Glan Llyn
Phase 5A & 5B

Desk Study & Phase 2 Geo-Environmental Interpretative Report

Glan Llyn, Newport

Phase 5A & 5B

Desk Study & Phase 2 Geo-Environmental Report

For

Brighton STM Developments Limited

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Executive Summary

This presents the salient points of the report and should not be referred to in isolation.

Summary	Rodgers Leask Ltd (RLL) were commissioned by Brighton STM Developments Limited (BSTMDL) to prepare a combined Desk Study and Phase 2 Geo-Environmental Interpretative Report for Phase 5A & 5B of the Glan Llyn development on the former Llanwern steelworks (hereafter referred to as the 'Site'). The Site is proposed to be re-developed for residential with gardens and public open spaces end-use.
Site Location and Description	The Site is irregular in shape and covers approximately 12 hectares, located within the Glan Llyn development at the former Llanwern Steelworks, approximately 5.5km to the east of Newport at National Grid Reference 336490E, 187114N. Prior to the recent earthworks, the site comprised an area used for the storage of excavated Made Ground originating from the wider Llanwern Site.
History	The Site historically comprised agricultural land until the 1960s, when it was developed as part of the Llanwern Steelworks (sinter plant, lagoons and associated infrastructure). Operations ceased in 2001,with the Site being partially demolished by 2006 and above ground structures were completely demolished to slab level by 2009..
Geology / Ground Conditions	The Site is understood to be underlain by Made Ground overlying Tidal Flat Deposits, underlain by bedrock from the Mercia Mudstone Group. The 2020-2021 RLL ground investigation comprised 103 trial pits within Phase 5A & 5B. General Made Ground was encountered within all 103 exploratory holes from ground level or underlying asphalt surfacing to a maximum encountered depth of 4.20m. Tidal Flat Deposits were encountered beneath the Made Ground in 74 locations from depths of between 0.80m and 4.20m; base of the formation was not encountered, but the strata was recorded to a maximum depth of 4.30m. The Mercia Mudstone Group was not encountered. The Mercia Mudstone Group or the Penarth Group was not encountered during the RLL 2020-2021 ground investigation.
Hydrology and Hydrogeology	The Mercia Mudstone Group is classified as a Secondary B Aquifer. The Penarth Group is a Secondary (Undifferentiated) Aquifer. The Tidal Flat Deposits are classified as Secondary (Undifferentiated) Aquifer. The nearest surface water feature is Kings Wall Reen and Northern Reen which bound the site to the north and east. Monks' Ditch, which is hydrologically separate to Kings Wall Reen and Northern Reen is approximately 28m to the north-east. These form part of the private reen network. The overall flood risk is mapped as low (tidal/ sea) by Natural Resources Wales. The Site lies within an area shown as having a Low Flood Risk from Sea according to Natural Resources Wales Flood Risk mapping.
Controlled Waters	With regard to controlled waters, the following pathways are considered applicable to the Site, following completion of the

	development and once relevant approvals have been granted to allow discharge into Monks' Ditch: ▪ Leaching of soil-borne contamination in Made Ground and subsequent lateral migration through permeable pathways in Made Ground to Monks' Ditch via onsite reens; and ▪ Newly created preferential pathways associated with the redevelopment of the Site e.g. foundations and infrastructure. As such, it is recommended that this report is read in conjunction with the Phase Specific Controlled Waters Risk Assessment. .
Contamination	169 soil samples were collected during the ground investigation for contamination testing, all of which were taken from the Made Ground. The samples collected were conservatively assessed against LQM/ CIEH 2015 S4ULs (Suitable for Use Levels) for a residential end use with plant uptake (1% SOM). Chemical testing has identified some exceedances of S4ULs for metals (lead, zinc, arsenic and vanadium) and hydrocarbons (TPH, PAHs and BTEX compounds). Asbestos was detected in 12 of 89 soil samples analysed, at concentrations of <0.001% to 0.0022%. The presence of asbestos and elevated contaminants identified on site are a risk to human health and will be managed through the remedial works and succeeding housebuilder requirements.
Ground Gas and Radon	No gas monitoring has been undertaken within Phase 5A & 5B. A programme of shallow gas monitoring is required following turnover and earthworks reengineering. The Site is located within a radon affected area, with 1-3% of properties being above the action level on its southern side and 10-30% of properties are above the action level across the majority of the Site. As such, the Site is in a radon affected area with and full protective measures are likely to be required in the construction of the new development.
Recommendations	Following the completion of the RLL ground investigation, the following recommendations are made: ▪ Removal of identified hotspot contamination on a grid square basis, and subsequent validation testing and reporting. ▪ Turnover of the Made Ground to natural geology, to variable depths up to approximately 4.20mAOD, with removal of obstructions. ▪ reengineering of materials in accordance with the approved Remediation Strategy and earthworks specification. ▪ Chemical validation of the placement of material following turnover. ▪ A programme of shallow gas monitoring and assessment is required following the turnover and reengineering of the earthworks. ▪ Concrete classification testing should be undertaken in accordance with BRE Special Digest 1.

	▪ Phase-specific geotechnical assessments and validation relating to the proposed development. ▪ Construction of buildings and hardstanding with suitable construction materials to break the pathway with underlying Made Ground, to intercept rainwater and to reduce infiltration. ▪ Installation of a 600mm clean cover system, suitable for a residential with plant uptake end use, will be required in areas of residential gardens and landscaping. ▪ Consultation with the water supply company in relation to the potential use of barrier pipe. ▪ Preparation of a Piling Risk Assessment. ▪ Preparation of a Detailed Quantitative Controlled Waters Risk Assessment to assess the risk posed to controlled waters within the future development and inform the Remediation Strategy. ▪ Preparation of an MMP to facilitate the reuse of excavated materials and import of soil for use in the cover system.

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1.0 Introduction

1.1. Terms of Reference

Rodgers Leask Ltd (RLL) was commissioned by Brighton STM Developments Limited (BSTMDL) to prepare a combined Desk Study and Phase 2 Geo-Environmental Interpretative Report for Phase 5A & 5B of the Glan Llyn development in Newport (hereafter referred to as the 'Site').

The Site is situated within the ongoing wider redevelopment of the former Llanwern Steelworks. The Site location plan is shown on Drawing 18669-RLL-25-XX-DR-O-0787, included in **Appendix A**.

In July 2024 the Client, St Modwen Developments, were rebranded to be called Brighton STM Developments Limited (BSTMDL). Any reference to the previous company names in this report should be referred to accordingly.

1.2. Proposed Development

It is understood that the Site is proposed to be redeveloped for a residential end use with gardens and public open space areas. An illustrative masterplan (ref. 8111-08-A011, Rev P19, dated April 2019) is available in **Appendix A**.

The development will form part of the wider Glan Llyn development.

1.3. Purpose

This report has been prepared to support the discharge of Planning Condition 27 of the Outline Planning Permission Reference 06/0471 for the proposed development of residential development Phase 5A & 5B as part of a wider mixed-use development at Llanwern, Newport.

Planning Condition 27 states the following.

"(27) Prior to the commencement of each phase of development as defined by Condition 03 (or at such other date or stage in development or for such specified activities or works as may be agreed in writing with the Local Planning Authority), the following components of a scheme to deal with the risks associated with contamination relating to that phase or activity shall each be submitted to and approved, in writing, by the Local Planning Authority:

(1) A preliminary risk assessment which has identified:
- *(a) all previous uses;*
- *(b) potential contaminants associated with those uses;*
- *(c) a conceptual model of the site indicating sources, pathways and receptors;*
- *(d) potentially unacceptable risks arising from contamination at the site.*

(2) A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.

(3) The site investigation results and the detailed risk assessment (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.

(4) A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in (3) are complete and identifying any requirements for longer term monitoring of pollutant linkages, maintenance and arrangements for contingency action. Any changes to these components require the express consent of the Local Planning Authority.

Reason: To ensure that the proposed development will not cause pollution of the environment or harm to human health."

The scope of this report is detailed in Section 1.4 below. It is considered that this report addresses the requirements of Condition 27 part 1 and 2. Part 3 and part 4 will be addressed in future reporting including a Remediation Strategy and Validation Report.

1.4. Objectives

The objectives of this report are to:

- Obtain desktop information to assist in the assessment of potential environmental and ground related issues that may have implications for the proposed development.
- Review the available information to determine the anticipated ground conditions and identify the potential for contamination to be present within the Site boundary, including formulation of an initial Conceptual Site Model.
- Present the findings of the ground investigations and produce an updated Ground Model,
- Present contamination data and undertake risk assessment to establish the nature and extent of any contamination within the Site.
- Produce a refined Conceptual Site Model for the site using the findings of the desktop study and ground investigation works, including identification of Source Pathway Receptor Linkages that require mitigation.
- Make outline recommendations for remedial actions, where required, to mitigate unacceptable risks.

1.5. Scope

In order to achieve the outlined objectives, the scope of the study includes:

- A review of existing geo-environmental data for the Site including a review of historical maps and existing ground investigation data.
- A site visit/ walkover survey.
- Undertake an intrusive ground investigation, including chemical and geotechnical laboratory testing.

- An assessment of the levels of contamination present within the soils on Site against generic screening criteria based on the results of laboratory testing of samples collected during the investigation.

1.6. Sources of Information

The following documents and data sources have been reviewed in preparation of this Desk Study & Phase 2 Geo-Environmental Interpretative Report and should be read in conjunction with this document:

Groundsure Report

- Groundsure Enviro+Geo Insight Historical Map Pack (ref. GS-FWC-52V-7SW-PC7), dated August 2025 (**Appendix C**); and
- Groundsure Enviro+Geo Insight Report (ref. GS-BO6-PBF-9D2-2IX), dated August 2025 (**Appendix D**).

The following reports have been prepared to be read in conjunction with this report:

- IOM, Assessment of asbestos contamination at former Llanwern Steelworks Site, Newport, Wales, ref. 610-34464 Rev 1, dated March 2024; and
- RLL, Phase 5A & 5B Controlled Waters Detailed Quantitative Risk Assessment Addendum, ref. 18669-RLL-26-XX-RP-O-0822-P01 dated May 2026.

1.7. Limitations and Confidentiality

All conclusions and recommendations made within this report are based upon and limited to the factual information obtained as part of this investigation. No responsibility can be taken by RLL for information obtained by third parties and it has been assumed that all third-party information provided is true and correct.

No liability can be accepted for conditions not revealed within the exploratory holes or pits undertaken by this investigation. The exploratory points cover only a small proportion of the total site area. RLL has where necessary undertaken extrapolation between locations and no responsibility can be taken for different conditions which may occur between locations.

RLL has undertaken the work in accordance with our understanding of current best practice at the time of undertaking the report. Further assessment and revision of the report may be required should new information come to light or legislation/ changes to best practice be introduced after the date of issue of the report.

RLL has prepared the report for the sole use and reliance of the Client. The report may not be used or relied upon by any unauthorised third party without the explicit written agreement of RLL.

The interpretive work undertaken within this report remains the intellectual property of RLL and must not be divulged to any commercial third party without prior written agreement of RLL.

At the time of writing, detailed information on the proposed structures, such as detailed layout, loadings and serviceability limits, was not available. Accordingly, where geotechnical design advice is provided it is for information only and should be reassessed by a competent specialist once the development layout and structural loadings are known.

2.0 Site Location and Description

2.1. Site Location

The Site is located within the Glan Llyn development at the former Llanwern Steelworks, approximately 5.5 km to the east of Newport City Centre, at approximate National Grid Reference 336490E, 187114N. The wider Glan Llyn development covers approximately 250 hectares and is undergoing phased redevelopment for residential, commercial, and open space use. The Site location plan is shown on RLL Drawing 18669-RLL-25-XX-DR-O-0787-P01, provided in **Appendix A**.

The Site is irregular in shape, covering an area of approximately 12ha and is situated in the northeastern part of the wider Glan Llyn development. The Site historically housed part of a sinter plant alongside other steelworks infrastructure. Drain 4, a historical below ground box culvert, was located on the eastern side of the Site orientated north-south. The Site currently comprises an area used for the stockpiling of excavated Made Ground generated from the wider Glan Llyn Site

The Site boundary is shown on drawing 18669-RLL-22-XX-DR-O-0787-P01, **Appendix A**.

2.2. Site Boundaries and Surrounding Area

The Site is bounded on all sides by the wider Glan Llyn development. Boundaries are not defined by permanent physical features but are identifiable on plan by the limits of current groundworks, hardstanding, and stockpile areas.

- North: the Site boundary runs broadly east–west and is bounded to the north by a surface water reen known as Northern East-West Ditch, which forms part of the private Glan Llyn drainage network.
- East: the eastern boundary is formed by a surface water reen known as Kings Wall Reen. Beyond which is Phase 5G, which is currently undeveloped.
- South: the southern boundary adjoins the proposed highway known as Avenue Road, beyond which is Phase 5F, also comprising undeveloped land.
- West: the western boundary is formed by Phase 4A, which comprises land used for the stockpiling of Made Ground generated from the wider Glan Llyn development.

2.3. Site Walkover

Numerous site walkovers were conducted between 2020-2022 by an RLL Engineer. The purpose of the site walkovers was to provide a general description of the Site. Copies of relevant photographs are included in **Appendix B**.

At the time of the walkovers, the Site had been demolished to slab level and housed approximately twenty mostly vegetated stockpiles of material originating from the wider Llanwern site. A temporary site compound was present for earthworks contractors working on the adjacent Phase 4A and contained a few buildings/

structures, open storage areas and stacked materials or containers. Numerous tracks and temporary haul routes traversed the Site.

Vegetation cover was sporadic, with notable areas of dense scrub, particularly in the northeastern areas. Boundaries were open in most locations, with no continuous fencing visible and the Site was directly accessible from adjoining areas within the wider Glan Llyn development.

2.4. Site History - Ordnance Survey Maps

Historical Ordnance Survey maps have been assessed to identify former land uses at the Site and the surrounding area. Records have been obtained from a Groundsure Insight Report commissioned for the Site in 2025 (**Appendix C**).

Map Date	Site Feature	Adjacent Features
1882 OS	The Site predominantly comprised undeveloped land: forming part of six fields segregated by drains. Monks Ditch, part of the collective reen network known as Black Wall, is shown on the eastern side of the Site. An unnamed reen diverges west of Monks Ditch, orientated east-west in the southern half of the Site. The unnamed reen appears again on the western Site boundary, where the reen diverted northwards offsite. A footpath traverses from the south of the Site to the north. Two small features, possibly drain overflows, are located in the northeast corner of the Site.	Surrounding land is characterised by open agricultural fields segregated by reens, drains, trees and the Great Western Railway line which runs approximately east to west approximately 100m to the north of the Site. Two reens are shown running parallel to each other 500mto the west and southwest of the Site. The western most watercourse, Ellen Reen, flows to the south with connected field drains to the east and west, including Middle Reen. Collectively this system is labelled Kings Wall. The Brassgout Reen/ Decoypool Walk runs east to west approximately 350m south-east of the Site. Decoypool Farm and the associated Decoy Pool (marshy pond) are located approximately 250m west of the Site. A footpath with various foot bridges runs from Decoypool Farm in a northeasterly direction towards Llanwern Station which is approximately 100m northeast of the Site. The main railway (Great Western Railway), orientated east to west, runs approximately 100m north of Site at its closest point. Various farms and residential properties are shown within 1km (Monkspill Cottage approximately 250m north-east, Pwll-pan approximately 800m north-east, Tatton Farm 1km southwest, New House 1km south-east).

Map Date	Site Feature	Adjacent Features
1900 OS	Trees have been removed from the field boundaries. The small structure on the northeast corner of the Site is now absent from the map. Black Wall Reen is now labelled as Barn Reen and the unnamed reen crossing the southern section of the Site is shown to flow in a westerly direction.	Decoy Pool is renamed Old Decoy Pool. Little significant change is observed within 1km.
1920 –1922 OS	Little significant change is observed. A footpath encroaches on the northwestern corner of the Site.	Llanwern Lime Works is indicated 450m north of the Site and the associated Goods Shed and railway siding is located 100m north. Ellens Reen and Middle Reen are indicated to have south-easterly flow direction.
1938 –1949 OS	Little significant change.	Llanwern Golf Club is shown to the north of the Great Western Railway line alongside new development comprising 13 residences. Lime kiln and associated infrastructure no longer shown. Monkspill Cottage shown 250m northeast.
1963 OS	Little significant change.	Roman Burials (found AD 1925) indicated to the west of Llanwern Golf Club. Little significant change is observed within 1km.
1973 OS	The Site is shown to form part of the Spencer Steelworks (later known as the Llanwern Steelworks). Numerous industrial buildings/ structures are recorded within the Site boundary, including part of a sinter plant. A large canteen building is also labelled. Dashed lines on the survey indicate access tracks and roads, as well as boundaries around infrastructure, possibly service areas, yards or plant enclosures. Railway sidings are shown to be present in the east of the site. Much of the northeast of the Site is shown as mud, implying a wet marshy area. Two surface water drainage channels, presumed to be open channels, are shown in the north and east of the Site.	Mapping shows the surrounding area to comprise the Spencer Steelworks. Within the steelworks, land to the west comprised travelling booms, chimneys, hoppers, tanks and other infrastructure associated with the benzole and benzene plant and gas holder. Further to the west was the coal storage dumps and numerous drains. Land to the east includes tanks, slag pits and numerous gasholders associated with the blast furnaces and iron granulating plant. Land to the immediate south comprised infrastructure associated with a sinter plant. Within 500m to the south-west were found a benzole refinery and associated tanks. To the south a lime plant and various conveyors /travelling booms.

Map Date	Site Feature	Adjacent Features
1988 OS	The Site is shown to have changed with the expansion of the steelworks. The eastern side of the Site formerly comprising marshy land is shown as open space with individual trees or small clusters of deciduous trees present at the time of mapping. An additional unlabelled building is shown to the immediate north of the canteen building. One of the railway sidings is shown to have been removed. A conveyor is shown on the southern boundary of the Site.	The railway sidings are no longer shown to the east of the Site, with roads/ tracks marked in their place. Some additional structures are indicated to the south of the Site associated with expansion of the benzole refinery 100m south. Expansion is shown to the benzole plant approximately 150m to the north of the Site with additional tanks and structures shown. Little significant change is evident to the west, south and east of the Site, with some expansion shown in the ore stockyard to the west.
2001 OS	Four large ponds/ lagoons are shown in the western part of the site.	Some infrastructure associated with the steelworks is shown to have been demolished.
2010 OS	All infrastructure associated with the Llanwern Steelworks has been demolished, including the railway sidings previously located in the west, leaving open space.	Infrastructure associated with the Llanwern Steelworks to the west and south of the Site has been demolished, leaving open space in its place.
2022 OS	No significant change.	A residential area associated with the wider Glan Llyn development is shown from ~500m from to the west of the Site. Notable features include Glan Llyn West Primary School, numerous residential houses with private gardens, numerous roads, recreational park areas and an updated surface water drainage network. To the east and southeast of the Site, six new commercial units, a surface water drainage network and access roads are shown within 500m. This infrastructure is associated with the Llanwern Business Park.

2.5. Site History – Aerial Photographs

Historical aerial photography obtained from online sources (**Appendix C**) and historical aerial photography included in the Groundsure Report (**Appendix D**) and other sources[1] provides additional information relating to the Site.

2001: High resolution, colour aerial imagery. Three large settlement lagoons are shown on the western side of the Site. A large building is shown in the approximate centre of the Site. The sinter plant is shown in the central southern area of the Site with associated structures, conveyors and chimney. A surface water drainage channel and vegetated area covers much of the northeastern part of the Site. A hard-surfaced road traverses centre of the sire from east to west.

[1] Google Earth Pro, Accessed 11/08/2025, BNG 336490E, 187114N, URL: https://earth.google.com/

2004: High resolution, colour aerial imagery shows much of the Site has been demolished to slab level. In the centre of the Site, the chimney, conveyors and factory buildings associated with the historical sinter plant are largely demolished or being demolished. The area stores building has been reduced to slab level. The southern half of the Site and immediate south of the Site is shown to have organised piles of demolition materials. The access road remains in place, as does the large, vegetated area in the north-east of the Site.

2006: High resolution, colour aerial imagery shows there to be only one remaining structure in the south of the Site. Two stockpiles are located to the southeast of the structure. Much of the dense vegetation and trees have been stripped from the open space in the northeast corner of the Site. The access tracks and hardstanding areas remain visible across the Site.

2009: High resolution, colour aerial imagery shows the water in the northwest corner of the Site to be larger. Numerous stockpiles are now observed across the Site, much of which are vegetated.

2014: High resolution, colour aerial imagery shows the last remaining structure to have been demolished along with the remaining foundations and hardstanding that was previously still visible within the Site. Fewer stockpiles are shown to be present on the Site and vegetation has become more dense on the northeast section of the Site.

2016: High resolution, colour aerial imagery shows numerous finger stockpiles neatly arranged on the southern half of the Site and further stockpiles are located on the northern half. A main haul route for ground workers is shown to run from the northwest Site boundary to the eastern boundary.

2018: High resolution, colour aerial imagery shows the stockpiles present on Site to have largely remained in the same positions, with approximately half covered in vegetation. Vegetation has been stripped back from the eastern corner of the Site.

2020: High resolution, colour aerial imagery shows numerous stockpiles across the Site. A temporary compound associated with wider earthworks has been constructed in the north-east of the Site.

2023: High resolution, colour aerial imagery shows numerous additional stockpiles across the Site. A large pump station (PS5) has been constructed in the south of the Site.

2.6. Site History - Available Information

According to the Royal Commission on the Ancient and Historical Monuments of Wales[2], the Llanwern Steelworks were built between 1958 and 1962 for Richard & Thomas Baldwin, was subsequently owned by British Steel, and is currently owned by Tata Steel Europe (formerly known as Corus Group). Reportedly due to the lack

[2] https://coflein.gov.uk/en/site/86821/

of a deep-water iron ore unloading terminal, the Steelworks struggled and steel making ceased in 2001 with demolition commencing in 2004.

Blueprints and a Historical Site Layout Plan of the wider Llanwern Steelworks site indicates that the Site comprised a sinter plant comprising the fan house and dust extraction unit. Within the sinter plant various infrastructure is shown including conveyors, pipelines and numerous buildings. Surrounding the sinter plant were various accessways and haul routes, a car park, office block and stores and heavy weighing group amenity building. A large lagoon is recorded as being present in the west of the Site. The north-west of the Site is characterised by ponded marshy vegetated ground and two surface water drains.

The routing of Drain 4 (a below ground box culvert) is shown in the western part of the Site.

The historical overlays of the Site are shown on drawings 18669-RLL-22-XX-DR-O-0784-P01, 18669-RLL-22-XX-DR-O-0789-P01 and the original Operational Site Layout drawing (ref. 839181, dated December 1999), included in **Appendix A**.

3.0 Ground Conditions and Mining Review

3.1. Published Geology

Information pertaining to the underlying ground conditions at the Site has been obtained via the BGS Onshore Geoindex[3] and the Groundsure Insight Report.

The published geological information shows artificial ground to be absent. However, due to the Site's history, Made Ground is known to be present associated with the previous development and subsequent demolition.

Superficial deposits are shown to comprise Tidal Flat Deposits. Historic or alternative names for the Tidal Flat Deposits include the Estuarine Alluvium, as reported on published geological maps[4] and historical logs.

Tidal Flat Deposits are described by the BGS as *'unconsolidated sediment, mainly mud and/ or sand. They may form the top surface of a deltaic deposit. Normally a consolidated soft silty clay, with layers of sand, gravel and peat.'*

The underlying bedrock is primarily shown to be the Mercia Mudstone Group with a narrow band of the Penarth Group – Mudstone mapped in the north-western part of the Site. The Mercia Mudstone Group was historically known as the Red Marl and is referenced as such in historic borehole logs.

The Mercia Mudstone Group is described by the BGS as comprising '*predominantly red, less commonly green-grey, mudstones and subordinate siltstones with thick halite bearing units in some basinal areas. Thin beds of gypsum/anhydrite are widespread; sandstones are also present'*.

The Penarth Group is described by the BGS as '*grey to black mudstones with subordinate limestones and sandstones; predominantly marine in origin'*.

There is an inferred fault approximately 58m north-east of the Site which trends roughly north to south and extends northwards away from Site.

3.2. BGS Borehole Records

A water well is shown on the northeast corner of the Site, referenced ST38NE7 and was drilled to approximately 24.4m. Topsoil was encountered to a depth of 0.15m overlying Tidal Flat Deposits comprising alternating beds of soft grey blue CLAY and brown fibrous PEAT to approximately 7.0mbgl. From approximately 7.0mbgl soft brown CLAY lies above a mixture of soft brown CLAY and GRAVEL to approximately 9.67mbgl. Bedrock of the red marl strata was encountered from depths of 9.76mbgl to a maximum encountered depth of 24.4mbgl.

[3] http://mapapps2.bgs.ac.uk/geoindex/home.html
[4] BGS Lexicon of Named Rock Units - Result Details (Accessed 22 May 2026)

3.3. Mining History

The Site does not lie in a coal mining reporting area, as defined by the Coal Authority.

There are no records relating to historical mining or extraction activities within 500m of the Site (**Appendix D**).

An on-site pond mapped in 1973 is recorded as a surface ground working in the northeast of the Site.

3.4. Railway and Tunnel Features

Information presented in the Groundsure Insight report (**Appendix D**) indicates that there are two active railways within 250m of the Site boundary: the South Wales Mainline and the private Tata railway which runs between the steelworks at Llanwern and the South Wales Mainline.

Additionally, it is known that railway sidings were present throughout the wider Llanwern Steelworks during its history including on the Site. Seven instances of these historical railway features are noted on the Groundsure report indicating their land use as railway sidings.

3.5. Radon

Information from the 'UK Maps of Radon'[5] interactive map indicates that the Site lies within a radon-affected area, with a maximum radon potential of 10–30% across most of the Site and 1-3% potential on the southern part of the Site. Accordingly, full radon protection measures are likely to be required for any new buildings constructed on the Site.

3.6. Potential for Ground Stability Hazards

The Site has been given the following classifications with regards to ground stability hazards (**Appendix D**):

- Potential for Collapsible Ground Stability Hazards: **Negligible**
- Potential for Compressible Ground Stability Hazards: **Moderate**
- Potential for Ground Dissolution Stability Hazards: **Negligible**
- Potential for Landslide Ground Stability Hazards: **Very Low**
- Potential for Running Sand Ground Stability Hazards: **Moderate**
- Potential for Shrinking or Swelling Clay Ground Stability Hazards: **Low**

3.7. Hydrogeology

Information presented in the Groundsure Insight Report (**Appendix D**) indicates that the underlying Mercia Mudstone Group strata is defined as a Secondary B Aquifer.

[5] https://check-your-flood-risk.naturalresources.wales/?culture=en-GB

The Penarth Group is defined as a Secondary (undifferentiated) Aquifer. The superficial Tidal Flat Deposits are defined as Unproductive Strata.

Secondary B Aquifers are classified as comprising '*predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifer'*.

Secondary (undifferentiated) aquifers are assigned where it is not possible to attribute either category A or B to a rock type. In general, these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

Unproductive Strata classification has been given to cases where '*rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow'.*

There are no records relating to groundwater abstraction licences for the Site.

The Site is not located within a groundwater Source Protection Zone and there are no reported Source Protection Zones within 500m of the Site boundary.

One historical water well, referenced ST38NE7, is located on the northeastern corner of the Site[6].

3.8. Hydrology

The Site is located within a privately drained system (Glan Llyn Surface Water Network). The nearest surface watercourse, within the private system is the Northern Reen, on the northern Site boundary and Kings Wall Reen, on the southeastern Site boundary.

Information presented in the Groundsure Insight Report (**Appendix D**) indicates that the nearest surface water feature, outside of the Glan Llyn privately drained system, is located 28m northeast of the Site and refers to Monks' Ditch.

There are no active surface water discharge consents within 500m of the Site.

The Site lies within an area shown as having a Low Flood Risk from Sea according to Natural Wales Flood Risk mapping[7] from Natural Resources Wales. The Flood risk map is presented within the Groundsure Insight report, included in **Appendix D.**

3.9. Unexploded Ordnance (UXO)

Regional Unexploded Bomb Risk maps obtained from Zetica indicates that the Site is in a low-risk area for encountering UXO. The Zetica UXO map is presented in **Appendix E**.

[6] GeoIndex - British Geological Survey (Accessed 22 May 2026)
[7] https://check-your-flood-risk.naturalresources.wales/?culture=en-GB

4.0 Regulatory Review

4.1. Authorisations and Consents

Data held by environmental regulatory bodies and Local Authorities regarding authorisations and consents has been obtained for the Site via a Groundsure Insight Report (**Appendix D**) commissioned for Site in August 2025.

The Groundsure Insight Report contains factual information which is produced from a database of records obtained from various sources including; Local Authorities, Environment Agency (Wales Region), Natural Resources Wales and UK Health Security Agency (formerly Public Health England).

4.2. Environmental permits, incidents and registers

There are eleven records of Integrated Pollution Controls within 500m of the Site. The closest of which is located 382m southwest, relating to carbonisation and associated processes for Koppers UK Ltd, in 1999.

There are no records of prosecutions relating to authorised processes in the vicinity of the Site.

There are three records of Control of Major Accident Hazards (COMAH) sites recorded within the Site, two relate to Air Products (BR) Limited which has a “current COMAH Site” operational status. Air Products (BR) Limited is an industrial gas supplier, located 1.25km to the southwest of the site.

The other COMAH record relates to a historical notification of Installations Handling Hazardous Substances (NIHHS) site for B.S.C, Llanwern Works.

There is one licenced discharge to controlled waters within 500m of the Site. The licence, effective since 12/03/2025, is associated with the trade discharge of site drainage from Indurent Park Newport.

4.3. Waste Management and Hazardous Substances

The environmental report indicates one licensed waste sites within the Site, relating to an historical industrial waste landfill site for factory curtilage (Corus Strip Products, licence BRI007), recorded as part of the Llanwern Works, with a permitted capacity exceeding 75,000 tonnes. The license was issued in 1979.

Four licensed waste sites were recorded within 500m of the Site boundary, the nearest of which relates to the Vertase FLI (Former Coking Works) located 135m west of the Site.

One record of a waste exemption is recorded within the Site, relating to Bam Nuttal Ltd (Rail Facilities) and a further four are recorded within 500m of the Site; the nearest of which is located 54m north of the Site for Bam Nuttal Ltd.

No current or recent petrol stations, hazardous substance consents, or licensed explosive sites are recorded within 500m. However, the Site lies adjacent to a COMAH lower-tier site (Air Products, Llanwern), associated with chemical storage and handling risks.

Historical licensed industrial activities include multiple permits for carbonisation and iron/ steel processes at the former Llanwern Works (Koppers UK, Multiserv), most now revoked or superseded. Records also confirm several radioactive substance authorisations for disposal of radioactive waste by Corus UK Ltd, located ~231m west of the Site, with permits granted between 1998 and 2003, now superseded or revoked.

Finally, historical discharges to controlled waters are noted, including expired consents to Monks' Ditch and on-site lagoons, with one current consent (DB3494FH, issued 2025) for trade drainage to Monks' Ditch ~242m southeast.

4.4. Landfills and Other Waste Sites

The Groundsure Insight Report (2025) indicates that there are no active landfill sites recorded within 500m of the Site boundary. One historical industrial waste landfill site for factory curtilage (Corus Strip Products, license BRI007) is recorded onsite as part of the Llanwern Works, with a permitted capacity exceeding 75,000 tonnes. The license was issued in 1979.

Four historical waste sites are recorded within 500m of the Site boundary, the nearest of which refers to a Scrap Metal Dump, dated 1967, located 332m east of the Site.

There are no records of Potentially Infilled Land (Water) located within 500m of the Site.

4.5. Current Land Use: Industrial Data

The environmental report indicates there are seven records of potentially contaminative industrial sites within 250m of the Site, the nearest of which is located 48m north-east and refers to an electrical pylon.

4.6. Designated Environmentally Sensitive Areas

Reference to the Data Map Wales Website[9] (accessed August 2025) and the Groundsure Insight Report (2025) indicates there is a SSSI located approximately 603m south-west relating to the Gwent Levels - Nash and Goldcliff.

No further designated environmentally sensitive sites are recorded within 1000m of the Site.

[9] https://datamap.gov.wales/maps/new?layer=inspire-nrw:NRW_SSSI#/

4.7. Archaeology

A preliminary search of the Historic Wales[10] archaeological database (accessed August 2025) indicates no records within the Site boundary.

[10] https://historic-wales-rcahmw.hub.arcgis.com/ (accessed June 2025)

5.0 Ground Investigation

5.1. Existing Reports

Two ground investigations have been undertaken, by Atkins in 2016 and Rodgers Leask (RLL) between December 2020 and February 2021. As part of the Atkins investigation 2 cable percussion boreholes were excavated and 2 window sample exploratory holes were excavated within the site area. As part of the RLL ground investigation, 103 trial pits were excavated within the Site area.

The following table provides a summary of the exploratory holes that were situated within the Site boundary.

Summary of Historical Exploratory Holes within the Site Boundary	
Report	**Exploratory Holes**
Atkins (2016)	**2 Window Sample and 2 Cable Percussion Boreholes:** CWCP10, CWCP32, CWWS10 and CWWS20.
RLL (2020-2021)	**79 Trial Pits:** AT6-1, AT6-2, AJ4-1, AJ4-2, AL2-1, AL2-2, AM1-1, AM1-2, AM2-1, AM2-2, AN1-1, AN1-2, AO1-1, AO1-2, AP1-1, AP1-2, AQ1-1, AR2-1, AR4-1, AR4-2, AS3-1, AS4-1, AS4-2, AS6-1, AS6-2, AS7-1, AS7-2, AT4-1, AT4-2, AT4-3, AG1-1, AH1-1, AH1-2, AI1-1, AJ1-1, AJ1-2, AJ6-1, AJ6-2, AK1-1, AK1-2, AK2-1, AK2-2, AK3-1, AK5-1, AK5-2, AL1-1, AL1-2, AR10-1, AR10-2, AR11-1, AR11-2, AS9-1, AS9-1, AN10-1, AN10-2, AN11-1, AN11-2, AN12-1, AN12-2, AN12-3, AP10-1, AP10-2, AQ10-1, AQ10-2, AN13-1, AN13-2, AN14-1, AN14-2, AN14-3, AN15-1, AN15-2, AL12-1, AL12-2, AL12-3, AL13-1, AL13-2, AL14-1, AL14-2, AM15-1, AM15-2, AM16-1, AM16-2, AL10-1, AL10-2, AL11-1, AL11-2, AM10-1, AM10-2, AM11-1, AM11-2, AM12-1, AM12-2, AM13-1, AM13-2, AM14-1, AM14-2, AM14-3, AG7-1, AH6-1, AH6-2, AH7-1, AH7-2, AI6-1, AI6-2, AI7-1, AI7-2, AI8-1, AI8-2, AK10-1, AF2-1, AF2-2, AF4-1, AF4-2, AF5-1, AF5-2, AG2-1, AG6-1, AG6-2, AH2-1, AH2-2, AL15-1, AL15-2, AL16-1, AL16-2, AL16-3, AD1-1, AD1-2, AE1-1, AE1-2, AF1-1, AF1-2, AG3-1, AG3-2, AH3-1, AH3-2, AI2-1, AI3-1, AI3-2, AJ2-1, AJ2-2, AJ3-1, AJ3-2, AN6-1, AJ5-1, AS5-1, AS5-2, AT5-1, AT5-2, AU5-1, AU5-2, AU5-3, AU6-1, AU6-2, AG8-1, AG8-2, AH8-1, AH8-2, AH8-3, AH8-4, AI8-1, AI8-2, AJ8-1, AJ8-2, AL3-1, AU7-1, AV6-1, AV6-2, AV6-3 and AV7-1.

RLL Drawing 18669-RLL-25-XX-DR-O-0788-P01, presented in **Appendix A**, shows the location of the exploratory holes; some areas in the central and western sections of the Site were not investigated as part of the ground investigation due to restricted access from stockpiled Made Ground originating from the wider Glan Llyn development.

The historical logs within the Site boundary are presented in **Appendix F**.

5.2. Encountered Ground Conditions

The Site was generally found to be underlain by Made Ground overlying Tidal Flat Deposits.

5.2.1. Made Ground – Topsoil

Topsoil was encountered in two locations (CWWS10 and AL1) from ground level to approximately 0.10m or directly overlying gravelly clay (Made Ground).

5.2.2. Made Ground – Surfacing

Surfacing was encountered in two locations (AH2 & AV6) from ground level to 0.1m and 0.3m respectively. AH2 comprising asphalt, while AV6 comprised recycled 6F2 gravel with a geotextile separator layer.

Localised historical hardstanding was encountered at shallow depths, comprising tarmac, with occasional concrete slab surfacing at near surface also noted. The locations and depth of the surfacing is summarised in the table below:

Trial Pit Location	Depth (m bgl)	Surfacing Type
AL6	0.30-0.40	Asphalt
AK4	0.20-0.30	Concrete Slab
AN6	0.50-0.55	Asphalt

5.2.3. General Made Ground

Made Ground was encountered within all 107 exploratory holes. The Made Ground was encountered from ground level or underlying the surfacing at thicknesses of between 0.15m and 4.20m, and was described as:

- Dark brown/ brown/ blue/ red/ black/ orange/ light grey clayey sandy GRAVEL with occasional boulders and rare silt;
- Dark brown/ brown/ blue/ red sandy clayey GRAVEL;
- Black gravelly occasionally ashy SAND with cobbles;
- Hard grey/ light grey/ orange/ brown/ yellow sandy GRAVEL with occasional cobbles and boulders of slag;
- Light brown loamy CLAY with angular gravel of brick;
- Dark grey slightly clayey gravelly SAND;
- Dark brown sandy GRAVEL;
- Dark grey to black clayey gravelly fine to coarse SAND;
- Dark brown slightly sandy silty gravelly CLAY;
- Dark red/ brown slightly sandy slightly gravelly CLAY with frequent rootlets; and
- Light yellow/grey sandy SILT.

Gravel and cobble components varied but commonly included various slags (fused in places), burnt shales, ash, clinker, bricks, concrete and other anthropogenic debris with occasional gravel inclusions of mudstone, sandstone, and other mixed lithologies.

16 locations (AF6, AG7, AH7, AJ5, AK3, AK4, AK11, AK12, AK18, AM13, AM15, AN6, AR11, AS5, AU5, AU6, AK4 and AV6) refused at depths between 0.3mbgl and 2.60mbgl.

5.2.4. Superficial Deposits

The Tidal Flat Deposits were encountered underlying the Made Ground in 77 of the exploratory holes. The top of the strata was recorded from depths of between 0.60mbgl and 4.20mbgl and the base of the formation was encountered in two locations at 9.60mbgl and 10.00mbgl.

The Tidal Flat Deposits were described as:

- Firm blue/ grey/ brown silty CLAY with occasional fine sand, shell fragments
- Soft to firm bluish grey to brownish grey CLAY
- Very soft to soft dark brown to brown fibrous PEAT;
- Black slightly silty clayey amorphous PEAT;
- Very soft grey SILT;
- Loose grey slightly gravelly fine to medium SAND sometimes with frequent bands of weak, coarse sandstone with carbonate shells; and
- Soft to firm blue/brown peaty silty CLAY.

5.2.5. Bedrock

The Mercia Mudstone Group was encountered in 2 locations (CWCP31 and CWCP32). The top of the bedrock was recorded from 9.60mbgl and 10.00mbgl, and the base of the bedrock was not encountered but was recorded to a maximum depth of 10.50mbgl.

The Mercia Mudstone Group was described as:

- Extremely weak red brown MUDSTONE (Grade II); and
- Very stiff reddish brown mottled grey silty CLAY (Grade IVa).

5.2.6. Perched Water

Perched water was recorded in 90 locations, generally within the Made Ground or at the boundary with the Tidal Flat Deposits. Water strikes were typically encountered between 0.15mbgl and 0.9mbgl, with occasional deeper strikes to 2.8mbgl.

5.2.7. Groundwater

Groundwater was recorded in 2 locations at the boundary between the lower loose gravelly sands and upper very soft silts. Water strikes were encountered at 9.50mbgl (CWCP31) and 8.00mbgl rising to 3.00mbgl (CWCP32).

5.2.8. Encountered Buried Obstructions or Services

Buried obstructions or services were encountered in 34 exploratory locations as detailed in the following table.

Encountered Buried Obstructions			
Trial Pit Ref.	**Depth (m)**	**Strata**	**Remarks**
AF6	0.70	MG	Concrete slab.
AG6	1.90	MG	Unknown pipe.
AG7	0.80	MG	Black fused slag.
AH3	0.00–1.30	MG	Black fused slag/ sand.
AI2	0.90	MG	Plastic water pipe.
AJ5	0.90–1.00	MG	Concrete slab.
AK1	0.80–1.10	MG	Fused slag.
AK2	1.40	MG	Metal pipe inside of pit.
AK4	0.30	MG	Concrete slab.
AK5	1.60	MG	Large pipe.
AK11	0.20–0.50	MG	Fused slag.
AL6	0.80–1.00	MG	Fused slag.
AL12	1.20–3.00	MG	Boulders of concrete.
AL15	0.90 + 1.50	MG	Concrete piles.
AL16	0.00–0.60	MG	Fused slag.
AM5	0.30	MG	Numerous piles.
AM10	0.20–0.50	MG	300 mm thick concrete slab.
AM16	0.50	MG	Concrete structure.
AN12	1.00–3.40	MG	Fused slag recovered as gravel.
AP10	0.80–0.85	MG	Fused slag.
AQ10	0.00–0.70	MG	Fused slag/mixed lithologies recovered as clay.
AR4	0.30–1.20	MG	Fused slag recovered as sandy gravel.
AR10	1.00–1.70	MG	Fused slag/mixed lithologies.
AR11	0.00–0.20, 0.45–2.00	MG	Fused slag.
AS4	1.30–1.80	MG	Fused slag.
AS5	2.40–2.50	MG	Fused slag.
AS6	0.70–1.20	MG	Fused slag recovered as gravelly sand.
AS7	0.90–1.70	MG	Fused slag recovered as gravel.
AT6	2.20–2.40	MG	Fused slag recovered as gravel.
AU5	2.40–2.50	MG	Fused slag.
AU6	1.50–2.20	MG	Concrete.
AK4	0.20*	MG	Concrete
AV6	2.50*	MG	Not Specified.
CWWS20	1.20*	MG	Not Specified.

Notes: MG= Made Ground, *base of obstruction not encountered.

5.2.9. Visual/ Olfactory Evidence of Contamination

During the intrusive investigation, visual or olfactory evidence of contamination was encountered in 15 locations as detailed in the following table.

Visual / Olfactory Evidence of Contamination			
Exploratory Hole	**Depth (m)**	**Strata***	**Remarks**
AC1	0.20	MG	Hydrocarbon odour and sheen on perched water.
AG3	0.80	MG	Hydrocarbon odour and sheen on perched water.
AG6	0.70	MG	Slight sheen on perched water.
AH6	1.00	MG	Slight sheen on perched water.
AI7	0.30 - 1.20	MG	Slight hydrocarbon odour. Slight sheen on perched water.
AI8	1.10 – 2.40	MG	Slight sheen observed on boulder of slag Material.
AK2	1.20	MG	Strong hydrocarbon odour.
AL16	1.00 – 1.10	MG	Slight sheen and hydrocarbon odour.
AL7	1.15	MG	Strong sulphuric odour.
AM10	1.00 – 1.10	MG	Slight hydrocarbon odour.
AN10	0.7 – 0.8	MG	Slight sheen on perched water.
AP10	0.5 – 0.6	MG	Slight sheen on perched water.
AQ10	1.00 – 1.10	MG	Slight sheen on perched water.
AG8	0.70 – 0.80	MG	Slight sheen on perched water.
AH8	1.30 – 1.40	MG	Slight sheen on perched water.

Notes: *MG= Made Ground

5.2.10. Instability

Evidence of instability in the Made Ground was not noted during the Atkins or RLL intrusive investigation. Variable Made Ground composition, presence of obstructions, and shallow water strikes has the potential for localised instability during excavations.

5.3. Gas Screening

No gas monitoring was undertaken during the RLL ground investigation. A programme of shallow gas monitoring is recommended following turnover and earthworks reengineering.

The classification of the Site will depend on the permeability of the upper clay of the Tidal Flat Deposits following earthworks. A site-specific ground gas assessment is recommended following the completion of the earthworks.

6.0 Chemical Testing

6.1. Risks to Human Health

6.1.1. Methodology

In order to assess the risk posed to the health of site end users, the concentrations of contaminants recorded in soils have been compared to appropriate Site Assessment Criteria (SAC). These have been derived using the Contaminated Land Exposure Assessment Model (CLEA). SACs used in this generic quantitative risk assessment, include:

- Defra Category 4 Screening Levels (C4SLs) (Defra, 2014); and
- Land Quality Management & Chartered Institute of Environmental Health (LQM & CIEH, 2015) Suitable for use levels (S4ULs).

Where C4SL or S4UL are not available for a contaminant or are not considered appropriate for the risk assessment reference has been made to the Environment Agency Soil Guideline Values (SGV), the LQM/ CIEH Generic Assessment Criteria (GAC) and the Environmental Industries Commission GAC (EIC GAC).

The C4SL and EA SGV have been derived based on the CLEA default value for Soil Organic Matter (SOM) content of 6% and a sandy loam soil type. The LQM/CIEH S4UL and GAC and the EIC GAC are based on 1%, 2.5% and 6% SOM content and a sandy loam soil type.

The Site has been assessed based on a residential end use with plant uptake as defined in the Environment Agency (EA) CLEA model v1.071 'Updated technical background to the CLEA model Science Report – SC050021/SR3'.

6.1.2. Results

169 soil samples were collected and tested during the 2020/ 2021 ground investigation taken from the Made Ground.

Samples were tested for heavy metals, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbon (TPH), BTEX, pH, soil organic matter (SOM), cyanide, phenols, ammoniacal nitrogen and selected samples were also screened for asbestos.

The samples collected were conservatively assessed against LQM/ CIEH 2015 S4ULs (Suitable for Use Levels) for a residential end use with plant uptake (1% SOM). A summary of exceedances is presented in the following table, and the chemical analysis results are presented in full in **Appendix G**.

Summary of Exceedances of S4ULs Residential with Plant Uptake Criteria				
Contaminant	**Screening Value (mg/kg)**	**No. of Exceedances**	**Exceedance Concentration Range (mg/kg)**	**Location of Exceedances**
Arsenic	37.0	2 of 169 (1.18%)	45.2 – 52.6	AN1-2, AM16-1

Summary of Exceedances of S4ULs Residential with Plant Uptake Criteria				
Contaminant	**Screening Value (mg/kg)**	**No. of Exceedances**	**Exceedance Concentration Range (mg/kg)**	**Location of Exceedances**
Chromium	26.0	1 of 169 (0.59%)	1200.0	AT6-2
Lead	200.00	23 of 169 (13.61%)	220.00 – 2070.00	AT6-1, AR2-1, AR4-1, AS3-1, AT4-1, AT4-2, AS9-1, AS9-1, AL13-1, AL13-2, AL14-1, AM10-1, AS5-2, AT5-2, AU5-2, AU5-3, AU6-1, AU6-2, AU7-1, AV6-1, AV6-2, AV6-3, AV7-1
Vanadium	410.00	27 of 169 (15.98%)	411.00 – 2050.00	AT6-1, AT6-2, AR4-1, AS3-1, AS4-1, AS4-2, AS6-1, AS6-2, AS7-1, AT4-3, AL1-2, AG7-1, AH7-2, AI8-1, AG3-2, AH3-2, AI3-2, AS5-2, AU5-1, AU5-2, AU5-3, AU6-2, AI8-1, AU7-1, AV6-1, AV6-2, AV7-1
Zinc	3700.00	11 of 169 (6.51%)	3910.00 – 10600.00	AR4-1, AS3-1, AT4-1, AT4-2, AS5-2, AU5-2, AU5-3, AU6-2, AU7-1, AV6-3, AV7-1
Aromatic >C16-C21	930.00	1 of 169 (0.59%)	966.00	AG2-1
Aromatic >C21-C35	1700.00	2 of 169 (1.18%)	1730.00 – 2610.00	AG2-1, AG3-1
Benzene	87.00	165 of 169 (97.63%)	<180.00 – 1480.00	All Samples Excluding: AR10-1, AR10-2, AR11-1, AR11-2
Naphthalene	15.00	6 of 169 (3.55%)	19.90 - 102.00	AM15-2, AH7-2, AG3-1, AH3-1, AH8-3, AH8-4
Phenanthrene	95.00	3 of 169 (1.78%)	123.00 – 191.00	AH7-2, AG3-1, AJ2-2
Benzo[a]anthracene	7.20	11 of 169 (6.51%)	7.24 - 99.00	AM15-1, AM15-2, AH7-2, AG2-1, AG3-1, AG3-2, AH3-1, AI3-1, AJ2-2, AH8-3, AH8-4
Chrysene	15.00	8 of 169 (4.73%)	18.50 - 82.90	AM15-1, AM15-2, AH7-2, AG2-1, AG3-1, AH3-1, AI3-1, AJ2-2
Benzo(b)fluoranthene	2.60	30 of 169 (17.75%)	2.92 – 136.00	AP1-2, AN11-1, AN12-2, AN12-3, AN14-1, AN14-2, AL12-2, AL12-3, AM15-1, AM15-2, AM11-2, AH7-2, AF5-1, AG2-1, AG6-1, AH2-1, AL15-2, AG3-1, AG3-2, AH3-1, AI2-1, AI3-1, AJ2-1, AJ2-2, AG8-1, AG8-2, AH8-1, AH8-2, AH8-3, AH8-4
Benzo(a)pyrene	2.20	27 of 169 (15.98%)	2.48 - 87.60	AP1-2, AK2-2, AN12-2, AN12-3, AN14-1, AN14-2, AL12-2, AL12-3, AM15-1, AM15-2, AM11-2, AH7-2, AF5-1, AG2-1, AL15-2, AG3-1, AG3-2, AH3-1, AI2-1, AI3-1, AJ2-1, AJ2-2, AG8-1, AH8-1, AH8-2, AH8-3, AH8-4

Summary of Exceedances of S4ULs Residential with Plant Uptake Criteria				
Contaminant	**Screening Value (mg/kg)**	**No. of Exceedances**	**Exceedance Concentration Range (mg/kg)**	**Location of Exceedances**
Indeno(1,2,3-c,d)Pyrene	27.00	3 of 169 (1.78%)	31.10 – 69.30	AM15-1, AH7-2, AG3-1
Dibenzo(a,h)anthracene	0.24	37 of 169 (21.89%)	0.24 - 11.70	AL2-1, AM1-1, AM1-2, AM2-1, AM2-2, AP1-1, AP1-2, AJ1-1, AK2-2, AK3-1, AN11-1, AN11-2, AN12-2, AN12-3, AN14-1, AN14-2, AL12-2, AL12-3, AM15-1, AM15-2, AM11-2, AM14-1, AH6-1, AH7-2, AF5-1, AG2-1, AG6-1, AH2-1, AL15-2, AG3-1, AG3-2, AH3-1, AH3-2, AI2-1, AI3-1, AJ2-1, AJ2-2, AJ3-1, AG8-1, AG8-2, AH8-1, AH8-2, AH8-3, AH8-4

165 of 169 samples were shown to exceed the screening criteria for benzene. It should be noted that 11 samples had concentrations above the limit of detection for benzene ranging between 214µg/kg and 1480µg/kg. The detection limit for benzene tested listed by the laboratory as 180µg/kg for 154 samples, this is greater than the screening value of 87µg/kg (0.087mg/kg) and causes a significant skew in the results. Where samples are reported at the detection limit, for screening purposes, it has been conservatively assumed that the value is 180µg/kg. The true concentration is likely to be significantly lower than this value.

6.1.3. Asbestos

Asbestos was detected in 12 of the 89 samples analysed. A summary of the identified asbestos occurrences is presented in the table below

Summary of Asbestos Identified within the Site		
Location (Depth in m)	**Asbestos Type**	**Quantification (%)**
AM1-2 (1.00)	Chrysotile	<0.001
AN1-2 (1.50)	Trace Chrysotile	<0.001
AP1-2 (1.80)	Amosite	0.0022
AT4-3 (2.60)	Chrysotile	<0.001
AR10-1 (0.50)	Trace Chrysotile	<0.001
AM16-1 (0.20)	Chrysotile	<0.001
AG2-1 (0.30)	Amosite	<0.001
AH3-1 (0.50)	Trace Chrysotile	<0.001
AL14-1 (0.30)	Chrysotile	0.0190
AI2-1 (0.50)	Chrysotile	<0.001
AU5-1 (0.70)	Chrysotile	<0.001
AJ8-1 (0.40)	Chrysotile	<0.001

Asbestos was identified in twelve samples; positive samples were quantified to ascertain the weight for weigh concentration of asbestos in soil and returned results ranging between <0.001% to 0.0190%. The Institute of Occupational Medicine (IOM) risk assessment report for the reuse of soils containing asbestos at Llanwern (Ref. 401134-IOM-14-XX-RP-Z-0001) and has been agreed with Natural Resources Wales, states the following:

- Within the clean cover system a minimum of 0.6m of clean soil (asbestos content <0.001%) will be placed across the Llanwern site.
- Beneath the cover system, soil will be screened and, if asbestos contamination is less than 0.02% (200PPM) in the soil, that soil may be used in residential areas.

6.1.4. Groundwater

No samples of perched groundwater were taken during the RLL intrusive investigation.

Historical investigations undertaken by Atkins across the wider development have identified elevated concentration of contaminants associated with the Site's former usage that may present a risk to Controlled Waters. Further assessment of the risk posed by the Site as part of the wider development has been completed via preparation of a Controlled Waters Detailed Quantitative Risk Assessment (Ref. 18669-RLE-19-RP-O-0006) for the wider development and a phase specific addendum to this (Ref. 18669-RLL-25-XX-RP-O-0822-P01).

Due to the history of the Site, it is anticipated that further remedial works including turnover of the Made Ground will be undertaken with post remedial monitoring of water and gas following the completion of the earthworks.

7.0 Conceptual Site Model (CSM)

This section provides a qualitative assessment of the risk posed from potential on and off-site contamination sources identified from the information presented in the previous sections. The CSM considers the findings of all ground investigations that have been undertaken at the Site.

The assessment carried out assumes that the Site will be redeveloped for a residential with plant uptake end-use, as the most sensitive of the proposed uses. Should the end use or proposed layout be altered in any way, potential pathways and receptors should be re-assessed.

The conceptual site model below has been developed based on the source-pathway-receptor model as detailed within the Environment Agency Land Contamination Risk Management guidance and the Welsh Government's Contaminated Land Statutory Guidance for Wales 2012, and the Welsh Government, Natural Resources Wales & Welsh Government's Development of Land Affected by Contamination: A Guide for Developers (2017).

7.1. Potential Pollutant Linkages

7.1.1. Sources

The Site makes up part of the former Llanwern Steelworks; the Site historically comprised a sinter plant. Within the sinter plant various infrastructure was present including a fan house, dust extraction unit, conveyors, pipelines, chimney and various other buildings including stores and a canteen. Alongside the sinter plant there were haulage routes and an open space area. In addition, a Benzole and Benzene Plant was located to the west of the Site.

Chemical analysis of soil samples has identified concentrations higher than the selected screening criteria for arsenic, chromium, lead, vanadium, zinc, aromatic TPH >C16-C21, aromatic TPH >C21-C35, benzene, naphthalene, phenanthrene, benzo[a]anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene and dibenzo(a,h)anthracene. Asbestos was identified in twelve of the 89 soil samples tested in the form of bundles and loose fibres detected at concentrations between <0.001% to 0.0190%.

Potential contaminant sources are summarised in the following table.

Summary of Potential on Site Sources of Contamination		
Source	**Site Area**	**Key Contaminants**
Deep Made Ground, including slag material	Whole Site	Heavy metals, PAHs, Benzene and ground gas.
Historical Steelworks infrastructure	Whole Site	Heavy metals, PAHs, TPHs, Benzene
Made Ground	Isolated locations across the Site	Low concentrations of asbestos.

Summary of Potential on Site Sources of Contamination		
Source	**Site Area**	**Key Contaminants**
Natural Strata	Whole Site	Potential for ground gas from organic materials in the Tidal Flat Deposits Potential for sulphates and pyrites in the underlying Tidal Flat Deposits and Mercia Mudstone Group/Penarth Group.

7.2. Potential Receptors

The following receptors (current and proposed) have been identified at the Site. Given the absence of significant ecological designations in the vicinity of the Site, ecological receptors are not considered below.

Humans:

- Construction workers and maintenance workers; and
- Residents on and off-site (current and future).

Controlled Waters:

- Groundwater within Mercia Mudstone Group (Secondary B Aquifer), Penarth Group Secondary (Undifferentiated Aquifer) and Tidal Flat Deposits (Secondary [Undifferentiated] Aquifer); and
- Private surface water network, including associated lakes within the private system (Central Lake, East Lake, Monks Lake) within 500m.

Property:

- Existing and proposed buildings and services on and immediately surrounding the Site; and
- Proposed infrastructure on the Site.

7.2.1. Potential Pathways

Human Health

There is the potential for exposure of site end users to contaminants in soils via the following pathways, based on a residential with plant uptake end use (Environment Agency CLEA land use scenario):

- Direct soil and dust ingestion;
- Dermal contact with soil directly and indoor dust;
- Plant uptake followed by consumption of homegrown produce;
- Inhalation of vapours;
- Inhalation of dust; and
- Inhalation of gases.

Due to the levels of contamination encountered it is recommended that appropriate risk assessments and method statements are prepared and safety measures (use of PPE/ hygiene rules) implemented in order to provide adequate protection for construction workers.

If materials are required to be imported to Site they will have to be assessed and validated in line with the agreed import criteria detailed in the remediation strategy and site-specific Materials Management Plan (MMP).

Full radon protection measures are likely to be required for any new buildings constructed on the Site.

Controlled Waters

It is considered that due to the low permeability nature of the underlying Tidal Flat Deposits, there is no feasible pathway for vertical migration of contaminants into the underlying Mercia Mudstone Aquifer.

Currently Monks' Ditch crosses the wider development within a concrete channel and no connection with the private drainage system presently exists. It is proposed that the future surface water network of reens and lakes will discharge via a pumping system into Monks' Ditch. This on-site surface water system will discharge, via a permit, into Monks' Ditch once the specified quality criteria are met and the application to connect the system is approved.

Monks' Ditch is not currently a receptor (it is understood to be hydraulically isolated as it flows between the Glan Llyn development and the business park the east, within a concrete channel), although it could potentially be a future receptor if surface water discharge is permitted into the Monks' Ditch.

With regard to Controlled Waters, the following pathways are considered applicable to the Site, following completion of the development and once relevant approvals have been granted to allow discharge into Monks' Ditch:

- Leaching of soil-borne contamination in Made Ground and subsequent lateral migration through permeable pathways in Made Ground to Monks' Ditch via onsite reens.

As such, a Site specific Detailed Controlled Waters Risk Assessment (Ref. 18669-RLL-25-XX-RP-O-0822-P01) has been prepared for the Site and should be read in conjunction with this report.

Structures

Concrete classification testing has not been undertaken. A Design Sulphate (DS) class and Aggressive Chemical Environment for Concrete (ACEC) class should be derived for the Site in accordance with the recommendations given within BRE SD1 and based on pH and sulphate testing.

A site-specific ground gas assessment is recommended following the earthworks. The classification of the Site will depend on the gas generation potential of the Made Ground and permeability of the upper clay of the Tidal Flat Deposits.

7.2.2. Preliminary Remediation Assessment

The Site has undergone one phase of ground investigation and remedial earthworks are proposed.

Based on the outcome of the conceptual site model outline remedial measures are required to break source-pathway-receptor linkages.

Installation of cover system to gardens and POS is required to make the Site suitable for end users.

Some Made Ground will be removed to make the Site suitable in terms of the risks to controlled waters (private reen network). The Made Ground will be tested, re-assessed and where the soil does not meet the reuse criteria it will be excavated, removed, and replaced with suitable fill that meets the criteria. Prior to filling, excavations of unsuitable material shall be validated to demonstrate compliance with the Remediation Strategy.

The installation and validation of gas mitigation measures may be required following completion of the post-earthworks ground gas risk assessment.

7.2.3. Proposed Mitigation

The proposed remedial approach is to remove unsuitable material based on the grid of testing and turnover the Made Ground to natural geology, approximately 2.0mbgl to 4.5mbgl to remove obstructions and reduce the permeability of the Made Ground. Based on the results of chemical testing, the Made Ground is not suitable for reuse at shallow depths within the residential plot but is likely to be suitable for use as part of the reengineered formation beneath 600mm of clean cover.

The introduction of buildings and hardstanding with suitable construction materials along with a clean cover system in landscaped areas is expected break the pathway with underlying Made Ground, to intercept rainwater and to reduce infiltration through to Controlled Waters (private reen network).

To break the identified contamination linkages, the following mitigation measures are required:

- Excavation of Made Ground to natural clay and removal of unsuitable material and buried obstructions to facilitate reengineering and reuse of Made Ground;
- Identify, remove and validate the removal of gross contamination and known and potential obstructions on a grid square basis, followed by subsequent validation testing and reporting;
- Treatment or off-site disposal of impacted soils (where required);
- Reengineering of materials in accordance with the approved Remediation Strategy and Earthworks Specification to an appropriate specification to achieve the required formation level;
- Chemical and geotechnical validation of the placement of material following turnover;
- Site-specific geotechnical assessment relating to the proposed development;

- Installation of a 600mm clean cover system, suitable for a residential with plant uptake end use, will be required in areas of residential gardens and landscaping;
- Consultation with the water supply company in relation to the potential use of barrier pipe;
- Preparation of a Piling Risk Assessment;
- With respect to asbestos, a minimum of 600mm of clean soil (in accordance with Llanwern Asbestos Risk Assessment prepared by IOM) will be placed across the Llanwern site. Made Ground material will be screened and, if asbestos contamination is less than 0.02% (200PPM) then it may be used in residential areas below the clean cover. The materials used in the preparation of the Site will be recorded in a validation report assessing compliance with the approved criteria;
- A Design Sulphate (DS) class and Aggressive Chemical Environment for Concrete (ACEC) class should be derived for the Site in accordance with the recommendations given within BRE SD1 and based on pH and sulphate testing; and
- A programme of shallow gas monitoring is recommended following the turnover and reengineering of the Made Ground to determine whether protective measures are needed with proposed buildings.

The risk to Controlled Waters has been assessed in both the sitewide CWRA (ref. 18669-RLE-19-RP-O-0006) and phase specific CWRA (ref. 18669-RLL-25-XX-RP-O-0822-P01) to further determine whether additional works are required to protect Controlled Waters receptors post-development. This, along with a formal Remediation Strategy should be agreed with Natural Resources Wales (NRW) and Local Authority (LA).

8.0 Geotechnical Testing

8.1. Sampling and Testing

Geotechnical sampling was undertaken by a RLL Engineer during the 2020-2021 ground investigation.

Samples collected on Site were sent for geotechnical laboratory testing, which were undertaken in accordance with BS1377:1990. Laboratory testing was undertaken by Celtest and included the following:

Summary of Geotechnical Testing Undertaken on Samples	
Test	**Number of Samples Tested**
Moisture Content	131
Particle Size Distribution by Wet Sieve	131
Compaction Using 4.5kg rammer	131
Total Expansion BRE Tests	73

The above testing provided results to show the principal geotechnical properties of the major geological units identified during the ground investigation. A summary of the geotechnical laboratory results is presented in the following sections and the laboratory data is included within **Appendix H**.

8.2. Classification Testing

8.2.1. Natural Moisture Content

131 compaction tests (4.5kg rammer) were undertaken on samples of Made Ground and recorded an optimum moisture content for the Made Ground of between 5.2% and 18.0%.

Moisture content tests were undertaken on 131 samples and recorded water content between 4.8% and 38%.

8.2.2. Material Grading and Classification

Particle size distribution (PSD) testing was undertaken on 131 samples of the Made Ground. The results indicate that the material can generally be described as a slightly clayey sandy gravel with occasional cobbles, falling into Class 1A/1B – General Granular Fill[11] or Class 2 - General Cohesive Fill. This grading of material, when compacted/ reengineered, is likely to have limited permeability (approximately 10^{-7}), classed as poor draining soils and therefore inhibiting the downward migration of infiltrated rainwater into the Made Ground.

[11] Series 600 Earthworks, Manual of Contract Documents for Highway Works - Volume 1, Specification for Highway Works, Amendment February 2017.

8.2.3. BRE Total Expansion Tests

73 samples were scheduled for testing in accordance with BRE 481 Part B - Appendix B to determine the expansion of steel slag (over 28 days at 80°C) and recorded a total expansion of -1.58% to 10.1%. It is worth noting that the BRE test is a conservative test crushing material >20mm and placing it in a bath of water at 80°c for 28 days.

According to the RLL Technical Note (ref. 17480-RLE-18-XX-RP-O-001, dated March 2018) Geotechnical Guidance for Reuse of Made Ground Containing Slag, the guideline average expansion value considered to be acceptable is 2.5%.

Of the 73 samples tested, the mean value recorded was 1.17%; and only 14 samples produced results over 2.5%, with expansion values of 2.7% to 10.10%.

A full copy of the results are included in **Appendix H**.

9.0 Conclusions and Recommendations

9.1. Conclusion

The Site is located within the Glan Llyn development at the former Llanwern Steelworks, approximately 5.5km to the east of Newport City Centre, at approximate National Grid Reference 336490E, 187114N. The Site is irregular in shape, covering an area of approximately 12ha, and is situated in the northeastern part of the wider Glan Llyn development. It is understood that the Site is proposed to be redeveloped for a residential end use.

Historical mapping and aerial photography indicate that the Site was in agricultural use until the late 1950s, after which it was developed as part of the Llanwern Steelworks, specifically accommodating a sinter plant with associated buildings, conveyors, lagoons, haul routes and ancillary infrastructure. Steelmaking operations ceased in 2001, with large-scale demolition works commencing in 2004, leaving much of the Site reduced to slab level. Since demolition, the Site has remained largely open ground with stockpiling, compounds and limited infrastructure, and more recently forms part of wider redevelopment associated with the Glan Llyn regeneration scheme.

The 2020-2021 RLL ground investigation comprised 103 trial pits within Phase 5A & 5B.

General Made Ground was encountered within all 103 exploratory holes from ground level or underlying surfacing to a maximum encountered depth of 4.20m. Superficial Tidal Flat Deposits were encountered beneath the Made Ground in 74 locations from depths between 0.80m and 4.20m bgl; the base of this formation was not encountered, but the strata was recorded to depths of up to 4.20m. The Mercia Mudstone Group was not encountered.

Perched water was encountered within the Made Ground in 90 locations.

Regional groundwater was not encountered in the exploratory holes within Phase 5A & 5B. Investigations across the wider development have identified perched water within the Made Ground or groundwater within the Tidal Flat Deposits (confined to the basal sand layers) and Mercia Mudstone.

Hydrocarbon odours/ oily sheens were encountered in fifteen locations in the Made Ground and on perched water from depths ranging from 0.20m to 2.40m. Given the slight sheen or mild odour that was observed in these locations, the presence of gross contamination, unsuitable for retention within the development is considered unlikely. This is further supported by only limited elevated speciated hydrocarbons within soils samples.

Buried obstructions such as piles, concrete, asphalt or fused slag were encountered in thirty-three locations between 0.00m to at least 3.00m.

169 soil samples of the Made Ground were analysed for a range pre-determined contaminants. The samples collected were conservatively assessed against LQM/ CIEH 2015 S4ULs (Suitable for Use Levels) for a residential end use with plant

uptake (1% SOM). Chemical analysis has identified some exceedances of arsenic, chromium, lead, vanadium, zinc, aromatic TPH >C16-C21, aromatic TPH >C21-C35, benzene, naphthalene, phenanthrene, benzo[a]anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, Indeno(1,2,3-c,d)Pyrene and dibenzo(a,h)anthracene.

Asbestos was identified in twelve soil samples at concentrations of <0.001% to 0.0190%. In accordance with the IOM report soils with these concentrations are considered suitable for reuse beneath the clean cover system.

No water sampling has been undertaken within the Site as part of the 2020-2021 RLL investigation. Ground investigations undertaken across the wider development have identified elevated concentrations of contaminants that may potentially present a risk to Controlled Waters, this has been assessed in the DQRA.

A Site-specific ground gas assessment is required following the earthworks, comprising a programme of shallow ground gas monitoring following the turnover of the Made Ground to natural geology and reengineering of the site won Made Ground to formation levels. The classification of the Site will depend on the permeability of the upper clay of the Tidal Flat Deposits. Radon protection measures are expected with a small portion of the Site lies within a radon-affected area, with a maximum radon potential of 10–30%.

9.2. Recommendations

Following the completion of the ground investigation the following recommendations have been made:

- Removal of identified hotspot contamination on a grid square basis, and subsequent validation testing and reporting.
- Turnover of the Made Ground to natural geology with removal of obstructions.
- Reengineering of materials in accordance with the approved Remediation Strategy and Earthworks Specification to an appropriate specification to achieve the required formation level.
- Chemical and geotechnical validation of the placement of material following turnover.
- A programme of shallow gas assessment is recommended following the earthworks to turnover and reengineer the Site.
- Concrete classification testing should be undertaken in accordance with BRE Special Digest 1.
- Phase-specific geotechnical assessments relating to the proposed development.
- Construction of buildings and hardstanding with suitable construction materials to break the pathway with underlying Made Ground, to intercept rainwater and to reduce infiltration.
- A 600mm clean cover system, suitable for a residential with plant uptake end use, will be required in areas of residential gardens and landscaping.

- Preparation of a Detailed Controlled Waters Risk Assessment to assess the risk posed to controlled waters within the future development and inform the Remediation Strategy.
- Preparation of a Piling Risk Assessment.
- Preparation of a Detailed Quantitative Controlled Waters Risk Assessment to assess the risk posed to controlled waters within the future development and inform the Remediation Strategy.
- Preparation of an MMP to facilitate the reuse of excavated materials and import of soil for use in the cover system.

Appendices

Appendix A
Drawings and Plans



GENERAL NOTES

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KEY:

SITE BOUNDARY

Rev	Date	Amendments	By	Chk
P01	20/08/2025	First Issue	DM	CW

Client

BSTMDL

Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 5a & 5b

Site Location Plan

INFORMATION

	Drawn	Checked	Date
NTS	DM	CW	20/08/25

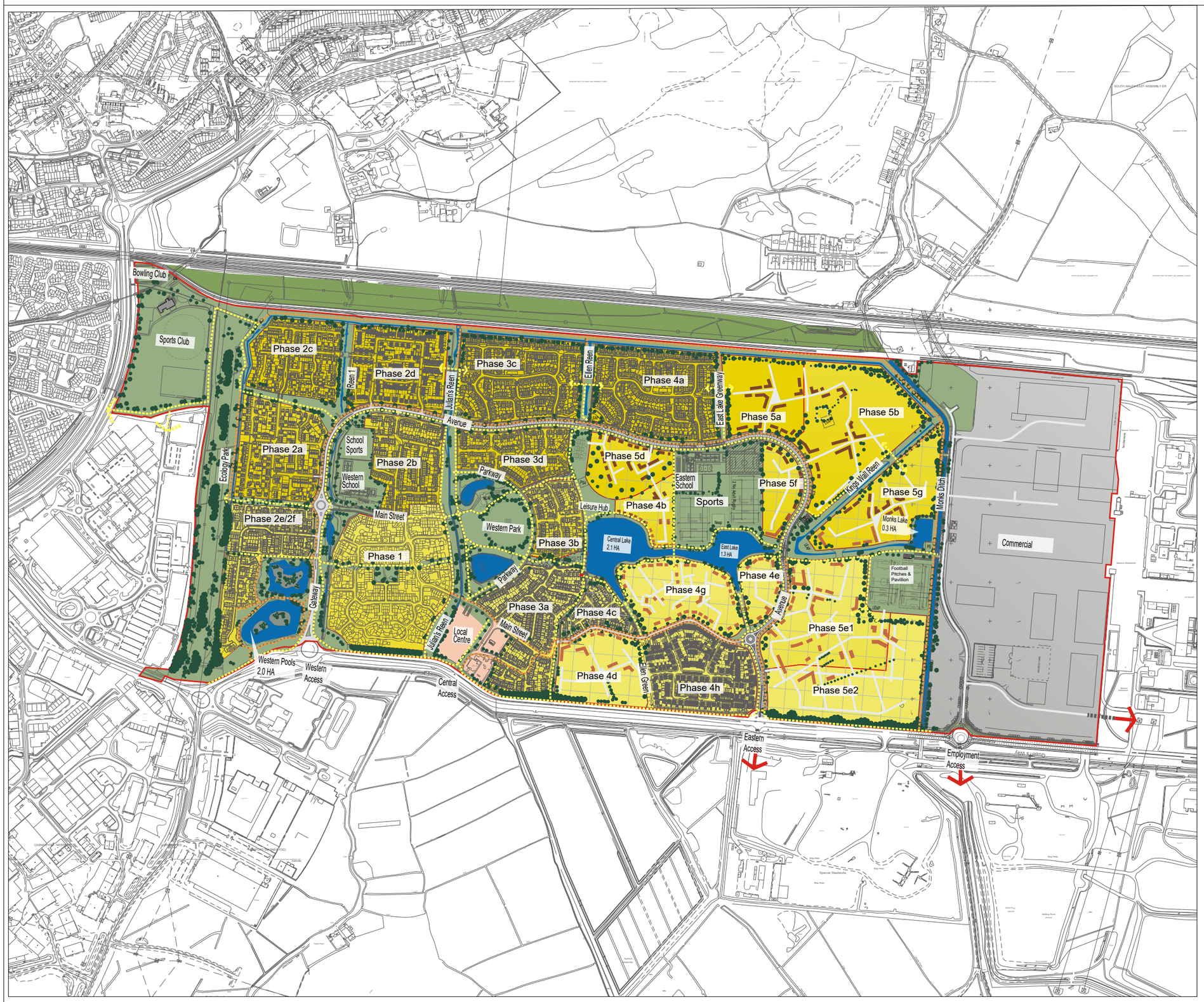
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Glan Llyn -ESAMP Indicative Masterplan



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Architects + Masterplanners

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SGP File Ref:	8111-08-A011	**Drawing No:**	8111-08-A012
Project No:	8111-08	**Rev:**	**Rev P19**
Drawn By:	NV	**Scale:**	1:5000 @A1
Date:	10/04/2019		

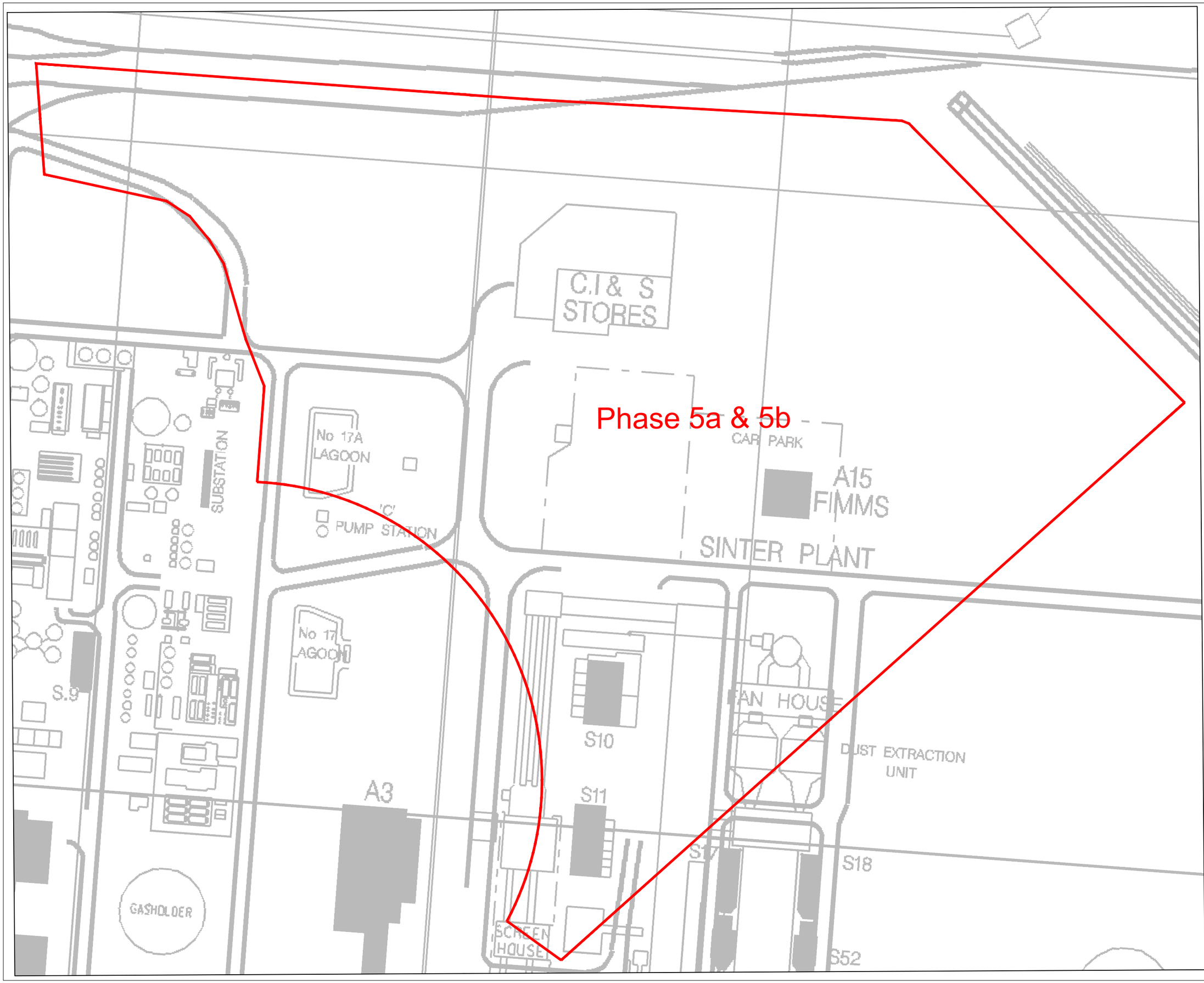
Notes:
Residential areas quoted are approximate gross site areas and include Leaps, Laps and on plot road infrastructure

Notes:
Residential areas quoted are approximate gross site areas and include Leaps, Laps and on plot road infrastructlayture

0 50 100 200 250 300 400 500
Metres at scale 1:5000

ST.MODWEN

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Rev	Date	Amendments	By	Chk

Client

BSTMDL

Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 5a & 5b

Historical Masterplan Overlay 2

INFORMATION

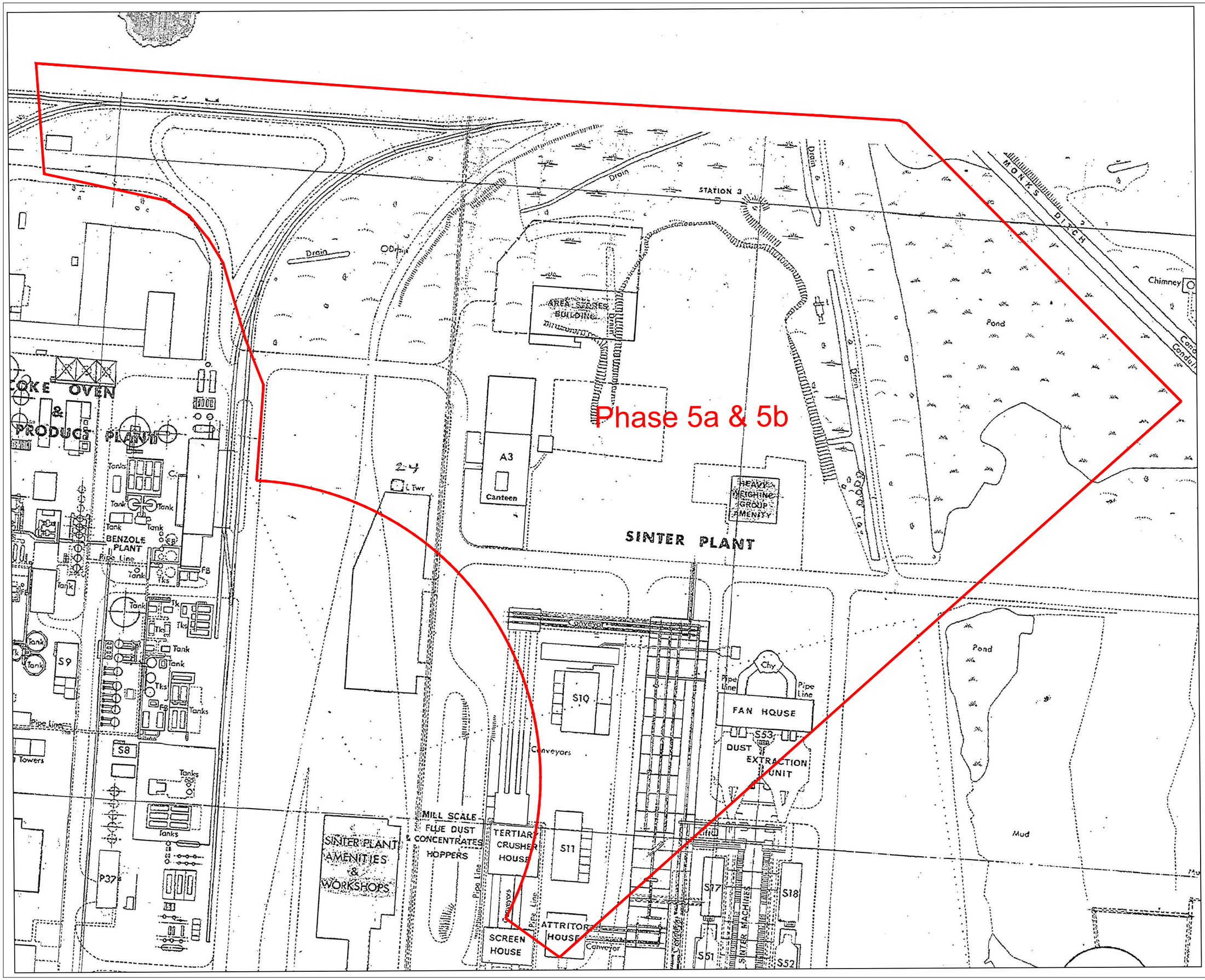
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Rev	Date	Amendments	By	Chk

Client

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Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 5a & 5b

Historical Masterplan Overlay 1

INFORMATION

Drawn	Checked	Date
NTS	DM	CW	11.08.25

Drawing No. | Rev.

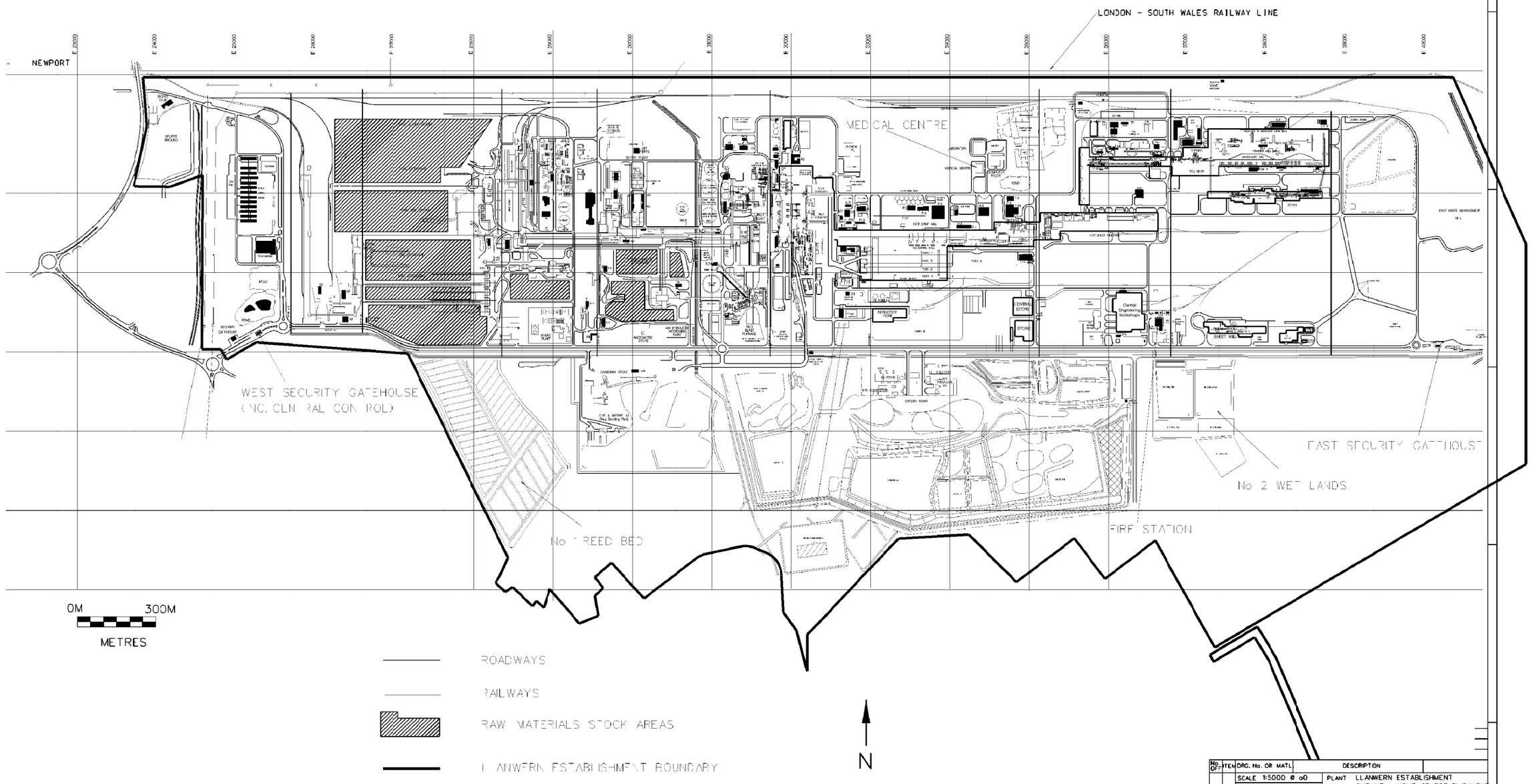
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MAP 1
APPENDIX 15.1



No. OFF	ITEM	DRG. No. OR MATL	DESCRIPTION
		SCALE 1:5000 @ a0	PLANT LLANWERN ESTABLISHMENT
		UNIT OF MEASUREMENT	SECTION OUTLINE LAYOUT OF ESTABLISHMENT
		DRAWN N.W.C. 09.12.99	DESCRIPTION
		CHECKED	ROADS, RAILS AND STOCKING AREAS FOR COMAH REPORT
		TRACED	
		PASSED	COPYRIGHT-BRITISH STEEL LIMITED© 19

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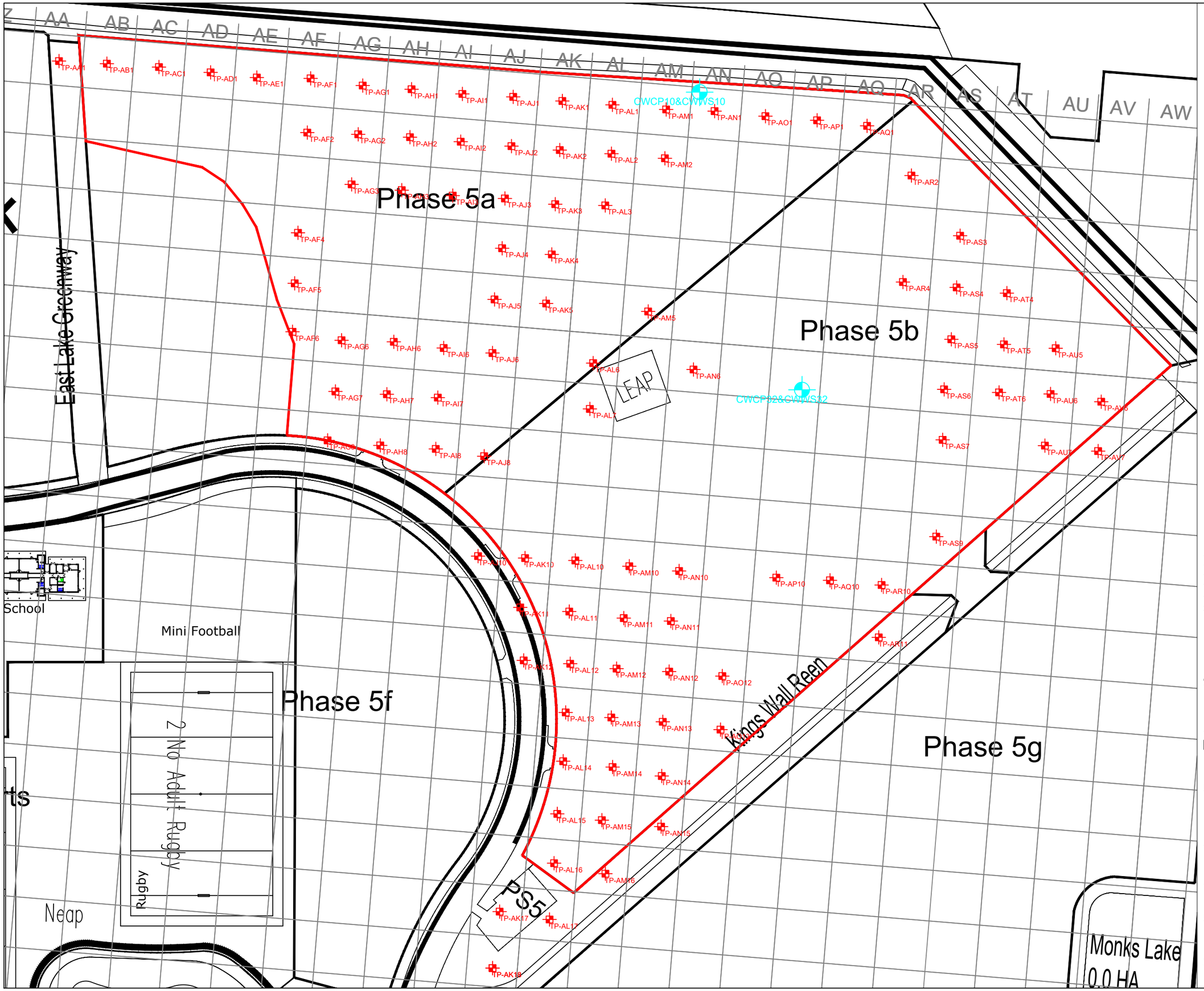
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DRG.No. 839181
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DRG.No.

DIVISION STRIP PRODUCTS
WORKS LLANWERN

British Steel Limited

C.A.D.

PRELIMINARY No 5 7/2/01



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KEY:

TP-AG6 RLL (2020/21) TRIAL PIT LOCATION

ATKINS (2016) EXPLORATORY HOLE LOCATION

Rev	Date	Amendments	By	Chk
P01	26/05/2026	Atkin Exploratory Holes Added	AMS	CW

Client

BSTMDL

Project

P18-669 Llanwern Reclamation

Drawing Title

Phase 5A & 5B Trial Pit Location Plan

INFORMATION

	Drawn	Checked	Date
NTS	DM	CW	15/08/25

Drawing No. 18669-RLL-25-XX-DR-O-0788

Rev. P01

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Appendix B
Site Walkover Photographs

P18-669 – Phase 5A & 5B, Llanwern – Photographic Report



Photograph 1 (25/05/23) – View along the compacted haul road at the northern boundary, with a vegetated drainage ditch (reen) and palisade fence running parallel to the site. Overhead powerlines and mature trees are visible to the north, with industrial buildings in the distance.



Photograph 2 (25/05/23) – View from the northern edge of the site looking south-east into the centre of Phases 5A/5B. The surface is largely level except from some stockpiles and free of standing water, with sporadic vegetation cover.



Photograph 3 (25/05/23) – View from a northern stockpile looking south-east across Phases 5A/5B
Elevated view over the site from a stockpiled area, showing widespread, material mounds and exposed Made Ground. Construction plant and ongoing ground reduction works are visible toward the south-eastern extent. Large warehouse units lie beyond the site boundary in the background.



Photograph 4 (25/05/23) – View from the approximate centre of the site looking south
Central view across the phase showing stockpiled material and exposed Made Ground. Temporary haul routes are visible, with vegetation cover across stockpiles and levelled ground.



Photograph 5 (25/05/23) – View of temporary haul route in the north of the phase looking west
View along the compacted temporary haul road running west across the northern part of the site, with vegetated margins and palisade fencing to the northern boudnary. Overhead pylons and established tree planting are visible along the northern boundary. No standing water or deterioration of the haul route observed.



Photograph 6 (25/05/23) – Low-lying dry ponded area in the north-east of the site
Shallow depression with desiccated ground and patchy vegetation, indicating an area that previously held surface water but is currently dry. Surrounding ground comprises Made Ground with intermittent grass cover and exposed soil.



Photograph 7 (25/05/23) – Former temporary compound area in the north-east of the site
Hardstanding of compacted Made Ground with residual Heras fencing and disturbed surface soils, marking the location of a former site compound. Ground is largely level with no evidence of residual structures, fuel staining or waste materials. Minor vegetation regrowth present around the edges.



Photograph 8 (25/05/23) – Stockpile of peat adjacent to central east–west haul route
Large stockpile of excavated peat located centrally within the phase, positioned beside the main east–west haul road. The stockpile is uncovered with visible organic material and minor vegetation growth on the surface. Surrounding ground shows desiccation cracking and intermittent puddling along the haul route, with active plant movement visible in the background.



Photograph 9 (25/05//23) – Central east–west haul route through the phase
View along the main east–west haul road with earthwork stockpiles on either side and surface puddling from recent vehicle movements/dust suppression works. The route is actively in use, with plant visible ahead. Ground comprises compacted Made Ground with no gross evidence of contamination or waste.



Photograph 10 (25/05/23) – Stockpile of pig iron / sheet metal in southern central area of the phase
Pile of excavated metallic fragments including broken pig iron and sheet metal, temporarily stockpiled within the southern central area of the site. Material appears to originate from historic steelworks demolition arisings. No visible oils, staining or hazardous residues observed around the stockpile.



Photograph 11 (25/05/23) – View from top of a Made Ground stockpile looking south
Elevated view showing sheet-metal/pig-iron stockpile in the mid-ground and a separate mound of imported subsoil to the right. Active earthworks and plant are visible to the south, with exposed Made Ground and temporary haul routes across the working area. No evidence of surface contamination or standing water noted.



Photograph 12 (25/05/23) – Central view of the site looking west
View across the central area of the phase toward the western boundary, showing areas of stockpiled material and partial vegetation regrowth. Warehouse buildings and the retained treeline are visible in the background. No standing water, fly-tipping or surface staining observed.

Appendix C

Historical Mapping & Aerial Imagery



Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: County Series

Map date: **1882**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1882
Revised 1882
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1882
Revised 1882
Edition N/A
Copyright N/A
Levelled N/A

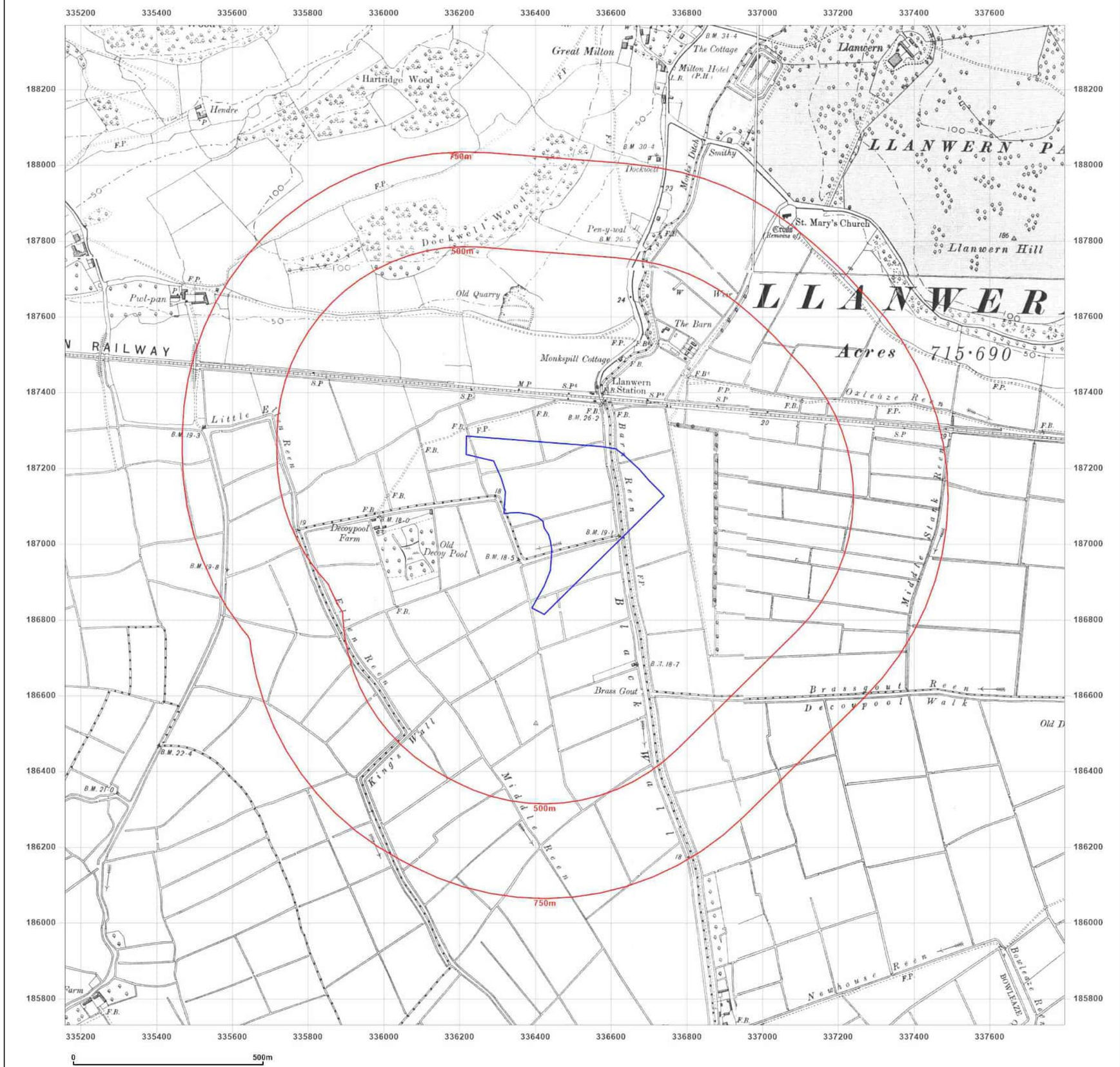
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Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: County Series
Map date: **1900**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1881
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1880
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1881
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1880
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

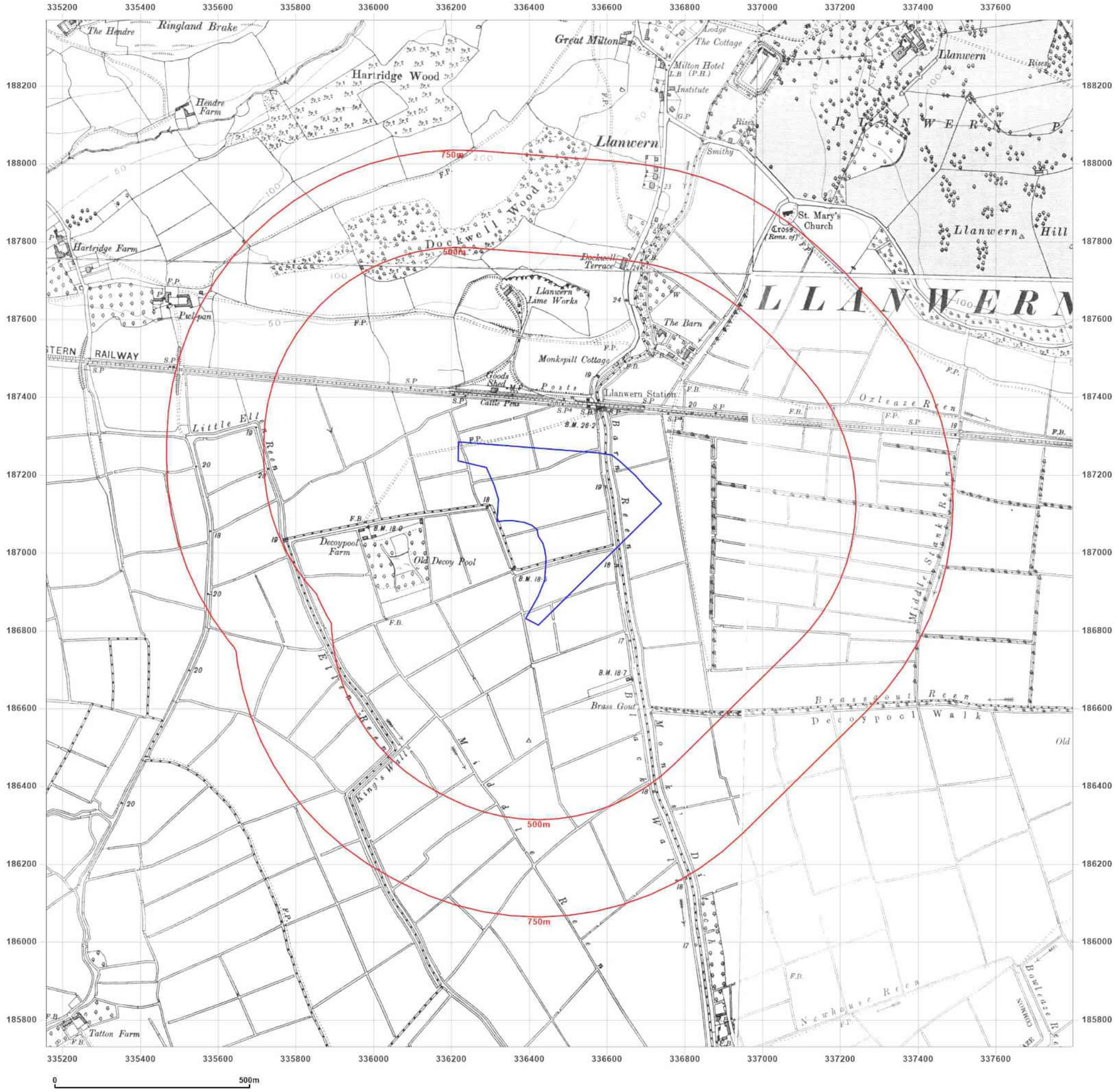
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Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: County Series

Map date: **1920-1922**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1881
Revised 1918
Edition 1922
Copyright N/A
Levelled 1900

Surveyed 1880
Revised 1922
Edition 1922
Copyright N/A
Levelled N/A

Surveyed 1881
Revised 1920
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1880
Revised 1922
Edition 1922
Copyright N/A
Levelled N/A

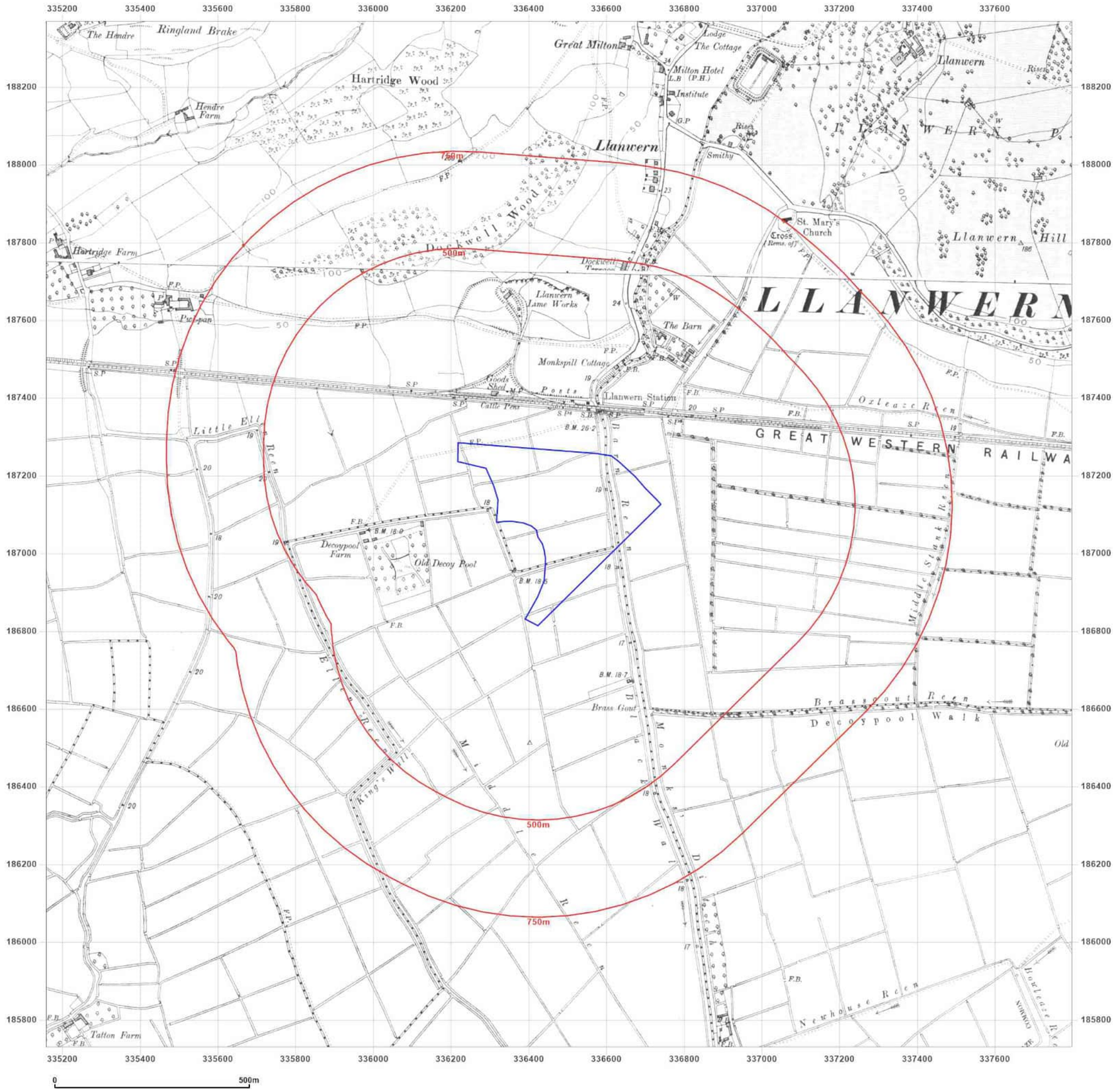
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Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: County Series

Map date: **1922**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1881
Revised 1922
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1885
Revised 1922
Edition N/A
Copyright N/A
Levelled N/A

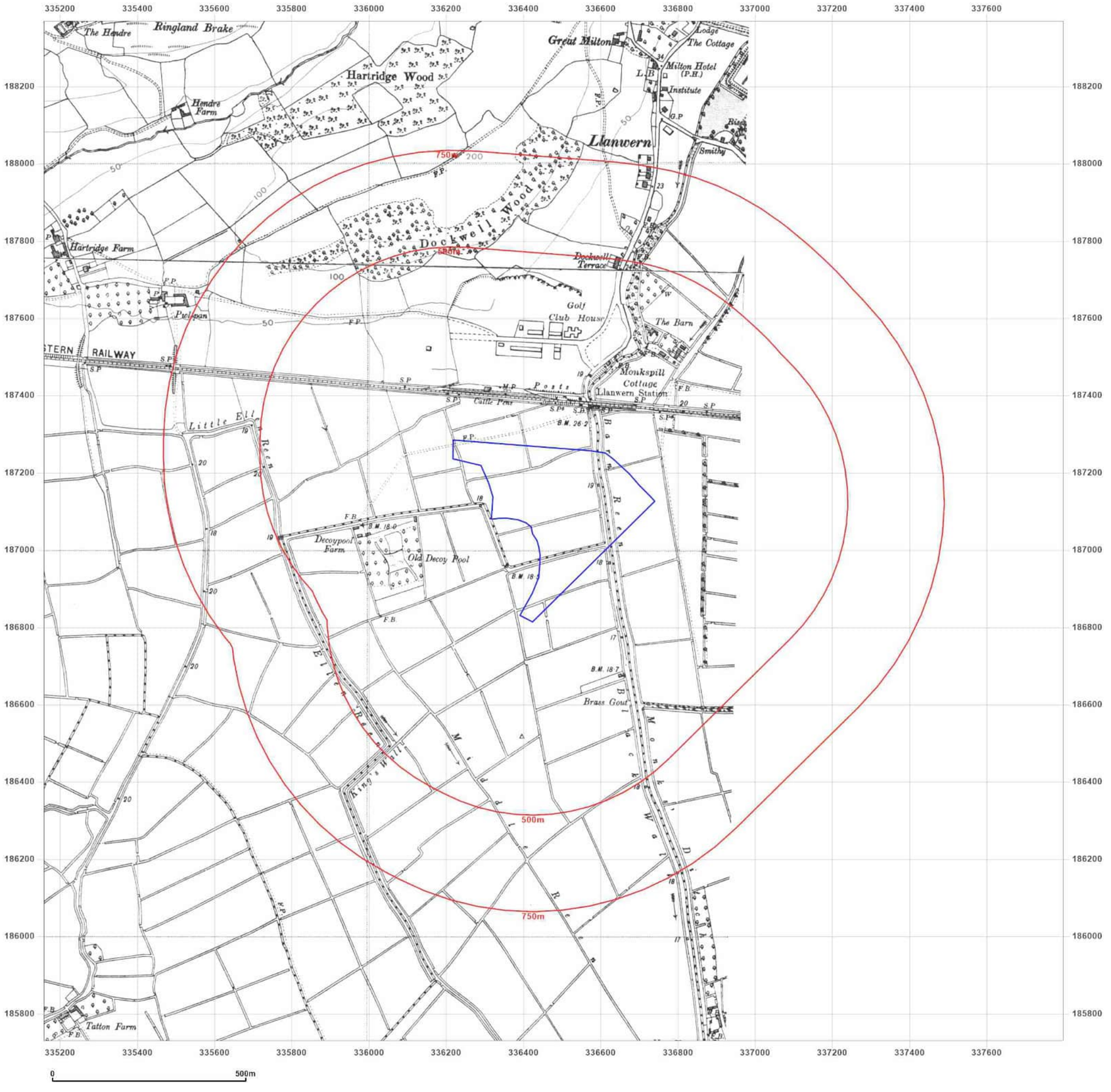
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Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: County Series

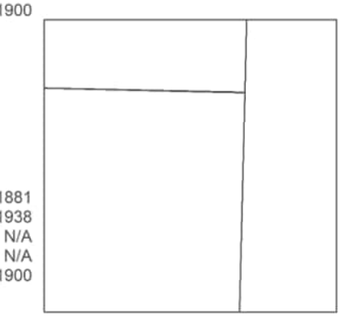
Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1881
Revised 1938
Edition N/A
Copyright N/A
Levelled 1900



Surveyed 1881
Revised 1938
Edition N/A
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Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: County Series

Map date: **1949**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1881
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1880
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1881
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1880
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

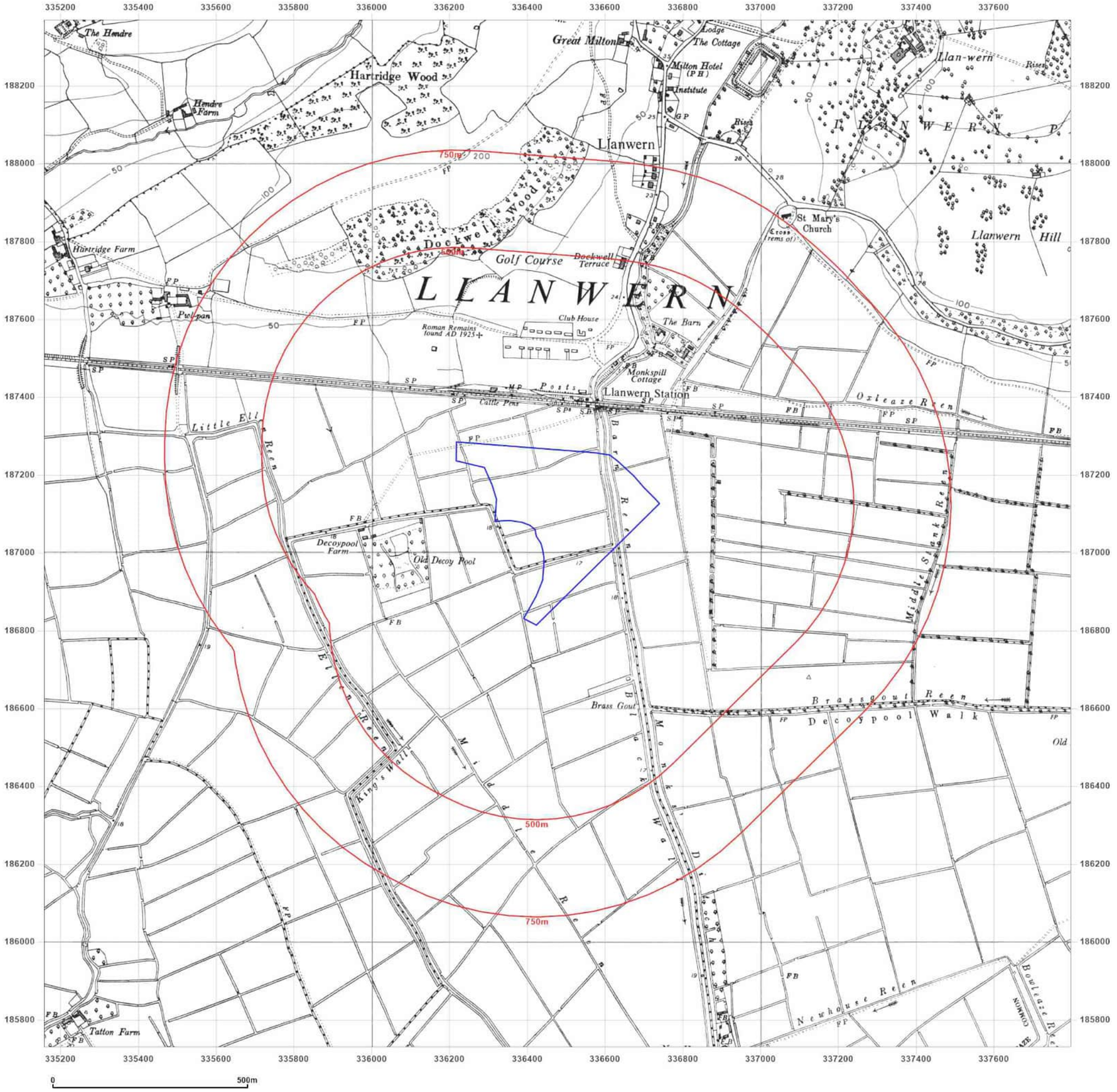
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Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: Provisional

Map date: **1963**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed N/A
Revised 1963
Edition N/A
Copyright N/A
Levelled N/A

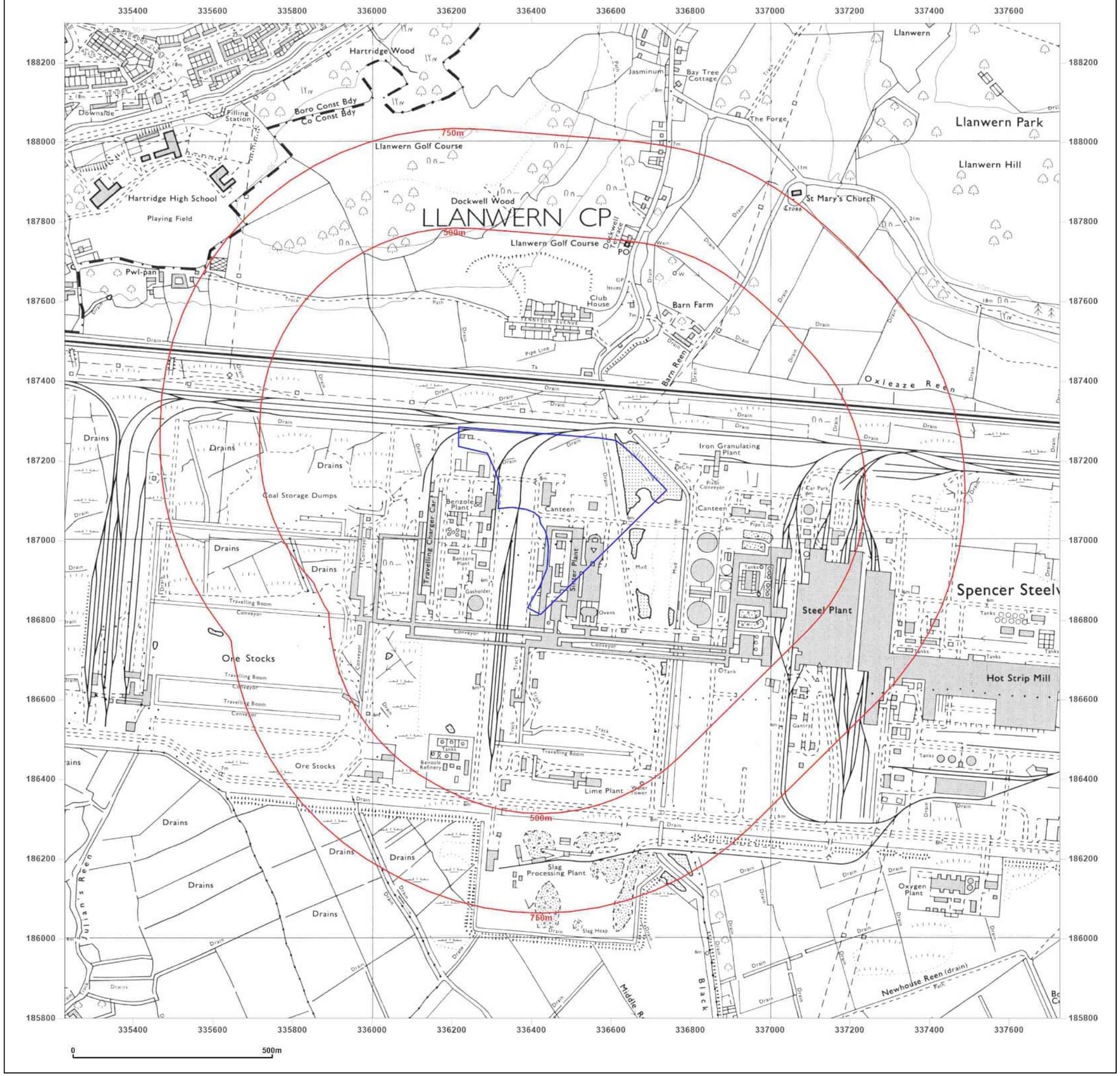
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Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: National Grid

Map date: **1973**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1973
Revised 1973
Edition N/A
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Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: National Grid

Map date: **1988**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1975
Revised 1988
Edition N/A
Copyright N/A
Levelled N/A

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Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: National Grid

Map date: **1988**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1975
Revised 1988
Edition N/A
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Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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2001

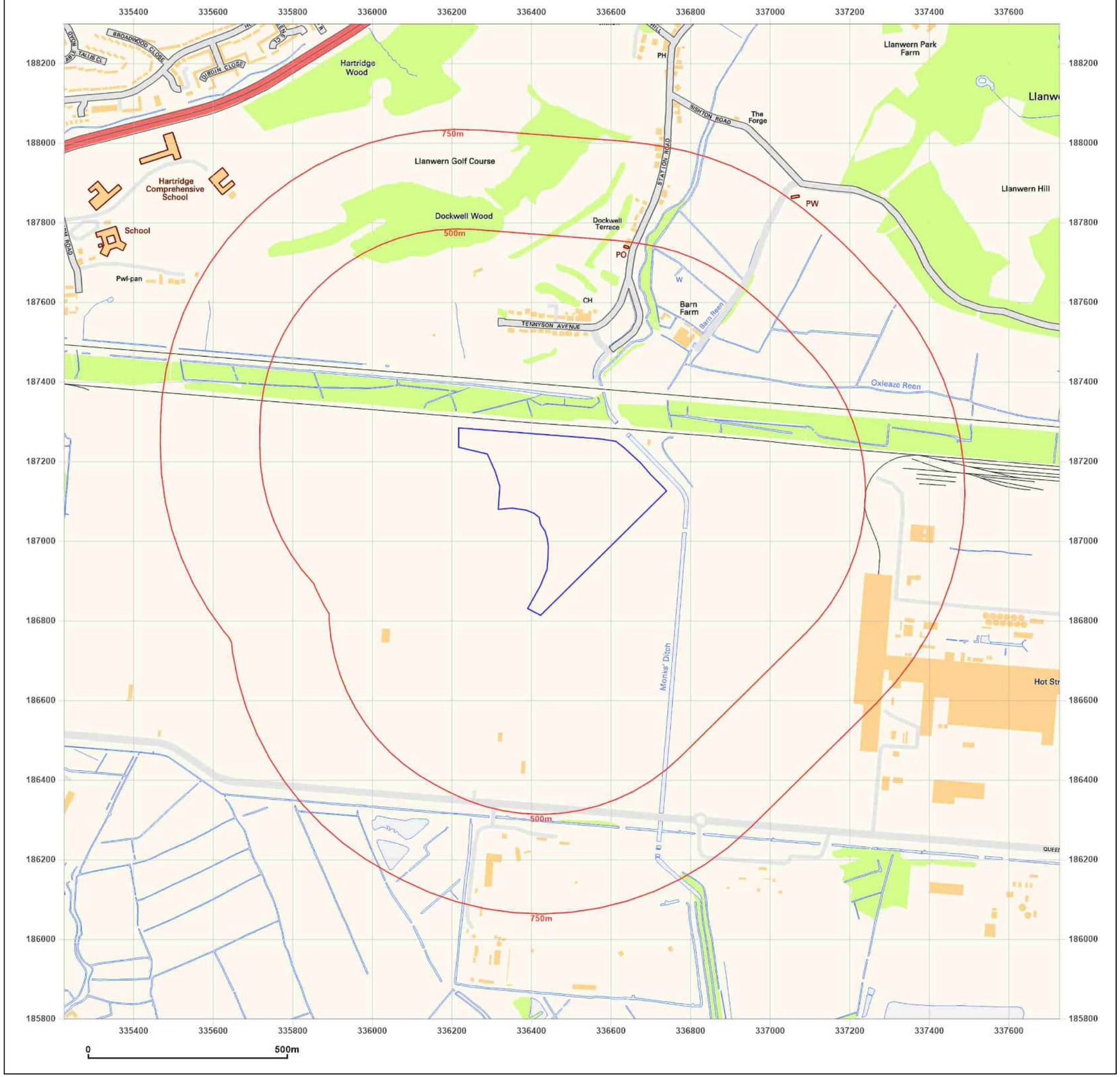
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Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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S

2010

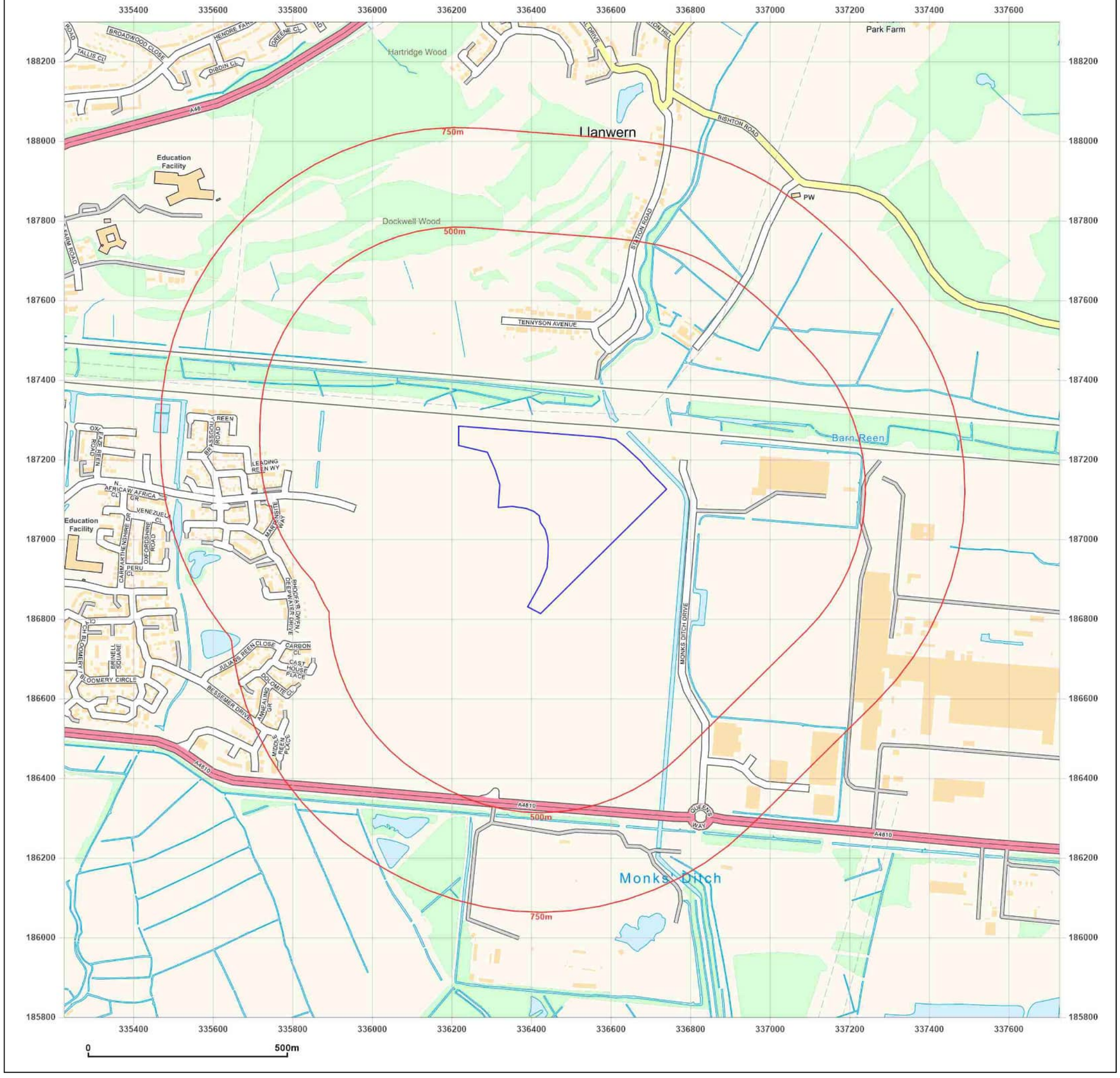
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Production date: 07 August 2025

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Groundsure INSIGHTS

Site Details:

Phase 5a & 5b

Client Ref: 25-08-18
Report Ref: GS-FWC-52V-7SW-PC7
Grid Ref: 336477, 187049

Map Name: National Grid
Map date: **2025**
Scale: 1:10,000
Printed at: 1:10,000

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2025

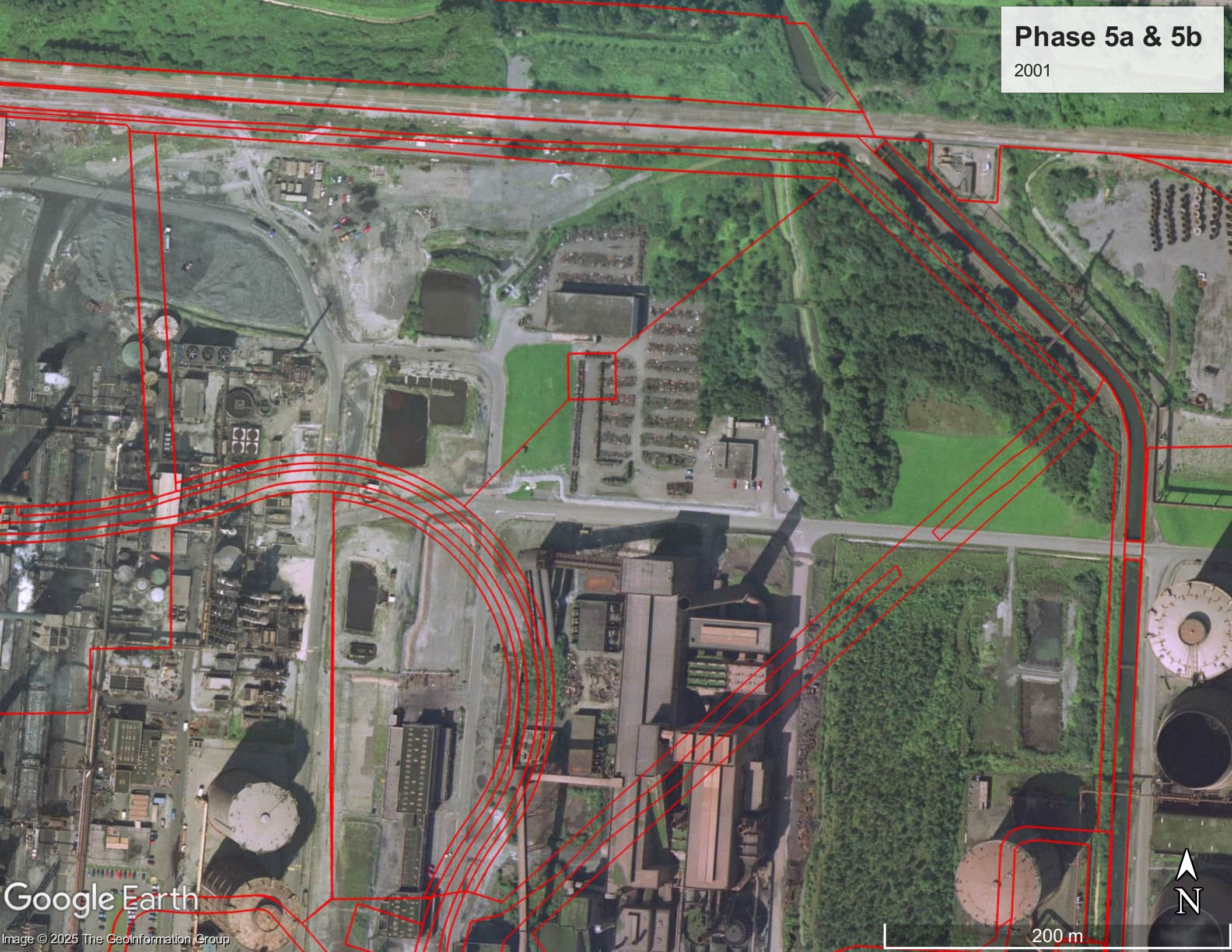
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Phase 5a & 5b
2001
Google Earth
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N
200 m


Phase 5a & 5b
2004
Google Earth
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Phase 5a & 5b
2006
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N
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Phase 5a & 5b
2009
Google Earth
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Phase 5a & 5b
2014
Google Earth
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Phase 5a & 5b
2016
Google Earth
N
200 m


Phase 5a & 5b
2018
Google Earth
N
200 m


Phase 5a & 5b
2020
Google Earth
200 m
N


Phase 5a & 5b
2023
Google Earth
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Appendix D

Groundsure Insight Report

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

Phase 5a & 5b

Order Details

Date: 07/08/2025

Your ref: 25-08-18

Our Ref: GS-BO6-PBF-9D2-2IX

Site Details

Location: 336490 187114

Area: 10.96 ha

Authority: Casnewydd - Newport City Council ↗



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Summary of findings p. 2 >

OS MasterMap site plan N/A: >10ha

Aerial image p. 9 >

Insight User Guide ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
14 >	1.1 >	Historical industrial land uses >	5	6	39	28	-
17 >	1.2 >	Historical tanks >	2	25	117	112	-
27 >	1.3 >	Historical energy features >	1	1	12	7	-
28	1.4	Historical petrol stations	0	0	0	0	-
28	1.5	Historical garages	0	0	0	0	-
29	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
30 >	2.1 >	Historical industrial land uses >	6	8	47	40	-
34 >	2.2 >	Historical tanks >	5	54	215	193	-
51 >	2.3 >	Historical energy features >	1	2	15	10	-
52	2.4	Historical petrol stations	0	0	0	0	-
53	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
54	3.1	Active or recent landfill	0	0	0	0	-
54	3.2	Historical landfill (BGS records)	0	0	0	0	-
55	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
55	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
55 >	3.5 >	Historical waste sites >	0	0	0	4	-
56 >	3.6 >	Licensed waste sites >	1	0	1	3	-
57 >	3.7 >	Waste exemptions >	1	0	3	1	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
59 >	4.1 >	Recent industrial land uses >	0	1	6	-	-
60 >	4.2 >	National Geographic Database (NGD) - Current or recent tanks >	0	1	1	-	-
60	4.3	Current or recent petrol stations	0	0	0	0	-
60	4.4	Electricity cables	0	0	0	0	-
61	4.5	Gas pipelines	0	0	0	0	-

61	4.6	Sites determined as Contaminated Land	0	0	0	0	-
61 >	4.7 >	Control of Major Accident Hazards (COMAH) >	3	0	0	0	-
61	4.8	Regulated explosive sites	0	0	0	0	-
62	4.9	Hazardous substance storage/usage	0	0	0	0	-
62 >	4.10 >	Historical licensed industrial activities (IPC) >	0	0	0	11	-
63	4.11	Licensed industrial activities (Part A(1))	0	0	0	0	-
64	4.12	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
64 >	4.13 >	Radioactive Substance Authorisations >	0	0	4	0	-
65 >	4.14 >	Licensed Discharges to controlled waters >	1	0	3	9	-
66	4.15	Pollutant release to surface waters (Red List)	0	0	0	0	-
67	4.16	Pollutant release to public sewer	0	0	0	0	-
67	4.17	List 1 Dangerous Substances	0	0	0	0	-
67	4.18	List 2 Dangerous Substances	0	0	0	0	-
67 >	4.19 >	Pollution Incidents (EA/NRW) >	0	0	11	1	-
69	4.20	Pollution inventory substances	0	0	0	0	-
69	4.21	Pollution inventory waste transfers	0	0	0	0	-
69	4.22	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
70 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
71 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
73 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
74	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
75	5.5	Groundwater vulnerability- local information	None (within 0m)				
76	5.6	Groundwater abstractions	0	0	0	0	0
76	5.7	Surface water abstractions	0	0	0	0	0
76	5.8	Potable abstractions	0	0	0	0	0
76	5.9	Source Protection Zones	0	0	0	0	-
77	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m

78 >	6.1 >	Water Network (OS MasterMap) >	0	6	37	-	-
82 >	6.2 >	Surface water features >	0	3	9	-	-
82 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
83 >	6.4 >	WFD Surface water bodies >	0	1	0	-	-
83 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
84 >	7.1 >	Risk of flooding from rivers and the sea >	Medium (within 50m)				
85 >	7.2 >	Historical Flood Events >	0	0	1	-	-
85	7.3	Flood Defences	0	0	0	-	-
85 >	7.4 >	Areas Benefiting from Flood Defences >	1	1	0	-	-
86	7.5	Flood Storage Areas	0	0	0	-	-
87 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
88 >	7.7 >	Flood Zone 3 >	Identified (within 50m)				
Page	Section	Surface water flooding >					
89 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
91 >	9.1 >	Groundwater flooding >	Negligible (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
92 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	2
93	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
93	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
93	10.4	Special Protection Areas (SPA)	0	0	0	0	0
93	10.5	National Nature Reserves (NNR)	0	0	0	0	0
94	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
94 >	10.7 >	Designated Ancient Woodland >	0	0	0	1	39
96	10.8	Biosphere Reserves	0	0	0	0	0
96	10.9	Forest Parks	0	0	0	0	0
96	10.10	Marine Conservation Zones	0	0	0	0	0
96	10.11	Green Belt	0	0	0	0	0

96	10.12	Proposed Ramsar sites	0	0	0	0	0
97	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
97	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
97	10.15	Nitrate Sensitive Areas	0	0	0	0	0
97	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
98 >	**10.17 >**	**SSSI Impact Risk Zones >**	1	-	-	-	-
99	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
100	11.1	World Heritage Sites	0	0	0	-	-
100	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
100	11.3	National Parks	0	0	0	-	-
100	11.4	Listed Buildings	0	0	0	-	-
101	11.5	Conservation Areas	0	0	0	-	-
101	11.6	Scheduled Ancient Monuments	0	0	0	-	-
101	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
102 >	**12.1 >**	**Agricultural Land Classification >**	Grade 4 (within 250m)				
103	12.2	Open Access Land	0	0	0	-	-
103	12.3	Tree Felling Licences	0	0	0	-	-
103	12.4	Environmental Stewardship Schemes	0	0	0	-	-
103	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
104	13.1	Priority Habitat Inventory	0	0	0	-	-
104	13.2	Habitat Networks	0	0	0	-	-
104	13.3	Open Mosaic Habitat	0	0	0	-	-
104	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	**Geology 1:10,000 scale >**	On site	0-50m	50-250m	250-500m	500-2000m
105 >	**14.1 >**	**10k Availability >**	Identified (within 500m)				
106	14.2	Artificial and made ground (10k)	0	0	0	0	-

107 >	14.3 >	Superficial geology (10k) >	1	0	0	0	-
108	14.4	Landslip (10k)	0	0	0	0	-
109 >	14.5 >	Bedrock geology (10k) >	2	1	2	1	-
110 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	1	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
111 >	15.1 >	50k Availability >	Identified (within 500m)				
112	15.2	Artificial and made ground (50k)	0	0	0	0	-
112	15.3	Artificial ground permeability (50k)	0	0	-	-	-
113 >	15.4 >	Superficial geology (50k) >	1	0	1	0	-
114 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
114	15.6	Landslip (50k)	0	0	0	0	-
114	15.7	Landslip permeability (50k)	None (within 50m)				
115 >	15.8 >	Bedrock geology (50k) >	2	1	4	2	-
116 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
116 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	1	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
117 >	16.1 >	BGS Boreholes >	3	4	14	-	-
Page	Section	Natural ground subsidence >					
119 >	17.1 >	Shrink swell clays >	Low (within 50m)				
120 >	17.2 >	Running sands >	Moderate (within 50m)				
121 >	17.3 >	Compressible deposits >	Moderate (within 50m)				
122 >	17.4 >	Collapsible deposits >	Negligible (within 50m)				
123 >	17.5 >	Landslides >	Very low (within 50m)				
124 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
126	18.1	BritPits	0	0	0	0	-
127 >	18.2 >	Surface ground workings >	1	1	13	-	-
127	18.3	Underground workings	0	0	0	0	0
128	18.4	Underground mining extents	0	0	0	0	-

128	18.5	Historical Mineral Planning Areas	0	0	0	0	-
128	18.6	Non-coal mining	0	0	0	0	0
128	18.7	JPB mining areas	None (within 0m)				
128	18.8	The Coal Authority non-coal mining	0	0	0	0	-
129	18.9	Researched mining	0	0	0	0	-
129	18.10	Mining record office plans	0	0	0	0	-
129	18.11	BGS mine plans	0	0	0	0	-
129	18.12	Coal mining	None (within 0m)				
130	18.13	Brine areas	None (within 0m)				
130	18.14	Gypsum areas	None (within 0m)				
130	18.15	Tin mining	None (within 0m)				
130	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
131	19.1	Natural cavities	0	0	0	0	-
131	19.2	Mining cavities	0	0	0	0	0
131	19.3	Reported recent incidents	0	0	0	0	-
131	19.4	Historical incidents	0	0	0	0	-
Page	Section	**Radon** >					
133 >	**20.1** >	**Radon** >	Between 10% and 30% (within 0m)				
Page	Section	**Soil chemistry** >	On site	0-50m	50-250m	250-500m	500-2000m
135 >	**21.1** >	**BGS Estimated Background Soil Chemistry** >	5	2	-	-	-
135	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
136	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	**Railway infrastructure and projects** >	On site	0-50m	50-250m	250-500m	500-2000m
137	22.1	Underground railways (London)	0	0	0	-	-
137	22.2	Underground railways (Non-London)	0	0	0	-	-
138	22.3	Railway tunnels	0	0	0	-	-
138 >	**22.4** >	**Historical railway and tunnel features** >	7	3	16	-	-
139	22.5	Royal Mail tunnels	0	0	0	-	-

139 >	22.6 >	Historical railways >	0	0	2	-	-
140 >	22.7 >	Railways >	0	7	14	-	-
141	22.8	Crossrail 2	0	0	0	0	-
141	22.9	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 20/05/2023

Site Area: 10.96ha

Recent site history - 2020 aerial photograph



Capture Date: 14/04/2020

Site Area: 10.96ha

Recent site history - 2014 aerial photograph



Capture Date: 23/07/2014

Site Area: 10.96ha

Recent site history - 2009 aerial photograph



Capture Date: 12/10/2009

Site Area: 10.96ha

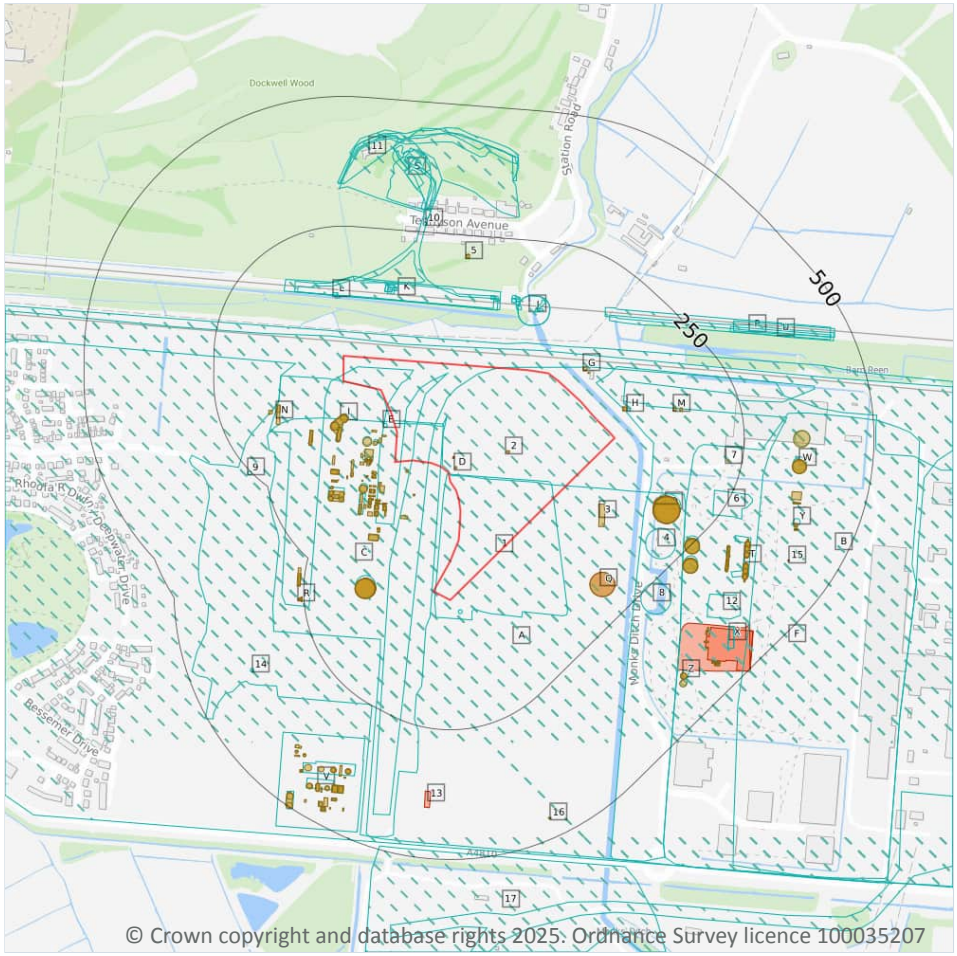
Recent site history - 2000 aerial photograph



Capture Date: 06/10/2000

Site Area: 10.96ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	78

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Unspecified Commercial/Industrial**	**1973**	**1271686**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Unspecified Commercial/Industrial**	**1973 - 1988**	**1225605**
A	**On site**	**Steel Works**	**1973**	**1229970**
B	**On site**	**Railway Sidings**	**1973 - 1988**	**1248441**
C	**On site**	**Unspecified Commercial/Industrial**	**1973**	**1282133**
E	14m W	Chimney	1988	1205766
A	26m SE	Unspecified Tank	1973	1204322
E	35m W	Unspecified Tanks	1988	1187052
E	43m W	Unspecified Tanks	1973 - 1988	1291793
F	46m NE	Steel Works	1973 - 1988	1247191
E	48m W	Unspecified Tanks	1988	1187050
H	54m NE	Chimney	1973	1205770
I	60m S	Unspecified Tanks	1988	1187048
E	70m SW	Unspecified Tanks	1988	1187051
I	79m S	Unspecified Tanks	1988	1223482
E	84m SW	Unspecified Tanks	1988	1187049
J	86m N	Railway Station	1938	1230122
J	86m N	Railway Station	1949	1258192
E	110m SW	Unspecified Tanks	1973 - 1988	1250297
K	111m N	Railway Sidings	1938	1237102
K	111m N	Railway Sidings	1949 - 1963	1242994
C	112m W	Gas Holder	1973 - 1988	1236854
L	112m N	Railway Building	1922 - 1938	1257878
K	113m N	Railway Sidings	1922	1233819
J	114m N	Railway Station	1882	1252579
J	115m N	Railway Building	1882 - 1900	1287196
J	116m N	Railway Station	1900	1267419
L	117m N	Railway Building	1949	1257703
J	123m N	Railway Station	1922	1221637

ID	Location	Land use	Dates present	Group ID
K	126m N	Goods Shed	1922	1186294
J	127m N	Railway Building	1949	1261994
J	127m N	Railway Building	1938	1273291
J	128m N	Railway Building	1922	1239113
K	130m N	Railway Building	1938	1263907
K	130m N	Railway Building	1949	1284762
J	130m N	Railway Building	1963	1285401
J	131m N	Railway Building	1938	1248515
J	131m N	Railway Building	1949	1290742
K	133m N	Railway Building	1963	1286503
J	134m N	Railway Building	1900	1214146
O	141m SE	Unspecified Tank	1973	1204323
K	144m N	Unspecified Pit	1922	1192126
P	153m NE	Railway Sidings	1922	1238493
P	154m NE	Railway Sidings	1963	1218252
F	156m E	Unspecified Commercial/Industrial	1973 - 1988	1291956
4	178m SE	Unspecified Tank	1973	1204324
6	217m SE	Refuse Heaps	1973 - 1988	1291606
B	236m SE	Unspecified Tank	1973 - 1988	1290723
8	247m SE	Unspecified Tank	1973	1204325
9	250m SW	Chimney	1988	1205765
B	262m SE	Unspecified Tank	1973 - 1988	1271819
10	263m N	Railway Building	1922	1206834
S	277m N	Lime Works	1922	1177984
S	290m N	Unspecified Ground Workings	1973 - 1988	1221658
S	292m N	Unspecified Old Quarry	1900	1182092
S	295m N	Unspecified Ground Workings	1882	1280021
T	299m SE	Unspecified Tanks	1973 - 1988	1222700

ID	Location	Land use	Dates present	Group ID
U	303m NE	Railway Sidings	1949	1235429
U	309m NE	Railway Sidings	1922	1294294
V	313m SW	Refinery	1973 - 1988	1253670
S	331m N	Cuttings	1922	1178691
11	332m N	Unspecified Pit	1963	1192127
S	332m N	Unspecified Ground Workings	1938	1248050
12	343m SE	Refuse Heaps	1973 - 1988	1274204
W	348m E	Unspecified Tank	1973 - 1988	1266123
W	348m E	Unspecified Tank	1988	1204319
S	360m N	Cuttings	1922	1178690
S	364m N	Unspecified Ground Workings	1922	1238349
V	366m SW	Unspecified Tanks	1973 - 1988	1269589
14	378m SW	Chimney	1988	1205767
Y	380m SE	Unspecified Covered Tank	1973 - 1988	1222863
V	413m SW	Unspecified Tanks	1973 - 1988	1249612
Z	413m SE	Unspecified Tank	1973 - 1988	1258867
X	414m SE	Unspecified Tanks	1973	1187046
X	414m SE	Chimneys	1988	1207873
Z	423m SE	Unspecified Tank	1988	1204320
V	470m SW	Unspecified Tanks	1988	1187053
17	485m S	Slag Processing Plant	1973	1207954

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	256

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
2	**On site**	**Unspecified Tank**	**1986 - 1995**	**200472**
D	**On site**	**Unspecified Tank**	**1986 - 1992**	**194426**
E	17m S	Unspecified Tank	1986 - 1995	187873
E	20m W	Tanks	1986 - 1995	186260
E	29m W	Tanks	1992 - 1995	200866
E	36m W	Unspecified Tank	1986 - 1995	191830
E	37m W	Tanks	1986 - 1995	195429
E	41m SW	Tanks	1967	193109
E	41m SW	Tanks	1969	200427
E	43m W	Tanks	1967 - 1995	189454
E	44m W	Unspecified Tank	1986	187238
E	44m W	Unspecified Tank	1967	186208
E	45m W	Tanks	1992 - 1995	199013
E	45m W	Unspecified Tank	1969	192279
E	46m SW	Tanks	1967	192840
E	46m SW	Tanks	1969	186968
G	47m NE	Tanks	1986 - 1995	186930
E	47m W	Unspecified Tank	1986	197386
E	47m W	Unspecified Tank	1986	200072
E	47m SW	Tanks	1967	196131
E	47m SW	Unspecified Tank	1986 - 1995	196722
E	47m W	Tanks	1986 - 1995	188246
E	48m W	Unspecified Tank	1969	199835
H	48m NE	Gas Bleeder	1967 - 1969	200728
E	48m W	Unspecified Tank	1967	196188
E	48m W	Tanks	1992 - 1995	200791
G	49m NE	Unspecified Tank	1986	181294

ID	Location	Land use	Dates present	Group ID
E	50m SW	Tanks	1967	177028
E	51m SW	Tanks	1967	200294
E	52m W	Unspecified Tank	1986	190963
E	53m W	Unspecified Tank	1967	186328
E	53m W	Unspecified Tank	1969	199249
E	55m SW	Tanks	1967	177027
E	59m SW	Unspecified Tank	1967 - 1986	187300
E	59m SW	Unspecified Tank	1986	189508
E	59m SW	Unspecified Tank	1986	190886
E	60m W	Unspecified Tank	1967 - 1986	196907
E	60m SW	Unspecified Tank	1967	188934
E	60m SW	Unspecified Tank	1969	200038
E	61m SW	Unspecified Tank	1992 - 1995	198228
I	61m S	Tanks	1995	194677
I	62m S	Unspecified Tank	1986	181441
E	63m W	Tanks	1992 - 1995	198527
I	64m S	Tanks	1992	201621
E	64m S	Unspecified Tank	1986 - 1995	188108
E	64m SW	Unspecified Tank	1967 - 1969	200713
E	66m SW	Tanks	1967 - 1969	198736
E	66m SW	Tanks	1986	200628
E	66m SW	Tanks	1992 - 1995	188401
3	69m SE	Unspecified Tank	1986	184389
E	70m SW	Unspecified Tank	1969	195691
E	70m SW	Unspecified Tank	1986	191357
E	71m SW	Unspecified Tank	1967	191608
E	71m SW	Unspecified Tank	1995	181440
E	73m SW	Unspecified Tank	1986	193059

ID	Location	Land use	Dates present	Group ID
E	73m SW	Tanks	1992 - 1995	199545
E	75m SW	Unspecified Tank	1967 - 1986	190489
E	79m S	Unspecified Tank	1986	198694
E	79m S	Tanks	1992 - 1995	198320
E	79m SW	Unspecified Tank	1967 - 1986	195198
E	79m W	Tanks	1986 - 1995	186396
I	81m S	Unspecified Tank	1986	202262
E	81m S	Unspecified Tank	1986	195349
E	83m SW	Tanks	1995	187424
E	83m SW	Tanks	1992	201094
E	83m SW	Tanks	1967	197112
E	83m SW	Tanks	1969	191860
E	83m W	Tanks	1967 - 1969	200285
E	83m W	Tanks	1986 - 1995	191527
E	83m S	Tanks	1986	201038
E	84m SW	Tanks	1986	194382
E	84m S	Tanks	1986 - 1995	196830
E	84m SW	Tanks	1967	196867
E	84m SW	Tanks	1969	198700
E	84m S	Tanks	1967	187867
E	84m SW	Tanks	1992 - 1995	198962
E	85m S	Tanks	1969	202074
E	86m S	Tanks	1995	197168
E	87m S	Tanks	1992	188435
I	88m S	Tanks	1995	188696
I	88m S	Tanks	1986	195113
E	89m SW	Tanks	1986 - 1995	199376
E	89m S	Tanks	1992 - 1995	200638

ID	Location	Land use	Dates present	Group ID
E	90m S	Tanks	1968 - 1986	194837
E	90m S	Tanks	1967	191495
E	91m SW	Tanks	1969	200198
E	93m SW	Tanks	1967 - 1986	194840
E	95m W	Unspecified Tank	1967 - 1969	193937
E	97m SW	Unspecified Tank	1992 - 1995	191199
E	99m SW	Tanks	1992	177025
E	101m S	Tanks	1967	200041
E	101m W	Tanks	1995	177029
E	102m S	Tanks	1992	192379
E	104m SW	Tanks	1992 - 1995	189622
E	105m SW	Tanks	1986	190020
E	106m SW	Tanks	1992	177026
E	109m W	Tanks	1986	198995
E	109m W	Tanks	1967 - 1969	193607
E	110m W	Tanks	1992 - 1995	191847
C	111m W	Gas Holder	1968	187460
C	112m W	Gas Holder	1967	195144
C	112m W	Gas Holder	1992 - 1995	200658
I	112m SW	Tanks	1986	187519
I	112m SW	Tanks	1992 - 1995	188602
I	113m SW	Tanks	1967 - 1969	198686
C	113m W	Gas Holder	1986	192000
E	114m W	Unspecified Tank	1967	181439
E	114m SW	Unspecified Tank	1967 - 1986	200604
E	116m SW	Tanks	1992 - 1995	201669
E	116m W	Tanks	1986 - 1995	192596
E	116m W	Unspecified Tank	1967 - 1986	191746

ID	Location	Land use	Dates present	Group ID
E	118m W	Unspecified Tank	1992 - 1995	186604
E	121m SW	Unspecified Tank	1967 - 1986	202083
M	124m NE	Unspecified Tank	1967 - 1995	199871
E	126m SW	Unspecified Tank	1967 - 1986	192652
E	128m W	Unspecified Tank	1986	190427
E	130m W	Tanks	1992 - 1995	197755
E	130m S	Tanks	1992 - 1995	195294
N	130m W	Tanks	1986	194862
N	131m W	Tanks	1992 - 1995	188865
E	131m SW	Unspecified Tank	1986	188146
E	132m S	Tanks	1967 - 1986	193499
E	132m SW	Unspecified Tank	1967	198351
E	132m SW	Unspecified Tank	1969	198803
M	136m NE	Unspecified Tank	1967 - 1995	199175
E	138m SW	Unspecified Tank	1969 - 1986	202380
E	138m SW	Unspecified Tank	1967	199502
E	141m NW	Tanks	1967 - 1968	199613
O	141m SE	Gasholder	1986	188294
E	141m NW	Tanks	1986 - 1995	187824
O	143m SE	Gasholder	1969	187066
O	143m SE	Gas Holder	1995	189336
O	143m SE	Gasholder	1967	186582
O	144m SE	Gas Holder	1986	187362
O	145m SE	Gas Holder	1992 - 1995	190938
O	145m SE	Gas Holder	1966	202921
O	146m SE	Gas Holder	1968	186952
N	148m W	Tanks	1995	177055
Q	161m SE	Gas Holder	1995	178698

ID	Location	Land use	Dates present	Group ID
5	206m N	Unspecified Tank	1967 - 1969	197641
7	221m E	Unspecified Tank	1995	181292
B	238m SE	Unspecified Tank	1986	202061
B	239m SE	Unspecified Tank	1966 - 1968	194673
B	240m SE	Unspecified Tank	1992 - 1995	202313
R	254m W	Gas Bleeder	1986 - 1995	188857
R	254m W	Gas Bleeder	1967	199932
R	254m W	Gas Bleeder	1968	188315
R	257m W	Tanks	1992 - 1995	194599
R	257m W	Tanks	1967	194766
R	257m W	Tanks	1968	193985
R	258m W	Tanks	1986	199195
B	263m SE	Unspecified Tank	1986	192133
B	264m SE	Unspecified Tank	1966 - 1968	199930
B	265m SE	Unspecified Tank	1992 - 1995	197152
T	301m SE	Tanks	1986	192143
T	302m SE	Tanks	1966	201937
T	302m SE	Tanks	1992 - 1995	187292
T	303m SE	Tanks	1968	194096
T	307m SE	Tanks	1966	186219
T	313m SE	Tanks	1966	201418
T	318m SE	Tanks	1986	198254
T	319m SE	Tanks	1966	199113
T	322m SE	Unspecified Tank	1966	200155
T	322m SE	Tanks	1986 - 1995	186956
T	323m SE	Tanks	1966	187988
T	323m SE	Unspecified Tank	1992 - 1995	192477
T	323m SE	Unspecified Tank	1968	197539

ID	Location	Land use	Dates present	Group ID
T	324m SE	Tanks	1968	190917
T	325m SE	Tanks	1966	197972
T	329m SE	Tanks	1966	186544
T	331m SE	Tanks	1966	192817
T	336m SE	Tanks	1966	190844
W	345m E	Unspecified Tank	1986 - 1995	194055
W	347m E	Unspecified Tank	1967 - 1969	196259
W	347m E	Unspecified Tank	1986	188114
W	348m E	Unspecified Tank	1992 - 1995	201421
T	348m SE	Tanks	1986	191534
T	348m SE	Tanks	1966	193325
T	349m SE	Tanks	1968	191228
T	349m SE	Tanks	1992 - 1995	190794
T	355m SE	Tanks	1966	191440
Y	358m E	Cooling Tank	1986	185784
T	362m SE	Tanks	1966	187924
Y	366m E	Tanks	1967 - 1986	186220
Y	367m E	Tanks	1992 - 1995	197044
T	371m SE	Unspecified Tank	1986	193674
T	371m SE	Unspecified Tank	1966	195937
T	371m SE	Unspecified Tank	1995	197372
T	371m SE	Unspecified Tank	1992	201570
V	379m SW	Unspecified Tank	1967	194954
V	379m SW	Unspecified Tank	1968	200450
V	379m SW	Tanks	1967 - 1995	186431
V	379m SW	Unspecified Tank	1986 - 1995	192951
Y	385m SE	Tanks	1973 - 1995	187303
X	386m SE	Tanks	1986 - 1995	185883

ID	Location	Land use	Dates present	Group ID
Y	386m SE	Unspecified Tank	1967 - 1968	194216
Y	388m SE	Tanks	1973 - 1995	197454
Y	389m SE	Unspecified Tank	1967 - 1968	194196
V	390m SW	Unspecified Tank	1968	188919
V	390m SW	Unspecified Tank	1967	190589
V	390m SW	Unspecified Tank	1986 - 1995	193868
V	392m SW	Tanks	1986 - 1995	199583
V	396m SW	Tanks	1992 - 1995	190431
V	399m SW	Tanks	1986	199344
V	399m SW	Tanks	1992 - 1995	192542
V	400m SW	Unspecified Tank	1986 - 1995	188432
X	400m SE	Tanks	1966	176946
X	403m SE	Tanks	1966 - 1968	197709
V	403m SW	Tanks	1986	187516
V	404m SW	Tanks	1992 - 1995	188063
V	408m SW	Tanks	1992	178014
15	409m SE	Unspecified Tank	1995	181293
X	410m SE	Tanks	1966	176945
V	411m SW	Unspecified Tank	1986 - 1995	200552
X	412m SE	Unspecified Tank	1968	181168
V	413m SW	Tanks	1968	186274
V	413m SW	Tanks	1967	193079
V	413m SW	Tanks	1986 - 1991	197348
V	413m SW	Tanks	1992 - 1995	188046
Z	414m SE	Unspecified Tank	1986	186022
Z	415m SE	Unspecified Tank	1992 - 1995	199885
V	417m SW	Tanks	1967	191439
V	418m SW	Tanks	1992 - 1995	190194

ID	Location	Land use	Dates present	Group ID
Z	423m SE	Unspecified Tank	1986 - 1995	193733
V	426m SW	Tanks	1995	178015
V	427m SW	Unspecified Tank	1967	202133
V	427m SW	Unspecified Tank	1968 - 1995	201936
V	428m SW	Tanks	1992 - 1995	188250
V	429m SW	Unspecified Tank	1986 - 1991	188195
V	431m SW	Tanks	1968	197662
V	432m SW	Tanks	1967	194184
V	432m SW	Tanks	1986 - 1995	190871
V	434m SW	Tanks	1992 - 1995	194990
X	437m SE	Tanks	1986 - 1992	191993
X	438m SE	Tanks	1966	197264
X	438m SE	Tanks	1968	201285
X	439m SE	Tanks	1995	192518
V	439m SW	Unspecified Tank	1992 - 1995	201879
V	440m SW	Tanks	1986 - 1991	195404
V	440m SW	Tanks	1986 - 1995	192151
V	441m SW	Tanks	1967 - 1968	198482
X	445m SE	Tanks	1966	186146
X	445m SE	Tanks	1995	187949
X	446m SE	Tanks	1995	196134
V	447m SW	Tanks	1967 - 1968	200436
V	451m SW	Unspecified Tank	1967 - 1968	195217
V	459m SW	Tanks	1986 - 1991	192680
V	459m SW	Tanks	1992 - 1995	193004
16	460m SE	Unspecified Tank	1995	184745
V	461m SW	Unspecified Tank	1967	201591
V	462m SW	Unspecified Tank	1968	191131

ID	Location	Land use	Dates present	Group ID
V	470m SW	Tanks	1992 - 1995	195049
V	470m SW	Unspecified Tank	1995	184747
V	475m SW	Tanks	1986 - 1991	193639
V	476m SW	Unspecified Tank	1992 - 1995	197474
V	491m SW	Unspecified Tank	1992 - 1995	193415

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**21**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
D	**On site**	**Electricity Substation**	**1995**	**105415**
H	48m NE	Gas Bleeder	1967 - 1969	119384
C	111m W	Gas Holder	1968	110627
C	112m W	Gas Holder	1967	118464
C	112m W	Gas Holder	1986 - 1995	113511
O	141m SE	Gasholder	1986	108841
O	143m SE	Gasholder	1969	114699
O	143m SE	Gas Holder	1995	115245
O	143m SE	Gasholder	1967	122415
O	144m SE	Gas Holder	1986	116030
O	145m SE	Gas Holder	1992 - 1995	117075
O	145m SE	Gas Holder	1966	112711
O	146m SE	Gas Holder	1968	115094

ID	Location	Land use	Dates present	Group ID
Q	161m SE	Gas Holder	1995	108111
R	254m W	Gas Bleeder	1986 - 1995	119340
R	254m W	Gas Bleeder	1967	122411
R	254m W	Gas Bleeder	1968	110770
X	351m SE	Power Plant	1966 - 1967	112302
13	371m S	Electricity Substation	1995	105414
X	390m SE	Power Plant	1968	121080
X	447m SE	Power Plant	1973	122629

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	**0**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	**0**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

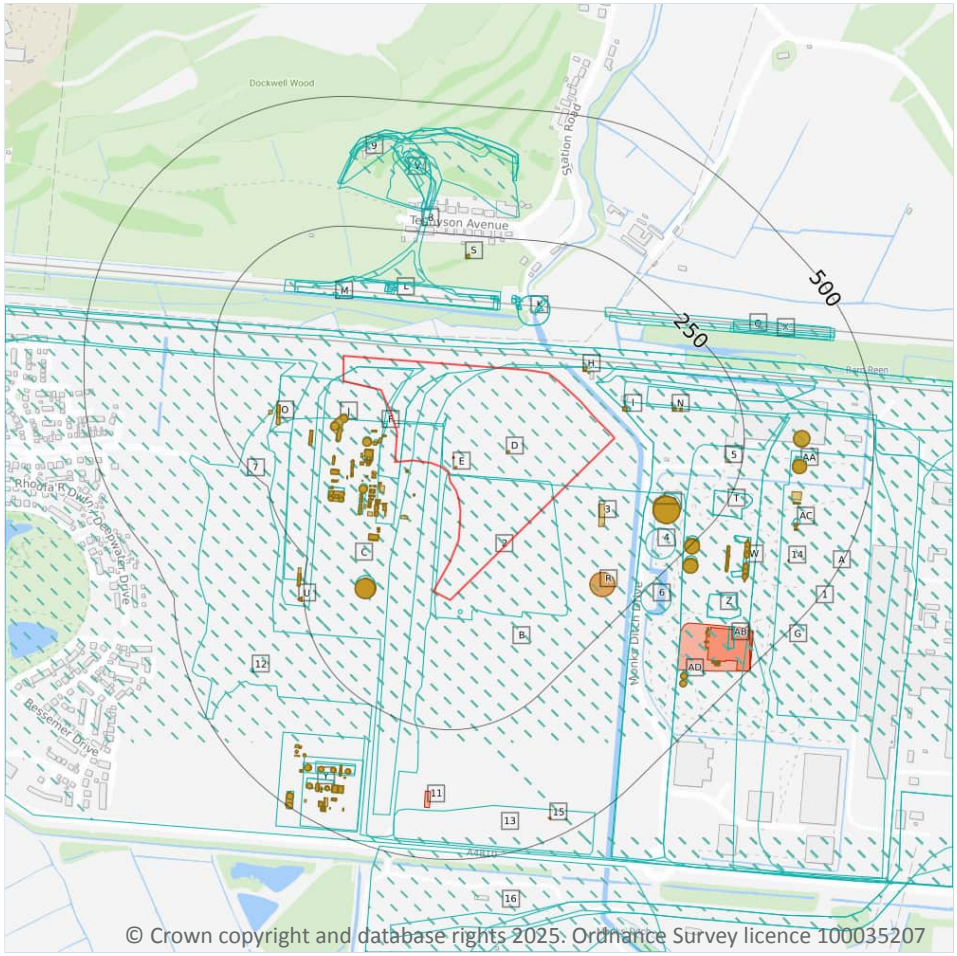
1.6 Historical military land

Records within 500m	0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

2.1 Historical industrial land uses

Records within 500m	101

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 30 >**

ID	Location	Land Use	Date	Group ID
1	On site	Railway Sidings	1973	1248441
2	On site	Unspecified Commercial/Industrial	1973	1271686
A	On site	Railway Sidings	1988	1248441

ID	Location	Land Use	Date	Group ID
B	**On site**	**Unspecified Commercial/Industrial**	**1988**	**1225605**
B	**On site**	**Steel Works**	**1973**	**1229970**
C	**On site**	**Unspecified Commercial/Industrial**	**1973**	**1282133**
F	14m W	Chimney	1988	1205766
B	26m SE	Unspecified Tank	1973	1204322
F	35m W	Unspecified Tanks	1988	1187052
F	43m W	Unspecified Tanks	1988	1291793
F	43m W	Unspecified Tanks	1973	1291793
G	46m NE	Steel Works	1988	1247191
G	46m NE	Steel Works	1973	1247191
F	48m W	Unspecified Tanks	1988	1187050
I	54m NE	Chimney	1973	1205770
J	60m S	Unspecified Tanks	1988	1187048
F	70m SW	Unspecified Tanks	1988	1187051
J	79m S	Unspecified Tanks	1988	1223482
J	82m S	Unspecified Tanks	1988	1223482
F	84m SW	Unspecified Tanks	1988	1187049
K	86m N	Railway Station	1938	1230122
K	86m N	Railway Station	1949	1258192
F	110m SW	Unspecified Tanks	1988	1250297
F	110m SW	Unspecified Tanks	1973	1250297
L	111m N	Railway Sidings	1938	1237102
L	111m N	Railway Sidings	1949	1242994
C	112m W	Gas Holder	1988	1236854
C	112m W	Gas Holder	1973	1236854
L	112m N	Railway Sidings	1963	1242994
M	112m N	Railway Building	1922	1257878
L	113m N	Railway Sidings	1922	1233819

ID	Location	Land Use	Date	Group ID
K	114m N	Railway Station	1882	1252579
K	115m N	Railway Building	1900	1287196
K	116m N	Railway Station	1900	1267419
K	117m N	Railway Building	1882	1287196
M	117m N	Railway Building	1938	1257878
M	117m N	Railway Building	1949	1257703
K	123m N	Railway Station	1922	1221637
L	126m N	Goods Shed	1922	1186294
K	127m N	Railway Building	1938	1273291
K	127m N	Railway Building	1949	1261994
K	128m N	Railway Building	1922	1239113
L	130m N	Railway Building	1938	1263907
L	130m N	Railway Building	1949	1284762
K	130m N	Railway Building	1963	1285401
K	131m N	Railway Building	1938	1248515
K	131m N	Railway Building	1949	1290742
L	133m N	Railway Building	1963	1286503
K	134m N	Railway Building	1900	1214146
P	141m SE	Unspecified Tank	1973	1204323
L	144m N	Unspecified Pit	1922	1192126
Q	153m NE	Railway Sidings	1922	1238493
Q	154m NE	Railway Sidings	1963	1218252
G	156m E	Unspecified Commercial/Industrial	1988	1291956
4	178m SE	Unspecified Tank	1973	1204324
T	217m SE	Refuse Heaps	1988	1291606
T	217m SE	Refuse Heaps	1973	1291606
A	236m SE	Unspecified Tank	1988	1290723
A	236m SE	Unspecified Tank	1973	1290723

ID	Location	Land Use	Date	Group ID
6	247m SE	Unspecified Tank	1973	1204325
7	250m SW	Chimney	1988	1205765
A	262m SE	Unspecified Tank	1988	1271819
A	262m SE	Unspecified Tank	1973	1271819
8	263m N	Railway Building	1922	1206834
V	277m N	Lime Works	1922	1177984
V	290m N	Unspecified Ground Workings	1988	1221658
V	290m N	Unspecified Ground Workings	1973	1221658
V	292m N	Unspecified Old Quarry	1900	1182092
V	295m N	Unspecified Ground Workings	1882	1280021
W	299m SE	Unspecified Tanks	1988	1222700
W	299m SE	Unspecified Tanks	1973	1222700
X	303m NE	Railway Sidings	1949	1235429
X	309m NE	Railway Sidings	1922	1294294
Y	313m SW	Refinery	1988	1253670
V	331m N	Cuttings	1922	1178691
9	332m N	Unspecified Pit	1963	1192127
V	332m N	Unspecified Ground Workings	1938	1248050
10	339m E	Unspecified Commercial/Industrial	1973	1291956
Z	343m SE	Refuse Heaps	1988	1274204
Z	343m SE	Refuse Heaps	1973	1274204
AA	348m E	Unspecified Tank	1988	1266123
AA	348m E	Unspecified Tank	1973	1266123
AA	348m E	Unspecified Tank	1988	1204319
Y	352m SW	Refinery	1973	1253670
V	360m N	Cuttings	1922	1178690
V	364m N	Unspecified Ground Workings	1922	1238349
Y	366m SW	Unspecified Tanks	1973	1269589

ID	Location	Land Use	Date	Group ID
Y	368m SW	Unspecified Tanks	1988	1269589
12	378m SW	Chimney	1988	1205767
AC	380m SE	Unspecified Covered Tank	1988	1222863
AC	380m SE	Unspecified Covered Tank	1973	1222863
13	403m S	Unspecified Commercial/Industrial	1973	1225605
Y	413m SW	Unspecified Tanks	1988	1249612
Y	413m SW	Unspecified Tanks	1973	1249612
AD	413m SE	Unspecified Tank	1973	1258867
AD	414m SE	Unspecified Tank	1988	1258867
AB	414m SE	Chimneys	1988	1207873
AB	414m SE	Unspecified Tanks	1973	1187046
AD	423m SE	Unspecified Tank	1988	1204320
Y	470m SW	Unspecified Tanks	1988	1187053
16	485m S	Slag Processing Plant	1973	1207954

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m **467**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 30 >**

ID	Location	Land Use	Date	Group ID
D	**On site**	**Unspecified Tank**	**1995**	**200472**
D	**On site**	**Unspecified Tank**	**1986**	**200472**
E	**On site**	**Unspecified Tank**	**1986**	**194426**
E	**On site**	**Unspecified Tank**	**1986**	**194426**
E	**On site**	**Unspecified Tank**	**1992**	**194426**
F	17m S	Unspecified Tank	1986	187873

ID	Location	Land Use	Date	Group ID
F	17m S	Unspecified Tank	1986	187873
F	18m S	Unspecified Tank	1995	187873
F	18m S	Unspecified Tank	1992	187873
F	20m W	Tanks	1986	186260
F	20m W	Tanks	1986	186260
F	21m W	Tanks	1995	186260
F	21m W	Tanks	1992	186260
F	29m W	Tanks	1995	200866
F	29m W	Tanks	1992	200866
F	36m W	Unspecified Tank	1986	191830
F	36m W	Unspecified Tank	1986	191830
F	37m W	Tanks	1986	195429
F	37m W	Tanks	1986	195429
F	37m W	Unspecified Tank	1995	191830
F	37m W	Unspecified Tank	1992	191830
F	37m W	Tanks	1995	195429
F	37m W	Tanks	1992	195429
F	41m SW	Tanks	1967	193109
F	41m SW	Tanks	1969	200427
F	43m W	Tanks	1986	189454
F	43m W	Tanks	1986	189454
F	44m W	Unspecified Tank	1986	187238
F	44m W	Unspecified Tank	1986	187238
F	44m W	Tanks	1967	189454
F	44m W	Tanks	1969	189454
F	44m W	Tanks	1995	189454
F	44m W	Tanks	1992	189454
F	44m W	Unspecified Tank	1967	186208

ID	Location	Land Use	Date	Group ID
F	45m W	Tanks	1995	199013
F	45m W	Tanks	1992	199013
F	45m W	Unspecified Tank	1969	192279
F	46m SW	Tanks	1967	192840
F	46m SW	Tanks	1969	186968
H	47m NE	Tanks	1986	186930
F	47m W	Unspecified Tank	1986	197386
F	47m W	Unspecified Tank	1986	200072
F	47m SW	Tanks	1967	196131
F	47m SW	Unspecified Tank	1986	196722
F	47m SW	Unspecified Tank	1986	196722
F	47m W	Tanks	1986	188246
F	47m W	Tanks	1986	188246
F	48m W	Unspecified Tank	1969	199835
I	48m NE	Gas Bleeder	1969	200728
I	48m NE	Gas Bleeder	1967	200728
F	48m W	Unspecified Tank	1967	196188
F	48m W	Tanks	1995	200791
F	48m W	Tanks	1992	200791
F	48m W	Tanks	1995	188246
F	48m W	Tanks	1992	188246
F	49m SW	Unspecified Tank	1995	196722
F	49m SW	Unspecified Tank	1992	196722
H	49m NE	Tanks	1995	186930
H	49m NE	Unspecified Tank	1986	181294
F	50m SW	Tanks	1967	177028
F	51m SW	Tanks	1967	200294
F	52m W	Unspecified Tank	1986	190963

ID	Location	Land Use	Date	Group ID
F	52m W	Unspecified Tank	1986	190963
F	53m W	Unspecified Tank	1967	186328
F	53m W	Unspecified Tank	1969	199249
F	55m SW	Tanks	1967	177027
F	59m SW	Unspecified Tank	1986	187300
F	59m SW	Unspecified Tank	1986	187300
F	59m SW	Unspecified Tank	1986	189508
F	59m SW	Unspecified Tank	1986	190886
F	59m SW	Unspecified Tank	1967	187300
F	60m SW	Unspecified Tank	1969	187300
F	60m W	Unspecified Tank	1986	196907
F	60m W	Unspecified Tank	1986	196907
F	60m SW	Unspecified Tank	1967	188934
F	60m SW	Unspecified Tank	1969	200038
F	61m W	Unspecified Tank	1969	196907
F	61m W	Unspecified Tank	1967	196907
F	61m SW	Unspecified Tank	1995	198228
F	61m SW	Unspecified Tank	1992	198228
J	61m S	Tanks	1995	194677
J	62m S	Unspecified Tank	1986	181441
F	63m W	Tanks	1995	198527
F	63m W	Tanks	1992	198527
J	64m S	Tanks	1992	201621
F	64m S	Unspecified Tank	1986	188108
F	64m S	Unspecified Tank	1986	188108
F	64m SW	Unspecified Tank	1967	200713
F	64m SW	Unspecified Tank	1969	200713
F	65m S	Unspecified Tank	1995	188108

ID	Location	Land Use	Date	Group ID
F	65m S	Unspecified Tank	1992	188108
F	66m SW	Tanks	1969	198736
F	66m SW	Tanks	1986	200628
F	66m SW	Tanks	1986	200628
F	66m SW	Tanks	1995	188401
F	66m SW	Tanks	1992	188401
F	67m SW	Tanks	1967	198736
3	69m SE	Unspecified Tank	1986	184389
F	70m SW	Unspecified Tank	1969	195691
F	70m SW	Unspecified Tank	1986	191357
F	70m SW	Unspecified Tank	1986	191357
F	71m SW	Unspecified Tank	1967	191608
F	71m SW	Unspecified Tank	1995	181440
F	73m SW	Unspecified Tank	1986	193059
F	73m SW	Unspecified Tank	1986	193059
F	73m SW	Tanks	1995	199545
F	73m SW	Tanks	1992	199545
F	75m SW	Unspecified Tank	1986	190489
F	75m SW	Unspecified Tank	1986	190489
F	76m SW	Unspecified Tank	1967	190489
F	76m SW	Unspecified Tank	1969	190489
F	79m S	Unspecified Tank	1986	198694
F	79m S	Unspecified Tank	1986	198694
F	79m S	Tanks	1995	198320
F	79m S	Tanks	1992	198320
F	79m SW	Unspecified Tank	1986	195198
F	79m SW	Unspecified Tank	1986	195198
F	79m W	Tanks	1986	186396

ID	Location	Land Use	Date	Group ID
F	79m W	Tanks	1986	186396
F	79m SW	Unspecified Tank	1967	195198
F	79m SW	Unspecified Tank	1969	195198
F	80m W	Tanks	1995	186396
F	80m W	Tanks	1992	186396
J	81m S	Unspecified Tank	1986	202262
J	81m S	Unspecified Tank	1986	202262
F	81m S	Unspecified Tank	1986	195349
F	81m S	Unspecified Tank	1986	195349
F	83m SW	Tanks	1995	187424
F	83m SW	Tanks	1992	201094
F	83m SW	Tanks	1967	197112
F	83m SW	Tanks	1969	191860
F	83m W	Tanks	1967	200285
F	83m W	Tanks	1986	191527
F	83m W	Tanks	1986	191527
F	83m W	Tanks	1969	200285
F	83m S	Tanks	1986	201038
F	84m SW	Tanks	1986	194382
F	84m SW	Tanks	1986	194382
F	84m S	Tanks	1986	196830
F	84m S	Tanks	1986	196830
F	84m SW	Tanks	1967	196867
F	84m SW	Tanks	1969	198700
F	84m S	Tanks	1967	187867
F	84m SW	Tanks	1995	198962
F	84m SW	Tanks	1992	198962
F	84m S	Tanks	1995	196830

ID	Location	Land Use	Date	Group ID
F	84m S	Tanks	1992	196830
F	84m W	Tanks	1995	191527
F	84m W	Tanks	1992	191527
F	85m S	Tanks	1969	202074
F	86m S	Tanks	1995	197168
F	87m S	Tanks	1992	188435
J	88m S	Tanks	1995	188696
J	88m S	Tanks	1986	195113
J	88m S	Tanks	1986	195113
F	89m SW	Tanks	1986	199376
F	89m SW	Tanks	1986	199376
F	89m S	Tanks	1995	200638
F	89m S	Tanks	1992	200638
F	90m SW	Tanks	1995	199376
F	90m SW	Tanks	1992	199376
F	90m S	Tanks	1968	194837
F	90m S	Tanks	1967	191495
F	90m S	Tanks	1986	194837
F	91m SW	Tanks	1969	200198
F	93m SW	Tanks	1968	194840
F	93m SW	Tanks	1967	194840
F	94m SW	Tanks	1986	194840
F	95m W	Unspecified Tank	1967	193937
F	96m W	Unspecified Tank	1969	193937
F	97m SW	Unspecified Tank	1995	191199
F	97m SW	Unspecified Tank	1992	191199
F	99m SW	Tanks	1992	177025
F	101m S	Tanks	1967	200041

ID	Location	Land Use	Date	Group ID
F	101m W	Tanks	1995	177029
F	102m S	Tanks	1992	192379
F	104m SW	Tanks	1995	189622
F	104m SW	Tanks	1992	189622
F	105m SW	Tanks	1986	190020
F	106m SW	Tanks	1992	177026
F	109m W	Tanks	1986	198995
F	109m W	Tanks	1986	198995
F	109m W	Tanks	1967	193607
F	110m W	Tanks	1969	193607
F	110m W	Tanks	1995	191847
F	110m W	Tanks	1992	191847
C	111m W	Gas Holder	1968	187460
C	112m W	Gas Holder	1967	195144
C	112m W	Gas Holder	1995	200658
C	112m W	Gas Holder	1992	200658
J	112m SW	Tanks	1986	187519
J	112m SW	Tanks	1995	188602
J	112m SW	Tanks	1992	188602
J	113m SW	Tanks	1967	198686
J	113m SW	Tanks	1969	198686
C	113m W	Gas Holder	1986	192000
F	114m W	Unspecified Tank	1967	181439
F	114m SW	Unspecified Tank	1986	200604
F	114m SW	Unspecified Tank	1986	200604
F	115m SW	Unspecified Tank	1967	200604
F	115m SW	Unspecified Tank	1969	200604
F	116m SW	Tanks	1995	201669

ID	Location	Land Use	Date	Group ID
F	116m SW	Tanks	1992	201669
F	116m W	Tanks	1986	192596
F	116m W	Tanks	1986	192596
F	116m W	Unspecified Tank	1986	191746
F	116m W	Unspecified Tank	1986	191746
F	117m W	Tanks	1995	192596
F	117m W	Tanks	1992	192596
F	117m W	Unspecified Tank	1967	191746
F	118m W	Unspecified Tank	1969	191746
F	118m W	Unspecified Tank	1995	186604
F	118m W	Unspecified Tank	1992	186604
F	121m SW	Unspecified Tank	1986	202083
F	121m SW	Unspecified Tank	1986	202083
F	122m SW	Unspecified Tank	1967	202083
F	123m SW	Unspecified Tank	1969	202083
N	124m NE	Unspecified Tank	1986	199871
N	126m NE	Unspecified Tank	1969	199871
N	126m NE	Unspecified Tank	1967	199871
N	126m NE	Unspecified Tank	1995	199871
F	126m SW	Unspecified Tank	1986	192652
F	126m SW	Unspecified Tank	1986	192652
F	128m SW	Unspecified Tank	1969	192652
F	128m SW	Unspecified Tank	1967	192652
F	128m W	Unspecified Tank	1986	190427
F	128m W	Unspecified Tank	1986	190427
F	130m W	Tanks	1995	197755
F	130m W	Tanks	1992	197755
F	130m S	Tanks	1995	195294

ID	Location	Land Use	Date	Group ID
F	130m S	Tanks	1992	195294
O	130m W	Tanks	1986	194862
O	130m W	Tanks	1986	194862
O	131m W	Tanks	1995	188865
O	131m W	Tanks	1992	188865
F	131m SW	Unspecified Tank	1986	188146
F	131m SW	Unspecified Tank	1986	188146
F	132m S	Tanks	1967	193499
F	132m S	Tanks	1968	193499
F	132m S	Tanks	1986	193499
F	132m SW	Unspecified Tank	1967	198351
F	132m SW	Unspecified Tank	1969	198803
N	136m NE	Unspecified Tank	1986	199175
N	137m NE	Unspecified Tank	1969	199175
F	138m SW	Unspecified Tank	1986	202380
F	138m SW	Unspecified Tank	1986	202380
N	138m NE	Unspecified Tank	1967	199175
N	138m NE	Unspecified Tank	1995	199175
F	138m SW	Unspecified Tank	1969	202380
F	138m SW	Unspecified Tank	1967	199502
F	141m NW	Tanks	1967	199613
F	141m NW	Tanks	1968	199613
P	141m SE	Gasholder	1986	188294
F	141m NW	Tanks	1986	187824
F	141m NW	Tanks	1995	187824
F	141m NW	Tanks	1992	187824
P	143m SE	Gasholder	1969	187066
P	143m SE	Gas Holder	1995	189336

ID	Location	Land Use	Date	Group ID
P	143m SE	Gasholder	1967	186582
P	144m SE	Gas Holder	1986	187362
P	145m SE	Gas Holder	1995	190938
P	145m SE	Gas Holder	1992	190938
P	145m SE	Gas Holder	1966	202921
P	146m SE	Gas Holder	1968	186952
O	148m W	Tanks	1995	177055
R	161m SE	Gas Holder	1995	178698
S	206m N	Unspecified Tank	1969	197641
S	207m N	Unspecified Tank	1967	197641
5	221m E	Unspecified Tank	1995	181292
A	238m SE	Unspecified Tank	1986	202061
A	239m SE	Unspecified Tank	1966	194673
A	240m SE	Unspecified Tank	1968	194673
A	240m SE	Unspecified Tank	1995	202313
A	240m SE	Unspecified Tank	1992	202313
U	254m W	Gas Bleeder	1995	188857
U	254m W	Gas Bleeder	1992	188857
U	254m W	Gas Bleeder	1967	199932
U	254m W	Gas Bleeder	1968	188315
U	254m W	Gas Bleeder	1986	188857
U	257m W	Tanks	1995	194599
U	257m W	Tanks	1992	194599
U	257m W	Tanks	1967	194766
U	257m W	Tanks	1968	193985
U	258m W	Tanks	1986	199195
A	263m SE	Unspecified Tank	1986	192133
A	264m SE	Unspecified Tank	1966	199930

ID	Location	Land Use	Date	Group ID
A	264m SE	Unspecified Tank	1968	199930
A	265m SE	Unspecified Tank	1995	197152
A	265m SE	Unspecified Tank	1992	197152
W	301m SE	Tanks	1986	192143
W	302m SE	Tanks	1966	201937
W	302m SE	Tanks	1995	187292
W	302m SE	Tanks	1992	187292
W	303m SE	Tanks	1968	194096
W	307m SE	Tanks	1966	186219
W	313m SE	Tanks	1966	201418
W	318m SE	Tanks	1986	198254
W	319m SE	Tanks	1966	199113
W	322m SE	Unspecified Tank	1966	200155
W	322m SE	Tanks	1986	186956
W	323m SE	Tanks	1966	187988
W	323m SE	Unspecified Tank	1995	192477
W	323m SE	Unspecified Tank	1992	192477
W	323m SE	Unspecified Tank	1968	197539
W	324m SE	Tanks	1968	190917
W	324m SE	Tanks	1995	186956
W	324m SE	Tanks	1992	186956
W	325m SE	Tanks	1966	197972
W	329m SE	Tanks	1966	186544
W	331m SE	Tanks	1966	192817
W	336m SE	Tanks	1966	190844
AA	345m E	Unspecified Tank	1986	194055
AA	345m E	Unspecified Tank	1995	194055
AA	345m E	Unspecified Tank	1992	194055

ID	Location	Land Use	Date	Group ID
AA	347m E	Unspecified Tank	1969	196259
AA	347m E	Unspecified Tank	1967	196259
AA	347m E	Unspecified Tank	1986	188114
AA	348m E	Unspecified Tank	1995	201421
AA	348m E	Unspecified Tank	1992	201421
W	348m SE	Tanks	1986	191534
W	348m SE	Tanks	1966	193325
W	349m SE	Tanks	1968	191228
W	349m SE	Tanks	1995	190794
W	349m SE	Tanks	1992	190794
W	355m SE	Tanks	1966	191440
AC	358m E	Cooling Tank	1986	185784
W	362m SE	Tanks	1966	187924
AC	366m E	Tanks	1986	186220
AC	366m E	Tanks	1967	186220
AC	366m E	Tanks	1969	186220
AC	367m E	Tanks	1995	197044
AC	367m E	Tanks	1992	197044
W	371m SE	Unspecified Tank	1986	193674
W	371m SE	Unspecified Tank	1966	195937
W	371m SE	Unspecified Tank	1995	197372
W	371m SE	Unspecified Tank	1992	201570
Y	379m SW	Unspecified Tank	1967	194954
Y	379m SW	Unspecified Tank	1968	200450
Y	379m SW	Tanks	1967	186431
Y	379m SW	Tanks	1968	186431
Y	379m SW	Tanks	1995	186431
Y	379m SW	Tanks	1992	186431

ID	Location	Land Use	Date	Group ID
Y	379m SW	Unspecified Tank	1995	192951
Y	379m SW	Unspecified Tank	1992	192951
Y	380m SW	Unspecified Tank	1986	192951
Y	380m SW	Unspecified Tank	1991	192951
Y	380m SW	Tanks	1986	186431
Y	380m SW	Tanks	1991	186431
AC	385m SE	Tanks	1995	187303
AC	385m SE	Tanks	1992	187303
AC	385m SE	Tanks	1986	187303
AB	386m SE	Tanks	1986	185883
AC	386m SE	Unspecified Tank	1967	194216
AC	386m SE	Tanks	1973	187303
AC	386m SE	Unspecified Tank	1968	194216
AB	387m SE	Tanks	1995	185883
AB	387m SE	Tanks	1992	185883
AC	388m SE	Tanks	1986	197454
AC	388m SE	Tanks	1995	197454
AC	388m SE	Tanks	1992	197454
AC	389m SE	Unspecified Tank	1967	194196
AC	389m SE	Tanks	1973	197454
Y	390m SW	Unspecified Tank	1968	188919
AC	390m SE	Unspecified Tank	1968	194196
Y	390m SW	Unspecified Tank	1967	190589
Y	390m SW	Unspecified Tank	1995	193868
Y	390m SW	Unspecified Tank	1992	193868
Y	391m SW	Unspecified Tank	1986	193868
Y	391m SW	Unspecified Tank	1991	193868
Y	392m SW	Tanks	1995	199583

ID	Location	Land Use	Date	Group ID
Y	392m SW	Tanks	1992	199583
Y	393m SW	Tanks	1986	199583
Y	396m SW	Tanks	1995	190431
Y	396m SW	Tanks	1992	190431
Y	399m SW	Tanks	1986	199344
Y	399m SW	Tanks	1995	192542
Y	399m SW	Tanks	1992	192542
Y	400m SW	Unspecified Tank	1995	188432
Y	400m SW	Unspecified Tank	1992	188432
AB	400m SE	Tanks	1966	176946
Y	400m SW	Unspecified Tank	1986	188432
Y	400m SW	Unspecified Tank	1991	188432
AB	403m SE	Tanks	1966	197709
AB	403m SE	Tanks	1968	197709
Y	403m SW	Tanks	1986	187516
Y	404m SW	Tanks	1995	188063
Y	404m SW	Tanks	1992	188063
Y	408m SW	Tanks	1992	178014
14	409m SE	Unspecified Tank	1995	181293
AB	410m SE	Tanks	1966	176945
Y	411m SW	Unspecified Tank	1995	200552
Y	411m SW	Unspecified Tank	1992	200552
Y	412m SW	Unspecified Tank	1986	200552
Y	412m SW	Unspecified Tank	1991	200552
AB	412m SE	Unspecified Tank	1968	181168
Y	413m SW	Tanks	1968	186274
Y	413m SW	Tanks	1967	193079
Y	413m SW	Tanks	1986	197348

ID	Location	Land Use	Date	Group ID
Y	413m SW	Tanks	1991	197348
Y	413m SW	Tanks	1995	188046
Y	413m SW	Tanks	1992	188046
AD	414m SE	Unspecified Tank	1986	186022
AD	415m SE	Unspecified Tank	1995	199885
AD	415m SE	Unspecified Tank	1992	199885
Y	417m SW	Tanks	1967	191439
Y	418m SW	Tanks	1995	190194
Y	418m SW	Tanks	1992	190194
AD	423m SE	Unspecified Tank	1986	193733
AD	424m SE	Unspecified Tank	1995	193733
AD	424m SE	Unspecified Tank	1992	193733
Y	426m SW	Tanks	1995	178015
Y	427m SW	Unspecified Tank	1967	202133
Y	427m SW	Unspecified Tank	1968	201936
Y	427m SW	Unspecified Tank	1986	201936
Y	427m SW	Unspecified Tank	1991	201936
Y	428m SW	Unspecified Tank	1995	201936
Y	428m SW	Unspecified Tank	1992	201936
Y	428m SW	Tanks	1995	188250
Y	428m SW	Tanks	1992	188250
Y	429m SW	Unspecified Tank	1986	188195
Y	429m SW	Unspecified Tank	1991	188195
Y	431m SW	Tanks	1968	197662
Y	432m SW	Tanks	1967	194184
Y	432m SW	Tanks	1995	190871
Y	432m SW	Tanks	1992	190871
Y	432m SW	Tanks	1986	190871

ID	Location	Land Use	Date	Group ID
Y	432m SW	Tanks	1991	190871
Y	434m SW	Tanks	1995	194990
Y	434m SW	Tanks	1992	194990
AB	437m SE	Tanks	1986	191993
AB	438m SE	Tanks	1966	197264
AB	438m SE	Tanks	1968	201285
AB	438m SE	Tanks	1992	191993
AB	439m SE	Tanks	1995	192518
Y	439m SW	Unspecified Tank	1995	201879
Y	439m SW	Unspecified Tank	1992	201879
Y	440m SW	Tanks	1986	195404
Y	440m SW	Tanks	1991	195404
Y	440m SW	Tanks	1986	192151
Y	440m SW	Tanks	1991	192151
Y	441m SW	Tanks	1967	198482
Y	441m SW	Tanks	1995	192151
Y	441m SW	Tanks	1992	192151
Y	441m SW	Tanks	1968	198482
AB	445m SE	Tanks	1966	186146
AB	445m SE	Tanks	1995	187949
AB	446m SE	Tanks	1995	196134
Y	447m SW	Tanks	1968	200436
Y	449m SW	Tanks	1967	200436
Y	451m SW	Unspecified Tank	1968	195217
Y	451m SW	Unspecified Tank	1967	195217
Y	459m SW	Tanks	1986	192680
Y	459m SW	Tanks	1991	192680
Y	459m SW	Tanks	1995	193004

ID	Location	Land Use	Date	Group ID
Y	459m SW	Tanks	1992	193004
15	460m SE	Unspecified Tank	1995	184745
Y	461m SW	Unspecified Tank	1967	201591
Y	462m SW	Unspecified Tank	1968	191131
Y	470m SW	Tanks	1995	195049
Y	470m SW	Tanks	1992	195049
Y	470m SW	Unspecified Tank	1995	184747
Y	475m SW	Tanks	1986	193639
Y	475m SW	Tanks	1991	193639
Y	476m SW	Unspecified Tank	1995	197474
Y	476m SW	Unspecified Tank	1992	197474
Y	491m SW	Unspecified Tank	1995	193415
Y	491m SW	Unspecified Tank	1992	193415

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**28**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 30 >**

ID	Location	Land Use	Date	Group ID
E	**On site**	**Electricity Substation**	**1995**	**105415**
I	48m NE	Gas Bleeder	1969	119384
I	48m NE	Gas Bleeder	1967	119384
C	111m W	Gas Holder	1968	110627
C	112m W	Gas Holder	1967	118464
C	112m W	Gas Holder	1995	113511
C	112m W	Gas Holder	1992	113511

ID	Location	Land Use	Date	Group ID
C	113m W	Gas Holder	1986	113511
P	141m SE	Gasholder	1986	108841
P	143m SE	Gasholder	1969	114699
P	143m SE	Gas Holder	1995	115245
P	143m SE	Gasholder	1967	122415
P	144m SE	Gas Holder	1986	116030
P	145m SE	Gas Holder	1995	117075
P	145m SE	Gas Holder	1992	117075
P	145m SE	Gas Holder	1966	112711
P	146m SE	Gas Holder	1968	115094
R	161m SE	Gas Holder	1995	108111
U	254m W	Gas Bleeder	1995	119340
U	254m W	Gas Bleeder	1992	119340
U	254m W	Gas Bleeder	1967	122411
U	254m W	Gas Bleeder	1968	110770
U	254m W	Gas Bleeder	1986	119340
AB	351m SE	Power Plant	1966	112302
11	371m S	Electricity Substation	1995	105414
AB	390m SE	Power Plant	1968	121080
AB	447m SE	Power Plant	1967	112302
AB	447m SE	Power Plant	1973	122629

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	**0**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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3.1 Active or recent landfill

Records within 500m	0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m	0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	4

Waste site records derived from Local Authority planning records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 54 >**

ID	Location	Address	Further Details	Date
B	332m E	Site Address: N/A	Type of Site: Scrap Metal Dump Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1967
B	370m E	Site Address: N/A	Type of Site: Scrap Metal Dump Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1969
C	386m E	Site Address: N/A	Type of Site: Scrap Metal Dump Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1967

ID	Location	Address	Further Details	Date
C	386m E	Site Address: N/A	Type of Site: Scrap Metal Dump Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1969

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	**5**

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on **page 54 >**

ID	Location	Details		
1	**On site**	**Site Name: Corus Strip Products, South Side Of Queensway Llanwern Works** **Site Address: South Side Of Queensway Llanwern Landfill, Corus, Llanwern Works, Newport, Gwent, NPT OXN** **Correspondence Address: Environmental Department, Corus Strip Products, A14, Llanwern Works, Llanwern, Newport, Gwent, NP19 4QZ**	**Type of Site: Industrial Waste Landfill (Factory curtilage)** **Size: >= 75000 tonnes** **Environmental Permitting Regulations (Waste) Licence Number: BRI007** **EPR reference: -** **Operator: Corus Strip Products** **Waste Management licence No: 30009** **Annual Tonnage: 0**	**Issue Date: 31/05/1979** **Effective Date: -** **Modified: -** **Surrendered Date: -** **Expiry Date: -** **Cancelled Date: -** **Status: Issued**
A	135m W	Site Name: - Site Address: Phase 4a and 5, Glan Llyn Former Coking Works, Llanwern, Newport, NP19 4QZ Correspondence Address: -	Type of Site: - Size: - Environmental Permitting Regulations (Waste) Licence Number: PAN-015198 EPR reference: - Operator: Vertase FLI Waste Management licence No: - Annual Tonnage: 16500	Issue Date: 08/11/2021 Effective Date: 08/11/2021 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
D	411m S	Site Name: - Site Address: Glan Llyn Development Site, Queensway, Llanwern, Newport, NP19 4TZ Correspondence Address: -	Type of Site: - Size: - Environmental Permitting Regulations (Waste) Licence Number: PAN-011383 EPR reference: - Operator: Celtic Technologies Ltd Waste Management licence No: - Annual Tonnage: 395000	Issue Date: 15/10/2020 Effective Date: 15/10/2020 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective

ID	Location	Details		
D	429m S	Site Name: - Site Address: Englobe Wastewater Treatment Plant Glan Llyn St Modwen Development Site, Queenâ€™s Way, Llanwern, Newport, Newport, NP19 4TZ Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: CB3491HU EPR reference: - Operator: Englobe Regeneration UK Limited Waste Management licence No: - Annual Tonnage: 341640	Issue Date: 02/03/2022 Effective Date: 02/03/2022 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
D	429m S	Site Name: - Site Address: Biogenie Wastewater Treatment Plant, Glan Llyn, St Modwen Development Site, Queenâ€™s Way, Llanwern, Newport, Newport, NP19 4TZ Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: - Environmental Permitting Regulations (Waste) Licence Number: CB3491HU EPR reference: - Operator: Biogenie Remediation UK Limited Waste Management licence No: - Annual Tonnage: 341640	Issue Date: 14/10/2024 Effective Date: 14/10/2024 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m **5**

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

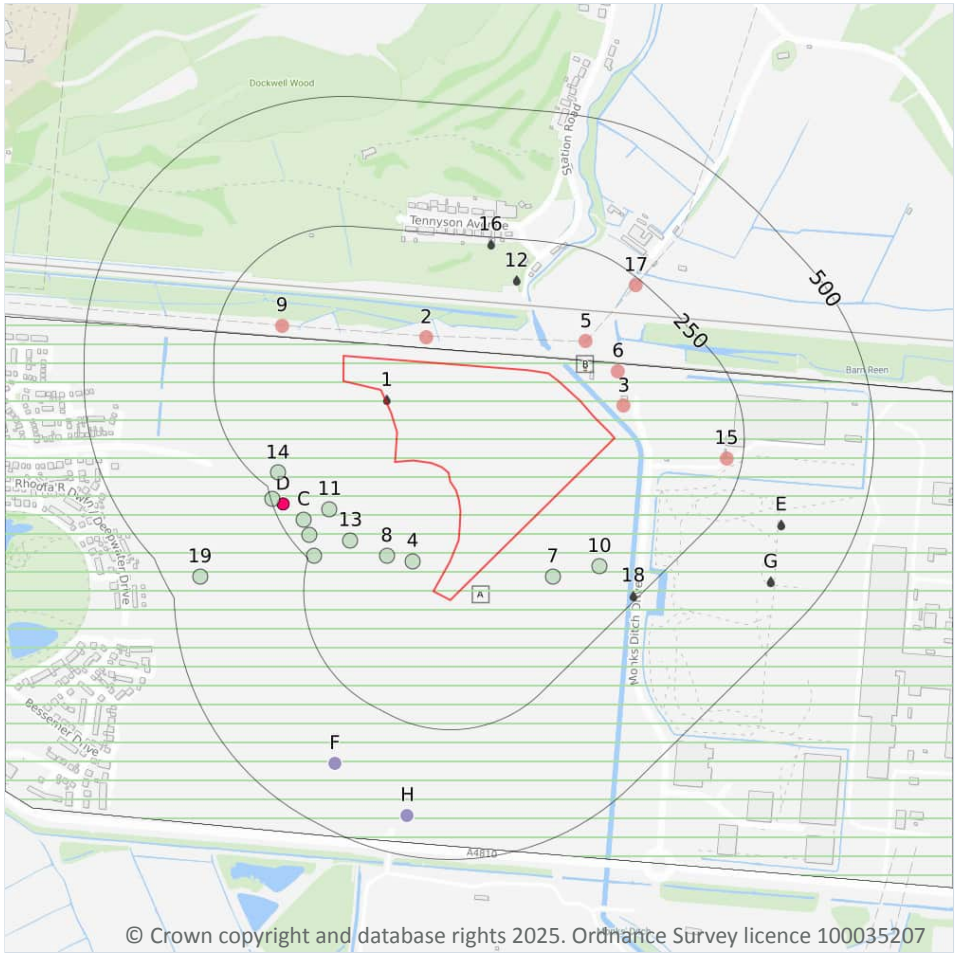
Features are displayed on the Waste and landfill map on **page 54 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
2	**On site**	**Bam Nuttall Ltd, Llanwern Rail Facilities, 1 Monks Ditch Drive, Celtic Business Park, Newport, Newport, Np19 4rh**	**NRW-WME047197**	**Using waste exemption**	**Not on a farm**	**Use of waste in construction**
3	54m N	Bam Nuttall Ltd, Llanwern Rail Facilities - Linear Waste Exemption, 1 Monks Ditch Drive, Newport, Np19 4rh	NRW-WME047196	Using waste exemption	Not on a farm	Use of waste in construction

ID	Location	Site	Reference	Category	Sub-Category	Description
A	165m W	Vertase Fli Limited, Former Llanwern Coking Works, Off Queen's Way, Glan Llyn, Newport, Np19 4rh	NRW-WME064731	Disposing of waste exemption	Not on a farm	Burning waste in the open
4	174m SE	Bam Nuttal, Haul Road - Linear Exemption, Llanwern Rail Facilities, 1 Monks Ditch Drive, Newport, Newport, Np19 4rh	NRW-WME047848	Using waste exemption	Not on a farm	Use of waste in construction
5	462m W	St. Modwen Homes, Llanwern Phase 3d, Glan Llyn, Newport, Np194ea	NRW-WME075169	Using waste exemption	Not on a farm	Use of waste in construction

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

NGD current or recent tanks

Control of Major Accident Hazards

Historical licensed industrial activities

Radioactive Substance Authorisations

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	7

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 59 >**

ID	Location	Company	Address	Activity	Category
2	48m N	Pylon	Gwent, NP19	Electrical Features	Infrastructure and Facilities
3	56m NE	Mast	Gwent, NP19	Telecommunications Features	Infrastructure and Facilities
5	93m NE	Pylon	Gwent, NP19	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
6	93m NE	Pylon	Gwent, NP19	Electrical Features	Infrastructure and Facilities
9	133m NW	Pylon	Gwent, NP19	Electrical Features	Infrastructure and Facilities
15	219m E	Electricity Sub Station	Gwent, NP19	Electrical Features	Infrastructure and Facilities
17	238m NE	Pylon	Gwent, NP19	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 National Geographic Database (NGD) - Current or recent tanks

Records within 250m	**2**

Current or recent tanks identified from the Ordnance Survey NGD.

Features are displayed on the Current industrial land use map on **page 59 >**

ID	Location	Tank description	Activity	Date first identified
B	48m NE	Roofed Storage Tank	Commercial Activity: Distribution Or Storage	10/07/2002
B	51m NE	Roofed Storage Tank	Commercial Activity: Distribution Or Storage	10/07/2002

This data is sourced from Ordnance Survey.

4.3 Current or recent petrol stations

Records within 500m	**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.4 Electricity cables

Records within 500m	**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.5 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.6 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.7 Control of Major Accident Hazards (COMAH)

Records within 500m	3

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

Features are displayed on the Current industrial land use map on **page 59 >**

ID	Location	Company	Address	Operational status	Tier
A	**On site**	**Bsc**	**Bsc, Llanwern Works, Newport**	**Historical NIHHS Site**	**-**
A	**On site**	**Air Products (BR) Limited**	**Air Products (BR) Limited, Llanwern, Spencer Works, Queensway, Newport, Gwent, Monmouthshire, NP19 4QX**	**Current COMAH Site**	**COMAH Lower Tier Operator**
A	**On site**	**Air Products (BR) Limited**	**Air Products (BR) Limited, Llanwern, Spencer Works, Queensway, Newport, Gwent, Monmouthshire, NP19 4QX**	**Current COMAH Site**	**COMAH Lower Tier Operator**

This data is sourced from the Health and Safety Executive.

4.8 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.9 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.10 Historical licensed industrial activities (IPC)

Records within 500m	11

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

Features are displayed on the Current industrial land use map on **page 59 >**

ID	Location	Details	
F	382m SW	Operator: Koppers UK Ltd Address: Llanwern Works, Queensway, Newport, Gwent, NP19 4QZ Process: Carbonisation And Associated Processes Permit Number: AF8491	Original Permit Number: IPCAIRAPP Date Approved: 29-6-1993 Effective Date: 29-6-1993 Status: Superseded By Variation
F	382m SW	Operator: Koppers UK Ltd Address: Llanwern Works, Queensway, Newport, Gwent, NP19 4QZ Process: Carbonisation And Associated Processes Permit Number: AK0677	Original Permit Number: IPCMAJVAR Date Approved: 26-11-1993 Effective Date: 26-11-1993 Status: Superseded By Variation
F	382m SW	Operator: Multiserv Group Ltd Address: Llanwern Works, Queensway, Newport, Gwent, NP19 4QZ Process: Iron And Steel Permit Number: AQ9898	Original Permit Number: IPCAIRAPP Date Approved: 30-7-1995 Effective Date: 30-7-1995 Status: Revoked
F	382m SW	Operator: Multiserv Group Ltd Address: Llanwern Works, Queensway, Newport, Gwent, NP19 4QZ Process: Iron And Steel Permit Number: AQ9928	Original Permit Number: IPCAIRAPP Date Approved: 30-7-1995 Effective Date: 30-7-1995 Status: Revoked
F	382m SW	Operator: Koppers UK Ltd Address: Llanwern Works, Queensway, Newport, Gwent, NP19 4QZ Process: Carbonisation And Associated Processes Permit Number: BC6284	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation

ID	Location	Details	
F	382m SW	Operator: Koppers UK Ltd Address: Llanwern Works, Queensway, Newport, Gwent, NP19 4QZ Process: Carbonisation And Associated Processes Permit Number: BF2358	Original Permit Number: IPCMAJVAR Date Approved: 28-6-1999 Effective Date: 1-7-1999 Status: Revoked
H	423m S	Operator: Multiserv (asr) Ltd Address: British Steel Plc, Llanwern Works, Newport, NP9 0XN Process: Iron And Steel Permit Number: AY8255	Original Permit Number: IPCAPP Date Approved: 22-10-1997 Effective Date: 1-11-1997 Status: Superseded By Variation
H	423m S	Operator: Multiserv (asr) Ltd Address: Integrated Works - Llanwern, Newport, Gwent, NP19 4QZ Process: Iron And Steel Permit Number: AY8271	Original Permit Number: IPCAPP Date Approved: 22-10-1997 Effective Date: 1-11-1997 Status: Superseded By Variation
H	423m S	Operator: Multiserv (asr) Ltd Address: British Steel Plc, Llanwern Works, Newport, NP9 0XN Process: Iron And Steel Permit Number: BD9700	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked
H	423m S	Operator: Multiserv (asr) Ltd Address: Integrated Works - Llanwern, Newport, Gwent, NP19 4QZ Process: Iron And Steel Permit Number: BD9726	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
H	423m S	Operator: Multiserv (asr) Ltd Address: Integrated Works - Llanwern, Newport, Gwent, NP19 4QZ Process: Iron And Steel Permit Number: BF2714	Original Permit Number: IPCMINVAR Date Approved: 12-4-1999 Effective Date: 19-4-1999 Status: Revoked

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed industrial activities (Part A(1))

Records within 500m	**0**

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.12 Licensed pollutant release (Part A(2)/B)

Records within 500m	0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.13 Radioactive Substance Authorisations

Records within 500m	4

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

Features are displayed on the Current industrial land use map on **page 59 >**

ID	Location	Address	Details	
D	231m W	Corus Uk Ltd, Corus Strip Products, Llanwern Works, Newport, Gwent, NP9 0XN	Operator: Corus Uk Ltd Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: BA6283 Date of approval: 30/06/1998	Effective from: 01/08/1998 Last date of update: 01/01/2015 Status: Superseded By Variation
D	231m W	Corus Uk Ltd, Corus Strip Products, Llanwern Works, Newport, Gwent, NP9 0XN	Operator: Corus Uk Ltd Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: BA6283 Date of approval: 14/10/1999	Effective from: 14/10/1999 Last date of update: 01/01/2015 Status: Superseded By Variation
D	231m W	Corus Uk Ltd, Corus Strip Products, Llanwern Works, Newport, Gwent, NP9 0XN	Operator: Corus Uk Ltd Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: BA6283 Date of approval: 07/09/2000	Effective from: 05/10/2000 Last date of update: 01/01/2015 Status: Superseded By Variation
D	231m W	Corus Uk Ltd, Corus Strip Products, Llanwern Works, Newport, Gwent, NP9 0XN	Operator: Corus Uk Ltd Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: BA6283 Date of approval: 01/12/2003	Effective from: 01/01/2004 Last date of update: 01/01/2015 Status: Revoked/cancelled

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Licensed Discharges to controlled waters

Records within 500m **13**

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 59 >**

ID	Location	Address	Details	
1	**On site**	**LLANWERNSTEELWORKSBLAST FURNACE, LLANWERNSTEELWORKS, BLASTFURNACESLAGOON**	**Effluent Type: UNSPECIFIED Permit Number: AC0099001 Permit Version: 1 Receiving Water: STREAM NUMBER 4**	**Status: CONSENT EXPIRED - TIME LIMIT Issue date: 20/08/1975 Effective Date: 20/08/1975 Revocation Date: 07/03/1986**
12	170m N	TENNYSONAVENUE, LLANWERN, NEWPORT	Effluent Type: UNSPECIFIED Permit Number: AN0218901 Permit Version: 2 Receiving Water: MONKSDITCH	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 10/09/1990 Effective Date: 10/09/1990 Revocation Date: 20/11/1992
16	236m N	TENNYSONAVENUE, LLANWERN, NEWPORT	Effluent Type: UNSPECIFIED Permit Number: AN0218901 Permit Version: 1 Receiving Water: MONKSDITCH	Status: REVOKED - UNSPECIFIED Issue date: 01/01/1901 Effective Date: 01/01/1901 Revocation Date: 09/09/1990
18	242m SE	Indurent Park, Queen's Way, Newport, NP19 4RG	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE (CONTAM SURFACE WATER, NOT WASTE SIT Permit Number: DB3494FH Permit Version: 0 Receiving Water: Monks DItch	Status: Effective Issue date: 12/03/2025 Effective Date: 12/03/2025 Revocation Date: -
E	362m SE	LLANWERNSTEELWORKSHOOD &LAN	Effluent Type: UNSPECIFIED Permit Number: AB0034308 Permit Version: 1 Receiving Water: STREAM NUMBER 5	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 15/02/1963 Effective Date: 15/02/1963 Revocation Date: 06/03/1986
E	362m SE	LLANWERNSTEELWORKSHOOD &LAN	Effluent Type: UNSPECIFIED Permit Number: AB0034310 Permit Version: 1 Receiving Water: STREAM NUMBER 5	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 15/02/1963 Effective Date: 15/02/1963 Revocation Date: 06/03/1986
E	362m SE	LLANWERNSTEELWORKSHOOD &LAN	Effluent Type: UNSPECIFIED Permit Number: AB0034301 Permit Version: 1 Receiving Water: STREAM NUMBER 5	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 15/02/1963 Effective Date: 15/02/1963 Revocation Date: 06/03/1986

ID	Location	Address	Details	
G	409m SE	LLANWERNSTEELWORKSFILTER UNI	Effluent Type: UNSPECIFIED Permit Number: AB0034303 Permit Version: 1 Receiving Water: STREAM NUMBER 5	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 15/02/1963 Effective Date: 15/02/1963 Revocation Date: 06/03/1986
G	409m SE	LLANWERNSTEELWORKSFILTER UNI	Effluent Type: UNSPECIFIED Permit Number: AB0034304 Permit Version: 1 Receiving Water: STREAM NUMBER 5	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 15/02/1963 Effective Date: 15/02/1963 Revocation Date: 06/03/1986
G	409m SE	LLANWERNSTEELWORKSFILTER UNI	Effluent Type: UNSPECIFIED Permit Number: AB0034307 Permit Version: 1 Receiving Water: STREAM NUMBWER 5	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 15/02/1963 Effective Date: 15/02/1963 Revocation Date: 06/03/1986
G	409m SE	LLANWERNSTEELWORKSFILTER UNI	Effluent Type: UNSPECIFIED Permit Number: AB0034302 Permit Version: 1 Receiving Water: STREAM NUMBER 5	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 15/02/1963 Effective Date: 15/02/1963 Revocation Date: 06/03/1986
G	409m SE	LLANWERNSTEELWORKSFILTER UNI	Effluent Type: UNSPECIFIED Permit Number: AB0034305 Permit Version: 1 Receiving Water: STREAM NUMBER 5	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 15/02/1963 Effective Date: 15/02/1963 Revocation Date: 06/03/1986
G	409m SE	LLANWERNSTEELWORKSFILTER UNI	Effluent Type: UNSPECIFIED Permit Number: AB0034306 Permit Version: 1 Receiving Water: STREAM NUMBER 5	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 15/02/1963 Effective Date: 15/02/1963 Revocation Date: 06/03/1986

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to surface waters (Red List)

Records within 500m	0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 List 2 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution Incidents (EA/NRW)

Records within 500m	12

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 59 >**

ID	Location	Details	
4	64m NW	Incident Date: 09/04/2001 Incident Identification: 1943 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
7	106m SE	Incident Date: 21/11/2001 Incident Identification: 44208 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

ID	Location	Details	
8	112m NW	Incident Date: 01/03/2002 Incident Identification: 63212 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
10	155m SE	Incident Date: 16/01/2002 Incident Identification: 52944 Pollutant: Organic Chemicals/Products Pollutant Description: Other Organic Chemical or Product	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
11	155m SW	Incident Date: 23/04/2001 Incident Identification: 3106 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
13	174m SW	Incident Date: 09/04/2001 Incident Identification: 1944 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
C	208m SW	Incident Date: 01/03/2002 Incident Identification: 61360 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
14	217m SW	Incident Date: 30/04/2001 Incident Identification: 3834 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
C	218m SW	Incident Date: 30/04/2001 Incident Identification: 3832 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
C	239m SW	Incident Date: 24/12/2001 Incident Identification: 49503 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
D	247m W	Incident Date: 19/04/2001 Incident Identification: 3102 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
19	436m SW	Incident Date: 20/11/2001 Incident Identification: 44047 Pollutant: Inorganic Chemicals/Products Pollutant Description: Ammonia Solutions	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.20 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

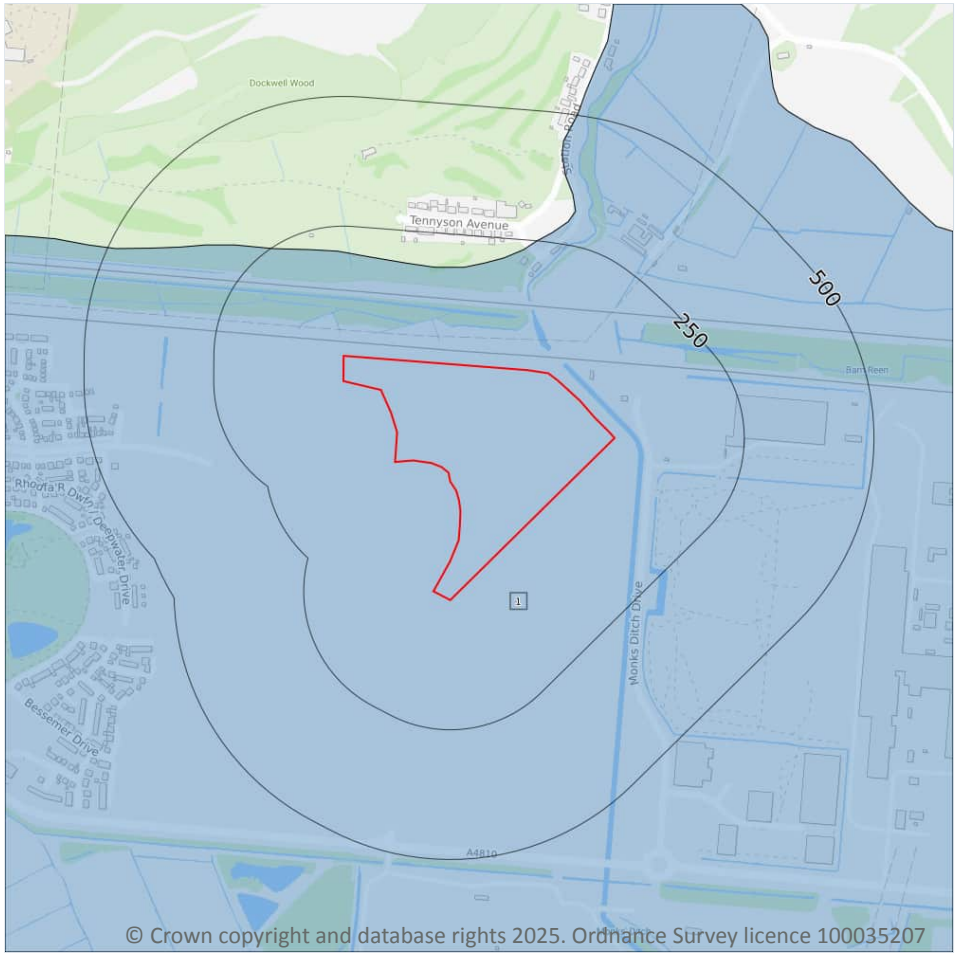
4.22 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	1

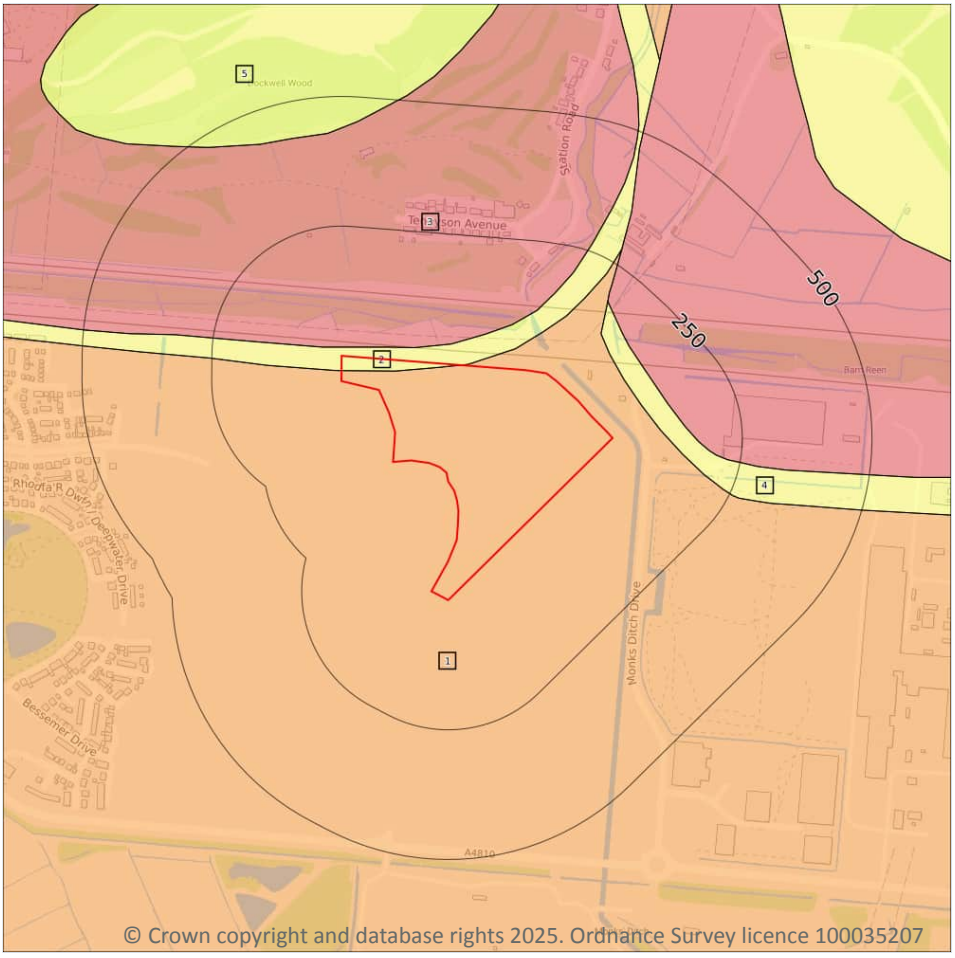
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 70 >**

ID	Location	Designation	Description
1	**On site**	**Unproductive**	**These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow**

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	5

Aquifer status of groundwater held within bedrock geology.

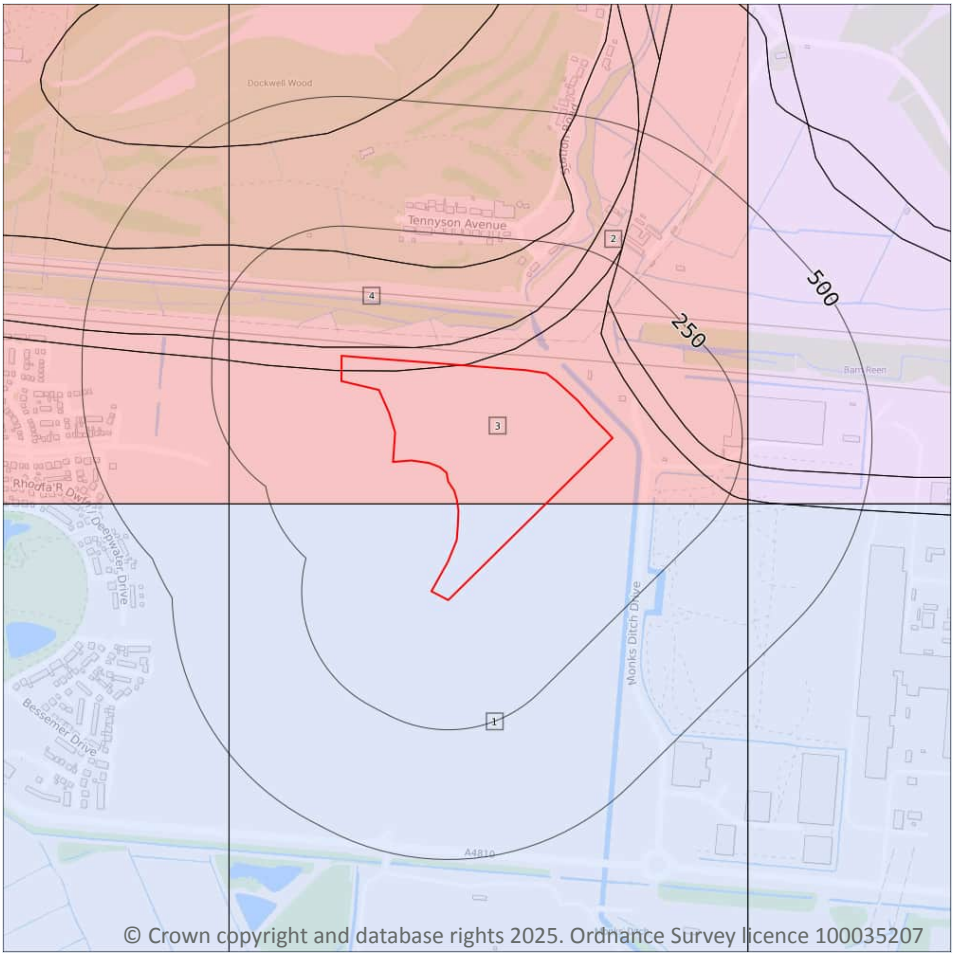
Features are displayed on the Bedrock aquifer map on **page 71 >**

ID	Location	Designation	Description
1	On site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers
2	On site	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	17m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	83m NE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
5	428m N	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability
- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability
- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	4

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 73 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures**
2	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
3	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
4	17m N	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**0**

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones

5.6 Groundwater abstractions

Records within 2000m	0

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	0

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m	0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m	0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology



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Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	43

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 78 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	28m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Monks' Ditch

ID	Location	Type of water feature	Ground level	Permanence	Name
4	33m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Monks' Ditch
B	43m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	43m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	46m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	46m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Monks' Ditch
B	72m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	72m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	73m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	76m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	77m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	83m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	86m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	86m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
B	87m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	89m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	90m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	94m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	97m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	100m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	103m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	115m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	119m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
7	122m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
9	137m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	138m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Barn Reen
F	138m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Barn Reen

ID	Location	Type of water feature	Ground level	Permanence	Name
10	149m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	161m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Barn Reen
F	166m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	166m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Barn Reen
H	174m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	177m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	183m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Barn Reen
D	188m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	188m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
I	196m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
I	199m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	202m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	207m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
J	207m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Barn Reen
11	209m E	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
J	218m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**12**

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 78 >**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	**1**

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 78 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River WB catchment**	**Monks Ditch - source to Wainbridge**	**GB109056026850**	**East Reens**	**Usk**

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

Features are displayed on the Hydrology map on **page 78 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
3	28m NE	River	Monks Ditch - source to Wainbridge	GB109056026850	Moderate	Good	Moderate	2016

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	1

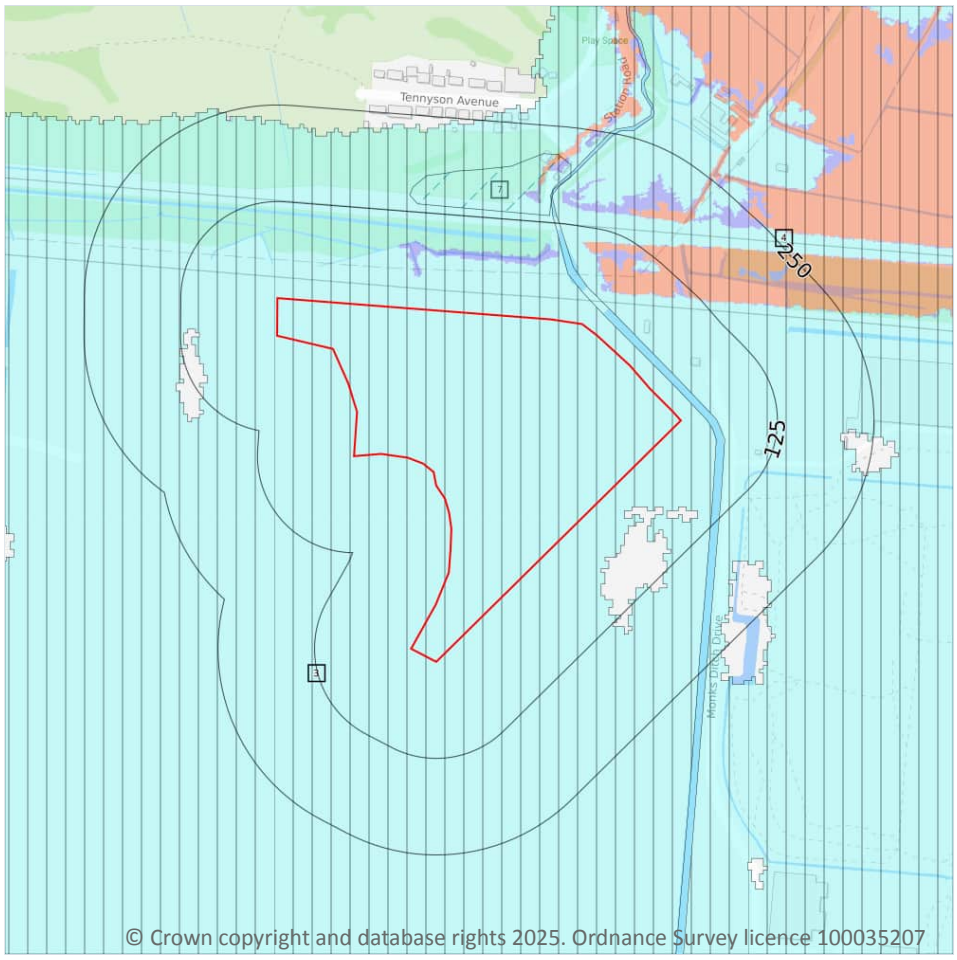
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 78 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	**On site**	**Usk Devonian Old Red Sandstone**	**GB40902G201700**	**Good**	**Good**	**Good**	**2017**

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding



Site Outline

Search buffers in metres (m)

River and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	8

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 84 >**

Distance	Flood risk category
On site	**Low**
0 - 50m	Medium

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m	**1**

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on **page 84 >**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
7	134m N	Llanwern December 1999 02	1999-12-01 1999-12-01	Drainage	Local drainage/surface water	Fluvial

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	**0**

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	**2**

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 84 >**

ID	Location	
3	**On site**	**Area benefiting from flood defences**
4	32m NE	Area benefiting from flood defences

This data is sourced from the Environment Agency and Natural Resources Wales.

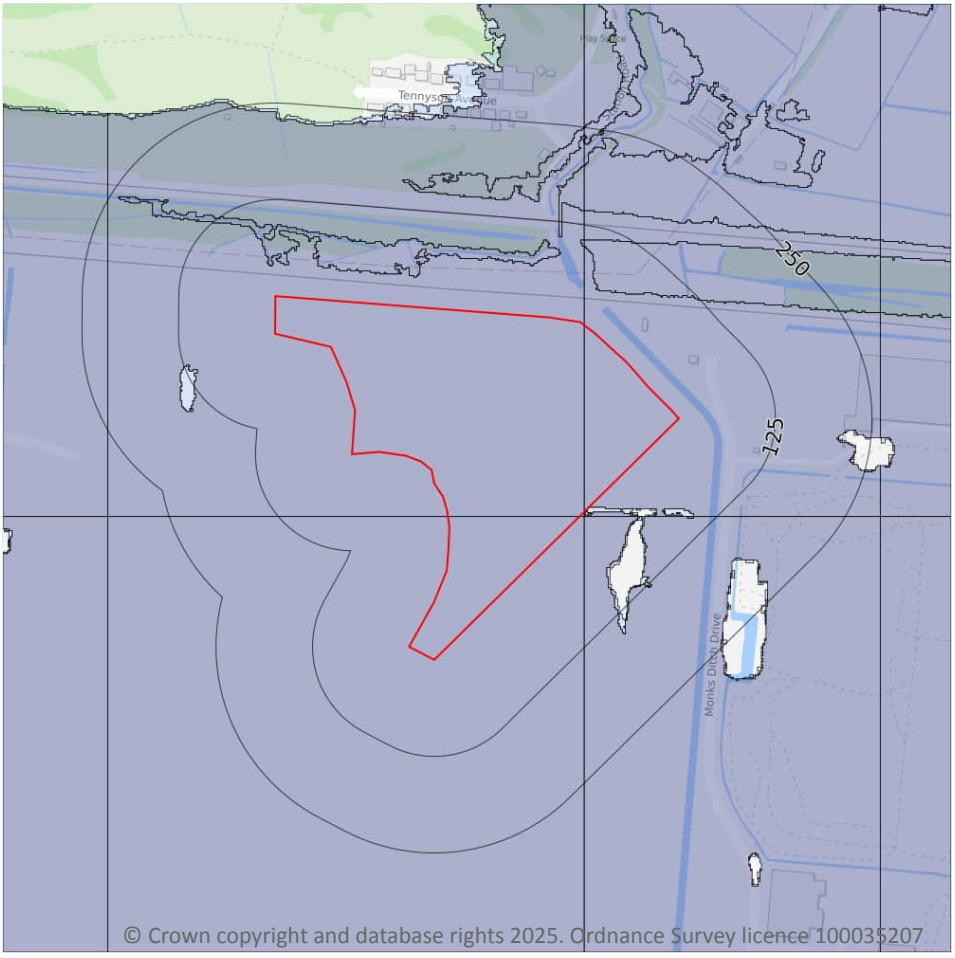
7.5 Flood Storage Areas

Records within 250m	**0**

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

River and coastal flooding - Flood Zones



Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on **page 84 >**

Location	Type
On site	**Zone 2 - (Fluvial /Tidal Models)**

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m	1

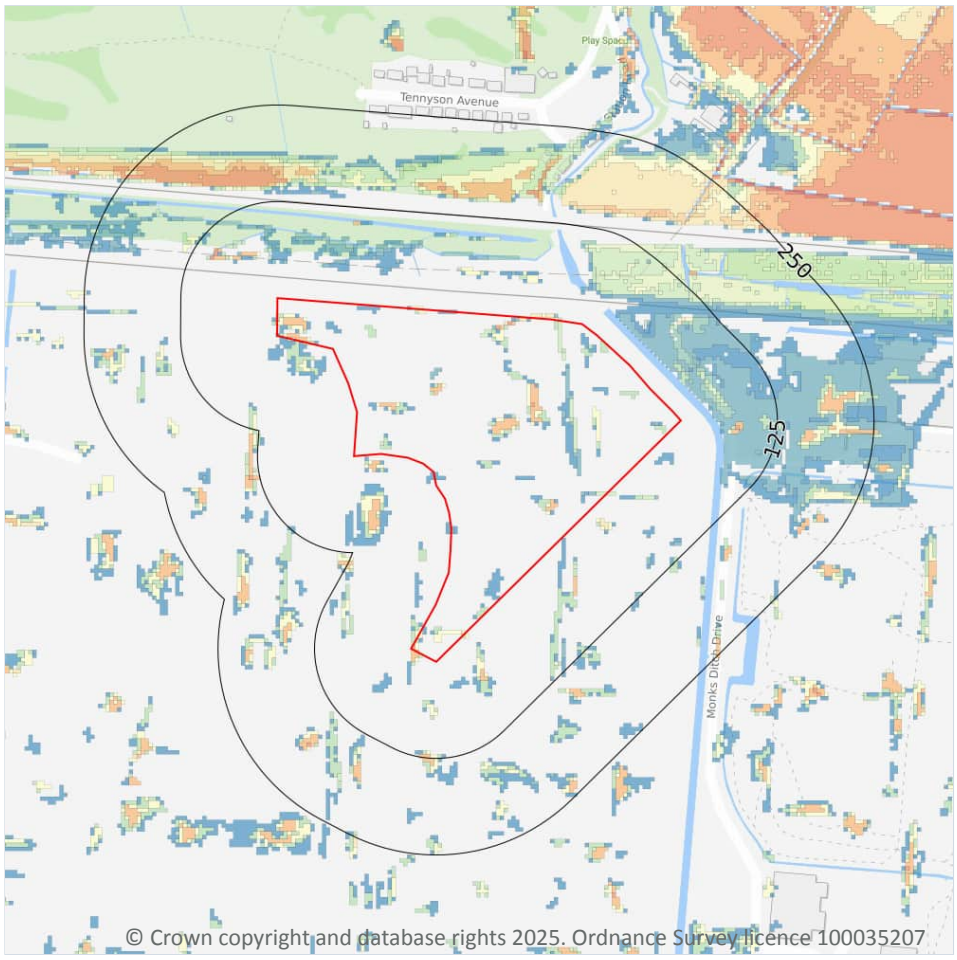
Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 84 >**

Location	Type
On site	**Zone 3 - (Fluvial /Tidal Models)**

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding



Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 89 >**

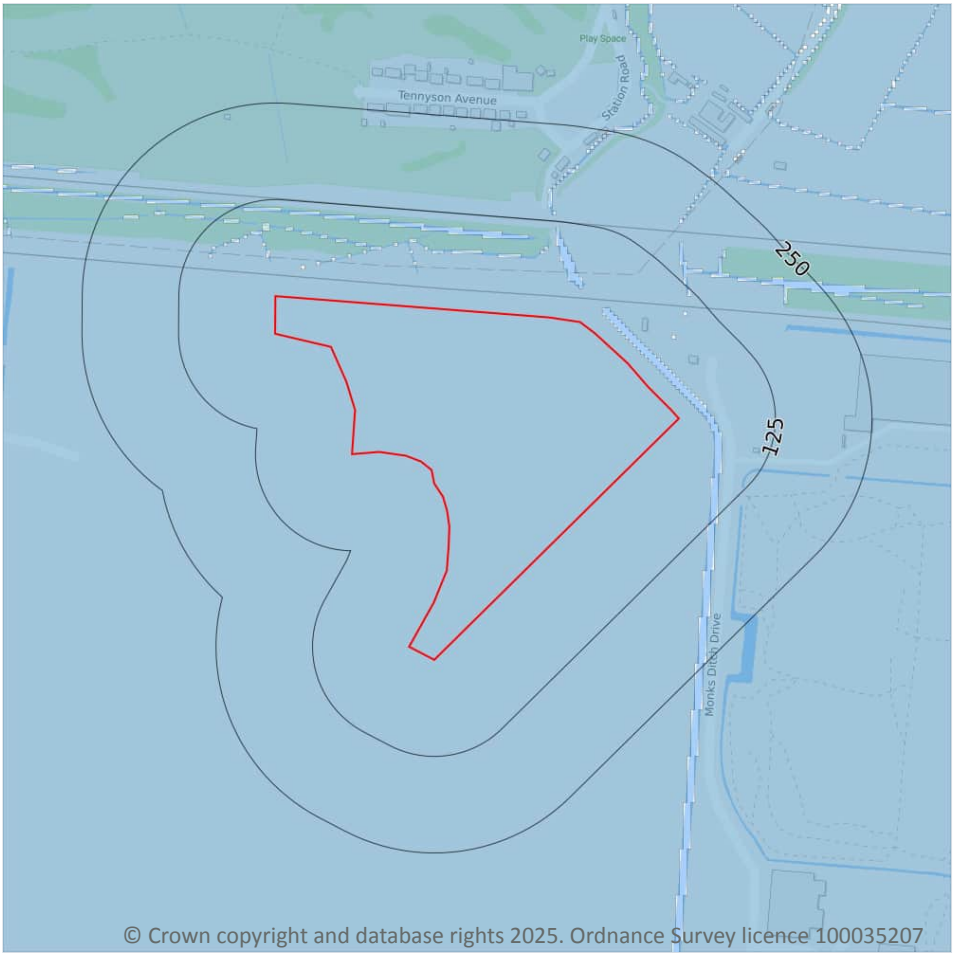
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

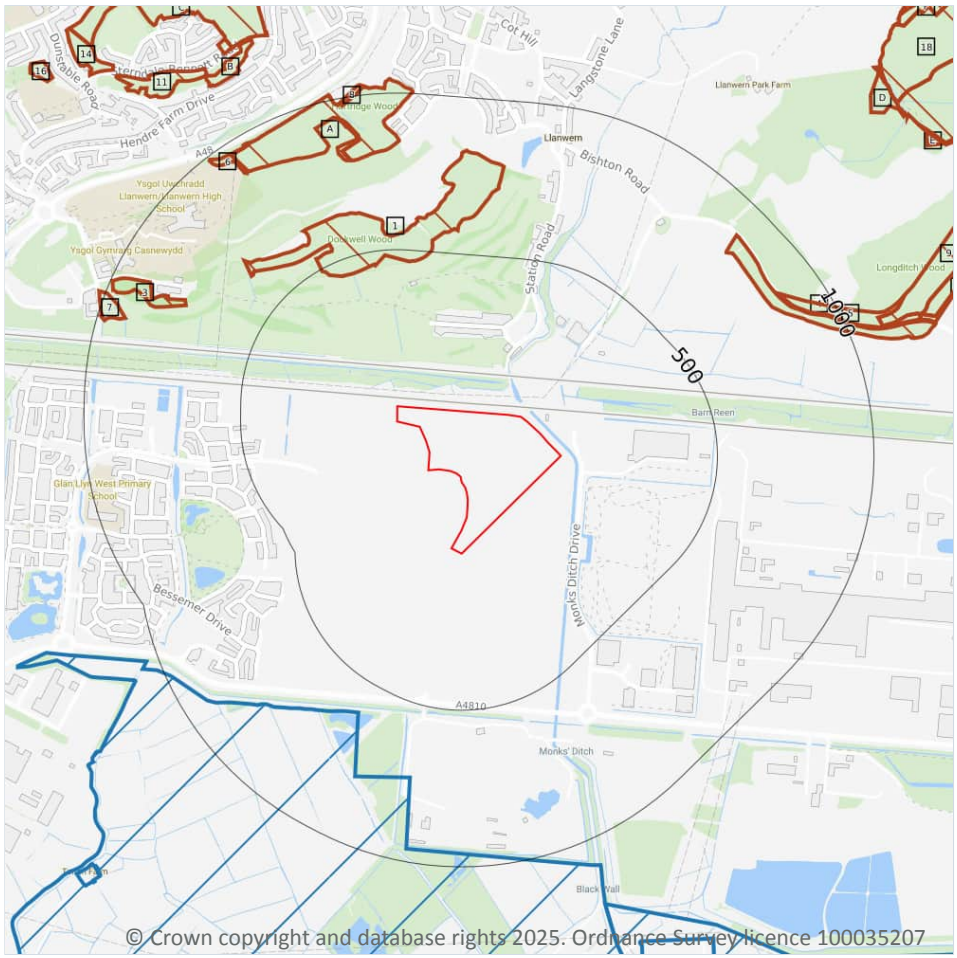
Highest risk on site	**Negligible**
Highest risk within 50m	**Negligible**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 91 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	2

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 92 >**

ID	Location	Name	Data source
2	603m SW	Gwent Levels - Nash and Goldcliff	Natural Resources Wales

ID	Location	Name	Data source
10	1209m S	Gwent Levels - Whitson	Natural Resources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m	40

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 92 >**

ID	Location	Name	Woodland Type
1	447m N	Unknown	Ancient Semi Natural Woodland
3	748m NW	Unknown	Ancient Semi Natural Woodland
A	797m N	Unknown	Ancient Semi Natural Woodland
A	799m N	Unknown	Ancient Semi Natural Woodland
4	823m NE	Unknown	Ancient Semi Natural Woodland
5	867m NE	Unknown	Ancient Semi Natural Woodland
6	888m NW	Unknown	Ancient Semi Natural Woodland
7	913m W	Unknown	Ancient Semi Natural Woodland
8	976m N	Unknown	Ancient Semi Natural Woodland
9	1106m NE	Unknown	Restored Ancient Woodland Site
B	1176m NW	Unknown	Ancient Woodland Site of Unknown Category
11	1220m NW	Unknown	Ancient Semi Natural Woodland
12	1229m E	Unknown	Plantation on Ancient Woodland Site
13	1236m E	Unknown	Plantation on Ancient Woodland Site
B	1254m NW	Unknown	Ancient Semi Natural Woodland
C	1255m N	Unknown	Ancient Semi Natural Woodland

ID	Location	Name	Woodland Type
-	1367m N	Unknown	Ancient Semi Natural Woodland
14	1406m NW	Unknown	Ancient Semi Natural Woodland
D	1473m NE	Unknown	Ancient Woodland Site of Unknown Category
-	1479m N	Unknown	Ancient Semi Natural Woodland
16	1521m NW	Unknown	Ancient Semi Natural Woodland
E	1534m NE	Unknown	Ancient Woodland Site of Unknown Category
17	1547m NE	Unknown	Ancient Semi Natural Woodland
D	1554m NE	Unknown	Plantation on Ancient Woodland Site
18	1555m NE	Unknown	Plantation on Ancient Woodland Site
E	1557m NE	Unknown	Ancient Semi Natural Woodland
D	1571m NE	Unknown	Plantation on Ancient Woodland Site
-	1621m N	Unknown	Ancient Semi Natural Woodland
-	1670m N	Unknown	Ancient Semi Natural Woodland
-	1730m NW	Unknown	Ancient Semi Natural Woodland
F	1731m NE	Unknown	Ancient Semi Natural Woodland
-	1737m NW	Unknown	Ancient Semi Natural Woodland
F	1762m NE	Unknown	Ancient Semi Natural Woodland
-	1779m NW	Unknown	Ancient Semi Natural Woodland
-	1865m NE	Unknown	Ancient Semi Natural Woodland
-	1931m E	Unknown	Ancient Semi Natural Woodland
-	1937m E	Unknown	Ancient Semi Natural Woodland
-	1966m N	Unknown	Ancient Semi Natural Woodland
-	1968m N	Unknown	Ancient Semi Natural Woodland
-	1983m NE	Unknown	Ancient Semi Natural Woodland

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m	0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

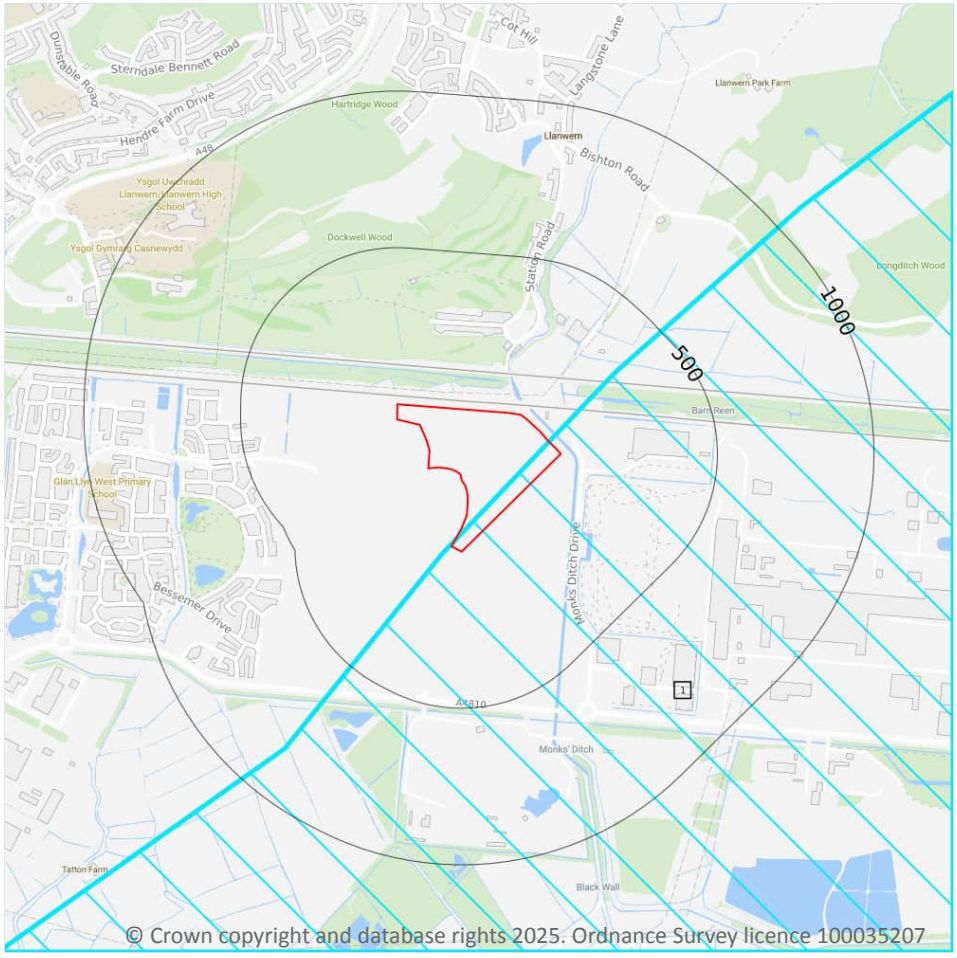
10.16 Nitrate Vulnerable Zones

Records within 2000m	0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 98 >**

ID	Location	Type of developments requiring consultation
1	**On site**	**https://irz.geodata.org.uk/IRZ/step2.html?irzcode=0300000630000&notes=&location=345653,191969%20(IRZ%20polygon%20centre)**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m	0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m	0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m	0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

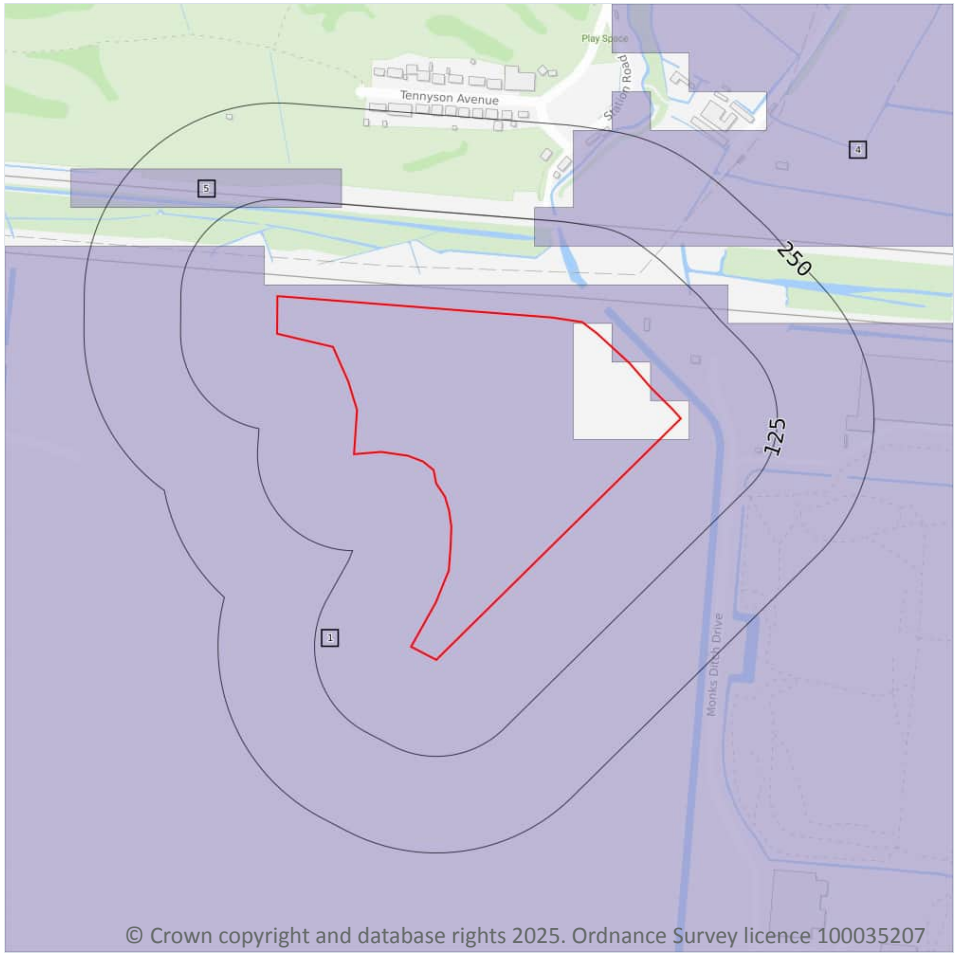
11.7 Registered Parks and Gardens

Records within 250m	0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	3

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 102 >**

ID	Location	Classification	Description
1	**On site**	**Grade 4**	**Poor quality agricultural land**
4	90m N	Grade 4	Poor quality agricultural land
5	115m N	Grade 4	Poor quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m	0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

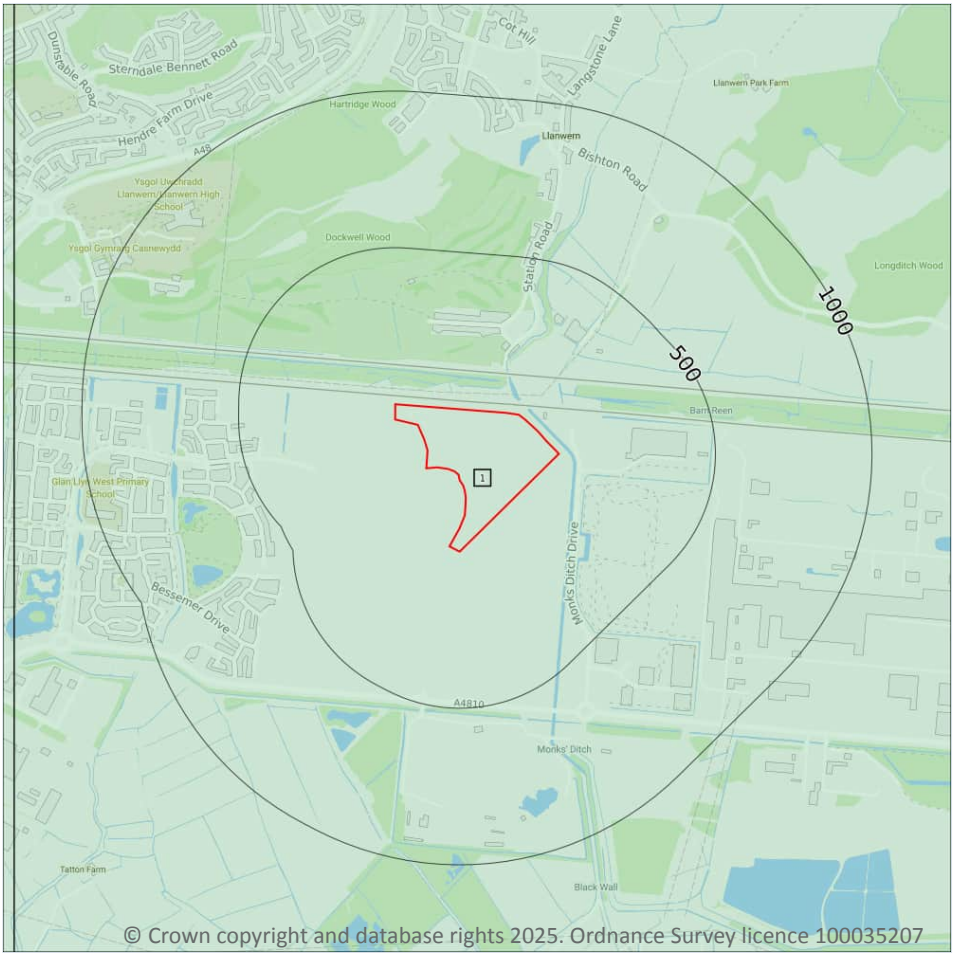
13.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 105 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**No coverage**	**ST38NE**

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Artificial and made ground

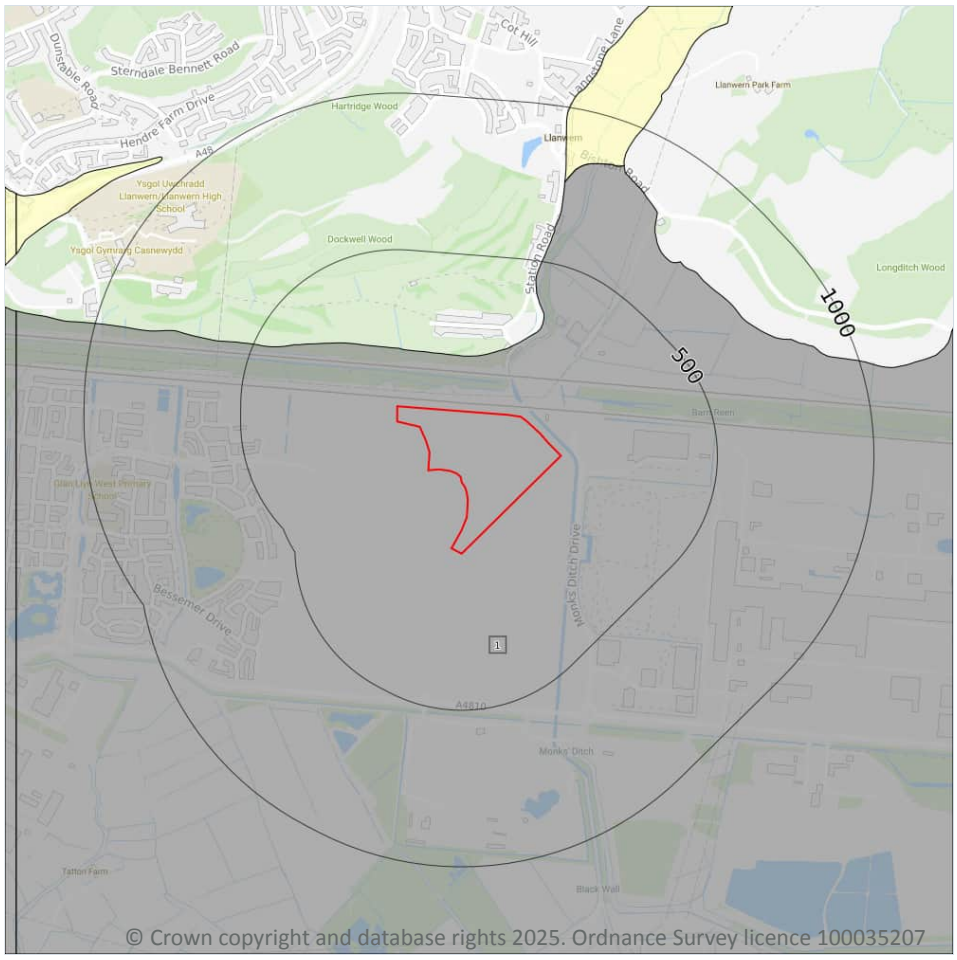
14.2 Artificial and made ground (10k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m	1

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 107 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TFD-CZ**	**Tidal Flat Deposits - Clay, Silty (unlithified Deposits Coding Scheme)**	**Clay, Silty**

This data is sourced from the British Geological Survey.

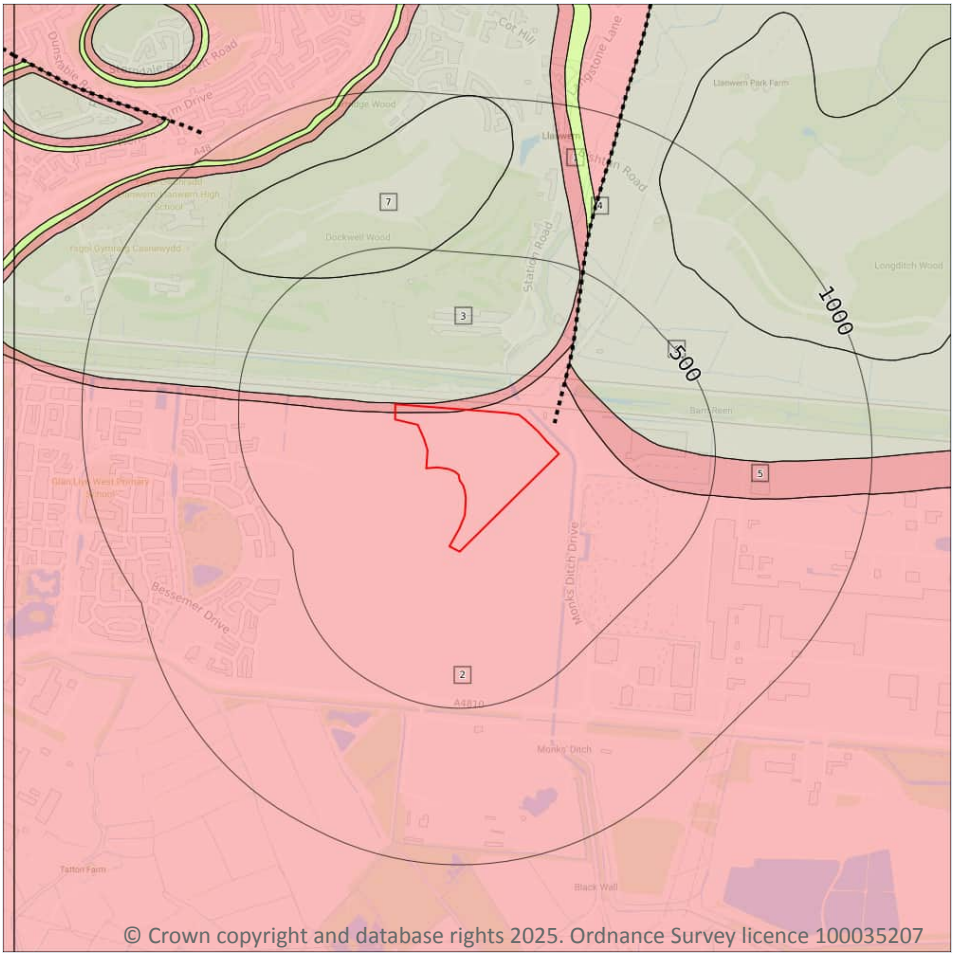
14.4 Landslip (10k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m **6**

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 109 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**PNG-MDST**	**Penarth Group - Mudstone**	**Rhaetian Age**
2	**On site**	**MMG-MDST**	**Mercia Mudstone Group - Mudstone**	**Rhaetian Age - Early Triassic Epoch**
3	4m N	BLI-LSMD	Blue Lias Formation - Interbedded Limestone And Mudstone	Sinemurian Age - Rhaetian Age

ID	Location	LEX Code	Description	Rock age
5	136m NE	PNG-MDST	Penarth Group - Mudstone	Rhaetian Age
6	212m NE	BLI-LSMD	Blue Lias Formation - Interbedded Limestone And Mudstone	Sinemurian Age - Rhaetian Age
7	425m N	BLI-MDST	Blue Lias Formation - Mudstone	Sinemurian Age - Rhaetian Age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	**1**

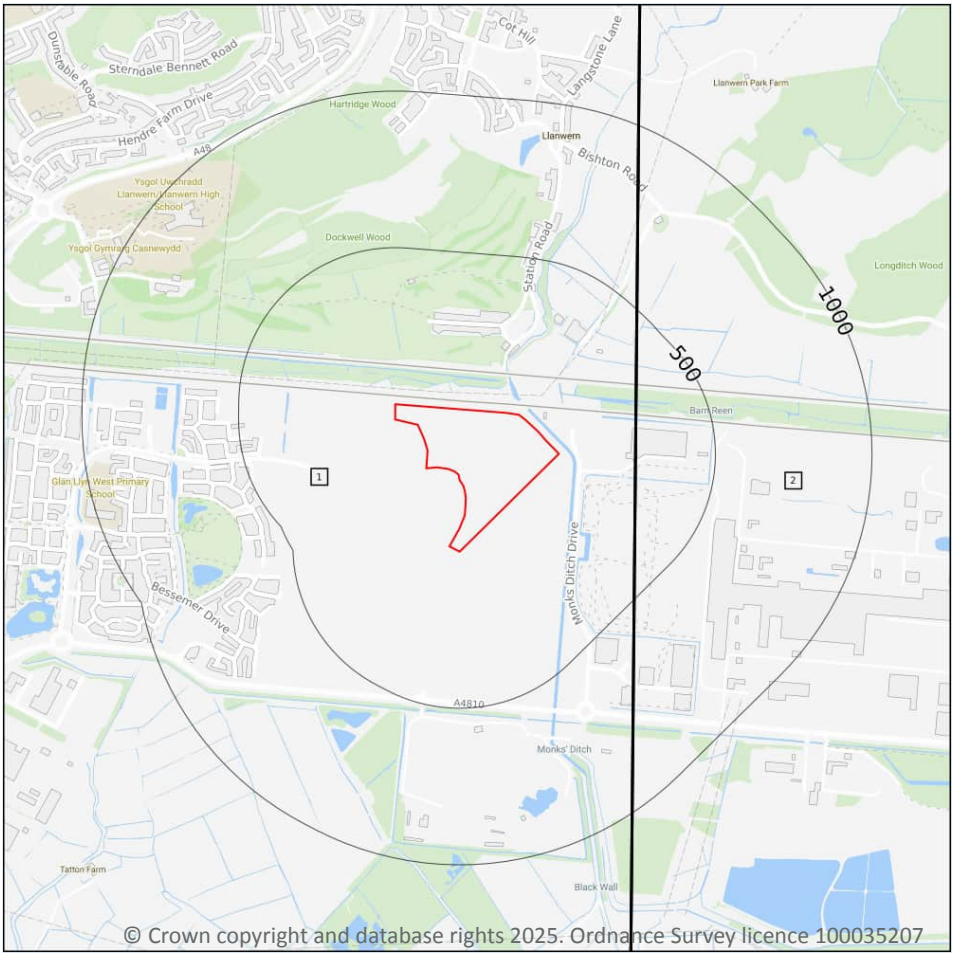
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 109 >**

ID	Location	Category	Description
4	58m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	2

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 111 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW249_newport_v4**
2	245m E	No coverage	Full	Full	Full	EW250_chepstow_v4

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

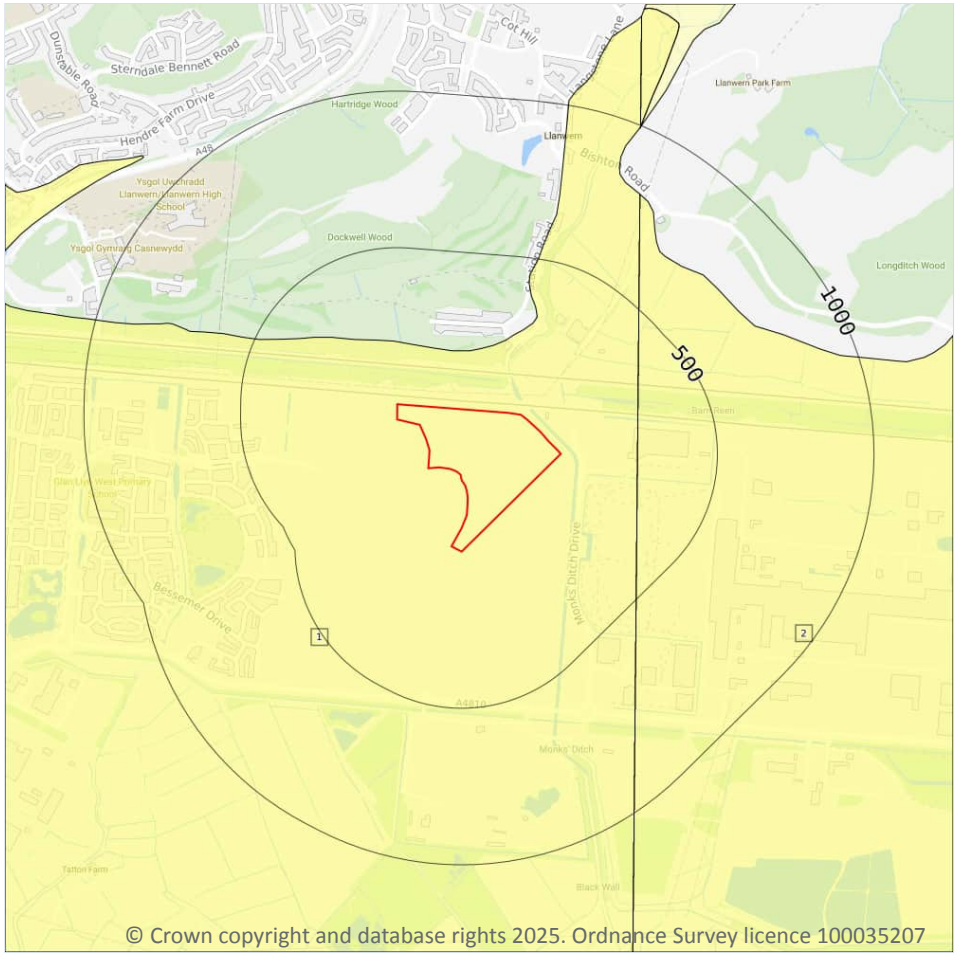
15.3 Artificial ground permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m **2**

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 113 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TFD-XCZ**	**TIDAL FLAT DEPOSITS**	**CLAY AND SILT**
2	245m E	TFD-XCZ	TIDAL FLAT DEPOSITS	CLAY AND SILT

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**Low**	**Very Low**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

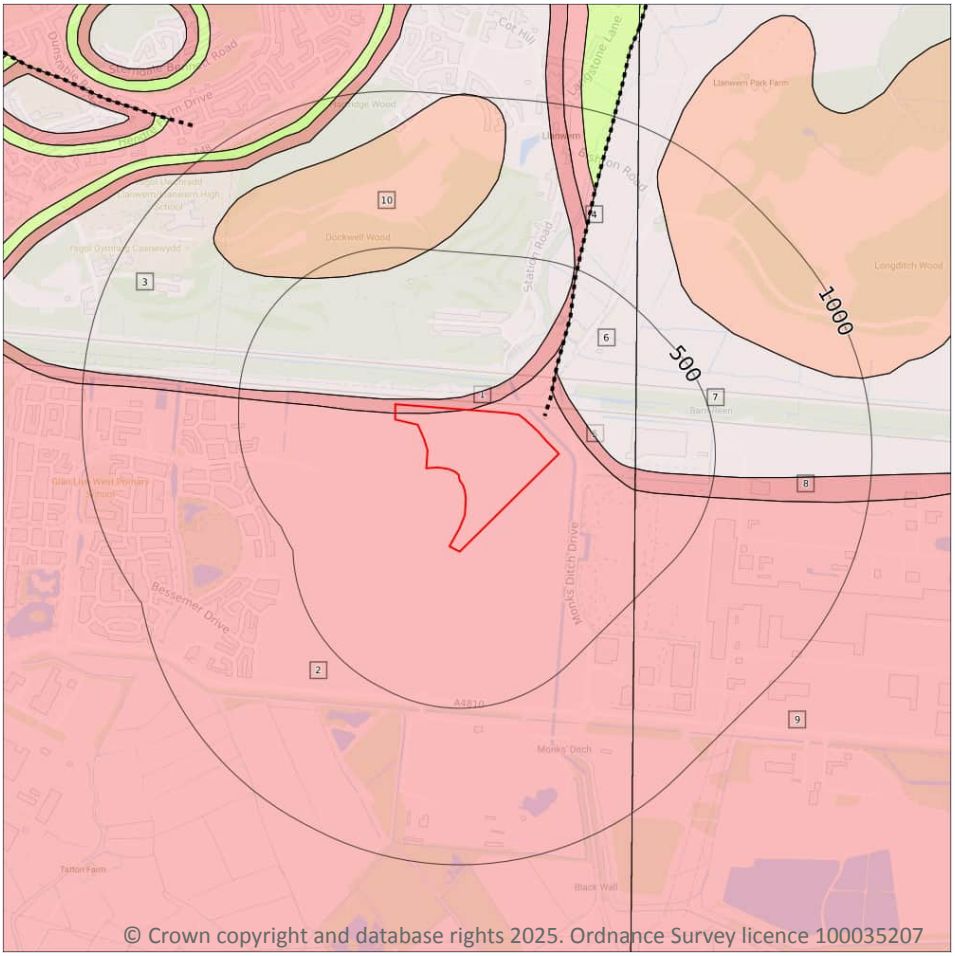
15.7 Landslip permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m **9**

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 115 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**PNG-MDST**	**PENARTH GROUP - MUDSTONE**	**RHAETIAN**
2	**On site**	**MMG-MDST**	**MERCIA MUDSTONE GROUP - MUDSTONE**	**-**
3	17m N	STM-LSMD	ST MARY'S WELL BAY MEMBER - LIMESTONE AND MUDSTONE, INTERBEDDED	RHAETIAN

ID	Location	LEX Code	Description	Rock age
5	83m NE	PNG-MDST	PENARTH GROUP - MUDSTONE	RHAETIAN
6	125m NE	STM-LSMD	ST MARY'S WELL BAY MEMBER - LIMESTONE AND MUDSTONE, INTERBEDDED	RHAETIAN
7	245m E	STM-LSMD	ST MARY'S WELL BAY MEMBER - LIMESTONE AND MUDSTONE, INTERBEDDED	RHAETIAN
8	249m E	PNG-MDST	PENARTH GROUP - MUDSTONE	RHAETIAN
9	270m SE	MMG-MDST	MERCIA MUDSTONE GROUP - MUDSTONE	-
10	428m N	LVN-MDST	LAVERNOCK SHALES MEMBER - MUDSTONE	HETTANGIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m **2**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Low**	**Low**
17m N	Fracture	Very High	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m **1**

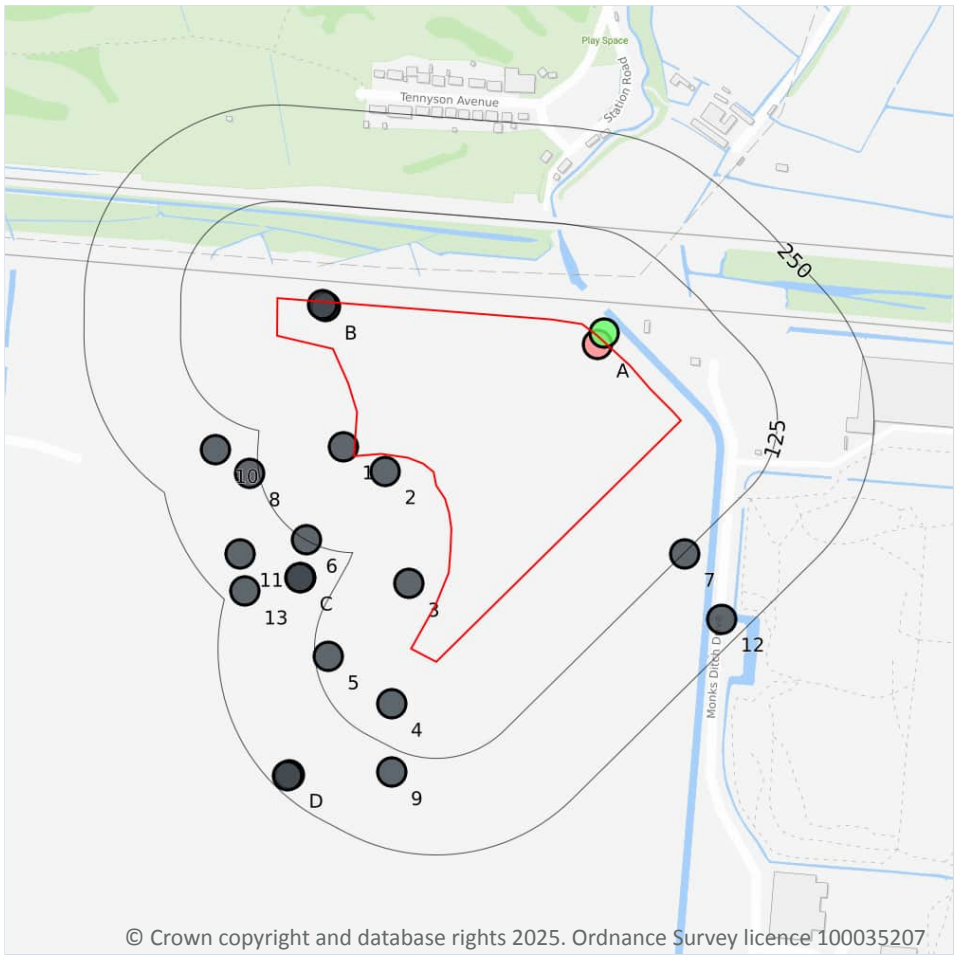
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 115 >**

ID	Location	Category	Description
4	51m NE	FAULT	Fault, inferred, displacement unknown

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m	21

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

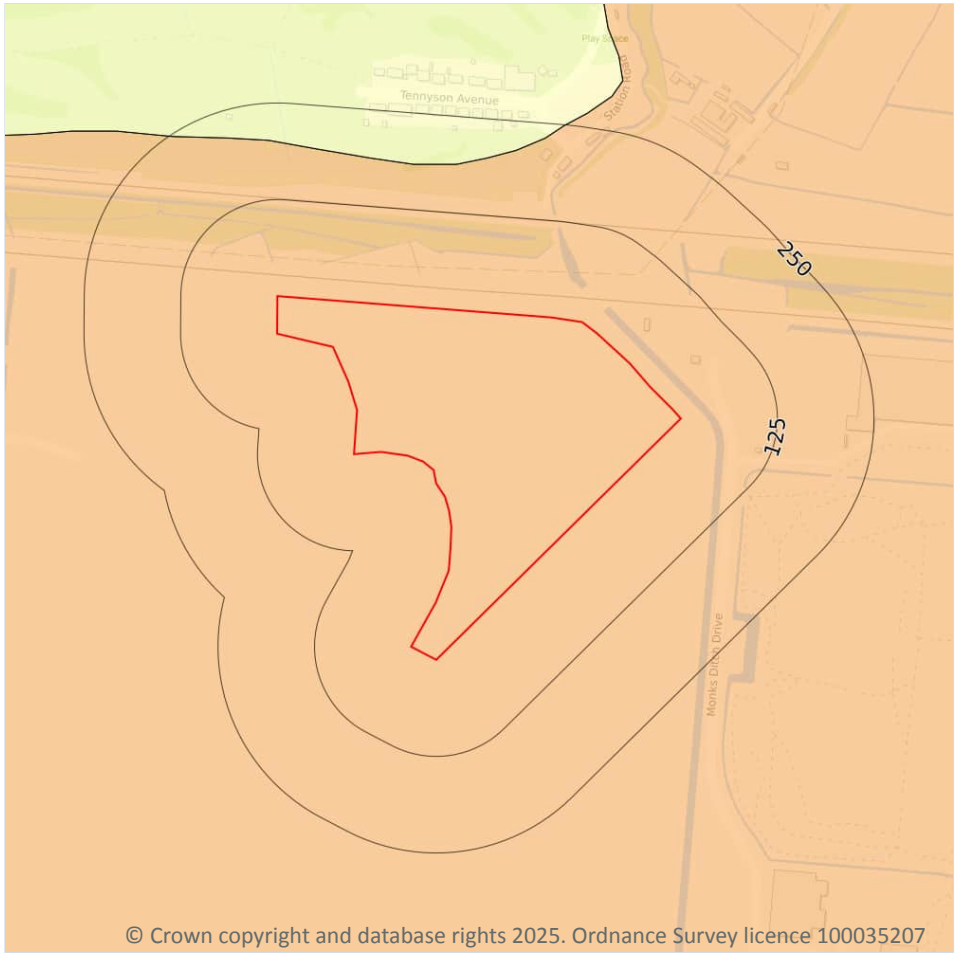
Features are displayed on the Boreholes map on **page 117 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	**On site**	**336631 187225**	**STEEL PLANT. 4**	**30.48**	**N**	**385029** ↗
B	**On site**	**336279 187274**	**Llanwern Regeneration Site - Zone B2 HCPBH101B**	**-**	**Y**	**N/A**

ID	Location	Grid reference	Name	Length	Confidential	Web link
B	**On site**	**336275 187277**	**Llanwern Regeneration Site - Zone B2 HCPBH101A**	**-**	**Y**	**N/A**
A	9m NE	336640 187240	NEWPORT EAST TRIAL NO.4	24.38	N	385050 ↗
1	15m W	336302 187093	Llanwern Regeneration Site - Zone B2 HCPBH104	-	Y	N/A
2	22m S	336357 187061	Llanwern Regeneration Site - Zone B2 HCPBH105	-	Y	N/A
3	43m W	336387 186916	Llanwern Regeneration Site - Zone B2 HCPBH111	-	Y	N/A
4	75m SW	336365 186760	Llanwern Regeneration Site - Zone B2 HCUBH101	-	Y	N/A
5	108m W	336283 186822	Llanwern Regeneration Site - Zone B2 HCPBH113	-	Y	N/A
6	124m SW	336255 186973	Llanwern Regeneration Site - Zone B2 HCPBH107	-	Y	N/A
7	127m SE	336744 186954	Llanwern Regeneration Site - Zone B2 HMDBH101	-	Y	N/A
8	137m W	336181 187059	Llanwern Regeneration Site - Zone B2 HCPBH103	-	Y	N/A
9	154m S	336365 186672	Llanwern Regeneration Site - Zone B2 HCUBH102	-	Y	N/A
10	168m SW	336137 187089	Llanwern Regeneration Site - Zone B2 HCPBH102	-	Y	N/A
C	170m NW	336247 186924	Llanwern Regeneration Site - Zone B2 HCPBH110B	-	Y	N/A
C	170m NW	336246 186923	Llanwern Regeneration Site - Zone B2 HCPBH110A	-	Y	N/A
11	194m SW	336169 186954	Llanwern Regeneration Site - Zone B2 HCPBH106	-	Y	N/A
12	220m SE	336792 186870	Llanwern Regeneration Site - Zone B2 HMDBH102	-	Y	N/A
13	225m SW	336175 186906	Llanwern Regeneration Site - Zone B2 HCPBH109	-	Y	N/A
D	227m SW	336233 186668	Llanwern Regeneration Site - Zone B2 HBRBH103A	-	Y	N/A
D	230m SW	336230 186667	Llanwern Regeneration Site - Zone B2 HBRBH103B	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	1

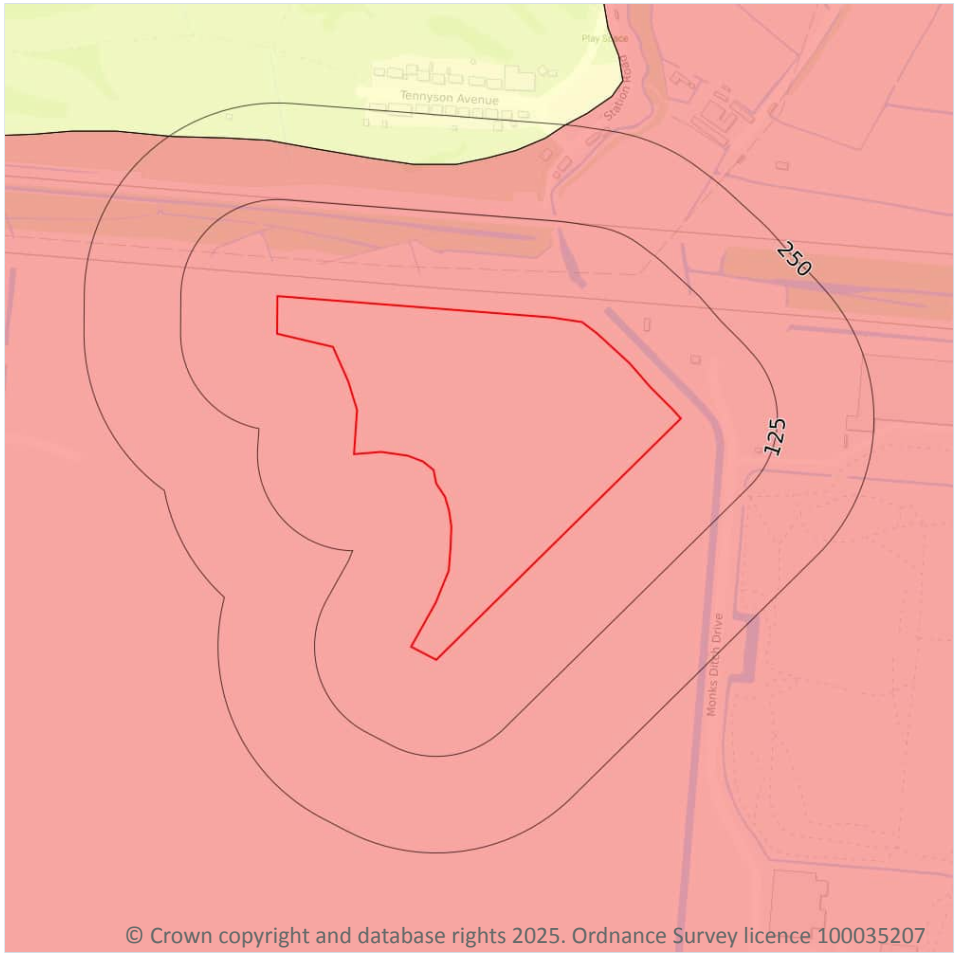
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 119 >**

Location	Hazard rating	Details
On site	**Low**	**Ground conditions predominantly medium plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	1

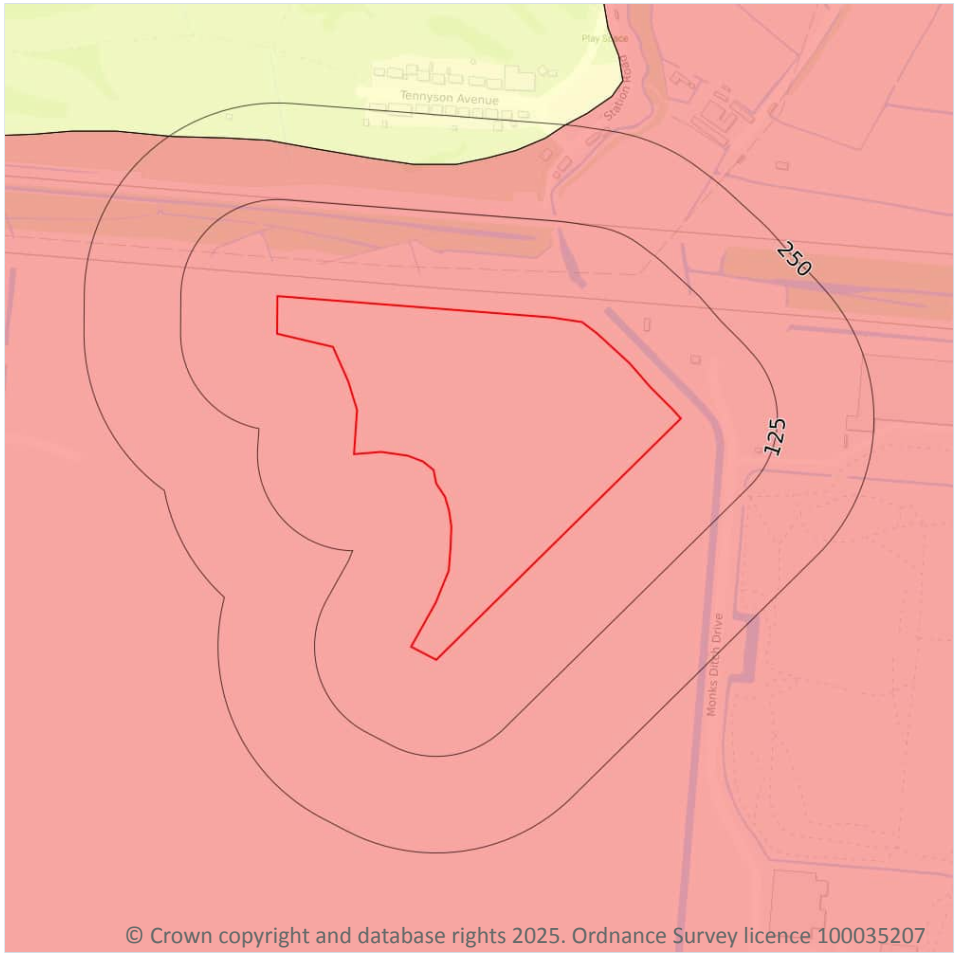
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 120 >**

Location	Hazard rating	Details
On site	**Moderate**	**Running sand conditions are probably present. Constraints may apply to land uses involving excavation or the addition or removal of water.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	1

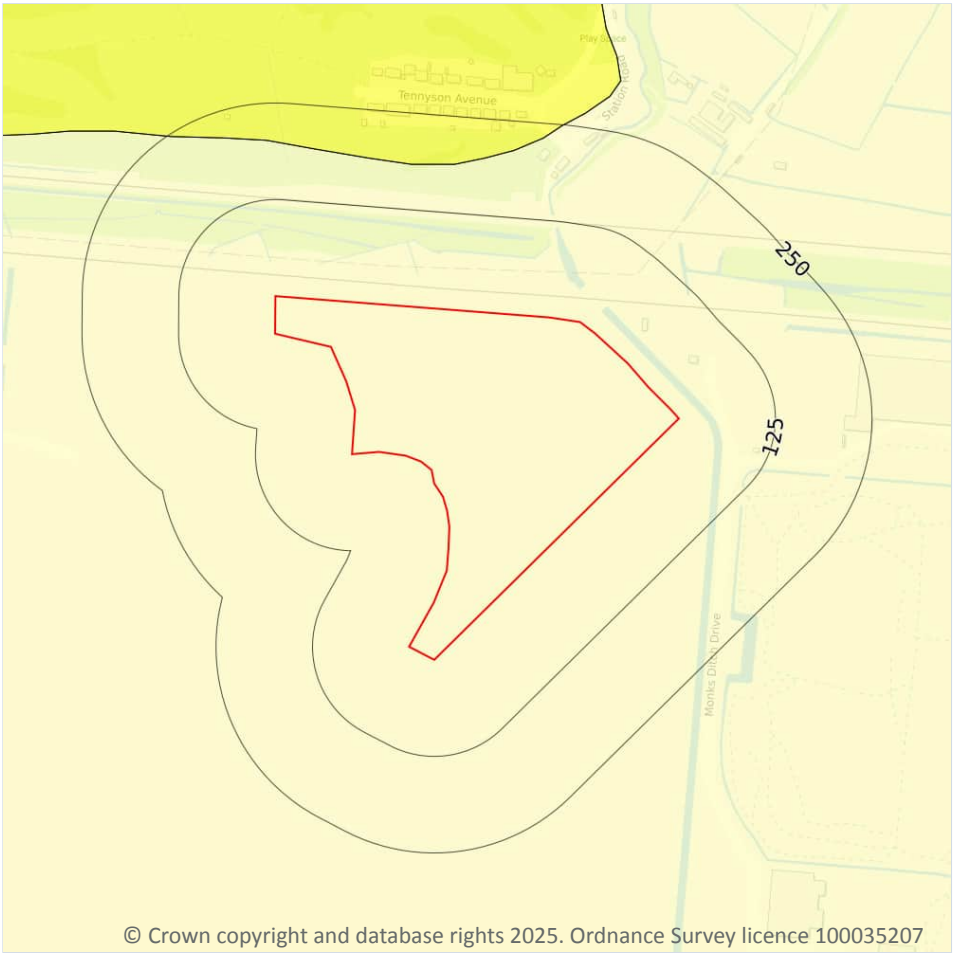
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 121 >**

Location	Hazard rating	Details
On site	**Moderate**	**Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



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Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	1

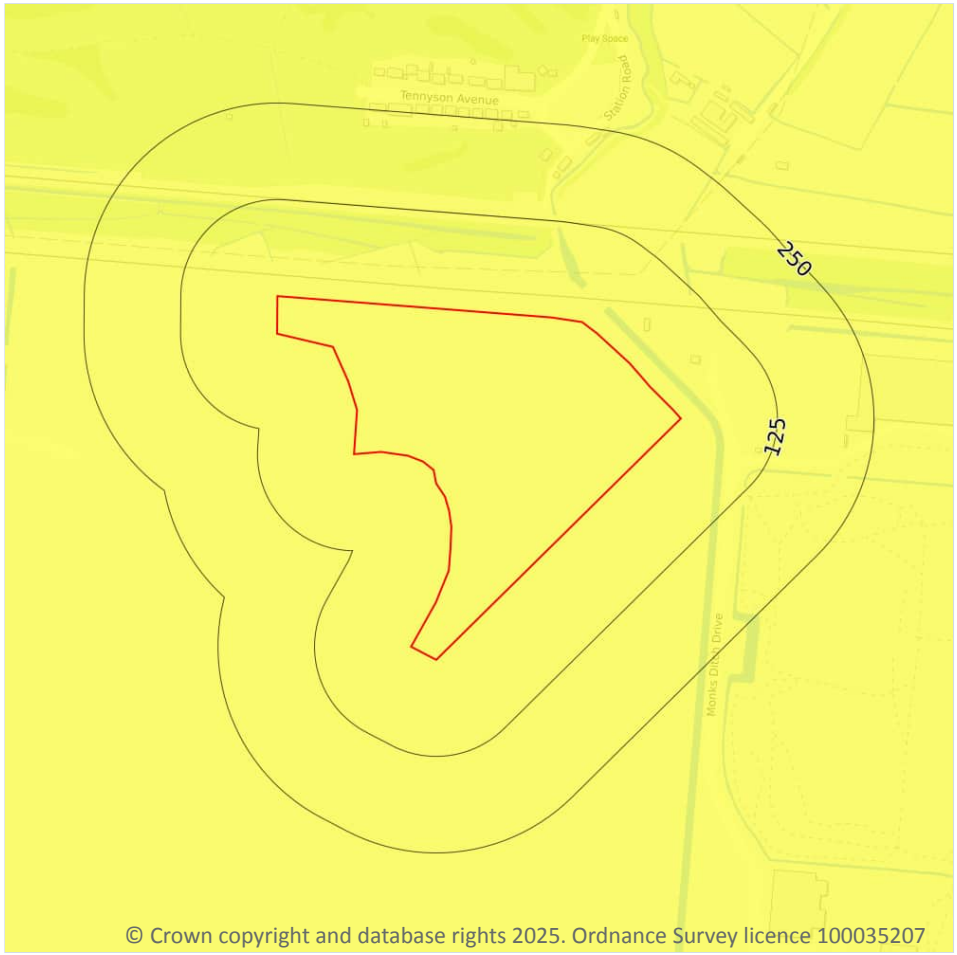
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 122 >**

Location	Hazard rating	Details
On site	**Negligible**	**Deposits with potential to collapse when loaded and saturated are believed not to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	1

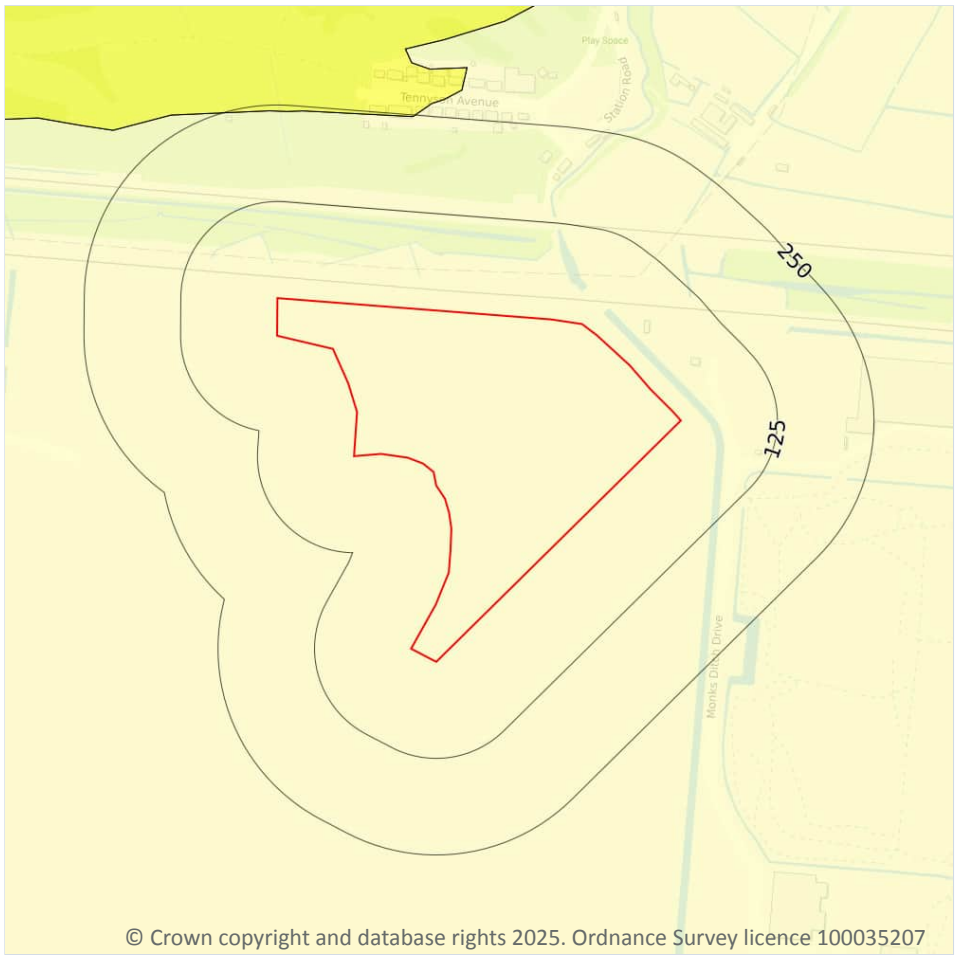
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 123 >**

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 124 >**

Location	Hazard rating	Details
On site	**Negligible**	**Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.**

This data is sourced from the British Geological Survey.

18 Mining and ground workings



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Site Outline

Search buffers in metres (m)

BritPits

Surface ground workings

Underground workings

Underground mining extents

Historical mineral planning areas

TCA non-coal mining

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m	0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	15

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on **page 126 >**

ID	Location	Land Use	Year of mapping	Mapping scale
1	**On site**	**Pond**	**1973**	**1:10000**
2	6m SE	Pond	1973	1:10000
3	55m S	Pond	1988	1:10000
4	68m SE	Ponds	1988	1:10000
5	125m SE	Pond	1973	1:10000
6	144m N	Unspecified Pit	1922	1:10560
7	214m SE	Pond	1973	1:10000
A	217m SE	Refuse Heaps	1988	1:10000
A	217m SE	Refuse Heaps	1973	1:10000
B	235m W	Pool	1963	1:10560
B	238m W	Pool	1882	1:10560
B	238m W	Pool	1938	1:10560
B	238m W	Pool	1949	1:10560
B	238m W	Pool	1900	1:10560
B	241m W	Pool	1922	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the

Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

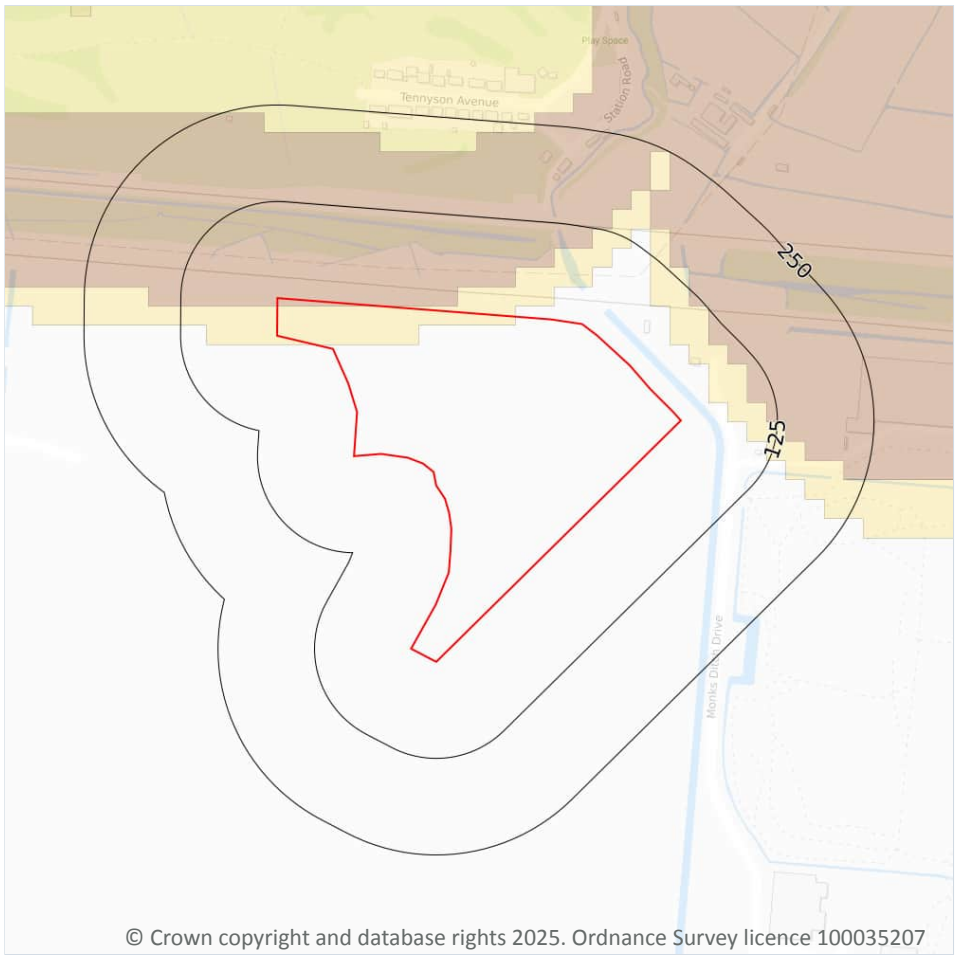
Records within 500m	0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.

This data is sourced from Groundsure.

20 Radon



Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	3

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on **page 133 >**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 1% and 3%**	**None**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 10% and 30%**	**Full**
On site	**Less than 1%**	**None**

This data is sourced from the British Geological Survey and UK Health Security Agency.

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m **7**

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**25 - 35 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
17m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
18m N	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	120 - 180 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m **0**

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

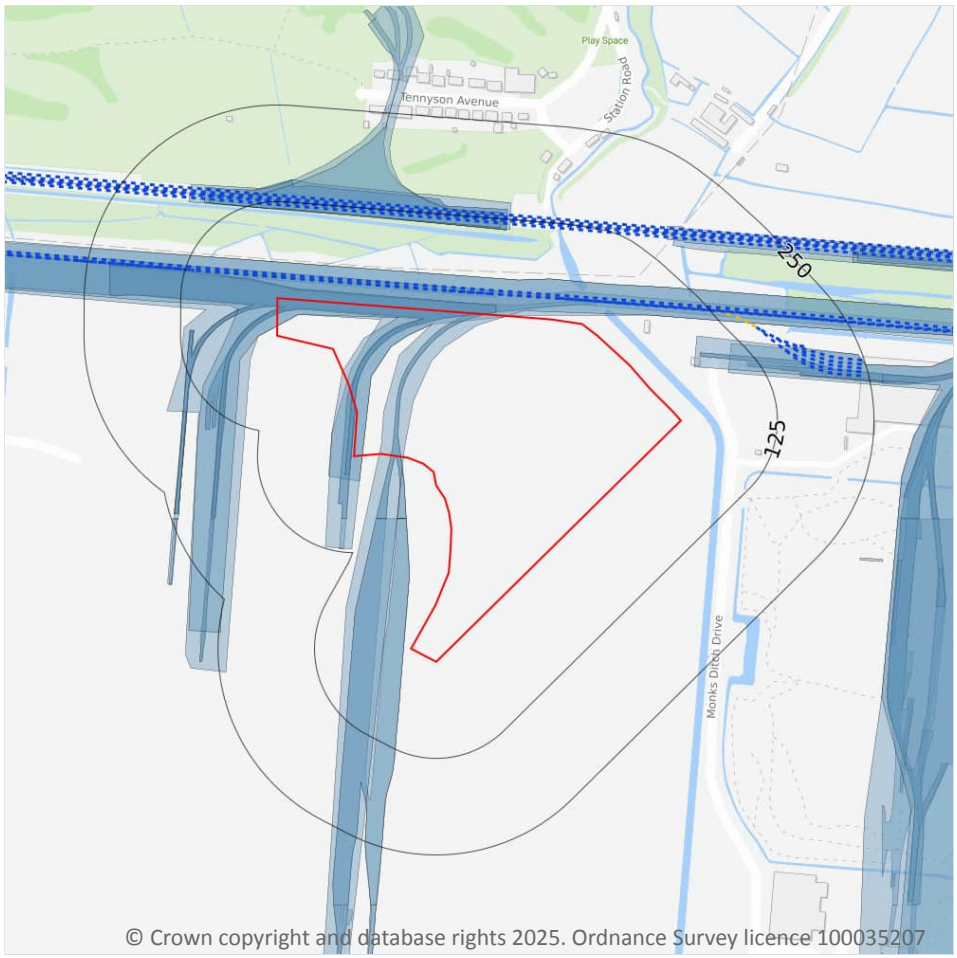
21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects



Site Outline

Search buffers in metres (m)

- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

22.1 Underground railways (London)

Records within 250m	0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	26

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on **page 137 >**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1973**	**10000**
On site	**Railway Sidings**	**1988**	**10000**
On site	**Railway Sidings**	**1992**	**1250**
On site	**Railway Sidings**	**1995**	**1250**
On site	**Railway Sidings**	**1967**	**1250**
On site	**Railway Sidings**	**1969**	**2500**
On site	**Railway Sidings**	**1986**	**1250**
5m N	Railway Sidings	1995	1250
10m W	Railway Sidings	1967	1250
10m W	Railway Sidings	1968	2500
75m NE	Railway Sidings	1967	1250
82m S	Railway Sidings	1968	2500
111m N	Railway Sidings	1949	10560
111m N	Railway Sidings	1938	10560
112m N	Railway Sidings	1963	10560
113m N	Railway Sidings	1922	10560
124m N	Railway Sidings	1921	2500

Location	Land Use	Year of mapping	Mapping scale
145m NE	Railway Sidings	1986	1250
153m NE	Railway Sidings	1922	10560
154m NE	Railway Sidings	1963	10560
198m SW	Railway Sidings	1992	1250
199m SW	Railway Sidings	1986	1250
217m W	Railway Sidings	1967	1250
217m W	Railway Sidings	1992	1250
242m W	Railway Sidings	1992	1250
243m W	Railway Sidings	1986	1250

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	2

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

Features are displayed on the Railway infrastructure and projects map on **page 137 >**

Location	Description
129m NE	Abandoned
151m NE	Disused

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	21

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

Features are displayed on the Railway infrastructure and projects map on **page 137 >**

Location	Name	Type
27m N	Not given	Multi Track
27m N	Not given	Multi Track
27m N	Not given	Multi Track
27m N	Not given	Multi Track
27m N	Down Service Line	rail
29m N	Not given	Multi Track
31m N	Up Service Line	rail
114m W	Not given	Multi Track
119m N	South Wales Main Line	rail
122m N	South Wales Main Line	rail
124m N	Not given	Multi Track
127m N	South Wales Main Line	rail
130m N	South Wales Main Line	rail
154m NE		rail
155m NE		rail
163m NE		rail
163m NE		rail
172m NE		rail
175m NE		rail
213m W	Not given	Multi Track
245m NE	Not given	Multi Track

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.9 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference ↗.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-and-conditions-april-2023/ ↗.

Appendix E
UXO Report

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Map Centre: 335932,186682



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- **High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- **Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- **Low:** Areas indicated as having 15 bombs per 1000acre or less.

Miltary | **Industry** | **UXO find** | **Other**
Transport | **Docks** | **Luftwaffe targets**
Utilities | **Bombing decoy** | **Airfields**

How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density.
Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then additional detailed research is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our pre-desk study assessments (PDSA) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 **email:** uxo@zetica.com **web:** www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the accompanying notes on our website.

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgement. The copyright remains with Zetica Ltd.

Appendix F
Exploratory Hole Logs

IAN FARMER ASSOCIATES
Geotechnical & Environmental Specialists

Contract Name: Llanwern Site Wide CWRA & Phase 2D			Client: St Modwen Developments Limited		Borehole ID: CWCP31
Contract Number: 21561	Date Started: 07/04/2016	Logged By: HP	Checked By:	Status: DRAFT	Sheet 1 of 2
Cable Percussion Borehole Log	Easting:	Northing:	Ground Level: 10.95mOD	Plant Used:	Print Date: 02/06/2016 / Scale: 1:50
Weather:		Termination:		SPT Hammer: N/R, Energy Ratio: N/R	

Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.00 - 1.00	B1					MADE GROUND: Dark brown, sandy gravel. gravel is medium to coarse, angular to subangular slag and brick with occasional concrete		
1.00 - 1.45	B2	SPT(C) 1.00m, N=28 (5,7/7,6,8,7)		(2.50)				
2.00 - 2.45	B3	SPT(C) 2.00m, N=26 (4,6/6,8,7,5)						
2.50	B4			2.50		Soft, brownish grey, silty CLAY (Tidal Flat Deposits)		
3.00 - 3.45	TW1	12 blows 60% recovery		(1.00)				
3.50	B5			3.50		Very soft, dark brown to dark grey, fibrous PEAT (Tidal Flat Deposits)		
3.50	D1							
4.00 - 4.45	D2	SPT(S) 4.00m, N=0 (1,0/0,0,0,0)		(2.00)				
5.00 - 5.45	D3	SPT(S) 5.00m, N=2 (1,0/0,1,1,0)						
5.50	B6			5.50		Very soft, grey SILT (Tidal Flat Deposits)		
6.00 - 6.45	TW2	6 blows 100% recovery						
6.50	D4							
7.50 - 7.95	D5	SPT(S) 7.50m, N=1 (1,0/0,1,0,0)		(4.00)				
9.00 - 9.45	D6	SPT(S) 9.00m, N=2 (1,0/1,0,1,0)						
9.50	B7			9.50		Loose, grey, slightly gravelly, fine to medium SAND. Gravel is fine to medium, angular to subangular sandstone and quartzite (Tidal Flat Deposits)		
10.00	B8			(0.50) 10.00				

Continued next sheet

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)

Borehole Diameter

Depth (m)	Dia (mm)
10.95	150

Casing Diameter

Depth (m)	Dia (mm)
10.50	150

Chiselling

From (m)	To (m)	Duration	Remarks
10.50	10.50	00:30	

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	9.50	PLAIN	50
9.50	10.50	SLOTTED	50

Remarks:

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
9.50	9.50		0		

IAN FARMER ASSOCIATES
Geotechnical & Environmental Specialists

Contract Name:		Client:			Borehole ID:
Llanwern Site Wide CWRA & Phase 2D		St Modwen Developments Limited			CWCP31
Contract Number:	Date Started:	Logged By:	Checked By:	Status:	Sheet 2 of 2
21561	07/04/2016	HP		DRAFT	
Cable Percussion Borehole Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date: / Scale:
			10.95mOD		02/06/2016 / 1:50

Weather: | Termination: | SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
10.50 - 10.95	D7	SPT(S) 10.50m, 50 (100 for 92mm/50 for 234mm)		(0.50) 10.50		Very stiff, reddish brown mottled grey, silty CLAY (Mercia Mudstone Group Grade IVa)		
						End of Borehole at 10.95m		

11 12 13 14 15 16 17 18 19 20

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)

Borehole Diameter

Depth (m)	Dia (mm)
10.95	150

Casing Diameter

Depth (m)	Dia (mm)
10.50	150

Remarks:

Chiselling

From (m)	To (m)	Duration	Remarks
10.50	10.50	00:30	

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	9.50	PLAIN	50
9.50	10.50	SLOTTED	50

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
9.50	9.50		0		

IAN FARMER ASSOCIATES
Geotechnical & Environmental Specialists

Contract Name:		Client:			Borehole ID:
Llanwern Site Wide CWRA & Phase 2D		St Modwen Developments Limited			CWCP32
Contract Number:	Date Started:	Logged By:	Checked By:	Status:	Sheet 1 of 2
21561	08/04/2016	CL		DRAFT	
Cable Percussion Borehole Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date: / Scale:
			10.50mOD		02/06/2016 / 1:50

Weather: | Termination: | SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.00 - 1.00	B1			(1.15)		MADE GROUND: Dark, grey to black, clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subrounded concrete, slag, ash, fragments of metal		
1.00 - 1.45	B2	SPT(C) 1.00m, N=14 (2,3/3,4,4,3)		1.15		Soft to firm, grey, silty CLAY (Tidal Flat Deposits)		
1.50 - 1.90	B3			(0.75)				
2.00	B4	SPT(S) 2.00m, N=1		1.90		Black, slightly silty, clay amorphous PEAT (Tidal Flat Deposits)		
2.00 - 2.45	D1	(1,0/0,1,0,0)						
3.00 - 3.45	D2	SPT(S) 3.00m, N=3 (1,2/1,1,1,0)		(3.10)				
4.00 - 4.45	D3	SPT(S) 4.00m, N=2 (1,0/1,0,1,0)						
5.00	B5	3 blows		5.00		Soft, grey, clayey SILT (Tidal Flat Deposits)		
5.00 - 5.45	TW1	90% recovery						
5.50	D4							
6.00 - 6.45	D5	SPT(S) 6.00m, N=4 (1,1/1,1,1,1)		(3.00)				
7.50 - 7.95	D6	SPT(S) 7.50m, N=3 (1,0/0,1,1,1)						
8.00	B6			8.00		Loose, yellow to grey, gravelly, fine to coarse SAND with frequent bands of weak, coarse, sandstone, with carbonate shells (Tidal Flat Deposits)		
8.50 - 8.60	D7			(1.60)				
9.00 - 9.45	D8	SPT(S) 9.00m, N=11 (3,3/1,4,4,2)						
9.60	B7			9.60		Extremely weak, red brown MUDSTONE (Mercia Mudstone Group Grade II)		
						Continued next sheet		

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
10.50	150	10.50	150

Chiselling

From (m)	To (m)	Duration	Remarks
8.50	8.00	00:30	
10.40	10.50	00:30	

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	8.00	PLAIN	50
8.00	10.50	SLOTTED	50

Remarks:

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
8.00	8.00	9.60	20	3.00	

IAN FARMER ASSOCIATES
Geotechnical & Environmental Specialists

Contract Name:		Client:			Borehole ID:
Llanwern Site Wide CWRA & Phase 2D		St Modwen Developments Limited			CWCP32
Contract Number:	Date Started:	Logged By:	Checked By:	Status:	Sheet 2 of 2
21561	08/04/2016	CL		DRAFT	
Cable Percussion Borehole Log	Easting:	Northing:	Ground Level: 10.50mOD	Plant Used:	Print Date: 02/06/2016 — Scale: 1:50

Weather: | Termination: | SPT Hammer: N/R, Energy Ratio: N/R

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
10.50	D9	SPT(S) 10.50m, 50 (25 for 82mm/50 for 236mm)		(0.90) 10.50		End of Borehole at 10.50m		

11 12 13 14 15 16 17 18 19 20

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)

Borehole Diameter

Depth (m)	Dia (mm)
10.50	150

Casing Diameter

Depth (m)	Dia (mm)
10.50	150

Chiselling

From (m)	To (m)	Duration	Remarks
8.50	8.00	00:30	
10.40	10.50	00:30	

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	8.00	PLAIN	50
8.00	10.50	SLOTTED	50

Remarks:

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
8.00	8.00	9.60	20	3.00	

IAN FARMER ASSOCIATES
Geotechnical & Environmental Specialists

Contract Name:		Client:			Borehole ID:
Llanwern Site Wide CWRA & Phase 2D		St Modwen Developments Limited			CWWS10
Contract Number:	Date Started:	Logged By:	Checked By:	Status:	Sheet 1 of 1
21561	05/04/2016	CL			
Dynamic Sample Borehole Log	Easting:	Northing:	Ground Level:	Plant Used:	Print Date: / Scale:
			2.00mOD		02/06/2016 / 1:40
Weather:		Termination:			

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				(0.60)		MADE GROUND: Topsoil and grass over dark brown, slightly sandy, silty, gravelly clay. Gravel is fine to coarse, angular to subrounded concrete, red brick, slag		
				0.60		Firm, bluish grey, silty CLAY (Tidal Flat Deposits)		
				(1.40)				
				2.00		End of Borehole at 2.00m		

1 2 3 4 5 6 7 8

Borehole Diameter		Installation			
Depth (m)	Dia (m)	Depth Top	Base (m)	Diameter	Pipe Type
		0.00	0.20		PLAIN
		0.20	0.70		SLOTTED

Water Strikes					
Depth Strike	Depth Casing	Depth Sealed	Time (mins)	Rose to (m)	Remarks

Remarks:

IAN FARMER ASSOCIATES
Geotechnical & Environmental Specialists

Contract Name: Llanwern Site Wide CWRA & Phase 2D			Client: St Modwen Developments Limited		Borehole ID: CWWS20
Contract Number: 21561	Date Started: 05/04/2016	Logged By: HB	Checked By:	Status:	Sheet 1 of 1
Dynamic Sample Borehole Log	Easting:	Northing:	Ground Level: 1.20mOD	Plant Used:	Print Date: 02/06/2016 / Scale: 1:40
Weather:		Termination:			

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				(1.20)		MADE GROUND: Soft to firm, dark brown, gravelly clay with occasional to frequent cobbles of concrete, limestone, metal. Gravel is medium to coarse, angular to subangular limestone, concrete, brick, slate, mudstone, quartzite, fragments of metal		
				1.20		End of Borehole at 1.20m		

1 2 3 4 5 6 7 8

Borehole Diameter		Installation			
Depth (m)	Dia (m)	Depth Top	Base (m)	Diameter	Pipe Type
		0.00	0.50		PLAIN
		0.50	1.00		SLOTTED

Water Strikes					
Depth Strike	Depth Casing	Depth Sealed	Time (mins)	Rose to (m)	Remarks

Remarks:
Refusal at 1.20m

Trial Pit Log

TrialPit No **AA1** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336200E - 187275N Level: 6.47	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.20	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20 0.20		B ES				MADE GROUND - Brown sandy gravelly CLAY with occasional cobbles. Gravel is fine to coarse, angular to rounded of various lithologies including sandstone, slags, bricks and mudstones.		
				5.27	1.20	MADE GROUND - black sandy GRAVEL. Gravel is fine to coarse, angular to rounded of various lithologies including sandstone, slags, bricks and mudstones.		
				5.07	1.40	MADE GROUND - Greyish yellow cobbly gravelly CLAY. Gravel is fine to coarse, angular to subrounded sandstone.		
1.80		ES						
				4.47	2.00	TIDAL FLAT DEPOSITS-soft to firm bluish grey CLAY.		
				4.27	2.20	End of Pit at 2.200m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AB1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336220E - 187279N Level: 6.46	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.30		ES					MADE GROUND - Brown sandy gravelly CLAY. Gravels are fine to coarse subrounded to subangular and include bricks fragments, mudstones, slags and other lithologies.		
				5.76		0.70	MADE GROUND - Orange sandy GRAVEL. Gravel is fine to medium subrounded to angular of mudstone.		
				5.56	1	0.90	MADE GROUND - Greyish blue sandy GRAVEL of slag. Slag is fused.		▼
1.60 1.60		B ES		4.96		1.50	MADE GROUND - Grey cobbly gravelly CLAY. Gravel is fine to coarse, angular to subrounded sandstone.		▼
				4.66		1.80	TIDAL FLAT DEPOSITS- Bluish grey CLAY.		
				4.46	2	2.00	End of Pit at 2.000m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AC1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336236E - 187283N Level: 5.46	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50		ES		4.86	0.60	MADE GROUND - Brown gravelly sandy CLAY with occasional cobbles. Gravel is fine to coarse, angular to subrounded, of various lithologies including mudstone, sandstone, slag, brick and others. *hydrocarbon odour and sheen on perched water*		
1.10		B		4.36	1.10	MADE GROUND - Grey medium grained well sorted GRAVEL. Possible type 1.		
				4.16	1.30	MADE GROUND - Orange sandy GRAVEL. Gravel is fine to coarse, angular to subrounded of various lithologies including burnt shales, slags, mudstone, bricks and concrete.		
1.50		ES		3.86	1.60	MADE GROUND - Grey gravelly SAND of slag. Slag is fused.		
				3.26	2.20	MADE GROUND - Grey sandy GRAVEL. Gravel is fine to coarse, angular to subrounded of various lithologies including mudstone and sandstone.		
				2.96	2.50	TIDAL FLAT DEPOSITS- soft to firm grey CLAY.		
						End of Pit at 2.500m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AD1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336258E - 187277N Level: 6.08	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.80	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				5.93	0.15	MADE GROUND - Brown sandy gravelly CLAY.		
				5.78	0.30	MADE GROUND - Grey sandy GRAVEL of slag. Slag is fused.		
0.40 0.40		B ES				MADE GROUND - black sandy gravelly CLAY.		
				5.48	0.60	MADE GROUND - Brown clayey gravelly COBBLES. Cobbles are angular to subrounded, of various lithologies including slags, mudstone, brick and others.		
1.10		ES						
				4.48	1.60	TIDAL FLAT DEPOSITS- Soft to firm bluish grey CLAY.		
				4.28	1.80	End of Pit at 1.800m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AE1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336294E - 187275N Level: 6.14	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
							MADE GROUND - Brown sandy gravelly CLAY.		
0.30		ES		5.84		0.30	MADE GROUND - Black sandy gravelly CLAY.		
				5.54		0.60	MADE GROUND - Grey medium grained well sorted GRAVEL. Possible type 1.		
				5.34		0.80	MADE GROUND - Orange sandy GRAVEL. Gravel is fine to coarse, angular to subrounded of various lithologies including burnt shales, slags, mudstone, bricks and concrete.		
				5.14	1	1.00	MADE GROUND - Brown clayey cobbly GRAVEL. Gravel is fine to coarse, subangular to subrounded of various lithologies including sandstone, mudstone, brick and slags.		
1.40 1.40		B ES							
				4.54		1.60	TIDAL FLAT DEPOSITS- soft to firm grey CLAY.		
				4.14	2	2.00	End of Pit at 2.000m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AF1** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336325E - 187272N Level: 6.10	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
							MADE GROUND - Brown sandy gravelly CLAY. Gravel is slag.		
				5.80		0.30	MADE GROUND - Black clayey gravelly SAND.		
0.70 0.70		B ES		5.40		0.70	MADE GROUND - Orange sandy GRAVEL. Gravel is fine to coarse, angular to subrounded of various lithologies including burnt shales, slags, mudstone, bricks and concrete.		
				5.10	1	1.00	MADE GROUND - Brown cobbly clayey GRAVEL. Gravel is fine to coarse, subrounded to subangular of various lithologies including sandstone, mudstone, slag and others.		
1.50		ES							
				4.20		1.90	TIDAL FLAT DEPOSITS- soft to firm grey CLAY.		
				4.10	2	2.00	End of Pit at 2.000m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AF2** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336331E - 187256N Level: 6.00	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 1.80	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20		B		5.70	0.30	MADE GROUND - Orange sandy slightly gravelly CLAY.		
0.60		ES		5.50	0.50	MADE GROUND - Brown sandy clayey GRAVEL. Gravels are fine to coarse, subangular to subrounded of various lithologies including slag, brick and mudstone.		
1.30		ES		5.00	1.00	MADE GROUND - Black gravelly clayey SAND. Gravel is fine to coarse, subrounded to angular of various lithologies.		
				4.50	1.50	MADE GROUND - Brown clayey sandy GRAVEL. Gravel is fine to coarse, subrounded to angular and comprises various lithologies including mudstones, slag and sandstones.		
				4.20	1.80	TIDAL FLAT DEPOSITS- Brownish grey peaty CLAY.		
						End of Pit at 1.800m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AF4**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336312E - 187193N Level: 6.83	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.43	0.40	MADE GROUND - Black gravelly sandy CLAY.		
0.50 0.50		B ES				MADE GROUND - Greyish orange sandy clayey GRAVEL of slag. Slag is fused.		
				5.63	1.20	MADE GROUND - Cobbly sandy GRAVEL. Gravel is fine to coarse, angular to subrounded of various lithologies including shales, sandstones and mudstones.		
1.60		ES						
				4.93	1.90	TIDAL FLAT DEPOSITS- Stiff grey CLAY.		
				4.83	2.00	End of Pit at 2.000m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AF5** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336323E - 187180N Level: 6.45	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.10	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				5.95	0.50	MADE GROUND - Black gravelly sandy CLAY.		
0.50		ES				MADE GROUND - Brown slightly sandy and clayey GRAVEL. Gravel is angular and medium grained. Possible type 1.		
0.90		B		5.35	1.10	MADE GROUND - brownish orange sandy GRAVEL. Gravel is fine to coarse, subangular to subrounded and comprises various lithologies including burnt shales, slag and others.		
1.80		ES		4.55	1.90	TIDAL FLAT DEPOSITS- Firm grey CLAY.		
				4.35	2.10	End of Pit at 2.100m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AF6**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336288E - 187141N Level: 6.39	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 0.70	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				5.69	0.70	MADE GROUND - Brownish black sandy gravelly CLAY. Gravel is subrounded to angular fine to coarse of various lithologies.		
						Refusal on concrete slab.		
						End of Pit at 0.700m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AG1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336344E - 187271N Level: 6.20	Date 18/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50 0.50		B ES		6.10	0.10	MADE GROUND - Brown sandy gravel CLAY.		
						MADE GROUND - Black gravelly SAND.		
				5.60	0.60	MADE GROUND - Orangish brown GRAVEL with rare cobbles. Gravel is fine to coarse, subrounded to angular comprised of various lithologies including mudstone, sandstone, and slags.		
				5.00	1.20	TIDAL FLAT DEPOSITS- Soft grey CLAY.		▼
				4.70	1.50	End of Pit at 1.500m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AG2**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336351E - 187249N Level: 5.80	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.20	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.30		ES		5.40	0.40	MADE GROUND - Brown sandy gravelly CLAY.		
				5.30	0.50	MADE GROUND - Grey slightly sandy and slightly clayey GRAVEL. Gravel is subangular to subrounded, fine to coarse fine to medium grained of various lithologies.		
0.80		B		5.00	0.80	MADE GROUND - Black clayey SAND.		
0.80		ES				MADE GROUND - Grey medium grained GRAVEL. Gravel is subrounded and well sorted of various lithologies.		
				4.80	1.00	TIDAL FLAT DEPOSITS- Soft to firm bluish grey clay		
				4.60	1.20	End of Pit at 1.200m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AG3**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336352E - 187209N Level: 7.40	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.20	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
							MADE GROUND - Soft brown CLAY.		
				6.80		0.60	MADE GROUND - Black gravelly clayey SAND. Gravel is subrounded to subangular fine to coarse of various lithologies.		
							Hydrocarbon odour and sheen on perched water		
					1				
				6.30		1.10	MADE GROUND - Grey sandy GRAVELof slag and brick. Slag is fused. Inclusions of plastic and brick.		
				5.40	2	2.00	TIDAL FLAT DEPOSITS- Soft to firm grey CLAY.		
				5.20		2.20	End of Pit at 2.200m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AG6** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336335E - 187137N Level: 6.45	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.30 0.30		B ES				MADE GROUND - Brownish black sandy gravelly CLAY. Gravel is subrounded to angular fine to coarse of various lithologies.		
						Slight sheen on perched water.		
				5.65	0.80			
				5.55	0.90	MADE GROUND - Sandy gravelly slightly cobbly CLAY. Gravel is fine to coarse, angular to subrounded of various lithologies including brick, sandstone, mudstone and slags.		
				5.35	1.10	MADE GROUND - Orange sandy GRAVEL. Gravels are fine to coarse, subangular to subrounded of various lithologies including brick, clay pipe fragments, slags, sandstones, burnt shales and metal fragments.		
1.50		ES				MADE GROUND - Greyish brown cobbly clayey sandy GRAVEL. Inclusion of one boulder. Gravel is fine to coarse, angular to subrounded of various lithologies including sandstone, mudstone and slags.		
						Pipe		
				4.45	2.00	TIDAL FLAT DEPOSITS- Soft to firm bluish grey CLAY.		
				4.15	2.30	End of Pit at 2.300m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AG7**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336349E - 187130N Level: 6.41	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.10	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50 0.50		B ES		5.91	0.50	MADE GROUND - Light brown sandy clayey GRAVEL. Gravel is fine to coarse, angular to subrounded of mixed lithologies including slags and brick.		
				5.61	0.80	MADE GROUND - Grey sandy gravel of slag and brick. Slag is fused.		
				5.31	1.10	MADE GROUND - Black fused slag. *Refusal* End of Pit at 1.100m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AH1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336371E - 187271N Level: 6.00	Date 18/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.40	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20		ES		5.80	0.20	MADE GROUND - Brown gravelly sandy CLAY. Gravel is fine to coarse, angular to subrounded, comprising various lithologies including slag, mudstone and sandstone.		
				5.60	0.40	MADE GROUND - Black sandy GRAVEL of slag. Gravel is subangular to subrounded, fine to coarse.		
						MADE GROUND - Greyish brown sandy GRAVEL of slag with frequent cobbles. Slag is fused.		
1.10		B		5.00	1.00	MADE GROUND - Orangish brown gravelly sandy COBBLES. Gravel is fine to coarse, subangular to subrounded, of various lithologies including slag, brick, mudstone, sandstone and concrete.		
				4.80	1.20	TIDAL FLAT DEPOSITS- Firm to stiff grey CLAY.		
				4.60	1.40	End of Pit at 1.400m		

1 2 3 4 5

Remarks:

Stability:

Trial Pit Log

TrialPit No **AH2**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336365E - 187241N Level: 6.30	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				6.20		0.10	MADE GROUND - Asphalt MADE GROUND - Black gravelly clayey SAND.		
0.50		ES		5.80		0.50	MADE GROUND - Orangish brown clayey sandy GRAVEL. Gravel is fine to coarse, rounded to angular of various lithologies including shales, slags and bricks.		
				5.30	1	1.00	MADE GROUND - Brown cobbly gravelly CLAY. Gravel is fine to coarse, subrounded to subangular of various lithologies including brick, mudstones, shales, sandstones and slags.		
1.50 1.50		B ES		4.70		1.60	TIDAL FLAT DEPOSITS- Soft to firm bluish grey CLAY.		
				4.30	2	2.00	End of Pit at 2.000m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AH3** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336370E - 187210N Level: 6.30	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50 0.50		B ES			1		MADE GROUND - Blackish brown gravelly clayey SAND. Fused coal sand. Inclusions of timber and brick.		
				5.00		1.30			
1.50		ES					MADE GROUND - Greyish brown sandy clayey GRAVEL. Gravel is fine to coarse, subrounded to subangular of various lithologies including brick, slag, mudstones and others.		
				4.60		1.70	TIDAL FLAT DEPOSITS- Firm to soft grey CLAY.		
				4.30	2	2.00	End of Pit at 2.000m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AH6** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336344E - 187143N Level: 6.50	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.20	0.30	MADE GROUND - Dark brown sandy CLAY.		
0.40 0.40		B ES				MADE GROUND - Greyish orange sandy gravelly CLAY. Gravel is subrounded to subangular fine to coarse of various lithologies including slags, mudstones and others.		
						Slight sheen on perched water.		
				5.30	1.20	MADE GROUND - Orangish black occasional cobbles. Gravel is fine to coarse, subangular to subrounded of mixed lithologies including burnt shales, slags, mudstones, concrete and others.		
				4.90	1.60	MADE GROUND - Brownish grey cobbly GRAVEL. Gravel is fine to coarse, subangular to subrounded of various lithologies including mudstone, shales, slags and others. Inclusions of metal fragments.		
2.00		ES						
				4.20	2.30	TIDAL FLAT DEPOSITS- Soft to firm bluish grey CLAY.		
				4.00	2.50	End of Pit at 2.500m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AH7**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336337E - 187113N Level: 6.60	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.70	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
						MADE GROUND - Brown sandy gravelly CLAY.		
0.40 0.40		B ES		6.20	0.40	MADE GROUND - Brown clayey sandy GRAVEL. Gravel is medium to coarse, subrounded to subangular of slag.		
				5.80	0.80	MADE GROUND - Black clayey sandy GRAVEL. Gravel is medium to coarse, subrounded to subangular of slag.		
				5.50	1.10	MADE GROUND - Blackish orange sandy GRAVEL. Gravel is fine to coarse, angular and comprises various lithologies including burnt shales, slag and others.		
1.50		ES						
				4.90	1.70	*Refusal*		
						End of Pit at 1.700m		

Remarks:

Stability:

Trial Pit Log

TrialPit No
AI1
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336394E - 187263N Level: 6.10	Date 18/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.40 0.40		B ES		6.00 5.95		0.10 0.15	MADE GROUND - Grey sandy clayey GRAVEL of slag. MADE GROUND - Grey slightly gravelly SAND of slag. Slag is fused.		
							MADE GROUND - Greyish black sandy GRAVEL occasional cobbles. Gravel is fine to coarse, subangular to subrounded comprised of various lithologies including slag, bricks, slag and plastics		
				5.20	1	0.90	MADE GROUND - Orangish brown of sandy GRAVEL. Gravel is fine to coarse, subrounded to subangular of various lithologies including slags, mudstones, bricks and other lithologies. Frequent cobbles throughout.		
				4.80		1.30	TIDAL FLAT DEPOSITS- Firm grey CLAY.		
				4.60	2	1.50	End of Pit at 1.500m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No
AI2
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336399E - 187234N Level: 6.31	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.60	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				5.91	0.40	MADE GROUND - Brownish black gravelly clayey SAND of slag. Slag is fused.		
0.50 0.50		B ES				MADE GROUND - Black gravelly clayey SAND of slag. Slag is fused. Gravel is fine to coarse subangular to subrounded of various slags.		
						Plastic water pipe		
				5.31	1.00	MADE GROUND - Brown slightly sandy clayey GRAVEL. Gravel of various lithologies.		
				4.91	1.40	TIDAL FLAT DEPOSITS- Firm grey CLAY.		
				4.71	1.60	End of Pit at 1.600m		

1 2 3 4 5

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AI3**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336379E - 187216N Level: 6.35	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 1.70	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				5.95		0.40	MADE GROUND - Brown slightly gravelly sandy CLAY. Gravel is fine to coarse angular to subrounded of slag.		
0.50 0.50		B ES							
				5.35	1	1.00	MADE GROUND - Black gravelly slightly clayey SAND.		
1.20		ES							
				5.05		1.30	MADE GROUND - Grey sandy GRAVEL of slag. Slag is fused.		
				4.85		1.50	MADE GROUND - Brown slightly clayey GRAVEL. Gravel is fine to coarse, subrounded to subangular of various lithologies including brick, slag and mudstone.		
				4.65		1.70	TIDAL FLAT DEPOSITS- Firm bluish grey CLAY.		
					2		End of Pit at 1.700m		
					3				
					4				
					5				

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AI6**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336084E - 187145N Level: 6.50	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.80	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.10 0.10		B ES		6.30	0.20	MADE GROUND - Reddish brown sandy gravelly CLAY.		
						MADE GROUND - Whitish grey sandy GRAVEL of slag. Slag is fused.		
				5.70	0.80	MADE GROUND - Red sandy GRAVEL with frequent cobbles. Gravel is fine to coarse, subangular to subrounded of various lithologies including brick, concrete, slag, burnt shales, mudstones and sandstones.		
1.60		ES		4.80	1.70	TIDAL FLAT DEPOSITS- Soft bluish grey CLAY.		
				4.70	1.80	End of Pit at 1.800m		

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AI7**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336379E - 187109N Level: 6.40	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 1.70	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.10	0.30	MADE GROUND - Reddish brown sandy gravelly CLAY.		
0.40 0.40		B ES				MADE GROUND - Black gravelly clayey SAND. *Slight hydrocarbon odour*		
				5.60	0.80	MADE GROUND - Black sandy GRAVEL with occasional cobbles. Gravel is fine to coarse, subrounded to subrounded of mixed lithologies including brick, slags, shales and sandstones.		
1.30		ES				*Slight sheen on perched water.*		
				4.90	1.50	TIDAL FLAT DEPOSITS- Soft to firm blue CLAY.		
				4.70	1.70	End of Pit at 1.700m		

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2
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Remarks:

Stability:

Trial Pit Log

TrialPit No: **AI8**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336382E - 187087N Level: 6.46	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				6.26		0.20	MADE GROUND - Reddish brown sandy gravelly CLAY.		
0.40 0.40		B ES					MADE GROUND - Grey brown sandy GRAVEL of slag with occasional cobbles. Gravel is fine to coarse, subangular to subrounded.		
				5.66		0.80	MADE GROUND - Grey sandy GRAVEL of slag. Slag is fused.		
				5.56		0.90	MADE GROUND - Brown slightly sandy and clayey GRAVEL. Gravel is angular and medium grained. Possible type 1.		
				5.36	1	1.10	MADE GROUND - Blackish orange sandy gravel with frequent cobbles. Gravel is fine to coarse subrounded to subangular of mixed lithologies including mudstone, brick, sandstones and slags. Slight sheen observed on one boulder of slag Material.		▼
2.00		ES			2				
				4.06		2.40	TIDAL FLAT DEPOSITS- Firm bluish grey clay with frequent rootlets.		
				3.96		2.50	End of Pit at 2.500m		
					3				
					4				
					5				

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AJ1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336416E - 187264N Level: 6.07	Date 18/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.70	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20		ES		5.87	0.20	MADE GROUND - Brown sandy gravelly CLAY.		
				5.57	0.50	MADE GROUND - Grey sandy GRAVEL.		
				5.47	0.60	MADE GROUND - Creamish brown sandy GRAVEL. Gravel is angular to subrounded lithologies comprise of slag, mudstone and bricks.		
				5.42	0.65	MADE GROUND - Brown SAND. Fine to medium grained.		
1.00		B				MADE GROUND - whitish grey sandy GRAVEL of slag. Slag is fused. Gravel is subangular to subrounded, fine to coarse occasional cobbles present.		
1.00		ES						
				4.57	1.50	TIDAL FLAT DEPOSITS- Soft grey CLAY.		
				4.37	1.70	End of Pit at 1.700m		

1 2 3 4 5

Remarks:

Stability:

Trial Pit Log

TrialPit No **AJ2**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336414E - 187234N Level: 6.41	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.80	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				6.31		0.10	MADE GROUND - Reddish brown sandy gravelly CLAY.		
							MADE GROUND - Black clayey gravelly SAND.		
				6.01		0.40			
0.50		ES					MADE GROUND - Orange sandy GRAVEL. Gravel is fine to coarse, subangular to subrounded of sandstone.		
				5.41	1	1.00			
							MADE GROUND - Brown very sandy clayey GRAVEL. Gravel is subrounded to subangular of various lithologies including burnt shales, slags, bricks and others.		
1.50		B							
1.50		ES		4.81		1.60	TIDAL FLAT DEPOSITS- Soft grey CLAY.		
				4.61		1.80	End of Pit at 1.800m		
					2				
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AJ3**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336432E - 187224N Level: 6.18	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.30 0.30		B ES		5.78	0.40	MADE GROUND - Black sandy gravelly CLAY.		
						MADE GROUND - Grey sandy BOULDERS of slag. Slag is fused.		
				4.88	1.30	MADE Ground - Grey well sorted coarse GRAVEL of slag.		
1.70		ES		4.38	1.80	TIDAL FLAT DEPOSITS- Firm to soft grey CLAY.		
				4.18	2.00	End of Pit at 2.000m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AJ4**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336421E - 187180N Level: 6.30	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 1.70	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.20	0.10	MADE GROUND - Dark brownish grey gravelly sandy CLAY with rare cobbles.		
0.40 0.40		B ES				MADE GROUND - Light brown clayey gravelly SAND. Subangular to subrounded, fine to coarse comprising various lithologies		
1.00		ES		5.10	1.20	MADE GROUND - Bluish grey sandy GRAVEL of slag with occasional brick fragments. Slag is fused.		
				4.80	1.50	TIDAL FLAT DEPOSITS- Greyish black peaty CALY.		
				4.60	1.70	End of Pit at 1.700m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AJ5**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336416E - 187167N Level: 6.30	Date 10/02/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.10	0.20	MADE GROUND - Brown sandy gravelly CLAY.		
				6.00	0.30	MADE GROUND - Whitish yellow gravelly sand of slag. Slag is fused.		
0.60 0.60		B ES		5.70	0.60	MADE GROUND - Orange clayey sandy GRAVEL. Gravel is fine to medium, subangular to subrounded of various lithologies including burnt shales and slag.		
				5.30	1.00	MADE GROUND - Gravelly sandy CLAY. Gravel is fine to coarse, subangular to subrounded of various lithologies including sandstone, mudstone, slags, bricks and concrete. Inclusions of cables and rebar.		
						Refusal on concrete slab.		
						End of Pit at 1.000m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AJ6**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336422E - 187109N Level: 6.30	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50		ES					MADE GROUND - Dark brown slightly gravelly CLAY. Frequent roots present, inclusions of brick fragments and glass.		
				5.50		0.80	MADE GROUND - Orange sandy GRAVEL. Gravel is fine to coarse, angular to subrounded of various lithologies including burnt shales, slags, mudstone, bricks and concrete. Increasing cobble content with depth		
1.30		B			1				
1.30		ES							
				4.30	2	2.00	TIDAL FLAT DEPOSITS- Soft grey CLAY.		
				4.00		2.30	End of Pit at 2.300m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AK1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336442E - 187257N Level: 6.00	Date 18/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				5.70		0.30	MADE GROUND - Brownish grey sandy gravelly CLAY occasional cobbles present. Gravel is fine to coarse, angular to subrounded of various lithologies		
0.30		ES		5.60		0.40	MADE GROUND - Whitish grey gravelly SAND of slag. Slag was fused.		
							MADE GROUND - Grey sandy GRAVEL of slag.		
				5.20		0.80	MADE GROUND - Black sandy GRAVEL of slag. Slag is fused		▼
				5.00	1	1.00	MADE GROUND - Brown slightly sandy GRAVEL of various lithologies including slag. Gravel is angular, fine to coarse. Rare cobbles throughout.		
1.70		B							
				4.20		1.80	TIDAL FLAT DEPOSITS- Firm to soft grey CLAY.		
				4.00	2	2.00	End of Pit at 2.000m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AK2** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336446E - 187238N Level: 6.30	Date 18/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.10		ES		6.10		0.20	MADE GROUND - Brown gravelly sandy CLAY. Topsoil		
0.70		B					MADE GROUND - Light grey sandy clayey GRAVEL of slag, brick and mudstone. Gravel is fine to coarse, subrounded to subangular		
1.30		ES		5.40	1	0.90	MADE GROUND - Black sandy GRAVEL of slag. Slag is fused. Gravels is fine to coarse, subrounded to subangular, comprising various lithologies including mudstone, slag, sandstone, burnt shales, brick and concrete. *Strong Hydrocarbon odour* *Metal pipe in side of pit*		
				4.80		1.50	TIDAL FLAT DEPOSITS- Firm peaty CLAY.		
				4.30	2	2.00	End of Pit at 2.000m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AK3**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336442E - 187184N Level: 6.58	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				5.58	1	1.00	MADE GROUND - Brown sandy gravelly cobbly CLAY. Gravel is fine to coarse, subangular to sub rounded comprising slag, concrete, sandstone, mudstone and fragments of textiles		
							Refusal on hard ground		
							End of Pit at 1.000m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AK4**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336442E - 187179N Level: 6.40	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 0.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.10	0.30	MADE GROUND - Brown sandy gravelly CLAY.		
						Refusal on concrete.		
						End of Pit at 0.300m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AK5** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336440E - 187154N Level: 6.30	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.40	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.20		ES		6.00		0.30	TOPSOIL - Dark brown Clayey TOPSOIL.		
							MADE GROUND - Orangey brown sandy gravelly CLAY. Comprising fine to coarse, subangular to sub rounded gravels of mudstone, slag, brick and tile slabs.		
				5.30	1	1.00	MADE GROUND - Orangish black sandy GRAVEL of slag. Slag is fused. Burnt shales also present within the gravel.		
1.20 1.20		B ES					*Large historical pipe across center of pit*		
				4.60		1.70	TIDAL FLAT DEPOSITS- Soft - firm grey CLAY.		
					2				
				3.90		2.40	End of Pit at 2.400m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AL1** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336469E - 187249N Level: 6.20	Date 18/12/2020
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 1.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50 0.50		B ES		6.10	0.10	MADE GROUND - Brown gravelly sandy CLAY. Topsoil		
1.00		ES				MADE GROUND - Grey sandy GRAVEL of slag. Slag is fused. Gravel is fine to coarse, subangular to subrounded comprised of slag, mudstone, and other various lithologies. Inclusions of plastic.		
				4.90	1.30	TIDAL FLAT DEPOSITS- Soft grey CLAY.		
				4.70	1.50	End of Pit at 1.500m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AL2**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336444E - 187211N Level: 6.40	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.20		ES					MADE GROUND - Brown sandy gravelly CLAY. Occasional large cobbles of concrete and asphalt. Gravel is fine to coarse, round to angular comprising various lithologies including slag, concrete, mudstone, sandstone and shales.		
				5.70		0.70	MADE GROUND - whitish grey sandy GRAVEL of slag. Slag is fused.		
1.00		B		5.40	1	1.00	MADE GROUND - Light brown cobbly sandy GRAVEL. Gravel is fine to coarse, subangular - subrounded, of various lithologies comprising slag, bricks, burnt shales, mudstones and sandstones.		
1.20		ES							
				4.60		1.80	TIDAL FLAT DEPOSITS- Soft grey CLAY.		
				4.40	2	2.00	End of Pit at 2.000m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AM1**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336501E - 187251N Level: 6.32	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.60	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.30 0.30		B ES				MADE GROUND - Brown sandy gravelly CLAY. Gravel is subrounded to angular, fine to coarse. Comprising various lithologies including brick, slag, shales, mudstone and sandstone. Fragments of metal and plastic present.		
1.00		ES						
				4.82	1.50	TIDAL FLAT DEPOSITS- Soft grey CLAY.		
				4.72	1.60	End of Pit at 1.600m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AM2**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336482E - 187223N Level: 6.30	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.80	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50		ES					MADE GROUND - Brown sandy CLAY. Frequent cobbles, cobbles are fine to coarse angular to sub rounded includes brick, slag and asphalt.		
				5.40	1	0.90	MADE GROUND - Cobbly sandy GRAVEL of bricks, concrete slabs, mudstone, asphalt and slag.		
1.60 1.60		B ES							
				4.50	2	1.80	End of Pit at 1.800m		
					3				
					4				
					5				

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AN1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336528E - 187241N Level: 6.40	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 1.70	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50		ES				MADE GROUND - Brown sandy gravelly CLAY with frequent cobbles of concrete, slag and shales. Material becomes more gravelly and cobbly with depth.		
1.50		B		4.90	1.50	TIDAL FLAT DEPOSITS- Soft grey CLAY.		
1.50		ES		4.70	1.70	End of Pit at 1.700m		

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AO1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336557E - 187238N Level: 6.49	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.30		ES				MADE GROUND - Brown sandy gravelly CLAY with occasional cobbles. Gravel is subrounded to subangular and comprises various lithologies including slag, cobbles, brick and concrete.		
				5.29	1.20			
1.30 1.30		B ES				MADE GROUND - Grey sandy GRAVEL of slag. Slag is fused. Gravel is fine to coarse, subangular to subrounded comprised of slag, burnt shales, mudstone, sandstones and other various lithologies.		
				4.59	1.90	TIDAL FLAT DEPOSITS- Firm blue grey CLAY.		▼
				4.49	2.00	End of Pit at 2.000m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AK10**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336416E - 187053N Level: 6.30	Date 19/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 0.60	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.30	AK10 -1	ES		6.00	0.30	MADE GROUND: Greyish brown gravelly sandy CLAY. Gravel is fine to coarse angular to subrounded of slag, mudstone and sandstone.		
0.60	AK10 -1	B		5.70	0.60	MADE GROUND: Brown sandy slightly clayey GRAVEL. Gravel is fine to coarse angular to subrounded of slag, sandstone, shale and mudstone.		▼
						End of Pit at 0.600m		

1 2 3 4 5

Remarks: 1. Hand Pit for Leachable Lead Sampling. 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AK11**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336420E - 187021N Level: 6.21	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 0.80	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.10 0.10		B ES		6.01	0.20	MADE GROUND - Brown sandy gravelly CLAY.		
				5.71	0.50	MADE GROUND - Greyish white sandy clayey GRAVEL. Gravel is fine to medium, subrounded to subrounded of slags. Slag is fused.		
				5.41	0.80	MADE GROUND - Brown gravelly sandy CLAY with occasional cobbles. Gravel is fine to coarse subangular to subrounded of various lithologies including mudstone, sandstones, bricks and slags. *Refusal*		
						End of Pit at 0.800m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AK12**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336431E - 187007N Level: 6.51	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.60 0.60		B ES				MADE GROUND - Brown sandy gravelly cobbly CLAY. Gravel is fine to coarse, angular to subrounded of various lithologies including brick, slags, shales, mudstones, sandstones and others. Inclusions of metal and timber.		
				5.21	1.30	*Refusal* End of Pit at 1.300m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AK17**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336429E - 186870N Level: 6.29	Date 19/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 1.60	Logged DM

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50	AK17 -1	ES					MADE GROUND: Brown gravelly CLAY. Gravel is fine to coarse subangular to rounded comprising of various slags, mudstone and sandstone.		
				5.29	1	1.00	MADE GROUND: Brown cobbly sandy GRAVEL. Gravel is fine to coarse subangular to rounded comprising of various slags, mudstone and sandstone.		
1.30	AK17 -1	B		4.99		1.30	TIDAL FLAT DEPOSITS: Soft to firm bluish grey and black CLAY.		
1.30	AK17 -2	ES							
				4.69		1.60	End of Pit at 1.600m		
					2				
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AK18**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336406E - 186842N Level: 6.34	Date 19/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 1.30	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
						MADE GROUND: Brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded of slag, sandstone, shale and mudstone.		
				5.64	0.70			
						MADE GROUND: Brown grey sandy GRAVEL. Gravel is fine to coarse subangular to subrounded of slag, sandstone, shale and mudstone.		
				5.44	0.90			
						MADE GROUND: Grey very sandy GRAVEL. Gravel is fine to coarse subangular to subrounded of slag, sandstone, shale and mudstone.		
						Refusal		
				5.04	1.30	End of Pit at 1.300m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AL10**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336455E - 187028N Level: 6.30	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.10		ES		6.20		0.10	MADE GROUND - Brown sandy gravelly CLAY.		
					1		MADE GROUND - Grey sandy clayey GRAVEL. Gravel is fine to coarse, rounded to angular, comprising mudstones, bricks, slags shales and other lithologies. Frequent cobbles increasing content with depth.		
2.00 2.00		B ES		4.20	2	2.10	TIDAL FLAT DEPOSITS- Soft to firm bluish grey CLAY.		
				4.00		2.30	End of Pit at 2.300m		
					3				
					4				
					5				

Remarks: 1. Hand Pit for Asbestos Identification 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AL11**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336461E - 186996N Level: 6.40	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 1.70	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.30 0.30		B ES					MADE GROUND - Brown sandy gravelly CLAY. Gravel is fine to coarse , subangular to subrounded of mix lithologies including sandstone, mudstones, slag, bricks, concrete and others.		
				5.90		0.50	MADE GROUND - Dark brown sandy clayey GRAVEL. Angular to subrounded, fine to coarse of various lithologies including burnt shales, mudstones, concrete and metal.		
				5.40	1	1.00	MADE GROUND - Orangy cobbly sandy clayey GRAVEL. Gravel is fine to coarse, subangular to subrounded, of various lithologies including burnt shales, mudstones, brick, sandstones, concrete, and slags. Inclusions of timber fragments.		
1.40		ES							
				4.90		1.50	TIDAL FLAT DEPOSITS- Soft bluish grey CLAY.		
				4.70		1.70	End of Pit at 1.700m		
					2				
					3				
					4				
					5				

Remarks: 1. Hand Pit for Asbestos Identification 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AL12**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336448E - 186975N Level: 6.20	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 3.20	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50 0.50		B ES				MADE GROUND - Reddish brown gravelly very sandy CLAY occasional cobbles. Gravel is fine to coarse, subrounded to subangular, lithologies include brick, shales, slag, mudstone and sandstone. Inclusions of metal, wires timber and concrete.		
1.00		ES		5.40	0.80	MADE GROUND - Black gravelly SAND with frequent cobbles. Gravel is fine to coarse, subrounded to subangular and comprises bricks, metal fragments and slags. Inclusions of historical conveyor.		▼
2.50		ES		5.00	1.20	MADE GROUND - Black gravelly sandy COBBLES of bricks. Gravel is fine to coarse, subrounded to subangular and comprises bricks and concrete. Inclusions of boulders of concrete.		
				3.20	3.00	TIDAL FLAT DEPOSITS- Soft to firm bluish grey CLAY.		
				3.00	3.20	End of Pit at 3.200m		

1 2 3 4 5

Remarks: 1. Hand Pit for Asbestos Identification 2. Excavation backfilled with arisings on completion.

Stability:

AGS

Trial Pit Log

TrialPit No **AL13** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336449E - 186946N Level: 6.60	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.30 0.30		B ES		6.20	0.40	MADE GROUND - Reddish brown slightly sandy gravelly CLAY. Gravel is fine to medium, fine to coarse comprised of brick, mudstone, slag and other lithologies. Inclusions of timber.		
				5.50	1.10	MADE GROUND - Dark reddish brown very sandy gravelly CLAY. Gravel is fine to coarse, subangular to subrounded comprising slag, metal, brick, sandstone and mudstone. Inclusions of timber.		
1.50		ES		4.50	2.10	MADE GROUND - Brown sandy clayey GRAVEL with frequent cobbles. Gravel is fine to coarse, subrounded to subangular, lithologies include brick, shales, slag, mudstone and sandstone. Inclusions of metal, wires timber and concrete.		
				4.30	2.30	TIDAL FLAT DEPOSITS- Soft bluish grey CLAY.		
						End of Pit at 2.300m		

Remarks: 1. Hand Pit for Asbestos Identification 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AL14**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336442E - 186936N Level: 6.30	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.20	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.30		ES					MADE GROUND - Brown sandy gravelly CLAY. Gravel is subrounded to subangular, fine to coarse with frequent cobbles. Lithologies include slag, brick and concrete. Inclusions of rebar.		
							Top of two piles in the eastern and southern pit walls.		
				5.30	1	1.00	MADE GROUND - Orange GRAVEL. Gravel is fine to coarse, angular to subangular comprising burnt shales, slag, concrete, sandstones and mudstones.		
1.70 1.70		B ES							
				4.30	2	2.00	TIDAL FLAT DEPOSITS- Soft bluish greyish Clay		
				4.10		2.20	End of Pit at 2.200m		
					3				
					4				
					5				

Remarks: 1. Hand Pit for Asbestos Identification 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AL15**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336438E - 186919N Level: 6.29	Date 21/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 1.90	Logged DM

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
							MADE GROUND: Brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded of slag, sandstone, shale and mudstone.		
0.50	AL15 -1	ES		5.79		0.50	MADE GROUND: Black very sandy clayey GRAVEL. Gravel is fine to coarse subangular to subrounded of slag, sandstone, shale and mudstone.		
				5.29	1	1.00	*Concrete Pile (S of pit).*		
							MADE GROUND: Brown cobbly sandy GRAVEL. Gravel is fine to coarse subangular to subrounded of slag, sandstone, shale and mudstone.		
1.40	AL15 -1	B		4.89		1.40	MADE GROUND: Brown cobbly sandy clayey GRAVEL. Gravel is fine to coarse subangular to subrounded of slag, sandstone, shale and mudstone.		
1.40	AL15 -2	ES					*Concrete Pile (SE of pit).*		
				4.59		1.70	TIDAL FLAT DEPOSITS: Soft to firm bluish grey and black CLAY.		
				4.39		1.90	End of Pit at 1.900m		
					2				
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AL16**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336435E - 186961N Level: 6.35	Date 21/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 3.50	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.25	0.10	MADE GROUND: Brown sandy gravelly CLAY. Gravel is fine to coarse angular to subrounded of fused slag.		
						MADE GROUND: Brown grey GRAVEL. Gravel is fine to coarse angular to subangular of fused slag.		
0.60	AL16 -1	ES		5.75	0.60	MADE GROUND: Brown cobbly GRAVEL. Gravel is medium to coarse of mudstone and occasional concrete and red brick fragments.		
						Slight sheen and hydrocarbon odour observed.		
1.50	AL16 -2	ES						
2.90	AL16 -1	B						
3.00	AL16 -3	ES		3.15	3.20	TIDAL FLAT DEPOSITS: Soft to firm bluish grey and black CLAY.		
				2.85	3.50	End of Pit at 3.500m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No: **AL17**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336428E - 186857N Level: 6.33	Date 21/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 2.30	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50	AL17 -1	B		5.73	0.60	MADE GROUND: Black and brown sandy gravelly CLAY. Gravel is fine to coarse subrounded to angular of slag, mudstone with occasional fragments of red brick and concrete.		
0.50	AL17 -1	ES						
1.90	AL17 -2	ES		4.43	1.90	MADE GROUND: Orange and brown sandy GRAVEL. Gravel is fine to coarse subangular to subrounded of slag and mudstone.		
				4.13	2.20	MADE GROUND: Orange sandy GRAVEL. Gravel is fine to coarse subangular to subrounded of slag and mudstone, shale, sandstone and rare fragments of red brick.		
				4.03	2.30	TIDAL FLAT DEPOSITS: Soft to firm bluish grey and black CLAY.		
						End of Pit at 2.300m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AL6** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336461E - 187140N Level: 6.35	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 1.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.05	0.30	MADE GROUND - Brownish red sandy GRAVEL of iron ore pellets.		
				5.95	0.40	MADE GROUND - Asphalt		
						MADE GROUND - Orange gravelly sandy CLAY. Gravel is fine to coarse subrounded to subangular of various lithologies including iron ore pellets, slags, mudstone, sandstones and others..		
0.80 0.80		B ES		5.55	0.80	MADE GROUND - Grey gravelly sand of slag. Slag is fused.		▼
				5.35	1.00	TIDAL FLAT DEPOSITS- Soft brownish grey clay with wood fragments.		
				4.85	1.50	End of Pit at 1.500m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AL7** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336457E - 187110N Level: 6.35	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.10	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				6.35		0.00	MADE GROUND - Brown sandy gravelly CLAY.		
0.40		ES		6.05		0.30	MADE GROUND - Brownish grey sandy clay GRAVEL. Gravel is fine to medium, angular to subrounded of various lithologies including brick, concrete, mudstones, sandstones, slags and others.		
				5.55		0.80	MADE GROUND - Grey sandy GRAVEL with frequent cobbles. Gravel is subrounded to subangular of various lithologies including shales, brick, slags and others. Material becomes increasingly cobbley with depth. Material has a cream precipitate build up on cobbles.		
					1		*Strong sulphuric odour.*		
1.50		ES							
				4.35	2	2.00	TIDAL FLAT DEPOSITS- Soft greyish brown CLAY.		
				4.25		2.10	End of Pit at 2.100m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AM10** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336482E - 187013N Level: 6.22	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.20	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.20 0.20		B ES					MADE GROUND - Reddish brown sandy gravelly clay with occasional cobbles. Gravel is fine to coarse, subrounded to subangular of slags. *Concrete slab in east of pit 300mm thick.*		
				5.72		0.50	MADE GROUND - Large cobbles of concrete and slag.		
				5.22	1	1.00	MADE GROUND -brownish grey sandy GRAVEL. Gravel is fine to coarse, subangular to subrounded comprising burnt shales, mudstone, brick, slag, concrete and inclusions of wires. *Slight hydrocarbon odour present*		▼
1.90		ES			2				
				4.12		2.10	TIDAL FLAT DEPOSITS- soft grey CLAY.		
				4.02		2.20	End of Pit at 2.200m		
					3				
					4				
					5				

Remarks: 1. Hand Pit for Leachable Lead Sampling. 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AM11** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336478E - 186977N Level: 6.18	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20 0.20		B ES				MADE GROUND - Reddish brown sandy gravelly CLAY with frequent cobbles. Gravel is fine to coarse, angular to subrounded of various lithologies.		
				5.68	0.50	MADE GROUND - Black sandy clayey GRAVEL. Gravel is fine to coarse, angular to subrounded, comprising mudstone, shales, sandstones, brick, slags and concrete. Inclusion of historical conveyor belt, metal and timber. *Cobble content increasing with depth*		
1.80		ES						
				4.18	2.00	TIDAL FLAT DEPOSITS- Brown fibrous peat		
				3.88	2.30	End of Pit at 2.300m		

1 2 3 4 5

Remarks: 1. Hand Pit for Leachable Lead Sampling. 2. Excavation backfilled with arisings on completion.

Stability:

AGS

Trial Pit Log

TrialPit No
AM12
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336480E - 186959N Level: 6.31	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					

1
2
3
4
5

Remarks: 1. Hand Pit for Leachable Lead Sampling. 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AM13**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336484E - 186947N Level: 6.45	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50 0.50		B ES					MADE GROUND - Brown gravelly sandy CLAY with occasional cobbles. Gravel is fine to coarse subangular to subrounded of various lithologies including mudstone, burnt shales, bricks and slags. Inclusion of metal fragments.		
				5.65		0.80	MADE GROUND - Brownish grey sandy GRAVEL with frequent cobbles. Gravel is fine to coarse, subrounded to subangular, comprising various lithologies including mudstones, bricks, slags and burnt shales. Inclusions of timber and pipes.		▼
1.80		ES			1				
				4.45	2	2.00	*Refusal on hard ground* End of Pit at 2.000m		
					3				
					4				
					5				

Remarks: 1. Hand Pit for Leachable Lead Sampling. 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AM14**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336483E - 186921N Level: 6.60	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.80	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20		ES				MADE GROUND - Black slightly sandy gravelly CLAY.		
				5.80	0.80	MADE GROUND - Black sandy cobbly GRAVEL. Gravel and cobbles are fine to coarse, subangular to subrounded comprising concrete, slag, burnt shales, metal fragments.		
1.80		ES						
2.10		B				*Becoming sandier with depth*		
2.10		ES						
				4.00	2.60	TIDAL FLAT DEPOSITS- Soft - firm blue CLAY.		
				3.80	2.80	End of Pit at 2.800m		

Remarks: 1. Hand Pit for Leachable Lead Sampling. 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AM15**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336469E - 186915N Level: 6.40	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.80	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50 0.50		B ES		5.80	0.60	MADE GROUND - Brownish black slightly clayey gravelly SAND. Gravel is fine to coarse, subangular to subrounded, mixed lithologies including slags, bricks, concrete, mudstones, sandstones, shales and various other lithologies		
1.60		ES		4.60	1.80	MADE GROUND - Blackish brown clayey sandy GRAVEL. Gravel is rounded to subangular, comprising slag, mudstone and sandstone. Inclusions of bricks timber, metal and concrete. *Refusal on hard surface.* End of Pit at 1.800m		

Remarks: 1. Hand Pit for Asbestos Identification 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AM16** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336453E - 186885N Level: 6.36	Date 08/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20		ES		5.96	0.40	MADE GROUND - Light brown sandy gravelly CLAY. Gravel is subrounded to subangular, fine to coarse of various lithologies of slag, mudstone and sandstone. Inclusions of historical conveyor components, metal, rubber and timber.		
						MADE GROUND - Black slightly gravelly SAND. *Concrete structure in north of pit*		
				5.26	1.10	MADE GROUND - Grey sandy GRAVEL. Gravel is sub angular and fine to coarse.		
				4.96	1.40	MADE GROUND - Brown sandy GRAVEL with frequent cobbles. Gravel is subrounded to subangular of various lithologies including slag, bricks, concrete, metal, shales, mudstone, pipes and wires. Occasional boulder of reinforced concrete.		
1.80 1.80		B ES		4.36	2.00	TIDAL FLAT DEPOSITS- Soft to firm bluish grey CLAY.		
				4.06	2.30	End of Pit at 2.300m		

Remarks: 1. Hand Pit for Asbestos Identification 2. Excavation backfilled with arisings on completion.

Stability:

Trial Pit Log

TrialPit No **AM5** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336500E - 187164N Level: 6.34	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.10	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
1.00 1.00		B ES			1		MADE GROUND - Grey sandy clayey GRAVEL with frequent cobbles. Gravel is fine to coarse, angular to subrounded of various lithologies including asphalt, slag, brick and slags. Inclusions of metal fragments and polystyrene. *Three piles within pit in each wall.*		
1.90		ES							
				4.34 4.24	2	2.00 2.10	TIDAL FLAT DEPOSITS- Firm to soft peaty CLAY. End of Pit at 2.100m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AN10**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336550E - 187022N Level: 6.35	Date 06/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 1.90	Logged DM

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				5.45		0.00	MADE GROUND: Brown sandy GRAVEL. Gravel is fine to coarse angular to subangular of slag with occasional mudstone, brick fragments and masonry.		
							Slight sheen on perched water.		
0.90	AN10 -1	ES			1	0.90	MADE GROUND: Brown clayey sandy GRAVEL. Gravel is fine to coarse angular to subangular of slag with occasional mudstone and sandstone.		
1.80	AN10 -1	B							
1.80	AN10 -2	ES		4.45	2	1.90	End of Pit at 1.900m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AN11**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336502E - 186997N Level: 6.30	Date 06/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 2.40	Logged DM

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.40	AN11 -1	B		5.85		0.45	MADE GROUND: Black and brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags.		
0.40	AN11 -1	ES			1		MADE GROUND: Black and grey sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags.		▼
2.10	AN11 -2	ES			2				
				3.90		2.40	End of Pit at 2.400m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AN12**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336501E - 186960N Level: 6.35	Date 06/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 3.40	Logged DM

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50	AN12 -1	B		5.85		0.50	MADE GROUND: Black and brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags.		
0.50	AN12 -1	ES							
				5.35	1	1.00	MADE GROUND: Dark brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags.		
1.60	AN12 -2	ES					MADE GROUND: Grey GRAVEL. Gravel is fine to coarse subangular to subrounded comprising fused slag and occasional metal and brick fragments.		
					2				
2.30	AN12 -3	ES							
					3				
				2.95		3.40	End of Pit at 3.400m		
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AN13**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336500E - 186925N Level: 6.50	Date 06/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 2.30	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
						MADE GROUND: Black and brown sandy gravelly CLAY. Gravel is fine to coarse angular to subrounded comprising various slags with occasional mudstone.		
0.60	AN13 -1	B		5.90	0.60			
0.60	AN13 -1	ES				MADE GROUND: Black sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags, mudstone with rare brick fragments.		
				5.40	1.10			
						MADE GROUND: Black sandy slightly clayey GRAVEL. Gravel is fine to coarse subangular to subrounded comprising various slags, mudstone with rare brick fragments.		
1.80	AN13 -2	ES						
				4.30	2.20	TIDAL FLAT DEPOSITS: Black organic PEAT.		
				4.20	2.30	End of Pit at 2.300m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AN14**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336502E - 186893N Level: 6.30	Date 06/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 2.80	Logged DM

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				5.90		0.40	MADE GROUND: Brown sandy GRAVEL. Gravel is fine to coarse angular to subangular comprising of various slags.		
1.00	AN14 -1	ES		5.20	1	1.10	MADE GROUND: Black sandy GRAVEL. Gravel is fine to coarse angular to subangular comprising of various slags , mudstone with rare brick fragments.		
1.70	AN14 -2	B					MADE GROUND: Reddish brown sandy gravelly CLAY. Gravel is medium to coarse subangular to subrounded comprising various slags and mudstone.		
1.70	AN14 -2	ES			2				
2.50	AN14 -3	ES							
				3.60		2.70	TIDAL FLAT DEPOSITS: Soft to firm bluish grey and black CLAY.		
				3.50	3	2.80	End of Pit at 2.800m		
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AN15**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336489E - 186907N Level: 6.35	Date 07/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 2.00	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.15	0.20	MADE GROUND: Grey brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags and mudstone.		
0.40	AN15 -1	ES				MADE GROUND: Brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags and mudstone with occasional rebar, concrete and red brick fragments.		
1.60	AN15 -2	B						
1.60	AN15 -2	ES						
				4.35	2.00	TIDAL FLAT DEPOSITS: Soft to firm bluish grey and black CLAY.		
				4.25	2.10	End of Pit at 2.000m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AN6**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336513E - 187125N Level: 6.17	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.40	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.30 0.30		B ES		5.67 5.62	0.50 0.55	MADE GROUND - Brown sandy gravelly CLAY. MADE GROUND - Asphalt MADE GROUND - Sandy clayey GRAVEL with frequent cobbles. Gravel is fine to coarse subangular to subrounded of various lithologies including slags, brick, mudstone, sandstone and shales. Inclusions of metal fragments.		
				4.77	1.40	*Refusal* End of Pit at 1.400m		

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AO12**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336530E - 186979N Level: 6.28	Date 11/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 1.50	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.23	0.05	MADE GROUND: Brown slightly sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags.		
						MADE GROUND: Black sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags and mudstone.		
0.50	AO1 2-1	ES		5.78	0.50	MADE GROUND: Grey slightly silty gravelly SAND. Gravel is fine to coarse subangular to subrounded comprising various slags and mudstone with frequent concrete and rebar.		
1.20	AO1 2-1	B						
1.20	AO1 2-2	ES		4.78	1.50	End of Pit at 1.500m		

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AO13**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336529E - 186957N Level: 6.45	Date 11/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 2.00	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.35	0.10	MADE GROUND: Black and brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags.		
0.30	AO1 3-1	ES				MADE GROUND: Grey brown slightly silty sandy GRAVEL. Gravel is fine to coarse angular to subangular comprising various slags and mudstone.		
				5.95	0.50	MADE GROUND: Grey cobbly sandy GRAVEL. Cobbles and Gravel is medium to coarse gular to subrounded comprising various slags with occasional concrete mudstone, shale and sandstone.		
					1	*Disused water pipe.*		
1.80	AO1 3-1	ES		4.65	1.80	TIDAL FLAT DEPOSITS: Soft to firm bluish grey and black CLAY.		
1.80	AO1 3-2	B		4.45	2	2.00 End of Pit at 2.000m		
					3			
					4			
					5			

Remarks:

Stability:

Trial Pit Log

TrialPit No **AP1** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336576E - 187243N Level: 7.00	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50		ES			1		MADE GROUND - Brown slightly sandy gravelly CLAY. Inclusions of metal fragments and cobbles of concrete.		
1.50		B							
1.80		ES							
				5.00	2	2.00	TIDAL FLAT DEPOSITS- Brownish grey CLAY.		
				4.70		2.30	End of Pit at 2.300m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AP10**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336557E - 187031N Level: 6.60	Date 06/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 2.40	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.40	AP10 -1	ES				MADE GROUND: Brownish grey sandy GRAVEL. Gravel is fine to coarse angular to subangular of slag.		
						Slight sheen on perched water.		
				5.80	0.80			
				5.75	0.85	MADE GROUND: Grey GRAVEL. Gravel is fine to coarse angular comprising of fused slag and concrete.		
						MADE GROUND: Brown sandy GRAVEL. Gravel is fine to coarse angular to subangular of slag.		
				5.40	1.20	MADE GROUND: Brownish grey sandy clayey GRAVEL. Gravel is fine to coarse angular to subangular of slag.		
2.20	AP10 -1	B						
2.20	AP10 -2	ES		4.20	2.40	End of Pit at 2.400m		

1 2 3 4 5

Remarks:

Stability:

Trial Pit Log

TrialPit No **AQ1**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336602E - 187241N Level: 7.00	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.20	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.40 0.40		B ES				MADE GROUND - Brown sandy gravelly CLAY. Gravel is subrounded to angular, fine to coarse with occasional cobbles. Comprising various lithologies including brick, slag, mudstone and sandstone.		
				6.20	0.80	TIDAL FLAT DEPOSITS - Soft brownish grey CLAY with frequent plant matter.		
				5.80	1.20	End of Pit at 1.200m		

1 2 3 4 5

Remarks:

Stability:

Trial Pit Log

TrialPit No **AQ10**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336574E - 187034N Level: 7.00	Date 06/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 2.20	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20	AQ1 0-1	B				MADE GROUND: Brown slightly sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various slags, fused slag, mudstone and sandstone.		
0.20	AQ1 0-1	ES						
				6.30	0.70			
				6.20	0.80	MADE GROUND: Grey sandy gravelly CLAY. Gravel is medium to coarse subangular to subrounded comprising various slags, mudstone, concrete with rare brick fragments.		
						MADE GROUND: Multi-coloured GRAVEL. Gravel is fine to coarse subangular to subrounded comprising occasional fragments of red brick.		
						Slight sheen on perched water.		
				5.50	1.50	MADE GROUND: Black and grey slightly sandy GRAVEL. Gravel is fine to coarse angular to subangular of slag.		
1.80	AQ1 0-1	ES						
				4.80	2.20	TIDAL FLAT DEPOSITS: Firm dark greyish black CLAY.		
				4.80	2.20	End of Pit at 2.200m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AR10**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336599E - 187035N Level: 6.91	Date 04/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.70	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.40		ES		6.41	0.50	MADE GROUND - Reddish brown sandy clayey GRAVEL. Gravel is subrounded to subangular, fine to coarse and comprises various lithologies including mudstone, shales, sandstones, slag and others. Metal fragment inclusions were frequent.		▼
0.70		B				MADE GROUND - Grey SAND of slag. Slag is fused.		
				5.91	1.00	MADE GROUND - Greyish orange gravelly SAND of various lithologies. Slag is fused. Gravel is fine to medium, subrounded to subangular, lithologies include mudstone, slag, brick, burnt shales and concrete.		▼
1.70		ES		5.21	1.70	End of Pit at 1.700m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AR11**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336605E - 187017N Level: 6.90	Date 04/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.70	0.20	MADE GROUND - Brownish black sandy GRAVEL of slag. Slag is fused.		
				6.65	0.25	MADE GROUND - Orange SAND.		
						MADE GROUND - Orange medium to coarse GRAVEL.		
0.50 0.50		B ES		6.45	0.45	MADE GROUND - Grey gravelly SAND of slag. Slag is fused, inclusions of metal and concrete frequent.		
1.70		ES		5.10	1.80	MADE GROUND - Whitish grey sandy GRAVEL. Gravel is fine to coarse, angular to subrounded and comprises blast slag, fused slag and iron ore slag.		
				4.90	2.00	*Refusal on hard ground.*		
						End of Pit at 2.000m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AR2**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336615E - 187238N Level: 7.35	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.60	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
						MADE GROUND - Brown gravelly cobbly CLAY. Gravel and cobbles are fine to coarse subangular to subrounded include brick, slags and concrete. Other inclusions of metal sheeting, timber and historical wiring.		
				5.95	1.40	TIDAL FLAT DEPOSITS- Blackish brown peaty CLAY. Frequent plant matter throughout.		
				5.75	1.60	End of Pit at 1.600m		

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Remarks:

Stability:

Trial Pit Log

TrialPit No **AR4** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336612E - 187165N Level: 6.30	Date 16/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20		ES		6.00	0.30	MADE GROUND - Black clayey gravelly SAND. Lithologies include mudstone, sandstone and slag.		
						MADE GROUND - Grey sandy GRAVEL of fused slag.		
1.30		ES		5.10	1.20	MADE GROUND - Brownish orange SAND.		
				4.50	1.80	TIDAL FLAT DEPOSITS- Soft Blueish grey CLAY.		
				4.30	2.00	End of Pit at 2.000m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AS3**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336640E - 187188N Level: 7.00	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 3.10	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50 0.50		B ES				MADE GROUND - Brown gravelly CLAY. Gravel is fine to coarse subrounded to sub angular of various lithologies including slag, mudstone, sandstone and brick. Boulder of asphalt noted.		
				5.90	1.10	TIDAL FLAT DEPOSITS- Very soft brownish black peaty CLAY with frequent rootlets. Local medium grained gravel pockets within clay.		
1.60		ES						
				3.90	3.10	End of Pit at 3.100m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AS4**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336642E - 187163N Level: 6.10	Date 16/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.90	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.50 0.50		B ES					MADE GROUND - Grey well sorted Type 1 GRAVEL.		
				5.10	1	1.00	MADE GROUND - Whitish fine to coarse GRAVEL of slag. Frequent metal and rubber inclusions.		
				4.80		1.30	MADE GROUND - Grey hard fused slag recovered as fine to coarse GRAVEL.		
1.60		ES							
				4.30		1.80	TIDAL FLAT DEPOSITS- Soft Grey CLAY.		
				4.20		1.90	End of Pit at 1.900m		
					2				
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AS5** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336651E - 187144N Level: 7.55	Date 10/02/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50 0.50		B ES		7.35	0.20	MADE GROUND - Grey coarse GRAVEL with occaional cobbles. Recycled 6F2 with terram layer at the base		
						MADE GROUND - Firm brown sandy gravelly CLAY with occasional cobbles. Gravel is fine to coarse, subrounded to subangular of various lithologies including bricks, concrete, slags, mudstone, sandstones and shales. Inclusions of local clay pockets with plant matter.		
2.00		ES		5.75	1.80	MADE GROUND - Very soft dark brown sandy slightly gravelly CLAY.		
				5.05	2.50	*Refusal on hard ground of fused material.* End of Pit at 2.500m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AS6** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336646E - 187124N Level: 6.35	Date 16/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.30		ES		5.95	0.40	MADE GROUND - Greyish brown sandy GRAVEL of slag. Gravel is subangular to subrounded fine to course with occasional cobbles.		
0.60		B		5.65	0.70	MADE GROUND - Grey fine to medium sandy GRAVEL. Gravel is yellow slag. Occasional wood fragment.		
				5.15	1.20	MADE GROUND - Brownish grey hard fused slag recovered as gravelly SAND.		
1.60		ES		4.55	1.80	MADE GROUND - Grey clayey sandy GRAVEL. Gravel is fine to coarse subangular to subrounded comprising various lithologies.		
				4.35	2.00	TIDAL FLAT DEPOSITS- Firm to soft Blueish grey CLAY.		
						End of Pit at 2.000m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AS7** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336643E - 187090N Level: 6.20	Date 16/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.80	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.40 0.40		B ES		5.70	0.50	MADE GROUND - Greyish brown reworked sandy gravelly CLAY. Gravels comprised of fine to coarse subrounded brick, sandstone, mudstone and slag.		
				5.30	0.90	MADE GROUND - Grey sandy GRAVEL with occasional cobbles. Gravel is fine to coarse angular to subrounded. Occasional rail track fragment.		
1.50		ES				MADE GROUND - Blackish grey GRAVEL. Gravels comprised hard fused slag of subangular mixed lithologies.		
				4.50	1.70	TIDAL FLAT DEPOSITS- Soft to firm blue grey CLAY.		
				4.40	1.80	End of Pit at 1.800m		

1 2 3 4 5

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AS9**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336634E - 187034N Level: 6.61	Date 05/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 1.80	Logged DM

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.11	0.50	MADE GROUND: Black slightly sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various lithologies including slags, mudstone and sandstone.		
0.50	AS9-1	ES		5.91	0.70	MADE GROUND: Orangish brown to grey sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various lithologies including slags, mudstone and sandstone.		▼
						MADE GROUND: Grey sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various lithologies including slags, mudstone with rare brick fragments.		
1.20	AS9-1	B		5.41	1.20	MADE GROUND: Reddish brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded comprising various lithologies including slags, mudstone with occasional brick fragments.		
1.20	AS9-2	ES		4.91	1.70	TIDAL FLAT DEPOSITS: Firm bluish grey and black CLAY.		
				4.81	1.80	End of Pit at 1.800m		

1 2 3 4 5

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AT4**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336668E - 187175N Level: 7.40	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 3.00	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20		ES				MADE GROUND - Soft brown occasionally gravelly CLAY. Gravel is fine to coarse subrounded to subangular and comprises various lithologies including mudstone, slag, brick and concrete. Inclusions of grey clay, metal bar, concrete cobbles and asphalt.		
0.50		B						
1.50		ES		5.80	1.60	MADE GROUND - Grey sandy GRAVEL of various lithologies including slag, sandstone and mudstone. Gravel is fine to coarse subangular to subrounded with inclusions of brick, plastic and wood.		
2.60		ES		4.70	2.70	TIDAL FLAT DEPOSITS- Firm to soft grey CLAY.		
				4.40	3.00	End of Pit at 3.000m		

1 2 3 4 5

Remarks:

Stability:

AGS

Trial Pit Log

TrialPit No **AT5** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336675E - 187153N Level: 7.52	Date 10/02/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				7.22		0.30	MADE GROUND - Grey coarse GRAVEL of recycled 6F2 with terram layer at the base		
0.40 0.40		B ES			1		MADE GROUND - Brown sandy gravelly clay with occasional cobbles. Gravel is fine to coarse, subrounded to subangular of various lithologies including slags, concrete and bricks. Localised pockets of clay with plant matter.		
1.30		ES		6.12		1.40	MADE GROUND - Very soft dark brown sandy slightly gravelly CLAY.		
					2				
				5.32		2.20	TIDAL FLAT DEPOSITS- Soft bluish grey CLAY.		
				5.22		2.30	End of Pit at 2.300m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AT6**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336664E - 187105N Level: 7.50	Date 16/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.40	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.20		ES				MADE GROUND - Orangish brown sandy gravelly CLAY. Gravel is subrounded to sub angular, fine to coarse grained and comprises mainly slag. Fragments of wood and metal present.		
0.30		B						
1.70		ES		5.80	1.70	MADE GROUND - Brownish grey sandy GRAVEL of slag. Gravel is fine to coarse, subangular to subrounded, comprised of slag. Occasional brick fragments are found throughout.		
				5.30	2.20	MADE GROUND - Grey GRAVEL of fused slag. Very hard, slag is recovered as fine to coarse, angular to subrounded gravels with occasional cobbles.		
				5.10	2.40	End of Pit at 2.400m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AU5**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336692E - 187150N Level: 7.50	Date 10/02/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				7.20	0.30	MADE GROUND - Grey coarse GRAVEL of recycled 6F2 with terram layer at the base		
0.70 0.70		B ES				MADE GROUND - Brown slightly gravelly very sandy CLAY. Gravels are fine to coarse subangular to subrounded of various lithologies including slags, concrete, mudstones and sandstones.		
				6.00	1.50	MADE GROUND - very soft dark brown sandy slightly gravelly CLAY.		
1.60		ES						
2.30		ES						
						Refusal on hard ground of fused material.		
				5.00 5.00	2.50 2.50	MADE GROUND - very soft dark brown sandy slightly gravelly CLAY.		
						Refusal on hard ground of fused material.		
						End of Pit at 2.500m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AU6**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336691E - 187124N Level: 7.55	Date 10/02/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.20	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				7.25	0.30	MADE GROUND - Grey coarse GRAVEL of recycled 6F2 with terram layer at the base		
0.50		ES				MADE GROUND - Brown gravelly sandy CLAY. Inclusions of plastic, concrete cobbles, glass and plant matter.		
				6.05	1.50	MADE GROUND - Grey sandy clayey GRAVEL. Fine to coarse subrounded to subangular of various lithologies including slags and concrete.		
1.70 1.70		B ES						▼
				5.35	2.20	*Refusal* End of Pit at 2.200m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AG8**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336347E - 187081N Level: 6.20	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.10	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				6.00		0.20	MADE GROUND - Reddish brown sandy gravelly CLAY.		
							MADE GROUND - Grey sandy gravel of slag. Slag is fused.		
							Slight sheen on perched water.		
				5.30	1	0.90	MADE GROUND - Brownish orange sandy GRAVEL. Gravel is fine to coarse, angular and comprises various lithologies including burnt shales, slag and others.		
				4.90		1.30	MADE GROUND - Cobbly GRAVEL. Gravel is fine to coarse subrounded to subangular of various lithologies including mudstone, sandstone, concrete, shales, slags and bricks.		
				4.50	2	1.70	TIDAL FLAT DEPOSITS- Soft bluish grey CLAY.		
				4.10		2.10	End of Pit at 2.100m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AH8** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336353E - 187098N Level: 6.43	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 4.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.10 0.10		B ES					MADE GROUND - Reddish brown sandy gravelly CLAY.		
				6.03		0.40	MADE GROUND - Brown sandy clayey GRAVEL. Gravels are fine to coarse, subangular to subrounded of various lithologies including slag, brick and mudstone.		
1.00		ES		5.53	1	0.90	MADE GROUND - Black sandy GRAVEL with occasional cobbles. Gravel is fine to coarse, subangular to subrounded, comprising burnt shales, slag, brick and other lithologies. Inclusions of timber. Material is stained with hydrocarbons.		
							Slight sheen on perched water.		
2.00		ES			2				
					3				
3.90		ES			4				
				2.23		4.20	TIDAL FLAT DEPOSITS- soft brown peaty CLAY.		
				2.13		4.30	End of Pit at 4.300m		
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No: **AI8**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336382E - 187087N Level: 6.46	Date 18/01/2021
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 2.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.26	0.20	MADE GROUND - Reddish brown sandy gravelly CLAY.		
0.40 0.40		B ES				MADE GROUND - Grey brown sandy GRAVEL of slag with occasional cobbles. Gravel is fine to coarse, subangular to subrounded.		
				5.66	0.80	MADE GROUND - Grey sandy GRAVEL of slag. Slag is fused.		
				5.56	0.90	MADE GROUND - Brown slightly sandy and clayey GRAVEL. Gravel is angular and medium grained. Possible type 1.		
				5.36	1.10	MADE GROUND - Blackish orange sandy gravel with frequent cobbles. Gravel is fine to coarse subrounded to subangular of mixed lithologies including mudstone, brick, sandstones and slags. One boulder of slag Material is contaminated with LNAPL.		
2.00		ES						
				4.06	2.40	TIDAL FLAT DEPOSITS- Firm bluish grey clay with frequent rootlets.		
				3.96	2.50	End of Pit at 2.500m		

1 2 3 4 5

Remarks:

Stability:

Trial Pit Log

TrialPit No **AJ8** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336419E - 187079N Level: 6.50	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 x 1.50 Depth 1.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.40 0.40		B ES				MADE GROUND - Brown clayey LOAM.		
				5.70	0.80			
1.00		ES				MADE GROUND - Orange sandy slightly cobbly GRAVEL. Gravel is fine to medium, subangular to subrounded of various lithologies comprising burnt shales, brick, slag, glass fragments, concrete slabs and mudstone. Becoming more cobbly with depth		
				5.10	1.40	TIDAL FLAT DEPOSITS- Soft grey CLAY.		
				5.00	1.50	End of Pit at 1.500m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AK4**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336442E - 187179N Level: 6.40	Date 17/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 0.30	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
				6.10	0.30	MADE GROUND - Brown sandy gravelly CLAY.		
						Refusal on concrete.		
						End of Pit at 0.300m		

Remarks:

Stability:

Trial Pit Log

TrialPit No: **TP-AL3**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336469E - 187203N Level: 6.58	Date 22/01/2021
Location: Llanwern		Dimensions (m):	Scale 1:25
Client: St Modwen Developments		Depth 1.80	Logged DM

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
0.30	AL3-1	ES					MADE GROUND: Brown sandy gravelly CLAY. Gravel is angular to rounded fine to coarse of mixed lithologies including slag, concrete, mudstone, sandstone and shale. Sand is fine to coarse. Occasional large cobbles of concrete and asphalt.		
0.50	AL3-1	B							
				5.98		0.60	MADE GROUND: Whitish grey sandy angular to subangular fine to coarse GRAVEL of mixed lithologies including slag. Sand is fine to coarse. Slag is fused.		
				5.68	1	0.90	MADE GROUND: Light brown sandy slightly clayey subangular to subrounded fine to coarse GRAVEL of mixed lithologies including slag, bricks, burnt shales, mudstones and sandstones. Sand is fine to coarse. Medium cobble content.		
				4.88		1.70	TIDAL FLAT DEPOSITS: Soft grey CLAY.		
				4.78	2	1.80	End of Pit at 1.800m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AU7**

Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336690E - 187085N Level: 7.50	Date 16/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.50	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
						MADE GROUND - Brown gravelly sandy CLAY. Gravel is fine to coarse, angular to subrounded, comprising various lithologies including slag, mudstone and sandstone. Occasional cobbles throughout.		
				6.40	1.10	MADE GROUND - Grey clayey sandy GRAVEL. Gravel is subrounded to subangular, fine to coarse comprised of slag.		
				6.10	1.40	TIDAL FLAT DEPOSITS- Bluish grey CLAY.		
				6.00	1.50	End of Pit at 1.500m		

Remarks:

Stability:

Trial Pit Log

TrialPit No **AV6**
Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336709E - 187125N Level: 7.55	Date 10/02/2021
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 2.60	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)		Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results						
				7.25		0.30	MADE GROUND - Grey coarse GRAVEL of recycled 6F2 with terram layer at the base		
0.50 0.50		B ES					MADE GROUND - Dark brownish black sandy gravelly CLAY with frequent cobbles. Gravel is fine to coarse, subrounded to subangular of various lithologies including slags, concrete, bricks and plastics.		
1.20		ES			1				
				5.75		1.80	MADE GROUND - Brownish grey sandy slightly gravelly CLAY. Gravels is fine to coarse, subangular to subrounded of various lithologies.		
2.00		ES			2				
				4.95		2.60	*Refusal* End of Pit at 2.600m		
					3				
					4				
					5				

Remarks:

Stability:

Trial Pit Log

TrialPit No **AV7** Sheet 1 of 1

Project Name: LLanwern Reclamation	Project No. P18-669	Co-ords: 336711E - 187081N Level: 7.50	Date 16/12/2020
Location: Llanwern		Dimensions (m): 2.50 × 1.50 Depth 1.70	Scale 1:25
Client: St Modwen Developments			Logged ET

Samples & In Situ Testing				Level (m)	Depth (m)	Stratum Description	Legend	Water Strike
Depth	Ref.	Type	Results					
0.50 0.50		B ES				MADE GROUND - Orangish brown sandy GRAVEL. Gravel is fine to coarse, angular to subrounded comprising slags, mudstone and brick. Occasional large cobbles.		
				6.10	1.40	MADE GROUND - Clayey sandy GRAVEL. Fine to coarse with frequent cobbles. Gravel comprises bricks, sandstone and mudstone. Frequent inclusions of plastic.		
				5.80	1.70	End of Pit at 1.700m		

Remarks:

Stability:

Appendix G
Chemical Screening and Testing Certification

Client: Rodgers Leask Environmental	Chemtest Job No.:				Generic Assessment Criteria Residential End use with Homegrown Produce (1% SOM)	201217-34	201217-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34
Quotation No.: Q21-24056	Chemtest Sample ID.:					23450096	23450104	23461553	23461557	23461544	23461548	23461525	23461530	23461536	23461540	23461505	23461514
Order No.: .	Client Sample Ref.:					AT6-1	AT6-2	AJ4-1	AJ4-2	AL2-1	AL2-2	AM1-1	AM1-2	AM2-1	AM2-2	AN1-1	AN1-2
	Sample Type:					SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	Top Depth (m):																
	Bottom Depth (m):					0.20-0.20	1.70-1.70	0.40-0.40	1.00-1.00	0.20-0.20	1.20-1.20	0.30-0.30	1.00-1.00	0.50-0.50	1.60-1.60	0.50-0.50	1.50-1.50
	Date Sampled:					16/12/2020	16/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
	Asbestos Lab:																
Determinand	Accred.	SOP	Units	LOD													
ACM Type	U	2192		N/A									Chrysotile (White) Asbestos				Trace Chrysotile (White) Asbestos
Asbestos Identification	U	2192		N/A			Not Detected		Not Detected		Not Detected		Detected		Not Detected		Detected
Asbestos by Gravimetry	U	2192	%	0.001									<0.000				<0.000
Total Asbestos	U	2192	%	0.001		-	-	-	-	-	-	-	<0.001	-	-	-	<0.001
Moisture	N	2030	%	0.02		17	6.4	12	18	10	12	8.1	12	7	6.7	13	17
Soil Colour	N	2040		N/A		Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A		Sandy Silt Loam	Sand	Sand	Sandy Loam	Sandy Loam	Stone/Soil	Sandy Loam	Loamy Sand	Sandy Loam	Stone/Soil	Sandy Loam	Sandy Loam
Soil Texture	N	2040		N/A		Stones	Stones	Stones	Stones	Vegetation	Vegetation	Stones	Vegetation	Stones	Vegetation	Stones	Stones
pH at 20C	M	2010		4		12.1	12.1	10.7	8.6	9.0	10.5	8.9	10.1	9.1	9.3	8.6	9.5
pH (2.5:1) at 20C	N	2010		4													
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01													
Total Sulphur	U	2175	%	0.01													
Chloride (Water Soluble)	M	2220	g/l	0.01													
Nitrate (Water Soluble)	N	2220	g/l	0.01													
Cyanide (Total)	M	2300	mg/kg	0.5		7.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.1	<1
Ammonium (Extractable)	M	2425	mg/kg	0.5													
Ammoniacal Nitrogen	M	2425	mg/kg	0.5		<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
Iron (Total)	N	2430	mg/kg	100		187000	184000	39700	42400	41500	16800	31500	108000	9870	15500	34300	257000
Sulphate (Total)	U	2430	%	0.01													
Arsenic	M	2450	mg/kg	1	37	9.8	<6	6.0	9.4	5.2	3.2	3.8	9.1	2.6	2.6	6.4	52.6
Cadmium	M	2450	mg/kg	0.1	26	4.6	<0.2	<0.02	<0.02	0.4	<0.02	0.9	0.8	0.2	0.0	0.4	1.9
Chromium	M	2450	mg/kg	1	910	408.0	1200.0	6.3	35.4	75.5	13.1	49.1	156.0	7.7	10.1	58.2	178.0
Manganese	M	2450	mg/kg	5		28700.0	53700.0	5640.0	4890.0	7640.0	6460.0	4800.0	14300.0	1250.0	2640.0	5520.0	12700.0
Copper	M	2450	mg/kg	0.5	2400	43.0	<14	4.0	13.4	10.4	<1.4	10.7	29.1	5.9	4.3	13.9	33.1
Mercury	M	2450	mg/kg	0.1	40	<1.4	<1.4	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<1.4
Nickel	M	2450	mg/kg	0.5	1.30E+02	29.1	7.3	6.5	11.9	8.8	3.7	7.3	20.7	5.9	5.4	12.5	44.7
Lead	M	2450	mg/kg	0.5	2.00E+02	599.0	14.6	8.9	19.4	24.3	4.5	28.6	92.6	14.9	5.4	38.6	78.3
Selenium	M	2450	mg/kg	0.2	250	13.7	33.8	2.5	2.0	5.0	4.9	2.7	<10	1.4	2.4	3.5	<10
Vanadium	U	2450	mg/kg	5	410	1470.0	911.0	64.6	60.2	76.6	56.8	68.1	210.0	22.1	36.9	101.0	296.0
Zinc	M	2450	mg/kg	0.5	3.70E+03	2530.0	33.2	65.0	86.5	137.0	35.5	140.0	372.0	52.7	29.9	185.0	182.0
Aliphatic VPH >C5-C6	M	2780	mg/kg	0.05	160	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic VPH >C6-C7	M	2780	mg/kg	0.05	530												
Aliphatic VPH >C7-C8	M	2780	mg/kg	0.05	530												
Aliphatic VPH >C6-C8 (Sum)	N	2780	mg/kg	0.1	530												
Aliphatic VPH >C8-C10	M	2780	mg/kg	0.05	150	<0.01	<0.01	<0.01	<0.01	0.022	<0.01	<0.01	0.021	<0.01	<0.01	<0.01	<0.01
Total Aliphatic VPH >C5-C10	M	2780	mg/kg	0.25													
Aliphatic EPH >C10-C12	M	2690	mg/kg	2	7.60E+02	<1	<1	<1	<1	<1	<1	<1	<1	<5	1.33	<1	<1
Aliphatic EPH >C12-C16	M	2690	mg/kg	1	4.30E+03	4.83	<1	<1	10.2	2.5	<1	<1	4.54	<5	6.73	<1	<1
Aliphatic EPH >C16-C21	M	2690	mg/kg	2	1.10E+05	26.2	2.6	5.35	68.5	8.3	1.64	6.39	10.5	<5	11.8	2.01	<1
Aliphatic EPH >C21-C35	M	2690	mg/kg	3	1.10E+05	113	17.4	14.7	64.8	14.2	7.62	9.97	21.8	11.3	25.4	12.9	6.06
Aliphatic EPH >C35-C40	N	2690	mg/kg	1	1.10E+05	31.8	3.4	1.1	8.7	<1	3.7	<1	1.5	<5	3.8	3.1	<1
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5													
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10		177	24	22	152	26	13	18	39	<2.5	49	18	7
Aromatic VPH >C5-C7	M	2780	mg/kg	0.05	300	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C7-C8	M	2780	mg/kg	0.05	660	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	M	2780	mg/kg	0.05	190	<0.01	<0.01	<0.01	<0.01	0.015	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.01
Total Aromatic VPH >C5-C10	M	2780	mg/kg	0.25													
Aromatic EPH >C10-C12	M	2690	mg/kg	1	380	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1
Aromatic EPH >C12-C16	M	2690	mg/kg	1	660	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1
Aromatic EPH >C16-C21	N	2690	mg/kg	2	930	7.09	1.49	<1	1.07	1.66	<1	5.24	5.57	<5	12.90	1.94	4.51
Aromatic EPH >C21-C35	M	2690	mg/kg	2	1.70E+03	33.00	6.99	8.63	24.10	107.00	24.10	174.00	123.00	153.00	433.00	14.40	19.50
Aromatic EPH >C35-C40	N	2690	mg/kg	1	1.70E+03	2.25	<1	1.89	1.27	74.60	13.80	126.00	43.50	99.80	360.00	3.58	2.67
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5													
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10		42.80	9.98	10.60	27.30	184.00	38.20	305.00	174.00	253.00	806.00	20.00	26.80
Total VPH >C5-C10	M	2780	mg/kg	0.5													
Total EPH >C10-C35	M	2690	mg/kg	10													
Total EPH >C10-C40	N	2690	mg/kg	10		219	34	33	180	210	51	324	213	270	855	38	34
Organic Matter	M	2625	%	0.4		5.9	0.8	1.9	4.7	9.5	1.3	5.6	4.1	6.9	9.2	1.0	7.5
Benzene	M	2760	µg/kg	1	87	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Toluene	M	2760	µg/kg	1	130000	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140
Ethylbenzene	M	2760	µg/kg	1	47000	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
m & p-Xylene	M	2760	µg/kg	1	56000	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
o-Xylene	M	2760	µg/kg	1		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Tert-Butyl Ether	M	2760	µg/kg	1		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Naphthalene	M	2800	mg/kg	0.1	15	0.047	0.032	0.034	0.044	<0.18	<0.045	<0.45	0.330	<0.45	<0.45	0.029	0.064
Acenaphthylene	N	2800	mg/kg	0.1	170	0.015	0.034	0.024	<0.012	<0.24	<0.06	<0.6	<0.24	<0.6	<0.6	0.020	0.087
Acenaphthene	M	2800	mg/kg	0.1	210	0.042	0.011	<0.008	<0.008	<0.16	<0.04	<0.4	<0.16	<0.4	<0.4	<0.008	<0.008
Fluorene	M	2800	mg/kg	0.1	170	0.025	<0.01	<0.01	<0.01	<0.2	<0.05	<0.5	<0.2	<0.5	<0.5	<0.01	0.052
Phenanthrene	M	2800	mg/kg	0.1	95	0.433	0.126	0.046	0.071	0.974	0.093	<0.75	0.517	<0.75	<0.75	0.090	0.549
Anthracene	M	2800	mg/kg	0.1	2400	0.085	0.050	<0.016	<0.016	<0.32	<0.08	<0.8	<0.32	<0.8	<0.8	0.026	0.339
Fluoranthene	M	2800	mg/kg	0.1	280	0.894	0.411	0.073	0.093	1.380	0.117	<0.85	0.797	<0.85	<0.85	0.190	2.250
Pyrene	M	2800	mg/kg	0.1	620	0.854	0.460	0.057	0.075	1.010	0.094	<0.75	0.633	<0.75	<0.75	0.157	1.740
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.2	0.465	0.241	0.055	0.060	0.600	<0.07	<0.7	0.378	<0.7	<0.7	0.123	1.190
Chrysene	M	2800	mg/kg	0.1	15	0.505	0.280	0.048	0.072	0.478	0.068	<0.5	0.432	<0.5	<0.5	0.142	1.130
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.6	0.767	0.415	0.122	0.134	0.990	0.095	<0.75	0.651	<0.75	<0.75	0.207	1.850
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77	0.290	0.131	0.034	0.035	<0.28	<0.07	<0.7	<0.28	<0.7	<0.7	0.069	0.549
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.2	0.527	0.270	0.058	0.069	0.603	<0.075	<0.75	0.378	<0.75	<0.75	0.136	1.090
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27	0.405	0.270	0.072	0.077	0.606	<0.09	<0.9	<0.36	<0.9	<0.9	0.115	0.844
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	0.075	0.041	<0.023	<0.023	<0.46	<0.115	<1.15	<0.46	<1.15	<1.15	<0.023	0.161
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320	0.389	0.245	0.068	0.070	0.551	<0.12	<1.2	<0.48	<1.2	<1.2	0.113	0.744
Total Of 16 PAH's	N	2800	mg/kg	2		5.82	3.02	0.69	0.80	7.20	<0.59	<5.9	4.12	<5.9	<5.9	1.42	12.60
Resorcinol	M	2920	mg/kg	0.02													
Phenol	M	2920	mg/kg	0.02	280	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0	<0.01	<0.01	<0.01	<0.01
Cresols	M	2920	mg/kg	0.02													
Xylenols	M	2920	mg/kg	0.02													
1-Naphthol	N	2920	mg/kg	0.02													
Trimethylphenols	M	2920	mg/kg	0.02													
Total Phenols	M	2920	mg/kg	0.1													

Chemtest Job No.:	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34
Chemtest Sample ID.:	23461496	23461501	23461488	23461492	23461562	23461483	23461578	23461585	23461479	23461591	23461599	23461567
Client Sample Ref.:	AO1-1	AO1-2	AP1-1	AP1-2	AQ1-1	AR2-1	AR4-1	AR4-2	AS3-1	AS4-1	AS4-2	AS6-1
Sample Type:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Top Depth (m):												
Bottom Depth (m):	0.30-0.30	1.30-1.30	0.50-0.50	1.80-1.80	0.50-0.50	0.40-0.40	0.20-0.20	1.30-1.30	0.50-0.50	0.50-0.50	1.60-1.60	0.30-0.30
Date Sampled:	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	16/12/2020	16/12/2020	17/12/2020	16/12/2020	16/12/2020	16/12/2020
Asbestos Lab:												
Determinand												
ACM Type				Amosite (Brown) Asbestos								
Asbestos Identification		Not Detected		Detected		Not Detected	Not Detected			Not Detected		Not Detected
Asbestos by Gravimetry				0.0022								
Total Asbestos	-	-	-	0.0022	-	-	-	-	-	-	-	-
Moisture	15	16	15	12	16	24	22	21	18	5.3	12	9.4
Soil Colour	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Light Brown	Dark Brown	Grey	Dark Brown	Dark Brown
Other Material	Loamy Sand	Sandy Loam	Loamy Sand	Loamy Sand	Loamy Sand	Loamy Sand	Silty Clay Loam	Sand	Loamy Sand	Sand	Stone/Soil	Sand
Soil Texture	Vegetation	Stones	Vegetation	None	Vegetation	Vegetation	Stones	None	Vegetation	Stones	Stones	Stones
pH at 20C	8.4	11.0	9.1	8.8	8.6	8.0	8.4	8.3	10.0	9.4	12.0	11.6
pH (2.5:1) at 20C												
Sulphate (2:1 Water Soluble) as SO4												
Total Sulphur												
Chloride (Water Soluble)												
Nitrate (Water Soluble)												
Cyanide (Total)	<1	<1	<1	<1	<1	28.4	6.5	<1	3.6	<1	1.8	<1
Ammonium (Extractable)												
Ammoniacal Nitrogen	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
Iron (Total)	82200	230000	76000	334000	58400	140000	340000	11500	131000	46700	78300	235000
Sulphate (Total)												
Arsenic	11.3	14.1	7.9	12.6	9.0	14.6	25.9	3.6	12.6	1.3	3.9	<6
Cadmium	2.1	1.6	0.9	2.3	0.3	7.2	12.8	0.1	7.8	<0.02	1.1	<0.2
Chromium	116.0	<9	75.6	<9	124.0	177.0	102.0	9.3	196.0	141.0	96.0	644.0
Manganese	8570.0	3530.0	7620.0	3980.0	7560.0	11700.0	20600.0	404.0	17000.0	14900.0	12100.0	33300.0
Copper	24.3	49.1	19.8	34.4	21.6	43.4	58.6	7.2	36.9	<1.4	12.0	31.1
Mercury	<1.4	<1.4	<0.14	<1.4	<0.14	<1.4	<1.4	<0.14	<1.4	<0.14	<0.14	<1.4
Nickel	25.6	51.0	17.0	38.1	17.1	37.2	51.8	11.5	26.9	3.1	8.0	23.7
Lead	183.0	75.0	86.7	169.0	87.7	940.0	1110.0	11.6	959.0	16.4	65.1	70.4
Selenium	<10	<10	2.2	<10	1.8	<10	<10	<1	<10	6.0	4.4	14.9
Vanadium	209.0	51.9	130.0	55.9	194.0	257.0	552.0	15.1	467.0	655.0	722.0	566.0
Zinc	707.0	171.0	398.0	410.0	412.0	3330.0	5610.0	27.8	3910.0	85.7	398.0	194.0
Aliphatic VPH >C5-C6	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic VPH >C6-C7												
Aliphatic VPH >C7-C8												
Aliphatic VPH >C6-C8 (Sum)												
Aliphatic VPH >C8-C10	<0.01	0.038	<0.01	0.03	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Total Aliphatic VPH >C5-C10												
Aliphatic EPH >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic EPH >C12-C16	<1	3.25	<1	2.08	<1	<1	<1	<1	7.46	<1	<1	<1
Aliphatic EPH >C16-C21	3.5	15.7	1.33	38.7	2.96	15.1	<1	<1	44.4	<1	2.35	8.3
Aliphatic EPH >C21-C35	21.3	91.9	12.6	15.2	26.3	75.7	<1	7.79	219	4.6	9.87	93.2
Aliphatic EPH >C35-C40	4.9	47.2	1.3	1.0	4.5	17.9	<1	<1	91.6	<1	1.5	34.7
Total Aliphatic EPH >C10-C35												
Total Aliphatic EPH >C10-C40	31	159	15	57	34	110	<5	9	363	5	14	136
Aromatic VPH >C5-C7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C7-C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	<0.01	0.025	<0.01	0.019	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aromatic VPH >C5-C10												
Aromatic EPH >C10-C12	<1	<1	<1	2.25	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic EPH >C12-C16	1.20	<1	1.10	2.94	<1	<1	<1	<1	1.36	<1	<1	<1
Aromatic EPH >C16-C21	23.30	1.64	3.43	35.90	<1	2.39	<1	<1	5.31	<1	<1	<1
Aromatic EPH >C21-C35	57.70	42.90	13.20	315.00	13.40	24.20	2.36	3.50	97.40	5.29	3.90	16.40
Aromatic EPH >C35-C40	10.20	4.88	4.82	98.40	1.60	2.50	<1	<1	22.40	<1	<1	1.48
Total Aromatic EPH >C10-C35												
Total Aromatic EPH >C10-C40	92.70	49.60	22.60	454.00	16.00	29.30	<5	<5	127.00	6.67	5.13	18.40
Total VPH >C5-C10												
Total EPH >C10-C35												
Total EPH >C10-C40	123	209	38	511	50	139	<10	<10	489	12	19	155
Organic Matter	6.4	4.4	4.6	18.3	3.8	8.1	2.2	1.1	6.9	0.4	0.9	3.2
Benzene	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Toluene	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140
Ethylbenzene	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
m & p-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
o-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Tert-Butyl Ether	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Naphthalene	0.184	0.037	<0.18	1.940	0.047	0.102	<0.009	<0.009	0.179	<0.009	0.010	0.044
Acenaphthylene	0.318	0.016	<0.24	2.100	0.027	0.068	<0.012	<0.012	<0.12	<0.012	<0.012	<0.012
Acenaphthene	0.042	<0.008	<0.16	<0.08	0.010	0.018	0.016	<0.008	<0.08	0.011	<0.008	0.083
Fluorene	0.288	<0.01	<0.2	0.261	0.019	0.050	<0.01	<0.01	<0.1	<0.01	<0.01	0.029
Phenanthrene	2.230	0.093	<0.3	2.620	0.183	0.438	0.100	<0.015	0.460	0.067	0.061	0.302
Anthracene	0.713	0.024	<0.32	1.030	0.049	0.157	0.024	<0.016	<0.16	<0.016	<0.016	0.084
Fluoranthene	4.680	0.173	0.820	8.430	0.364	0.859	0.153	<0.017	1.060	0.110	0.117	0.577
Pyrene	3.170	0.147	0.626	11.200	0.283	0.663	0.147	<0.015	0.978	0.097	0.123	0.552
Benzo[a]anthracene	2.030	0.112	0.427	5.860	0.181	0.440	0.102	<0.014	0.581	0.073	0.077	0.520
Chrysene	1.620	0.112	0.458	8.000	0.204	0.509	0.113	<0.01	0.691	0.082	0.095	0.544
Benzo[b]fluoranthene	2.560	0.198	0.726	21.600	0.286	0.725	0.179	<0.015	1.070	0.140	0.135	0.998
Benzo[k]fluoranthene	0.875	0.054	<0.28	5.830	0.115	0.217	0.078	<0.014	0.437	0.049	0.048	0.361
Benzo[a]pyrene	1.600	0.107	0.407	15.000	0.183	0.389	0.125	<0.015	0.646	0.087	0.093	0.727
Indeno(1,2,3-c,d)Pyrene	1.150	0.084	<0.36	20.400	0.145	0.301	0.113	<0.018	0.577	0.085	0.079	0.656
Dibenz(a,h)Anthracene	0.231	<0.023	<0.46	3.240	0.030	0.073	<0.023	<0.023	<0.23	<0.023	<0.023	0.080
Benzo[g,h,i]perylene	1.010	0.083	<0.48	23.100	0.126	0.321	0.107	<0.024	0.563	0.078	0.073	0.581
Total Of 16 PAH's	22.70	1.24	3.46	131.00	2.25	5.33	1.26	<0.118	7.24	0.88	0.91	6.14
Resorcinol												
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols												
Xylenols												
1-Naphthol												
Trimethylphenols												
Total Phenols												

Chemtest Job No.:	201218-34	201218-34	201218-34	201218-34	201218-34	201218-34	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
Chemtest Sample ID.:	23461571	23461465	23461520	23461607	23461469	23461475	23471766	23471748	23471754	23471742	23471733	23471738
Client Sample Ref.:	AS6-2	AS7-1	AS7-2	AT4-1	AT4-2	AT4-3	AG1-1	AH1-1	AH1-2	AI1-1	AJ1-1	AJ1-2
Sample Type:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Top Depth (m):												
Bottom Depth (m):	1.60-1.60	0.40-0.40	1.50-1.50	0.20-0.20	1.50-1.50	2.60-2.60	0.50-0.50	0.20-0.20	1.10-1.10	0.40-0.40	0.20-0.20	1.00-1.00
Date Sampled:	16/12/2020	16/12/2020	16/12/2020	17/12/2020	17/12/2020	17/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020
Asbestos Lab:												
Determinand												
ACM Type						Chrysotile (White) Asbestos						
Asbestos Identification		Not Detected		Not Detected		Detected			Not Detected	Not Detected	Not Detected	
Asbestos by Gravimetry						<0.001						
Total Asbestos	-	-	-	-	-	<0.001	-	-	-	-	-	-
Moisture	15	21	20	16	25	20	13	8.4	21	15	7.6	4.2
Soil Colour	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Light Brown	Dark Brown	Dark Brown	Dark Brown	Light Brown
Other Material	Stone/Soil	Sandy Clay Loam	N/A	Loamy Sand	Loamy Sand	Loamy Sand	Loamy Sand	N/A	Sandy Loam	Stone/Soil	Sandy Silt Loam	N/A
Soil Texture	Stones	Stones	Stones	Vegetation	None	Vegetation	Stones	Stones	Stones	None	Stones	Stones
pH at 20C	12.2	8.7	9.5	8.8	10.5	12.5	8.9	9.5	8.8	11.2	9.9	11.3
pH (2.5:1) at 20C												
Sulphate (2:1 Water Soluble) as SO4												
Total Sulphur												
Chloride (Water Soluble)												
Nitrate (Water Soluble)												
Cyanide (Total)	<1	<1	2.7	10.3	11.6	<1	<1	<1	<1	<1	<1	<1
Ammonium (Extractable)												
Ammoniacal Nitrogen	<12	<12	17	<12	<12	26	19	<12	<12	<12	<12	<12
Iron (Total)	207000	147000	81200	139000	164000	152000	35100	18700	72200	94000	75400	7400
Sulphate (Total)												
Arsenic	7.1	12.8	5.1	17.4	21.0	6.2	6.9	4.1	9.5	9.2	<6	3.0
Cadmium	1.3	2.1	1.0	7.3	14.9	1.1	0.2	0.0	0.9	0.7	0.9	0.1
Chromium	683.0	182.0	120.0	135.0	141.0	624.0	16.8	18.2	126.0	69.6	315.0	5.8
Manganese	43100.0	12200.0	13800.0	10600.0	12100.0	38300.0	3070.0	4420.0	13100.0	6430.0	14500.0	2430.0
Copper	29.4	36.2	24.2	38.7	51.2	29.3	31.3	8.8	16.2	<14	15.0	3.5
Mercury	<0.14	<1.4	<0.14	<0.14	<1.4	<1.4	<0.14	<0.14	<1.4	<1.4	<1.4	<0.14
Nickel	21.0	34.0	10.1	24.3	36.0	22.5	12.1	7.6	21.7	9.0	24.8	2.9
Lead	31.1	172.0	134.0	1330.0	1890.0	41.7	20.6	13.5	79.2	26.1	47.5	7.9
Selenium	15.5	<10	4.1	2.9	<10	20.3	1.3	3.1	<10	<10	<10	2.4
Vanadium	2050.0	481.0	212.0	205.0	376.0	1680.0	34.5	47.7	160.0	109.0	236.0	15.9
Zinc	110.0	624.0	761.0	4640.0	7140.0	128.0	67.7	38.5	193.0	55.7	177.0	26.0
Aliphatic VPH >C5-C6	<0.01	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic VPH >C6-C7												
Aliphatic VPH >C7-C8												
Aliphatic VPH >C6-C8 (Sum)												
Aliphatic VPH >C8-C10	<0.01	<0.01	<0.01	<0.01	0.049	0.021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aliphatic VPH >C5-C10												
Aliphatic EPH >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic EPH >C12-C16	2.76	<1	<1	<1	1.23	1.2	<1	<1	<1	<1	1.28	<1
Aliphatic EPH >C16-C21	12.7	3.77	2.36	9.85	9.92	8.99	2.79	<1	<1	<1	58	2.25
Aliphatic EPH >C21-C35	90.4	18.7	9.66	49.8	67.5	65.3	8.32	4.47	2.84	5.21	31.8	<1
Aliphatic EPH >C35-C40	28.7	3.1	2.2	2.5	26.2	28.0	<1	1.0	<1	<1	<1	<1
Total Aliphatic EPH >C10-C35												
Total Aliphatic EPH >C10-C40	135	26	15	63	105	104	12	6	<5	6	92	<5
Aromatic VPH >C5-C7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C7-C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	<0.01	<0.01	<0.01	<0.01	0.032	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aromatic VPH >C5-C10												
Aromatic EPH >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.14	<1
Aromatic EPH >C12-C16	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.95	<1
Aromatic EPH >C16-C21	6.98	2.47	1.82	2.33	1.51	5.25	5.81	<1	2.76	1.75	9.73	<1
Aromatic EPH >C21-C35	41.00	20.10	9.31	69.30	19.10	47.30	16.90	1.44	10.90	7.29	71.30	1.03
Aromatic EPH >C35-C40	6.63	3.82	<1	31.10	1.96	7.64	1.08	<1	<1	<1	19.00	<1
Total Aromatic EPH >C10-C35												
Total Aromatic EPH >C10-C40	55.10	26.60	12.20	103.00	22.60	60.50	24.10	<5	15.20	10.40	103.00	<5
Total VPH >C5-C10												
Total EPH >C10-C35												
Total EPH >C10-C40	190	52	27	166	128	164	36	<10	15	17	195	<10
Organic Matter	2.9	6.3	80.0	12.7	11.3	2.7	85.5	3.6	8.1	>100	4.8	0.4
Benzene	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Toluene	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140
Ethylbenzene	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
m & p-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
o-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Tert-Butyl Ether	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Naphthalene	0.034	0.071	0.067	0.154	0.211	0.064	0.138	0.017	0.352	0.222	1.070	0.036
Acenaphthylene	<0.012	0.094	0.062	<0.12	<0.12	<0.012	0.098	<0.012	0.138	0.091	0.664	0.039
Acenaphthene	0.062	0.013	0.013	<0.08	0.191	0.070	<0.008	<0.008	0.035	0.014	<0.08	<0.008
Fluorene	0.027	0.019	0.026	<0.1	0.159	0.042	0.047	<0.01	0.102	0.043	0.155	<0.01
Phenanthrene	0.414	0.225	0.255	0.738	0.898	0.634	0.694	0.033	0.695	0.460	1.400	0.117
Anthracene	0.099	0.100	0.061	<0.16	<0.16	0.112	0.128	<0.016	0.283	0.100	0.488	0.039
Fluoranthene	1.150	0.584	0.454	1.030	1.220	1.170	1.070	0.050	1.170	0.852	2.930	0.443
Pyrene	1.210	0.539	0.391	0.797	1.030	1.130	0.792	0.039	0.846	0.659	2.320	0.354
Benzo[a]anthracene	0.960	0.478	0.314	0.542	0.573	0.773	0.508	0.036	0.629	0.420	1.750	0.282
Chrysene	1.000	0.504	0.356	0.646	0.583	0.816	0.564	0.036	0.601	0.550	1.490	0.261
Benzo[b]fluoranthene	1.520	1.070	0.601	1.000	0.715	1.240	0.800	0.043	0.773	0.705	2.100	0.248
Benzo[k]fluoranthene	0.614	0.291	0.190	0.409	<0.14	0.472	0.239	0.018	0.307	0.274	1.040	0.143
Benzo[a]pyrene	1.210	0.646	0.367	0.618	0.518	1.040	0.437	0.033	0.541	0.378	2.010	0.256
Indeno(1,2,3-c,d)Pyrene	0.862	0.593	0.296	0.594	0.379	0.796	0.399	0.035	0.426	0.441	2.710	0.206
Dibenz(a,h)Anthracene	0.117	0.101	0.061	<0.23	<0.23	0.156	0.097	<0.023	0.072	0.062	0.339	0.037
Benzo[g,h,i]perylene	0.795	0.603	0.311	0.587	0.411	0.743	0.362	0.029	0.371	0.334	2.720	0.194
Total Of 16 PAH's	10.10	5.93	3.82	7.12	6.89	9.26	6.37	0.37	7.34	5.60	23.20	2.66
Resorcinol												
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols												
Xylenols												
1-Naphthol												
Trimethylphenols												
Total Phenols												

Client: Rodgers Leask Environmental	Chemtest Job No.:					201219-57	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57	210105-10
Quotation No.: Q21-24056	Chemtest Sample ID.:				Generic Assessment Criteria Residential End use with Homegrown Produce (1% SOM)	23471776	23471781	23471725	23471729	23471714	23471720	23471705	23471762	23471770	23471814	23471710	23498287
Order No.: .	Client Sample Ref.:					AJ6-1	AJ6-2	AK1-1	AK1-2	AK2-1	AK2-2	AK3-1	AK5-1	AK5-2	AL1-1	AL1-2	AR10-1
	Sample Type:					SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	Top Depth (m):																
	Bottom Depth (m):					0.50-0.50	1.30-1.30	0.30-0.30	1.70-1.70	0.10-0.10	1.30-1.30	0.50-0.50	0.20-0.20	1.20-1.20	0.50-0.50	1.00-1.00	0.50-0.50
	Date Sampled:					17/12/2020	17/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020	17/12/2020	17/12/2020	17/12/2020	18/12/2020	18/12/2020	1/4/2021
	Asbestos Lab:																
Determinand	Accred.	SOP	Units	LOD													
ACM Type	U	2192		N/A													Trace Chrysotile (White) Asbestos
Asbestos Identification	U	2192		N/A			Not Detected	Not Detected		Not Detected		Not Detected		Not Detected	Not Detected		Detected
Asbestos by Gravimetry	U	2192	%	0.001													<0.001
Total Asbestos	U	2192	%	0.001		-	-	-	-	-	-	-	-	-	-	-	<0.001
Moisture	N	2030	%	0.02		23	7.7	7	4.3	12	5.7	6.1	18	7.9	6.2	9.5	6.7
Soil Colour	N	2040		N/A		Dark Brown	Light Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A		Clay Loam	Sand	Loamy Sand	N/A	Sandy Silt Loam	N/A	Loamy Sand	Clay Loam	N/A	N/A	Sand	Sand
Soil Texture	N	2040		N/A		Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
pH at 20C	M	2010		4		8.0	9.0	9.5	10.9	9.5	10.3	9.2	8.2	11.8	11.3	11.6	9.8
pH (2.5:1) at 20C	N	2010		4													
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01													
Total Sulphur	U	2175	%	0.01													
Chloride (Water Soluble)	M	2220	g/l	0.01													
Nitrate (Water Soluble)	N	2220	g/l	0.01													
Cyanide (Total)	M	2300	mg/kg	0.5		<1	<1	<1	<1	1.4	<1	<1	<1	<1	<1	2.2	<1
Ammonium (Extractable)	M	2425	mg/kg	0.5													
Ammoniacal Nitrogen	M	2425	mg/kg	0.5		<12	<12	<12	<12	<12	<12	<12	19	<12	<12	<12	48
Iron (Total)	N	2430	mg/kg	100		64100	13500	80900	3420	90600	35000	16200	39700	59400	157000	164000	197000
Sulphate (Total)	U	2430	%	0.01													
Arsenic	M	2450	mg/kg	1	37	12.8	4.6	12.2	1.0	<6	1.5	2.4	10.7	6.6	<6	<6	<6
Cadmium	M	2450	mg/kg	0.1	26	0.2	0.1	1.1	0.1	0.9	0.1	0.2	0.6	0.1	0.7	0.8	<0.2
Chromium	M	2450	mg/kg	1	910	238.0	17.0	206.0	6.4	373.0	81.1	22.0	30.9	72.4	489.0	650.0	321.0
Manganese	M	2450	mg/kg	5		8980.0	1310.0	11900.0	1640.0	14800.0	8630.0	4770.0	2370.0	9450.0	36400.0	26600.0	16100.0
Copper	M	2450	mg/kg	0.5	2400	13.9	6.7	28.3	2.4	<14	1.9	7.9	13.5	14.7	<14	<14	<14
Mercury	M	2450	mg/kg	0.1	40	<0.14	<0.14	<1.4	<0.14	<1.4	<0.14	<0.14	<0.14	<0.14	<1.4	<1.4	<1.4
Nickel	M	2450	mg/kg	0.5	1.30E+02	22.4	8.0	15.5	3.2	13.8	1.1	5.2	19.2	14.8	3.2	11.3	28.1
Lead	M	2450	mg/kg	0.5	2.00E+02	47.2	15.1	32.6	6.2	49.8	4.3	24.4	52.9	22.3	<7	12.0	17.3
Selenium	M	2450	mg/kg	0.2	250	3.0	<1	<10	1.5	<10	3.5	3.5	<1	3.1	18.1	13.5	<10
Vanadium	U	2450	mg/kg	5	410	217.0	40.6	211.0	5.4	277.0	109.0	39.9	65.2	144.0	344.0	487.0	296.0
Zinc	M	2450	mg/kg	0.5	3.70E+03	140.0	35.6	144.0	50.8	164.0	39.6	117.0	213.0	38.8	38.3	78.9	70.8
Aliphatic VPH >C5-C6	M	2780	mg/kg	0.05	160	<0.01	<0.01	<0.01	<0.01	0.043	<0.01	<0.01	<0.01	0.051	0.019	0.024	<0.01
Aliphatic VPH >C6-C7	M	2780	mg/kg	0.05	530												
Aliphatic VPH >C7-C8	M	2780	mg/kg	0.05	530												
Aliphatic VPH >C6-C8 (Sum)	N	2780	mg/kg	0.1	530												
Aliphatic VPH >C8-C10	M	2780	mg/kg	0.05	150	<0.01	<0.01	<0.01	<0.01	0.047	<0.01	<0.01	<0.01	1.68	0.045	0.021	<0.01
Total Aliphatic VPH >C5-C10	M	2780	mg/kg	0.25													
Aliphatic EPH >C10-C12	M	2690	mg/kg	2	7.60E+02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic EPH >C12-C16	M	2690	mg/kg	1	4.30E+03	<1	<1	<1	<1	12.3	17.2	2.83	<1	<1	<1	4.7	<1
Aliphatic EPH >C16-C21	M	2690	mg/kg	2	1.10E+05	1.06	<1	1.32	3.92	31.9	54.3	18.1	1.14	<1	<1	24.1	<1
Aliphatic EPH >C21-C35	M	2690	mg/kg	3	1.10E+05	11	<1	2.74	<1	19.9	16.4	37.9	16.7	1.31	5.38	30.3	7.06
Aliphatic EPH >C35-C40	N	2690	mg/kg	1	1.10E+05	1.0	<1	<1	<1	1.2	<1	<1	<1	<1	<1	1.2	1.4
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5													
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10		14	<5	<5	5	65	89	59	19	<5	6	60	9
Aromatic VPH >C5-C7	M	2780	mg/kg	0.05	300	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C7-C8	M	2780	mg/kg	0.05	660	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	M	2780	mg/kg	0.05	190	<0.01	<0.01	<0.01	<0.01	0.031	<0.01	<0.01	<0.01	1.120	0.030	0.013	<0.01
Total Aromatic VPH >C5-C10	M	2780	mg/kg	0.25													
Aromatic EPH >C10-C12	M	2690	mg/kg	1	380	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic EPH >C12-C16	M	2690	mg/kg	1	660	<1	<1	<1	<1	6.71	11.10	1.64	<1	<1	<1	<1	<1
Aromatic EPH >C16-C21	N	2690	mg/kg	2	930	1.64	<1	14.20	1.74	16.60	25.60	3.06	1.16	<1	<1	2.16	<1
Aromatic EPH >C21-C35	M	2690	mg/kg	2	1.70E+03	13.70	<1	55.50	2.83	61.10	77.10	604.00	15.40	10.40	<1	11.30	7.50
Aromatic EPH >C35-C40	N	2690	mg/kg	1	1.70E+03	7.40	<1	9.42	<1	10.10	16.30	476.00	7.00	3.54	<1	<1	2.00
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5													
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10		22.80	<5	80.30	5.98	94.90	131.00	1080.00	23.80	14.50	<5	14.80	10.20
Total VPH >C5-C10	M	2780	mg/kg	0.5													
Total EPH >C10-C35	M	2690	mg/kg	10													
Total EPH >C10-C40	N	2690	mg/kg	10		36	<10	80	11	160	220	1140	42	16	<10	75	19
Organic Matter	M	2625	%	0.4		6.6	1.2	8.3	<0.35	21.6	2.2	3.2	7.3	1.8	0.6	1.2	0.5
Benzene	M	2760	µg/kg	1	87	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<9
Toluene	M	2760	µg/kg	1	130000	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<7
Ethylbenzene	M	2760	µg/kg	1	47000	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<4
m & p-Xylene	M	2760	µg/kg	1	56000	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<10
o-Xylene	M	2760	µg/kg	1		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<10
Methyl Tert-Butyl Ether	M	2760	µg/kg	1		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<10
Naphthalene	M	2800	mg/kg	0.1	15	0.034	<0.045	0.378	0.084	0.217	2.870	<0.45	0.070	<0.045	<0.009	0.048	0.023
Acenaphthylene	N	2800	mg/kg	0.1	170	0.029	<0.06	0.371	0.079	0.247	1.160	<0.6	0.084	<0.06	<0.012	0.042	0.025
Acenaphthene	M	2800	mg/kg	0.1	210	<0.008	<0.04	0.029	<0.008	0.041	0.096	<0.4	<0.04	<0.04	<0.008	<0.008	<0.008
Fluorene	M	2800	mg/kg	0.1	170	<0.01	<0.05	0.106	0.040	0.102	0.471	<0.5	<0.05	<0.05	<0.01	0.019	<0.01
Phenanthrene	M	2800	mg/kg	0.1	95	0.116	<0.075	1.040	0.303	0.714	3.470	<0.75	0.266	0.086	0.027	0.118	0.087
Anthracene	M	2800	mg/kg	0.1	2400	0.026	<0.08	0.321	0.186	0.239	1.120	<0.8	<0.08	<0.08	<0.016	0.041	0.020
Fluoranthene	M	2800	mg/kg	0.1	280	0.236	<0.085	2.600	0.894	1.810	5.850	<0.85	0.571	0.133	0.047	0.295	0.231
Pyrene	M	2800	mg/kg	0.1	620	0.177	<0.075	2.070	0.633	1.440	4.510	<0.75	0.426	0.117	0.062	0.239	0.181
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.2	0.136	<0.07	1.530	0.449	1.170	2.860	<0.7	0.323	<0.07	0.065	0.155	0.139
Chrysene	M	2800	mg/kg	0.1	15	0.137	<0.05	1.390	0.398	0.981	2.630	<0.5	0.286	0.067	0.051	0.145	0.142
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.6	0.186	<0.075	2.160	0.424	1.440	2.450	<0.75	0.277	0.099	0.048	0.167	0.242
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77	0.072	<0.07	0.892	0.192	0.534	1.440	<0.7	0.189	<0.07	<0.014	0.061	0.075
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.2	0.131	<0.075	1.680	0.343	1.170	2.910	<0.75	0.317	<0.075	0.037	0.169	0.156
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27	0.146	<0.09	1.710	0.271	1.100	3.220	<0.9	0.271	<0.09	0.028	0.150	0.165
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	<0.023	<0.115	0.215	0.043	0.170	0.455	<1.15	<0.115	<0.115	<0.023	<0.023	0.028
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320	0.110	<0.12	1.230	0.225	0.901	2.520	<1.2	0.263	<0.12	0.044	0.123	0.161
Total Of 16 PAH's	N	2800	mg/kg	2		1.54	<0.59	17.70	4.56	12.30	38.00	<5.9	3.34	<0.59	0.41	1.77	1.67
Resorcinol	M	2920	mg/kg	0.02													
Phenol	M	2920	mg/kg	0.02	280	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0	<0.01	<0.01	<0.01
Cresols	M	2920	mg/kg	0.02													
Xylenols	M	2920	mg/kg	0.02													
1-Naphthol	N	2920	mg/kg	0.02													
Trimethylphenols	M	2920	mg/kg	0.02													
Total Phenols	M	2920	mg/kg	0.1													

Chemtest Job No.:	210105-10	210105-10	210105-10	210106-76	210106-76	210108-19	210108-19	210108-19	210108-19	210108-19	210108-19	210108-19
Chemtest Sample ID.:	23498291	23498295	23498299	23504862	23504831	23512069	23512073	23512103	23512111	23512115	23512040	23512046
Client Sample Ref.:	AR10-2	AR11-1	AR11-2	AS9-1	AS9-1	AN10-1	AN10-2	AN11-1	AN11-2	AN12-1	AN12-2	AN12-3
Sample Type:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Top Depth (m):												
Bottom Depth (m):	1.70-1.70	0.50-0.50	1.80-1.80	0.50-0.50	1.20-1.20	0.90-0.90	1.80-1.80	0.40-0.40	2.10-2.10	0.50-0.50	1.60-1.60	2.30-2.30
Date Sampled:	1/4/2021	1/4/2021	1/4/2021	05/01/2021	05/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
Asbestos Lab:												
Determinand												
ACM Type												
Asbestos Identification		Not Detected		Not Detected	Not Detected		Not Detected	Not Detected		Not Detected		Not Detected
Asbestos by Gravimetry												
Total Asbestos	-	-	-									
Moisture	10	5.1	7.1	10	9.9	17	11	17	8.6	15	15	18
Soil Colour	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Grey	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	Sand	Loamy Sand	Loamy Sand	Sandy Loam	Sandy Loam	Sand	Sand	Loamy Sand	Sand	Sandy Loam	Sand	Sand
Soil Texture	Crushed Brick	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
pH at 20C	11.1	10.0	11.7	10.3	11.6	11.0	10.9	10.7	11.7	9.3	10.8	10.6
pH (2.5:1) at 20C												
Sulphate (2:1 Water Soluble) as SO4												
Total Sulphur												
Chloride (Water Soluble)												
Nitrate (Water Soluble)												
Cyanide (Total)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.0	1.5
Ammonium (Extractable)												
Ammoniacal Nitrogen	<12	<12	<12	<12	<12	<12	14	<12	<12	<12	<12	<12
Iron (Total)	83200	5660	147000	177000	121000	172000	62600	63600	31300	71000	20600	30000
Sulphate (Total)												
Arsenic	8.7	1.3	7.5	9.1	10.0	9.8	9.2	12.3	1.7	9.4	11.2	6.6
Cadmium	0.2	0.2	0.4	2.9	1.4	2.1	0.2	0.5	0.1	1.1	0.3	0.7
Chromium	<9	2.2	190.0	112.0	110.0	51.4	11.1	122.0	70.3	128.0	33.5	33.8
Manganese	4710.0	163.0	19700.0	10700.0	11600.0	5650.0	3100.0	12100.0	9960.0	9770.0	931.0	3210.0
Copper	16.6	<1.4	19.2	26.6	22.9	27.4	12.9	31.5	2.2	21.5	10.3	21.7
Mercury	<1.4	<0.14	<1.4	<1.4	2.1	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Nickel	7.2	2.1	8.2	25.8	15.0	27.3	14.4	19.6	1.7	18.1	23.9	10.9
Lead	24.2	7.9	25.2	334.0	261.0	131.0	69.8	98.4	2.5	50.9	18.8	29.8
Selenium	<10	<1	<10	<10	2.3	<1	<1	4.9	4.8	3.9	<1	2.0
Vanadium	-	5.1	385.0	268.0	297.0	81.8	56.1	241.0	205.0	185.0	46.0	101.0
Zinc	39.6	13.7	46.2	1540.0	1010.0	143.0	66.8	280.0	21.6	209.0	171.0	217.0
Aliphatic VPH >C5-C6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.043	0.03
Aliphatic VPH >C6-C7												
Aliphatic VPH >C7-C8												
Aliphatic VPH >C6-C8 (Sum)												
Aliphatic VPH >C8-C10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.178	0.803
Total Aliphatic VPH >C5-C10												
Aliphatic EPH >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic EPH >C12-C16	1.03	<1	1.88	1.06	10.6	<1	4.06	<1	<1	3.67	1.04	1.86
Aliphatic EPH >C16-C21	2.75	<1	5.71	7.82	30.3	<1	8.44	7.47	4.93	34.6	20.5	29.9
Aliphatic EPH >C21-C35	8.51	14.3	20.7	34.6	69.2	2.34	7.21	65	8.92	221	73.2	88.5
Aliphatic EPH >C35-C40	<1	<1	4.0	7.1	16.5	<1	1.2	14.7	6.1	41.1	18.1	29.6
Total Aliphatic EPH >C10-C35												
Total Aliphatic EPH >C10-C40	13	16	32	51	127	<5	21	88	20	300	113	150
Aromatic VPH >C5-C7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C7-C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.119	0.536
Total Aromatic VPH >C5-C10												
Aromatic EPH >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic EPH >C12-C16	<1	<1	<1	<1	2.12	<1	<1	1.44	<1	2.15	<1	1.40
Aromatic EPH >C16-C21	<1	<1	2.88	1.53	2.32	<1	1.13	10.90	6.37	11.10	10.10	4.71
Aromatic EPH >C21-C35	1.60	1.19	25.60	14.50	14.30	16.40	21.50	124.00	38.00	113.00	81.00	107.00
Aromatic EPH >C35-C40	<1	<1	2.30	1.70	1.33	7.04	10.10	16.00	5.03	6.14	7.46	9.73
Total Aromatic EPH >C10-C35												
Total Aromatic EPH >C10-C40	<5	<5	30.80	18.30	20.10	23.60	33.40	153.00	49.40	133.00	99.70	123.00
Total VPH >C5-C10												
Total EPH >C10-C35												
Total EPH >C10-C40	13	16	63	69	147	24	54	241	70	432	214	274
Organic Matter	0.8	<0.35	0.7	4.0	8.5	2.2	1.3	35.9	1.2	8.6	5.5	7.9
Benzene	<9	<9	<9	<180	<180	<180	<180	<180	<180	<180	<180	<180
Toluene	<7	<7	<7	<140	<140	<140	<140	<140	<140	<140	<140	<140
Ethylbenzene	<4	<4	<4	<80	<80	<80	<80	<80	<80	<80	<80	<80
m & p-Xylene	<10	<10	<10	<200	<200	<200	<200	<200	<200	<200	<200	<200
o-Xylene	<10	<10	<10	<200	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Tert-Butyl Ether	<10	<10	<10	<200	<200	<200	<200	<200	<200	<200	<200	<200
Naphthalene	<0.009	0.013	0.024	0.038	0.039	<0.045	<0.045	0.126	0.091	0.192	0.197	0.169
Acenaphthylene	<0.012	<0.012	<0.012	0.036	0.024	<0.06	<0.06	<0.06	<0.06	0.080	0.081	0.073
Acenaphthene	<0.008	<0.008	0.038	0.011	0.023	<0.04	<0.04	0.087	<0.04	0.031	0.052	0.136
Fluorene	<0.01	<0.01	0.020	0.013	0.019	<0.05	<0.05	0.084	<0.05	0.050	0.085	0.081
Phenanthrene	0.019	0.025	0.244	0.181	0.254	<0.075	<0.075	0.756	0.579	0.327	1.170	4.910
Anthracene	<0.016	<0.016	0.056	0.057	0.053	<0.08	<0.08	0.263	0.181	0.104	0.299	0.945
Fluoranthene	0.027	<0.017	0.645	0.548	0.631	0.113	0.113	1.630	1.510	0.656	6.770	11.800
Pyrene	0.024	<0.015	0.644	0.450	0.572	0.100	0.106	1.480	1.510	0.541	5.430	8.250
Benzo[a]anthracene	0.022	<0.014	0.429	0.343	0.385	<0.07	0.098	1.610	1.190	0.409	4.770	5.240
Chrysene	0.027	<0.01	0.445	0.404	0.436	0.088	0.104	1.590	1.230	0.430	4.400	5.080
Benzo[b]fluoranthene	0.047	<0.015	0.773	0.551	0.603	0.145	0.201	2.920	2.060	0.731	5.670	5.670
Benzo[k]fluoranthene	<0.014	<0.014	0.245	0.166	0.184	<0.07	<0.07	0.877	0.635	0.222	1.810	1.880
Benzo[a]pyrene	0.024	<0.015	0.522	0.322	0.382	<0.075	0.119	1.720	1.250	0.412	2.840	2.970
Indeno(1,2,3-c,d)Pyrene	0.027	<0.018	0.465	0.298	0.311	<0.09	0.136	1.430	1.010	0.368	2.210	2.070
Dibenz(a,h)Anthracene	<0.023	<0.023	0.036	0.053	0.056	<0.115	<0.115	0.428	0.254	0.098	0.678	0.626
Benzo[g,h,i]perylene	<0.024	<0.024	0.453	0.272	0.297	<0.12	<0.12	1.390	0.997	0.362	1.890	1.800
Total Of 16 PAH's	0.22	<0.118	5.04	3.74	4.27	<0.59	0.88	16.40	12.50	5.01	38.40	51.70
Resorcinol												
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols												
Xylenols												
1-Naphthol												
Trimethylphenols												
Total Phenols												

Chemtest Job No.:	210108-19	210108-19	210108-19	210108-19	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52	210109-42
Chemtest Sample ID.:	23512055	23512065	23512094	23512099	23513440	23513530	23513568	23513578	23513589	23513603	23513615	23518594
Client Sample Ref.:	AP10-1	AP10-2	AQ10-1	AQ10-2	AN13-1	AN13-2	AN14-1	AN14-2	AN14-3	AN15-1	AN15-2	AL12-1
Sample Type:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Top Depth (m):												
Bottom Depth (m):	0.40-0.40	2.20-2.20	0.20-0.20	1.80-1.80	0.60-0.60	1.80-1.80	1.00-1.00	1.70-1.70	2.50-2.50	0.40-0.40	1.60-1.60	0.50-0.50
Date Sampled:	06/01/2021	06/01/2021	06/01/2021	07/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	07/01/2021	07/01/2021	08/01/2021
Asbestos Lab:												
Determinand												
ACM Type												
Asbestos Identification		Not Detected	Not Detected		Not Detected		Not Detected		Not Detected		Not Detected	Not Detected
Asbestos by Gravimetry												
Total Asbestos					-	-	-	-	-	-	-	
Moisture	16	18	12	13	14	17	16	14	17	15	15	10
Soil Colour	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	Sandy Loam	Loamy Sand	Sandy Loam	Sandy Loam	Loamy Sand	Loamy Sand	Loamy Sand	Sand	Stone/Soil	Sand	Sand	Loamy Sand
Soil Texture	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Vegetation	Stones	Stones
pH at 20C	10.2	9.8	9.0	10.6	10.0	11.0	11.6	11.7	11.4	11.1	11.3	10.7
pH (2.5:1) at 20C												
Sulphate (2:1 Water Soluble) as SO4												
Total Sulphur												
Chloride (Water Soluble)												
Nitrate (Water Soluble)												
Cyanide (Total)	<1	<1	<1	<1	<1	3.8	<1	1.6	<1	<1	<1	<1
Ammonium (Extractable)												
Ammoniacal Nitrogen	<12	44	<12	<12	<12	21	<12	<12	<12	22	17	<12
Iron (Total)	48800	28600	56000	87600	51400	40000	21200	34500	36600	69800	130000	176000
Sulphate (Total)												
Arsenic	11.3	7.7	5.4	6.4	9.1	7.3	4.2	7.1	7.5	8.8	6.7	19.4
Cadmium	0.7	1.0	0.3	0.3	0.1	0.7	1.0	0.6	0.1	0.2	2.1	2.2
Chromium	50.0	36.0	86.8	13.8	97.1	42.8	224.0	37.1	50.1	24.1	14.2	58.1
Manganese	4310.0	1280.0	7580.0	2790.0	9950.0	2940.0	4780.0	3740.0	4800.0	4120.0	3890.0	6070.0
Copper	23.0	21.5	14.3	17.9	16.0	29.9	13.3	13.6	12.7	21.4	12.6	38.4
Mercury	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<1.4
Nickel	21.7	30.8	14.6	15.2	15.0	16.4	11.9	10.3	13.8	19.4	16.0	22.9
Lead	62.9	34.9	44.7	27.6	56.1	12.3	20.3	28.2	11.7	41.1	43.9	117.0
Selenium	1.6	<1	3.2	<1	4.3	1.8	7.3	1.9	2.8	<1	<1	<10
Vanadium	88.1	39.3	147.0	44.1	145.0	83.9	320.0	89.2	197.0	46.2	37.5	132.0
Zinc	398.0	106.0	139.0	126.0	307.0	49.9	103.0	139.0	59.7	88.8	154.0	288.0
Aliphatic VPH >C5-C6	<0.01	0.029	<0.01	<0.01	<0.01	0.026	<0.01	0.014	0.019	<0.01	<0.01	<0.01
Aliphatic VPH >C6-C7												
Aliphatic VPH >C7-C8												
Aliphatic VPH >C6-C8 (Sum)												
Aliphatic VPH >C8-C10	<0.01	0.048	<0.01	<0.01	0.013	0.109	0.019	0.068	0.034	<0.01	0.011	0.028
Total Aliphatic VPH >C5-C10												
Aliphatic EPH >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic EPH >C12-C16	<1	1.45	<1	<1	3.46	14.5	18.2	2.59	3.93	2.85	1.49	2.1
Aliphatic EPH >C16-C21	7.36	4.14	3.64	4.32	19.6	23.5	210	41.7	16.6	27.4	12.9	8.43
Aliphatic EPH >C21-C35	34.8	38.7	10.7	23.3	47.8	30.8	72.1	78.4	20.2	31.4	53.3	36.9
Aliphatic EPH >C35-C40	7.8	7.8	2.8	12.2	12.1	8.0	53.9	29.5	5.9	37.3	94.4	9.5
Total Aliphatic EPH >C10-C35												
Total Aliphatic EPH >C10-C40	51	52	17	40	84	78	355	152	47	100	162	57
Aromatic VPH >C5-C7	<0.01	0.021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C7-C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	<0.01	0.032	<0.01	<0.01	<0.01	0.073	0.013	0.046	0.023	<0.01	<0.01	0.019
Total Aromatic VPH >C5-C10												
Aromatic EPH >C10-C12	<1	<1	<1	<1	<1	<1	<1	1.27	<1	<1	<1	<1
Aromatic EPH >C12-C16	<1	<1	<1	<1	<1	2.23	12.90	4.19	1.03	1.17	<1	1.13
Aromatic EPH >C16-C21	<1	<1	<1	<1	2.98	12.40	54.90	35.30	3.86	8.25	1.54	5.21
Aromatic EPH >C21-C35	13.10	22.20	10.90	20.40	25.10	48.40	113.00	137.00	26.00	57.70	50.30	24.30
Aromatic EPH >C35-C40	1.93	1.74	2.59	2.58	2.45	5.56	5.53	18.10	8.49	9.43	9.29	3.52
Total Aromatic EPH >C10-C35												
Total Aromatic EPH >C10-C40	16.00	25.40	14.20	23.60	31.10	69.10	188.00	196.00	39.80	76.70	61.30	34.70
Total VPH >C5-C10												
Total EPH >C10-C35												
Total EPH >C10-C40	67	78	32	64	115	147	542	349	87	176	223	92
Organic Matter	4.5	2.1	2.3	2.0	4.5	4.8	38.1	9.9	3.6	16.5	2.2	4.1
Benzene	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Toluene	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140
Ethylbenzene	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
m & p-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
o-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Tert-Butyl Ether	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Naphthalene	0.028	0.023	0.022	<0.045	0.161	0.165	0.880	1.310	0.093	0.387	0.058	0.476
Acenaphthylene	<0.012	0.018	<0.012	<0.06	0.149	0.213	1.310	0.751	0.043	0.216	<0.06	0.220
Acenaphthene	<0.008	0.016	<0.008	<0.04	0.026	0.023	0.111	0.110	0.012	<0.04	<0.04	0.045
Fluorene	<0.01	0.021	<0.01	<0.05	0.141	0.102	1.120	0.624	0.047	0.104	<0.05	0.200
Phenanthrene	0.085	0.085	0.063	<0.075	1.090	0.812	8.490	5.380	0.315	1.030	0.124	1.420
Anthracene	0.025	0.051	<0.016	<0.08	0.330	0.273	1.830	1.710	0.078	0.278	<0.08	0.731
Fluoranthene	0.137	0.208	0.117	<0.085	1.850	2.040	13.500	9.010	0.461	2.300	0.249	2.490
Pyrene	0.124	0.161	0.103	<0.075	1.400	1.420	10.400	8.180	0.384	2.070	0.249	1.920
Benzo[a]anthracene	0.072	0.145	0.081	<0.07	1.030	1.040	6.020	4.710	0.290	1.350	0.162	1.180
Chrysene	0.088	0.134	0.106	<0.05	0.975	1.030	4.870	4.100	0.263	1.120	0.139	1.190
Benzo[b]fluoranthene	0.120	0.152	0.163	<0.075	1.580	1.630	6.400	5.000	0.361	1.750	0.249	0.812
Benzo[k]fluoranthene	0.037	0.058	0.051	<0.07	0.501	0.449	2.570	1.900	0.125	0.605	<0.07	0.334
Benzo[a]pyrene	0.063	0.094	0.090	<0.075	0.883	0.924	4.900	3.850	0.293	1.300	0.136	0.865
Indeno(1,2,3-c,d)Pyrene	0.054	0.060	0.085	<0.09	0.713	0.751	4.260	3.120	0.270	1.120	0.120	0.662
Dibenz(a,h)Anthracene	<0.023	<0.023	<0.023	<0.115	0.147	0.147	0.901	0.671	0.058	0.220	<0.115	0.151
Benzo[g,h,i]perylene	0.054	0.053	0.088	<0.12	0.686	0.671	3.510	2.810	0.235	1.060	<0.12	0.629
Total Of 16 PAH's	0.88	1.28	0.97	<0.59	11.70	11.70	71.10	53.20	3.33	14.90	1.48	13.30
Resorcinol												
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	0	0	0	<0.01	<0.01	<0.01	<0.01
Cresols												
Xylenols												
1-Naphthol												
Trimethylphenols												
Total Phenols												

Client: Rodgers Leask Environmental	Accred.	SOP	Units	LOD	Generic Assessment Criteria Residential End use with Homegrown Produce (1% SOM)	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
Chemtest Job No.:						210109-42	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
Quotation No.: Q21-24056 — Chemtest Sample ID.:						23518599	23518603	23518581	23518588	23518567	23518577	23518557	23518561	23518548	23518552
Order No.: . — Client Sample Ref.:						AL12-2	AL12-3	AL13-1	AL13-2	AL14-1	AL14-2	AM15-1	AM15-2	AM16-1	AM16-2
Sample Type:						SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Top Depth (m):															
Bottom Depth (m):						1.00-1.00	2.15-2.15	0.30-0.30	1.50-1.50	0.30-0.30	1.70-1.70	0.50-0.50	1.70-1.70	0.20-0.20	1.80-1.80
Date Sampled:						08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
Asbestos Lab:															
Determinand	**Accred.**	**SOP**	**Units**	**LOD**											
ACM Type	U	2192		N/A						Chrysotile (White) Asbestos				Chrysotile (White) Asbestos	
Asbestos Identification	U	2192		N/A			Not Detected	Not Detected		Detected		Not Detected		Detected	
Asbestos by Gravimetry	U	2192	%	0.001						0.0190				<0.001	
Total Asbestos	U	2192	%	0.001						0.0193				<0.001	
Moisture	N	2030	%	0.02		17	19	13	14	10	12	13	19	14	13
Soil Colour	N	2040		N/A		Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A		Sand	Sand	Loamy Sand	Loamy Sand	Sand	Sand	Sand	Loamy Sand	Sandy Clay Loam	Sand
Soil Texture	N	2040		N/A		Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
pH at 20C	M	2010		4		10.8	7.7	10.9	10.5	10.6	10.5	10.5	9.5	8.7	11.5
pH (2.5:1) at 20C	N	2010		4											
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01											
Total Sulphur	U	2175	%	0.01											
Chloride (Water Soluble)	M	2220	g/l	0.01											
Nitrate (Water Soluble)	N	2220	g/l	0.01											
Cyanide (Total)	M	2300	mg/kg	0.5		1.5	1.0	<1	<1	1.4	<1	1.8	11.2	<1	<1
Ammonium (Extractable)	M	2425	mg/kg	0.5											
Ammoniacal Nitrogen	M	2425	mg/kg	0.5		<12	<12	<12	<12	39	<12	<12	<12	<12	<12
Iron (Total)	N	2430	mg/kg	100		102000	23900	179000	138000	229000	59700	65700	35400	96600	43900
Sulphate (Total)	U	2430	%	0.01											
Arsenic	M	2450	mg/kg	1	37	20.1	12.5	8.7	12.6	17.3	10.4	4.6	6.3	45.2	12.8
Cadmium	M	2450	mg/kg	0.1	26	1.4	<0.02	2.5	1.6	3.0	0.4	<0.02	0.7	0.4	0.5
Chromium	M	2450	mg/kg	1	910	57.2	28.5	268.0	22.0	66.9	67.2	187.0	42.0	581.0	50.9
Manganese	M	2450	mg/kg	5		2990.0	1430.0	13700.0	3980.0	4550.0	2630.0	12200.0	3630.0	11000.0	1920.0
Copper	M	2450	mg/kg	0.5	2400	71.4	15.0	32.9	23.4	50.6	26.4	25.3	30.4	259.0	28.6
Mercury	M	2450	mg/kg	0.1	40	<1.4	<0.14	<1.4	<1.4	<1.4	<0.14	<0.14	0.2	2.2	0.2
Nickel	M	2450	mg/kg	0.5	1.30E+02	65.1	12.5	26.5	38.4	51.1	28.4	8.8	13.6	48.4	28.0
Lead	M	2450	mg/kg	0.5	2.00E+02	127.0	16.0	220.0	297.0	587.0	97.3	51.8	110.0	177.0	81.5
Selenium	M	2450	mg/kg	0.2	250	<10	<1	<10	<10	<10	<1	4.8	2.0	1.8	<1
Vanadium	U	2450	mg/kg	5	410	67.0	44.9	364.0	67.5	64.9	78.2	302.0	69.8	144.0	38.7
Zinc	M	2450	mg/kg	0.5	3.70E+03	293.0	58.6	548.0	321.0	267.0	99.2	116.0	182.0	437.0	233.0
Aliphatic VPH >C5-C6	M	2780	mg/kg	0.05	160	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.019	<0.01	<0.01
Aliphatic VPH >C6-C7	M	2780	mg/kg	0.05	530										
Aliphatic VPH >C7-C8	M	2780	mg/kg	0.05	530										
Aliphatic VPH >C6-C8 (Sum)	N	2780	mg/kg	0.1	530										
Aliphatic VPH >C8-C10	M	2780	mg/kg	0.05	150	0.023	0.046	0.056	<0.01	<0.01	0.01	0.03	0.127	<0.01	0.02
Total Aliphatic VPH >C5-C10	M	2780	mg/kg	0.25											
Aliphatic EPH >C10-C12	M	2690	mg/kg	2	7.60E+02	<1	<1	<1	<1	<1	<1	1.84	<1	<1	<1
Aliphatic EPH >C12-C16	M	2690	mg/kg	1	4.30E+03	<1	1.2	5.22	14	4.54	<1	3.45	<1	<1	<1
Aliphatic EPH >C16-C21	M	2690	mg/kg	2	1.10E+05	5.47	135	17.7	124	46.5	11.3	8.91	1.77	3.85	1.87
Aliphatic EPH >C21-C35	M	2690	mg/kg	3	1.10E+05	71.3	51.6	110	106	728	199	24	5.62	20.4	13.7
Aliphatic EPH >C35-C40	N	2690	mg/kg	1	1.10E+05	14.8	3.6	22.2	5.9	337.0	41.5	22.8	2.0	6.1	2.4
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5											
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10		93	192	155	250	1120	252	61	10	31	18
Aromatic VPH >C5-C7	M	2780	mg/kg	0.05	300	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	<0.01
Aromatic VPH >C7-C8	M	2780	mg/kg	0.05	660	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	M	2780	mg/kg	0.05	190	0.014	0.030	0.038	<0.01	<0.01	<0.01	0.020	0.085	<0.01	0.013
Total Aromatic VPH >C5-C10	M	2780	mg/kg	0.25											
Aromatic EPH >C10-C12	M	2690	mg/kg	1	380	<1	<1	<1	<1	<1	<1	8.50	25.50	<1	<1
Aromatic EPH >C12-C16	M	2690	mg/kg	1	660	3.42	6.48	<1	<1	<1	<1	36.00	46.00	<1	<1
Aromatic EPH >C16-C21	N	2690	mg/kg	2	930	64.60	17.40	2.39	2.63	<1	<1	430.00	294.00	7.61	1.31
Aromatic EPH >C21-C35	M	2690	mg/kg	2	1.70E+03	152.00	61.60	38.20	47.10	255.00	51.30	1550.00	389.00	48.60	5.84
Aromatic EPH >C35-C40	N	2690	mg/kg	1	1.70E+03	15.70	4.29	4.89	9.30	7.44	3.21	212.00	44.50	13.40	<1
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5											
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10		237.00	90.00	46.20	59.00	263.00	54.90	2230.00	799.00	70.20	8.30
Total VPH >C5-C10	M	2780	mg/kg	0.5											
Total EPH >C10-C35	M	2690	mg/kg	10											
Total EPH >C10-C40	N	2690	mg/kg	10		329	282	201	309	1380	307	2290	809	101	27
Organic Matter	M	2625	%	0.4		24.1	4.6	4.4	4.1	3.9	3.2	22.2	31.7	3.1	15.0
Benzene	M	2760	µg/kg	1	87	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Toluene	M	2760	µg/kg	1	130000	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140
Ethylbenzene	M	2760	µg/kg	1	47000	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
m & p-Xylene	M	2760	µg/kg	1	56000	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
o-Xylene	M	2760	µg/kg	1		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Tert-Butyl Ether	M	2760	µg/kg	1		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Naphthalene	M	2800	mg/kg	0.1	15	0.482	1.990	0.183	<0.09	<0.09	0.166	3.380	26.500	0.091	0.170
Acenaphthylene	N	2800	mg/kg	0.1	170	0.291	0.406	0.080	<0.12	<0.12	0.072	2.170	9.590	0.026	0.057
Acenaphthene	M	2800	mg/kg	0.1	210	0.106	0.247	0.042	<0.08	<0.08	<0.008	1.750	0.937	0.075	<0.016
Fluorene	M	2800	mg/kg	0.1	170	0.272	1.720	0.071	<0.1	<0.1	0.044	3.170	5.880	0.074	0.035
Phenanthrene	M	2800	mg/kg	0.1	95	5.760	17.400	0.527	<0.15	<0.15	0.321	39.300	34.500	0.702	0.473
Anthracene	M	2800	mg/kg	0.1	2400	1.310	3.580	0.215	<0.16	<0.16	0.083	10.700	9.310	0.202	0.101
Fluoranthene	M	2800	mg/kg	0.1	280	12.300	16.700	1.240	<0.17	<0.17	0.553	75.800	56.800	1.120	0.857
Pyrene	M	2800	mg/kg	0.1	620	9.130	10.900	0.997	<0.15	0.215	0.416	59.100	43.200	0.909	0.659
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.2	6.050	6.250	0.662	<0.14	<0.14	0.299	42.000	25.700	0.593	0.342
Chrysene	M	2800	mg/kg	0.1	15	5.940	5.560	0.679	<0.1	<0.1	0.276	36.100	24.200	0.626	0.368
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.6	7.830	6.860	1.070	<0.15	<0.15	0.472	54.100	35.200	0.851	0.399
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77	2.830	2.180	0.375	<0.14	<0.14	0.130	18.900	10.800	0.278	0.126
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.2	5.210	4.170	0.607	<0.15	<0.15	0.279	39.600	23.700	0.517	0.229
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27	4.610	3.160	0.489	<0.18	<0.18	0.247	31.100	19.300	0.408	0.160
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	1.030	0.603	0.092	<0.23	<0.23	0.047	6.870	4.070	0.082	<0.046
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320	4.100	2.610	0.473	<0.24	<0.24	0.213	27.400	19.400	0.369	0.144
Total Of 16 PAH's	N	2800	mg/kg	2		67.20	84.30	7.80	<1.18	<1.18	3.62	451.00	349.00	6.92	4.12
Resorcinol	M	2920	mg/kg	0.02											
Phenol	M	2920	mg/kg	0.02	280	0	<0.01	<0.01	<0.01	<0.01	<0.01	0	0	<0.01	<0.01
Cresols	M	2920	mg/kg	0.02											
Xylenols	M	2920	mg/kg	0.02											
1-Naphthol	N	2920	mg/kg	0.02											
Trimethylphenols	M	2920	mg/kg	0.02											
Total Phenols	M	2920	mg/kg	0.1											

Determinand	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
Chemtest Sample ID.:	23527439	23527534	23527299	23527369	23527539	23527546	23527550	23527559	23527563	23527310	23527315	23527320	23527326	23527335	23527341
Client Sample Ref.:	AL10-1	AL10-2	AL11-1	AL11-2	AM10-1	AM10-2	AM11-1	AM11-2	AM12-1	AM12-2	AM13-1	AM13-2	AM14-1	AM14-2	AM14-3
Sample Type:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Top Depth (m):															
Bottom Depth (m):	0.10-0.10	2.00-2.00	0.30-0.30	1.40-1.40	0.20-0.20	1.90-1.90	0.20-0.20	1.80-1.80	0.10-0.10	2.10-2.10	0.00-0.80	1.50-1.50	0.20-0.20	1.80-1.80	2.10-2.10
Date Sampled:	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
Asbestos Lab:															
ACM Type															
Asbestos Identification	Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		Not Detected
Asbestos by Gravimetry															
Total Asbestos															
Moisture	13	10	12	11	9	7.9	9.4	14	6.4	11	13	8.6	8.1	13	13
Soil Colour	Dark Brown	Light Brown	Dark Brown	Dark Brown	Dark Brown	Light Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	Sand	Sand	Sand	Stone/Soil	Sand	Sand	Sand	Sand	Loamy Sand	Sand	Sand	Sand	Sand	Stone/Soil	Stone/Soil
Soil Texture	Vegetation	Stones	Vegetation	None	Vegetation	Stones	None	None	Stones	None	None	Stones	Vegetation	None	N/A
pH at 20C	8.8	10.2	9.0	10.2	9.3	9.4	11.0	11.1	8.9	10.4	11.3	10.8	10.1	11.0	10.9
pH (2.5:1) at 20C															
Sulphate (2:1 Water Soluble) as SO4															
Total Sulphur															
Chloride (Water Soluble)															
Nitrate (Water Soluble)															
Cyanide (Total)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ammonium (Extractable)															
Ammoniacal Nitrogen	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
Iron (Total)	63900	98500	71200	16200	174000	32700	53800	40200	15000	22800	92900	39200	32700	28500	28300
Sulphate (Total)															
Arsenic	10.2	8.2	9.0	5.8	8.2	6.7	6.8	8.2	20.7	6.2	9.1	4.5	6.0	5.8	7.4
Cadmium	<0.02	0.5	<0.02	0.0	1.5	<0.02	0.4	<0.02	0.2	<0.02	0.2	0.3	0.3	<0.02	0.3
Chromium	35.0	57.2	118.0	12.6	<9	12.3	15.2	71.1	4.7	30.1	3.8	15.7	9.1	22.5	9.4
Manganese	3920.0	10300.0	11300.0	809.0	2790.0	891.0	1820.0	4130.0	3940.0	3650.0	4690.0	3580.0	2800.0	3230.0	1900.0
Copper	17.8	25.1	16.0	9.1	18.6	21.7	21.2	21.1	5.3	8.7	13.7	11.7	10.7	10.6	15.0
Mercury	<0.14	<1.4	<0.14	<0.14	<1.4	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	22.9
Nickel	16.2	24.3	14.4	12.2	33.8	23.3	25.8	19.4	3.9	8.0	17.6	9.9	10.3	13.0	13.2
Lead	61.8	57.8	26.8	12.5	343.0	19.2	30.0	30.4	12.2	1.3	56.8	14.0	29.4	12.0	13.0
Selenium	1.3	<10	3.3	<1	<10	<1	<1	2.2	2.2	2.6	<1	1.8	1.4	3.4	1.6
Vanadium	60.0	180.0	213.0	20.2	55.7	24.0	37.9	85.0	14.8	35.2	36.5	22.8	33.2	25.9	19.3
Zinc	161.0	128.0	125.0	62.1	128.0	66.4	92.1	107.0	59.3	76.5	125.0	58.0	237.0	74.8	97.0
Aliphatic VPH >C5-C6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.037	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic VPH >C6-C7															
Aliphatic VPH >C7-C8															
Aliphatic VPH >C6-C8 (Sum)															
Aliphatic VPH >C8-C10	<0.01	<0.01	<0.01	<0.01	<0.01	0.039	0.034	0.022	<0.01	0.099	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aliphatic VPH >C5-C10															
Aliphatic EPH >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic EPH >C12-C16	<1	1.74	<1	<1	<1	2.62	<1	2.08	1.02	<1	4.5	<1	<1	<1	<1
Aliphatic EPH >C16-C21	2.15	34.6	12.5	<1	2.71	324	4.93	19.8	5.06	1.86	39.1	5.38	3.6	2.29	1.45
Aliphatic EPH >C21-C35	15.7	33.1	29	2.03	10.5	135	32.6	45.6	15.6	9.29	62.5	116	18.7	8.34	6.77
Aliphatic EPH >C35-C40	<1	2.9	4.9	<1	<1	<1	30.9	19.0	1.0	1.5	63.4	45.3	10.8	6.2	3.6
Total Aliphatic EPH >C10-C35															
Total Aliphatic EPH >C10-C40	19	72	48	<5	14	461	69	87	23	13	170	168	34	17	12
Aromatic VPH >C5-C7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C7-C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	<0.01	<0.01	<0.01	<0.01	<0.01	0.026	0.023	0.015	<0.01	0.066	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aromatic VPH >C5-C10															
Aromatic EPH >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic EPH >C12-C16	<1	<1	<1	<1	<1	<1	<1	3.07	<1	<1	<1	<1	1.07	<1	<1
Aromatic EPH >C16-C21	1.04	<1	2.15	18.40	<1	<1	<1	32.00	2.34	<1	2.57	<1	5.02	2.09	<1
Aromatic EPH >C21-C35	26.50	6.42	26.60	29.60	23.30	3.71	19.90	84.80	87.20	6.17	68.40	42.90	31.40	12.60	9.36
Aromatic EPH >C35-C40	15.10	<1	4.56	4.47	8.92	<1	1.74	9.93	57.60	<1	7.09	3.83	3.58	1.43	1.02
Total Aromatic EPH >C10-C35															
Total Aromatic EPH >C10-C40	42.80	8.59	33.50	53.00	32.70	5.67	22.50	131.00	148.00	7.84	78.30	47.70	41.20	16.30	11.50
Total VPH >C5-C10															
Total EPH >C10-C35															
Total EPH >C10-C40	62	81	81	53	46	467	92	217	171	21	248	215	76	33	24
Organic Matter	8.8	2.5	5.8	2.0	2.7	1.3	4.2	15.3	4.1	8.4	5.8	7.2	10.7	<0.35	12.9
Benzene	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Toluene	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140
Ethylbenzene	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
m & p-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
o-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Tert-Butyl Ether	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Naphthalene	0.030	0.012	0.025	0.052	<0.09	0.013	<0.09	7.300	0.087	0.028	0.079	0.024	0.270	<0.09	0.028
Acenaphthylene	0.014	0.021	0.026	0.050	<0.12	<0.012	<0.12	3.540	0.144	0.047	0.072	0.021	0.147	<0.12	0.014
Acenaphthene	<0.008	<0.008	0.018	0.015	<0.08	<0.008	<0.08	0.157	0.035	0.012	0.070	0.010	0.048	<0.08	<0.008
Fluorene	<0.01	0.025	0.015	0.039	<0.1	<0.01	<0.1	2.960	0.046	0.015	0.076	<0.01	0.104	<0.1	<0.01
Phenanthrene	0.076	0.223	0.154	0.527	<0.15	0.038	<0.15	13.700	0.428	0.112	0.540	0.100	1.310	0.253	0.105
Anthracene	<0.016	0.044	0.044	0.131	<0.16	<0.016	<0.16	4.090	0.177	0.055	0.158	0.029	0.328	<0.16	0.020
Fluoranthene	0.142	0.341	0.390	0.974	<0.17	0.054	<0.17	13.700	1.300	0.407	1.200	0.364	2.720	0.528	0.157
Pyrene	0.117	0.259	0.370	0.760	<0.15	0.045	<0.15	10.200	1.140	0.336	1.400	0.299	2.260	0.417	0.121
Benzo[a]anthracene	0.087	0.151	0.278	0.455	<0.14	0.030	<0.14	4.540	0.800	0.259	1.100	0.218	1.540	0.259	0.084
Chrysene	0.098	0.121	0.307	0.453	<0.1	0.028	<0.1	4.580	0.648	0.260	0.917	0.190	1.560	0.275	0.093
Benzo[b]fluoranthene	0.090	0.157	0.510	0.644	<0.15	0.041	<0.15	5.050	1.100	0.437	1.110	0.275	2.120	0.380	0.135
Benzo[k]fluoranthene	0.039	0.049	0.164	0.191	<0.14	<0.014	<0.14	1.690	0.373	0.127	0.458	0.089	0.712	<0.14	0.041
Benzo[a]pyrene	0.082	0.108	0.338	0.427	<0.15	0.022	<0.15	3.940	0.749	0.258	0.905	0.184	1.560	0.220	0.075
Indeno(1,2,3-c,d)Pyrene	0.078	0.091	0.297	0.391	<0.18	<0.018	<0.18	3.170	0.731	0.214	0.708	0.134	1.370	<0.18	0.067
Dibenz(a,h)Anthracene	<0.023	<0.023	0.046	0.083	<0.23	<0.023	<0.23	0.569	0.141	0.037	0.168	0.026	0.278	<0.23	<0.023
Benzo[g,h,i]perylene	0.077	0.081	0.291	0.383	<0.24	<0.024	<0.24	3.030	0.575	0.206	0.591	0.118	1.280	<0.24	0.069
Total Of 16 PAH's	0.93	1.68	3.27	5.58	<1.18	0.27	<1.18	82.20	8.47	2.81	9.56	2.08	17.60	2.33	1.01
Resorcinol															
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols															
Xylenols															
1-Naphthol															
Trimethylphenols															
Total Phenols															

Determinand	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
Chemtest Sample ID.:	23577280	23577284	23577289	23577269	23577276	23577450	23577459	23577433	23577438	23577358	23577424
Client Sample Ref.:	AG7-1	AH6-1	AH6-2	AH7-1	AH7-2	AI6-1	AI6-2	AI7-1	AI7-2	AI8-1	AI8-2
Sample Type:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Top Depth (m):											
Bottom Depth (m):	0.50-0.50	0.40-0.40	2.00-2.00	0.40-0.40	1.50-1.50	0.10-0.10	1.60-1.60	0.40-0.40	1.30-1.30	0.40-4.00	2.00-2.00
Date Sampled:	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
Asbestos Lab:											
ACM Type											
Asbestos Identification	Not Detected		Not Detected	Not Detected		Not Detected		Not Detected		Not Detected	
Asbestos by Gravimetry											
Total Asbestos											
Moisture	7.4	9.9	10	10	9.2	8.7	15	7.5	12	6.8	7.1
Soil Colour	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Black	Dark Brown	Dark Brown
Other Material	Sand	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sand	Sand	Stone/Soil	Stone/Soil	Sand	N/A
Soil Texture	Vegetation	Stones	Stones	Stones	Stones	Vegetation	Vegetation	Vegetation	Oil/Petroleum	Stones	None
pH at 20C	11.3	9.0	10.4	9.3	11.0	8.9	9.4	9.7	10.9	12.0	9.3
pH (2.5:1) at 20C											
Sulphate (2:1 Water Soluble) as SO4											
Total Sulphur											
Chloride (Water Soluble)											
Nitrate (Water Soluble)											
Cyanide (Total)	1.0	4.5	6.7	<1	1.3	<1	1.1	<1	<1	<1	4.4
Ammonium (Extractable)											
Ammoniacal Nitrogen	<12	<12	23	<12	<12	<12	<12	<12	<12	<12	25
Iron (Total)	153000	56200	29300	94700	96700	52400	64900	104000	104000	112000	39800
Sulphate (Total)											
Arsenic	6.2	6.0	6.0	4.0	<6	2.8	7.1	<6	<6	<6	6.5
Cadmium	0.5	0.1	1.6	0.0	<0.2	0.1	<0.02	0.2	<0.2	<0.2	0.2
Chromium	505.0	43.9	8.6	210.0	332.0	35.2	157.0	348.0	384.0	589.0	8.3
Manganese	20400.0	6260.0	2340.0	12600.0	24100.0	9580.0	8500.0	22500.0	23900.0	32400.0	2010.0
Copper	30.3	13.4	10.1	8.6	18.1	9.1	17.4	<14	<14	<14	6.3
Mercury	<1.4	<0.14	<0.14	<0.14	<1.4	0.6	<0.14	<1.4	<1.4	<1.4	<0.14
Nickel	23.4	11.5	16.0	7.2	42.6	10.4	18.2	7.4	41.8	5.7	6.0
Lead	55.7	39.5	179.0	17.3	44.8	14.9	21.6	15.5	<7	10.1	11.8
Selenium	11.8	3.5	1.1	5.1	12.0	4.5	3.4	10.6	12.2	17.2	1.0
Vanadium	411.0	73.9	42.0	184.0	444.0	103.0	130.0	311.0	276.0	478.0	15.7
Zinc	184.0	910.0	124.0	103.0	41.9	86.5	73.6	87.1	38.9	59.9	50.8
Aliphatic VPH >C5-C6	<0.01	<0.01	0.039	<0.01	0.352	<0.01	0.023	<0.01	0.019	<0.01	0.028
Aliphatic VPH >C6-C7											
Aliphatic VPH >C7-C8											
Aliphatic VPH >C6-C8 (Sum)											
Aliphatic VPH >C8-C10	<0.01	<0.01	0.592	0.013	20.3	<0.01	0.07	<0.01	0.048	<0.01	0.096
Total Aliphatic VPH >C5-C10											
Aliphatic EPH >C10-C12	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1
Aliphatic EPH >C12-C16	<1	<1	4.18	<1	133	<1	<1	<1	2.67	<1	1.82
Aliphatic EPH >C16-C21	28.9	7.55	63.2	11.9	1590	3.71	75.9	12.1	72.1	11.3	73.9
Aliphatic EPH >C21-C35	34.4	14.4	31.1	6.24	391	1.46	22.6	3.86	12.6	37	28.8
Aliphatic EPH >C35-C40	14.1	<1	<1	<1	<10	<1	2.5	<1	<1	4.9	5.1
Total Aliphatic EPH >C10-C35											
Total Aliphatic EPH >C10-C40	78	23	99	18	2120	6	102	16	87	53	110
Aromatic VPH >C5-C7	<0.01	<0.01	0.367	<0.01	0.329	<0.01	0.071	<0.01	0.011	<0.01	0.083
Aromatic VPH >C7-C8	<0.01	<0.01	0.063	<0.01	1.850	<0.01	0.013	<0.01	<0.01	<0.01	0.020
Aromatic VPH >C8-C10	<0.01	<0.01	0.394	<0.01	13.500	<0.01	0.047	<0.01	0.032	<0.01	0.064
Total Aromatic VPH >C5-C10											
Aromatic EPH >C10-C12	<1	<1	2.07	<1	132.00	2.06	6.29	<1	1.58	<1	1.21
Aromatic EPH >C12-C16	<1	<1	1.25	<1	197.00	1.56	2.44	<1	1.46	<1	2.06
Aromatic EPH >C16-C21	1.00	4.03	3.30	4.46	772.00	43.70	6.72	3.06	8.59	<1	16.20
Aromatic EPH >C21-C35	16.20	77.70	3.82	20.40	749.00	35.30	28.50	13.40	5.00	2.87	12.70
Aromatic EPH >C35-C40	3.16	25.20	<1	3.14	113.00	10.40	6.98	1.59	<1	<1	<1
Total Aromatic EPH >C10-C35											
Total Aromatic EPH >C10-C40	20.60	107.00	11.40	28.50	1960.00	93.00	50.90	18.70	17.60	<5	33.20
Total VPH >C5-C10											
Total EPH >C10-C35											
Total EPH >C10-C40	98	130	112	47	4120	99	153	35	105	53	143
Organic Matter	3.9	24.1	1.3	9.5	12.3	20.0	5.7	21.0	32.6	3.8	0.6
Benzene	<180	<180	390	<180	1370	<180	<180	<180	<1800	<180	<180
Toluene	<140	<140	238	<140	4510	<140	<140	<140	<1400	<140	<140
Ethylbenzene	<80	<80	<80	<80	835	<80	<80	<80	<800	<80	<80
m & p-Xylene	<200	<200	<200	<200	19000	<200	<200	<200	<2000	<200	<200
o-Xylene	<200	<200	<200	<200	4430	<200	<200	<200	<2000	<200	<200
Methyl Tert-Butyl Ether	<200	<200	<200	<200	<200	<200	<200	<200	<2000	<200	<200
Naphthalene	0.137	0.175	1.240	0.255	80.600	1.970	2.280	0.182	0.938	0.031	0.838
Acenaphthylene	0.139	0.303	0.272	0.286	18.600	0.716	0.224	0.101	0.079	<0.012	0.100
Acenaphthene	0.021	0.014	0.166	0.018	2.190	0.029	0.036	0.009	0.061	<0.008	0.079
Fluorene	0.023	0.039	0.746	0.100	34.000	0.132	0.159	0.020	0.098	<0.01	0.136
Phenanthrene	0.240	0.436	2.610	0.721	163.000	0.929	0.565	0.269	0.434	0.051	0.325
Anthracene	0.109	0.140	0.491	0.227	27.000	0.591	0.127	0.079	0.101	<0.016	0.093
Fluoranthene	0.618	1.400	2.630	1.730	143.000	1.280	0.350	0.701	0.542	0.166	0.562
Pyrene	0.551	1.150	1.870	1.320	91.800	0.946	0.291	0.539	0.388	0.127	0.499
Benzo[a]anthracene	0.482	1.120	0.624	0.953	50.500	0.686	0.161	0.417	0.185	0.068	0.185
Chrysene	0.413	1.010	0.652	0.859	35.700	0.537	0.128	0.361	0.166	0.070	0.197
Benzo[b]fluoranthene	0.898	1.920	0.639	1.650	61.000	1.330	0.235	0.593	0.270	0.129	0.202
Benzo[k]fluoranthene	0.271	0.658	0.177	0.688	20.800	0.395	0.082	0.201	0.089	0.036	0.073
Benzo[a]pyrene	0.538	1.280	0.399	0.989	41.900	0.870	0.187	0.385	0.147	0.063	0.178
Indeno(1,2,3-c,d)Pyrene	0.626	1.300	0.304	0.926	32.200	1.630	0.228	0.414	0.172	0.067	0.136
Dibenz(a,h)Anthracene	0.117	0.272	0.067	0.173	5.410	0.224	0.041	0.085	<0.023	<0.023	0.028
Benzo[g,h,i]perylene	0.705	1.200	0.266	0.918	27.600	2.110	0.280	0.389	0.157	0.063	0.148
Total Of 16 PAH's	5.89	12.40	13.10	11.80	835.00	14.40	5.37	4.74	3.83	0.87	3.78
Resorcinol											
Phenol	<0.01	<0.01	<0.01	<0.01	<0.1	0	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols											
Xylenols											
1-Naphthol											
Trimethylphenols											
Total Phenols											

Client: Rodgers Leask Environmental						210120-68	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
	Chemtest Job No.:															
Quotation No.: Q21-24056	Chemtest Sample ID.:				Generic Assessment Criteria Residential End use with Homegrown Produce (1% SOM)	23577310	23584634	23584642	23584623	23584630	23584610	23584617	23584648	23584593	23584600	23584664
Order No.: .	Client Sample Ref.:					AK10-1	AF2-1	AF2-2	AF4-1	AF4-2	AF5-1	AF5-2	AG2-1	AG6-1	AG6-2	AH2-1
	Sample Type:					SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	Top Depth (m):															
	Bottom Depth (m):					0.30-0.30	0.60-0.60	1.30-1.30	0.50-0.50	1.60-1.60	0.50-0.50	1.80-1.80	0.30-0.30	0.30-0.30	1.50-1.50	0.50-0.50
	Date Sampled:					19/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
	Asbestos Lab:															
Determinand	Accred.	SOP	Units	LOD												
ACM Type	U	2192		N/A									Amosite (Brown) Asbestos			
Asbestos Identification	U	2192		N/A			Not Detected		Not Detected		Not Detected		Detected	Not Detected		
Asbestos by Gravimetry	U	2192	%	0.001									<0.001			
Total Asbestos	U	2192	%	0.001			-	-	-	-	-	-	<0.001	-	-	-
Moisture	N	2030	%	0.02		8.3	17	14	7.4	15	9.7	13	15	9.3	11	9.6
Soil Colour	N	2040		N/A		Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown	Black	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A		Sandy Loam	Sand	Loamy Sand	Stone/Soil	Sand	Sand	Sandy Loam	Sand	Sand	Stone/Soil	Loamy Sand
Soil Texture	N	2040		N/A		Stones	None	Stones	None	None	None	Stones	None	Vegetation	None	Stones
pH at 20C	M	2010		4		9.1	8.7	8.6	12.1	11.0	11.0	9.4	8.2	9.1	9.4	9.5
pH (2.5:1) at 20C	N	2010		4												
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01												
Total Sulphur	U	2175	%	0.01												
Chloride (Water Soluble)	M	2220	g/l	0.01												
Nitrate (Water Soluble)	N	2220	g/l	0.01												
Cyanide (Total)	M	2300	mg/kg	0.5		<1	<1	10.0	<1	1.2	<1	6.0	3.1	<1	3.2	8.3
Ammonium (Extractable)	M	2425	mg/kg	0.5												
Ammoniacal Nitrogen	M	2425	mg/kg	0.5		<12	<12	<12	<12	<12	<12	<12	<12	<12	39	<12
Iron (Total)	N	2430	mg/kg	100		56700	36800	23500	120000	43300	66300	58300	45500	92600	25600	85300
Sulphate (Total)	U	2430	%	0.01												
Arsenic	M	2450	mg/kg	1	37	6.1	5.0	8.6	2.1	5.8	3.6	10.5	11.2	6.0	7.4	9.5
Cadmium	M	2450	mg/kg	0.1	26	<0.02	0.2	0.1	0.2	0.3	<0.02	0.3	0.3	<0.02	0.3	<0.02
Chromium	M	2450	mg/kg	1	910	<0.9	91.2	8.0	453.0	56.1	91.1	94.1	14.5	244.0	34.2	198.0
Manganese	M	2450	mg/kg	5		1960.0	4380.0	920.0	33300.0	8530.0	8770.0	7040.0	1720.0	16900.0	2980.0	9410.0
Copper	M	2450	mg/kg	0.5	2400	8.8	22.2	26.7	14.2	11.7	10.1	15.9	21.6	26.6	10.8	22.5
Mercury	M	2450	mg/kg	0.1	40	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.6	<0.14	<0.14	0.6
Nickel	M	2450	mg/kg	0.5	1.30E+02	11.0	13.7	29.2	6.8	16.5	6.3	17.8	11.3	10.8	10.6	23.4
Lead	M	2450	mg/kg	0.5	2.00E+02	28.4	22.3	22.1	16.7	19.0	66.1	28.5	51.7	26.1	34.5	29.3
Selenium	M	2450	mg/kg	0.2	250	1.2	2.0	<1	14.9	2.6	2.1	2.1	<1	3.9	1.8	1.8
Vanadium	U	2450	mg/kg	5	410	19.1	96.1	23.1	396.0	107.0	99.2	85.8	21.1	185.0	45.2	129.0
Zinc	M	2450	mg/kg	0.5	3.70E+03	98.8	72.7	81.8	37.5	62.3	89.8	114.0	112.0	136.0	126.0	137.0
Aliphatic VPH >C5-C6	M	2780	mg/kg	0.05	160	<0.01	<0.01	0.035	<0.01	0.022	<0.01	<0.01	0.018	<0.01	0.021	<0.01
Aliphatic VPH >C6-C7	M	2780	mg/kg	0.05	530											
Aliphatic VPH >C7-C8	M	2780	mg/kg	0.05	530											
Aliphatic VPH >C6-C8 (Sum)	N	2780	mg/kg	0.1	530											
Aliphatic VPH >C8-C10	M	2780	mg/kg	0.05	150	<0.01	<0.01	0.066	<0.01	0.037	<0.01	0.03	0.071	<0.01	0.056	<0.01
Total Aliphatic VPH >C5-C10	M	2780	mg/kg	0.25												
Aliphatic EPH >C10-C12	M	2690	mg/kg	2	7.60E+02	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1
Aliphatic EPH >C12-C16	M	2690	mg/kg	1	4.30E+03	<1	<1	1.09	<1	<1	<1	<1	<5	<1	<1	<1
Aliphatic EPH >C16-C21	M	2690	mg/kg	2	1.10E+05	1.97	1.26	5.34	1	1.4	6.32	7.1	7.99	2.67	10.6	2.86
Aliphatic EPH >C21-C35	M	2690	mg/kg	3	1.10E+05	11.6	4.34	3.27	19.8	8.42	13.8	3.54	25.7	3.73	4.41	7.64
Aliphatic EPH >C35-C40	N	2690	mg/kg	1	1.10E+05	<1	<1	<1	5.4	1.3	1.8	<1	<5	<1	<1	<1
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5												
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10		14	6	10	26	12	23	11	36	7	16	11
Aromatic VPH >C5-C7	M	2780	mg/kg	0.05	300	<0.01	<0.01	0.028	<0.01	0.018	<0.01	<0.01	0.018	<0.01	0.288	<0.01
Aromatic VPH >C7-C8	M	2780	mg/kg	0.05	660	<0.01	<0.01	0.022	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	0.015	<0.01
Aromatic VPH >C8-C10	M	2780	mg/kg	0.05	190	<0.01	<0.01	0.044	<0.01	0.025	<0.01	0	0.047	<0.01	0.037	<0.01
Total Aromatic VPH >C5-C10	M	2780	mg/kg	0.25												
Aromatic EPH >C10-C12	M	2690	mg/kg	1	380	<1	<1	<1	<1	<1	<1	<1	<5	<1	1.42	<1
Aromatic EPH >C12-C16	M	2690	mg/kg	1	660	<1	<1	2.05	<1	<1	2.08	<1	96.30	<1	<1	1.22
Aromatic EPH >C16-C21	N	2690	mg/kg	2	930	<1	6.21	2.89	<1	<1	15.90	7.63	966.00	11.50	<1	18.30
Aromatic EPH >C21-C35	M	2690	mg/kg	2	1.70E+03	30.70	22.00	4.45	2.39	3.14	75.30	35.80	2610.00	56.60	15.90	74.20
Aromatic EPH >C35-C40	N	2690	mg/kg	1	1.70E+03	10.00	4.18	<1	<1	<1	10.80	6.48	284.00	13.10	6.02	17.40
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5												
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10		41.10	32.60	11.10	<5	<5	105.00	51.20	3960.00	81.80	24.70	112.00
Total VPH >C5-C10	M	2780	mg/kg	0.5												
Total EPH >C10-C35	M	2690	mg/kg	10												
Total EPH >C10-C40	N	2690	mg/kg	10		55	38	22	26	12	128	63	4000	88	41	123
Organic Matter	M	2625	%	0.4		5.1	88.4	6.3	1.4	4.2	25.7	6.0	>100	28.1	4.2	18.4
Benzene	M	2760	µg/kg	1	87	<180	<180	<180	<180	<180	<180	<180	229	<180	214	<180
Toluene	M	2760	µg/kg	1	130000	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140
Ethylbenzene	M	2760	µg/kg	1	47000	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
m & p-Xylene	M	2760	µg/kg	1	56000	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
o-Xylene	M	2760	µg/kg	1		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Tert-Butyl Ether	M	2760	µg/kg	1		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Naphthalene	M	2800	mg/kg	0.1	15	0.026	0.055	0.381	0.036	0.182	0.446	0.207	1.630	0.124	0.196	0.241
Acenaphthylene	N	2800	mg/kg	0.1	170	0.023	0.118	0.129	0.033	<0.012	0.543	0.150	3.850	0.292	0.074	0.466
Acenaphthene	M	2800	mg/kg	0.1	210	<0.008	0.023	0.474	0.014	<0.008	<0.04	0.015	0.532	0.011	<0.008	<0.008
Fluorene	M	2800	mg/kg	0.1	170	<0.01	0.086	0.131	0.013	<0.01	0.127	0.040	4.580	0.030	0.023	0.102
Phenanthrene	M	2800	mg/kg	0.1	95	0.126	0.729	0.248	0.157	0.032	1.700	0.405	37.500	0.385	0.117	1.130
Anthracene	M	2800	mg/kg	0.1	2400	0.029	0.214	0.130	0.051	<0.016	0.678	0.135	10.600	0.147	0.028	0.477
Fluoranthene	M	2800	mg/kg	0.1	280	0.239	1.230	1.030	0.361	0.032	5.070	1.140	61.100	2.510	0.178	4.330
Pyrene	M	2800	mg/kg	0.1	620	0.182	0.917	0.753	0.274	0.025	3.980	0.903	40.100	2.280	0.146	3.260
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.2	0.158	0.570	0.499	0.190	<0.014	2.610	0.644	24.100	1.600	0.121	2.140
Chrysene	M	2800	mg/kg	0.1	15	0.140	0.631	0.495	0.209	0.015	2.690	0.648	23.200	1.630	0.142	2.120
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.6	0.232	0.854	0.782	0.308	0.020	4.580	1.050	31.300	3.280	0.291	3.470
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77	0.061	0.269	0.233	0.092	<0.014	1.380	0.312	9.560	0.899	0.092	1.030
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.2	0.124	0.487	0.428	0.168	<0.015	2.480	0.581	17.300	1.820	0.191	1.960
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27	0.115	0.422	0.366	0.152	<0.018	2.220	0.517	12.900	1.730	0.214	1.730
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	0.029	0.097	0.079	0.036	<0.023	0.507	0.112	3.110	0.368	0.041	0.390
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320	0.107	0.374	0.383	0.147	<0.024	2.140	0.493	11.300	1.610	0.243	1.630
Total Of 16 PAH's	N	2800	mg/kg	2		1.59	7.08	6.54	2.24	0.31	31.10	7.35	293.00	18.70	2.10	24.50
Resorcinol	M	2920	mg/kg	0.02												
Phenol	M	2920	mg/kg	0.02	280	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0	<0.01	<0.01	0
Cresols	M	2920	mg/kg	0.02												
Xylenols	M	2920	mg/kg	0.02												
1-Naphthol	N	2920	mg/kg	0.02												
Trimethylphenols	M	2920	mg/kg	0.02												
Total Phenols	M	2920	mg/kg	0.1												

Chemtest Job No.:	210121-44	210123-50	210123-50	210123-50	210123-50	210123-50	210123-55	210123-55	210123-55	210123-55	210123-55
Chemtest Sample ID.:	23584669	23598960	23598967	23598889	23598948	23598955	23599110	23599117	23599097	23599106	23599088
Client Sample Ref.:	AH2-2	AL15-1	AL15-2	AL16-1	AL16-2	AL16-3	AD1-1	AD1-2	AE1-1	AE1-2	AF1-1
Sample Type:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Top Depth (m):											
Bottom Depth (m):	1.50-1.50	0.50-0.50	1.40-1.40	0.60-0.60	1.50-1.50	3.00-3.00	0.40-0.40	1.10-1.10	0.30-0.30	1.40-1.40	0.70-0.70
Date Sampled:	20/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
Asbestos Lab:											
Determinand											
ACM Type											
Asbestos Identification	Not Detected		Not Detected	Not Detected		Not Detected		Not Detected		Not Detected	
Asbestos by Gravimetry											
Total Asbestos	-	-	-	-	-	-	-	-	-	-	-
Moisture	12	12	11	7.9	9.3	7.4	14	7.8	12	10	11
Soil Colour	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sandy Loam	Sand	Loamy Sand	Sand
Soil Texture	Vegetation	Stones	Vegetation	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
pH at 20C	9.7	10.4	9.7	11.8	9.9	9.9	8.9	9.4	10.2	8.8	8.3
pH (2.5:1) at 20C											
Sulphate (2:1 Water Soluble) as SO4											
Total Sulphur											
Chloride (Water Soluble)											
Nitrate (Water Soluble)											
Cyanide (Total)	2.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ammonium (Extractable)											
Ammoniacal Nitrogen	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
Iron (Total)	30000	56800	47700	80300	46100	76700	12000	<10000	54300	32800	42700
Sulphate (Total)											
Arsenic	7.5	7.4	10.3	6.6	7.9	8.0	<6	<6	6.9	9.1	12.7
Cadmium	0.1	0.3	0.6	0.8	0.4	0.5	<0.2	<0.2	0.4	0.5	0.5
Chromium	25.1	81.1	33.4	58.0	35.0	42.3	17.9	22.5	161.0	26.0	25.6
Manganese	2300.0	4800.0	1510.0	4140.0	2260.0	2520.0	3550.0	5620.0	13500.0	2590.0	1150.0
Copper	8.1	41.0	26.9	18.7	14.3	16.6	<14	<14	24.0	19.8	29.7
Mercury	<0.14	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<0.14	<1.4	<1.4
Nickel	18.4	13.9	26.9	15.8	16.3	17.0	5.3	5.5	16.3	25.4	42.7
Lead	7.8	167.0	37.7	30.8	21.2	11.1	<7	<7	58.3	24.4	26.6
Selenium	<1	<10	<10	<10	<10	<10	<10	<10	7.7	<10	<10
Vanadium	26.6	73.6	65.1	73.4	56.0	69.4	26.0	64.8	151.0	44.4	43.3
Zinc	42.8	115.0	129.0	185.0	80.4	55.0	31.7	30.1	113.0	110.0	97.0
Aliphatic VPH >C5-C6	0.017	0.021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic VPH >C6-C7											
Aliphatic VPH >C7-C8											
Aliphatic VPH >C6-C8 (Sum)											
Aliphatic VPH >C8-C10	0.227	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aliphatic VPH >C5-C10											
Aliphatic EPH >C10-C12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic EPH >C12-C16	<1	<1	<1	<1	1.27	<1	<1	<1	<1	<1	<1
Aliphatic EPH >C16-C21	<1	13.4	<1	3.64	1.93	<1	4.06	<1	<1	<1	<1
Aliphatic EPH >C21-C35	2.06	57.4	8.15	51.8	6.81	7.42	10.7	3.69	1.26	3.81	<1
Aliphatic EPH >C35-C40	<1	34.3	3.6	16.0	1.0	2.4	2.5	<1	<1	<1	<1
Total Aliphatic EPH >C10-C35											
Total Aliphatic EPH >C10-C40	<5	106	12	72	11	11	18	<5	<5	<5	<5
Aromatic VPH >C5-C7	0.650	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C7-C8	0.166	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	0.151	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aromatic VPH >C5-C10											
Aromatic EPH >C10-C12	2.40	1.14	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic EPH >C12-C16	<1	3.24	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic EPH >C16-C21	7.75	37.60	2.84	<1	<1	<1	1.77	<1	1.51	1.92	<1
Aromatic EPH >C21-C35	30.50	173.00	14.40	14.00	10.80	5.55	7.71	35.50	4.44	12.70	1.02
Aromatic EPH >C35-C40	3.61	23.20	2.41	<1	<1	<1	1.02	8.63	<1	<1	<1
Total Aromatic EPH >C10-C35											
Total Aromatic EPH >C10-C40	44.70	238.00	19.60	15.70	12.00	6.70	10.60	44.60	7.08	15.80	<5
Total VPH >C5-C10											
Total EPH >C10-C35											
Total EPH >C10-C40	46	344	32	88	23	18	28	45	<10	16	<10
Organic Matter	2.5	46.4	7.1	66.9	2.3	2.1	3.0	16.6	6.2	20.7	2.4
Benzene	296	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Toluene	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140
Ethylbenzene	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
m & p-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
o-Xylene	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Tert-Butyl Ether	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Naphthalene	1.070	<0.009	0.119	0.094	0.039	0.023	0.083	0.083	0.109	0.107	<0.009
Acenaphthylene	0.267	<0.012	0.379	0.033	<0.012	<0.012	0.044	0.035	0.037	0.056	<0.012
Acenaphthene	<0.008	<0.008	0.022	0.012	0.027	<0.008	<0.008	<0.008	<0.008	0.009	<0.008
Fluorene	0.144	<0.01	0.389	0.017	0.028	<0.01	0.030	0.016	0.021	0.023	<0.01
Phenanthrene	1.440	0.020	9.790	0.241	0.079	0.045	0.395	0.131	0.238	0.186	0.027
Anthracene	0.554	<0.016	2.670	0.059	0.018	<0.016	0.070	0.036	0.052	0.043	<0.016
Fluoranthene	3.350	0.026	15.400	0.378	0.050	0.045	0.434	0.157	0.375	0.339	0.021
Pyrene	2.350	0.022	10.000	0.295	0.039	0.033	0.334	0.118	0.280	0.250	0.018
Benzo[a]anthracene	1.430	0.016	4.680	0.182	0.021	0.018	0.237	0.090	0.202	0.179	<0.014
Chrysene	1.420	0.016	3.550	0.173	0.025	0.023	0.251	0.086	0.225	0.170	0.014
Benzo[b]fluoranthene	2.080	0.019	3.560	0.220	0.033	0.025	0.293	0.148	0.364	0.268	0.017
Benzo[k]fluoranthene	0.658	<0.014	1.330	0.089	<0.014	<0.014	0.114	0.046	0.099	0.084	<0.014
Benzo[a]pyrene	1.150	<0.015	3.160	0.167	0.017	<0.015	0.206	0.084	0.177	0.166	<0.015
Indeno(1,2,3-c,d)Pyrene	0.996	<0.018	2.420	0.140	<0.018	<0.018	0.221	0.083	0.175	0.174	<0.018
Dibenz(a,h)Anthracene	0.216	<0.023	0.514	0.028	<0.023	<0.023	0.051	<0.023	0.034	0.039	<0.023
Benzo[g,h,i]perylene	0.895	<0.024	2.060	0.136	<0.024	<0.024	0.162	0.076	0.151	0.154	<0.024
Total Of 16 PAH's	18.00	0.12	60.10	2.26	0.38	0.21	2.92	1.19	2.54	2.25	<0.118
Resorcinol											
Phenol	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols											
Xylenols											
1-Naphthol											
Trimethylphenols											
Total Phenols											

Chemtest Job No.:	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
Chemtest Sample ID.:	23599092	23599148	23599152	23599156	23599163	23599167	23599072	23599133	23599175	23599180
Client Sample Ref.:	AF1-2	AG3-1	AG3-2	AH3-1	AH3-2	AI2-1	AI3-1	AI3-2	AJ2-1	AJ2-2
Sample Type:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Top Depth (m):										
Bottom Depth (m):	1.50-1.50	0.80-0.80	1.90-1.90	0.50-0.50	1.50-1.50	0.50-0.50	0.50-0.50	1.20-1.20	0.50-0.50	1.50-1.50
Date Sampled:	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
Asbestos Lab:										
Determinand										
ACM Type				Trace Chrysotile (White) Asbestos		Chrysotile (White) Asbestos				
Asbestos Identification	Not Detected	Not Detected		Detected		Detected	Not Detected			Not Detected
Asbestos by Gravimetry				<0.001		<0.001				
Total Asbestos	-	-	-	<0.001	-	<0.001	-	-	-	-
Moisture	12	18	10	15	12	11	15	7.8	8.5	4.8
Soil Colour	Dark Brown	Grey	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	Loamy Sand	Sand	Sandy Loam	Loamy Sand	Sandy Loam	Sand	Sand	Sandy Loam	Sandy Loam	Stone/Soil
Soil Texture	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
pH at 20C	7.9	7.8	11.7	11.9	11.3	11.8	10.4	11.7	9.5	9.0
pH (2.5:1) at 20C										
Sulphate (2:1 Water Soluble) as SO4										
Total Sulphur										
Chloride (Water Soluble)										
Nitrate (Water Soluble)										
Cyanide (Total)	6.9	213.0	17.2	45.2	13.7	7.3	6.5	3.6	3.0	3.8
Ammonium (Extractable)										
Ammoniacal Nitrogen	<12	34	<12	<12	<12	<12	<12	<12	<12	<12
Iron (Total)	30600	23000	186000	93800	200000	119000	19300	170000	80200	23000
Sulphate (Total)										
Arsenic	7.5	<6	<6	<6	<6	<6	<6	<6	6.6	<6
Cadmium	0.5	0.3	<0.2	0.5	<0.2	0.7	0.4	<0.2	0.5	0.3
Chromium	13.0	37.7	555.0	262.0	541.0	451.0	88.8	579.0	55.4	<9
Manganese	542.0	2530.0	42200.0	16400.0	43100.0	24700.0	2600.0	36900.0	3550.0	1100.0
Copper	<14	91.8	49.1	19.9	19.9	<14	18.4	18.0	56.1	<14
Mercury	<1.4	2.0	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4
Nickel	33.7	20.3	10.6	7.4	5.3	<2	6.3	28.7	21.5	9.2
Lead	16.6	47.0	31.9	10.6	8.7	38.8	27.9	8.3	26.6	<7
Selenium	<10	<10	28.6	<10	27.3	12.2	<10	24.7	<10	<10
Vanadium	16.4	44.4	639.0	305.0	691.0	372.0	52.1	721.0	65.0	13.9
Zinc	77.4	345.0	55.5	83.6	19.4	134.0	104.0	<19	79.1	35.7
Aliphatic VPH >C5-C6	<0.01	0.09	0.014	0.02	0.025	<0.01	0.03	0.028	0.012	<0.01
Aliphatic VPH >C6-C7										
Aliphatic VPH >C7-C8										
Aliphatic VPH >C6-C8 (Sum)										
Aliphatic VPH >C8-C10	<0.01	0.52	0.076	0.13	0.071	0.047	0.08	0.093	0.051	<0.01
Total Aliphatic VPH >C5-C10										
Aliphatic EPH >C10-C12	<1	6	<1	1	<1	<1	5	<1	<1	<1
Aliphatic EPH >C12-C16	<1	56	8.11	11	<1	4.62	12	4.23	2.25	<1
Aliphatic EPH >C16-C21	<1	601	53.7	117	11.6	21.6	24	56.4	12.1	<1
Aliphatic EPH >C21-C35	<1	379	49.3	151	25.7	20.4	49	15.9	9.83	<1
Aliphatic EPH >C35-C40	<1	67.1	9.0	23.4	3.7	2.6	11.1	<1	<1	<1
Total Aliphatic EPH >C10-C35										
Total Aliphatic EPH >C10-C40	<5	1110	120	303	42	50	101	77	25	<5
Aromatic VPH >C5-C7	<0.01	0.456	0.013	0.169	0.017	<0.01	0.023	0.012	<0.01	<0.01
Aromatic VPH >C7-C8	<0.01	0.120	<0.01	0.034	<0.01	<0.01	0.015	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	<0.01	0.345	0.050	0.084	0.048	0.031	0.056	0.062	0.034	<0.01
Total Aromatic VPH >C5-C10										
Aromatic EPH >C10-C12	<1	169.00	17.00	40.90	3.98	2.45	11.50	<1	3.82	<1
Aromatic EPH >C12-C16	<1	239.00	40.70	46.60	8.31	5.88	54.90	1.24	7.37	<1
Aromatic EPH >C16-C21	<1	866.00	324.00	204.00	30.40	36.30	273.00	14.50	78.90	3.86
Aromatic EPH >C21-C35	<1	1730.00	696.00	404.00	61.90	126.00	718.00	23.70	243.00	18.20
Aromatic EPH >C35-C40	<1	294.00	118.00	50.60	9.35	36.20	91.80	3.38	29.50	3.07
Total Aromatic EPH >C10-C35										
Total Aromatic EPH >C10-C40	<5	3300.00	1200.00	746.00	114.00	207.00	1150.00	43.30	363.00	25.60
Total VPH >C5-C10										
Total EPH >C10-C35										
Total EPH >C10-C40	<10	4410	1320	1050	156	256	1250	120	388	26
Organic Matter	1.8	8.0	5.4	64.8	24.1	10.3	>100	5.5	11.8	1.7
Benzene	<180	258	<180	481	<180	<180	<1800	<180	<180	<180
Toluene	<140	<140	<140	<140	<140	<140	<1400	<140	<140	<140
Ethylbenzene	<80	<80	<80	<80	<80	<80	<800	<80	<80	<80
m & p-Xylene	<200	<200	<200	<200	<200	<200	<2000	<200	<200	<200
o-Xylene	<200	<200	<200	<200	<200	<200	<2000	<200	<200	<200
Methyl Tert-Butyl Ether	<200	<200	<200	<200	<200	<200	<2000	<200	<200	<200
Naphthalene	0.015	102.000	8.340	27.500	3.150	1.960	3.930	0.490	14.700	7.610
Acenaphthylene	<0.012	35.300	2.000	7.710	0.794	1.270	4.850	0.284	1.010	13.500
Acenaphthene	0.117	28.600	3.280	1.030	0.105	0.203	1.980	0.049	0.090	1.880
Fluorene	<0.01	49.700	3.510	10.200	0.946	1.300	5.040	0.204	0.556	25.100
Phenanthrene	0.024	191.000	14.400	57.500	4.010	9.490	25.500	1.140	4.110	123.000
Anthracene	<0.016	46.800	3.630	17.500	0.964	2.300	7.970	0.329	1.390	22.300
Fluoranthene	<0.017	216.000	16.200	71.000	4.310	14.300	46.400	2.470	8.260	133.000
Pyrene	0.017	149.000	11.400	49.900	3.060	10.300	32.500	1.960	6.990	88.300
Benzo[a]anthracene	<0.014	99.000	7.240	29.600	1.720	6.370	21.300	1.350	4.360	41.300
Chrysene	0.020	82.900	5.850	26.100	1.530	5.870	18.500	1.290	3.730	36.500
Benzo[b]fluoranthene	0.020	136.000	8.280	36.000	1.520	8.850	27.200	1.900	5.950	50.100
Benzo[k]fluoranthene	<0.014	43.400	2.680	12.200	0.615	2.680	8.770	0.691	1.740	17.300
Benzo[a]pyrene	<0.015	87.600	6.870	22.700	1.390	5.120	17.100	1.130	3.750	31.000
Indeno(1,2,3-c,d)Pyrene	<0.018	69.300	5.490	18.400	1.090	4.240	12.700	1.010	2.910	25.500
Dibenz(a,h)Anthracene	<0.023	11.700	1.080	3.260	0.241	0.735	3.340	0.227	0.743	5.560
Benzo[g,h,i]perylene	<0.024	55.000	4.780	13.900	0.974	3.380	10.400	0.994	2.540	19.900
Total Of 16 PAH's	0.21	1400.00	105.00	405.00	26.40	78.30	248.00	15.50	62.80	642.00
Resorcinol										
Phenol	<0.01	0	0	0	0	<0.01	0	<0.01	<0.01	<0.01
Cresols										
Xylenols										
1-Naphthol										
Trimethylphenols										
Total Phenols										

Client: Rodgers Leask Environmental	Chemtest Job No.:					210123-55	210123-55	210126-90	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68	201219-57	201219-57	210123-50	201217-34	210211-154	210211-154	210211-154	201217-34
Quotation No.: Q21-24056	Chemtest Sample ID.:				Generic Assessment Criteria Residential End use with Homegrown Produce (1% SOM)	23599078	23599083	23610107	23709291	23709374	23709378	23709365	23709370	23709347	23709357	23709361	23709332	23709339																			
Order No.: -	Client Sample Ref.:					AJ3-1	AJ3-2	AN6-1	AJ5-1	AS5-1	AS5-2	AT5-1	AT5-2	AU5-1	AU5-2	AU5-3	AU6-1	AU6-2	AG8-1	AG8-2	AH8-1	AH8-2	AH8-3	AH8-4	AI8-1	AI8-2	AJ8-1	AJ8-2	AL3-1	AU7-1	AV6-1	AV6-2	AV6-3	AV7-1
	Sample Type:					SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	Top Depth (m):																		0.40-0.40	1.50-1.50	0.10-0.10	1.00-1.00	2.00-2.00	3.90-3.90	0.40-4.00	2.00-2.00	0.40-0.40	1.00-1.00	0.30-0.30	0.50-0.50	0.50-0.50	1.20-1.20	2.00-2.00	0.30-0.30	
	Bottom Depth (m):					0.30-0.30	1.70-1.70	0.30-0.30	0.60-0.60	0.50-0.50	2.00-2.00	0.40-0.40	1.30-1.30	0.70-0.70	1.60-1.60	2.30-2.30	0.50-0.50	1.70-1.70																	
	Date Sampled:					20/01/2021	20/01/2021	22/01/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	17/12/2020	17/12/2020	22/01/2021	16/12/2020	10/02/2021	10/02/2021	10/02/2021	16/12/2020
	Asbestos Lab:																																	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**																														
ACM Type	U	2192		N/A										Chrysotile (White) Asbestos													Trace Chrysotile (White Asbestos)							
Asbestos Identification	U	2192		N/A			Not Detected	Not Detected			Not Detected		Not Detected	Detected		Not Detected	Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		Trace				Not Detected		Not Detected
Asbestos by Gravimetry	U	2192	%	0.001										<0.001													<0.001						
Total Asbestos	U	2192	%	0.001		-	-	-	-	-	-	-	-	<0.001	-	-	-	-									<0.001						
Moisture	N	2030	%	0.02		17	15	13	5.4	20	23	14	14	16	23	24	25	22	9.5	15	13	9.7	11	13	6.8	7.1	5.3	8.9	11	13	13	6.9	31	20
Soil Colour	N	2040		N/A		Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Light Brown	Red	Light Brown	Dark Brown	Dark Brown	Dark Brown	Black	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Light Brown	Light Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A		Sand	Stone/Soil	Sandy Loam	Stone/Soil	Sandy Loam	Sandy Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Clay Loam	Sandy Loam	Sandy Clay Loam	Loamy Sand	Loamy Sand	Oil/Petroleum	None	Vegetation	None	Stones	None	Stones	None	Stones	Stones	Stones	Vegetation	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A		Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones									Loamy Sand	Loamy Sand		Loamy Sand				Loamy Sand
pH at 20C	M	2010		4		8.8	9.0	8.8	8.5	10.4	8.8	10.4	10.7	10.6	10.7	9.2	7.7	11.4	11.1	10.5	8.9	9.2	11.3	11.0	12.0	9.3	8.3	8.6	11.5	11.4	12.5	11.4	9.8	11.6
pH (2.5:1) at 20C	N	2010		4																														
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01																														
Total Sulphur	U	2175	%	0.01																														
Chloride (Water Soluble)	M	2220	g/l	0.01																														
Nitrate (Water Soluble)	N	2220	g/l	0.01																														
Cyanide (Total)	M	2300	mg/kg	0.5		2.9	1.9	<1	<1	<1	18.7	<1	6.9	<1	23.1	37.2	1.1	9.8	1.4	2.6	<1	<1	<1	<1	<1	4.4	<1	<1	<1	8.7	4.4	7.0	184.0	10.8
Ammonium (Extractable)	M	2425	mg/kg	0.5																														
Ammoniacal Nitrogen	M	2425	mg/kg	0.5		<12	<12	<12	19	<12	<12	<12	<12	<12	<12	<12	123	<12	<12	25	93	<12	<12	<12	<12	25	<12	<12	<12	<12	<12	<12	<12	<12
Iron (Total)	N	2430	mg/kg	100		16200	<10000	48400	32300	62800	258000	45100	47100	104000	349000	261000	22100	254000	114000	54600	62800	112000	85300	97400	112000	39800	11500	11400	67200	255000	192000	467000	417000	327000
Sulphate (Total)	U	2430	%	0.01																														
Arsenic	M	2450	mg/kg	1	37	<6	<6	12.5	<6	6.6	14.3	7.1	9.8	10.2	19.7	17.7	17.7	13.7	5.1	6.1	6.0	16.0	4.3	6.3	<6	6.5	3.9	4.8	6.6	16.3	<6	16.9	22.2	17.2
Cadmium	M	2450	mg/kg	0.1	26	0.3	<0.2	0.5	<0.2	2.0	13.0	1.0	3.4	2.1	21.9	16.5	0.9	12.6	0.4	<0.02	0.2	<0.2	0.2	<0.2	<0.2	0.2	0.2	0.1	0.5	9.8	6.4	7.4	24.0	10.4
Chromium	M	2450	mg/kg	1	910	28.8	<9	32.1	120.0	129.0	579.0	138.0	39.6	588.0	267.0	115.0	17.2	551.0	215.0	108.0	148.0	448.0	127.0	288.0	589.0	8.3	9.4	11.7	163.0	273.0	430.0	172.0	104.0	91.7
Manganese	M	2450	mg/kg	5		1990.0	1290.0	2470.0	8150.0	8480.0	29900.0	5900.0	1940.0	12700.0	23600.0	13400.0	624.0	26300.0	17000.0	12300.0	10400.0	3340.0	17400.0	25000.0	32400.0	2010.0	585.0	784.0	16300.0	23300.0	33500.0	14600.0	14400.0	16700.0
Copper	M	2450	mg/kg	0.5	2400	15.5	<14	23.7	<14	27.3	63.6	34.6	88.3	64.7	85.3	63.7	52.8	55.3	22.1	13.8	21.9	29.2	19.3	22.1	<14	6.3	9.2	11.8	<14	56.5	38.0	117.0	82.0	60.0
Mercury	M	2450	mg/kg	0.1	40	<1.4	<1.4	<0.14	<1	<1	<1	<1	2.0	<1	<1	<1	<1	<1	<0.14	<0.14	<0.14	<1.4	<0.14	<1.4	<1.4	<0.14	<0.14	<0.14	<1.4	<1.4	<1	1.4	1.3	<1.4
Nickel	M	2450	mg/kg	0.5	1.30E+02	7.0	2.8	22.2	9.9	20.1	41.3	22.7	29.4	26.1	52.3	44.0	21.2	28.5	10.0	13.6	13.1	33.6	10.0	11.1	5.7	6.0	8.9	10.0	14.4	45.5	39.2	40.1	59.2	60.2
Lead	M	2450	mg/kg	0.5	2.00E+02	32.1	8.4	62.9	7.0	163.0	1040.0	56.4	255.0	135.0	1920.0	1370.0	564.0	1070.0	28.1	18.1	31.2	182.0	32.3	18.7	10.1	11.8	14.7	9.1	18.3	1320.0	494.0	447.0	2070.0	1270.0
Selenium	M	2450	mg/kg	0.2	250	<10	<10	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	6.3	5.4	4.3	<10	5.7	10.2	17.2	1.0	<1	<1	13.0	<10	11.8	<10	<10	<10
Vanadium	U	2450	mg/kg	5	410	33.6	10.8	58.7	82.4	247.0	593.0	107.0	56.9	490.0	945.0	460.0	23.6	485.0	157.0	110.0	181.0	74.1	165.0	199.0	478.0	15.7	12.0	17.1	256.0	1180.0	1490.0	472.0	379.0	691.0
Zinc	M	2450	mg/kg	0.5	3.70E+03	118.0	35.2	182.0	40.2	618.0	5270.0	208.0	1260.0	559.0	9230.0	6550.0	187.0	5520.0	75.7	77.1	154.0	283.0	82.3	71.5	59.9	50.8	35.6	16.6	86.2	5510.0	2100.0	1920.0	10600.0	5830.0
Aliphatic VPH >C5-C6	M	2780	mg/kg	0.05	160	0.034	0.024	<0.01	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.04	<0.01	<0.01	0.04	0.04	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
Aliphatic VPH >C6-C7	M	2780	mg/kg	0.05	530																													
Aliphatic VPH >C7-C8	M	2780	mg/kg	0.05	530																													
Aliphatic VPH >C6-C8 (Sum)	N	2780	mg/kg	0.1	530														0.04	0.09	<0.01	<0.01	0.16	0.18	<0.01	0.05	<0.01	<0.01	<0.01	0.02	<0.01	0.03	0.01	0.02
Aliphatic VPH >C8-C10	M	2780	mg/kg	0.05	150	0.032	0.028	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.051	<0.01	<0.01	<0.01	<0.01	0.09	0.37	<0.01	<0.01	1.88	1.16	<0.01	0.10	<0.01	<0.01	<0.01	0.03	<0.01	0.06	0.02	0.03
Total Aliphatic VPH >C5-C10	M	2780	mg/kg	0.25																														
Aliphatic EPH >C10-C12	M	2690	mg/kg	2	7.60E+02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aliphatic EPH >C12-C16	M	2690	mg/kg	1	4.30E+03	1.44	<1	<1	<1	2.94	<1	<1	1.79	1.12	1.74	1.09	1.26	1.32	49.4	79.4	<1	<1	27.9	30.8	<1	1.82	<1	<1	<1	3.37	10.8	6.03	6.34	1.52
Aliphatic EPH >C16-C21	M	2690	mg/kg	2	1.10E+05	45.3	16.1	<1	2.56	12.8	5.67	3.46	5.67	5.8	11.1	5.43	5.18	7.11	672	1190	27.9	20.3	213	251	11.3	73.9	<1	1.13	1.03	19.4	31	20.7	20.6	6.04
Aliphatic EPH >C21-C35	M	2690	mg/kg	3	1.10E+05	12.9	5.19	<1	10.3	102	31.7	19.8	28.1	80.1	45.8	29.4	32.2	16.8	122	1450	3.49	7.8	39.9	43.7	37	28.8	2.86	5.32	4.57	96.8	122	91.2	50.3	24.7
Aliphatic EPH >C35-C40	N	2690	mg/kg	1	1.10E+05	1.1	<1	<1	1.6	36.6	7.0	5.3	13.9	22.6	12.9	7.8	5.4	1.3	5.5	249.0	<1	<1	5.6	5.2	4.9	5.1	<1	<1	<1	31.8	47.1	45.2	12.9	4.3
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5																														
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10		61	22	<5	15	154	45	29	50	110	72	46	45	27	849	2970	32	29	287	331	53	110	<5	7	6	152	211	164	91	37
Aromatic VPH >C5-C7	M	2780	mg/kg	0.05	300	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.09	0.34	<0.01	<0.01	0	0	<0.01	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C7-C8	M	2780	mg/kg	0.05	660	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.07	<0.01	<0.01	0	0	<0.01	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic VPH >C8-C10	M	2780	mg/kg	0.05	190	0.021	0.019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.035	<0.01	<0.01	<0.01	<0.01	0.06	0.25	<0.01	<0.01	1	1	<0.01	0	<0.01	<0.01	<0.01	0	<0.01	0	0	0
Total Aromatic VPH >C5-C10	M	2780	mg/kg	0.25																														
Aromatic EPH >C10-C12	M	2690	mg/kg	1	380	1.24	<1	<1	<1	<1	<1	<1	<1	<1	<1	6.64	<1	<1	2.42	20.40	<1	<1	25.80	37.00	<1	1.21	<1	<1	<1	<1	<1	<1	<1	<1
Aromatic EPH >C12-C16	M	2690	mg/kg	1	660	2.36	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.05	<1	<1	18.20	23.10	2.58	1.00	47.40	43.10	<1	2.06	7.87	<1	<1	<1	<1	<1	<1	<1
Aromatic EPH >C16-C21	N	2690	mg/kg	2	930	19.90	3.16	4.87	<1	2.03	1.61	1.94	2.49	3.37	1.54	3.70	18.90	<1	123.00	133.00	53.00	44.80	166.00	169.00	<1	16.20	100.00	<1	1.54	7.50	9.72	6.53	3.16	<1
Aromatic EPH >C21-C35	M	2690	mg/kg	2	1.70E+03	170.00	21.40	7.43	14.80	37.60	12.30	11.00	17.50	20.00	19.80	26.80	122.00	7.84	121.00	188.00	140.00	109.00	179.00	177.00	2.87	12.70	225.00	6.63	6.60	32.60	46.80	46.80	22.90	5.60
Aromatic EPH >C35-C40	N	2690	mg/kg	1	1.70E+03	36.50	3.13	<1	2.17	2.22	<1	<1	<1	2.19	1.53	1.33	23.00	<1	18.50	8.63	31.20	23.00	25.60	26.00	<1	<1	27.10	<1	<1	2.21	3.99	3.03	<1	<1
Total Aromatic EPH >C35-C35	M	2690	mg/kg	5																														
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10		230.00	29.00	13.70	17.60	42.50	15.00	14.00	21.60	25.60	23.10	38.90	167.00	10.10	283.00	373.00	227.00	178.00	443.00	452.00	<5	33.20	360.00	8.49	9.14	43.00	61.20	57.20	27.50	7.90
Total VPH >C5-C10	M	2780	mg/kg	0.5																														
Total EPH >C10-C35	M	2690	mg/kg	10																														
Total EPH >C10-C40	N	2690	mg/kg	10		291	51	14	32	197	60	43	71	135	95	85	212	37	1130	3340	259	207	734	785	53	143	360	16	15	195	273	221	118	45
Organic Matter	M	2625	%	0.4		>100	83.8	7.0	0.8	5.0	6.9	4.4	10.3	6.6	9.3	6.6	39.1	18.3	2.3	2.3	7.6	6.7	13.0	30.7	3.8	0.6	1.4	0.9	<0.35	6.5	2.8	2.7	8.8	9.0
Benzene	M	2760	µg/kg	1	87	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	266	1480	<180	<180	376	623	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180
Toluene	M	2760	µg/kg	1	130000	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140	320	<140	<140	478	432	<140	<140	<140	<140	<140	<140	<140	<140	<140	<140
Ethylbenzene	M	2760	µg/kg	1	47000	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80
m & p-Xylene	M	2760	µg/kg	1	56000	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	549	<200	<200	1190	618	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
o-Xylene	M	2760	µg/kg	1		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	298	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Tert-Butyl Ether	M	2760	µg/kg	1		<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Naphthalene	M	2800	mg/kg	0.1	15	0.921	0.108	0.155	0.016	0.061	0.032	0.175	0.058	0.069	0.028	0.047	0.041	0.021	1.830	4.900	0.144	0.237	19.900	25.800	0.031	0.838	<0.009	0.013	0.014	0.061	0.044	0.121	0.029	0.062
Acenaphthylene	N	2800	mg/kg	0.1	170	0.434	0.098	0.193	0.015	0.022	<0.012	0.022	<0.06	0.018	<0.012	<0.012	0.021	<0.012	1.520	1.130	0.906	1.240	6.210	5.780	<0.012	0.100	<0.012	<0.012	0.015	0.050	<0.012	0.094	<0.012	0.021
Acenaphthene	M	2800	mg/kg	0.1	210	0.035	<0.008	0.019	<0.008	0.026	<0.008	0.143	0.054	0.048	<0.008	0.027	0.036	<0.008	0.637	0.311	<0.008	<0.008	0.614	0.864	<0.008	0.079	<0.008	<0.008	<0.008	0.040	0.074	0.078	<0.008	<0.008
Fluorene	M	2800	mg/kg	0.1	170	0.106	0.021	0.162	<0.01	0.034	<0.01	0.105	<0.05	0.059	<0.01	0.033	0.046	<0.01	1.210	1.010	0.097	0.087	7.810	7.610	<0.01	0.136	<0.01	<0.01	<0.01	0.030	0.037	0.054	<0.01	0.015
Phenanthrene	M	2800	mg/kg	0.1	95	1.040	0.191	1.150	0.039	0.219	0.069	1.160	0.410	0.352	0.119	0.301	0.339	0.081	3.330	2.730	0.783	1.730	30.200	24.400	0.051	0.325	0.039	0.057	0.153	0.468	0.691	0.662	0.064	0.129
Anthracene	M	2800	mg/kg	0.1	2400	0.364	0.071	0.406	<0.016	0.056	<0.016	0.236	0.189	0.100	0.024	0.067	0.067	<0.016	1.160	0.750	0.380	0.660	5.300	4.850	<0.016	0.093	<0.016	<0.016	0.026	0.130	0.122	0.197	<0.016	0.033
Fluoranthene	M	2800	mg/kg	0.1	280	2.430	0.399	1.880	0.086	0.423	0.114	1.460	1.720	0.499	0.233	0.508	0.675	0.149	7.260	5.590	4.820	9.190	26.700	22.900	0.166	0.562	0.096	0.110	0.408	1.170	1.320	1.820	0.092	0.260
Pyrene	M	2800	mg/kg	0.1	620	1.860	0.314	1.290	0.068	0.373	0.101	1.180	1.540	0.430	0.217	0.424	0.523	0.109	5.600	5.540	4.280	7.850	18.000	15.700	0.127	0.499	0.073	0.087	0.376	1.140	1.240	1.900	0.100	0.301
Benzo[a]anthracene	M	2800	mg/kg	0.1	7.2	1.570	0.260	0.736	0.061	0.227	0.069	0.636	1.450	0.249	0.121	0.285	0.402	0.069	2.970	2.400	3.300	4.750	9.140	7.350	0.068	0.185	0.075	0.100	0.238	0.639	0.705	1.290	0.058	0.173
Chrysene	M	2800	mg/kg	0.1	15	1.320	0.236	0.668	0.062	0.278	0.079	0.519	1.570	0.245	0.153	0.311	0.461	0.070	2.760	1.850	3.190	4.320	6.820	5.820	0.070	0.197	0.085	0.098	0.262	0.870	0.710	1.620	0.072	0.192
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.6	1.580	0.352	0.603	0.126	0.379	0.121	0.896	2.060	0.410	0.219	0.416	0.712	0.120	5.140	3.190	7.640	8.990	11.100	9.510	0.129	0.202	0.089	0.108	0.480	1.190	1.160	2.410	0.097	0.293
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	77	0.854	0.138	0.292	0.038	0.108	0.038	0.318	0.717	0.126	0.066	0.143	0.219	0.032	1.550	0.938	2.110	2.470	3.470	2.790	0.036	0.073	0.031	0.053	0.141	0.352	0.373	0.707	0.028	0.095
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.2	1.620	0.302	0.620	0.073	0.202	0.067	0.570	1.130	0.244	0.108	0.250	0.371	0.051	3.350	1.940	4.380	5.560	7.600	6.190	0.063	0.178	0.065	0.090	0.268	0.716	0.837	1.530	0.043	0.151
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	27	1.720	0.345	0.514	0.076	0.173	0.052	0.449	0.799	0.207	0.093	0.185	0.307	0.044	3.670	1.590	4.050	5.170	5.560	5.000	0.067	0.136	0.045	0.065	0.280	0.650	0.592	1.170	0.036	0.118
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.24	0.376	0.057	0.089	<0.023	0.038	<0.023	0.068	0.218	0.036	<0.023	0.033	0.066	<0.023	0.492	0.344	0.843	0.947	1.110	0.838	<0.023	0.028	<0.023	<0.023	0.039	0.121	0.084	0.222	<0.023	<0.023
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	320	1.750	0.317	0.428	0.067	0.178	0.059	0.402	0.748	0.188	0.085	0.182	0.260	0.049	4.140	1.480	4.000	5.280	4.980	4.430	0.063	0.148	0.043	0.061	0.273	0.616	0.550	1.200	0.040	0.121
Total Of 16 PAH's	N	2800	mg/kg	2		18.00	3.21	9.20	0.73	2.80	0.80	8.33	12.60	3.28	1.47	3.21	4.55	0.79	46.60	35.70	40.90	58.50	165.00	150.00	0.87	3.78	0.64	0.84	2.97	8.24	8.54	15.10	0.66	1.96
Resorcinol	M	2920	mg/kg	0.02																														
Phenol	M	2920	mg/kg	0.02	280	<0.01	<0.01	<0.01	<0.01	0	<0.01	0	0	<0.01	0	0	<0.01	<0.01	0	<0.01	<0.01	<0.01	0	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0	0	<0.01	<0.01
Cresols	M	2920	mg/kg	0.02															0.0111	<0.01	0.0115	<0.01	0.0224	0.0232	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0107	<0.01	<0.01
Xylenols	M	2920	mg/kg	0.02															<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Naphthol	N	2920	mg/kg	0.02																														
Trimethylphenols	M	2920	mg/kg	0.02																														
Total Phenols	M	2920	mg/kg	0.1															<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	0.069	0.183	<0.035	<0.035

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Rodgers Leask
Office 225
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Aztec West
Almondsbury
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BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	201217-34
Your Reference:	P18-669
Location:	Llanwern
Report No:	583544

This report has been revised and directly supersedes 582957 in its entirety.

We received 19 samples on Thursday December 17, 2020 and 19 of these samples were scheduled for analysis which was completed on Tuesday January 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23450096	AT6-1		0.20 - 0.20	16/12/2020
23450104	AT6-2		1.70 - 1.70	16/12/2020
23450074	AU7-1		0.50 - 0.50	16/12/2020
23450081	AV7-1		0.30 - 0.30	16/12/2020
23450088	AW7-1		0.40 - 0.40	16/12/2020
23450092	AW7-2		2.00 - 2.00	16/12/2020
23450052	SPFO-1		0.00 - 0.00	15/12/2020
23450108	SPFO-2		0.00 - 0.00	15/12/2020
23450112	SPFO-3		0.00 - 0.00	15/12/2020
23450117	SPFO-4		0.00 - 0.00	15/12/2020
23450122	SPFO-5		0.00 - 0.00	15/12/2020
23450127	SPFO-6		0.00 - 0.00	15/12/2020
23450131	SPFO-7		0.00 - 0.00	15/12/2020
23450139	SPFO-8		0.00 - 0.00	15/12/2020
23450148	SPFO-9		0.00 - 0.00	15/12/2020
23450057	SPFO-10		0.00 - 0.00	15/12/2020
23450061	SPFO-11		0.00 - 0.00	15/12/2020
23450065	SPFO-12		0.00 - 0.00	15/12/2020
23450069	SPFO-13		0.00 - 0.00	15/12/2020

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23450096		23450104		23450074		23450081		23450088		23450092		23450052		23450108				
Customer Sample Reference			AT6-1		AT6-2		AU7-1		AV7-1		AW7-1		AW7-2		SPFO-1		SPFO-2				
AGS Reference																					
Depth (m)			0.20 - 0.20		1.70 - 1.70		0.50 - 0.50		0.30 - 0.30		0.40 - 0.40		2.00 - 2.00		0.00 - 0.00		0.00 - 0.00				
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 19	X			X		X			X		X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10			X					X					X			X			
Calorific Value (S)*	All	NDPs: 0 Tests: 7																	X		X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19	X			X		X			X		X			X			X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 19	X			X		X			X		X			X		X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 19		X			X		X			X		X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 19	X			X		X			X		X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 19	X			X		X			X		X			X			X		
pH	All	NDPs: 0 Tests: 19	X			X		X			X		X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 19	X			X		X			X		X			X			X		
Sample description	All	NDPs: 0 Tests: 19	X			X		X			X		X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 19	X			X		X			X		X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 19	X			X		X			X		X			X		X			
VOC MS (S)	All	NDPs: 0 Tests: 19		X			X		X			X		X			X			X	

23450148	SPFO-9		0.00 - 0.00	250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23450139	SPFO-8		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23450131	SPFO-7		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23450127	SPFO-6		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X		X	X	X		X		X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S								X						
23450122	SPFO-5		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X	X											
23450117	SPFO-4		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S			X											
23450112	SPFO-3		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X		X	X			X		X	X	X	X		
				1kg TUB with Handle (ALE260)	S		X			X			X					X	
23450108	SPFO-2		0.00 - 0.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23450148	23450057		23450061		23450065		23450069	
Customer Sample Reference			SPFO-9	SPFO-10		SPFO-11		SPFO-12		SPFO-13	
AGS Reference											
Depth (m)			0.00 - 0.00	0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00	
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 19		X			X		X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10				X					X		
Calorific Value (S)*	All	NDPs: 0 Tests: 7										X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19		X			X		X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 19	X		X			X		X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 19		X			X		X			X	
PAH by GCMS	All	NDPs: 0 Tests: 19		X			X		X			X	
pH	All	NDPs: 0 Tests: 19		X			X		X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 19		X			X		X			X	
Sample description	All	NDPs: 0 Tests: 19		X			X		X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 19		X			X		X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X			X	
VOC MS (S)	All	NDPs: 0 Tests: 19	X		X			X		X			X

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23450096	AT6-1	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	None
23450104	AT6-2	1.70 - 1.70	Dark Brown	Sand	Stones	None
23450074	AU7-1	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
23450081	AV7-1	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	None
23450088	AW7-1	0.40 - 0.40	Dark Brown	Loamy Sand	None	Stones
23450092	AW7-2	2.00 - 2.00	Dark Brown	N/A	Stones	None
23450052	SPFO-1	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23450108	SPFO-2	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
23450112	SPFO-3	0.00 - 0.00	Dark Brown	Sandy Silt Loam	Stones	None
23450117	SPFO-4	0.00 - 0.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23450122	SPFO-5	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
23450127	SPFO-6	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
23450131	SPFO-7	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
23450139	SPFO-8	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
23450148	SPFO-9	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
23450057	SPFO-10	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23450061	SPFO-11	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
23450065	SPFO-12	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
23450069	SPFO-13	0.00 - 0.00	Dark Brown	Stone/Soil	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AT6-1	AT6-2	AU7-1	AV7-1	AW7-1	AW7-2
			Depth (m)	0.20 - 0.20	1.70 - 1.70	0.50 - 0.50	0.30 - 0.30	0.40 - 0.40	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450096	23450104	23450074	23450081	23450088	23450092
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		17	6.4	13	20	16	22
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035
Soil Organic Matter (SOM)	<0.35 %	TM132		5.91 #	0.833 #	6.5 #	8.96 #	14.4 #	20.9
pH	1 pH Units	TM133		12.1 M	12.1 M	11.4 M	11.6 M	9.36 M	10.8
Cyanide, Total	<1 mg/kg	TM153		7.26 M	<1 M	8.68 M	10.8 M	5.07 M	4.16
Arsenic	<0.6 mg/kg	TM181		9.79 M	<6 M	16.3 M	17.2 M	14.3 M	11.9
Cadmium	<0.02 mg/kg	TM181		4.58 M	<0.2 M	9.82 M	10.4 M	5.34 M	4.41
Chromium	<0.9 mg/kg	TM181		408 M	1200 M	273 M	91.7 M	59.3 M	35.4
Copper	<1.4 mg/kg	TM181		43 M	<14 M	56.5 M	60 M	48.1 M	33.5
Iron	<1000 mg/kg	TM181		187000 #	184000 #	255000 #	327000 #	226000 #	222000
Lead	<0.7 mg/kg	TM181		599 M	14.6 M	1320 M	1270 M	695 M	423
Manganese	<0.13 mg/kg	TM181		28700 M	53700 M	23300 M	16700 M	10800 M	7420
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4
Nickel	<0.2 mg/kg	TM181		29.1 M	7.29 M	45.5 M	60.2 M	46.4 M	50.5
Selenium	<1 mg/kg	TM181		13.7 #	33.8 #	<10 #	<10 #	<10 #	<10
Vanadium	<0.2 mg/kg	TM181		1470 #	911 #	1180 #	691 #	355 #	239
Zinc	<1.9 mg/kg	TM181		2530 M	33.2 M	5510 M	5830 M	3100 M	1720

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPFO-1	SPFO-2	SPFO-3	SPFO-4	SPFO-5	SPFO-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450052	23450108	23450112	23450117	23450122	23450127
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9	8.8	11	14	9.6	7.4
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		17	16.5	8.77	4.64	1.41	<0.5
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		14.5	14.4	7.64	3.79	1.16	<0.5
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		16.5	16	8.41	4.46	1.21	<0.5
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		13.8	13.6	7.02	3.22	0.59	<0.5
Water Analytical M (ad)	<0.5 %	SUB		0.77	0.99	0.94	1.04	1.68	<0.5
Water Gross M(ex)	<0.5 %	SUB		14.1	12.3	12.1	17.6	16.3	7.14
Water Total M(ar)	<0.5 %	SUB		14.8	13.2	12.9	18.4	17.7	7.14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.011 M	0.011 M	0.0112 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.022 M	0.0219 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.022 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0549 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		46.5 #	74.8 #	48.3 #	28.1 #	5.81 #	2.45 #
pH	1 pH Units	TM133		9.04 M	8.43 M	9.77 M	8.29 M	8.14 M	9.02 M
Cyanide, Total	<1 mg/kg	TM153		2.31 M	1.24 M	<1 M	20.4 M	<1 M	2.79 M
Arsenic	<0.6 mg/kg	TM181		3.68 M	9.34 M	9.24 M	30.4 M	16.2 M	9.27 M
Cadmium	<0.02 mg/kg	TM181		0.319 M	0.706 M	0.39 M	14.2 M	0.699 M	0.597 M
Chromium	<0.9 mg/kg	TM181		181 M	98.7 M	84.5 M	15.3 M	10.2 M	19.2 M
Copper	<1.4 mg/kg	TM181		10.8 M	19.6 M	15.7 M	42 M	29.6 M	14.7 M
Iron	<1000 mg/kg	TM181		45800 #	77900 #	63100 #	259000 #	55300 #	27400 #
Lead	<0.7 mg/kg	TM181		67.5 M	119 M	92.4 M	2640 M	209 M	127 M
Manganese	<0.13 mg/kg	TM181		8870 M	7400 M	6110 M	8860 M	1920 M	2680 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<1.4 M	0.32 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.2 M	17.3 M	17.7 M	48.3 M	24.8 M	12.4 M
Selenium	<1 mg/kg	TM181		5 #	<10 #	1.96 #	<10 #	<1 #	1.11 #
Vanadium	<0.2 mg/kg	TM181		177 #	159 #	93.7 #	348 #	36.2 #	39.1 #
Zinc	<1.9 mg/kg	TM181		168 M	282 M	290 M	6490 M	305 M	382 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPFO-7	SPFO-8	SPFO-9	SPFO-10	SPFO-11	SPFO-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450131	23450139	23450148	23450057	23450061	23450065
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	7.1	8.1	17	11	3.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0226 M	<0.01 M	0.0109 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0113 M	<0.01 M	0.0109 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		40.9 #	50.9 #	8.88 #	15 #	5.45 #	2.17 #
pH	1 pH Units	TM133		8.92 M	8.8 M	9.07 M	8.27 M	8.62 M	8.77 M
Cyanide, Total	<1 mg/kg	TM153		7.22 M	1.98 M	1.29 M	25.9 M	<1 M	3.45 M
Arsenic	<0.6 mg/kg	TM181		6.28 M	7.19 M	8.06 M	19.2 M	13.4 M	10.2 M
Cadmium	<0.02 mg/kg	TM181		1.34 M	0.507 M	2.68 M	12 M	0.404 M	0.597 M
Chromium	<0.9 mg/kg	TM181		66 M	52.3 M	49.3 M	<9 M	7.62 M	12.3 M
Copper	<1.4 mg/kg	TM181		21 M	15.5 M	23.1 M	32.2 M	24 M	17.9 M
Iron	<1000 mg/kg	TM181		131000 #	40000 #	32600 #	267000 #	37300 #	38100 #
Lead	<0.7 mg/kg	TM181		376 M	65.5 M	146 M	2250 M	147 M	189 M
Manganese	<0.13 mg/kg	TM181		4880 M	7930 M	2750 M	6480 M	1290 M	3240 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	0.225 M	<1.4 M	<0.14 M	0.321 M
Nickel	<0.2 mg/kg	TM181		17.2 M	11.8 M	14.5 M	42.6 M	22.1 M	14.7 M
Selenium	<1 mg/kg	TM181		<10 #	5.06 #	1.17 #	<10 #	<1 #	1.35 #
Vanadium	<0.2 mg/kg	TM181		123 #	99.7 #	54.4 #	307 #	26.7 #	41.5 #
Zinc	<1.9 mg/kg	TM181		911 M	215 M	268 M	5490 M	152 M	574 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SPFO-13		
Depth (m)	0.00 - 0.00		
Sample Type	Soil/Solid (S)		
Date Sampled	15/12/2020		
Sample Time	.		
Date Received	17/12/2020		
SDG Ref	201217-34		
Lab Sample No.(s)	23450069		
AGS Reference			

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	7.6
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB	<0.5
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB	<0.5
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB	<0.5
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB	<0.5
Water Analytical M (ad)	<0.5 %	SUB	<0.5
Water Gross M(ex)	<0.5 %	SUB	7.11
Water Total M(ar)	<0.5 %	SUB	7.11
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 #
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 #
Soil Organic Matter (SOM)	<0.35 %	TM132	2.22 #
pH	1 pH Units	TM133	8.64 #
Cyanide, Total	<1 mg/kg	TM153	<1 #
Arsenic	<0.6 mg/kg	TM181	9.96 #
Cadmium	<0.02 mg/kg	TM181	0.429 #
Chromium	<0.9 mg/kg	TM181	89 #
Copper	<1.4 mg/kg	TM181	14.6 #
Iron	<1000 mg/kg	TM181	24600 #
Lead	<0.7 mg/kg	TM181	61.1 #
Manganese	<0.13 mg/kg	TM181	1590 #
Mercury	<0.14 mg/kg	TM181	<0.14 #
Nickel	<0.2 mg/kg	TM181	38.7 #
Selenium	<1 mg/kg	TM181	<1 #
Vanadium	<0.2 mg/kg	TM181	52 #
Zinc	<1.9 mg/kg	TM181	224 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AT6-1	AT6-2	AU7-1	AV7-1	AW7-1	AW7-2
			Depth (m)	0.20 - 0.20	1.70 - 1.70	0.50 - 0.50	0.30 - 0.30	0.40 - 0.40	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450096	23450104	23450074	23450081	23450088	23450092
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.5	84.1	83	83.2	82.7	84.6
Acenaphthene-d10 % recovery**	%	TM218		82.4	87	85.6	83.3	88	83.9
Phenanthrene-d10 % recovery**	%	TM218		86.8	84.6	87.1	84.9	85.4	85.9
Chrysene-d12 % recovery**	%	TM218		84.8	90.6	89.3	86.4	89.2	88.9
Perylene-d12 % recovery**	%	TM218		86.6	93.7	81.4	77.3	90.3	81.8
Naphthalene	<9 µg/kg	TM218		47 M	31.7 M	61.2 M	61.5 M	40.1 M	31.6
Acenaphthylene	<12 µg/kg	TM218		15.2 M	33.9 M	49.8 M	20.5 M	162 M	60.9
Acenaphthene	<8 µg/kg	TM218		42.1 M	11.3 M	40 M	<8 M	<8 M	<8
Fluorene	<10 µg/kg	TM218		24.6 M	<10 M	29.7 M	15.1 M	20.9 M	18.7
Phenanthrene	<15 µg/kg	TM218		433 M	126 M	468 M	129 M	216 M	193
Anthracene	<16 µg/kg	TM218		85.3 M	49.5 M	130 M	32.8 M	122 M	89.3
Fluoranthene	<17 µg/kg	TM218		894 M	411 M	1170 M	260 M	858 M	504
Pyrene	<15 µg/kg	TM218		854 M	460 M	1140 M	301 M	893 M	487
Benz(a)anthracene	<14 µg/kg	TM218		465 M	241 M	639 M	173 M	640 M	370
Chrysene	<10 µg/kg	TM218		505 M	280 M	870 M	192 M	824 M	438
Benzo(b)fluoranthene	<15 µg/kg	TM218		767 M	415 M	1190 M	293 M	1550 M	678
Benzo(k)fluoranthene	<14 µg/kg	TM218		290 M	131 M	352 M	94.6 M	425 M	195
Benzo(a)pyrene	<15 µg/kg	TM218		527 M	270 M	716 M	151 M	991 M	386
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		405 M	270 M	650 M	118 M	1050 M	401
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		75.2 M	40.7 M	121 M	<23 M	178 M	56.5
Benzo(g,h,i)perylene	<24 µg/kg	TM218		389 M	245 M	616 M	121 M	987 M	337
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		5820	3020	8240	1960	8970	4250

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPFO-1	SPFO-2	SPFO-3	SPFO-4	SPFO-5	SPFO-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450052	23450108	23450112	23450117	23450122	23450127
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		70.1	75.2	79.9	82.5	76.8	82.4
Acenaphthene-d10 % recovery**	%	TM218		70.7	74.6	93.7	82.5	76.2	83.9
Phenanthrene-d10 % recovery**	%	TM218		70.9	73.2	85.9	77.5	77	85.5
Chrysene-d12 % recovery**	%	TM218		70.3	68.4	84.6	72	76.2	74.2
Perylene-d12 % recovery**	%	TM218		70.7	68	88.6	73	78.5	72.1
Naphthalene	<9 µg/kg	TM218		6380 M	13500 M	2250 M	24900 M	170 M	19.4 M
Acenaphthylene	<12 µg/kg	TM218		6980 M	21500 M	2890 M	13700 M	68 M	<12 M
Acenaphthene	<8 µg/kg	TM218		637 M	1290 M	639 M	1710 M	<40 M	<8 M
Fluorene	<10 µg/kg	TM218		5640 M	20100 M	7420 M	22500 M	79 M	<10 M
Phenanthrene	<15 µg/kg	TM218		38100 M	98500 M	34200 M	208000 M	548 M	44.3 M
Anthracene	<16 µg/kg	TM218		12000 M	32700 M	8580 M	36400 M	119 M	<16 M
Fluoranthene	<17 µg/kg	TM218		82900 M	124000 M	35800 M	229000 M	725 M	66.3 M
Pyrene	<15 µg/kg	TM218		58800 M	82600 M	23100 M	154000 M	506 M	63.8 M
Benz(a)anthracene	<14 µg/kg	TM218		32200 M	41500 M	11500 M	73100 M	294 M	44.4 M
Chrysene	<10 µg/kg	TM218		25500 M	36400 M	10700 M	65900 M	337 M	51.9 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		39100 M	50500 M	12400 M	89300 M	392 M	85.8 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		14500 M	17400 M	4600 M	30300 M	123 M	23.4 M
Benzo(a)pyrene	<15 µg/kg	TM218		24300 M	31400 M	8610 M	63100 M	250 M	48.9 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		19500 M	24400 M	6470 M	48600 M	218 M	45.2 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		3940 M	4800 M	1540 M	8190 M	<115 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		15700 M	19500 M	5250 M	42800 M	216 M	47.2 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		386000	620000	176000	1110000	4040	541

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPFO-7	SPFO-8	SPFO-9	SPFO-10	SPFO-11	SPFO-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450131	23450139	23450148	23450057	23450061	23450065
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.3	75	87	83.8	79.8	83.7
Acenaphthene-d10 % recovery**	%	TM218		81.5	84	86	80.7	76.1	85.2
Phenanthrene-d10 % recovery**	%	TM218		80.6	87.8	85	81	76.7	87.3
Chrysene-d12 % recovery**	%	TM218		78.5	89.3	90	77.6	70.7	81.9
Perylene-d12 % recovery**	%	TM218		79.8	74.8	88	70.4	72.7	78.8
Naphthalene	<9 µg/kg	TM218		5280 M	8480 M	18900 M	13100 M	79.2 M	25.6 M
Acenaphthylene	<12 µg/kg	TM218		5990 M	13800 M	21000 M	5100 M	<60 M	<12 M
Acenaphthene	<8 µg/kg	TM218		579 M	1840 M	6560 M	610 M	<40 M	<8 M
Fluorene	<10 µg/kg	TM218		5520 M	17100 M	36000 M	8070 M	<50 M	<10 M
Phenanthrene	<15 µg/kg	TM218		33100 M	93800 M	174000 M	70000 M	128 M	54.2 M
Anthracene	<16 µg/kg	TM218		9900 M	44700 M	46600 M	13000 M	<80 M	<16 M
Fluoranthene	<17 µg/kg	TM218		57400 M	143000 M	200000 M	78100 M	190 M	79 M
Pyrene	<15 µg/kg	TM218		39600 M	95600 M	131000 M	52900 M	150 M	76.3 M
Benz(a)anthracene	<14 µg/kg	TM218		20500 M	50100 M	67400 M	28500 M	101 M	49.1 M
Chrysene	<10 µg/kg	TM218		16500 M	45600 M	54600 M	27200 M	112 M	55.2 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		25200 M	51300 M	80400 M	33800 M	182 M	92.5 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		8860 M	17800 M	28500 M	10900 M	<70 M	33.1 M
Benzo(a)pyrene	<15 µg/kg	TM218		16300 M	31700 M	51100 M	22600 M	116 M	56.4 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		12700 M	25100 M	41300 M	18800 M	121 M	61.7 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		2360 M	5210 M	7530 M	2510 M	<115 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		10400 M	20100 M	31800 M	14700 M	<120 M	67.7 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		270000	665000	997000	400000	1180	651

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SPFO-13
Depth (m)	0.00 - 0.00
Sample Type	Soil/Solid (S)
Date Sampled	15/12/2020
Sample Time	.
Date Received	17/12/2020
SDG Ref	201217-34
Lab Sample No.(s)	23450069
AGS Reference	

Component	LOD/Units	Method	
Naphthalene-d8 % recovery**	%	TM218	85.6
Acenaphthene-d10 % recovery**	%	TM218	84
Phenanthrene-d10 % recovery**	%	TM218	84.1
Chrysene-d12 % recovery**	%	TM218	83.1
Perylene-d12 % recovery**	%	TM218	83.8
Naphthalene	<9 µg/kg	TM218	21.7 #
Acenaphthylene	<12 µg/kg	TM218	<12 #
Acenaphthene	<8 µg/kg	TM218	<8 #
Fluorene	<10 µg/kg	TM218	<10 #
Phenanthrene	<15 µg/kg	TM218	59.8 #
Anthracene	<16 µg/kg	TM218	<16 #
Fluoranthene	<17 µg/kg	TM218	57.8 #
Pyrene	<15 µg/kg	TM218	51.7 #
Benz(a)anthracene	<14 µg/kg	TM218	32.4 #
Chrysene	<10 µg/kg	TM218	41.7 #
Benzo(b)fluoranthene	<15 µg/kg	TM218	53.9 #
Benzo(k)fluoranthene	<14 µg/kg	TM218	18 #
Benzo(a)pyrene	<15 µg/kg	TM218	28.1 #
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	23.5 #
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 #
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24 #
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	389

Validated

CERTIFICATE OF ANALYSIS

SDG: 201217-34 **Client Reference:** P18-669 **Report Number:** 583544
Location: Llanwern **Order Number:** **Superseded Report:** 582957

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AT6-1	AT6-2	AU7-1	AV7-1	AW7-1	AW7-2
			Depth (m)	0.20 - 0.20	1.70 - 1.70	0.50 - 0.50	0.30 - 0.30	0.40 - 0.40	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450096	23450104	23450074	23450081	23450088	23450092
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97.9 @	98.5 @	84.1 @	111 @	97.6 @	84.2 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 @	<10 @	24.2 @	17.5 @	17.9 @	26.9 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 @	<10 @	31.1 @	25 @	21.4 @	34.6 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		4830	<1000	3370	1520	<1000	3220
Aliphatics >C16-C21	<1000 µg/kg	TM414		26200	2600	19400	6040	5750	13400
Aliphatics >C21-C35	<1000 µg/kg	TM414		113000	17400	96800	24700	19800	65600
Aliphatics >C35-C44	<1000 µg/kg	TM414		31800	3410	31800	4250	3310	33200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		177000	23800	152000	36900	29200	116000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		219000	33800	195000	44800	101000	264000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 @	<10 @	20.7 @	16.3 @	14.3 @	23 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	3930
Aromatics > EC16-EC21	<1000 µg/kg	TM414		7090	1490	7500	<1000	8470	42400
Aromatics > EC21-EC35	<1000 µg/kg	TM414		33000	6990	32600	5600	53200	90100
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2250	<1000	2210	<1000	10000	11500
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1730	2120
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		42800	9980	43000	7900	72200	148000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		219000	33800	195000	44800	102000	264000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	<50 @	55.2 @	<50 @	<50 @	61.4 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @	<50 @	<50 @	<50 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		<20 @	<20 @	55.2 @	<20 @	<20 @	61.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201217-34 **Client Reference:** P18-669 **Report Number:** 583544
Location: Llanwern **Order Number:** **Superseded Report:** 582957

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPFO-1	SPFO-2	SPFO-3	SPFO-4	SPFO-5	SPFO-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450052	23450108	23450112	23450117	23450122	23450127
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		21.3 4 @	27.1 4 @	21.8 4 @	94.3 @	82.4 @	91.8 @
Aliphatics >C5-C6	<10 µg/kg	TM089		12.1 4 @	12.1 4 @	<10 4 @	<10 @	<10 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		61.5 4 @	63.6 4 @	35.8 4 @	<10 @	<10 @	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089		47.2 4 @	71.3 4 @	33.6 4 @	<10 @	13.3 @	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		1380	2580	1230	<5000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		4610	6640	4280	<5000	<1000	2010
Aliphatics >C16-C21	<1000 µg/kg	TM414		6640	16600	8080	7740	2090	33200
Aliphatics >C21-C35	<1000 µg/kg	TM414		16000	25000	25400	67300	269000	77700
Aliphatics >C35-C44	<1000 µg/kg	TM414		4850	4080	3100	<5000	142000	7280
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		33500	54900	42000	77200	414000	120000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		934000	1460000	1110000	5670000	552000	144000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	15.4 4 @	<10 4 @	<10 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	15.4 4 @	<10 4 @	<10 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		30.7 4 @	48.3 4 @	22.4 4 @	<10 @	<10 @	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		11100	17900	13500	101000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		35800	47100	37300	177000	2490	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		286000	434000	347000	2230000	3690	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		484000	747000	549000	2700000	125000	22100
Aromatics >EC35-EC44	<1000 µg/kg	TM414		83300	154000	116000	386000	6320	1140
Aromatics > EC40-EC44	<1000 µg/kg	TM414		14600	32900	24500	81700	5420	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		900000	1400000	1060000	5590000	138000	23800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		934000	1460000	1110000	5670000	552000	144000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		121 4 @	147 4 @	69.4 4 @	<50 @	<50 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	79 4 @	<50 4 @	<50 @	<50 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		121 4 @	226 4 @	69.4 4 @	<20 @	<20 @	<20 @

Validated

CERTIFICATE OF ANALYSIS

SDG: 201217-34 **Client Reference:** P18-669 **Report Number:** 583544
Location: Llanwern **Order Number:** **Superseded Report:** 582957

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPFO-7	SPFO-8	SPFO-9	SPFO-10	SPFO-11	SPFO-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450131	23450139	23450148	23450057	23450061	23450065
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		17.2 4 @	32.1 4 @	28.5 4 @	64.1 4 @	75.5 @	82.5 @
Aliphatics >C5-C6	<10 µg/kg	TM089		11.3 4 @	19.4 4 @	<10 4 @	<10 4 @	<10 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		53.1 4 @	95.9 4 @	10.9 4 @	<10 4 @	<10 @	10.4 @
Aliphatics >C8-C10	<10 µg/kg	TM089		53.1 4 @	88.3 4 @	10.9 4 @	<10 4 @	<10 @	14.5 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<5000	1840	<5000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		8310	7250	<5000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		12200	18700	5190	14700	5130	15800
Aliphatics >C21-C35	<1000 µg/kg	TM414		39900	28100	27500	62700	117000	43200
Aliphatics >C35-C44	<1000 µg/kg	TM414		<5000	10100	<5000	4690	143000	5010
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		64500	66000	35700	82300	265000	64700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		6260000	1710000	4020000	393000	519000	81700
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	12.9 4 @	<10 4 @	<10 4 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	16.2 4 @	<10 4 @	<10 4 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		35 4 @	59.2 4 @	<10 4 @	<10 4 @	<10 @	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		30800	11100	83800	5870	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		309000	53200	290000	11500	1410	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2440000	520000	1500000	120000	2190	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		2880000	899000	1870000	158000	238000	15700
Aromatics >EC35-EC44	<1000 µg/kg	TM414		532000	162000	243000	15400	11500	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		83300	17200	42700	2900	7470	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		6200000	1650000	3980000	310000	254000	17100
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		6260000	1710000	4020000	393000	519000	81800
Total Aliphatics >C5-C10	<50 µg/kg	TM089		118 4 @	204 4 @	<50 4 @	<50 4 @	<50 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	88.3 4 @	<50 4 @	<50 4 @	<50 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		118 4 @	292 4 @	<20 4 @	<20 4 @	<20 @	<20 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	SPFO-13
Depth (m)	0.00 - 0.00
Sample Type	Soil/Solid (S)
Date Sampled	15/12/2020
Sample Time	.
Date Received	17/12/2020
SDG Ref	201217-34
Lab Sample No.(s)	23450069
AGS Reference	

Component	LOD/Units	Method	
GRO Surrogate % recovery**	%	TM089	91.4 @
Aliphatics >C5-C6	<10 µg/kg	TM089	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414	6710
Aliphatics >C35-C44	<1000 µg/kg	TM414	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414	8150
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414	22100
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414	2310
Aromatics > EC21-EC35	<1000 µg/kg	TM414	9760
Aromatics >EC35-EC44	<1000 µg/kg	TM414	1270
Aromatics > EC40-EC44	<1000 µg/kg	TM414	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414	14000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414	22100
Total Aliphatics >C5-C10	<50 µg/kg	TM089	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089	<50 @
GRO >C5-C10	<20 µg/kg	TM089	<20 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AT6-1	AT6-2	AU7-1	AV7-1	AW7-1	AW7-2
			Depth (m)	0.20 - 0.20	1.70 - 1.70	0.50 - 0.50	0.30 - 0.30	0.40 - 0.40	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450096	23450104	23450074	23450081	23450088	23450092
			AGS Reference						
Dibromofluoromethane**	%	TM116		102 @	108 @	112 @	108 @	116 @	107 @
Toluene-d8**	%	TM116		98.1 @	98.8 @	97.3 @	98.4 @	97.5 @	97.7 @
4-Bromofluorobenzene**	%	TM116		95.2 @	98.9 @	96.1 @	97.9 @	97.8 @	95.7 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ #
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ #
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ #
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ #
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ #
Naphthalene	<13 µg/kg	TM116		<130 ♦ M	<13 ♦ M	<260 ♦ M	<13 M	<260 ♦ M	<260 ♦ #
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPFO-1	SPFO-2	SPFO-3	SPFO-4	SPFO-5	SPFO-6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450052	23450108	23450112	23450117	23450122	23450127
			AGS Reference						
Dibromofluoromethane**	%	TM116		92.1 @	92.2 @	95.5 @	110 @	107 @	107 @
Toluene-d8**	%	TM116		89.5 @	93.6 @	94.6 @	97.1 @	97.4 @	98.6 @
4-Bromofluorobenzene**	%	TM116		71.2 @	78.3 @	81 @	91.4 @	94.4 @	95.8 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		1980 ♦ M	2510 ♦ M	2950 ♦ M	340 ♦ M	<260 ♦ M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPFO-7	SPFO-8	SPFO-9	SPFO-10	SPFO-11	SPFO-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020	15/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020
			SDG Ref	201217-34	201217-34	201217-34	201217-34	201217-34	201217-34
			Lab Sample No.(s)	23450131	23450139	23450148	23450057	23450061	23450065
			AGS Reference						
Dibromofluoromethane**	%	TM116		106 @	98.2 @	92.3 @	106 @	101 @	106 @
Toluene-d8**	%	TM116		93.1 @	94.3 @	91.5 @	98.3 @	95.8 @	98.6 @
4-Bromofluorobenzene**	%	TM116		76.3 @	77.7 @	75.2 @	95.8 @	94.1 @	95.6 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		745 M	1850 M	721 M	<260 ♦ M	<260 ♦ M	<260 ♦ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref. SPFO-13				
			Depth (m) 0.00 - 0.00				
			Sample Type Soil/Solid (S)				
			Date Sampled 15/12/2020				
			Sample Time .				
			Date Received 17/12/2020				
			SDG Ref 201217-34				
			Lab Sample No.(s) 23450069				
			AGS Reference				
Dibromofluoromethane**	%	TM116	108 @				
Toluene-d8**	%	TM116	98.1 @				
4-Bromofluorobenzene**	%	TM116	94.1 @				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 @ #				
Benzene	<9 µg/kg	TM116	<180 @ #				
Toluene	<7 µg/kg	TM116	<140 @ #				
Ethylbenzene	<4 µg/kg	TM116	<80 @ #				
p/m-Xylene	<10 µg/kg	TM116	<200 @ #				
o-Xylene	<10 µg/kg	TM116	<200 @ #				
Naphthalene	<13 µg/kg	TM116	28.5 ♦ #				
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.4 @				
Sum of BTEX	<40 µg/kg	TM116	<800 @				

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AT6-2 1.70 - 1.70 SOLID 16/12/2020 00:00:00 17/12/2020 05:00:00 201217-34 23450104 TM048	30/12/2020	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AV7-1 0.30 - 0.30 SOLID 16/12/2020 00:00:00 17/12/2020 05:00:00 201217-34 23450081 TM048	30/12/2020	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AW7-2 2.00 - 2.00 SOLID 16/12/2020 00:00:00 17/12/2020 05:00:00 201217-34 23450092 TM048	30/12/2020	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPFO-1 0.00 - 0.00 SOLID 15/12/2020 00:00:00 17/12/2020 05:00:00 201217-34 23450052 TM048	30/12/2020	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPFO-3 0.00 - 0.00 SOLID 15/12/2020 00:00:00 17/12/2020 05:00:00 201217-34 23450112 TM048	30/12/2020	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPFO-5 0.00 - 0.00 SOLID 15/12/2020 00:00:00 17/12/2020 05:00:00 201217-34 23450122 TM048	30/12/2020	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPFO-7 0.00 - 0.00 SOLID 15/12/2020 00:00:00 17/12/2020 05:00:00 201217-34 23450131 TM048	22/12/20	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPFO-9 0.00 - 0.00 SOLID 15/12/2020 00:00:00 17/12/2020 05:00:00 201217-34 23450148 TM048	23/12/2020	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	SPFO-11 0.00 - 0.00 SOLID 15/12/2020 00:00:00 17/12/2020 05:00:00 201217-34 23450061 TM048	30/12/2020	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	SPFO-13 0.00 - 0.00 SOLID 15/12/2020 00:00:00 17/12/2020 05:00:00 201217-34 23450069 TM048	30/12/2020	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	201217-34	**Client Reference:**	P18-669	**Report Number:**	583544
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582957

Test Completion Dates

Lab Sample No(s)	23450096	23450104	23450074	23450081	23450088	23450092	23450052	23450108	23450112	23450117
Customer Sample Ref.	AT6-1	AT6-2	AU7-1	AV7-1	AW7-1	AW7-2	SPFO-1	SPFO-2	SPFO-3	SPFO-4
AGS Ref.										
Depth	0.20 - 0.20	1.70 - 1.70	0.50 - 0.50	0.30 - 0.30	0.40 - 0.40	2.00 - 2.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020
Asbestos ID in Solid Samples		30-Dec-2020		30-Dec-2020		30-Dec-2020	30-Dec-2020		30-Dec-2020	
Calorific Value (S)*							07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	24-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020
EPH CWG GC (S)	14-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	08-Jan-2021	15-Jan-2021	11-Jan-2021	15-Jan-2021	15-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	15-Jan-2021
Metals in solid samples by OES	13-Jan-2021	30-Dec-2020	13-Jan-2021	31-Dec-2020	30-Dec-2020	31-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020
PAH by GCMS	21-Dec-2020	24-Dec-2020	24-Dec-2020	30-Dec-2020	24-Dec-2020	30-Dec-2020	21-Dec-2020	21-Dec-2020	24-Dec-2020	21-Dec-2020
pH	18-Dec-2020	29-Dec-2020	30-Dec-2020	29-Dec-2020	18-Dec-2020	29-Dec-2020	29-Dec-2020	30-Dec-2020	29-Dec-2020	30-Dec-2020
Phenols by HPLC (S)	21-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	24-Dec-2020	23-Dec-2020	20-Dec-2020	20-Dec-2020	23-Dec-2020	20-Dec-2020
Sample description	17-Dec-2020	17-Dec-2020	18-Dec-2020	18-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
Total Organic Carbon	30-Dec-2020	23-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	23-Dec-2020	31-Dec-2020	23-Dec-2020	23-Dec-2020
TPH CWG GC (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	15-Jan-2021
VOC MS (S)	14-Jan-2021	14-Jan-2021	14-Jan-2021	18-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021

Lab Sample No(s)	23450122	23450127	23450131	23450139	23450148	23450057	23450061	23450065	23450069
Customer Sample Ref.	SPFO-5	SPFO-6	SPFO-7	SPFO-8	SPFO-9	SPFO-10	SPFO-11	SPFO-12	SPFO-13
AGS Ref.									
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	24-Dec-2020	24-Dec-2020	24-Dec-2020	24-Dec-2020	24-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020
Asbestos ID in Solid Samples	30-Dec-2020		22-Dec-2020		23-Dec-2020		30-Dec-2020		30-Dec-2020
Calorific Value (S)*	07-Jan-2021	07-Jan-2021							07-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	30-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	22-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020
EPH CWG GC (S)	08-Jan-2021	15-Jan-2021	07-Jan-2021	08-Jan-2021	07-Jan-2021	08-Jan-2021	11-Jan-2021	08-Jan-2021	15-Jan-2021
GRO by GC-FID (S)	15-Jan-2021	15-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021
Metals in solid samples by OES	30-Dec-2020	23-Dec-2020	23-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020
PAH by GCMS	21-Dec-2020	23-Dec-2020	21-Dec-2020	24-Dec-2020	21-Dec-2020	30-Dec-2020	21-Dec-2020	21-Dec-2020	21-Dec-2020
pH	29-Dec-2020	18-Dec-2020	23-Dec-2020	18-Dec-2020	23-Dec-2020	18-Dec-2020	29-Dec-2020	30-Dec-2020	29-Dec-2020
Phenols by HPLC (S)	20-Dec-2020	20-Dec-2020	20-Dec-2020	23-Dec-2020	23-Dec-2020	24-Dec-2020	21-Dec-2020	20-Dec-2020	23-Dec-2020
Sample description	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020	17-Dec-2020
Total Organic Carbon	23-Dec-2020	22-Dec-2020	23-Dec-2020	29-Dec-2020	22-Dec-2020	30-Dec-2020	23-Dec-2020	30-Dec-2020	23-Dec-2020
TPH CWG GC (S)	15-Jan-2021	15-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021
VOC MS (S)	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021

CERTIFICATE OF ANALYSIS

Work Order	: **PR20C7787**	Issue Date	: 07-Jan-2021
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 201217-34	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 23-Dec-2020
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 28-Dec-2020 - 07-Jan-2021
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)

Analytical Results

Sub-Matrix: **SOIL**			Client sample ID	**23462352 SPFO-2**		**23462314 SPFO-5**		**----**	
			Laboratory sample ID	*PR20C7787-001*		*PR20C7787-002*		----	
			Client sampling date / time	[23-Dec-2020]		[23-Dec-2020]		----	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	**16.5**	± 10.2%	**1.41**	± 25.7%	**----**	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	**14.4**	± 10.3%	**1.16**	± 30.4%	**----**	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	**16.0**	± 10.2%	**1.21**	± 29.3%	**----**	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	**13.6**	± 10.3%	**0.59**	± 57.4%	**----**	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**0.99**	± 39.1%	**1.68**	± 28.2%	**----**	----
Water Gross M(ex)	I-WG-GR	0.50	%	**12.3**	± 20.2%	**16.3**	± 20.1%	**----**	----
Water Total M(ar)	I-WT-CC	0.50	%	**13.2**	----	**17.7**	----	**----**	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	Sample combustion in a calorimetric bomb for fuel tests
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

CERTIFICATE OF ANALYSIS

Work Order	: **PR20C7788**	Issue Date	: 07-Jan-2021
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 201217-34	Page	: 1 of 3
Order number	: ----	Date Samples Received	: 23-Dec-2020
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 28-Dec-2020 - 07-Jan-2021
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

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The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)

Analytical Results

Sub-Matrix: **SOIL**			*Client sample ID*	**23454800 SPFO-1**		**23454349 SPFO-13**		**23454143 SPFO-3**	
			Laboratory sample ID	*PR20C7788-001*		*PR20C7788-002*		*PR20C7788-003*	
			Client sampling date / time	[23-Dec-2020]		[23-Dec-2020]		[23-Dec-2020]	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	**17.0**	± 10.2%	<0.50	----	**8.77**	± 10.7%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	**14.5**	± 10.2%	<0.50	----	**7.64**	± 10.9%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	**16.5**	± 10.2%	<0.50	----	**8.41**	± 10.8%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	**13.8**	± 10.3%	<0.50	----	**7.02**	± 11.1%
Water Analytical M(ad)	I-WA-GR	0.50	%	**0.77**	± 47.8%	<0.50	----	**0.94**	± 40.6%
Water Gross M(ex)	I-WG-GR	0.50	%	**14.1**	± 20.1%	**7.11**	± 20.5%	**12.1**	± 20.2%
Water Total M(ar)	I-WT-CC	0.50	%	**14.8**	----	**7.11**	----	**12.9**	----

Sub-Matrix: **SOIL**			*Client sample ID*	**23458189 SPFO-4**		**23454644 SPFO-6**		**----**	
			Laboratory sample ID	*PR20C7788-004*		*PR20C7788-005*		----	
			Client sampling date / time	[23-Dec-2020]		[23-Dec-2020]		----	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	**4.64**	± 12.3%	<0.50	----	**----**	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	**3.79**	± 13.3%	<0.50	----	**----**	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	**4.46**	± 12.5%	<0.50	----	**----**	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	**3.22**	± 14.4%	<0.50	----	**----**	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**1.04**	± 37.9%	<0.50	----	**----**	----
Water Gross M(ex)	I-WG-GR	0.50	%	**17.6**	± 20.1%	**7.14**	± 20.5%	**----**	----
Water Total M(ar)	I-WT-CC	0.50	%	**18.4**	----	**7.14**	----	**----**	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	*Method Descriptions*

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	Sample combustion in a calorimetric bomb for fuel tests
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
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Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	20 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	201219-57
Your Reference:	P18-669
Location:	Llanwern
Report No:	583757

We received 20 samples on Saturday December 19, 2020 and 20 of these samples were scheduled for analysis which was completed on Tuesday January 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	201219-57	**Client Reference:**	P18-669	**Report Number:**	583757
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23471766	AG1-1		0.50 - 0.50	18/12/2020
23471748	AH1-1		0.20 - 0.20	18/12/2020
23471754	AH1-2		1.10 - 1.10	18/12/2020
23471742	AI1-1		0.40 - 0.40	18/12/2020
23471733	AJ1-1		0.20 - 0.20	18/12/2020
23471738	AJ1-2		1.00 - 1.00	18/12/2020
23471776	AJ6-1		0.50 - 0.50	17/12/2020
23471781	AJ6-2		1.30 - 1.30	17/12/2020
23471789	AJ7-1		0.50 - 0.50	17/12/2020
23471798	AJ8-1		0.40 - 0.40	17/12/2020
23471807	AJ8-2		1.00 - 1.00	17/12/2020
23471725	AK1-1		0.30 - 0.30	18/12/2020
23471729	AK1-2		1.70 - 1.70	18/12/2020
23471714	AK2-1		0.10 - 0.10	18/12/2020
23471720	AK2-2		1.30 - 1.30	18/12/2020
23471705	AK3-1		0.50 - 0.50	17/12/2020
23471762	AK5-1		0.20 - 0.20	17/12/2020
23471770	AK5-2		1.20 - 1.20	17/12/2020
23471814	AL1-1		0.50 - 0.50	18/12/2020
23471710	AL1-2		1.00 - 1.00	18/12/2020

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	23471766	23471748	23471754	23471742	23471733	23471738	23471776	23471781
			Customer Sample Reference	AG1-1	AH1-1	AH1-2	AI1-1	AJ1-1	AJ1-2	AJ6-1	AJ6-2
			AGS Reference								
			Depth (m)	0.50 - 0.50	0.20 - 0.20	1.10 - 1.10	0.40 - 0.40	0.20 - 0.20	1.00 - 1.00	0.50 - 0.50	1.30 - 1.30
			Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 20		X			X		X			X				X		X		X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10							X			X			X							X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 20		X			X		X			X				X		X		X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 20			X		X			X			X			X		X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20				X		X			X			X			X		X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 20		X			X		X			X				X		X		X		
PAH by GCMS	All	NDPs: 0 Tests: 20			X		X		X			X				X		X		X		
pH	All	NDPs: 0 Tests: 20		X			X		X			X				X		X		X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 20		X			X		X			X				X		X		X		
Sample description	All	NDPs: 0 Tests: 20		X			X		X			X				X		X		X		
Total Organic Carbon	All	NDPs: 0 Tests: 20		X			X		X			X				X		X		X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 20			X		X			X			X			X		X		X		
VOC MS (S)	All	NDPs: 0 Tests: 20				X		X			X			X			X		X		X		

23471705	AK3-1		0.50 - 0.50	250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23471720	AK2-2		1.30 - 1.30	60g VOC (ALE215)	S							X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23471714	AK2-1		0.10 - 0.10	60g VOC (ALE215)	S							X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23471729	AK1-2		1.70 - 1.70	60g VOC (ALE215)	S							X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23471725	AK1-1		0.30 - 0.30	60g VOC (ALE215)	S							X											X
				250g Amber Jar (ALE210)	S					X												X	
				1kg TUB with Handle (ALE260)	S	X	X		X			X	X	X	X	X	X						
23471807	AJ8-2		1.00 - 1.00	60g VOC (ALE215)	S							X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23471798	AJ8-1		0.40 - 0.40	60g VOC (ALE215)	S							X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X	X															
23471789	AJ7-1		0.50 - 0.50	60g VOC (ALE215)	S							X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23471781	AJ6-2		1.30 - 1.30	60g VOC (ALE215)	S							X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					

Validated

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)										
			23471705	23471762			23471770			23471814		23471710	
			Customer Sample Reference										
			AK3-1	AK5-1			AK5-2			AL1-1		AL1-2	
			AGS Reference										
			Depth (m)										
			0.50 - 0.50	0.20 - 0.20			1.20 - 1.20			0.50 - 0.50		1.00 - 1.00	
			Container										
			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type										
			S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 20		X			X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10				X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 20		X			X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 20		X			X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20	X		X			X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 20		X			X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 20		X			X			X		X	
pH	All	NDPs: 0 Tests: 20		X			X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 20		X			X			X		X	
Sample description	All	NDPs: 0 Tests: 20		X			X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 20		X			X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 20		X			X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 20	X		X			X			X		X

CERTIFICATE OF ANALYSIS

SDG:	201219-57	**Client Reference:**	P18-669	**Report Number:**	583757
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23471766	AG1-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23471748	AH1-1	0.20 - 0.20	Light Brown	N/A	Stones	None
23471754	AH1-2	1.10 - 1.10	Dark Brown	Sandy Loam	Stones	None
23471742	AI1-1	0.40 - 0.40	Dark Brown	Stone/Soil	None	None
23471733	AJ1-1	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Stones	None
23471738	AJ1-2	1.00 - 1.00	Light Brown	N/A	Stones	None
23471776	AJ6-1	0.50 - 0.50	Dark Brown	Clay Loam	Stones	Vegetation
23471781	AJ6-2	1.30 - 1.30	Light Brown	Sand	Stones	None
23471789	AJ7-1	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Vegetation
23471798	AJ8-1	0.40 - 0.40	Light Brown	Sand	Stones	Vegetation
23471807	AJ8-2	1.00 - 1.00	Light Brown	Sand	Stones	Crushed Brick
23471725	AK1-1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None
23471729	AK1-2	1.70 - 1.70	Dark Brown	N/A	Stones	None
23471714	AK2-1	0.10 - 0.10	Dark Brown	Sandy Silt Loam	Stones	Vegetation
23471720	AK2-2	1.30 - 1.30	Dark Brown	N/A	Stones	Oil/Petroleum
23471705	AK3-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23471762	AK5-1	0.20 - 0.20	Dark Brown	Clay Loam	Stones	Vegetation
23471770	AK5-2	1.20 - 1.20	Dark Brown	N/A	Stones	None
23471814	AL1-1	0.50 - 0.50	Dark Brown	N/A	Stones	None
23471710	AL1-2	1.00 - 1.00	Dark Brown	Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG1-1	AH1-1	AH1-2	AI1-1	AJ1-1	AJ1-2
			Depth (m)	0.50 - 0.50	0.20 - 0.20	1.10 - 1.10	0.40 - 0.40	0.20 - 0.20	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471766	23471748	23471754	23471742	23471733	23471738
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	8.4	21	15	7.6	4.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		18.8 M	<12	<12 M	<12 #	<12 M	<12
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01	<0.01 M	<0.01 #	<0.01 M	<0.01
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01	<0.01 M	<0.01 #	<0.01 M	<0.01
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015	<0.015 M	<0.015 #	<0.015 M	<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035	<0.035 M	<0.035 #	<0.035 M	<0.035
Soil Organic Matter (SOM)	<0.35 %	TM132		85.5 #	3.57	8.09 #	>100 #	4.84 #	0.41
pH	1 pH Units	TM133		8.93 M	9.5	8.76 M	11.2 #	9.89 M	11.3
Cyanide, Total	<1 mg/kg	TM153		<1 ♦ M	<1	<1 ♦ M	<1 ♦ #	<1 M	<1
Arsenic	<0.6 mg/kg	TM181		6.89 M	4.07	9.53 M	9.15 #	<6 M	3
Cadmium	<0.02 mg/kg	TM181		0.15 M	0.0341	0.906 M	0.744 #	0.885 M	0.0831
Chromium	<0.9 mg/kg	TM181		16.8 M	18.2	126 M	69.6 #	315 M	5.75
Copper	<1.4 mg/kg	TM181		31.3 M	8.75	16.2 M	<14 #	15 M	3.51
Iron	<1000 mg/kg	TM181		35100 #	18700	72200 #	94000 #	75400 #	7400
Lead	<0.7 mg/kg	TM181		20.6 M	13.5	79.2 M	26.1 #	47.5 M	7.89
Manganese	<0.13 mg/kg	TM181		3070 M	4420	13100 M	6430 #	14500 M	2430
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14	<1.4 M	<1.4 #	<1.4 M	<0.14
Nickel	<0.2 mg/kg	TM181		12.1 M	7.57	21.7 M	9.01 #	24.8 M	2.92
Selenium	<1 mg/kg	TM181		1.26 #	3.05	<10 #	<10 #	<10 #	2.4
Vanadium	<0.2 mg/kg	TM181		34.5 #	47.7	160 #	109 #	236 #	15.9
Zinc	<1.9 mg/kg	TM181		67.7 M	38.5	193 M	55.7 #	177 M	26

Validated

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ6-1	AJ6-2	AJ7-1	AJ8-1	AJ8-2	AK1-1
			Depth (m)	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50	0.40 - 0.40	1.00 - 1.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	18/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471776	23471781	23471789	23471798	23471807	23471725
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	7.7	21	5.3	8.9	7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.026 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		6.6 #	1.19 #	4.55 #	1.42 #	0.902 #	8.33 #
pH	1 pH Units	TM133		8.01 M	8.96 M	9.26 M	8.32 M	8.57 M	9.53 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		12.8 M	4.58 M	7.99 M	3.94 M	4.77 M	12.2 M
Cadmium	<0.02 mg/kg	TM181		0.21 M	0.148 M	0.278 M	0.177 M	0.118 M	1.08 M
Chromium	<0.9 mg/kg	TM181		238 M	17 M	29.8 M	9.37 M	11.7 M	206 M
Copper	<1.4 mg/kg	TM181		13.9 M	6.65 M	11.1 M	9.19 M	11.8 M	28.3 M
Iron	<1000 mg/kg	TM181		64100 #	13500 #	29200 #	11500 #	11400 #	80900 #
Lead	<0.7 mg/kg	TM181		47.2 M	15.1 M	21.3 M	14.7 M	9.07 M	32.6 M
Manganese	<0.13 mg/kg	TM181		8980 M	1310 M	2330 M	585 M	784 M	11900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		22.4 M	7.96 M	16.4 M	8.94 M	9.98 M	15.5 M
Selenium	<1 mg/kg	TM181		3 #	<1 #	<1 #	<1 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		217 #	40.6 #	40.4 #	12 #	17.1 #	211 #
Zinc	<1.9 mg/kg	TM181		140 M	35.6 M	94.9 M	35.6 M	16.6 M	144 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		
Additional Asbestos Components (Using TM048)		TM304					None #		
Analysts Comments		TM304					0		
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #		

Validated

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK1-2	AK2-1	AK2-2	AK3-1	AK5-1	AK5-2
			Depth (m)	1.70 - 1.70	0.10 - 0.10	1.30 - 1.30	0.50 - 0.50	0.20 - 0.20	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/12/2020	18/12/2020	18/12/2020	17/12/2020	17/12/2020	17/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471729	23471714	23471720	23471705	23471762	23471770
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.3	12	5.7	6.1	18	7.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12	<12 M	<12	<12 M	18.5 M	<12
Phenol	<0.01 mg/kg	TM062 (S)		<0.01	<0.01 M	<0.01	<0.01 M	<0.01 M	0.0109
Cresols	<0.01 mg/kg	TM062 (S)		0.0209	<0.01 M	0.0106	<0.01 M	0.0123 M	<0.01
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015	<0.015 M	<0.015	<0.015 M	<0.015 M	<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035	<0.035 M	<0.035	<0.035 M	<0.035 M	<0.035
Soil Organic Matter (SOM)	<0.35 %	TM132		<0.35	21.6 #	2.16	3.15 #	7.33 #	1.84
pH	1 pH Units	TM133		10.9	9.51 M	10.3	9.17 M	8.24 M	11.8
Cyanide, Total	<1 mg/kg	TM153		<1	1.4 M	<1	<1 M	<1 M	<1
Arsenic	<0.6 mg/kg	TM181		1.01	<6 M	1.47	2.41 M	10.7 M	6.58
Cadmium	<0.02 mg/kg	TM181		0.061	0.853 M	0.147	0.227 M	0.576 M	0.114
Chromium	<0.9 mg/kg	TM181		6.36	373 M	81.1	22 M	30.9 M	72.4
Copper	<1.4 mg/kg	TM181		2.41	<14 M	1.87	7.88 M	13.5 M	14.7
Iron	<1000 mg/kg	TM181		3420	90600 #	35000	16200 #	39700 #	59400
Lead	<0.7 mg/kg	TM181		6.2	49.8 M	4.29	24.4 M	52.9 M	22.3
Manganese	<0.13 mg/kg	TM181		1640	14800 M	8630	4770 M	2370 M	9450
Mercury	<0.14 mg/kg	TM181		<0.14	<1.4 M	<0.14	<0.14 M	<0.14 M	<0.14
Nickel	<0.2 mg/kg	TM181		3.17	13.8 M	1.09	5.2 M	19.2 M	14.8
Selenium	<1 mg/kg	TM181		1.52	<10 #	3.53	3.53 #	<1 #	3.05
Vanadium	<0.2 mg/kg	TM181		5.41	277 #	109	39.9 #	65.2 #	144
Zinc	<1.9 mg/kg	TM181		50.8	164 M	39.6	117 M	213 M	38.8

CERTIFICATE OF ANALYSIS

SDG:	201219-57	**Client Reference:**	P18-669	**Report Number:**	583757
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL1-1	AL1-2				
			Depth (m)	0.50 - 0.50	1.00 - 1.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	18/12/2020	18/12/2020				
			Sample Time	.	.				
			Date Received	19/12/2020	19/12/2020				
			SDG Ref	201219-57	201219-57				
			Lab Sample No.(s)	23471814	23471710				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.2	9.5				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12	<12 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035	<0.035 M				
Soil Organic Matter (SOM)	<0.35 %	TM132		0.567	1.18 #				
pH	1 pH Units	TM133		11.3	11.6 M				
Cyanide, Total	<1 mg/kg	TM153		<1	2.23 M				
Arsenic	<0.6 mg/kg	TM181		<6	<6 M				
Cadmium	<0.02 mg/kg	TM181		0.653	0.797 M				
Chromium	<0.9 mg/kg	TM181		489	650 M				
Copper	<1.4 mg/kg	TM181		<14	<14 M				
Iron	<1000 mg/kg	TM181		157000	164000 #				
Lead	<0.7 mg/kg	TM181		<7	12 M				
Manganese	<0.13 mg/kg	TM181		36400	26600 M				
Mercury	<0.14 mg/kg	TM181		<1.4	<1.4 M				
Nickel	<0.2 mg/kg	TM181		3.17	11.3 M				
Selenium	<1 mg/kg	TM181		18.1	13.5 #				
Vanadium	<0.2 mg/kg	TM181		344	487 #				
Zinc	<1.9 mg/kg	TM181		38.3	78.9 M				

Validated

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG1-1	AH1-1	AH1-2	AI1-1	AJ1-1	AJ1-2
			Depth (m)	0.50 - 0.50	0.20 - 0.20	1.10 - 1.10	0.40 - 0.40	0.20 - 0.20	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471766	23471748	23471754	23471742	23471733	23471738
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		70.2	93.7	83.3	90.3	93.8	86.2
Acenaphthene-d10 % recovery**	%	TM218		74.3	91.5	86.5	91.6	91.7	87.5
Phenanthrene-d10 % recovery**	%	TM218		68.1	90.1	91.7	88.5	92.5	91.2
Chrysene-d12 % recovery**	%	TM218		61.3	79.6	86.1	72.7	91.3	99.3
Perylene-d12 % recovery**	%	TM218		48.4	78.5	86.1	72.2	84.5	97.8
Naphthalene	<9 µg/kg	TM218		138 M	16.7	352 M	222 #	1070 M	35.7
Acenaphthylene	<12 µg/kg	TM218		97.5 M	<12	138 M	91.3 #	664 M	39
Acenaphthene	<8 µg/kg	TM218		<8 M	<8	35.1 M	14 #	<80 M	<8
Fluorene	<10 µg/kg	TM218		47.2 M	<10	102 M	43.2 #	155 M	<10
Phenanthrene	<15 µg/kg	TM218		694 M	33	695 M	460 #	1400 M	117
Anthracene	<16 µg/kg	TM218		128 M	<16	283 M	100 #	488 M	38.9
Fluoranthene	<17 µg/kg	TM218		1070 M	50.3	1170 M	852 #	2930 M	443
Pyrene	<15 µg/kg	TM218		792 M	38.9	846 M	659 #	2320 M	354
Benz(a)anthracene	<14 µg/kg	TM218		508 M	36.4	629 M	420 #	1750 M	282
Chrysene	<10 µg/kg	TM218		564 M	35.5	601 M	550 #	1490 M	261
Benzo(b)fluoranthene	<15 µg/kg	TM218		800 M	42.5	773 M	705 #	2100 M	248
Benzo(k)fluoranthene	<14 µg/kg	TM218		239 M	18.4	307 M	274 #	1040 M	143
Benzo(a)pyrene	<15 µg/kg	TM218		437 M	33.1	541 M	378 #	2010 M	256
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		399 M	35.1	426 M	441 #	2710 M	206
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		96.8 M	<23	72.1 M	61.7 #	339 M	37.1
Benzo(g,h,i)perylene	<24 µg/kg	TM218		362 M	29.4	371 M	334 #	2720 M	194
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		6370	369	7340	5600	23200	2660

Validated

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ6-1	AJ6-2	AJ7-1	AJ8-1	AJ8-2	AK1-1
			Depth (m)	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50	0.40 - 0.40	1.00 - 1.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	18/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471776	23471781	23471789	23471798	23471807	23471725
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.5	92.6	89.8	88.2	93.5	93.1
Acenaphthene-d10 % recovery**	%	TM218		93.1	90	91.9	89	92.9	95.1
Phenanthrene-d10 % recovery**	%	TM218		93.7	89.5	94	94	92.6	98.3
Chrysene-d12 % recovery**	%	TM218		87.1	78.8	102	103	81.2	89.4
Perylene-d12 % recovery**	%	TM218		87.2	78.1	99.8	99.4	78.8	87.2
Naphthalene	<9 µg/kg	TM218		34 M	<45 M	149 M	<9 M	12.5 M	378 M
Acenaphthylene	<12 µg/kg	TM218		29.3 M	<60 M	<120 M	<12 M	<12 M	371 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<40 M	<80 M	<8 M	<8 M	29 M
Fluorene	<10 µg/kg	TM218		<10 M	<50 M	<100 M	<10 M	<10 M	106 M
Phenanthrene	<15 µg/kg	TM218		116 M	<75 M	286 M	39.2 M	56.9 M	1040 M
Anthracene	<16 µg/kg	TM218		25.9 M	<80 M	<160 M	<16 M	<16 M	321 M
Fluoranthene	<17 µg/kg	TM218		236 M	<85 M	474 M	96.2 M	110 M	2600 M
Pyrene	<15 µg/kg	TM218		177 M	<75 M	390 M	73 M	87 M	2070 M
Benz(a)anthracene	<14 µg/kg	TM218		136 M	<70 M	210 M	75.2 M	100 M	1530 M
Chrysene	<10 µg/kg	TM218		137 M	<50 M	234 M	84.9 M	98.2 M	1390 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		186 M	<75 M	272 M	88.6 M	108 M	2160 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		71.6 M	<70 M	<140 M	31.4 M	52.8 M	892 M
Benzo(a)pyrene	<15 µg/kg	TM218		131 M	<75 M	229 M	65.4 M	90 M	1680 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		146 M	<90 M	<180 M	45.2 M	65.2 M	1710 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<115 M	<230 M	<23 M	<23 M	215 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		110 M	<120 M	<240 M	42.7 M	61.3 M	1230 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1540	<590	2240	642	841	17700

Validated

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK1-2	AK2-1	AK2-2	AK3-1	AK5-1	AK5-2
			Depth (m)	1.70 - 1.70	0.10 - 0.10	1.30 - 1.30	0.50 - 0.50	0.20 - 0.20	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/12/2020	18/12/2020	18/12/2020	17/12/2020	17/12/2020	17/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471729	23471714	23471720	23471705	23471762	23471770
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.5	85.5	91	92.5	79.9	95.8
Acenaphthene-d10 % recovery**	%	TM218		90.7	87.9	94.4	91	82.3	92
Phenanthrene-d10 % recovery**	%	TM218		92.7	96	101	90.5	85.4	91.9
Chrysene-d12 % recovery**	%	TM218		87.6	104	93	85.5	90.7	83.4
Perylene-d12 % recovery**	%	TM218		86.6	97.3	90.8	79	90	84.7
Naphthalene	<9 µg/kg	TM218		83.9	217 M	2870	<450 M	69.7 M	<45
Acenaphthylene	<12 µg/kg	TM218		78.6	247 M	1160	<600 M	83.9 M	<60
Acenaphthene	<8 µg/kg	TM218		<8	41.3 M	96.4	<400 M	<40 M	<40
Fluorene	<10 µg/kg	TM218		40.4	102 M	471	<500 M	<50 M	<50
Phenanthrene	<15 µg/kg	TM218		303	714 M	3470	<750 M	266 M	86.4
Anthracene	<16 µg/kg	TM218		186	239 M	1120	<800 M	<80 M	<80
Fluoranthene	<17 µg/kg	TM218		894	1810 M	5850	<850 M	571 M	133
Pyrene	<15 µg/kg	TM218		633	1440 M	4510	<750 M	426 M	117
Benz(a)anthracene	<14 µg/kg	TM218		449	1170 M	2860	<700 M	323 M	<70
Chrysene	<10 µg/kg	TM218		398	981 M	2630	<500 M	286 M	67.4
Benzo(b)fluoranthene	<15 µg/kg	TM218		424	1440 M	2450	<750 M	277 M	99
Benzo(k)fluoranthene	<14 µg/kg	TM218		192	534 M	1440	<700 M	189 M	<70
Benzo(a)pyrene	<15 µg/kg	TM218		343	1170 M	2910	<750 M	317 M	<75
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		271	1100 M	3220	<900 M	271 M	<90
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		42.7	170 M	455	<1150 M	<115 M	<115
Benzo(g,h,i)perylene	<24 µg/kg	TM218		225	901 M	2520	<1200 M	263 M	<120
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		4560	12300	38000	<5900	3340	<590

CERTIFICATE OF ANALYSIS

SDG: 201219-57 Client Reference: P18-669 Report Number: 583757
Location: Llanwern Order Number: 108281 Superseded Report:

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL1-1	AL1-2
			Depth (m)	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/12/2020	18/12/2020
			Sample Time	.	.
			Date Received	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57
			Lab Sample No.(s)	23471814	23471710
			AGS Reference		
Naphthalene-d8 % recovery**	%	TM218		90.7	87
Acenaphthene-d10 % recovery**	%	TM218		93.3	88.6
Phenanthrene-d10 % recovery**	%	TM218		97.5	93.3
Chrysene-d12 % recovery**	%	TM218		108	100
Perylene-d12 % recovery**	%	TM218		105	98.6
Naphthalene	<9 µg/kg	TM218		<9	48.2 M
Acenaphthylene	<12 µg/kg	TM218		<12	42.3 M
Acenaphthene	<8 µg/kg	TM218		<8	<8 M
Fluorene	<10 µg/kg	TM218		<10	18.9 M
Phenanthrene	<15 µg/kg	TM218		27.3	118 M
Anthracene	<16 µg/kg	TM218		<16	40.8 M
Fluoranthene	<17 µg/kg	TM218		47.3	295 M
Pyrene	<15 µg/kg	TM218		61.8	239 M
Benz(a)anthracene	<14 µg/kg	TM218		65.4	155 M
Chrysene	<10 µg/kg	TM218		50.6	145 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		48.1	167 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<14	61.4 M
Benzo(a)pyrene	<15 µg/kg	TM218		36.6	169 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		28.2	150 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		43.8	123 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		409	1770

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG1-1	AH1-1	AH1-2	AI1-1	AJ1-1	AJ1-2
			Depth (m)	0.50 - 0.50	0.20 - 0.20	1.10 - 1.10	0.40 - 0.40	0.20 - 0.20	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471766	23471748	23471754	23471742	23471733	23471738
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		93.5 @	96 @	125 @	76.9 @	73.2 @	107 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1280	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		2790	<1000	<1000	<1000	58000	2250
Aliphatics >C21-C35	<1000 µg/kg	TM414		8320	4470	2840	5210	31800	<1000
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	1030	<1000	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		11700	5500	<5000	6410	91500	<5000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		35800	<10000	18300	16800	195000	<10000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1140	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1950	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		5810	<1000	2760	1750	9730	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		16900	1440	10900	7290	71300	1030
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1080	<1000	<1000	<1000	19000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	3150	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		24100	<5000	15200	10400	103000	<5000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		35800	<10000	15200	16800	195000	<10000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	<50 @	<50 @	<50 @	<50 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @	<50 @	<50 @	<50 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		<20 @	<20 @	<20 @	<20 @	<20 @	<20 @

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ6-1	AJ6-2	AJ7-1	AJ8-1	AJ8-2	AK1-1
			Depth (m)	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50	0.40 - 0.40	1.00 - 1.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	18/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471776	23471781	23471789	23471798	23471807	23471725
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		77.7 @	122 @	90.8 @	81.5 @	83.3 @	98.5 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1060	<1000	<1000	<1000	1130	1320
Aliphatics >C21-C35	<1000 µg/kg	TM414		11000	<1000	1510	2860	5320	2740
Aliphatics >C35-C44	<1000 µg/kg	TM414		1030	<1000	25600	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		13600	<5000	27100	<5000	7170	<5000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		36300	<10000	55000	364000	15700	84900
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	7870	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1640	<1000	<1000	100000	<1000	14200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		13700	<1000	13100	225000	6630	55500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		7400	<1000	14200	27100	<1000	9420
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1820	3630	<1000	1410
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		22800	<5000	27900	360000	8490	80300
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		36300	<10000	55000	360000	15700	80300
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	<50 @	<50 @	<50 @	<50 @	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @	<50 @	<50 @	<50 @	<50 @
GRO >C5-C10	<20 µg/kg	TM089		<20 @	<20 @	<20 @	<20 @	<20 @	<20 @

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK1-2	AK2-1	AK2-2	AK3-1	AK5-1	AK5-2
			Depth (m)	1.70 - 1.70	0.10 - 0.10	1.30 - 1.30	0.50 - 0.50	0.20 - 0.20	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/12/2020	18/12/2020	18/12/2020	17/12/2020	17/12/2020	17/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471729	23471714	23471720	23471705	23471762	23471770
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		96.6 @	123 @	96.9 @	73.5 @	102 @	97.5 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	43.3 @	<10 @	<10 @	<10 @	51 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 @	49 @	<10 @	<10 @	<10 @	155 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 @	46.7 @	<10 @	<10 @	<10 @	1680 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	12300	17200	2830	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		3920	31900	54300	18100	1140	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	19900	16400	37900	16700	1310
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	1170	<1000	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		5400	65300	88500	59200	18500	<5000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		11400	160000	220000	1140000	42300	16800
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10 @	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 @	30.8 @	<10 @	<10 @	<10 @	1120 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	6710	11100	1640	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1740	16600	25600	3060	1160	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		2830	61100	77100	604000	15400	10400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	10100	16300	476000	7000	3540
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1390	3410	54500	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		5980	94900	131000	1080000	23800	14500
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		11400	160000	220000	1140000	42300	15600
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	139 @	<50 @	<50 @	<50 @	1890 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @	<50 @	<50 @	<50 @	1120 @
GRO >C5-C10	<20 µg/kg	TM089		<20 @	139 @	<20 @	<20 @	<20 @	3010 @

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL1-1	AL1-2				
			Depth (m)	0.50 - 0.50	1.00 - 1.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	18/12/2020	18/12/2020				
			Sample Time	.	.				
			Date Received	19/12/2020	19/12/2020				
			SDG Ref	201219-57	201219-57				
			Lab Sample No.(s)	23471814	23471710				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		112 @	108 @				
Aliphatics >C5-C6	<10 µg/kg	TM089		19.2 @	24.2 @				
Aliphatics >C6-C8	<10 µg/kg	TM089		20.3 @	20.9 @				
Aliphatics >C8-C10	<10 µg/kg	TM089		44.8 @	20.9 @				
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000				
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	4700				
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	24100				
Aliphatics >C21-C35	<1000 µg/kg	TM414		5380	30300				
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	1180				
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		5620	60300				
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		<10000	75000				
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @				
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @				
Aromatics >EC8-EC10	<10 µg/kg	TM089		29.8 @	13.2 @				
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000				
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000				
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	2160				
Aromatics > EC21-EC35	<1000 µg/kg	TM414		<1000	11300				
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000				
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000				
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		<5000	14800				
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		<10000	75100				
Total Aliphatics >C5-C10	<50 µg/kg	TM089		84.2 @	66 @				
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	<50 @				
GRO >C5-C10	<20 µg/kg	TM089		84.2 @	66 @				

Validated

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG1-1	AH1-1	AH1-2	AI1-1	AJ1-1	AJ1-2
			Depth (m)	0.50 - 0.50	0.20 - 0.20	1.10 - 1.10	0.40 - 0.40	0.20 - 0.20	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020	18/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471766	23471748	23471754	23471742	23471733	23471738
			AGS Reference						
Dibromofluoromethane**	%	TM116		106 @	106 @	123 @	104 @	107 @	105 @
Toluene-d8**	%	TM116		102 @	103 @	98 @	96.8 @	96.7 @	98.3 @
4-Bromofluorobenzene**	%	TM116		87.6 @	94.6 @	94.1 @	88.5 @	87.4 @	97.1 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ #	<200 @ M	<200 @ #	<200 @ M	<200 @ #
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ #	<180 @ M	<180 @ #	<180 @ M	<180 @ #
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ #	<140 @ M	<140 @ #	<140 @ M	<140 @ #
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ #	<80 @ M	<80 @ #	<80 @ M	<80 @ #
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ #	<200 @ M	<200 @ #	<200 @ M	<200 @ #
Naphthalene	<13 µg/kg	TM116		<260 ♦ M	<13	60.3 M	<260 ♦ #	24.6 M	<13
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ6-1	AJ6-2	AJ7-1	AJ8-1	AJ8-2	AK1-1
			Depth (m)	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50	0.40 - 0.40	1.00 - 1.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/12/2020	17/12/2020	17/12/2020	17/12/2020	17/12/2020	18/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471776	23471781	23471789	23471798	23471807	23471725
			AGS Reference						
Dibromofluoromethane**	%	TM116		114 @	102 @	103 @	103 @	103 @	102 @
Toluene-d8**	%	TM116		97.8 @	98.8 @	97.2 @	97.8 @	99.3 @	96 @
4-Bromofluorobenzene**	%	TM116		92.7 @	93.9 @	89.1 @	89.9 @	93.8 @	85.4 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<13 ♦ M	<13 ♦ M	<260 ♦ M	<13 ♦ M	<13 ♦ M	<260 ♦ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK1-2	AK2-1	AK2-2	AK3-1	AK5-1	AK5-2
			Depth (m)	1.70 - 1.70	0.10 - 0.10	1.30 - 1.30	0.50 - 0.50	0.20 - 0.20	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/12/2020	18/12/2020	18/12/2020	17/12/2020	17/12/2020	17/12/2020
			Sample Time	.	.	.	.	.	.
			Date Received	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020	19/12/2020
			SDG Ref	201219-57	201219-57	201219-57	201219-57	201219-57	201219-57
			Lab Sample No.(s)	23471729	23471714	23471720	23471705	23471762	23471770
			AGS Reference						
Dibromofluoromethane**	%	TM116		104 @	110 @	103 @	108 @	118 @	104 @
Toluene-d8**	%	TM116		98.3 @	97.8 @	98.3 @	92.9 @	97.5 @	98.6 @
4-Bromofluorobenzene**	%	TM116		94.2 @	91.9 @	92 @	86 @	92.5 @	95.2 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ #	<200 @ M	<200 @ #	<200 @ M	<200 @ M	<200 @ #
Benzene	<9 µg/kg	TM116		<180 @ #	<180 @ M	<180 @ #	<180 @ M	<180 @ M	<180 @ #
Toluene	<7 µg/kg	TM116		<140 @ #	<140 @ M	<140 @ #	<140 @ M	<140 @ M	<140 @ #
Ethylbenzene	<4 µg/kg	TM116		<80 @ #	<80 @ M	<80 @ #	<80 @ M	<80 @ M	<80 @ #
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ M	<200 @ #	<200 @ M	<200 @ M	<200 @ #
Naphthalene	<13 µg/kg	TM116		15.2	18.6 M	270	<13 ♦ M	<260 ♦ M	<13 ♦
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @	<800 @	<800 @	<800 @	<800 @

CERTIFICATE OF ANALYSIS

SDG:	201219-57	**Client Reference:**	P18-669	**Report Number:**	583757
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL1-1	AL1-2				
			Depth (m)	0.50 - 0.50	1.00 - 1.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	18/12/2020	18/12/2020				
			Sample Time	.	.				
			Date Received	19/12/2020	19/12/2020				
			SDG Ref	201219-57	201219-57				
			Lab Sample No.(s)	23471814	23471710				
			AGS Reference						
Dibromofluoromethane**	%	TM116		105 @	105 @				
Toluene-d8**	%	TM116		98.4 @	98.8 @				
4-Bromofluorobenzene**	%	TM116		97 @	96.8 @				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 @ #	<200 @ M				
Benzene	<9 µg/kg	TM116		<180 @ #	<180 @ M				
Toluene	<7 µg/kg	TM116		<140 @ #	<140 @ M				
Ethylbenzene	<4 µg/kg	TM116		<80 @ #	<80 @ M				
p/m-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ #				
o-Xylene	<10 µg/kg	TM116		<200 @ #	<200 @ M				
Naphthalene	<13 µg/kg	TM116		<13 #	<13 M				
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4 @	<0.4 @				
Sum of BTEX	<40 µg/kg	TM116		<800 @	<800 @				

CERTIFICATE OF ANALYSIS

SDG:	201219-57	**Client Reference:**	P18-669	**Report Number:**	583757
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AH1-2 1.10 - 1.10 SOLID 18/12/2020 00:00:00 19/12/2020 05:00:00 201219-57 23471754 TM048	04/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AI1-1 0.40 - 0.40 SOLID 18/12/2020 00:00:00 19/12/2020 05:00:00 201219-57 23471742 TM048	04/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ1-1 0.20 - 0.20 SOLID 18/12/2020 00:00:00 19/12/2020 05:00:00 201219-57 23471733 TM048	04/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ6-2 1.30 - 1.30 SOLID 17/12/2020 00:00:00 19/12/2020 05:00:00 201219-57 23471781 TM048	04/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ8-1 0.40 - 0.40 SOLID 17/12/2020 00:00:00 19/12/2020 05:00:00 201219-57 23471798 TM048	04/01/2021	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK1-1 0.30 - 0.30 SOLID 18/12/2020 00:00:00 19/12/2020 05:00:00 201219-57 23471725 TM048	04/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK2-1 0.10 - 0.10 SOLID 18/12/2020 00:00:00 19/12/2020 05:00:00 201219-57 23471714 TM048	04/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK3-1 0.50 - 0.50 SOLID 17/12/2020 00:00:00 19/12/2020 05:00:00 201219-57 23471705 TM048	04/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 201219-57 **Client Reference:** P18-669 **Report Number:** 583757
Location: Llanwern **Order Number:** 108281 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AK5-2 1.20 - 1.20 SOLID 17/12/2020 00:00:00 19/12/2020 05:00:00 201219-57 23471770 TM048	04/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AL1-1 0.50 - 0.50 SOLID 18/12/2020 00:00:00 19/12/2020 05:00:00 201219-57 23471814 TM048	04/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	201219-57	**Client Reference:**	P18-669	**Report Number:**	583757
Location:	Llanwern	**Order Number:**	108281	**Superseded Report:**	

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	AJ8-1	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.40 - 0.40					
Sample Type	SOLID					
Date Sampled	17/12/2020 00:00:00					
Date Receieved	19/12/2020 05:00:00					
SDG	201219-57					
Original Sample	23471798					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG: 201219-57 Client Reference: P18-669 Report Number: 583757
Location: Llanwern Order Number: 108281 Superseded Report:

Test Completion Dates

Lab Sample No(s)	23471766	23471748	23471754	23471742	23471733	23471738	23471776	23471781	23471789	23471798
Customer Sample Ref.	AG1-1	AH1-1	AH1-2	AI1-1	AJ1-1	AJ1-2	AJ6-1	AJ6-2	AJ7-1	AJ8-1
AGS Ref.										
Depth	0.50 - 0.50	0.20 - 0.20	1.10 - 1.10	0.40 - 0.40	0.20 - 0.20	1.00 - 1.00	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50	0.40 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021
Asbestos ID in Solid Samples			04-Jan-2021	04-Jan-2021	04-Jan-2021			04-Jan-2021		04-Jan-2021
Asbestos Quantification - Full										12-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	05-Jan-2021	30-Dec-2020	05-Jan-2021	05-Jan-2021	31-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020
EPH CWG GC (S)	08-Jan-2021	13-Jan-2021	14-Jan-2021	15-Jan-2021	11-Jan-2021	14-Jan-2021	15-Jan-2021	08-Jan-2021	07-Jan-2021	08-Jan-2021
GRO by GC-FID (S)	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021
Metals in solid samples by OES	04-Jan-2021	04-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	04-Jan-2021	04-Jan-2021
PAH by GCMS	04-Jan-2021	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020
pH	30-Dec-2020	30-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	05-Jan-2021	31-Dec-2020	31-Dec-2020	05-Jan-2021	31-Dec-2020
Phenols by HPLC (S)	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020
Sample description	29-Dec-2020	24-Dec-2020	29-Dec-2020	29-Dec-2020	24-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020
Total Organic Carbon	05-Jan-2021	04-Jan-2021	04-Jan-2021	05-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021
TPH CWG GC (S)	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021
VOC MS (S)	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021

Lab Sample No(s)	23471807	23471725	23471729	23471714	23471720	23471705	23471762	23471770	23471814	23471710
Customer Sample Ref.	AJ8-2	AK1-1	AK1-2	AK2-1	AK2-2	AK3-1	AK5-1	AK5-2	AL1-1	AL1-2
AGS Ref.										
Depth	1.00 - 1.00	0.30 - 0.30	1.70 - 1.70	0.10 - 0.10	1.30 - 1.30	0.50 - 0.50	0.20 - 0.20	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	05-Jan-2021	04-Jan-2021	05-Jan-2021	04-Jan-2021	04-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021
Asbestos ID in Solid Samples		04-Jan-2021		04-Jan-2021		04-Jan-2021		04-Jan-2021	04-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	30-Dec-2020	31-Dec-2020	30-Dec-2020	31-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020	30-Dec-2020
EPH CWG GC (S)	07-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	13-Jan-2021	08-Jan-2021	07-Jan-2021	13-Jan-2021	14-Jan-2021	14-Jan-2021
GRO by GC-FID (S)	18-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
Metals in solid samples by OES	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021	05-Jan-2021
PAH by GCMS	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020
pH	31-Dec-2020	31-Dec-2020	31-Dec-2020	31-Dec-2020	30-Dec-2020	31-Dec-2020	30-Dec-2020	31-Dec-2020	31-Dec-2020	05-Jan-2021
Phenols by HPLC (S)	29-Dec-2020	04-Jan-2021	29-Dec-2020	04-Jan-2021	04-Jan-2021	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020	29-Dec-2020
Sample description	23-Dec-2020	24-Dec-2020	23-Dec-2020	24-Dec-2020	24-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020	23-Dec-2020
Total Organic Carbon	04-Jan-2021	04-Jan-2021	05-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021	04-Jan-2021
TPH CWG GC (S)	18-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
VOC MS (S)	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
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Deeside
CH5 3US
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Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	13 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210105-10
Your Reference:	P18-669
Location:	Llanwern
Report No:	582874

This report has been revised and directly supersedes 582714 in its entirety.

We received 6 samples on Tuesday January 05, 2021 and 6 of these samples were scheduled for analysis which was completed on Wednesday January 13, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23498287	AR10-1		0.50 - 0.50	04/01/2021
23498291	AR10-2		1.70 - 1.70	04/01/2021
23498295	AR11-1		0.50 - 0.50	04/01/2021
23498299	AR11-2		1.80 - 1.80	04/01/2021
23498303	AS10-1		0.40 - 0.40	04/01/2021
23498307	AS10-2		2.00 - 2.00	04/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23498287		23498291			23498295			23498299		23498303			23498307	
Customer Sample Reference			AR10-1		AR10-2			AR11-1			AR11-2		AS10-1			AS10-2	
AGS Reference																	
Depth (m)			0.50 - 0.50		1.70 - 1.70			0.50 - 0.50			1.80 - 1.80		0.40 - 0.40			2.00 - 2.00	
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 6		X		X			X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3	X					X					X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1	X														
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 6		X		X			X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 6		X		X			X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 6			X		X			X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 6		X		X			X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 6		X		X			X		X			X		X	
pH	All	NDPs: 0 Tests: 6		X		X			X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 6		X		X			X		X			X		X	
Sample description	All	NDPs: 0 Tests: 6		X		X			X		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 6		X		X			X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 6		X		X			X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 6			X		X			X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23498287	AR10-1	0.50 - 0.50	Dark Brown	Sand	Stones	None
23498291	AR10-2	1.70 - 1.70	Dark Brown	Sand	Crushed Brick	Stones
23498295	AR11-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23498299	AR11-2	1.80 - 1.80	Dark Brown	Loamy Sand	Stones	None
23498303	AS10-1	0.40 - 0.40	Dark Brown	Loamy Sand	Stones	None
23498307	AS10-2	2.00 - 2.00	Light Brown	Sandy Clay Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AR10-1	AR10-2	AR11-1	AR11-2	AS10-1	AS10-2
			Depth (m)	0.50 - 0.50	1.70 - 1.70	0.50 - 0.50	1.80 - 1.80	0.40 - 0.40	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	04/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021
			SDG Ref	210105-10	210105-10	210105-10	210105-10	210105-10	210105-10
			Lab Sample No.(s)	23498287	23498291	23498295	23498299	23498303	23498307
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.7	10	5.1	7.1	6.9	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		48.1 M	<12 M	<12 M	<12 M	<12 M	1260 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		0.509 #	0.75 #	<0.35 #	0.748 #	2.69 #	1.32 #
pH	1 pH Units	TM133		9.75 M	11.1 M	9.95 M	11.7 M	10.8 M	8.16 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	8.68 M	1.26 M	7.45 M	3.23 M	4.92 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.219 M	0.238 M	0.391 M	<0.02 M	0.344 M
Chromium	<0.9 mg/kg	TM181		321 M	<9 M	2.16 M	190 M	187 M	13.1 M
Copper	<1.4 mg/kg	TM181		<14 M	16.6 M	<1.4 M	19.2 M	5.17 M	13.4 M
Iron	<1000 mg/kg	TM181		197000 #	83200 #	5660 #	147000 #	79100 #	28900 #
Lead	<0.7 mg/kg	TM181		17.3 M	24.2 M	7.87 M	25.2 M	15.7 M	32.3 M
Manganese	<0.13 mg/kg	TM181		16100 M	4710 M	163 M	19700 M	14900 M	1330 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		28.1 M	7.16 M	2.13 M	8.17 M	4.65 M	14 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<1 #	<10 #	5.23 #	<1 #
Vanadium	<0.2 mg/kg	TM181		296 #		5.05 #	385 #	449 #	31.8 #
Zinc	<1.9 mg/kg	TM181		70.8 M	39.6 M	13.7 M	46.2 M	156 M	138 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		0					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AR10-1	AR10-2	AR11-1	AR11-2	AS10-1	AS10-2
			Depth (m)	0.50 - 0.50	1.70 - 1.70	0.50 - 0.50	1.80 - 1.80	0.40 - 0.40	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	04/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021
			SDG Ref	210105-10	210105-10	210105-10	210105-10	210105-10	210105-10
			Lab Sample No.(s)	23498287	23498291	23498295	23498299	23498303	23498307
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		99.4	97.3	102	98	96.9	96.4
Acenaphthene-d10 % recovery**	%	TM218		98.8	96.8	101	98.2	92.2	96.3
Phenanthrene-d10 % recovery**	%	TM218		98.6	95.9	99	99	91.8	95.9
Chrysene-d12 % recovery**	%	TM218		102	91.9	95.8	98.1	91.5	101
Perylene-d12 % recovery**	%	TM218		95.9	97.3	99.4	102	86.3	102
Naphthalene	<9 µg/kg	TM218		23.4 M	<9 M	13.1 M	23.8 M	20.7 M	18.3 M
Acenaphthylene	<12 µg/kg	TM218		25.1 M	<12 M	<12 M	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	<8 M	38.3 M	<8 M	15.5 M
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	<10 M	19.6 M	<10 M	18.2 M
Phenanthrene	<15 µg/kg	TM218		86.8 M	19.4 M	25.2 M	244 M	107 M	77.6 M
Anthracene	<16 µg/kg	TM218		19.6 M	<16 M	<16 M	55.9 M	18.7 M	22.6 M
Fluoranthene	<17 µg/kg	TM218		231 M	26.9 M	<17 M	645 M	205 M	78.9 M
Pyrene	<15 µg/kg	TM218		181 M	24.2 M	<15 M	644 M	164 M	61.3 M
Benz(a)anthracene	<14 µg/kg	TM218		139 M	21.8 M	<14 M	429 M	97.7 M	31.8 M
Chrysene	<10 µg/kg	TM218		142 M	27.4 M	<10 M	445 M	113 M	30 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		242 M	47.1 M	<15 M	773 M	151 M	34.7 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		75.3 M	<14 M	<14 M	245 M	55.8 M	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218		156 M	23.8 M	<15 M	522 M	86.5 M	24.7 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		165 M	27.1 M	<18 M	465 M	78.8 M	<18 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		28 M	<23 M	<23 M	35.6 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		161 M	<24 M	<24 M	453 M	82.6 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1670	218	<118	5040	1180	413

Validated

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AR10-1	AR10-2	AR11-1	AR11-2	AS10-1	AS10-2
			Depth (m)	0.50 - 0.50	1.70 - 1.70	0.50 - 0.50	1.80 - 1.80	0.40 - 0.40	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	04/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021
			SDG Ref	210105-10	210105-10	210105-10	210105-10	210105-10	210105-10
			Lab Sample No.(s)	23498287	23498291	23498295	23498299	23498303	23498307
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		101	103	76.3	102	99.2	126
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	45.2
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	10.8	<10	57.1
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	53.6
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	1030	<1000	1880	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	2750	<1000	5710	4850	1940
Aliphatics >C21-C35	<1000 µg/kg	TM414		7060	8510	14300	20700	62900	17900
Aliphatics >C35-C44	<1000 µg/kg	TM414		1440	<1000	<1000	4020	23300	14600
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		8750	12800	16300	32400	91300	34800
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		19000	15700	18700	63200	102000	44000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	35.7
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	<1000	2880	<1000	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		7500	1600	1190	25600	9560	6550
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2000	<1000	<1000	2300	<1000	1440
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		10200	<5000	<5000	30800	10800	9220
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		19000	12800	16300	63200	102000	44200
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	156
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	156

Validated

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AR10-1	AR10-2	AR11-1	AR11-2	AS10-1	AS10-2
			Depth (m)	0.50 - 0.50	1.70 - 1.70	0.50 - 0.50	1.80 - 1.80	0.40 - 0.40	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	04/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021
			SDG Ref	210105-10	210105-10	210105-10	210105-10	210105-10	210105-10
			Lab Sample No.(s)	23498287	23498291	23498295	23498299	23498303	23498307
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	116	110	81.6	104	106
Toluene-d8**	%	TM116		93.6	96.9	92.4	92.8	98.6	95
4-Bromofluorobenzene**	%	TM116		76.4	89.3	71.7	74.3	87.1	81.9
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Benzene	<9 µg/kg	TM116		<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
Toluene	<7 µg/kg	TM116		<7 M	<7 M	<7 M	<7 M	<7 M	<7 M
Ethylbenzene	<4 µg/kg	TM116		<4 M	<4 M	<4 M	<4 M	<4 M	<4 M
p/m-Xylene	<10 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
o-Xylene	<10 µg/kg	TM116		<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Naphthalene	<13 µg/kg	TM116		<13 M	<13 M	<13 M	15.3 M	<13 M	31.9 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sum of BTEX	<40 µg/kg	TM116		<40	<40	<40	<40	<40	<40

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AR10-1 0.50 - 0.50 SOLID 04/01/2021 00:00:00 05/01/2021 00:00:00 210105-10 23498287 TM048	06/01/2021	Agnieszka Chelmowska	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AR11-1 0.50 - 0.50 SOLID 04/01/2021 00:00:00 05/01/2021 00:00:00 210105-10 23498295 TM048	06/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AS10-1 0.40 - 0.40 SOLID 04/01/2021 00:00:00 05/01/2021 00:00:00 210105-10 23498303 TM048	06/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	AR10-1	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.50 - 0.50					
Sample Type	SOLID					
Date Sampled	04/01/2021 00:00:00					
Date Received	05/01/2021 00:00:00					
SDG	210105-10					
Original Sample	23498287					
Method Number	TM304					

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210105-10	**Client Reference:**	P18-669	**Report Number:**	582874
Location:	Llanwern	**Order Number:**		**Superseded Report:**	582714

Test Completion Dates

Lab Sample No(s)	23498287	23498291	23498295	23498299	23498303	23498307
Customer Sample Ref.	AR10-1	AR10-2	AR11-1	AR11-2	AS10-1	AS10-2
AGS Ref.						
Depth	0.50 - 0.50	1.70 - 1.70	0.50 - 0.50	1.80 - 1.80	0.40 - 0.40	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021
Asbestos ID in Solid Samples	06-Jan-2021		06-Jan-2021		06-Jan-2021	
Asbestos Quantification - Full	13-Jan-2021					
Cyanide Comp/Free/Total/Thiocyanate	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
EPH CWG GC (S)	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021
GRO by GC-FID (S)	08-Jan-2021	06-Jan-2021	06-Jan-2021	06-Jan-2021	11-Jan-2021	12-Jan-2021
Metals in solid samples by OES	11-Jan-2021	08-Jan-2021	08-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
PAH by GCMS	11-Jan-2021	06-Jan-2021	06-Jan-2021	06-Jan-2021	11-Jan-2021	11-Jan-2021
pH	06-Jan-2021	06-Jan-2021	06-Jan-2021	07-Jan-2021	06-Jan-2021	06-Jan-2021
Phenols by HPLC (S)	08-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	08-Jan-2021	08-Jan-2021
Sample description	06-Jan-2021	06-Jan-2021	05-Jan-2021	05-Jan-2021	06-Jan-2021	06-Jan-2021
Total Organic Carbon	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
TPH CWG GC (S)	08-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	11-Jan-2021	12-Jan-2021
VOC MS (S)	08-Jan-2021	06-Jan-2021	06-Jan-2021	06-Jan-2021	08-Jan-2021	08-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
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BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	21 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210106-76
Your Reference:	P18-669
Location:	Llanwern
Report No:	583887

This report has been revised and directly supersedes 583221 in its entirety.

We received 19 samples on Wednesday January 06, 2021 and 19 of these samples were scheduled for analysis which was completed on Thursday January 21, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23504862	AS9-1		0.50 - 0.50	05/01/2021
23504831	AS9-1		1.20 - 1.20	05/01/2021
23504840	AS11-1		0.50 - 0.50	04/01/2021
23504844	AS11-2		1.40 - 1.40	04/01/2021
23504866	AT9-1		0.60 - 0.60	05/01/2021
23504870	AT9-2		1.40 - 1.40	05/01/2021
23504779	AT9-3		2.60 - 2.60	05/01/2021
23504772	AT10-1		0.20 - 0.20	04/01/2021
23504835	AT10-2		1.50 - 1.50	04/01/2021
23504848	AT11-1		0.10 - 0.10	04/01/2021
23504854	AT11-2		1.90 - 1.90	04/01/2021
23504788	AU9-1		0.30 - 0.30	05/01/2021
23504795	AU9-2		1.30 - 1.30	05/01/2021
23504800	AU10-1		0.30 - 0.30	05/01/2021
23504804	AV10-1		0.50 - 0.50	05/01/2021
23504809	AV10-2		1.70 - 1.70	05/01/2021
23504815	AV10-3		2.40 - 2.40	05/01/2021
23504819	AW10-1		0.90 - 0.90	05/01/2021
23504824	AW10-2		1.60 - 1.60	05/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23504862			23504831			23504840			23504844		23504866			23504870			23504779		23504772	
Customer Sample Reference			AS9-1			AS9-1			AS11-1			AS11-2		AT9-1			AT9-2			AT9-3		AT10-1	
AGS Reference																							
Depth (m)			0.50 - 0.50			1.20 - 1.20			0.50 - 0.50			1.40 - 1.40		0.60 - 0.60			1.40 - 1.40			2.60 - 2.60		0.20 - 0.20	
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 19		X			X			X		X		X			X		X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10	X			X			X							X						X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19		X			X			X		X		X			X		X				
EPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X			X		X		X			X		X				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 19			X			X			X		X		X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 19		X			X			X		X		X			X		X				
PAH by GCMS	All	NDPs: 0 Tests: 19		X			X			X		X		X			X		X				
pH	All	NDPs: 0 Tests: 19		X			X			X		X		X			X		X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 19		X			X			X		X		X			X		X				
Sample description	All	NDPs: 0 Tests: 19		X			X			X		X		X			X		X				
Total Organic Carbon	All	NDPs: 0 Tests: 19		X			X			X		X		X			X		X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X			X		X		X			X		X				
VOC MS (S)	All	NDPs: 0 Tests: 19			X			X			X		X		X			X			X		

23504809	AV10-2		1.70 - 1.70	250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X	X															
23504804	AV10-1		0.50 - 0.50	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23504800	AU10-1		0.30 - 0.30	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23504795	AU9-2		1.30 - 1.30	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23504788	AU9-1		0.30 - 0.30	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23504854	AT11-2		1.90 - 1.90	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23504848	AT11-1		0.10 - 0.10	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23504835	AT10-2		1.50 - 1.50	60g VOC (ALE215)	S						X												X
				1kg TUB with Handle (ALE260)	S	X			X	X		X	X	X	X	X	X	X					
23504772	AT10-1		0.20 - 0.20	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23504809	23504815		23504819		23504824	
Customer Sample Reference			AV10-2	AV10-3		AW10-1		AW10-2	
AGS Reference									
Depth (m)			1.70 - 1.70	2.40 - 2.40		0.90 - 0.90		1.60 - 1.60	
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 19		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10				X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 19		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 19	X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 19		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 19		X			X		X	
pH	All	NDPs: 0 Tests: 19		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 19		X			X		X	
Sample description	All	NDPs: 0 Tests: 19		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 19		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 19		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 19	X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23504831	AS9-1	1.20 - 1.20	Dark Brown	Sandy Loam	Stones	None
23504862	AS9-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
23504840	AS11-1	0.50 - 0.50	Dark Brown	Clay Loam	None	None
23504844	AS11-2	1.40 - 1.40	Dark Brown	Loamy Sand	Stones	Vegetation
23504866	AT9-1	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	None
23504870	AT9-2	1.40 - 1.40	Dark Brown	Sandy Loam	Stones	Vegetation
23504779	AT9-3	2.60 - 2.60	Dark Brown	Sand	Stones	None
23504772	AT10-1	0.20 - 0.20	Dark Brown	Sandy Loam	Vegetation	Stones
23504835	AT10-2	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Vegetation
23504848	AT11-1	0.10 - 0.10	Dark Brown	Sandy Silt Loam	Stones	Vegetation
23504854	AT11-2	1.90 - 1.90	Dark Brown	N/A	Stones	None
23504788	AU9-1	0.30 - 0.30	Dark Brown	Sand	Stones	None
23504795	AU9-2	1.30 - 1.30	Dark Brown	Loamy Sand	Stones	None
23504800	AU10-1	0.30 - 0.30	Dark Brown	Clay Loam	Stones	Vegetation
23504804	AV10-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
23504809	AV10-2	1.70 - 1.70	Dark Brown	Loamy Sand	Stones	Vegetation
23504815	AV10-3	2.40 - 2.40	Dark Brown	Loamy Sand	Stones	None
23504819	AW10-1	0.90 - 0.90	Dark Brown	Loamy Sand	Stones	Vegetation
23504824	AW10-2	1.60 - 1.60	Dark Brown	Silt Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AS9-1	AS9-1	AS11-1	AS11-2	AT9-1	AT9-2
			Depth (m)	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	05/01/2021	04/01/2021	04/01/2021	05/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504862	23504831	23504840	23504844	23504866	23504870
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	9.9	19	14	15	8.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	16.2 M	22.7 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4 #	8.45 #	5.31 #	5.74 #	5.14 #	5.38 #
pH	1 pH Units	TM133		10.3 M	11.6 M	9.19 M	10.5 M	11.9 M	11.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	8.62 M	4.69 M	1 M	1.44 M
Arsenic	<0.6 mg/kg	TM181		9.11 M	10 M	19.5 M	10.6 M	13 M	282 M
Cadmium	<0.02 mg/kg	TM181		2.89 M	1.4 M	11.7 M	1.46 M	1.96 M	2.38 M
Chromium	<0.9 mg/kg	TM181		112 M	110 M	390 M	26 M	228 M	347 M
Copper	<1.4 mg/kg	TM181		26.6 M	22.9 M	48.5 M	20.5 M	31.3 M	160 M
Iron	<1000 mg/kg	TM181		177000 #	121000 #	316000 #	52800 #	241000 #	196000 #
Lead	<0.7 mg/kg	TM181		334 M	261 M	1290 M	205 M	234 M	319 M
Manganese	<0.13 mg/kg	TM181		10700 M	11600 M	23800 M	3420 M	17400 M	348000 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	2.05 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		25.8 M	15 M	38.4 M	20.6 M	30.3 M	237 M
Selenium	<1 mg/kg	TM181		<10 #	2.27 #	<10 #	1.03 #	<10 #	207 #
Vanadium	<0.2 mg/kg	TM181		268 #	297 #	1140 #	93.9 #	369 #	492 #
Zinc	<1.9 mg/kg	TM181		1540 M	1010 M	3720 M	1210 M	1020 M	990 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AT9-3	AT10-1	AT10-2	AT11-1	AT11-2	AU9-1
			Depth (m)	2.60 - 2.60	0.20 - 0.20	1.50 - 1.50	0.10 - 0.10	1.90 - 1.90	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504779	23504772	23504835	23504848	23504854	23504788
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	14	12	26	11	9.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0112	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.02 #	4.02 #	10 #	10.3 #	2.88	2.43 #
pH	1 pH Units	TM133		11.7 M	9.04 M	11.5 M	11 M	11.7	12.3 M
Cyanide, Total	<1 mg/kg	TM153		1.24 M	<1 M	<1 M	14.1 M	4.73	<1 M
Arsenic	<0.6 mg/kg	TM181		9.49 M	10.6 M	17.2 M	22.7 M	10.1	4.6 M
Cadmium	<0.02 mg/kg	TM181		1.75 M	1.93 M	<0.02 M	10.5 M	3.03	0.487 M
Chromium	<0.9 mg/kg	TM181		724 M	102 M	281 M	79.7 M	460	393 M
Copper	<1.4 mg/kg	TM181		42 M	22.2 M	19 M	50.5 M	31.5	16.7 M
Iron	<1000 mg/kg	TM181		211000 #	99800 #	181000 #	247000 #	245000	107000 #
Lead	<0.7 mg/kg	TM181		280 M	212 M	138 M	1050 M	342	79.1 M
Manganese	<0.13 mg/kg	TM181		42300 M	9630 M	26700 M	12400 M	34600	25300 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4	<0.14 M
Nickel	<0.2 mg/kg	TM181		23.9 M	17.3 M	17.9 M	39.3 M	24.8	9.14 M
Selenium	<1 mg/kg	TM181		21.9 #	2.98 #	7.18 #	<10 #	14	8.31 #
Vanadium	<0.2 mg/kg	TM181		1700 #	190 #	775 #	349 #	1330	738 #
Zinc	<1.9 mg/kg	TM181		614 M	1000 M	696 M	3790 M	1080	212 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AU9-2	AU10-1	AV10-1	AV10-2	AV10-3	AW10-1
			Depth (m)	1.30 - 1.30	0.30 - 0.30	0.50 - 0.50	1.70 - 1.70	2.40 - 2.40	0.90 - 0.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504795	23504800	23504804	23504809	23504815	23504819
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.9	21	28	17	18	18
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	79.3 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0138 M	<0.01 M	0.0122 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		1.17 #	6.71 #	7.21 #	4.98 #	3.07 #	10.7 #
pH	1 pH Units	TM133		12 M	8.19 M	8.95 M	8.77 M	12 M	10.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	7.76 M	5.66 M	24 M	1.78 M	40.9 M
Arsenic	<0.6 mg/kg	TM181		3.63 M	9.74 M	13.3 M	77.4 M	14.9 M	14.2 M
Cadmium	<0.02 mg/kg	TM181		1.15 M	2.74 M	4.47 M	8.79 M	3.32 M	9.62 M
Chromium	<0.9 mg/kg	TM181		856 M	231 M	137 M	186 M	450 M	298 M
Copper	<1.4 mg/kg	TM181		9.39 M	22.9 M	30.5 M	80 M	97 M	33.2 M
Iron	<1000 mg/kg	TM181		182000 #	138000 #	190000 #	220000 #	226000 #	213000 #
Lead	<0.7 mg/kg	TM181		56.9 M	370 M	809 M	1500 M	283 M	2000 M
Manganese	<0.13 mg/kg	TM181		42600 M	17200 M	15200 M	48200 M	39900 M	21700 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	0.399 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		9.48 M	18.2 M	23.9 M	83.7 M	40.5 M	22.7 M
Selenium	<1 mg/kg	TM181		11.4 #	4.42 #	1.62 #	54.7 #	16.8 #	11.6 #
Vanadium	<0.2 mg/kg	TM181		670 #	499 #	431 #	544 #	1690 #	466 #
Zinc	<1.9 mg/kg	TM181		360 M	1640 M	2650 M	4620 M	892 M	5000 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		
Additional Asbestos Components (Using TM048)		TM304					None #		
Analysts Comments		TM304					N/A		
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

		Customer Sample Ref.	AW10-2
		Depth (m)	1.60 - 1.60
		Sample Type	Soil/Solid (S)
		Date Sampled	05/01/2021
		Sample Time	.
		Date Received	06/01/2021
		SDG Ref	210106-76
		Lab Sample No.(s)	23504824
		AGS Reference	
Component	**LOD/Units**	**Method**	
Moisture Content Ratio (% of as received sample)	%	PM024	25
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M
Phenol	<0.01 mg/kg	TM062 (S)	0.0134 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	0.0536 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	0.067 M
Soil Organic Matter (SOM)	<0.35 %	TM132	10.8 #
pH	1 pH Units	TM133	10.4 M
Cyanide, Total	<1 mg/kg	TM153	14.7 M
Arsenic	<0.6 mg/kg	TM181	18.4 M
Cadmium	<0.02 mg/kg	TM181	5.14 M
Chromium	<0.9 mg/kg	TM181	<9 M
Copper	<1.4 mg/kg	TM181	32 M
Iron	<1000 mg/kg	TM181	293000 #
Lead	<0.7 mg/kg	TM181	1240 M
Manganese	<0.13 mg/kg	TM181	9840 M
Mercury	<0.14 mg/kg	TM181	1.7 M
Nickel	<0.2 mg/kg	TM181	18 M
Selenium	<1 mg/kg	TM181	<10 #
Vanadium	<0.2 mg/kg	TM181	94.1 #
Zinc	<1.9 mg/kg	TM181	2660 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AS9-1	AS9-1	AS11-1	AS11-2	AT9-1	AT9-2
			Depth (m)	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	05/01/2021	04/01/2021	04/01/2021	05/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504862	23504831	23504840	23504844	23504866	23504870
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.5	95.9	95.2	94.1	95.8	97.2
Acenaphthene-d10 % recovery**	%	TM218		100	99.9	95.3	97.5	95.4	97.6
Phenanthrene-d10 % recovery**	%	TM218		104	105	94.8	101	96.8	99.5
Chrysene-d12 % recovery**	%	TM218		101	104	90.7	95.7	97.8	104
Perylene-d12 % recovery**	%	TM218		84.9	89	73.8	79.3	87.8	97.7
Naphthalene	<9 µg/kg	TM218		37.9 M	39.3 M	73.8 M	31.5 M	29.1 M	39.5 M
Acenaphthylene	<12 µg/kg	TM218		36.1 M	24 M	<12 M	<12 M	<12 M	16.9 M
Acenaphthene	<8 µg/kg	TM218		11.2 M	22.6 M	10.9 M	9.33 M	<8 M	29.1 M
Fluorene	<10 µg/kg	TM218		13 M	19.4 M	20.9 M	16.7 M	<10 M	17.3 M
Phenanthrene	<15 µg/kg	TM218		181 M	254 M	142 M	106 M	121 M	269 M
Anthracene	<16 µg/kg	TM218		56.8 M	52.7 M	39.6 M	25.7 M	24.8 M	65.7 M
Fluoranthene	<17 µg/kg	TM218		548 M	631 M	237 M	138 M	245 M	519 M
Pyrene	<15 µg/kg	TM218		450 M	572 M	282 M	169 M	221 M	470 M
Benz(a)anthracene	<14 µg/kg	TM218		343 M	385 M	158 M	67.9 M	152 M	337 M
Chrysene	<10 µg/kg	TM218		404 M	436 M	175 M	92.9 M	184 M	397 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		551 M	603 M	235 M	91.7 M	265 M	556 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		166 M	184 M	79.3 M	28.9 M	81.5 M	197 M
Benzo(a)pyrene	<15 µg/kg	TM218		322 M	382 M	137 M	50.9 M	162 M	374 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		298 M	311 M	107 M	36.4 M	140 M	299 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		53.3 M	56.1 M	<23 M	<23 M	27.6 M	49.7 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		272 M	297 M	109 M	35.3 M	143 M	286 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		3740	4270	1810	901	1800	3920

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AT9-3	AT10-1	AT10-2	AT11-1	AT11-2	AU9-1
			Depth (m)	2.60 - 2.60	0.20 - 0.20	1.50 - 1.50	0.10 - 0.10	1.90 - 1.90	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504779	23504772	23504835	23504848	23504854	23504788
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.5	97.8	98.5	94.9	96.5	98.3
Acenaphthene-d10 % recovery**	%	TM218		97.3	99.4	99.2	95.4	96.2	99.3
Phenanthrene-d10 % recovery**	%	TM218		99.7	103	100	96.3	97.7	104
Chrysene-d12 % recovery**	%	TM218		91.5	98	98.8	94.4	97.8	105
Perylene-d12 % recovery**	%	TM218		73.9	82.5	88	81.2	89.8	97.4
Naphthalene	<9 µg/kg	TM218		39 M	92.9 M	21.9 M	48.4 M	36.4	21.9 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	73.3 M	<12 M	<12 M	<12	20 M
Acenaphthene	<8 µg/kg	TM218		10.3 M	30.5 M	<8 M	<8 M	13	<8 M
Fluorene	<10 µg/kg	TM218		<10 M	59.7 M	<10 M	<10 M	12.1	<10 M
Phenanthrene	<15 µg/kg	TM218		108 M	542 M	89.4 M	93.7 M	145	90.4 M
Anthracene	<16 µg/kg	TM218		24.6 M	164 M	21.7 M	25.3 M	27.6	17.9 M
Fluoranthene	<17 µg/kg	TM218		237 M	1020 M	218 M	210 M	297	210 M
Pyrene	<15 µg/kg	TM218		252 M	780 M	235 M	219 M	291	185 M
Benz(a)anthracene	<14 µg/kg	TM218		160 M	605 M	173 M	92.8 M	165	138 M
Chrysene	<10 µg/kg	TM218		188 M	642 M	199 M	96.1 M	200	176 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		282 M	850 M	307 M	132 M	279	263 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		95.5 M	282 M	92.3 M	38.7 M	89.4	83.8 M
Benzo(a)pyrene	<15 µg/kg	TM218		211 M	539 M	201 M	73.8 M	196	148 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		151 M	419 M	164 M	57.6 M	144	155 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	78.5 M	30 M	<23 M	<23	27.8 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		147 M	376 M	154 M	60.3 M	146	143 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1910	6550	1910	1150	2040	1680

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AU9-2	AU10-1	AV10-1	AV10-2	AV10-3	AW10-1
			Depth (m)	1.30 - 1.30	0.30 - 0.30	0.50 - 0.50	1.70 - 1.70	2.40 - 2.40	0.90 - 0.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504795	23504800	23504804	23504809	23504815	23504819
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.1	92.1	92.9	94	96.6	88.7
Acenaphthene-d10 % recovery**	%	TM218		96.8	93.3	94.9	97.4	97.3	91.9
Phenanthrene-d10 % recovery**	%	TM218		101	95.9	97.5	101	101	94.3
Chrysene-d12 % recovery**	%	TM218		103	86.5	92.9	100	105	78.7
Perylene-d12 % recovery**	%	TM218		91.9	72.3	77.9	88.1	99	59.8
Naphthalene	<9 µg/kg	TM218		<9 M	78.3 M	31.3 M	35.9 M	69.3 M	356 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	22.5 M	<12 M	<12 M	<12 M	25.1 M
Acenaphthene	<8 µg/kg	TM218		<8 M	10.4 M	11.1 M	22 M	114 M	69.9 M
Fluorene	<10 µg/kg	TM218		<10 M	29.4 M	21.2 M	23.2 M	71.7 M	250 M
Phenanthrene	<15 µg/kg	TM218		95.2 M	171 M	119 M	178 M	1170 M	1100 M
Anthracene	<16 µg/kg	TM218		<16 M	46.7 M	34.9 M	54.1 M	178 M	408 M
Fluoranthene	<17 µg/kg	TM218		232 M	266 M	211 M	279 M	2100 M	1890 M
Pyrene	<15 µg/kg	TM218		184 M	226 M	222 M	254 M	1970 M	2160 M
Benz(a)anthracene	<14 µg/kg	TM218		119 M	124 M	129 M	142 M	1230 M	691 M
Chrysene	<10 µg/kg	TM218		160 M	140 M	154 M	150 M	1390 M	645 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		230 M	162 M	211 M	191 M	1850 M	1020 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		63.2 M	53.8 M	62.3 M	63.9 M	712 M	253 M
Benzo(a)pyrene	<15 µg/kg	TM218		118 M	92.9 M	132 M	130 M	1570 M	496 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		116 M	70.7 M	99.6 M	89.2 M	1050 M	318 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	<23 M	<23 M	158 M	69 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		110 M	66.4 M	101 M	80.6 M	1050 M	333 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1430	1560	1540	1690	14700	10100

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	AW10-2
Depth (m)	1.60 - 1.60
Sample Type	Soil/Solid (S)
Date Sampled	05/01/2021
Sample Time	.
Date Received	06/01/2021
SDG Ref	210106-76
Lab Sample No.(s)	23504824
AGS Reference	

Component	LOD/Units	Method	
Naphthalene-d8 % recovery**	%	TM218	84.6
Acenaphthene-d10 % recovery**	%	TM218	83.9
Phenanthrene-d10 % recovery**	%	TM218	75.9
Chrysene-d12 % recovery**	%	TM218	41.8
Perylene-d12 % recovery**	%	TM218	25.6
Naphthalene	<9 µg/kg	TM218	1780 M
Acenaphthylene	<12 µg/kg	TM218	47.9 M
Acenaphthene	<8 µg/kg	TM218	152 M
Fluorene	<10 µg/kg	TM218	410 M
Phenanthrene	<15 µg/kg	TM218	837 M
Anthracene	<16 µg/kg	TM218	246 M
Fluoranthene	<17 µg/kg	TM218	717 M
Pyrene	<15 µg/kg	TM218	961 M
Benz(a)anthracene	<14 µg/kg	TM218	159 M
Chrysene	<10 µg/kg	TM218	152 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	215 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	51.7 M
Benzo(a)pyrene	<15 µg/kg	TM218	93.3 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	63.6 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	70.1 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	5960

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AS9-1	AS9-1	AS11-1	AS11-2	AT9-1	AT9-2
			Depth (m)	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	05/01/2021	04/01/2021	04/01/2021	05/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504862	23504831	23504840	23504844	23504866	23504870
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		96.8	97.5	99.5	100	116	107
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	19.7	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	30.2	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	32.5	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1060	10600	2240	10700	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		7820	30300	15600	24500	5790	5890
Aliphatics >C21-C35	<1000 µg/kg	TM414		34600	69200	44700	79500	47300	38400
Aliphatics >C35-C44	<1000 µg/kg	TM414		7100	16500	14000	25700	13200	7700
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		50500	127000	76900	141000	66700	52200
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		68900	147000	97000	162000	79500	65400
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	20.9	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	2120	<1000	1020	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1530	2320	2640	1020	<1000	1300
Aromatics > EC21-EC35	<1000 µg/kg	TM414		14500	14300	15600	17600	10300	10600
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1700	1330	<1000	1500	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		18300	20100	20200	21300	12800	13200
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		68900	147000	97000	162000	79500	65400
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	82.4	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	82.4	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AT9-3	AT10-1	AT10-2	AT11-1	AT11-2	AU9-1
			Depth (m)	2.60 - 2.60	0.20 - 0.20	1.50 - 1.50	0.10 - 0.10	1.90 - 1.90	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504779	23504772	23504835	23504848	23504854	23504788
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		110	95.5	108	102	123	115
Aliphatics >C5-C6	<10 µg/kg	TM089		33.1	<10	<10	<10	32.5	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		73	<10	<10	<10	40.3	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		78.7	<10	<10	<10	491	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	4220	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	3710	1510	16400	3520	7090
Aliphatics >C21-C35	<1000 µg/kg	TM414		8920	25900	22300	46100	20300	51000
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	5230	10800	8220	3260	6090
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		10200	35400	34700	75100	27600	64700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		20600	60500	43300	89900	36600	78100
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		52.4	<10	<10	<10	327	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1210	2950	<1000	1940	<1000	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		8200	18700	6280	10800	6610	11300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	3130	1100	1020	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1110	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		10500	25000	8570	14800	9020	13300
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		20900	60500	43300	89900	37500	78100
Total Aliphatics >C5-C10	<50 µg/kg	TM089		185	<50	<50	<50	563	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		52.4	<50	<50	<50	327	<50
GRO >C5-C10	<20 µg/kg	TM089		237	<20	<20	<20	890	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AU9-2	AU10-1	AV10-1	AV10-2	AV10-3	AW10-1
			Depth (m)	1.30 - 1.30	0.30 - 0.30	0.50 - 0.50	1.70 - 1.70	2.40 - 2.40	0.90 - 0.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504795	23504800	23504804	23504809	23504815	23504819
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		112	122	87.5	99	105	97.1
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	21.6	<10	<10	31.7	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	47	<10	<10	53.7	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	199	<10	<10	163	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	1420	<1000	<1000	2390	2280
Aliphatics >C16-C21	<1000 µg/kg	TM414		10400	6760	5170	1290	8530	46300
Aliphatics >C21-C35	<1000 µg/kg	TM414		104000	29800	24200	8380	46700	107000
Aliphatics >C35-C44	<1000 µg/kg	TM414		9350	5080	3860	<1000	16300	7270
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		124000	43300	33600	9740	74600	163000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		143000	75400	54600	14200	143000	221000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	133	<10	<10	109	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	4100	1670	<1000	12300	11400
Aromatics > EC21-EC35	<1000 µg/kg	TM414		17400	23200	17700	2980	47700	40500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	3680	1520	<1000	7640	5940
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1210	3150
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		19400	32100	21000	<5000	68100	58700
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		143000	75800	54600	<10000	143000	221000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	268	<50	<50	249	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	133	<50	<50	109	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	401	<20	<20	357	<20

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	AW10-2
Depth (m)	1.60 - 1.60
Sample Type	Soil/Solid (S)
Date Sampled	05/01/2021
Sample Time	.
Date Received	06/01/2021
SDG Ref	210106-76
Lab Sample No.(s)	23504824
AGS Reference	

Component	LOD/Units	Method	
GRO Surrogate % recovery**	%	TM089	70.4
Aliphatics >C5-C6	<10 µg/kg	TM089	18.8
Aliphatics >C6-C8	<10 µg/kg	TM089	25.5
Aliphatics >C8-C10	<10 µg/kg	TM089	29.5
Aliphatics >C10-C12	<1000 µg/kg	TM414	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414	1910
Aliphatics >C16-C21	<1000 µg/kg	TM414	20000
Aliphatics >C21-C35	<1000 µg/kg	TM414	44500
Aliphatics >C35-C44	<1000 µg/kg	TM414	3680
Total Aliphatics >C10-C44	<5000 µg/kg	TM414	70100
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414	97200
Aromatics >EC5-EC7	<10 µg/kg	TM089	13.4
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	20.1
Aromatics > EC10-EC12	<1000 µg/kg	TM414	2300
Aromatics > EC12-EC16	<1000 µg/kg	TM414	4270
Aromatics > EC16-EC21	<1000 µg/kg	TM414	8890
Aromatics > EC21-EC35	<1000 µg/kg	TM414	10100
Aromatics >EC35-EC44	<1000 µg/kg	TM414	1500
Aromatics > EC40-EC44	<1000 µg/kg	TM414	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414	27100
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414	97300
Total Aliphatics >C5-C10	<50 µg/kg	TM089	73.7
Total Aromatics >EC5-EC10	<50 µg/kg	TM089	<50
GRO >C5-C10	<20 µg/kg	TM089	73.7

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AS9-1	AS9-1	AS11-1	AS11-2	AT9-1	AT9-2
			Depth (m)	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	05/01/2021	04/01/2021	04/01/2021	05/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504862	23504831	23504840	23504844	23504866	23504870
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	108	102	108	106	109
Toluene-d8**	%	TM116		96.1	93.5	96.1	96.4	96.2	96.3
4-Bromofluorobenzene**	%	TM116		101	102	98.9	99.8	104	104
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AT9-3	AT10-1	AT10-2	AT11-1	AT11-2	AU9-1
			Depth (m)	2.60 - 2.60	0.20 - 0.20	1.50 - 1.50	0.10 - 0.10	1.90 - 1.90	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	04/01/2021	04/01/2021	04/01/2021	04/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504779	23504772	23504835	23504848	23504854	23504788
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	106	110	105	103	103
Toluene-d8**	%	TM116		96.2	96.7	95.2	96.5	96.3	95.5
4-Bromofluorobenzene**	%	TM116		103	101	104	103	105	102
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AU9-2	AU10-1	AV10-1	AV10-2	AV10-3	AW10-1
			Depth (m)	1.30 - 1.30	0.30 - 0.30	0.50 - 0.50	1.70 - 1.70	2.40 - 2.40	0.90 - 0.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			SDG Ref	210106-76	210106-76	210106-76	210106-76	210106-76	210106-76
			Lab Sample No.(s)	23504795	23504800	23504804	23504809	23504815	23504819
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	108	108	108	105	105
Toluene-d8**	%	TM116		96.1	95.2	95.6	96.4	96.9	96.5
4-Bromofluorobenzene**	%	TM116		103	99.8	101	105	103	102
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	AW10-2
Depth (m)	1.60 - 1.60
Sample Type	Soil/Solid (S)
Date Sampled	05/01/2021
Sample Time	.
Date Received	06/01/2021
SDG Ref	210106-76
Lab Sample No.(s)	23504824
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM116	97.5
Toluene-d8**	%	TM116	93.9
4-Bromofluorobenzene**	%	TM116	88.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M
Benzene	<9 µg/kg	TM116	<180 M
Toluene	<7 µg/kg	TM116	<140 M
Ethylbenzene	<4 µg/kg	TM116	<80 M
p/m-Xylene	<10 µg/kg	TM116	<200 #
o-Xylene	<10 µg/kg	TM116	<200 M
Naphthalene	<13 µg/kg	TM116	549 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.4
Sum of BTEX	<40 µg/kg	TM116	<800

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AS9-1 0.50 - 0.50 SOLID 05/01/2021 00:00:00 06/01/2021 05:00:00 210106-76 23504862 TM048	13/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AS9-1 1.20 - 1.20 SOLID 05/01/2021 00:00:00 06/01/2021 05:00:00 210106-76 23504831 TM048	13/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AS11-1 0.50 - 0.50 SOLID 04/01/2021 00:00:00 06/01/2021 05:00:00 210106-76 23504840 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AT9-2 1.40 - 1.40 SOLID 05/01/2021 00:00:00 06/01/2021 05:00:00 210106-76 23504870 TM048	12/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AT10-1 0.20 - 0.20 SOLID 04/01/2021 00:00:00 06/01/2021 05:00:00 210106-76 23504772 TM048	12/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AT11-1 0.10 - 0.10 SOLID 04/01/2021 00:00:00 06/01/2021 05:00:00 210106-76 23504848 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AU9-1 0.30 - 0.30 SOLID 05/01/2021 00:00:00 06/01/2021 05:00:00 210106-76 23504788 TM048	12/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AU10-1 0.30 - 0.30 SOLID 05/01/2021 00:00:00 06/01/2021 05:00:00 210106-76 23504800 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AV10-2 1.70 - 1.70 SOLID 05/01/2021 00:00:00 06/01/2021 05:00:00 210106-76 23504809 TM048	13/01/21	Andrzej Ferfecki	soil containing material typical of asbestos insulation board	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AW10-1 0.90 - 0.90 SOLID 05/01/2021 00:00:00 06/01/2021 05:00:00 210106-76 23504819 TM048	13/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	AV10-2	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	1.70 - 1.70					
Sample Type	SOLID					
Date Sampled	05/01/2021 00:00:00					
Date Receieved	06/01/2021 05:00:00					
SDG	210106-76					
Original Sample	23504809					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210106-76	**Client Reference:**	P18-669	**Report Number:**	583887
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583221

Test Completion Dates

Lab Sample No(s)	23504831	23504862	23504840	23504844	23504866	23504870	23504779	23504772	23504835	23504848
Customer Sample Ref.	AS9-1	AS9-1	AS11-1	AS11-2	AT9-1	AT9-2	AT9-3	AT10-1	AT10-2	AT11-1
AGS Ref.										
Depth	1.20 - 1.20	0.50 - 0.50	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.40 - 1.40	2.60 - 2.60	0.20 - 0.20	1.50 - 1.50	0.10 - 0.10
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	08-Jan-2021	12-Jan-2021	12-Jan-2021	08-Jan-2021	12-Jan-2021	08-Jan-2021	12-Jan-2021	08-Jan-2021	08-Jan-2021	12-Jan-2021
Asbestos ID in Solid Samples	13-Jan-2021	13-Jan-2021	13-Jan-2021			12-Jan-2021		12-Jan-2021		13-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
EPH CWG GC (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
GRO by GC-FID (S)	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021
Metals in solid samples by OES	14-Jan-2021	14-Jan-2021	14-Jan-2021	11-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	11-Jan-2021	14-Jan-2021
PAH by GCMS	12-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
pH	11-Jan-2021	11-Jan-2021	11-Jan-2021	07-Jan-2021	07-Jan-2021	11-Jan-2021	07-Jan-2021	11-Jan-2021	07-Jan-2021	11-Jan-2021
Phenols by HPLC (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	08-Jan-2021	11-Jan-2021	08-Jan-2021	11-Jan-2021	08-Jan-2021	08-Jan-2021	11-Jan-2021
Sample description	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021
Total Organic Carbon	12-Jan-2021	12-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021
TPH CWG GC (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
VOC MS (S)	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	11-Jan-2021

Lab Sample No(s)	23504854	23504788	23504795	23504800	23504804	23504809	23504815	23504819	23504824
Customer Sample Ref.	AT11-2	AU9-1	AU9-2	AU10-1	AV10-1	AV10-2	AV10-3	AW10-1	AW10-2
AGS Ref.									
Depth	1.90 - 1.90	0.30 - 0.30	1.30 - 1.30	0.30 - 0.30	0.50 - 0.50	1.70 - 1.70	2.40 - 2.40	0.90 - 0.90	1.60 - 1.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	08-Jan-2021	12-Jan-2021
Asbestos ID in Solid Samples		12-Jan-2021		13-Jan-2021		13-Jan-2021		13-Jan-2021	
Asbestos Quantification - Full						21-Jan-2021			
Cyanide Comp/Free/Total/Thiocyanate	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021
EPH CWG GC (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	13-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
GRO by GC-FID (S)	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021
Metals in solid samples by OES	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021
PAH by GCMS	11-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	11-Jan-2021	14-Jan-2021	14-Jan-2021
pH	07-Jan-2021	11-Jan-2021	07-Jan-2021	11-Jan-2021	07-Jan-2021	11-Jan-2021	07-Jan-2021	11-Jan-2021	07-Jan-2021
Phenols by HPLC (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	08-Jan-2021	11-Jan-2021
Sample description	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021	07-Jan-2021
Total Organic Carbon	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
TPH CWG GC (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	13-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
VOC MS (S)	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	15 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210108-19
Your Reference:	P18-669
Location:	Llanwern
Report No:	583284

We received 15 samples on Thursday January 07, 2021 and 15 of these samples were scheduled for analysis which was completed on Friday January 15, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210108-19	**Client Reference:**	P18-669	**Report Number:**	583284
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23512069	AN10-1		0.90 - 0.90	06/01/2021
23512073	AN10-2		1.80 - 1.80	06/01/2021
23512103	AN11-1		0.40 - 0.40	06/01/2021
23512111	AN11-2		2.10 - 2.10	06/01/2021
23512115	AN12-1		0.50 - 0.50	06/01/2021
23512040	AN12-2		1.60 - 1.60	06/01/2021
23512046	AN12-3		2.30 - 2.30	06/01/2021
23512055	AP10-1		0.40 - 0.40	06/01/2021
23512065	AP10-2		2.20 - 2.20	06/01/2021
23512094	AQ10-1		0.20 - 0.20	06/01/2021
23512099	AQ10-2		1.80 - 1.80	07/01/2021
23512035	AV11-1		0.40 - 0.40	05/01/2021
23512079	AV11-2		1.75 - 1.75	05/01/2021
23512083	AW11-1		0.40 - 0.40	05/01/2021
23512087	AW11-2		1.75 - 1.75	05/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-19	**Client Reference:**	P18-669	**Report Number:**	583284
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23512069		23512073			23512103		23512111		23512115			23512040		23512046		23512055	
Customer Sample Reference			AN10-1		AN10-2			AN11-1		AN11-2		AN12-1			AN12-2		AN12-3		AP10-1	
AGS Reference																				
Depth (m)			0.90 - 0.90		1.80 - 1.80			0.40 - 0.40		2.10 - 2.10		0.50 - 0.50			1.60 - 1.60		2.30 - 2.30		0.40 - 0.40	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 15	X			X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8			X			X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 15	X			X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 15	X			X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 15		X			X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 15	X			X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 15	X			X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 15	X			X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 15	X			X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 15	X			X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 15	X			X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 15	X			X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 15		X			X			X		X			X		X			X	

23512087	AW11-2		1.75 - 1.75	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23512083	AW11-1		0.40 - 0.40	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23512079	AV11-2		1.75 - 1.75	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23512035	AV11-1		0.40 - 0.40	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23512099	AQ10-2		1.80 - 1.80	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
23512094	AQ10-1		0.20 - 0.20	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23512065	AP10-2		2.20 - 2.20	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23512055	AP10-1		0.40 - 0.40	60g VOC (ALE215)	S					X								X

CERTIFICATE OF ANALYSIS

SDG:	210108-19	**Client Reference:**	P18-669	**Report Number:**	583284
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23512069	AN10-1	0.90 - 0.90	Dark Brown	Sand	Stones	Concrete/Aggregate
23512073	AN10-2	1.80 - 1.80	Dark Brown	Sand	Stones	Concrete/Aggregate
23512103	AN11-1	0.40 - 0.40	Grey	Loamy Sand	Stones	None
23512111	AN11-2	2.10 - 2.10	Dark Brown	Sand	Stones	Brick
23512115	AN12-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
23512040	AN12-2	1.60 - 1.60	Dark Brown	Sand	Stones	Brick
23512046	AN12-3	2.30 - 2.30	Dark Brown	Sand	Stones	Brick
23512055	AP10-1	0.40 - 0.40	Dark Brown	Sandy Loam	Stones	None
23512065	AP10-2	2.20 - 2.20	Dark Brown	Loamy Sand	Stones	None
23512094	AQ10-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23512099	AQ10-2	1.80 - 1.80	Dark Brown	Sandy Loam	Stones	Crushed Brick
23512035	AV11-1	0.40 - 0.40	Dark Brown	Loamy Sand	Stones	Vegetation
23512079	AV11-2	1.75 - 1.75	Dark Brown	N/A	Stones	None
23512083	AW11-1	0.40 - 0.40	Dark Brown	Sandy Silt Loam	Stones	Brick
23512087	AW11-2	1.75 - 1.75	Dark Brown	Sandy Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-19 **Client Reference:** P18-669 **Report Number:** 583284
Location: Llanwern **Order Number:** **Superseded Report:**

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN10-1	AN10-2	AN11-1	AN11-2	AN12-1	AN12-2
			Depth (m)	0.90 - 0.90	1.80 - 1.80	0.40 - 0.40	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			SDG Ref	210108-19	210108-19	210108-19	210108-19	210108-19	210108-19
			Lab Sample No.(s)	23512069	23512073	23512103	23512111	23512115	23512040
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		17	11	17	8.6	15	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	13.6 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.17 #	1.28 #	35.9 #	1.16 #	8.59 #	5.47 #
pH	1 pH Units	TM133		11 M	10.9 M	10.7 M	11.7 M	9.31 M	10.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	2.99 M
Arsenic	<0.6 mg/kg	TM181		9.76 M	9.18 M	12.3 M	1.71 M	9.43 M	11.2 M
Cadmium	<0.02 mg/kg	TM181		2.11 M	0.221 M	0.47 M	0.0514 M	1.05 M	0.269 M
Chromium	<0.9 mg/kg	TM181		51.4 M	11.1 M	122 M	70.3 M	128 M	33.5 M
Copper	<1.4 mg/kg	TM181		27.4 M	12.9 M	31.5 M	2.24 M	21.5 M	10.3 M
Iron	<1000 mg/kg	TM181		172000 #	62600 #	63600 #	31300 #	71000 #	20600 #
Lead	<0.7 mg/kg	TM181		131 M	69.8 M	98.4 M	2.45 M	50.9 M	18.8 M
Manganese	<0.13 mg/kg	TM181		5650 M	3100 M	12100 M	9960 M	9770 M	931 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		27.3 M	14.4 M	19.6 M	1.65 M	18.1 M	23.9 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	4.93 #	4.75 #	3.93 #	<1 #
Vanadium	<0.2 mg/kg	TM181		81.8 #	56.1 #	241 #	205 #	185 #	46 #
Zinc	<1.9 mg/kg	TM181		143 M	66.8 M	280 M	21.6 M	209 M	171 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-19	**Client Reference:**	P18-669	**Report Number:**	583284
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN12-3	AP10-1	AP10-2	AQ10-1	AQ10-2	AV11-1
			Depth (m)	2.30 - 2.30	0.40 - 0.40	2.20 - 2.20	0.20 - 0.20	1.80 - 1.80	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	07/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			SDG Ref	210108-19	210108-19	210108-19	210108-19	210108-19	210108-19
			Lab Sample No.(s)	23512046	23512055	23512065	23512094	23512099	23512035
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	16	18	12	13	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	43.6 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0119 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		7.86 #	4.53 #	2.1 #	2.31 #	1.98 #	8.03 #
pH	1 pH Units	TM133		10.6 M	10.2 M	9.78 M	8.95 M	10.6 M	9.87 M
Cyanide, Total	<1 mg/kg	TM153		1.48 M	<1 M	<1 M	<1 M	<1 M	9.84 M
Arsenic	<0.6 mg/kg	TM181		6.64 M	11.3 M	7.72 M	5.43 M	6.44 M	11 M
Cadmium	<0.02 mg/kg	TM181		0.732 M	0.679 M	0.975 M	0.309 M	0.323 M	6.55 M
Chromium	<0.9 mg/kg	TM181		33.8 M	50 M	36 M	86.8 M	13.8 M	271 M
Copper	<1.4 mg/kg	TM181		21.7 M	23 M	21.5 M	14.3 M	17.9 M	32.3 M
Iron	<1000 mg/kg	TM181		30000 #	48800 #	28600 #	56000 #	87600 #	225000 #
Lead	<0.7 mg/kg	TM181		29.8 M	62.9 M	34.9 M	44.7 M	27.6 M	722 M
Manganese	<0.13 mg/kg	TM181		3210 M	4310 M	1280 M	7580 M	2790 M	28000 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		10.9 M	21.7 M	30.8 M	14.6 M	15.2 M	25.6 M
Selenium	<1 mg/kg	TM181		1.98 #	1.64 #	<1 #	3.15 #	<1 #	11.3 #
Vanadium	<0.2 mg/kg	TM181		101 #	88.1 #	39.3 #	147 #	44.1 #	993 #
Zinc	<1.9 mg/kg	TM181		217 M	398 M	106 M	139 M	126 M	2900 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-19	**Client Reference:**	P18-669	**Report Number:**	583284
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AV11-2	AW11-1	AW11-2			
			Depth (m)	1.75 - 1.75	0.40 - 0.40	1.75 - 1.75			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	05/01/2021	05/01/2021	05/01/2021			
			Sample Time	.	.	.			
			Date Received	07/01/2021	07/01/2021	07/01/2021			
			SDG Ref	210108-19	210108-19	210108-19			
			Lab Sample No.(s)	23512079	23512083	23512087			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	12	18			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	0.0122 M			
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M			
Soil Organic Matter (SOM)	<0.35 %	TM132		3.81	4.9 #	8.96 #			
pH	1 pH Units	TM133		11.5	11.4 M	11.4 M			
Cyanide, Total	<1 mg/kg	TM153		4.26	3.98 M	4.98 M			
Arsenic	<0.6 mg/kg	TM181		6.24	8.97 M	17.4 M			
Cadmium	<0.02 mg/kg	TM181		1.96	4.59 M	7.51 M			
Chromium	<0.9 mg/kg	TM181		289	328 M	182 M			
Copper	<1.4 mg/kg	TM181		19.6	24.3 M	38.4 M			
Iron	<1000 mg/kg	TM181		126000	180000 #	291000 #			
Lead	<0.7 mg/kg	TM181		285	626 M	901 M			
Manganese	<0.13 mg/kg	TM181		19900	28400 M	21000 M			
Mercury	<0.14 mg/kg	TM181		<1.4	<1.4 M	<1.4 M			
Nickel	<0.2 mg/kg	TM181		11.1	19 M	38.2 M			
Selenium	<1 mg/kg	TM181		10.8	14.6 #	<10 #			
Vanadium	<0.2 mg/kg	TM181		441	568 #	652 #			
Zinc	<1.9 mg/kg	TM181		886	2050 M	3090 M			

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-19 **Client Reference:** P18-669 **Report Number:** 583284
Location: Llanwern **Order Number:** **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN10-1	AN10-2	AN11-1	AN11-2	AN12-1	AN12-2
			Depth (m)	0.90 - 0.90	1.80 - 1.80	0.40 - 0.40	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			SDG Ref	210108-19	210108-19	210108-19	210108-19	210108-19	210108-19
			Lab Sample No.(s)	23512069	23512073	23512103	23512111	23512115	23512040
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.7	85.8	88.1	87.2	85.6	85.1
Acenaphthene-d10 % recovery**	%	TM218		82.9	81.3	84.3	82.7	83.6	83.8
Phenanthrene-d10 % recovery**	%	TM218		81.8	80	81.7	82.4	84.4	84.6
Chrysene-d12 % recovery**	%	TM218		79.9	80.2	82.7	84	85.3	86.8
Perylene-d12 % recovery**	%	TM218		78.7	80.7	80.2	82.5	82.5	83.8
Naphthalene	<9 µg/kg	TM218		<45 M	<45 M	126 M	91.4 M	192 M	197 M
Acenaphthylene	<12 µg/kg	TM218		<60 M	<60 M	<60 M	<60 M	80.4 M	80.7 M
Acenaphthene	<8 µg/kg	TM218		<40 M	<40 M	87.1 M	<40 M	30.5 M	52.4 M
Fluorene	<10 µg/kg	TM218		<50 M	<50 M	84.4 M	<50 M	49.9 M	85 M
Phenanthrene	<15 µg/kg	TM218		<75 M	<75 M	756 M	579 M	327 M	1170 M
Anthracene	<16 µg/kg	TM218		<80 M	<80 M	263 M	181 M	104 M	299 M
Fluoranthene	<17 µg/kg	TM218		113 M	113 M	1630 M	1510 M	656 M	6770 M
Pyrene	<15 µg/kg	TM218		100 M	106 M	1480 M	1510 M	541 M	5430 M
Benz(a)anthracene	<14 µg/kg	TM218		<70 M	97.5 M	1610 M	1190 M	409 M	4770 M
Chrysene	<10 µg/kg	TM218		87.6 M	104 M	1590 M	1230 M	430 M	4400 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		145 M	201 M	2920 M	2060 M	731 M	5670 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<70 M	<70 M	877 M	635 M	222 M	1810 M
Benzo(a)pyrene	<15 µg/kg	TM218		<75 M	119 M	1720 M	1250 M	412 M	2840 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<90 M	136 M	1430 M	1010 M	368 M	2210 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<115 M	<115 M	428 M	254 M	98.4 M	678 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<120 M	<120 M	1390 M	997 M	362 M	1890 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		<590	876	16400	12500	5010	38400

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-19 **Client Reference:** P18-669 **Report Number:** 583284
Location: Llanwern **Order Number:** **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN12-3	AP10-1	AP10-2	AQ10-1	AQ10-2	AV11-1
			Depth (m)	2.30 - 2.30	0.40 - 0.40	2.20 - 2.20	0.20 - 0.20	1.80 - 1.80	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	07/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			SDG Ref	210108-19	210108-19	210108-19	210108-19	210108-19	210108-19
			Lab Sample No.(s)	23512046	23512055	23512065	23512094	23512099	23512035
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.2	88.8	87.5	87.9	89.3	89.4
Acenaphthene-d10 % recovery**	%	TM218		85.2	86.8	85.2	85.8	85.7	84.7
Phenanthrene-d10 % recovery**	%	TM218		84.8	87.6	84.6	85.8	86.2	79.8
Chrysene-d12 % recovery**	%	TM218		87.2	86.9	85.9	83.4	83	62.1
Perylene-d12 % recovery**	%	TM218		84.3	86.4	85.4	79.9	83.6	49
Naphthalene	<9 µg/kg	TM218		169 M	28.4 M	23.4 M	21.7 M	<45 M	94.2 M
Acenaphthylene	<12 µg/kg	TM218		72.6 M	<12 M	18.4 M	<12 M	<60 M	80.3 M
Acenaphthene	<8 µg/kg	TM218		136 M	<8 M	15.5 M	<8 M	<40 M	16.4 M
Fluorene	<10 µg/kg	TM218		81.1 M	<10 M	21.2 M	<10 M	<50 M	28.6 M
Phenanthrene	<15 µg/kg	TM218		4910 M	85.2 M	84.9 M	62.9 M	<75 M	219 M
Anthracene	<16 µg/kg	TM218		945 M	24.7 M	51 M	<16 M	<80 M	74.5 M
Fluoranthene	<17 µg/kg	TM218		11800 M	137 M	208 M	117 M	<85 M	601 M
Pyrene	<15 µg/kg	TM218		8250 M	124 M	161 M	103 M	<75 M	607 M
Benz(a)anthracene	<14 µg/kg	TM218		5240 M	71.6 M	145 M	81.2 M	<70 M	392 M
Chrysene	<10 µg/kg	TM218		5080 M	87.5 M	134 M	106 M	<50 M	466 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		5670 M	120 M	152 M	163 M	<75 M	715 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1880 M	36.8 M	57.6 M	51.2 M	<70 M	226 M
Benzo(a)pyrene	<15 µg/kg	TM218		2970 M	62.5 M	94 M	89.8 M	<75 M	375 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2070 M	54.1 M	59.9 M	84.8 M	<90 M	328 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		626 M	<23 M	<23 M	<23 M	<115 M	56.3 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1800 M	53.6 M	53.1 M	88.4 M	<120 M	332 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		51700	884	1280	969	<590	4610

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-19	**Client Reference:**	P18-669	**Report Number:**	583284
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AV11-2	AW11-1	AW11-2			
			Depth (m)	1.75 - 1.75	0.40 - 0.40	1.75 - 1.75			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	05/01/2021	05/01/2021	05/01/2021			
			Sample Time	.	.	.			
			Date Received	07/01/2021	07/01/2021	07/01/2021			
			SDG Ref	210108-19	210108-19	210108-19			
			Lab Sample No.(s)	23512079	23512083	23512087			
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.2	85.7	87			
Acenaphthene-d10 % recovery**	%	TM218		89.8	83.7	84.5			
Phenanthrene-d10 % recovery**	%	TM218		87.2	83.3	82.8			
Chrysene-d12 % recovery**	%	TM218		76.3	78.2	75.8			
Perylene-d12 % recovery**	%	TM218		62	71	66.2			
Naphthalene	<9 µg/kg	TM218		225 #	207 M	123 M			
Acenaphthylene	<12 µg/kg	TM218		42.9 #	53.5 M	37.4 M			
Acenaphthene	<8 µg/kg	TM218		22.8 #	29.1 M	36.5 M			
Fluorene	<10 µg/kg	TM218		36.8 #	45.8 M	62.8 M			
Phenanthrene	<15 µg/kg	TM218		244 #	402 M	560 M			
Anthracene	<16 µg/kg	TM218		71.1 #	117 M	137 M			
Fluoranthene	<17 µg/kg	TM218		422 #	732 M	796 M			
Pyrene	<15 µg/kg	TM218		430 #	718 M	669 M			
Benz(a)anthracene	<14 µg/kg	TM218		240 #	395 M	418 M			
Chrysene	<10 µg/kg	TM218		308 #	503 M	470 M			
Benzo(b)fluoranthene	<15 µg/kg	TM218		414 #	710 M	583 M			
Benzo(k)fluoranthene	<14 µg/kg	TM218		143 #	208 M	193 M			
Benzo(a)pyrene	<15 µg/kg	TM218		234 #	350 M	326 M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		202 #	289 M	243 M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		36.9 #	71.3 M	50.1 M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218		190 #	290 M	208 M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		3260	5120	4910			

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-19 **Client Reference:** P18-669 **Report Number:** 583284
Location: Llanwern **Order Number:** **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN10-1	AN10-2	AN11-1	AN11-2	AN12-1	AN12-2
			Depth (m)	0.90 - 0.90	1.80 - 1.80	0.40 - 0.40	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			SDG Ref	210108-19	210108-19	210108-19	210108-19	210108-19	210108-19
			Lab Sample No.(s)	23512069	23512073	23512103	23512111	23512115	23512040
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		102	100	77.9	91.2	73.3	105
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	42.5
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	57.8
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	178
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	4060	<1000	<1000	3670	1040
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	8440	7470	4930	34600	20500
Aliphatics >C21-C35	<1000 µg/kg	TM414		2340	7210	65000	8920	221000	73200
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	1230	14700	6080	41100	18100
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	20900	88000	20000	300000	113000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		26200	54400	241000	69500	432000	213000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	119
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	1440	<1000	2150	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	1130	10900	6370	11100	10100
Aromatics > EC21-EC35	<1000 µg/kg	TM414		16400	21500	124000	38000	113000	81000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		7040	10100	16000	5030	6140	7460
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1450	2480	3320	1630	2490	1460
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		23600	33400	153000	49400	133000	99700
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		23600	54400	241000	69500	432000	214000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	278
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	119
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	398

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-19 **Client Reference:** P18-669 **Report Number:** 583284
Location: Llanwern **Order Number:** **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN12-3	AP10-1	AP10-2	AQ10-1	AQ10-2	AV11-1
			Depth (m)	2.30 - 2.30	0.40 - 0.40	2.20 - 2.20	0.20 - 0.20	1.80 - 1.80	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	07/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			SDG Ref	210108-19	210108-19	210108-19	210108-19	210108-19	210108-19
			Lab Sample No.(s)	23512046	23512055	23512065	23512094	23512099	23512035
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		127	95.1	106	103	92.8	97.4
Aliphatics >C5-C6	<10 µg/kg	TM089		30.3	<10	29	<10	<10	23.8
Aliphatics >C6-C8	<10 µg/kg	TM089		66.6	<10	38.7	<10	<10	25
Aliphatics >C8-C10	<10 µg/kg	TM089		803	<10	48.4	<10	<10	114
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1860	<1000	1450	<1000	<1000	1790
Aliphatics >C16-C21	<1000 µg/kg	TM414		29900	7360	4140	3640	4320	16300
Aliphatics >C21-C35	<1000 µg/kg	TM414		88500	34800	38700	10700	23300	48400
Aliphatics >C35-C44	<1000 µg/kg	TM414		29600	7820	7840	2810	12200	12300
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		150000	50900	52100	17400	40200	79300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		273000	66900	77500	31600	63800	115000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	20.6	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		536	<10	31.5	<10	<10	76.2
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		1400	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		4710	<1000	<1000	<1000	<1000	4870
Aromatics > EC21-EC35	<1000 µg/kg	TM414		107000	13100	22200	10900	20400	27000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		9730	1930	1740	2590	2580	2740
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1260	1140	<1000	<1000	2150	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		123000	16000	25400	14200	23600	35400
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		274000	66900	77700	31600	63800	115000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		900	<50	116	<50	<50	163
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		536	<50	52	<50	<50	76.2
GRO >C5-C10	<20 µg/kg	TM089		1440	<20	168	<20	<20	239

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-19 **Client Reference:** P18-669 **Report Number:** 583284
Location: Llanwern **Order Number:** **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AV11-2	AW11-1	AW11-2			
			Depth (m)	1.75 - 1.75	0.40 - 0.40	1.75 - 1.75			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	05/01/2021	05/01/2021	05/01/2021			
			Sample Time	.	.	.			
			Date Received	07/01/2021	07/01/2021	07/01/2021			
			SDG Ref	210108-19	210108-19	210108-19			
			Lab Sample No.(s)	23512079	23512083	23512087			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		98.5	84.4	112			
Aliphatics >C5-C6	<10 µg/kg	TM089		30.2	<10	<10			
Aliphatics >C6-C8	<10 µg/kg	TM089		40.3	<10	11			
Aliphatics >C8-C10	<10 µg/kg	TM089		41.4	<10	13.4			
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aliphatics >C12-C16	<1000 µg/kg	TM414		3390	1420	2110			
Aliphatics >C16-C21	<1000 µg/kg	TM414		16600	13600	19800			
Aliphatics >C21-C35	<1000 µg/kg	TM414		43900	53800	67400			
Aliphatics >C35-C44	<1000 µg/kg	TM414		8120	11600	16200			
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		72000	80400	106000			
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		91900	109000	145000			
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089		26.9	<10	<10			
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC16-EC21	<1000 µg/kg	TM414		3110	4070	7390			
Aromatics > EC21-EC35	<1000 µg/kg	TM414		14600	21900	28900			
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1170	1390	2480			
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000			
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		19800	28100	39600			
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		92000	109000	145000			
Total Aliphatics >C5-C10	<50 µg/kg	TM089		112	<50	<50			
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50			
GRO >C5-C10	<20 µg/kg	TM089		112	<20	<20			

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-19 **Client Reference:** P18-669 **Report Number:** 583284
Location: Llanwern **Order Number:** **Superseded Report:**

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN10-1	AN10-2	AN11-1	AN11-2	AN12-1	AN12-2
			Depth (m)	0.90 - 0.90	1.80 - 1.80	0.40 - 0.40	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			SDG Ref	210108-19	210108-19	210108-19	210108-19	210108-19	210108-19
			Lab Sample No.(s)	23512069	23512073	23512103	23512111	23512115	23512040
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	108	106	106	107	110
Toluene-d8**	%	TM116		99.3	99.7	101	99.3	101	99
4-Bromofluorobenzene**	%	TM116		95.9	98.6	94.7	93.1	97.6	91.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-19 **Client Reference:** P18-669 **Report Number:** 583284
Location: Llanwern **Order Number:** **Superseded Report:**

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN12-3	AP10-1	AP10-2	AQ10-1	AQ10-2	AV11-1
			Depth (m)	2.30 - 2.30	0.40 - 0.40	2.20 - 2.20	0.20 - 0.20	1.80 - 1.80	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	07/01/2021	05/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			SDG Ref	210108-19	210108-19	210108-19	210108-19	210108-19	210108-19
			Lab Sample No.(s)	23512046	23512055	23512065	23512094	23512099	23512035
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	105	105	108	107	102
Toluene-d8**	%	TM116		101	101	101	102	101	101
4-Bromofluorobenzene**	%	TM116		89.5	95.9	95.6	100	96.7	96.6
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210108-19	**Client Reference:**	P18-669	**Report Number:**	583284
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AV11-2	AW11-1	AW11-2			
			Depth (m)	1.75 - 1.75	0.40 - 0.40	1.75 - 1.75			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	05/01/2021	05/01/2021	05/01/2021			
			Sample Time	.	.	.			
			Date Received	07/01/2021	07/01/2021	07/01/2021			
			SDG Ref	210108-19	210108-19	210108-19			
			Lab Sample No.(s)	23512079	23512083	23512087			
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	109	109			
Toluene-d8**	%	TM116		101	100	101			
4-Bromofluorobenzene**	%	TM116		97.6	97.3	96.8			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200	<200 M	<200 M			
Benzene	<9 µg/kg	TM116		<180	<180 M	<180 M			
Toluene	<7 µg/kg	TM116		<140	<140 M	<140 M			
Ethylbenzene	<4 µg/kg	TM116		<80	<80 M	<80 M			
p/m-Xylene	<10 µg/kg	TM116		<200	<200 #	<200 #			
o-Xylene	<10 µg/kg	TM116		<200	<200 M	<200 M			
Naphthalene	<13 µg/kg	TM116		<260	<260 M	<260 M			
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4			
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800			

CERTIFICATE OF ANALYSIS

SDG:	210108-19	**Client Reference:**	P18-669	**Report Number:**	583284
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN10-2 1.80 - 1.80 SOLID 06/01/2021 00:00:00 07/01/2021 05:00:00 210108-19 23512073 TM048	13/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN11-1 0.40 - 0.40 SOLID 06/01/2021 00:00:00 07/01/2021 05:00:00 210108-19 23512103 TM048	13/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN12-1 0.50 - 0.50 SOLID 06/01/2021 00:00:00 07/01/2021 05:00:00 210108-19 23512115 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN12-3 2.30 - 2.30 SOLID 06/01/2021 00:00:00 07/01/2021 05:00:00 210108-19 23512046 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AP10-2 2.20 - 2.20 SOLID 06/01/2021 00:00:00 07/01/2021 05:00:00 210108-19 23512065 TM048	13/01/2021	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AQ10-1 0.20 - 0.20 SOLID 06/01/2021 00:00:00 07/01/2021 05:00:00 210108-19 23512094 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AV11-1 0.40 - 0.40 SOLID 05/01/2021 00:00:00 07/01/2021 05:00:00 210108-19 23512035 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AW11-1 0.40 - 0.40 SOLID 05/01/2021 00:00:00 07/01/2021 05:00:00 210108-19 23512083 TM048	13/01/2021	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210108-19	**Client Reference:**	P18-669	**Report Number:**	583284
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210108-19	**Client Reference:**	P18-669	**Report Number:**	583284
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	23512069	23512073	23512103	23512111	23512115	23512040	23512046	23512055	23512065	23512094
Customer Sample Ref.	AN10-1	AN10-2	AN11-1	AN11-2	AN12-1	AN12-2	AN12-3	AP10-1	AP10-2	AQ10-1
AGS Ref.										
Depth	0.90 - 0.90	1.80 - 1.80	0.40 - 0.40	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	2.30 - 2.30	0.40 - 0.40	2.20 - 2.20	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
Asbestos ID in Solid Samples		13-Jan-2021	13-Jan-2021		13-Jan-2021		13-Jan-2021		13-Jan-2021	13-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021
EPH CWG GC (S)	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021
GRO by GC-FID (S)	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
Metals in solid samples by OES	15-Jan-2021	13-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	13-Jan-2021	14-Jan-2021	13-Jan-2021	14-Jan-2021	14-Jan-2021
PAH by GCMS	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
pH	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
Phenols by HPLC (S)	14-Jan-2021	12-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021
Sample description	09-Jan-2021	09-Jan-2021	09-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	09-Jan-2021	08-Jan-2021
Total Organic Carbon	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
TPH CWG GC (S)	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021
VOC MS (S)	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021

Lab Sample No(s)	23512099	23512035	23512079	23512083	23512087
Customer Sample Ref.	AQ10-2	AV11-1	AV11-2	AW11-1	AW11-2
AGS Ref.					
Depth	1.80 - 1.80	0.40 - 0.40	1.75 - 1.75	0.40 - 0.40	1.75 - 1.75
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
Asbestos ID in Solid Samples		13-Jan-2021		13-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
EPH CWG GC (S)	13-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
GRO by GC-FID (S)	13-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021
Metals in solid samples by OES	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021
PAH by GCMS	12-Jan-2021	14-Jan-2021	14-Jan-2021	12-Jan-2021	14-Jan-2021
pH	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021
Phenols by HPLC (S)	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021
Sample description	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021	08-Jan-2021
Total Organic Carbon	14-Jan-2021	14-Jan-2021	12-Jan-2021	14-Jan-2021	12-Jan-2021
TPH CWG GC (S)	13-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021
VOC MS (S)	12-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Deeside
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Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210108-52
Your Reference:	P18-669
Location:	Llanwern
Report No:	583591

This report has been revised and directly supersedes 583448 in its entirety.

We received 22 samples on Friday January 08, 2021 and 22 of these samples were scheduled for analysis which was completed on Tuesday January 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23513440	AN13-1		0.60 - 0.60	06/01/2021
23513530	AN13-2		1.80 - 1.80	06/01/2021
23513568	AN14-1		1.00 - 1.00	06/01/2021
23513578	AN14-2		1.70 - 1.70	06/01/2021
23513589	AN14-3		2.50 - 2.50	06/01/2021
23513603	AN15-1		0.40 - 0.40	07/01/2021
23513615	AN15-2		1.60 - 1.60	07/01/2021
23513623	AN16-1		0.60 - 0.60	07/01/2021
23513634	AN16-2		1.20 - 1.20	07/01/2021
23513448	AN16-3		2.90 - 2.90	07/01/2021
23513456	AN17-1		0.30 - 0.30	07/01/2021
23513467	AN17-2		1.90 - 1.90	07/01/2021
23513491	AN18-1		0.60 - 0.60	07/01/2021
23513499	AN18-2		1.70 - 1.70	07/01/2021
23513507	AN19-1		0.30 - 0.30	07/01/2021
23513518	AN19-2		1.50 - 1.50	07/01/2021
23513474	AO18-1		0.10 - 0.10	07/01/2021
23513483	AO18-2		1.10 - 1.10	07/01/2021
23513522	AO19-1		0.90 - 0.90	07/01/2021
23513536	AP19-1		0.40 - 0.40	07/01/2021
23513545	AP20-1		0.40 - 0.40	07/01/2021
23513553	AP20-2		1.80 - 1.80	07/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23513440		23513530		23513568		23513578		23513589		23513603		23513615						
Customer Sample Reference			AN13-1		AN13-2		AN14-1		AN14-2		AN14-3		AN15-1		AN15-2						
AGS Reference																					
Depth (m)			0.60 - 0.60		1.80 - 1.80		1.00 - 1.00		1.70 - 1.70		2.50 - 2.50		0.40 - 0.40		1.60 - 1.60						
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 22		X		X			X		X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11	X					X					X						X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 22		X		X			X		X			X			X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 22		X		X			X		X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 22			X		X			X		X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 22		X		X			X		X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 22		X		X			X		X			X		X				X	
pH	All	NDPs: 0 Tests: 22		X		X			X		X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 22		X		X			X		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 22		X		X			X		X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 22		X		X			X		X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 22		X		X			X		X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 22			X		X			X		X			X			X			X

23513518	AN19-2		1.50 - 1.50	250g Amber Jar (ALE210)	S		X			X		X			X		X		X		X		
23513507	AN19-1		0.30 - 0.30	60g VOC (ALE215)	S								X										X
				250g Amber Jar (ALE210)	S		X			X		X			X		X		X		X		
				1kg TUB with Handle (ALE260)	S				X														
23513499	AN18-2		1.70 - 1.70	60g VOC (ALE215)	S								X										X
				250g Amber Jar (ALE210)	S		X			X		X			X		X		X		X		
23513491	AN18-1		0.60 - 0.60	60g VOC (ALE215)	S								X										X
				250g Amber Jar (ALE210)	S		X			X		X			X		X		X		X		
				1kg TUB with Handle (ALE260)	S				X														
23513467	AN17-2		1.90 - 1.90	60g VOC (ALE215)	S								X										X
				250g Amber Jar (ALE210)	S		X			X		X			X		X		X		X		
23513456	AN17-1		0.30 - 0.30	60g VOC (ALE215)	S								X										X
				250g Amber Jar (ALE210)	S		X			X		X			X		X		X		X		
				1kg TUB with Handle (ALE260)	S				X														
23513448	AN16-3		2.90 - 2.90	60g VOC (ALE215)	S								X										X
				250g Amber Jar (ALE210)	S		X			X		X			X		X		X		X		
23513634	AN16-2		1.20 - 1.20	60g VOC (ALE215)	S								X										X
				250g Amber Jar (ALE210)	S		X			X		X			X		X		X		X		
				1kg TUB with Handle (ALE260)	S				X														
23513623	AN16-1		0.60 - 0.60	60g VOC (ALE215)	S								X										X
				250g Amber Jar (ALE210)	S		X			X		X			X		X		X		X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23513518	23513474			23513483			23513522			23513536			23513545		23513553
Customer Sample Reference			AN19-2	AO18-1			AO18-2			AO19-1			AP19-1			AP20-1		AP20-2
AGS Reference																		
Depth (m)			1.50 - 1.50	0.10 - 0.10			1.10 - 1.10			0.90 - 0.90			0.40 - 0.40			0.40 - 0.40		1.80 - 1.80
Container			60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 22			X		X			X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11		X					X					X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1		X														
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 22			X		X			X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 22			X		X			X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 22	X			X		X			X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 22			X		X			X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 22			X		X			X		X			X		X	
pH	All	NDPs: 0 Tests: 22			X		X			X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 22			X		X			X		X			X		X	
Sample description	All	NDPs: 0 Tests: 22			X		X			X		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 22			X		X			X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 22			X		X			X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 22	X			X		X			X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23513440	AN13-1	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	Vegetation
23513530	AN13-2	1.80 - 1.80	Dark Brown	Loamy Sand	Stones	N/A
23513568	AN14-1	1.00 - 1.00	Black	Loamy Sand	Stones	N/A
23513578	AN14-2	1.70 - 1.70	Black	Sand	Stones	Vegetation
23513589	AN14-3	2.50 - 2.50	Dark Brown	Stone/Soil	Stones	N/A
23513603	AN15-1	0.40 - 0.40	Dark Brown	Sand	Vegetation	Stones
23513615	AN15-2	1.60 - 1.60	Dark Brown	Sand	Stones	N/A
23513623	AN16-1	0.60 - 0.60	Dark Brown	Sand	Vegetation	Stones
23513634	AN16-2	1.20 - 1.20	Dark Brown	Sand	None	Stones
23513448	AN16-3	2.90 - 2.90	Dark Brown	Sand	Stones	None
23513456	AN17-1	0.30 - 0.30	Black	Sand	None	Stones
23513467	AN17-2	1.90 - 1.90	Dark Brown	Sand	Vegetation	Stones
23513491	AN18-1	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	N/A
23513499	AN18-2	1.70 - 1.70	Dark Brown	N/A	None	Stones
23513507	AN19-1	0.30 - 0.30	Dark Brown	Loamy Sand	Vegetation	Stones
23513518	AN19-2	1.50 - 1.50	Dark Brown	Stone/Soil	None	Stones
23513474	AO18-1	0.10 - 0.10	Dark Brown	Loamy Sand	Stones	None
23513483	AO18-2	1.10 - 1.10	Black	Sand	Stones	N/A
23513522	AO19-1	0.90 - 0.90	Red	Shale	N/A	None
23513536	AP19-1	0.40 - 0.40	Dark Brown	Loamy Sand	Vegetation	Stones
23513545	AP20-1	0.40 - 0.40	Dark Brown	Loamy Sand	Vegetation	Stones
23513553	AP20-2	1.80 - 1.80	Dark Brown	Stone/Soil	None	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN13-1	AN13-2	AN14-1	AN14-2	AN14-3	AN15-1
			Depth (m)	0.60 - 0.60	1.80 - 1.80	1.00 - 1.00	1.70 - 1.70	2.50 - 2.50	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513440	23513530	23513568	23513578	23513589	23513603
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	17	16	14	17	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	21.3 M	<12 M	<12 M	<12 #	22.2 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.012 M	0.0119 M	0.0117 M	<0.01 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0116 M	0.012 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4.5 #	4.83 #	38.1 #	9.93 #	3.59 #	16.5 #
pH	1 pH Units	TM133		10 M	11 M	11.6 M	11.7 M	11.4 #	11.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	3.78 M	<1 M	1.64 M	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		9.08 M	7.32 M	4.18 M	7.08 M	7.48 #	8.84 M
Cadmium	<0.02 mg/kg	TM181		0.098 M	0.706 M	0.995 M	0.629 M	0.0585 #	0.205 M
Chromium	<0.9 mg/kg	TM181		97.1 M	42.8 M	224 M	37.1 M	50.1 #	24.1 M
Copper	<1.4 mg/kg	TM181		16 M	29.9 M	13.3 M	13.6 M	12.7 #	21.4 M
Iron	<1000 mg/kg	TM181		51400 #	40000 #	21200 #	34500 #	36600 #	69800 #
Lead	<0.7 mg/kg	TM181		56.1 M	12.3 M	20.3 M	28.2 M	11.7 #	41.1 M
Manganese	<0.13 mg/kg	TM181		9950 M	2940 M	4780 M	3740 M	4800 #	4120 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #	<0.14 M
Nickel	<0.2 mg/kg	TM181		15 M	16.4 M	11.9 M	10.3 M	13.8 #	19.4 M
Selenium	<1 mg/kg	TM181		4.34 #	1.82 #	7.25 #	1.9 #	2.79 #	<1 #
Vanadium	<0.2 mg/kg	TM181		145 #	83.9 #	320 #	89.2 #	197 #	46.2 #
Zinc	<1.9 mg/kg	TM181		307 M	49.9 M	103 M	139 M	59.7 #	88.8 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN15-2	AN16-1	AN16-2	AN16-3	AN17-1	AN17-2
			Depth (m)	1.60 - 1.60	0.60 - 0.60	1.20 - 1.20	2.90 - 2.90	0.30 - 0.30	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513615	23513623	23513634	23513448	23513456	23513467
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	12	13	11	15	18
Exchangeable Ammonia as N	<12 mg/kg	TM024		16.7 M	<12 M	<12 M	<12 M	<12 M	39.3 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0246 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.24 #	10 #	4.57 #	3.64 #	28.6 #	19.3 #
pH	1 pH Units	TM133		11.3 M	11.2 M	11.7 M	11.5 M	11.4 M	11.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.72 M	4.74 M	6.84 M	5.9 M	7.05 M	12.9 M
Cadmium	<0.02 mg/kg	TM181		2.1 M	1.44 M	1.55 M	0.49 M	0.242 M	1.92 M
Chromium	<0.9 mg/kg	TM181		14.2 M	150 M	11.2 M	14.3 M	172 M	81.3 M
Copper	<1.4 mg/kg	TM181		12.6 M	19.4 M	12.9 M	15.9 M	<14 M	25.4 M
Iron	<1000 mg/kg	TM181		130000 #	111000 #	135000 #	28300 #	116000 #	153000 #
Lead	<0.7 mg/kg	TM181		43.9 M	489 M	31.8 M	19 M	25.8 M	37.1 M
Manganese	<0.13 mg/kg	TM181		3890 M	12800 M	2610 M	943 M	17700 M	9570 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		16 M	14.6 M	14.2 M	16.3 M	13.1 M	18.1 M
Selenium	<1 mg/kg	TM181		<1 #	4.69 #	<1 #	<1 #	<10 #	2.08 #
Vanadium	<0.2 mg/kg	TM181		37.5 #	268 #	36.1 #	27.1 #	491 #	142 #
Zinc	<1.9 mg/kg	TM181		154 M	101 M	106 M	49.5 M	64.6 M	120 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN18-1	AN18-2	AN19-1	AN19-2	AO18-1	AO18-2
			Depth (m)	0.60 - 0.60	1.70 - 1.70	0.30 - 0.30	1.50 - 1.50	0.10 - 0.10	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513491	23513499	23513507	23513518	23513474	23513483
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	14	9.9	12	24	18
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12	<12 M	<12 #	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 #	<0.01 M	0.0122 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 #	<0.01 M	0.0122 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 M	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 #	<0.035 M	<0.035 #	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		10.6 #	2.95	4.07 #	5.57 #	3.29 #	45.2 #
pH	1 pH Units	TM133		10.9 M	10.6	10.8 M	10.6 #	10.8 M	11.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1	<1 M	<1 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		15.3 M	6.61	6.34 M	6.99 #	11.5 M	6.02 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.585	1.02 M	0.698 #	1.25 M	1.58 M
Chromium	<0.9 mg/kg	TM181		<0.9 M	13	32.3 M	76.7 #	153 M	48.3 M
Copper	<1.4 mg/kg	TM181		20.1 M	14.1	19.1 M	18 #	32.8 M	16.5 M
Iron	<1000 mg/kg	TM181		102000 #	32000	19300 #	11800 #	78500 #	120000 #
Lead	<0.7 mg/kg	TM181		61.8 M	19.4	32.2 M	18 #	62.2 M	82.1 M
Manganese	<0.13 mg/kg	TM181		1960 M	649	4430 M	3810 #	10800 M	5300 M
Mercury	<0.14 mg/kg	TM181		0.243 M	<0.14	<0.14 M	<0.14 #	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		25.6 M	15.8	12.6 M	15.6 #	19.3 M	24.8 M
Selenium	<1 mg/kg	TM181		<1 #	<1	2.01 #	2.36 #	4.24 #	<1 #
Vanadium	<0.2 mg/kg	TM181		45.1 #	23.6	85.5 #	122 #	275 #	128 #
Zinc	<1.9 mg/kg	TM181		184 M	54.3	101 M	128 #	308 M	147 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AO19-1	AP19-1	AP20-1	AP20-2		
			Depth (m)	0.90 - 0.90	0.40 - 0.40	0.40 - 0.40	1.80 - 1.80		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021		
			Sample Time	.	.	.	.		
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021		
			SDG Ref	210108-52	210108-52	210108-52	210108-52		
			Lab Sample No.(s)	23513522	23513536	23513545	23513553		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	10	12	14		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	18.6 M	<12 #		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 #		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 #		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 #		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	<0.035 #		
Soil Organic Matter (SOM)	<0.35 %	TM132		0.5 #	2.72 #	2.83 #	4.45 #		
pH	1 pH Units	TM133		10.9 #	10.9 M	11.2 M	11.2 #		
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 M	<1 M	<1 #		
Arsenic	<0.6 mg/kg	TM181		7.46 #	6.46 M	13.4 M	11.2 #		
Cadmium	<0.02 mg/kg	TM181		0.538 #	2.85 M	0.179 M	0.542 #		
Chromium	<0.9 mg/kg	TM181		24.7 #	55.7 M	11.3 M	16.2 #		
Copper	<1.4 mg/kg	TM181		17.8 #	16.6 M	7.82 M	16.1 #		
Iron	<1000 mg/kg	TM181		9750 #	195000 #	24300 #	30000 #		
Lead	<0.7 mg/kg	TM181		9.87 #	125 M	55.8 M	26.6 #		
Manganese	<0.13 mg/kg	TM181		530 #	5320 M	1040 M	1290 #		
Mercury	<0.14 mg/kg	TM181		<0.14 #	<0.14 M	<0.14 M	<0.14 #		
Nickel	<0.2 mg/kg	TM181		27.1 #	39.6 M	10.1 M	20.2 #		
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		34.1 #	107 #	25.5 #	31.5 #		
Zinc	<1.9 mg/kg	TM181		50.1 #	296 M	91.3 M	89.5 #		

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-52 **Client Reference:** P18-669 **Report Number:** 583591
Location: Llanwern **Order Number:** **Superseded Report:** 583448

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN13-1	AN13-2	AN14-1	AN14-2	AN14-3	AN15-1
			Depth (m)	0.60 - 0.60	1.80 - 1.80	1.00 - 1.00	1.70 - 1.70	2.50 - 2.50	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513440	23513530	23513568	23513578	23513589	23513603
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.2	85.9	86.9	87.2	90.3	89.5
Acenaphthene-d10 % recovery**	%	TM218		85.6	87.7	91.3	86.8	90.4	87.9
Phenanthrene-d10 % recovery**	%	TM218		89.8	92.9	98.9	88.4	91.7	91.8
Chrysene-d12 % recovery**	%	TM218		105	107	104	82.4	91.6	93.2
Perylene-d12 % recovery**	%	TM218		99.5	97.5	101	76.9	97.2	94
Naphthalene	<9 µg/kg	TM218		161 M	165 M	880 M	1310 M	92.7 #	387 M
Acenaphthylene	<12 µg/kg	TM218		149 M	213 M	1310 M	751 M	43.3 #	216 M
Acenaphthene	<8 µg/kg	TM218		26.2 M	23.1 M	111 M	110 M	11.7 #	<40 M
Fluorene	<10 µg/kg	TM218		141 M	102 M	1120 M	624 M	47.4 #	104 M
Phenanthrene	<15 µg/kg	TM218		1090 M	812 M	8490 M	5380 M	315 #	1030 M
Anthracene	<16 µg/kg	TM218		330 M	273 M	1830 M	1710 M	78.4 #	278 M
Fluoranthene	<17 µg/kg	TM218		1850 M	2040 M	13500 M	9010 M	461 #	2300 M
Pyrene	<15 µg/kg	TM218		1400 M	1420 M	10400 M	8180 M	384 #	2070 M
Benz(a)anthracene	<14 µg/kg	TM218		1030 M	1040 M	6020 M	4710 M	290 #	1350 M
Chrysene	<10 µg/kg	TM218		975 M	1030 M	4870 M	4100 M	263 #	1120 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		1580 M	1630 M	6400 M	5000 M	361 #	1750 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		501 M	449 M	2570 M	1900 M	125 #	605 M
Benzo(a)pyrene	<15 µg/kg	TM218		883 M	924 M	4900 M	3850 M	293 #	1300 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		713 M	751 M	4260 M	3120 M	270 #	1120 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		147 M	147 M	901 M	671 M	57.7 #	220 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		686 M	671 M	3510 M	2810 M	235 #	1060 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		11700	11700	71100	53200	3330	14900

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN15-2	AN16-1	AN16-2	AN16-3	AN17-1	AN17-2
			Depth (m)	1.60 - 1.60	0.60 - 0.60	1.20 - 1.20	2.90 - 2.90	0.30 - 0.30	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513615	23513623	23513634	23513448	23513456	23513467
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.5	88.1	88.7	88.4	87.5	87.8
Acenaphthene-d10 % recovery**	%	TM218		85.4	86.5	90.4	86.6	91.2	89.4
Phenanthrene-d10 % recovery**	%	TM218		87.5	88.7	95.2	87.7	97.5	96.2
Chrysene-d12 % recovery**	%	TM218		107	83.7	103	85.1	100	103
Perylene-d12 % recovery**	%	TM218		101	78	101	78	94	98.9
Naphthalene	<9 µg/kg	TM218		57.7 M	339 M	44.8 M	10.8 M	268 M	357 M
Acenaphthylene	<12 µg/kg	TM218		<60 M	828 M	77.9 M	<12 M	217 M	641 M
Acenaphthene	<8 µg/kg	TM218		<40 M	49.5 M	<8 M	<8 M	68.2 M	36.1 M
Fluorene	<10 µg/kg	TM218		<50 M	272 M	57.6 M	<10 M	191 M	268 M
Phenanthrene	<15 µg/kg	TM218		124 M	2440 M	765 M	32.6 M	1900 M	2430 M
Anthracene	<16 µg/kg	TM218		<80 M	1490 M	896 M	<16 M	585 M	2760 M
Fluoranthene	<17 µg/kg	TM218		249 M	8640 M	4100 M	37.1 M	3710 M	9100 M
Pyrene	<15 µg/kg	TM218		249 M	6630 M	3150 M	32.1 M	2970 M	6750 M
Benz(a)anthracene	<14 µg/kg	TM218		162 M	4620 M	1960 M	22.6 M	1990 M	4950 M
Chrysene	<10 µg/kg	TM218		139 M	4100 M	2010 M	25.6 M	1760 M	4430 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		249 M	4380 M	1740 M	25.6 M	2250 M	4520 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<70 M	1710 M	657 M	<14 M	856 M	2110 M
Benzo(a)pyrene	<15 µg/kg	TM218		136 M	3920 M	1430 M	19.6 M	1640 M	3730 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		120 M	3270 M	1320 M	<18 M	1490 M	2910 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<115 M	693 M	227 M	<23 M	324 M	679 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<120 M	2740 M	1060 M	<24 M	1250 M	2350 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1480	46100	19500	206	21500	48000

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-52 **Client Reference:** P18-669 **Report Number:** 583591
Location: Llanwern **Order Number:** **Superseded Report:** 583448

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN18-1	AN18-2	AN19-1	AN19-2	AO18-1	AO18-2
			Depth (m)	0.60 - 0.60	1.70 - 1.70	0.30 - 0.30	1.50 - 1.50	0.10 - 0.10	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513491	23513499	23513507	23513518	23513474	23513483
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.5	90	86.3	86.5	85.1	84.2
Acenaphthene-d10 % recovery**	%	TM218		91	88.1	85.2	86.4	84.2	84.5
Phenanthrene-d10 % recovery**	%	TM218		102	88.2	88.1	89.9	87.9	84.8
Chrysene-d12 % recovery**	%	TM218		93.1	84.9	88.9	87.8	87.3	96.5
Perylene-d12 % recovery**	%	TM218		82.3	78.7	81.1	82.2	84	84.7
Naphthalene	<9 µg/kg	TM218		51.9 M	82.4	<90 M	114 #	302 M	1330 M
Acenaphthylene	<12 µg/kg	TM218		34.5 M	64.1	<120 M	23.6 #	119 M	2680 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8	<80 M	<8 #	43.3 M	252 M
Fluorene	<10 µg/kg	TM218		14.9 M	54	<100 M	22.2 #	143 M	5160 M
Phenanthrene	<15 µg/kg	TM218		209 M	289	433 M	176 #	926 M	25900 M
Anthracene	<16 µg/kg	TM218		45.4 M	72.5	<160 M	26.1 #	232 M	6590 M
Fluoranthene	<17 µg/kg	TM218		351 M	356	826 M	195 #	1560 M	26900 M
Pyrene	<15 µg/kg	TM218		303 M	253	702 M	162 #	1230 M	18900 M
Benz(a)anthracene	<14 µg/kg	TM218		180 M	145	374 M	107 #	762 M	10700 M
Chrysene	<10 µg/kg	TM218		159 M	122	367 M	145 #	687 M	8740 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		214 M	106	361 M	106 #	743 M	12000 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		78.3 M	50.8	156 M	44.8 #	335 M	3780 M
Benzo(a)pyrene	<15 µg/kg	TM218		157 M	118	308 M	77.7 #	709 M	7430 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		127 M	88.4	308 M	70.4 #	540 M	5690 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		27.8 M	<23	<230 M	<23 #	116 M	1190 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		134 M	83	315 M	77.8 #	497 M	5030 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		2090	1880	4150	1350	8940	142000

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-52 **Client Reference:** P18-669 **Report Number:** 583591
Location: Llanwern **Order Number:** **Superseded Report:** 583448

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AO19-1	AP19-1	AP20-1	AP20-2		
			Depth (m)	0.90 - 0.90	0.40 - 0.40	0.40 - 0.40	1.80 - 1.80		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021		
			Sample Time	.	.	.	.		
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021		
			SDG Ref	210108-52	210108-52	210108-52	210108-52		
			Lab Sample No.(s)	23513522	23513536	23513545	23513553		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.1	89.3	90.1	88.2		
Acenaphthene-d10 % recovery**	%	TM218		86.2	86.8	90.1	86.4		
Phenanthrene-d10 % recovery**	%	TM218		87.3	89.3	89.1	87		
Chrysene-d12 % recovery**	%	TM218		85.1	86.7	85.3	83.8		
Perylene-d12 % recovery**	%	TM218		79.3	82.5	76.6	79.4		
Naphthalene	<9 µg/kg	TM218		<9 #	90.2 M	595 M	108 #		
Acenaphthylene	<12 µg/kg	TM218		<12 #	46.5 M	174 M	29.1 #		
Acenaphthene	<8 µg/kg	TM218		<8 #	<8 M	33.4 M	<8 #		
Fluorene	<10 µg/kg	TM218		<10 #	19.9 M	107 M	19.9 #		
Phenanthrene	<15 µg/kg	TM218		21.8 #	220 M	1190 M	205 #		
Anthracene	<16 µg/kg	TM218		<16 #	70.4 M	423 M	45.1 #		
Fluoranthene	<17 µg/kg	TM218		34.8 #	425 M	2050 M	340 #		
Pyrene	<15 µg/kg	TM218		29.7 #	349 M	1700 M	269 #		
Benz(a)anthracene	<14 µg/kg	TM218		22.6 #	243 M	1160 M	166 #		
Chrysene	<10 µg/kg	TM218		18.8 #	237 M	1140 M	171 #		
Benzo(b)fluoranthene	<15 µg/kg	TM218		26.1 #	266 M	1450 M	211 #		
Benzo(k)fluoranthene	<14 µg/kg	TM218		<14 #	95.9 M	509 M	79.7 #		
Benzo(a)pyrene	<15 µg/kg	TM218		17.7 #	239 M	1120 M	165 #		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<18 #	243 M	840 M	156 #		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 #	44.6 M	156 M	31.9 #		
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<24 #	239 M	810 M	157 #		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		171	2830	13500	2150		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN13-1	AN13-2	AN14-1	AN14-2	AN14-3	AN15-1
			Depth (m)	0.60 - 0.60	1.80 - 1.80	1.00 - 1.00	1.70 - 1.70	2.50 - 2.50	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513440	23513530	23513568	23513578	23513589	23513603
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		83.9	116	50.1 4	83	106	60.2 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	26.4	<10 4	14	19.4	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		10.4	46.8	17.9 4	56.2	21.8	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		12.8	109	19 4	67.9	33.9	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		3460	14500	18200	2590	3930	2850
Aliphatics >C16-C21	<1000 µg/kg	TM414		19600	23500	210000	41700	16600	27400
Aliphatics >C21-C35	<1000 µg/kg	TM414		47800	30800	72100	78400	20200	31400
Aliphatics >C35-C44	<1000 µg/kg	TM414		12100	8030	53900	29500	5880	37300
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		83500	77600	355000	152000	46700	99600
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		115000	147000	542000	349000	86500	176000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10 4	10.5	<10	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	73.2	13.1 4	45.6	23	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	1270	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	2230	12900	4190	1030	1170
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2980	12400	54900	35300	3860	8250
Aromatics > EC21-EC35	<1000 µg/kg	TM414		25100	48400	113000	137000	26000	57700
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2450	5560	5530	18100	8490	9430
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	2890	1850	1760
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		31100	69100	188000	196000	39800	76700
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		115000	147000	542000	349000	86600	176000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	182	<50 4	138	75	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	73.2	<50 4	56.2	<50	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20	256	<20 4	194	75	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-52 **Client Reference:** P18-669 **Report Number:** 583591
Location: Llanwern **Order Number:** **Superseded Report:** 583448

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN15-2	AN16-1	AN16-2	AN16-3	AN17-1	AN17-2
			Depth (m)	1.60 - 1.60	0.60 - 0.60	1.20 - 1.20	2.90 - 2.90	0.30 - 0.30	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513615	23513623	23513634	23513448	23513456	23513467
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		113	65.6 4	106	127	50 4	73
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	10.2 4	<10	<10	<10 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	28.3 4	<10	20.2	36.3 4	24.6
Aliphatics >C8-C10	<10 µg/kg	TM089		10.6	62.2 4	<10	40.3	45.6 4	38.1
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1490	1650	<1000	<1000	<1000	1540
Aliphatics >C16-C21	<1000 µg/kg	TM414		12900	13800	<1000	<1000	4050	12900
Aliphatics >C21-C35	<1000 µg/kg	TM414		53300	16500	16500	1130	13600	50700
Aliphatics >C35-C44	<1000 µg/kg	TM414		94400	<1000	4620	<1000	3210	21400
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		162000	32600	22000	<5000	22000	86600
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		223000	230000	30300	<10000	142000	129000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 4	<10	<10	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	40.7 4	<10	26.9	30.4 4	24.6
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	2670	<1000	<1000	2250	1030
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1540	32000	<1000	<1000	25300	6770
Aromatics > EC21-EC35	<1000 µg/kg	TM414		50300	138000	6520	<1000	82700	32100
Aromatics >EC35-EC44	<1000 µg/kg	TM414		9290	23700	<1000	<1000	8890	2750
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	3540	<1000	<1000	1120	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		61300	197000	8270	<5000	120000	42900
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		223000	230000	30300	<10000	142000	130000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	101 4	<50	60.5	81.9 4	62.7
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 4	<50	<50	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	101 4	<20	60.5	81.9 4	62.7

Validated

CERTIFICATE OF ANALYSIS

SDG: 210108-52 **Client Reference:** P18-669 **Report Number:** 583591
Location: Llanwern **Order Number:** **Superseded Report:** 583448

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN18-1	AN18-2	AN19-1	AN19-2	AO18-1	AO18-2
			Depth (m)	0.60 - 0.60	1.70 - 1.70	0.30 - 0.30	1.50 - 1.50	0.10 - 0.10	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513491	23513499	23513507	23513518	23513474	23513483
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91.4	83.8	71.6	79.6	74.1	53.1 4
Aliphatics >C5-C6	<10 µg/kg	TM089		13.9	29	<10	<10	<10	17.1 4
Aliphatics >C6-C8	<10 µg/kg	TM089		23.2	74.2	<10	<10	<10	70.8 4
Aliphatics >C8-C10	<10 µg/kg	TM089		24.4	632	<10	<10	<10	72 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1420	<1000	<1000	1130	1560	1780
Aliphatics >C16-C21	<1000 µg/kg	TM414		13600	2160	2780	2270	4350	11000
Aliphatics >C21-C35	<1000 µg/kg	TM414		44800	10200	23300	22700	20900	67900
Aliphatics >C35-C44	<1000 µg/kg	TM414		16700	4080	36700	25600	4690	33100
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		76700	16900	63000	52200	31600	114000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		131000	30000	111000	79100	78700	252000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	11 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		16.2	421	<10	<10	<10	47.6 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		1040	<1000	<1000	<1000	1360	3260
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2900	<1000	1380	1250	8790	21200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		38300	10500	40000	23000	30900	101000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		11500	1260	6220	2270	5490	11100
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2480	<1000	1540	<1000	<1000	1760
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		54100	13100	47800	26900	47100	138000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		131000	31200	111000	79100	78700	253000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		61.5	735	<50	<50	<50	160 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	421	<50	<50	<50	58.6 4
GRO >C5-C10	<20 µg/kg	TM089		61.5	1160	<20	<20	<20	218 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AO19-1	AP19-1	AP20-1	AP20-2		
			Depth (m)	0.90 - 0.90	0.40 - 0.40	0.40 - 0.40	1.80 - 1.80		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021		
			Sample Time	.	.	.	.		
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021		
			SDG Ref	210108-52	210108-52	210108-52	210108-52		
			Lab Sample No.(s)	23513522	23513536	23513545	23513553		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95.8	81.4	55.5 4	84.8		
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	17.1 4	18.6		
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	22.2	60.4 4	24.4		
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	57.7	62.7 4	91.6		
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000		
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	1090	<1000		
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	4050	19000	1040		
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	53000	286000	14000		
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	39100	157000	4150		
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	96400	463000	19300		
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		11600	135000	557000	24700		
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	10.3 4	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	23.9 4	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	38.9	42.2 4	61.5		
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000		
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	1770	<1000		
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	3010	10900	<1000		
Aromatics > EC21-EC35	<1000 µg/kg	TM414		9930	33100	76600	3740		
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	1760	3340	<1000		
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000		
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		11400	38300	93500	5450		
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		11400	135000	557000	24900		
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	79.9	140 4	135		
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	76.4 4	61.5		
GRO >C5-C10	<20 µg/kg	TM089		<20	79.9	217 4	196		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN13-1	AN13-2	AN14-1	AN14-2	AN14-3	AN15-1
			Depth (m)	0.60 - 0.60	1.80 - 1.80	1.00 - 1.00	1.70 - 1.70	2.50 - 2.50	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/01/2021	06/01/2021	06/01/2021	06/01/2021	06/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513440	23513530	23513568	23513578	23513589	23513603
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	104	101	103	106	104
Toluene-d8**	%	TM116		98.8	99.1	95.5	96.4	97.6	96.9
4-Bromofluorobenzene**	%	TM116		92.8	96.8	85.3	89.4	91.4	91.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 #	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 #	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	655 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN15-2	AN16-1	AN16-2	AN16-3	AN17-1	AN17-2
			Depth (m)	1.60 - 1.60	0.60 - 0.60	1.20 - 1.20	2.90 - 2.90	0.30 - 0.30	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513615	23513623	23513634	23513448	23513456	23513467
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	99.6	105	107	101	101
Toluene-d8**	%	TM116		95.5	96.2	98.3	98.6	93.9	96.7
4-Bromofluorobenzene**	%	TM116		90.3	88.5	94.1	92.8	85.3	89.9
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AN18-1	AN18-2	AN19-1	AN19-2	AO18-1	AO18-2
			Depth (m)	0.60 - 0.60	1.70 - 1.70	0.30 - 0.30	1.50 - 1.50	0.10 - 0.10	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			SDG Ref	210108-52	210108-52	210108-52	210108-52	210108-52	210108-52
			Lab Sample No.(s)	23513491	23513499	23513507	23513518	23513474	23513483
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	106	105	107	104	99.5
Toluene-d8**	%	TM116		97.9	97.6	97.4	97.8	98.8	92.1
4-Bromofluorobenzene**	%	TM116		93.6	89.6	92	93.4	91.7	76.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200	<200 M	<200 #	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180	<180 M	<180 #	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140	<140 M	<140 #	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80	<80 M	<80 #	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200	<200 M	<200 #	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	324	<260 M	<260 #	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AO19-1	AP19-1	AP20-1	AP20-2		
			Depth (m)	0.90 - 0.90	0.40 - 0.40	0.40 - 0.40	1.80 - 1.80		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021		
			Sample Time	.	.	.	.		
			Date Received	08/01/2021	08/01/2021	08/01/2021	08/01/2021		
			SDG Ref	210108-52	210108-52	210108-52	210108-52		
			Lab Sample No.(s)	23513522	23513536	23513545	23513553		
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	104	99	106		
Toluene-d8**	%	TM116		96.7	97.4	91.9	98.2		
4-Bromofluorobenzene**	%	TM116		97.4	91.4	80.7	94.3		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 #	<200 M	<200 M	<200 #		
Benzene	<9 µg/kg	TM116		<180 #	<180 M	<180 M	<180 #		
Toluene	<7 µg/kg	TM116		<140 #	<140 M	<140 M	<140 #		
Ethylbenzene	<4 µg/kg	TM116		<80 #	<80 M	<80 M	<80 #		
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #		
o-Xylene	<10 µg/kg	TM116		<200 #	<200 M	<200 M	<200 #		
Naphthalene	<13 µg/kg	TM116		<260 #	<260 M	<260 M	<260 #		
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800		

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN13-1 0.60 - 0.60 SOLID 06/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513440 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN14-1 1.00 - 1.00 SOLID 06/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513568 TM048	14/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN14-3 2.50 - 2.50 SOLID 06/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513589 TM048	14/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN15-2 1.60 - 1.60 SOLID 07/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513615 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN16-2 1.20 - 1.20 SOLID 07/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513634 TM048	14/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN17-1 0.30 - 0.30 SOLID 07/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513456 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN18-1 0.60 - 0.60 SOLID 07/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513491 TM048	14/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN19-1 0.30 - 0.30 SOLID 07/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513507 TM048	14/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AO18-1 0.10 - 0.10 SOLID 07/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513474 TM048	13/01/2021	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AO19-1 0.90 - 0.90 SOLID 07/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513522 TM048	14/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AP20-1 0.40 - 0.40 SOLID 07/01/2021 00:00:00 08/01/2021 05:00:00 210108-52 23513545 TM048	14/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	AO18-1	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.10 - 0.10					
Sample Type	SOLID					
Date Sampled	07/01/2021 00:00:00					
Date Received	08/01/2021 05:00:00					
SDG	210108-52					
Original Sample	23513474					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210108-52	**Client Reference:**	P18-669	**Report Number:**	583591
Location:	Llanwern	**Order Number:**		**Superseded Report:**	583448

Test Completion Dates

Lab Sample No(s)	23513440	23513530	23513568	23513578	23513589	23513603	23513615	23513623	23513634	23513448
Customer Sample Ref.	AN13-1	AN13-2	AN14-1	AN14-2	AN14-3	AN15-1	AN15-2	AN16-1	AN16-2	AN16-3
AGS Ref.										
Depth	0.60 - 0.60	1.80 - 1.80	1.00 - 1.00	1.70 - 1.70	2.50 - 2.50	0.40 - 0.40	1.60 - 1.60	0.60 - 0.60	1.20 - 1.20	2.90 - 2.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	15-Jan-2021	12-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	12-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
Asbestos ID in Solid Samples	13-Jan-2021		14-Jan-2021		14-Jan-2021		13-Jan-2021		14-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	13-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021
EPH CWG GC (S)	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
GRO by GC-FID (S)	13-Jan-2021	13-Jan-2021	15-Jan-2021	15-Jan-2021	13-Jan-2021	14-Jan-2021	13-Jan-2021	15-Jan-2021	13-Jan-2021	14-Jan-2021
Metals in solid samples by OES	18-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	18-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
PAH by GCMS	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021
pH	12-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021
Phenols by HPLC (S)	15-Jan-2021	13-Jan-2021	15-Jan-2021	12-Jan-2021	15-Jan-2021	12-Jan-2021	15-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
Sample description	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021
Total Organic Carbon	14-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021
TPH CWG GC (S)	13-Jan-2021	13-Jan-2021	15-Jan-2021	15-Jan-2021	13-Jan-2021	14-Jan-2021	13-Jan-2021	15-Jan-2021	13-Jan-2021	14-Jan-2021
VOC MS (S)	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021

Lab Sample No(s)	23513456	23513467	23513491	23513499	23513507	23513518	23513474	23513483	23513522	23513536
Customer Sample Ref.	AN17-1	AN17-2	AN18-1	AN18-2	AN19-1	AN19-2	AO18-1	AO18-2	AO19-1	AP19-1
AGS Ref.										
Depth	0.30 - 0.30	1.90 - 1.90	0.60 - 0.60	1.70 - 1.70	0.30 - 0.30	1.50 - 1.50	0.10 - 0.10	1.10 - 1.10	0.90 - 0.90	0.40 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	12-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
Asbestos ID in Solid Samples	13-Jan-2021		14-Jan-2021		14-Jan-2021		13-Jan-2021		14-Jan-2021	
Asbestos Quantification - Full							19-Jan-2021			
Cyanide Comp/Free/Total/Thiocyanate	13-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021
EPH CWG GC (S)	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021
GRO by GC-FID (S)	14-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	15-Jan-2021	13-Jan-2021	15-Jan-2021
Metals in solid samples by OES	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	18-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	18-Jan-2021
PAH by GCMS	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021
pH	12-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021	11-Jan-2021
Phenols by HPLC (S)	15-Jan-2021	12-Jan-2021	14-Jan-2021	15-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	15-Jan-2021	15-Jan-2021
Sample description	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021
Total Organic Carbon	15-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021
TPH CWG GC (S)	14-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	15-Jan-2021	13-Jan-2021	15-Jan-2021
VOC MS (S)	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021

Lab Sample No(s)	23513545	23513553
Customer Sample Ref.	AP20-1	AP20-2
AGS Ref.		
Depth	0.40 - 0.40	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	12-Jan-2021	12-Jan-2021
Asbestos ID in Solid Samples	14-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	12-Jan-2021	12-Jan-2021
EPH CWG GC (S)	12-Jan-2021	12-Jan-2021
GRO by GC-FID (S)	15-Jan-2021	13-Jan-2021
Metals in solid samples by OES	18-Jan-2021	15-Jan-2021
PAH by GCMS	15-Jan-2021	15-Jan-2021
pH	12-Jan-2021	11-Jan-2021
Phenols by HPLC (S)	12-Jan-2021	12-Jan-2021
Sample description	09-Jan-2021	09-Jan-2021
Total Organic Carbon	14-Jan-2021	14-Jan-2021
TPH CWG GC (S)	15-Jan-2021	13-Jan-2021
VOC MS (S)	12-Jan-2021	12-Jan-2021

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
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Aztec West
Almondsbury
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BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	22 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210109-42
Your Reference:	P18-669
Location:	Llanwern
Report No:	584110

This report has been revised and directly supersedes 583663 in its entirety.

We received 25 samples on Saturday January 09, 2021 and 25 of these samples were scheduled for analysis which was completed on Friday January 22, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23518594	AL12-1		0.50 - 0.50	08/01/2021
23518599	AL12-2		1.00 - 1.00	08/01/2021
23518603	AL12-3		2.15 - 2.15	08/01/2021
23518581	AL13-1		0.30 - 0.30	08/01/2021
23518588	AL13-2		1.50 - 1.50	08/01/2021
23518567	AL14-1		0.30 - 0.30	08/01/2021
23518577	AL14-2		1.70 - 1.70	08/01/2021
23518557	AM15-1		0.50 - 0.50	08/01/2021
23518561	AM15-2		1.70 - 1.70	08/01/2021
23518548	AM16-1		0.20 - 0.20	08/01/2021
23518552	AM16-2		1.80 - 1.80	08/01/2021
23518542	AM17-1		0.40 - 0.40	08/01/2021
23518531	AM18-1		0.20 - 0.20	08/01/2021
23518538	AM18-2		1.90 - 1.90	08/01/2021
23518523	AM19-1		0.40 - 0.40	07/01/2021
23518527	AM19-2		2.10 - 2.10	07/01/2021
23518626	AM20-1		0.50 - 0.50	07/01/2021
23518630	AM20-2		1.50 - 1.50	07/01/2021
23518634	AM20-3		2.60 - 2.60	07/01/2021
23518611	AN20-1		0.30 - 0.30	07/01/2021
23518615	AN20-2		1.20 - 1.20	07/01/2021
23518620	AN20-3		3.00 - 3.00	07/01/2021
23518571	AO20-1		0.80 - 0.80	07/01/2021
23518607	AO20-2		1.70 - 1.70	07/01/2021
23518515	AP19-2		1.70 - 1.70	07/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG:	210109-42	Client Reference:	P18-669	Report Number:	584110
Location:	Llanwern	Order Number:	108282	Superseded Report:	583663

Results Legend

- X Test
- N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23518594			23518599		23518603			23518581			23518588		23518567			23518577		23518557
Customer Sample Reference			AL12-1			AL12-2		AL12-3			AL13-1			AL13-2		AL14-1			AL14-2		AM15-1
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00		2.15 - 2.15			0.30 - 0.30			1.50 - 1.50		0.30 - 0.30			1.70 - 1.70		0.50 - 0.50
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 25		X		X			X			X		X			X		X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 13	X					X			X					X					X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2														X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 25		X		X			X			X		X			X		X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 25		X		X			X			X		X			X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 25			X		X			X			X		X			X		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 25		X		X			X			X		X			X		X		
PAH by GCMS	All	NDPs: 0 Tests: 25		X		X			X			X		X			X		X		
pH	All	NDPs: 0 Tests: 25		X		X			X			X		X			X		X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 25		X		X			X			X		X			X		X		
Sample description	All	NDPs: 0 Tests: 25		X		X			X			X		X			X		X		
Total Organic Carbon	All	NDPs: 0 Tests: 25		X		X			X			X		X			X		X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 25		X		X			X			X		X			X		X		
VOC MS (S)	All	NDPs: 0 Tests: 25			X		X			X			X		X			X		X	

23518527	AM19-2		2.10 - 2.10	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23518523	AM19-1		0.40 - 0.40	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23518538	AM18-2		1.90 - 1.90	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23518531	AM18-1		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23518542	AM17-1		0.40 - 0.40	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23518552	AM16-2		1.80 - 1.80	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23518548	AM16-1		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X	X											
23518561	AM15-2		1.70 - 1.70	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23518557	AM15-1		0.50 - 0.50	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23518626	23518630	23518634	23518611	23518615	23518620	23518571	23518607									
Customer Sample Reference			AM20-1	AM20-2	AM20-3	AN20-1	AN20-2	AN20-3	AO20-1	AO20-2									
AGS Reference																			
Depth (m)			0.50 - 0.50	1.50 - 1.50	2.60 - 2.60	0.30 - 0.30	1.20 - 1.20	3.00 - 3.00	0.80 - 0.80	1.70 - 1.70									
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 25		X		X			X		X			X		X		X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 13	X					X					X							X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 25		X		X			X		X			X		X		X			X
EPH CWG GC (S)	All	NDPs: 0 Tests: 25		X		X			X		X			X		X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 25			X		X			X		X			X		X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 25		X		X			X		X			X		X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 25		X		X			X		X			X		X		X			X
pH	All	NDPs: 0 Tests: 25		X		X			X		X			X		X		X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 25		X		X			X		X			X		X		X			X
Sample description	All	NDPs: 0 Tests: 25		X		X			X		X			X		X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 25		X		X			X		X			X		X		X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 25		X		X			X		X			X		X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 25			X		X			X		X			X		X		X		

23518515	AP19-2		1.70 - 1.70	60g VOC (ALE215)	S					X								X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X											
23518607	AO20-2		1.70 - 1.70	60g VOC (ALE215)	S					X								X

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23518594	AL12-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Brick
23518599	AL12-2	1.00 - 1.00	Black	Sand	Stones	None
23518603	AL12-3	2.15 - 2.15	Dark Brown	Sand	Stones	Brick
23518581	AL13-1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None
23518588	AL13-2	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Vegetation
23518567	AL14-1	0.30 - 0.30	Dark Brown	Sand	Stones	None
23518577	AL14-2	1.70 - 1.70	Dark Brown	Sand	Stones	Brick
23518557	AM15-1	0.50 - 0.50	Black	Sand	Stones	N/A
23518561	AM15-2	1.70 - 1.70	Dark Brown	Loamy Sand	Stones	Vegetation
23518548	AM16-1	0.20 - 0.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23518552	AM16-2	1.80 - 1.80	Dark Brown	Sand	Stones	Brick
23518542	AM17-1	0.40 - 0.40	Dark Brown	Sand	Stones	None
23518531	AM18-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Vegetation
23518538	AM18-2	1.90 - 1.90	Dark Brown	Sand	Stones	N/A
23518523	AM19-1	0.40 - 0.40	Dark Brown	Loamy Sand	Vegetation	Brick
23518527	AM19-2	2.10 - 2.10	Dark Brown	Loamy Sand	Stones	None
23518626	AM20-1	0.50 - 0.50	Dark Brown	Sandy Clay Loam	Stones	None
23518630	AM20-2	1.50 - 1.50	Dark Brown	Sand	Fibres	Hardcore/Rubble
23518634	AM20-3	2.60 - 2.60	Dark Brown	Loamy Sand	Stones	N/A
23518611	AN20-1	0.30 - 0.30	Dark Brown	Sand	None	Stones
23518615	AN20-2	1.20 - 1.20	Black	Sand	None	Stones
23518620	AN20-3	3.00 - 3.00	Dark Brown	Loamy Sand	Stones	N/A
23518571	AO20-1	0.80 - 0.80	Dark Brown	Loamy Sand	Stones	N/A
23518607	AO20-2	1.70 - 1.70	Dark Brown	Loamy Sand	Stones	N/A
23518515	AP19-2	1.70 - 1.70	Dark Brown	Silt Loam	Stones	N/A

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL12-1	AL12-2	AL12-3	AL13-1	AL13-2	AL14-1
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.15 - 2.15	0.30 - 0.30	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518594	23518599	23518603	23518581	23518588	23518567
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	17	19	13	14	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	38.8 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.012 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.012 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4.12 #	24.1 #	4.59 #	4.4 #	4.14 #	3.91 #
pH	1 pH Units	TM133		10.7 M	10.8 M	7.67 M	10.9 M	10.5 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.52 M	1.02 M	<1 M	<1 M	1.42 M
Arsenic	<0.6 mg/kg	TM181		19.4 M	20.1 M	12.5 M	8.73 M	12.6 M	17.3 M
Cadmium	<0.02 mg/kg	TM181		2.16 M	1.41 M	<0.02 M	2.47 M	1.57 M	2.96 M
Chromium	<0.9 mg/kg	TM181		58.1 M	57.2 M	28.5 M	268 M	22 M	66.9 M
Copper	<1.4 mg/kg	TM181		38.4 M	71.4 M	15 M	32.9 M	23.4 M	50.6 M
Iron	<1000 mg/kg	TM181		176000 #	102000 #	23900 #	179000 #	138000 #	229000 #
Lead	<0.7 mg/kg	TM181		117 M	127 M	16 M	220 M	297 M	587 M
Manganese	<0.13 mg/kg	TM181		6070 M	2990 M	1430 M	13700 M	3980 M	4550 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		22.9 M	65.1 M	12.5 M	26.5 M	38.4 M	51.1 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<1 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		132 #	67 #	44.9 #	364 #	67.5 #	64.9 #
Zinc	<1.9 mg/kg	TM181		288 M	293 M	58.6 M	548 M	321 M	267 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							0.019 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/A
Asbestos Quantification - Total - %	<0.001 %	TM304							0.0193 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL14-2	AM15-1	AM15-2	AM16-1	AM16-2	AM17-1
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.70 - 1.70	0.20 - 0.20	1.80 - 1.80	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518577	23518557	23518561	23518548	23518552	23518542
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	13	19	14	13	9.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0115 M	0.0123 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.023 M	0.0369 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	0.0984 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	0.148 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		3.17 #	22.2 #	31.7 #	3.1 #	15 #	6.38 #
pH	1 pH Units	TM133		10.5 M	10.5 M	9.48 M	8.74 M	11.5 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.75 M	11.2 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.4 M	4.58 M	6.25 M	45.2 M	12.8 M	9.94 M
Cadmium	<0.02 mg/kg	TM181		0.406 M	<0.02 M	0.731 M	0.432 M	0.484 M	2 M
Chromium	<0.9 mg/kg	TM181		67.2 M	187 M	42 M	581 M	50.9 M	280 M
Copper	<1.4 mg/kg	TM181		26.4 M	25.3 M	30.4 M	259 M	28.6 M	30.4 M
Iron	<1000 mg/kg	TM181		59700 #	65700 #	35400 #	96600 #	43900 #	168000 #
Lead	<0.7 mg/kg	TM181		97.3 M	51.8 M	110 M	177 M	81.5 M	147 M
Manganese	<0.13 mg/kg	TM181		2630 M	12200 M	3630 M	11000 M	1920 M	13800 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	0.235 M	2.21 M	0.182 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		28.4 M	8.76 M	13.6 M	48.4 M	28 M	29.9 M
Selenium	<1 mg/kg	TM181		<1 #	4.81 #	1.98 #	1.82 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		78.2 #	302 #	69.8 #	144 #	38.7 #	234 #
Zinc	<1.9 mg/kg	TM181		99.2 M	116 M	182 M	437 M	233 M	278 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		
Additional Asbestos Components (Using TM048)		TM304					None #		
Analysts Comments		TM304					0		
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
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diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM18-1	AM18-2	AM19-1	AM19-2	AM20-1	AM20-2
			Depth (m)	0.20 - 0.20	1.90 - 1.90	0.40 - 0.40	2.10 - 2.10	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518531	23518538	23518523	23518527	23518626	23518630
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	9.4	10	14	15	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0232 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		5.64 #	12.6 #	4 #	7.09 #	2.72 #	9.78 #
pH	1 pH Units	TM133		11 M	9.77 M	8.7 M	11 M	8.22 M	10.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		23 M	9.62 M	12.7 M	12.9 M	7.39 M	14 M
Cadmium	<0.02 mg/kg	TM181		0.718 M	0.446 M	0.451 M	0.358 M	0.246 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		181 M	34.3 M	62.6 M	49 M	20 M	33.5 M
Copper	<1.4 mg/kg	TM181		73.5 M	28.7 M	22.4 M	28.8 M	15.2 M	24.6 M
Iron	<1000 mg/kg	TM181		58200 #	29200 #	36100 #	41700 #	25400 #	183000 #
Lead	<0.7 mg/kg	TM181		99 M	41.3 M	45.2 M	66 M	38.6 M	147 M
Manganese	<0.13 mg/kg	TM181		9510 M	9280 M	3520 M	3970 M	909 M	4140 M
Mercury	<0.14 mg/kg	TM181		1.46 M	0.196 M	<0.14 M	0.299 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		103 M	26.8 M	19.3 M	15.2 M	18 M	40.4 M
Selenium	<1 mg/kg	TM181		3.25 #	3.88 #	1.75 #	1.94 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		181 #	39.7 #	117 #	71.7 #	31.6 #	42.7 #
Zinc	<1.9 mg/kg	TM181		348 M	141 M	264 M	225 M	94.3 M	405 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM20-3	AN20-1	AN20-2	AN20-3	AO20-1	AO20-2
			Depth (m)	2.60 - 2.60	0.30 - 0.30	1.20 - 1.20	3.00 - 3.00	0.80 - 0.80	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518634	23518611	23518615	23518620	23518571	23518607
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	12	13	12	16	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	219 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		3.38 #	62.6 #	92.8 #	3.6 #	4.09 #	0.874 #
pH	1 pH Units	TM133		9.72 M	10.9 M	10.1 M	10.1 M	9.49 M	9.17 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	133 M	22.9 M
Arsenic	<0.6 mg/kg	TM181		7.21 M	6.92 M	8.29 M	14.1 M	21.1 M	6.64 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	1.24 M	<0.02 M	1.44 M	0.344 M	0.201 M
Chromium	<0.9 mg/kg	TM181		28.9 M	<9 M	11.6 M	18.4 M	13.8 M	16.8 M
Copper	<1.4 mg/kg	TM181		15.5 M	16.4 M	20.3 M	17 M	33.7 M	19 M
Iron	<1000 mg/kg	TM181		61700 #	124000 #	90500 #	119000 #	40500 #	19000 #
Lead	<0.7 mg/kg	TM181		68.7 M	91.9 M	23.9 M	49.8 M	43.1 M	21.8 M
Manganese	<0.13 mg/kg	TM181		1750 M	3510 M	1510 M	2060 M	593 M	415 M
Mercury	<0.14 mg/kg	TM181		0.367 M	<1.4 M	0.171 M	<0.14 M	0.204 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17.9 M	17.3 M	14.5 M	17 M	41.8 M	19.5 M
Selenium	<1 mg/kg	TM181		<1 #	<10 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		33.1 #	44.6 #	24.2 #	42.3 #	44.9 #	26.4 #
Zinc	<1.9 mg/kg	TM181		148 M	77.4 M	57.3 M	75 M	193 M	100 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.			AP19-2
Depth (m)			1.70 - 1.70
Sample Type			Soil/Solid (S)
Date Sampled			07/01/2021
Sample Time			.
Date Received			09/01/2021
SDG Ref			210109-42
Lab Sample No.(s)			23518515
AGS Reference			
Component	**LOD/Units**	**Method**	
Moisture Content Ratio (% of as received sample)	%	PM024	18
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132	2.24 #
pH	1 pH Units	TM133	11.2 M
Cyanide, Total	<1 mg/kg	TM153	<1 M
Arsenic	<0.6 mg/kg	TM181	8.11 M
Cadmium	<0.02 mg/kg	TM181	<0.02 M
Chromium	<0.9 mg/kg	TM181	33.9 M
Copper	<1.4 mg/kg	TM181	16.3 M
Iron	<1000 mg/kg	TM181	23700 #
Lead	<0.7 mg/kg	TM181	17.9 M
Manganese	<0.13 mg/kg	TM181	2220 M
Mercury	<0.14 mg/kg	TM181	<0.14 M
Nickel	<0.2 mg/kg	TM181	17.6 M
Selenium	<1 mg/kg	TM181	1.58 #
Vanadium	<0.2 mg/kg	TM181	62 #
Zinc	<1.9 mg/kg	TM181	105 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL12-1	AL12-2	AL12-3	AL13-1	AL13-2	AL14-1
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.15 - 2.15	0.30 - 0.30	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518594	23518599	23518603	23518581	23518588	23518567
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.8	83.6	86.6	88.4	81.9	72.6
Acenaphthene-d10 % recovery**	%	TM218		86.5	83.4	86.8	90.4	83.8	77.9
Phenanthrene-d10 % recovery**	%	TM218		94.9	89.5	90.5	93.6	88.6	79.3
Chrysene-d12 % recovery**	%	TM218		89.2	87.5	94.2	89.6	83.4	76.3
Perylene-d12 % recovery**	%	TM218		77.6	85.7	81.5	85.9	75.1	72.8
Naphthalene	<9 µg/kg	TM218		476 M	482 M	1990 M	183 M	<90 M	<90 M
Acenaphthylene	<12 µg/kg	TM218		220 M	291 M	406 M	80 M	<120 M	<120 M
Acenaphthene	<8 µg/kg	TM218		44.9 M	106 M	247 M	42.1 M	<80 M	<80 M
Fluorene	<10 µg/kg	TM218		200 M	272 M	1720 M	70.6 M	<100 M	<100 M
Phenanthrene	<15 µg/kg	TM218		1420 M	5760 M	17400 M	527 M	<150 M	<150 M
Anthracene	<16 µg/kg	TM218		731 M	1310 M	3580 M	215 M	<160 M	<160 M
Fluoranthene	<17 µg/kg	TM218		2490 M	12300 M	16700 M	1240 M	<170 M	<170 M
Pyrene	<15 µg/kg	TM218		1920 M	9130 M	10900 M	997 M	<150 M	215 M
Benz(a)anthracene	<14 µg/kg	TM218		1180 M	6050 M	6250 M	662 M	<140 M	<140 M
Chrysene	<10 µg/kg	TM218		1190 M	5940 M	5560 M	679 M	<100 M	<100 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		812 M	7830 M	6860 M	1070 M	<150 M	<150 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		334 M	2830 M	2180 M	375 M	<140 M	<140 M
Benzo(a)pyrene	<15 µg/kg	TM218		865 M	5210 M	4170 M	607 M	<150 M	<150 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		662 M	4610 M	3160 M	489 M	<180 M	<180 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		151 M	1030 M	603 M	91.5 M	<230 M	<230 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		629 M	4100 M	2610 M	473 M	<240 M	<240 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		13300	67200	84300	7800	<1180	<1180

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL14-2	AM15-1	AM15-2	AM16-1	AM16-2	AM17-1
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.70 - 1.70	0.20 - 0.20	1.80 - 1.80	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518577	23518557	23518561	23518548	23518552	23518542
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.9	79.3	83	86.2	86.2	86
Acenaphthene-d10 % recovery**	%	TM218		88.3	80.3	84.8	85.8	84.8	84.5
Phenanthrene-d10 % recovery**	%	TM218		90.2	80.1	83.8	88.2	87.4	87
Chrysene-d12 % recovery**	%	TM218		87.5	72.8	82.6	83.7	81.1	78.2
Perylene-d12 % recovery**	%	TM218		82.9	74.4	78.2	80.6	80.6	73.1
Naphthalene	<9 µg/kg	TM218		166 M	3380 M	26500 M	90.5 M	170 M	92.3 M
Acenaphthylene	<12 µg/kg	TM218		71.7 M	2170 M	9590 M	25.9 M	57.1 M	<60 M
Acenaphthene	<8 µg/kg	TM218		<8 M	1750 M	937 M	75.2 M	<16 M	<40 M
Fluorene	<10 µg/kg	TM218		44 M	3170 M	5880 M	74.2 M	35.1 M	<50 M
Phenanthrene	<15 µg/kg	TM218		321 M	39300 M	34500 M	702 M	473 M	192 M
Anthracene	<16 µg/kg	TM218		83 M	10700 M	9310 M	202 M	101 M	<80 M
Fluoranthene	<17 µg/kg	TM218		553 M	75800 M	56800 M	1120 M	857 M	309 M
Pyrene	<15 µg/kg	TM218		416 M	59100 M	43200 M	909 M	659 M	261 M
Benz(a)anthracene	<14 µg/kg	TM218		299 M	42000 M	25700 M	593 M	342 M	159 M
Chrysene	<10 µg/kg	TM218		276 M	36100 M	24200 M	626 M	368 M	146 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		472 M	54100 M	35200 M	851 M	399 M	260 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		130 M	18900 M	10800 M	278 M	126 M	<70 M
Benzo(a)pyrene	<15 µg/kg	TM218		279 M	39600 M	23700 M	517 M	229 M	143 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		247 M	31100 M	19300 M	408 M	160 M	120 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		47 M	6870 M	4070 M	82.1 M	<46 M	<115 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		213 M	27400 M	19400 M	369 M	144 M	<120 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		3620	451000	349000	6920	4120	1680

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM18-1	AM18-2	AM19-1	AM19-2	AM20-1	AM20-2
			Depth (m)	0.20 - 0.20	1.90 - 1.90	0.40 - 0.40	2.10 - 2.10	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518531	23518538	23518523	23518527	23518626	23518630
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		76.9	85	85.8	87.8	79	86
Acenaphthene-d10 % recovery**	%	TM218		77.7	84.5	84.7	86.5	85.1	83.5
Phenanthrene-d10 % recovery**	%	TM218		76.9	85.5	85.5	88.1	82.3	86
Chrysene-d12 % recovery**	%	TM218		69.7	82.9	80.5	83.4	74.9	78.6
Perylene-d12 % recovery**	%	TM218		70.1	74	78.2	88.3	74.4	70.1
Naphthalene	<9 µg/kg	TM218		79.9 M	28.9 M	241 M	275 M	<45 M	98.3 M
Acenaphthylene	<12 µg/kg	TM218		<60 M	14.7 M	70.5 M	76.2 M	<60 M	<60 M
Acenaphthene	<8 µg/kg	TM218		<40 M	9.26 M	<40 M	68.4 M	<40 M	<40 M
Fluorene	<10 µg/kg	TM218		<50 M	11.1 M	56.8 M	94.3 M	<50 M	<50 M
Phenanthrene	<15 µg/kg	TM218		466 M	119 M	397 M	694 M	<75 M	242 M
Anthracene	<16 µg/kg	TM218		127 M	23.7 M	<80 M	160 M	<80 M	<80 M
Fluoranthene	<17 µg/kg	TM218		890 M	173 M	689 M	1170 M	<85 M	392 M
Pyrene	<15 µg/kg	TM218		747 M	142 M	518 M	904 M	<75 M	333 M
Benz(a)anthracene	<14 µg/kg	TM218		442 M	92.3 M	380 M	579 M	<70 M	203 M
Chrysene	<10 µg/kg	TM218		424 M	93.3 M	343 M	592 M	<50 M	178 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		550 M	108 M	654 M	981 M	<75 M	267 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		189 M	37.7 M	182 M	300 M	<70 M	85.6 M
Benzo(a)pyrene	<15 µg/kg	TM218		421 M	72.9 M	345 M	566 M	<75 M	183 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		337 M	52.1 M	308 M	473 M	<90 M	153 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<115 M	<23 M	<115 M	<115 M	<115 M	<115 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		318 M	57.4 M	282 M	449 M	<120 M	168 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		4990	1040	4470	7380	<590	2300

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

PAH by GCMS

Results Legend	
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diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM20-3	AN20-1	AN20-2	AN20-3	AO20-1	AO20-2
			Depth (m)	2.60 - 2.60	0.30 - 0.30	1.20 - 1.20	3.00 - 3.00	0.80 - 0.80	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518634	23518611	23518615	23518620	23518571	23518607
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.3	91.2	84.7	85.8	82.8	89.3
Acenaphthene-d10 % recovery**	%	TM218		86.7	89.5	86.7	88.4	83.5	88.4
Phenanthrene-d10 % recovery**	%	TM218		90.4	87.5	84.5	90	89.7	91
Chrysene-d12 % recovery**	%	TM218		84.4	72	54.2	77.8	79.9	81.8
Perylene-d12 % recovery**	%	TM218		81.7	59.8	33.8	63.2	70.6	83.3
Naphthalene	<9 µg/kg	TM218		256 M	49 M	156 M	65.8 M	346 M	25.3 M
Acenaphthylene	<12 µg/kg	TM218		57.4 M	<12 M	21 M	<12 M	21.6 M	<12 M
Acenaphthene	<8 µg/kg	TM218		12.2 M	9.05 M	46.1 M	<8 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218		48.9 M	26.4 M	114 M	27.6 M	19.5 M	<10 M
Phenanthrene	<15 µg/kg	TM218		290 M	198 M	597 M	179 M	309 M	52.8 M
Anthracene	<16 µg/kg	TM218		76.5 M	32.1 M	102 M	32 M	32.8 M	<16 M
Fluoranthene	<17 µg/kg	TM218		473 M	130 M	298 M	137 M	164 M	54.4 M
Pyrene	<15 µg/kg	TM218		342 M	121 M	253 M	108 M	145 M	40.3 M
Benz(a)anthracene	<14 µg/kg	TM218		217 M	77.4 M	165 M	75.7 M	79.4 M	24.5 M
Chrysene	<10 µg/kg	TM218		223 M	85 M	153 M	69.4 M	106 M	24.1 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		354 M	123 M	138 M	69.7 M	115 M	27.8 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		98.2 M	30.9 M	43.3 M	25.7 M	37.8 M	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218		203 M	55.7 M	100 M	54.3 M	87.9 M	24.2 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		176 M	42.1 M	59.6 M	42.4 M	167 M	27 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		32.4 M	<23 M	<23 M	<23 M	28 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		160 M	49.7 M	73.8 M	41 M	170 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		3020	1030	2320	928	1830	300

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	AP19-2
Depth (m)	1.70 - 1.70
Sample Type	Soil/Solid (S)
Date Sampled	07/01/2021
Sample Time	.
Date Received	09/01/2021
SDG Ref	210109-42
Lab Sample No.(s)	23518515
AGS Reference	

Component	LOD/Units	Method	
Naphthalene-d8 % recovery**	%	TM218	89.1
Acenaphthene-d10 % recovery**	%	TM218	90.2
Phenanthrene-d10 % recovery**	%	TM218	91.8
Chrysene-d12 % recovery**	%	TM218	83.4
Perylene-d12 % recovery**	%	TM218	79.4
Naphthalene	<9 µg/kg	TM218	28.4 M
Acenaphthylene	<12 µg/kg	TM218	<12 M
Acenaphthene	<8 µg/kg	TM218	<8 M
Fluorene	<10 µg/kg	TM218	<10 M
Phenanthrene	<15 µg/kg	TM218	55 M
Anthracene	<16 µg/kg	TM218	<16 M
Fluoranthene	<17 µg/kg	TM218	79 M
Pyrene	<15 µg/kg	TM218	67.6 M
Benz(a)anthracene	<14 µg/kg	TM218	44.5 M
Chrysene	<10 µg/kg	TM218	38.7 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	66.6 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	19.4 M
Benzo(a)pyrene	<15 µg/kg	TM218	35.7 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	33.9 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	30.3 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	499

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL12-1	AL12-2	AL12-3	AL13-1	AL13-2	AL14-1
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.15 - 2.15	0.30 - 0.30	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518594	23518599	23518603	23518581	23518588	23518567
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		64.9 4	72.2	79.8	78	81.8	84.1
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		24.4 4	19.2	24.8	40.3	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		27.8 4	22.8	45.9	56.4	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		2100	<1000	1200	5220	14000	4540
Aliphatics >C16-C21	<1000 µg/kg	TM414		8430	5470	135000	17700	124000	46500
Aliphatics >C21-C35	<1000 µg/kg	TM414		36900	71300	51600	110000	106000	728000
Aliphatics >C35-C44	<1000 µg/kg	TM414		9500	14800	3610	22200	5940	337000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		56900	92500	192000	155000	250000	1120000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		91600	329000	282000	201000	309000	1380000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		18.9 4	14.4	29.8	38	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		1130	3420	6480	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		5210	64600	17400	2390	2630	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		24300	152000	61600	38200	47100	255000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3520	15700	4290	4890	9300	7440
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1390	2440	<1000	<1000	3010	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		34700	237000	90000	46200	59000	263000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		91700	329000	282000	201000	309000	1380000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		52.2 4	<50	70.7	96.6	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		52.2 4	<20	70.7	96.6	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL14-2	AM15-1	AM15-2	AM16-1	AM16-2	AM17-1
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.70 - 1.70	0.20 - 0.20	1.80 - 1.80	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518577	23518557	23518561	23518548	23518552	23518542
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		82.4	21.3 4	37.1 4	70.1	53.4	75.3
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10 4	18.5 4	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		10.3	26.5 4	98.4 4	<10	12.7	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		10.3	29.9 4	127 4	<10	19.6	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	1840	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	3450	<1000	<1000	<1000	1200
Aliphatics >C16-C21	<1000 µg/kg	TM414		11300	8910	1770	3850	1870	17400
Aliphatics >C21-C35	<1000 µg/kg	TM414		199000	24000	5620	20400	13700	64100
Aliphatics >C35-C44	<1000 µg/kg	TM414		41500	22800	1960	6130	2360	6200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		252000	61000	9690	30600	18200	89100
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		307000	2290000	808000	101000	26500	225000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 4	20.9 4	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 4	<10 4	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	19.6 4	84.9 4	<10	12.7	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	8500	25500	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	36000	46000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	430000	294000	7610	1310	1260
Aromatics > EC21-EC35	<1000 µg/kg	TM414		51300	1550000	389000	48600	5840	96900
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3210	212000	44500	13400	<1000	37500
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	35200	3650	1590	<1000	1870
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		54900	2230000	799000	70200	8300	136000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		307000	2290000	809000	101000	26500	225000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	56.4 4	244 4	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 4	106 4	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	56.4 4	349 4	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM18-1	AM18-2	AM19-1	AM19-2	AM20-1	AM20-2
			Depth (m)	0.20 - 0.20	1.90 - 1.90	0.40 - 0.40	2.10 - 2.10	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518531	23518538	23518523	23518527	23518626	23518630
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		74.1	80.8	87.2	84	85.4	104
Aliphatics >C5-C6	<10 µg/kg	TM089		10.6	<10	<10	<10	14.2	18.1
Aliphatics >C6-C8	<10 µg/kg	TM089		35.4	12.1	<10	22	48.4	52
Aliphatics >C8-C10	<10 µg/kg	TM089		72	17.6	<10	44.1	73.2	59.9
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		18000	<1000	<1000	<1000	<1000	3230
Aliphatics >C16-C21	<1000 µg/kg	TM414		41100	2320	2110	2030	<1000	19900
Aliphatics >C21-C35	<1000 µg/kg	TM414		400000	8830	13500	13600	5050	55400
Aliphatics >C35-C44	<1000 µg/kg	TM414		31800	2040	3160	1680	2330	22600
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		492000	13700	18900	17400	7870	101000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		542000	29800	72400	32100	11900	129000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		48.4	12.1	<10	29	49.6	39.6
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		2000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		5390	2210	2910	1490	<1000	1180
Aromatics > EC21-EC35	<1000 µg/kg	TM414		39600	12300	35500	11700	2670	25000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3030	1570	14600	1280	<1000	1830
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1110	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		50000	16100	53500	14700	<5000	28300
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		542000	29800	72400	32200	<10000	130000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		118	<50	<50	66.1	136	130
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		118	<20	<20	66.1	136	130

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM20-3	AN20-1	AN20-2	AN20-3	AO20-1	AO20-2
			Depth (m)	2.60 - 2.60	0.30 - 0.30	1.20 - 1.20	3.00 - 3.00	0.80 - 0.80	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518634	23518611	23518615	23518620	23518571	23518607
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99.4	76.9	33.3 4	103	116	118
Aliphatics >C5-C6	<10 µg/kg	TM089		18.6	<10	<10 4	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		60.3	13.6	11.5 4	34.2	21.4	33.6
Aliphatics >C8-C10	<10 µg/kg	TM089		106	19.2	15 4	66.1	26.2	91.6
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	2480	11100	1240	1500	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		3120	9410	50800	5800	<1000	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	41200	89400	18000	<1000	<1000
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	10700	34100	4270	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	63800	186000	29300	<5000	<5000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		10100	82000	212000	35800	12200	<10000
Aromatics >EC5-EC7	<10 µg/kg	TM089		20.9	<10	<10 4	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		17.4	<10	<10 4	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		69.6	13.6	10.4 4	43.3	17.9	60.3
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	2390	<1000	2940	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1280	3300	9440	1680	2330	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		3140	13100	13700	3630	2650	<1000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	1040	<1000	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		5750	18300	26600	6520	9270	<5000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		<10000	82100	212000	35900	<10000	<10000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		184	<50	<50 4	100	<50	125
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		108	<50	<50 4	<50	<50	60.3
GRO >C5-C10	<20 µg/kg	TM089		292	<20	<20 4	100	<20	186

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	AP19-2
Depth (m)	1.70 - 1.70
Sample Type	Soil/Solid (S)
Date Sampled	07/01/2021
Sample Time	.
Date Received	09/01/2021
SDG Ref	210109-42
Lab Sample No.(s)	23518515
AGS Reference	

Component	LOD/Units	Method	
GRO Surrogate % recovery**	%	TM089	115
Aliphatics >C5-C6	<10 µg/kg	TM089	13.4
Aliphatics >C6-C8	<10 µg/kg	TM089	65.9
Aliphatics >C8-C10	<10 µg/kg	TM089	406
Aliphatics >C10-C12	<1000 µg/kg	TM414	2830
Aliphatics >C12-C16	<1000 µg/kg	TM414	11500
Aliphatics >C16-C21	<1000 µg/kg	TM414	9190
Aliphatics >C21-C35	<1000 µg/kg	TM414	17600
Aliphatics >C35-C44	<1000 µg/kg	TM414	7130
Total Aliphatics >C10-C44	<5000 µg/kg	TM414	48300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414	72200
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	271
Aromatics > EC10-EC12	<1000 µg/kg	TM414	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414	1480
Aromatics > EC16-EC21	<1000 µg/kg	TM414	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414	17900
Aromatics >EC35-EC44	<1000 µg/kg	TM414	3960
Aromatics > EC40-EC44	<1000 µg/kg	TM414	1920
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414	23900
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414	72900
Total Aliphatics >C5-C10	<50 µg/kg	TM089	486
Total Aromatics >EC5-EC10	<50 µg/kg	TM089	271
GRO >C5-C10	<20 µg/kg	TM089	756

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL12-1	AL12-2	AL12-3	AL13-1	AL13-2	AL14-1
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.15 - 2.15	0.30 - 0.30	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518594	23518599	23518603	23518581	23518588	23518567
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	107	105	105	103	112
Toluene-d8**	%	TM116		97.7	97.7	97.5	98.7	98.5	96.6
4-Bromofluorobenzene**	%	TM116		90.4	92.1	92.9	95.5	95.9	91.2
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL14-2	AM15-1	AM15-2	AM16-1	AM16-2	AM17-1
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.70 - 1.70	0.20 - 0.20	1.80 - 1.80	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518577	23518557	23518561	23518548	23518552	23518542
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	98.1	109	103	111	105
Toluene-d8**	%	TM116		98	93.8	94.5	97.9	97.7	86.3
4-Bromofluorobenzene**	%	TM116		96.3	82.4	90	93.1	96.7	70.2
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<10 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<9 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<7 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<4 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<10 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<10 M
Naphthalene	<13 µg/kg	TM116		<260 M	467 M	6330 M	<260 M	<260 M	16.4 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.02
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<40

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM18-1	AM18-2	AM19-1	AM19-2	AM20-1	AM20-2
			Depth (m)	0.20 - 0.20	1.90 - 1.90	0.40 - 0.40	2.10 - 2.10	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518531	23518538	23518523	23518527	23518626	23518630
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	105	105	106	105	105
Toluene-d8**	%	TM116		97.5	97.4	96.6	98.6	98.2	98.3
4-Bromofluorobenzene**	%	TM116		90.2	92.9	92.8	94.4	96	93.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM20-3	AN20-1	AN20-2	AN20-3	AO20-1	AO20-2
			Depth (m)	2.60 - 2.60	0.30 - 0.30	1.20 - 1.20	3.00 - 3.00	0.80 - 0.80	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021	07/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021	09/01/2021
			SDG Ref	210109-42	210109-42	210109-42	210109-42	210109-42	210109-42
			Lab Sample No.(s)	23518634	23518611	23518615	23518620	23518571	23518607
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	104	106	107	112	112
Toluene-d8**	%	TM116		97.5	97.5	97.3	99.1	98.2	98.5
4-Bromofluorobenzene**	%	TM116		92.4	92.5	89.1	96	97.4	94.6
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	AP19-2
Depth (m)	1.70 - 1.70
Sample Type	Soil/Solid (S)
Date Sampled	07/01/2021
Sample Time	.
Date Received	09/01/2021
SDG Ref	210109-42
Lab Sample No.(s)	23518515
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM116	107
Toluene-d8**	%	TM116	97.5
4-Bromofluorobenzene**	%	TM116	94.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M
Benzene	<9 µg/kg	TM116	<180 M
Toluene	<7 µg/kg	TM116	<140 M
Ethylbenzene	<4 µg/kg	TM116	<80 M
p/m-Xylene	<10 µg/kg	TM116	<200 #
o-Xylene	<10 µg/kg	TM116	<200 M
Naphthalene	<13 µg/kg	TM116	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.4
Sum of BTEX	<40 µg/kg	TM116	<800

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL12-1 0.50 - 0.50 SOLID 08/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518594 TM048	15/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL12-3 2.15 - 2.15 SOLID 08/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518603 TM048	15/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL13-1 0.30 - 0.30 SOLID 08/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518581 TM048	15/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL14-1 0.30 - 0.30 SOLID 08/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518567 TM048	15/01/2021	Paul Poynton	Asbestos insulation debris in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM15-1 0.50 - 0.50 SOLID 08/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518557 TM048	18/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM16-1 0.20 - 0.20 SOLID 08/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518548 TM048	15/01/2021	James Richards	Fibre bundle in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM18-2 1.90 - 1.90 SOLID 08/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518538 TM048	15/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM19-2 2.10 - 2.10 SOLID 07/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518527 TM048	18/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AM20-1 0.50 - 0.50 SOLID 07/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518626 TM048	15/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AM20-3 2.60 - 2.60 SOLID 07/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518634 TM048	15/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AN20-2 1.20 - 1.20 SOLID 07/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518615 TM048	15/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AO20-2 1.70 - 1.70 SOLID 07/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518607 TM048	18/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AP19-2 1.70 - 1.70 SOLID 07/01/2021 00:00:00 09/01/2021 05:00:00 210109-42 23518515 TM048	15/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	AL14-1	None (#)	N/A	0.0190 (#)	<0.001 (#)	0.0193 (#)
Depth (m)	0.30 - 0.30					
Sample Type	SOLID					
Date Sampled	08/01/2021 00:00:00					
Date Receieved	09/01/2021 05:00:00					
SDG	210109-42					
Original Sample	23518567					
Method Number	TM304					
Cust. Sample Ref.	AM16-1	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.20 - 0.20					
Sample Type	SOLID					
Date Sampled	08/01/2021 00:00:00					
Date Receieved	09/01/2021 05:00:00					
SDG	210109-42					
Original Sample	23518548					
Method Number	TM304					

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210109-42	**Client Reference:**	P18-669	**Report Number:**	584110
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	583663

Test Completion Dates

Lab Sample No(s)	23518594	23518599	23518603	23518581	23518588	23518567	23518577	23518557	23518561	23518548
Customer Sample Ref.	AL12-1	AL12-2	AL12-3	AL13-1	AL13-2	AL14-1	AL14-2	AM15-1	AM15-2	AM16-1
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.15 - 2.15	0.30 - 0.30	1.50 - 1.50	0.30 - 0.30	1.70 - 1.70	0.50 - 0.50	1.70 - 1.70	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021
Asbestos ID in Solid Samples	15-Jan-2021		15-Jan-2021	15-Jan-2021		15-Jan-2021		18-Jan-2021		15-Jan-2021
Asbestos Quantification - Full						22-Jan-2021				22-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	13-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	14-Jan-2021	13-Jan-2021	15-Jan-2021
EPH CWG GC (S)	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	12-Jan-2021	14-Jan-2021	12-Jan-2021
GRO by GC-FID (S)	14-Jan-2021	15-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	14-Jan-2021	15-Jan-2021	13-Jan-2021
Metals in solid samples by OES	18-Jan-2021	15-Jan-2021	15-Jan-2021	18-Jan-2021	15-Jan-2021	18-Jan-2021	18-Jan-2021	15-Jan-2021	18-Jan-2021	14-Jan-2021
PAH by GCMS	14-Jan-2021	18-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	18-Jan-2021	14-Jan-2021	18-Jan-2021	14-Jan-2021	14-Jan-2021
pH	12-Jan-2021	11-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
Phenols by HPLC (S)	13-Jan-2021	12-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021
Sample description	11-Jan-2021	09-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	09-Jan-2021	11-Jan-2021	09-Jan-2021
Total Organic Carbon	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	15-Jan-2021	18-Jan-2021	15-Jan-2021
TPH CWG GC (S)	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	13-Jan-2021
VOC MS (S)	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021

Lab Sample No(s)	23518552	23518542	23518531	23518538	23518523	23518527	23518626	23518630	23518634	23518611
Customer Sample Ref.	AM16-2	AM17-1	AM18-1	AM18-2	AM19-1	AM19-2	AM20-1	AM20-2	AM20-3	AN20-1
AGS Ref.										
Depth	1.80 - 1.80	0.40 - 0.40	0.20 - 0.20	1.90 - 1.90	0.40 - 0.40	2.10 - 2.10	0.50 - 0.50	1.50 - 1.50	2.60 - 2.60	0.30 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021
Asbestos ID in Solid Samples				15-Jan-2021		18-Jan-2021	15-Jan-2021		15-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	14-Jan-2021	14-Jan-2021	13-Jan-2021	14-Jan-2021	14-Jan-2021
EPH CWG GC (S)	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	15-Jan-2021
GRO by GC-FID (S)	14-Jan-2021	15-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	15-Jan-2021	13-Jan-2021	13-Jan-2021
Metals in solid samples by OES	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021
PAH by GCMS	14-Jan-2021	14-Jan-2021	18-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	18-Jan-2021	14-Jan-2021	14-Jan-2021	19-Jan-2021
pH	11-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	11-Jan-2021
Phenols by HPLC (S)	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021
Sample description	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	11-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021
Total Organic Carbon	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	15-Jan-2021	18-Jan-2021	15-Jan-2021	18-Jan-2021
TPH CWG GC (S)	14-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021	13-Jan-2021	15-Jan-2021	13-Jan-2021	15-Jan-2021
VOC MS (S)	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021

Lab Sample No(s)	23518615	23518620	23518571	23518607	23518515
Customer Sample Ref.	AN20-2	AN20-3	AO20-1	AO20-2	AP19-2
AGS Ref.					
Depth	1.20 - 1.20	3.00 - 3.00	0.80 - 0.80	1.70 - 1.70	1.70 - 1.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021
Asbestos ID in Solid Samples	15-Jan-2021			18-Jan-2021	15-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	14-Jan-2021	13-Jan-2021	15-Jan-2021	14-Jan-2021	13-Jan-2021
EPH CWG GC (S)	15-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	14-Jan-2021
GRO by GC-FID (S)	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021
Metals in solid samples by OES	14-Jan-2021	14-Jan-2021	18-Jan-2021	14-Jan-2021	15-Jan-2021
PAH by GCMS	15-Jan-2021	15-Jan-2021	14-Jan-2021	18-Jan-2021	14-Jan-2021
pH	12-Jan-2021	12-Jan-2021	11-Jan-2021	12-Jan-2021	12-Jan-2021
Phenols by HPLC (S)	15-Jan-2021	12-Jan-2021	12-Jan-2021	15-Jan-2021	13-Jan-2021
Sample description	09-Jan-2021	09-Jan-2021	09-Jan-2021	09-Jan-2021	11-Jan-2021
Total Organic Carbon	15-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021
TPH CWG GC (S)	15-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	14-Jan-2021
VOC MS (S)	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
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email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 January 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210112-39
Your Reference:	P18-669
Location:	Llanwern
Report No:	583697

We received 37 samples on Tuesday January 12, 2021 and 37 of these samples were scheduled for analysis which was completed on Tuesday January 19, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23527346	A012-1		0.50 - 0.50	11/01/2021
23527351	A012-2		1.20 - 1.20	11/01/2021
23527359	A013-1		0.30 - 0.30	11/01/2021
23527365	A013-2		1.80 - 1.80	11/01/2021
23527439	AL10-1		0.10 - 0.10	08/01/2021
23527534	AL10-2		2.00 - 2.00	08/01/2021
23527299	AL11-1		0.30 - 0.30	08/01/2021
23527369	AL11-2		1.40 - 1.40	08/01/2021
23527539	AM10-1		0.20 - 0.20	08/01/2021
23527546	AM10-2		1.90 - 1.90	08/01/2021
23527550	AM11-1		0.20 - 0.20	08/01/2021
23527559	AM11-2		1.80 - 1.80	08/01/2021
23527563	AM12-1		0.10 - 0.10	08/01/2021
23527310	AM12-2		2.10 - 2.10	08/01/2021
23527315	AM13-1		0.00 - 0.80	08/01/2021
23527320	AM13-2		1.50 - 1.50	08/01/2021
23527326	AM14-1		0.20 - 0.20	08/01/2021
23527335	AM14-2		1.80 - 1.80	08/01/2021
23527341	AM14-3		2.10 - 2.10	08/01/2021
23527374	AO15-1		0.40 - 0.40	11/01/2021
23527380	AO15-2		1.20 - 1.20	11/01/2021
23527390	AO16-1		0.30 - 0.30	11/01/2021
23527397	AO16-2		1.50 - 1.50	11/01/2021
23527402	AP15-1		0.50 - 0.50	11/01/2021
23527407	AP15-2		1.60 - 1.60	11/01/2021
23527414	AP16-1		0.40 - 0.40	11/01/2021
23527425	AP16-2		1.80 - 1.80	11/01/2021
23527429	AQ17-1		0.20 - 0.20	11/01/2021
23527434	AQ17-2		1.90 - 1.90	11/01/2021
23527450	AQ18-1		0.40 - 0.40	11/01/2021
23527463	AQ18-2		1.00 - 1.00	11/01/2021
23527472	AQ18-3		2.20 - 2.20	11/01/2021
23527505	AQ20-1		0.50 - 0.50	11/01/2021
23527519	AQ20-2		1.40 - 1.40	11/01/2021
23527483	AR19-1		0.60 - 0.60	11/01/2021
23527493	AR19-2		1.30 - 1.30	11/01/2021
23527529	AR20-1		0.60 - 0.60	11/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23527346		23527351		23527359		23527365		23527439		23527534		23527299		23527369			
Customer Sample Reference			A012-1		A012-2		A013-1		A013-2		AL10-1		AL10-2		AL11-1		AL11-2			
AGS Reference																				
Depth (m)			0.50 - 0.50		1.20 - 1.20		0.30 - 0.30		1.80 - 1.80		0.10 - 0.10		2.00 - 2.00		0.30 - 0.30		1.40 - 1.40			
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 37	X			X		X			X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19			X					X			X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 37	X			X		X			X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 37	X			X		X			X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 37		X			X		X			X			X		X				X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 37	X			X		X			X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 37	X			X		X			X			X		X			X		X
pH	All	NDPs: 0 Tests: 37	X			X		X			X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 37	X			X		X			X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 37	X			X		X			X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 37	X			X		X			X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 37	X			X		X			X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 37		X			X		X			X			X		X				X	

23527320	AM13-2		1.50 - 1.50	60g VOC (ALE215)	S						X										X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	X		
23527315	AM13-1		0.00 - 0.80	60g VOC (ALE215)	S						X										X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S		X														
23527310	AM12-2		2.10 - 2.10	60g VOC (ALE215)	S						X										X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	X		
23527563	AM12-1		0.10 - 0.10	60g VOC (ALE215)	S						X										X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S		X														
23527559	AM11-2		1.80 - 1.80	60g VOC (ALE215)	S						X										X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	X		
23527550	AM11-1		0.20 - 0.20	60g VOC (ALE215)	S						X										X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S		X														
23527546	AM10-2		1.90 - 1.90	60g VOC (ALE215)	S						X										X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	X		
23527539	AM10-1		0.20 - 0.20	60g VOC (ALE215)	S						X										X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S		X														
23527369	AL11-2		1.40 - 1.40	60g VOC (ALE215)	S						X										X

Validated

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23527326		23527335		23527341			23527374		23527380			23527390		23527397			23527402	
Customer Sample Reference			AM14-1		AM14-2		AM14-3			AO15-1		AO15-2			AO16-1		AO16-2			AP15-1	
AGS Reference																					
Depth (m)			0.20 - 0.20		1.80 - 1.80		2.10 - 2.10			0.40 - 0.40		1.20 - 1.20			0.30 - 0.30		1.50 - 1.50			0.50 - 0.50	
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19	X					X					X					X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 37			X		X			X		X			X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
pH	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
Sample description	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
TPH CWG GC (S)	All	NDPs: 0 Tests: 37		X		X			X		X			X		X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 37			X		X			X		X			X		X			X	

23527472	AQ18-3		2.20 - 2.20	60g VOC (ALE215)	S						X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	X			
23527463	AQ18-2		1.00 - 1.00	60g VOC (ALE215)	S						X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	X			
				1kg TUB with Handle (ALE260)	S		X															
23527450	AQ18-1		0.40 - 0.40	60g VOC (ALE215)	S						X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	X			
23527434	AQ17-2		1.90 - 1.90	60g VOC (ALE215)	S						X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	X			
				1kg TUB with Handle (ALE260)	S		X															
23527429	AQ17-1		0.20 - 0.20	60g VOC (ALE215)	S						X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	X			
23527425	AP16-2		1.80 - 1.80	60g VOC (ALE215)	S						X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	X			
				1kg TUB with Handle (ALE260)	S		X															
23527414	AP16-1		0.40 - 0.40	60g VOC (ALE215)	S						X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	X			
23527407	AP15-2		1.60 - 1.60	60g VOC (ALE215)	S						X											X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	X			
				1kg TUB with Handle (ALE260)	S		X															
23527402	AP15-1		0.50 - 0.50	60g VOC (ALE215)	S						X											X

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23527505		23527519		23527483			23527493			23527529	
Customer Sample Reference			AQ20-1		AQ20-2		AR19-1			AR19-2			AR20-1	
AGS Reference														
Depth (m)			0.50 - 0.50		1.40 - 1.40		0.60 - 0.60			1.30 - 1.30			0.60 - 0.60	
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 37		X		X			X		X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19	X					X					X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 37		X		X			X		X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 37		X		X			X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 37			X		X			X		X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 37		X		X			X		X			X	
PAH by GCMS	All	NDPs: 0 Tests: 37		X		X			X		X			X	
pH	All	NDPs: 0 Tests: 37		X		X			X		X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 37		X		X			X		X			X	
Sample description	All	NDPs: 0 Tests: 37		X		X			X		X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 37		X		X			X		X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 37		X		X			X		X			X	
VOC MS (S)	All	NDPs: 0 Tests: 37			X		X			X		X			X

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23527346	A012-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23527351	A012-2	1.20 - 1.20	Light Brown	Sand	Stones	None
23527359	A013-1	0.30 - 0.30	Dark Brown	Sand	Stones	None
23527365	A013-2	1.80 - 1.80	Dark Brown	Sand	Vegetation	Stones
23527439	AL10-1	0.10 - 0.10	Dark Brown	Sand	Vegetation	Stones
23527534	AL10-2	2.00 - 2.00	Light Brown	Sand	Stones	Brick
23527299	AL11-1	0.30 - 0.30	Dark Brown	Sand	Vegetation	Stones
23527369	AL11-2	1.40 - 1.40	Dark Brown	Stone/Soil	None	Stones
23527539	AM10-1	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23527546	AM10-2	1.90 - 1.90	Light Brown	Sand	Stones	None
23527550	AM11-1	0.20 - 0.20	Dark Brown	Sand	None	Stones
23527559	AM11-2	1.80 - 1.80	Dark Brown	Sand	None	Stones
23527563	AM12-1	0.10 - 0.10	Dark Brown	Loamy Sand	Stones	Vegetation
23527310	AM12-2	2.10 - 2.10	Dark Brown	Sand	None	Stones
23527315	AM13-1	0.00 - 0.80	Dark Brown	Sand	None	Stones
23527320	AM13-2	1.50 - 1.50	Dark Brown	Sand	Stones	Brick
23527326	AM14-1	0.20 - 0.20	Dark Brown	Sand	Vegetation	Stones
23527335	AM14-2	1.80 - 1.80	Dark Brown	Stone/Soil	None	Stones
23527341	AM14-3	2.10 - 2.10	Dark Brown	Stone/Soil	N/A	Stones
23527374	AO15-1	0.40 - 0.40	Dark Brown	Sandy Silt Loam	Stones	None
23527380	AO15-2	1.20 - 1.20	Dark Brown	Sand	Stones	None
23527390	AO16-1	0.30 - 0.30	Black	Sand	None	Stones
23527397	AO16-2	1.50 - 1.50	Light Brown	Sand	Stones	None
23527402	AP15-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23527407	AP15-2	1.60 - 1.60	Dark Brown	Sand	Stones	None
23527414	AP16-1	0.40 - 0.40	Dark Brown	Loamy Sand	Stones	None
23527425	AP16-2	1.80 - 1.80	Dark Brown	Sand	Stones	None
23527429	AQ17-1	0.20 - 0.20	Dark Brown	Sand	Stones	None
23527434	AQ17-2	1.90 - 1.90	Dark Brown	Sand	Stones	None
23527450	AQ18-1	0.40 - 0.40	Dark Brown	Stone/Soil	None	Stones
23527463	AQ18-2	1.00 - 1.00	Light Brown	N/A	Stones	Vegetation
23527472	AQ18-3	2.20 - 2.20	Light Brown	Sand	Stones	None
23527505	AQ20-1	0.50 - 0.50	Dark Brown	Loamy Sand	None	Stones
23527519	AQ20-2	1.40 - 1.40	Dark Brown	Stone/Soil	None	Stones
23527483	AR19-1	0.60 - 0.60	Dark Brown	Sandy Clay Loam	Stones	Vegetation
23527493	AR19-2	1.30 - 1.30	Dark Brown	Sand	Stones	None
23527529	AR20-1	0.60 - 0.60	Dark Brown	Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	A012-1	A012-2	A013-1	A013-2	AL10-1	AL10-2
			Depth (m)	0.50 - 0.50	1.20 - 1.20	0.30 - 0.30	1.80 - 1.80	0.10 - 0.10	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527346	23527351	23527359	23527365	23527439	23527534
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	10	11	15	13	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0112 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		61.5 #	1.24 #	5.74 #	4.17 #	8.79 #	2.45 #
pH	1 pH Units	TM133		9.14 M	12.1 M	11.8 M	11.2 M	8.84 M	10.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.56 M	8.07 M	9.06 M	9.45 M	10.2 M	8.24 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.207 M	<0.02 M	0.296 M	<0.02 M	0.5 M
Chromium	<0.9 mg/kg	TM181		24.3 M	8 M	10.7 M	9.87 M	35 M	57.2 M
Copper	<1.4 mg/kg	TM181		8.92 M	6.35 M	10.1 M	14.3 M	17.8 M	25.1 M
Iron	<1000 mg/kg	TM181		15100 #	12500 #	42300 #	31700 #	63900 #	98500 #
Lead	<0.7 mg/kg	TM181		2.62 M	16.4 M	36.4 M	15.4 M	61.8 M	57.8 M
Manganese	<0.13 mg/kg	TM181		3080 M	721 M	2240 M	1240 M	3920 M	10300 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		5.66 M	7.04 M	14.8 M	19 M	16.2 M	24.3 M
Selenium	<1 mg/kg	TM181		2.73 #	<1 #	1.09 #	<1 #	1.31 #	<10 #
Vanadium	<0.2 mg/kg	TM181		37.5 #	24 #	21 #	23.8 #	60 #	180 #
Zinc	<1.9 mg/kg	TM181		35 M	43.3 M	75.8 M	64 M	161 M	128 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL11-1	AL11-2	AM10-1	AM10-2	AM11-1	AM11-2
			Depth (m)	0.30 - 0.30	1.40 - 1.40	0.20 - 0.20	1.90 - 1.90	0.20 - 0.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527299	23527369	23527539	23527546	23527550	23527559
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	11	9	7.9	9.4	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		5.84 #	1.98 #	2.69 #	1.3 #	4.19 #	15.3 #
pH	1 pH Units	TM133		8.99 M	10.2 #	9.3 M	9.41 M	11 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.96 M	5.84 #	8.22 M	6.68 M	6.77 M	8.23 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.0296 #	1.54 M	<0.02 M	0.361 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		118 M	12.6 #	<9 M	12.3 M	15.2 M	71.1 M
Copper	<1.4 mg/kg	TM181		16 M	9.09 #	18.6 M	21.7 M	21.2 M	21.1 M
Iron	<1000 mg/kg	TM181		71200 #	16200 #	174000 #	32700 #	53800 #	40200 #
Lead	<0.7 mg/kg	TM181		26.8 M	12.5 #	343 M	19.2 M	30 M	30.4 M
Manganese	<0.13 mg/kg	TM181		11300 M	809 #	2790 M	891 M	1820 M	4130 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 #	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		14.4 M	12.2 #	33.8 M	23.3 M	25.8 M	19.4 M
Selenium	<1 mg/kg	TM181		3.25 #	<1 #	<10 #	<1 #	<1 #	2.2 #
Vanadium	<0.2 mg/kg	TM181		213 #	20.2 #	55.7 #	24 #	37.9 #	85 #
Zinc	<1.9 mg/kg	TM181		125 M	62.1 #	128 M	66.4 M	92.1 M	107 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM12-1	AM12-2	AM13-1	AM13-2	AM14-1	AM14-2
			Depth (m)	0.10 - 0.10	2.10 - 2.10	0.00 - 0.80	1.50 - 1.50	0.20 - 0.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527563	23527310	23527315	23527320	23527326	23527335
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.4	11	13	8.6	8.1	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #
Soil Organic Matter (SOM)	<0.35 %	TM132		4.12 #	8.4 #	5.83 #	7.15 #	10.7 #	<0.35 #
pH	1 pH Units	TM133		8.94 M	10.4 M	11.3 M	10.8 M	10.1 M	11 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Arsenic	<0.6 mg/kg	TM181		20.7 M	6.15 M	9.07 M	4.51 M	5.98 M	5.75 #
Cadmium	<0.02 mg/kg	TM181		0.227 M	<0.02 M	0.208 M	0.296 M	0.302 M	<0.02 #
Chromium	<0.9 mg/kg	TM181		4.7 M	30.1 M	3.77 M	15.7 M	9.09 M	22.5 #
Copper	<1.4 mg/kg	TM181		5.27 M	8.69 M	13.7 M	11.7 M	10.7 M	10.6 #
Iron	<1000 mg/kg	TM181		15000 #	22800 #	92900 #	39200 #	32700 #	28500 #
Lead	<0.7 mg/kg	TM181		12.2 M	1.25 M	56.8 M	14 M	29.4 M	12 #
Manganese	<0.13 mg/kg	TM181		3940 M	3650 M	4690 M	3580 M	2800 M	3230 #
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #
Nickel	<0.2 mg/kg	TM181		3.86 M	8 M	17.6 M	9.86 M	10.3 M	13 #
Selenium	<1 mg/kg	TM181		2.22 #	2.55 #	<1 #	1.75 #	1.42 #	3.44 #
Vanadium	<0.2 mg/kg	TM181		14.8 #	35.2 #	36.5 #	22.8 #	33.2 #	25.9 #
Zinc	<1.9 mg/kg	TM181		59.3 M	76.5 M	125 M	58 M	237 M	74.8 #

Validated

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM14-3	AO15-1	AO15-2	AO16-1	AO16-2	AP15-1
			Depth (m)	2.10 - 2.10	0.40 - 0.40	1.20 - 1.20	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527341	23527374	23527380	23527390	23527397	23527402
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	12	11	14	12	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	0.0113 M	<0.01 M	<0.01 M	0.0115 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	0.0113 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		12.9 #	28.3 #	15.6 #	42.1 #	0.702 #	34.1 #
pH	1 pH Units	TM133		10.9 #	11.1 M	11.1 M	11.2 M	9.52 M	11.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 M	3.85 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.43 #	<6 M	4.63 M	<6 M	11.9 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.33 #	0.74 M	<0.02 M	0.344 M	0.739 M	0.467 M
Chromium	<0.9 mg/kg	TM181		9.42 #	119 M	302 M	213 M	4.41 M	270 M
Copper	<1.4 mg/kg	TM181		15 #	20.6 M	8.89 M	20.9 M	4.39 M	26.7 M
Iron	<1000 mg/kg	TM181		28300 #	94300 #	85900 #	98900 #	11300 #	104000 #
Lead	<0.7 mg/kg	TM181		13 #	41.1 M	6.99 M	32.3 M	17 M	37.7 M
Manganese	<0.13 mg/kg	TM181		1900 #	80700 M	17600 M	17400 M	880 M	24300 M
Mercury	<0.14 mg/kg	TM181		22.9 #	<1.4 M	<0.14 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		13.2 #	23.9 M	9.77 M	17.5 M	6.65 M	18.8 M
Selenium	<1 mg/kg	TM181		1.6 #	<10 #	3.82 #	<10 #	<1 #	13.2 #
Vanadium	<0.2 mg/kg	TM181		19.3 #	154 #	334 #	537 #	23.8 #	602 #
Zinc	<1.9 mg/kg	TM181		97 #	146 M	60 M	95.9 M	54.9 M	90.4 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AP15-2	AP16-1	AP16-2	AQ17-1	AQ17-2	AQ18-1
			Depth (m)	1.60 - 1.60	0.40 - 0.40	1.80 - 1.80	0.20 - 0.20	1.90 - 1.90	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527407	23527414	23527425	23527429	23527434	23527450
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	13	13	13	10	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0116 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.0232 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #
Soil Organic Matter (SOM)	<0.35 %	TM132		0.61 #	43.6 #	7.33 #	15.8 #	2.02 #	4.4 #
pH	1 pH Units	TM133		10.7 M	10.9 M	10.1 M	11.2 M	10.9 M	9.18 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Arsenic	<0.6 mg/kg	TM181		10.2 M	7.74 M	16.4 M	8.12 M	12.5 M	9.79 #
Cadmium	<0.02 mg/kg	TM181		0.385 M	0.504 M	0.383 M	<0.02 M	0.316 M	0.832 #
Chromium	<0.9 mg/kg	TM181		5.14 M	262 M	21 M	114 M	58.3 M	118 #
Copper	<1.4 mg/kg	TM181		6.55 M	21 M	10.4 M	47.2 M	15.8 M	41.6 #
Iron	<1000 mg/kg	TM181		16700 #	88300 #	23500 #	56000 #	88000 #	66800 #
Lead	<0.7 mg/kg	TM181		16.6 M	36.5 M	19.2 M	56.8 M	56.9 M	76.9 #
Manganese	<0.13 mg/kg	TM181		500 M	12300 M	1690 M	10200 M	10000 M	11300 #
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 #
Nickel	<0.2 mg/kg	TM181		10.8 M	24.2 M	13.3 M	18 M	15.6 M	22.5 #
Selenium	<1 mg/kg	TM181		<1 #	<10 #	<1 #	3.76 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		21.9 #	243 #	40.1 #	244 #	112 #	193 #
Zinc	<1.9 mg/kg	TM181		55.9 M	159 M	64 M	130 M	162 M	230 #

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AQ18-2	AQ18-3	AQ20-1	AQ20-2	AR19-1	AR19-2
			Depth (m)	1.00 - 1.00	2.20 - 2.20	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527463	23527472	23527505	23527519	23527483	23527493
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.5	13	10	13	13	7.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12	26.4 M	<12 M	<12 #	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01	<0.01 M	<0.01 M	<0.01 #	0.0115 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01	<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015	<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035	<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		0.931	2.1 #	1.49 #	2.4 #	15.3 #	6.43 #
pH	1 pH Units	TM133		11.5	10.1 M	9.8 M	11.3 #	10.1 M	11.4 M
Cyanide, Total	<1 mg/kg	TM153		<1	<1 M	<1 M	1.55 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.42	12 M	11.8 M	10.2 #	10 M	6.6 M
Cadmium	<0.02 mg/kg	TM181		0.353	0.25 M	0.801 M	<0.02 #	0.622 M	0.292 M
Chromium	<0.9 mg/kg	TM181		6.77	<0.9 M	<9 M	51.1 #	111 M	373 M
Copper	<1.4 mg/kg	TM181		6.39	13.7 M	22.5 M	28.7 #	24.2 M	15.1 M
Iron	<1000 mg/kg	TM181		38000	31400 #	199000 #	78200 #	76800 #	15700 #
Lead	<0.7 mg/kg	TM181		15.8	797 M	113 M	16 #	72.2 M	22.7 M
Manganese	<0.13 mg/kg	TM181		1230	742 M	2930 M	4650 #	10600 M	907 M
Mercury	<0.14 mg/kg	TM181		<0.14	0.163 M	<1.4 M	<0.14 #	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		10.7	11.9 M	40.5 M	18.7 #	25.5 M	23.6 M
Selenium	<1 mg/kg	TM181		<1	<1 #	<10 #	<1 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		35.1	17.3 #	63.2 #	107 #	164 #	29.6 #
Zinc	<1.9 mg/kg	TM181		61.7	25 M	150 M	114 #	220 M	64.9 M

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	AR20-1
Depth (m)	0.60 - 0.60
Sample Type	Soil/Solid (S)
Date Sampled	11/01/2021
Sample Time	.
Date Received	12/01/2021
SDG Ref	210112-39
Lab Sample No.(s)	23527529
AGS Reference	

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	10
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132	25.3 #
pH	1 pH Units	TM133	10.3 M
Cyanide, Total	<1 mg/kg	TM153	<1 M
Arsenic	<0.6 mg/kg	TM181	21.1 M
Cadmium	<0.02 mg/kg	TM181	1.8 M
Chromium	<0.9 mg/kg	TM181	24.5 M
Copper	<1.4 mg/kg	TM181	56.2 M
Iron	<1000 mg/kg	TM181	271000 #
Lead	<0.7 mg/kg	TM181	377 M
Manganese	<0.13 mg/kg	TM181	6350 M
Mercury	<0.14 mg/kg	TM181	<1.4 M
Nickel	<0.2 mg/kg	TM181	73.5 M
Selenium	<1 mg/kg	TM181	<10 #
Vanadium	<0.2 mg/kg	TM181	84.9 #
Zinc	<1.9 mg/kg	TM181	1260 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	A012-1	A012-2	A013-1	A013-2	AL10-1	AL10-2
			Depth (m)	0.50 - 0.50	1.20 - 1.20	0.30 - 0.30	1.80 - 1.80	0.10 - 0.10	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527346	23527351	23527359	23527365	23527439	23527534
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		74.1	85.2	76.6	87.6	87.4	86.1
Acenaphthene-d10 % recovery**	%	TM218		74.7	91.4	76.2	92.5	91.4	91.3
Phenanthrene-d10 % recovery**	%	TM218		76.3	96.3	77	97	94.1	95.8
Chrysene-d12 % recovery**	%	TM218		74.8	95.9	77.5	96.1	95.4	97
Perylene-d12 % recovery**	%	TM218		70.1	85.9	77.7	85.9	85.6	86
Naphthalene	<9 µg/kg	TM218		602 M	39.7 M	106 M	49 M	30.2 M	11.6 M
Acenaphthylene	<12 µg/kg	TM218		1260 M	51.7 M	<120 M	29.3 M	14.2 M	21 M
Acenaphthene	<8 µg/kg	TM218		102 M	<8 M	<80 M	12 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218		983 M	23.5 M	<100 M	12.4 M	<10 M	24.8 M
Phenanthrene	<15 µg/kg	TM218		6950 M	273 M	315 M	91.2 M	75.6 M	223 M
Anthracene	<16 µg/kg	TM218		2220 M	93.6 M	<160 M	25 M	<16 M	44.1 M
Fluoranthene	<17 µg/kg	TM218		13400 M	675 M	594 M	200 M	142 M	341 M
Pyrene	<15 µg/kg	TM218		9780 M	510 M	475 M	169 M	117 M	259 M
Benz(a)anthracene	<14 µg/kg	TM218		5620 M	330 M	292 M	132 M	86.9 M	151 M
Chrysene	<10 µg/kg	TM218		4800 M	333 M	283 M	117 M	98.3 M	121 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		7640 M	384 M	462 M	131 M	89.6 M	157 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		2530 M	146 M	<140 M	68.7 M	38.6 M	49.2 M
Benzo(a)pyrene	<15 µg/kg	TM218		4770 M	292 M	253 M	146 M	81.7 M	108 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		3880 M	260 M	225 M	140 M	77.9 M	91.2 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		704 M	48.6 M	<230 M	28.6 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		3590 M	230 M	<240 M	124 M	76.5 M	81.2 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		68900	3690	3000	1470	928	1680

Validated

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL11-1	AL11-2	AM10-1	AM10-2	AM11-1	AM11-2
			Depth (m)	0.30 - 0.30	1.40 - 1.40	0.20 - 0.20	1.90 - 1.90	0.20 - 0.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527299	23527369	23527539	23527546	23527550	23527559
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.8	88	71.1	88.1	76.9	84.7
Acenaphthene-d10 % recovery**	%	TM218		91.6	92.5	71.6	87.8	77.4	90.1
Phenanthrene-d10 % recovery**	%	TM218		99.3	99.7	73.8	88.6	81.1	95.2
Chrysene-d12 % recovery**	%	TM218		97.1	93.2	71.2	87.3	76.5	95.9
Perylene-d12 % recovery**	%	TM218		87.5	88.1	70.2	85.1	72.9	88.2
Naphthalene	<9 µg/kg	TM218		24.9 M	51.6 #	<90 M	12.5 M	<90 M	7300 M
Acenaphthylene	<12 µg/kg	TM218		26.3 M	50.2 #	<120 M	<12 M	<120 M	3540 M
Acenaphthene	<8 µg/kg	TM218		17.9 M	15.3 #	<80 M	<8 M	<80 M	157 M
Fluorene	<10 µg/kg	TM218		14.6 M	39.4 #	<100 M	<10 M	<100 M	2960 M
Phenanthrene	<15 µg/kg	TM218		154 M	527 #	<150 M	37.8 M	<150 M	13700 M
Anthracene	<16 µg/kg	TM218		43.6 M	131 #	<160 M	<16 M	<160 M	4090 M
Fluoranthene	<17 µg/kg	TM218		390 M	974 #	<170 M	53.9 M	<170 M	13700 M
Pyrene	<15 µg/kg	TM218		370 M	760 #	<150 M	44.8 M	<150 M	10200 M
Benz(a)anthracene	<14 µg/kg	TM218		278 M	455 #	<140 M	29.5 M	<140 M	4540 M
Chrysene	<10 µg/kg	TM218		307 M	453 #	<100 M	28 M	<100 M	4580 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		510 M	644 #	<150 M	41.1 M	<150 M	5050 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		164 M	191 #	<140 M	<14 M	<140 M	1690 M
Benzo(a)pyrene	<15 µg/kg	TM218		338 M	427 #	<150 M	22.3 M	<150 M	3940 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		297 M	391 #	<180 M	<18 M	<180 M	3170 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		46.4 M	83.2 #	<230 M	<23 M	<230 M	569 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		291 M	383 #	<240 M	<24 M	<240 M	3030 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		3270	5580	<1180	270	<1180	82200

Validated

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM12-1	AM12-2	AM13-1	AM13-2	AM14-1	AM14-2
			Depth (m)	0.10 - 0.10	2.10 - 2.10	0.00 - 0.80	1.50 - 1.50	0.20 - 0.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527563	23527310	23527315	23527320	23527326	23527335
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87	90.4	81.2	88.2	86.4	79.3
Acenaphthene-d10 % recovery**	%	TM218		89.7	90.9	86.3	89.5	92.4	81
Phenanthrene-d10 % recovery**	%	TM218		95.1	96.6	89.3	93.2	98.1	83
Chrysene-d12 % recovery**	%	TM218		93.3	95.5	89.3	86.3	95.9	82.3
Perylene-d12 % recovery**	%	TM218		83.2	88.6	81.9	84.7	81.6	77.7
Naphthalene	<9 µg/kg	TM218		87.1 M	27.9 M	79.4 M	23.5 M	270 M	<90 #
Acenaphthylene	<12 µg/kg	TM218		144 M	47.2 M	71.9 M	21.4 M	147 M	<120 #
Acenaphthene	<8 µg/kg	TM218		35.2 M	11.6 M	69.6 M	9.91 M	48.1 M	<80 #
Fluorene	<10 µg/kg	TM218		46.2 M	14.9 M	76.4 M	<10 M	104 M	<100 #
Phenanthrene	<15 µg/kg	TM218		428 M	112 M	540 M	100 M	1310 M	253 #
Anthracene	<16 µg/kg	TM218		177 M	54.7 M	158 M	29.3 M	328 M	<160 #
Fluoranthene	<17 µg/kg	TM218		1300 M	407 M	1200 M	364 M	2720 M	528 #
Pyrene	<15 µg/kg	TM218		1140 M	336 M	1400 M	299 M	2260 M	417 #
Benz(a)anthracene	<14 µg/kg	TM218		800 M	259 M	1100 M	218 M	1540 M	259 #
Chrysene	<10 µg/kg	TM218		648 M	260 M	917 M	190 M	1560 M	275 #
Benzo(b)fluoranthene	<15 µg/kg	TM218		1100 M	437 M	1110 M	275 M	2120 M	380 #
Benzo(k)fluoranthene	<14 µg/kg	TM218		373 M	127 M	458 M	88.6 M	712 M	<140 #
Benzo(a)pyrene	<15 µg/kg	TM218		749 M	258 M	905 M	184 M	1560 M	220 #
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		731 M	214 M	708 M	134 M	1370 M	<180 #
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		141 M	36.9 M	168 M	25.6 M	278 M	<230 #
Benzo(g,h,i)perylene	<24 µg/kg	TM218		575 M	206 M	591 M	118 M	1280 M	<240 #
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		8470	2810	9560	2080	17600	2330

Validated

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM14-3	AO15-1	AO15-2	AO16-1	AO16-2	AP15-1
			Depth (m)	2.10 - 2.10	0.40 - 0.40	1.20 - 1.20	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527341	23527374	23527380	23527390	23527397	23527402
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.7	85.5	91.7	87.9	88.6	82.5
Acenaphthene-d10 % recovery**	%	TM218		87.3	91.2	92.2	88.1	86.8	90.6
Phenanthrene-d10 % recovery**	%	TM218		91.2	96.3	90.5	94.5	86.6	90.7
Chrysene-d12 % recovery**	%	TM218		89.1	94.7	83.3	80.7	84.8	92.6
Perylene-d12 % recovery**	%	TM218		83.2	83.3	81.5	74.9	86.1	85.5
Naphthalene	<9 µg/kg	TM218		28 #	1160 M	1260 M	998 M	17.3 M	1540 M
Acenaphthylene	<12 µg/kg	TM218		14.1 #	750 M	1050 M	3360 M	<12 M	2170 M
Acenaphthene	<8 µg/kg	TM218		<8 #	79.8 M	71.9 M	259 M	<8 M	174 M
Fluorene	<10 µg/kg	TM218		<10 #	302 M	694 M	4340 M	<10 M	1270 M
Phenanthrene	<15 µg/kg	TM218		105 #	3810 M	3660 M	27400 M	36.8 M	8980 M
Anthracene	<16 µg/kg	TM218		19.7 #	1070 M	1390 M	6430 M	<16 M	3680 M
Fluoranthene	<17 µg/kg	TM218		157 #	9170 M	7640 M	29500 M	65.7 M	19700 M
Pyrene	<15 µg/kg	TM218		121 #	7450 M	6370 M	24400 M	56.9 M	15900 M
Benz(a)anthracene	<14 µg/kg	TM218		84.4 #	5080 M	3900 M	11700 M	41.3 M	8950 M
Chrysene	<10 µg/kg	TM218		92.8 #	4590 M	3690 M	9220 M	38.3 M	7180 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		135 #	7010 M	5900 M	13800 M	68.7 M	9370 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		40.9 #	1680 M	1900 M	5130 M	20.6 M	3460 M
Benzo(a)pyrene	<15 µg/kg	TM218		75.1 #	4390 M	3700 M	9550 M	33.9 M	7350 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		67.3 #	3730 M	3240 M	7880 M	37.6 M	6260 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 #	921 M	645 M	1410 M	<23 M	1230 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		69 #	3220 M	2810 M	7020 M	34.6 M	5340 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1010	54400	47900	162000	452	103000

Validated

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AP15-2	AP16-1	AP16-2	AQ17-1	AQ17-2	AQ18-1
			Depth (m)	1.60 - 1.60	0.40 - 0.40	1.80 - 1.80	0.20 - 0.20	1.90 - 1.90	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527407	23527414	23527425	23527429	23527434	23527450
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.8	88.9	90.8	88.7	86.8	82.7
Acenaphthene-d10 % recovery**	%	TM218		87.7	87.7	92	92	89.7	85.5
Phenanthrene-d10 % recovery**	%	TM218		87.6	87.9	96.4	98	94.8	94.3
Chrysene-d12 % recovery**	%	TM218		84.9	82.6	99.9	94.6	92	85
Perylene-d12 % recovery**	%	TM218		85.9	78.8	92.6	86.8	86.8	78.4
Naphthalene	<9 µg/kg	TM218		25.1 M	619 M	140 M	124 M	36.2 M	67.3 #
Acenaphthylene	<12 µg/kg	TM218		26.9 M	399 M	91.1 M	29.3 M	25.1 M	<60 #
Acenaphthene	<8 µg/kg	TM218		<8 M	50.8 M	11.3 M	29.7 M	<8 M	<40 #
Fluorene	<10 µg/kg	TM218		12 M	220 M	64.3 M	37.7 M	12 M	<50 #
Phenanthrene	<15 µg/kg	TM218		71.1 M	2220 M	464 M	333 M	114 M	420 #
Anthracene	<16 µg/kg	TM218		23.6 M	604 M	189 M	86.8 M	32.6 M	138 #
Fluoranthene	<17 µg/kg	TM218		149 M	4660 M	843 M	601 M	283 M	641 #
Pyrene	<15 µg/kg	TM218		114 M	3590 M	682 M	622 M	237 M	488 #
Benz(a)anthracene	<14 µg/kg	TM218		71.1 M	2450 M	448 M	379 M	161 M	310 #
Chrysene	<10 µg/kg	TM218		66.2 M	2240 M	453 M	426 M	165 M	385 #
Benzo(b)fluoranthene	<15 µg/kg	TM218		116 M	3560 M	610 M	544 M	228 M	350 #
Benzo(k)fluoranthene	<14 µg/kg	TM218		33.3 M	1290 M	190 M	171 M	66.8 M	143 #
Benzo(a)pyrene	<15 µg/kg	TM218		66.8 M	2100 M	358 M	319 M	131 M	293 #
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		63.2 M	1710 M	288 M	236 M	108 M	270 #
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	340 M	59 M	60.2 M	<23 M	<115 #
Benzo(g,h,i)perylene	<24 µg/kg	TM218		53.9 M	1450 M	274 M	240 M	106 M	256 #
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		892	27500	5170	4240	1710	3760

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AQ18-2	AQ18-3	AQ20-1	AQ20-2	AR19-1	AR19-2
			Depth (m)	1.00 - 1.00	2.20 - 2.20	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527463	23527472	23527505	23527519	23527483	23527493
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.9	86.7	88	88.3	77	88.9
Acenaphthene-d10 % recovery**	%	TM218		85.9	92.1	86.3	93.7	77.9	87.3
Phenanthrene-d10 % recovery**	%	TM218		87.7	96.2	87.7	102	80.5	90.6
Chrysene-d12 % recovery**	%	TM218		91.2	95.1	86.5	94.3	78.8	87.3
Perylene-d12 % recovery**	%	TM218		90.2	87.2	86.7	90.1	73	83.3
Naphthalene	<9 µg/kg	TM218		31	<9 M	78.7 M	106 #	624 M	540 M
Acenaphthylene	<12 µg/kg	TM218		15.1	<12 M	22.4 M	68.4 #	363 M	1680 M
Acenaphthene	<8 µg/kg	TM218		<8	<8 M	<8 M	9.97 #	<80 M	166 M
Fluorene	<10 µg/kg	TM218		<10	<10 M	18.8 M	36.5 #	260 M	2960 M
Phenanthrene	<15 µg/kg	TM218		68.6	20.6 M	114 M	499 #	1570 M	13500 M
Anthracene	<16 µg/kg	TM218		<16	<16 M	32.2 M	191 #	724 M	3090 M
Fluoranthene	<17 µg/kg	TM218		129	20 M	154 M	1440 #	3650 M	15200 M
Pyrene	<15 µg/kg	TM218		98.6	<15 M	118 M	1160 #	2600 M	9730 M
Benz(a)anthracene	<14 µg/kg	TM218		78.7	<14 M	81.5 M	636 #	1770 M	5470 M
Chrysene	<10 µg/kg	TM218		68.4	15.5 M	78.2 M	618 #	1780 M	3960 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		127	<15 M	140 M	1000 #	2390 M	5700 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		38.1	<14 M	42.7 M	352 #	707 M	2010 M
Benzo(a)pyrene	<15 µg/kg	TM218		73.4	<15 M	76.6 M	755 #	1420 M	3940 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		71.8	<18 M	74.6 M	633 #	1050 M	2820 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23	<23 M	<23 M	134 #	<230 M	596 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		70.8	<24 M	67.1 M	631 #	985 M	2210 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		871	<118	1100	8260	19900	73600

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	AR20-1
Depth (m)	0.60 - 0.60
Sample Type	Soil/Solid (S)
Date Sampled	11/01/2021
Sample Time	.
Date Received	12/01/2021
SDG Ref	210112-39
Lab Sample No.(s)	23527529
AGS Reference	

Component	LOD/Units	Method	
Naphthalene-d8 % recovery**	%	TM218	85.8
Acenaphthene-d10 % recovery**	%	TM218	85.4
Phenanthrene-d10 % recovery**	%	TM218	87.7
Chrysene-d12 % recovery**	%	TM218	87.9
Perylene-d12 % recovery**	%	TM218	84.5
Naphthalene	<9 µg/kg	TM218	90.5 M
Acenaphthylene	<12 µg/kg	TM218	24.4 M
Acenaphthene	<8 µg/kg	TM218	<8 M
Fluorene	<10 µg/kg	TM218	19 M
Phenanthrene	<15 µg/kg	TM218	138 M
Anthracene	<16 µg/kg	TM218	40 M
Fluoranthene	<17 µg/kg	TM218	233 M
Pyrene	<15 µg/kg	TM218	187 M
Benz(a)anthracene	<14 µg/kg	TM218	133 M
Chrysene	<10 µg/kg	TM218	138 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	204 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	60.8 M
Benzo(a)pyrene	<15 µg/kg	TM218	113 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	87.6 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	96.3 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	1560

Validated

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	A012-1	A012-2	A013-1	A013-2	AL10-1	AL10-2
			Depth (m)	0.50 - 0.50	1.20 - 1.20	0.30 - 0.30	1.80 - 1.80	0.10 - 0.10	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527346	23527351	23527359	23527365	23527439	23527534
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		45.9 4	104	66.3 4	110	93	95.8
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10	<10 4	17.7	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	<10	<10 4	26	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	<10	<10 4	59	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	1200	1790	<1000	1740
Aliphatics >C16-C21	<1000 µg/kg	TM414		3230	<1000	7830	3510	2150	34600
Aliphatics >C21-C35	<1000 µg/kg	TM414		7140	7540	25500	13300	15700	33100
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	1340	6050	3450	<1000	2850
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		11500	9100	40700	22100	19100	72300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		215000	24400	210000	40700	61800	80900
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10 4	10.6	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10 4	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	<10	<10 4	38.9	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		4640	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		49300	2160	1650	<1000	1040	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		132000	9750	110000	12100	26500	6420
Aromatics >EC35-EC44	<1000 µg/kg	TM414		17600	3220	56600	5290	15100	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		2400	<1000	13900	1040	1820	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		204000	15300	169000	18600	42800	8590
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		215000	24400	210000	40800	61800	80900
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50	<50 4	103	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50 4	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20	<20 4	103	<20	<20

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL11-1	AL11-2	AM10-1	AM10-2	AM11-1	AM11-2
			Depth (m)	0.30 - 0.30	1.40 - 1.40	0.20 - 0.20	1.90 - 1.90	0.20 - 0.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527299	23527369	23527539	23527546	23527550	23527559
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91.5	106	118	127	95.8	76.4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	27.2	19.8	15.2
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	39.1	34.1	22.2
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	2620	<1000	2080
Aliphatics >C16-C21	<1000 µg/kg	TM414		12500	<1000	2710	324000	4930	19800
Aliphatics >C21-C35	<1000 µg/kg	TM414		29000	2030	10500	135000	32600	45600
Aliphatics >C35-C44	<1000 µg/kg	TM414		4900	<1000	<1000	<1000	30900	19000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		47600	<5000	13700	461000	69000	86600
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		81100	56400	46400	467000	91500	217000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	26.1	23.1	15.2
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	3070
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2150	18400	<1000	<1000	<1000	32000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		26600	29600	23300	3710	19900	84800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		4560	4470	8920	<1000	1740	9930
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	1300
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		33500	53000	32700	5670	22500	131000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		81100	53000	46400	467000	91500	217000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	66.2	53.9	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	66.2	53.9	<20

Validated

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM12-1	AM12-2	AM13-1	AM13-2	AM14-1	AM14-2
			Depth (m)	0.10 - 0.10	2.10 - 2.10	0.00 - 0.80	1.50 - 1.50	0.20 - 0.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527563	23527310	23527315	23527320	23527326	23527335
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		35 4	114	88.9	85	43 4	82.4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	37	<10	<10	<10 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 4	48.2	<10	<10	<10 4	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 4	98.6	<10	<10	<10 4	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1020	<1000	4500	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		5060	1860	39100	5380	3600	2290
Aliphatics >C21-C35	<1000 µg/kg	TM414		15600	9290	62500	116000	18700	8340
Aliphatics >C35-C44	<1000 µg/kg	TM414		1040	1500	63400	45300	10800	6230
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		23200	12900	170000	168000	34200	17100
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		171000	20700	248000	215000	75500	33400
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10	<10	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 4	66.1	<10	<10	<10 4	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1070	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		2340	<1000	2570	<1000	5020	2090
Aromatics > EC21-EC35	<1000 µg/kg	TM414		87200	6170	68400	42900	31400	12600
Aromatics >EC35-EC44	<1000 µg/kg	TM414		57600	<1000	7090	3830	3580	1430
Aromatics > EC40-EC44	<1000 µg/kg	TM414		6560	<1000	1700	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		148000	7840	78300	47700	41200	16300
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		171000	20900	248000	215000	75500	33400
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	184	<50	<50	<50 4	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	66.1	<50	<50	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	250	<20	<20	<20 4	<20

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM14-3	AO15-1	AO15-2	AO16-1	AO16-2	AP15-1
			Depth (m)	2.10 - 2.10	0.40 - 0.40	1.20 - 1.20	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527341	23527374	23527380	23527390	23527397	23527402
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		96.4	15.4 4	27 4	17.8 4	85.9	22 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	10.3 4	<10 4	22 4	<10	25.3 4
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	21.7 4	<10 4	45.2 4	<10	49.5 4
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	14.8 4	<10 4	31.3 4	<10	35.7 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	2220	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	5480	2160	6010	<1000	13500
Aliphatics >C16-C21	<1000 µg/kg	TM414		1450	10400	9980	30000	<1000	77300
Aliphatics >C21-C35	<1000 µg/kg	TM414		6770	24900	23300	34100	3870	31800
Aliphatics >C35-C44	<1000 µg/kg	TM414		3580	8780	35400	6950	<1000	14500
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		12000	51800	71300	77500	<5000	138000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		23500	258000	311000	247000	<10000	615000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 4	<10 4	<10 4	<10	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 4	<10 4	<10 4	<10	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	10.3 4	<10 4	20.9 4	<10	24.2 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	1500	1380	<1000	<1000	2770
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	9050	5210	5160	<1000	15900
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	42900	58200	31100	<1000	136000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		9360	137000	156000	116000	1700	288000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1020	16000	19800	16500	<1000	34500
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	2150	3200	1670	<1000	4960
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		11500	206000	240000	169000	<5000	477000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		23500	258000	311000	247000	<10000	615000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50 4	<50 4	98.6 4	<50	110 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 4	<50 4	<50 4	<50	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20	<20 4	<20 4	98.6 4	<20	110 4

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AP15-2	AP16-1	AP16-2	AQ17-1	AQ17-2	AQ18-1
			Depth (m)	1.60 - 1.60	0.40 - 0.40	1.80 - 1.80	0.20 - 0.20	1.90 - 1.90	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527407	23527414	23527425	23527429	23527434	23527450
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97.5	62.8 4	67.8 4	110	103	79.2
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	11.4 4	<10 4	12.7	22.2	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		19.6	43.3 4	<10 4	15	24.4	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		51.8	46.7 4	<10 4	18.4	62.2	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	1030	<1000	17200	2540	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	2430	1170	37600	4370	2630
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	11000	6290	284000	30200	13500
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	2890	<1000	81800	40700	2300
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	17400	7710	422000	77800	18700
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		<10000	73400	18900	487000	98400	44300
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 4	<10 4	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	10.3 4	<10 4	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		34.5	30.8 4	<10 4	11.5	41.1	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	1730	<1000	3690	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	9240	2100	15600	1380	2470
Aromatics > EC21-EC35	<1000 µg/kg	TM414		<1000	40100	7710	43300	17100	17500
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	4460	<1000	1920	1750	5350
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		<5000	56000	11200	64900	20600	25600
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		<10000	73500	18900	487000	98600	44300
Total Aliphatics >C5-C10	<50 µg/kg	TM089		71.3	101 4	<50 4	<50	109	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 4	<50 4	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		71.3	101 4	<20 4	<20	109	<20

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AQ18-2	AQ18-3	AQ20-1	AQ20-2	AR19-1	AR19-2
			Depth (m)	1.00 - 1.00	2.20 - 2.20	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527463	23527472	23527505	23527519	23527483	23527493
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		116	91.3	74.4	77.5	40.4 4	79.9
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	14.6	26.5	<10 4	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	17.9	35.7	<10 4	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	6500	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	<1000	<1000	18100	4690	5020
Aliphatics >C21-C35	<1000 µg/kg	TM414		19000	14100	5780	43300	8630	5750
Aliphatics >C35-C44	<1000 µg/kg	TM414		6040	1870	<1000	12600	3660	1190
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		25200	16000	6630	80500	17500	12000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		32500	19100	11200	97500	129000	107000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	12.3	24.2	<10 4	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1250	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	4640	1270
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	<1000	2770	35900	12300
Aromatics > EC21-EC35	<1000 µg/kg	TM414		6090	1840	3110	12200	63300	72600
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	6540	8040
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1470	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		7310	<5000	<5000	16900	112000	94500
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		32500	16000	<10000	97600	129000	107000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	62.1	<50 4	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	62.1	<20 4	<20

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	AR20-1						
Depth (m)	0.60 - 0.60						
Sample Type	Soil/Solid (S)						
Date Sampled	11/01/2021						
Sample Time	.						
Date Received	12/01/2021						
SDG Ref	210112-39						
Lab Sample No.(s)	23527529						
AGS Reference							
Component	**LOD/Units**	**Method**					
GRO Surrogate % recovery**	%	TM089	80.8				
Aliphatics >C5-C6	<10 µg/kg	TM089	<10				
Aliphatics >C6-C8	<10 µg/kg	TM089	<10				
Aliphatics >C8-C10	<10 µg/kg	TM089	<10				
Aliphatics >C10-C12	<1000 µg/kg	TM414	<1000				
Aliphatics >C12-C16	<1000 µg/kg	TM414	<1000				
Aliphatics >C16-C21	<1000 µg/kg	TM414	4480				
Aliphatics >C21-C35	<1000 µg/kg	TM414	33900				
Aliphatics >C35-C44	<1000 µg/kg	TM414	20500				
Total Aliphatics >C10-C44	<5000 µg/kg	TM414	59000				
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414	84600				
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10				
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10				
Aromatics > EC10-EC12	<1000 µg/kg	TM414	<1000				
Aromatics > EC12-EC16	<1000 µg/kg	TM414	<1000				
Aromatics > EC16-EC21	<1000 µg/kg	TM414	<1000				
Aromatics > EC21-EC35	<1000 µg/kg	TM414	23000				
Aromatics >EC35-EC44	<1000 µg/kg	TM414	1570				
Aromatics > EC40-EC44	<1000 µg/kg	TM414	<1000				
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414	25500				
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414	84600				
Total Aliphatics >C5-C10	<50 µg/kg	TM089	<50				
Total Aromatics >EC5-EC10	<50 µg/kg	TM089	<50				
GRO >C5-C10	<20 µg/kg	TM089	<20				

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	A012-1	A012-2	A013-1	A013-2	AL10-1	AL10-2
			Depth (m)	0.50 - 0.50	1.20 - 1.20	0.30 - 0.30	1.80 - 1.80	0.10 - 0.10	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527346	23527351	23527359	23527365	23527439	23527534
			AGS Reference						
Dibromofluoromethane**	%	TM116		98	102	97.6	104	104	105
Toluene-d8**	%	TM116		94.8	96.9	95.6	98.2	96.6	98.7
4-Bromofluorobenzene**	%	TM116		82.8	92.8	91.3	94	90.2	97.4
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL11-1	AL11-2	AM10-1	AM10-2	AM11-1	AM11-2
			Depth (m)	0.30 - 0.30	1.40 - 1.40	0.20 - 0.20	1.90 - 1.90	0.20 - 0.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527299	23527369	23527539	23527546	23527550	23527559
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	105	106	113	111	115
Toluene-d8**	%	TM116		96.4	99.1	98.1	99.2	98.2	98.7
4-Bromofluorobenzene**	%	TM116		90.6	93.9	97.8	95.3	93.7	94.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 #	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 #	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 #	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 #	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM12-1	AM12-2	AM13-1	AM13-2	AM14-1	AM14-2
			Depth (m)	0.10 - 0.10	2.10 - 2.10	0.00 - 0.80	1.50 - 1.50	0.20 - 0.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021	08/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527563	23527310	23527315	23527320	23527326	23527335
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	101	108	104	102	103
Toluene-d8**	%	TM116		95.6	97.3	97.8	97.4	96.8	96.2
4-Bromofluorobenzene**	%	TM116		79.9	90.1	93.7	91	89.5	90.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AM14-3	AO15-1	AO15-2	AO16-1	AO16-2	AP15-1
			Depth (m)	2.10 - 2.10	0.40 - 0.40	1.20 - 1.20	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527341	23527374	23527380	23527390	23527397	23527402
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	92.8	98.9	97.7	103	98.1
Toluene-d8**	%	TM116		96.5	88.6	91.8	93.8	98.2	95.4
4-Bromofluorobenzene**	%	TM116		89.1	72.3	79.9	84.3	96.2	86.1
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 #	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 #	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 #	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 #	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 #	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 #	<260 M	751 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AP15-2	AP16-1	AP16-2	AQ17-1	AQ17-2	AQ18-1
			Depth (m)	1.60 - 1.60	0.40 - 0.40	1.80 - 1.80	0.20 - 0.20	1.90 - 1.90	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527407	23527414	23527425	23527429	23527434	23527450
			AGS Reference						
Dibromofluoromethane**	%	TM116		118	106	103	104	105	107
Toluene-d8**	%	TM116		99.7	95.7	97.5	97.1	99.2	96.2
4-Bromofluorobenzene**	%	TM116		98.7	87.4	89.1	91.3	98.5	93.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 #
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 #
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 #
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 #
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 #
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 #
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG: 210112-39 **Client Reference:** P18-669 **Report Number:** 583697
Location: Llanwern **Order Number:** **Superseded Report:**

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AQ18-2	AQ18-3	AQ20-1	AQ20-2	AR19-1	AR19-2
			Depth (m)	1.00 - 1.00	2.20 - 2.20	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021	11/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021
			SDG Ref	210112-39	210112-39	210112-39	210112-39	210112-39	210112-39
			Lab Sample No.(s)	23527463	23527472	23527505	23527519	23527483	23527493
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	104	115	117	98.6	105
Toluene-d8**	%	TM116		96.9	98.1	98	99.9	96	98.5
4-Bromofluorobenzene**	%	TM116		91.6	96	94.8	96	84.6	96.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260	<260 M	<260 M	<260 M	306 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Customer Sample Ref.	AR20-1
Depth (m)	0.60 - 0.60
Sample Type	Soil/Solid (S)
Date Sampled	11/01/2021
Sample Time	.
Date Received	12/01/2021
SDG Ref	210112-39
Lab Sample No.(s)	23527529
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM116	114
Toluene-d8**	%	TM116	98
4-Bromofluorobenzene**	%	TM116	91.1
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M
Benzene	<9 µg/kg	TM116	<180 M
Toluene	<7 µg/kg	TM116	<140 M
Ethylbenzene	<4 µg/kg	TM116	<80 M
p/m-Xylene	<10 µg/kg	TM116	<200 #
o-Xylene	<10 µg/kg	TM116	<200 M
Naphthalene	<13 µg/kg	TM116	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.4
Sum of BTEX	<40 µg/kg	TM116	<800

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	A012-2 1.20 - 1.20 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527351 TM048	13/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	A013-2 1.80 - 1.80 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527365 TM048	14/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL10-1 0.10 - 0.10 SOLID 08/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527439 TM048	18/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL11-1 0.30 - 0.30 SOLID 08/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527299 TM048	18/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM10-1 0.20 - 0.20 SOLID 08/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527539 TM048	18/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM11-1 0.20 - 0.20 SOLID 08/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527550 TM048	18/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM12-1 0.10 - 0.10 SOLID 08/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527563 TM048	18/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM13-1 0.00 - 0.80 SOLID 08/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527315 TM048	13/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM14-1 0.20 - 0.20 SOLID 08/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527326 TM048	18/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AM14-3 2.10 - 2.10 SOLID 08/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527341 TM048	18/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AO15-2 1.20 - 1.20 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527380 TM048	14/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AO16-2 1.50 - 1.50 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527397 TM048	18/01/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AP15-2 1.60 - 1.60 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527407 TM048	18/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AP16-2 1.80 - 1.80 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527425 TM048	18/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AQ17-2 1.90 - 1.90 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527434 TM048	18/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AQ18-2 1.00 - 1.00 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527463 TM048	18/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AQ20-1 0.50 - 0.50 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527505 TM048	18/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AR19-1 0.60 - 0.60 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527483 TM048	19/01/2021	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AR20-1 0.60 - 0.60 SOLID 11/01/2021 00:00:00 12/01/2021 05:00:00 210112-39 23527529 TM048	18/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	23527346	23527351	23527359	23527365	23527439	23527534	23527299	23527369	23527539	23527546
Customer Sample Ref.	A012-1	A012-2	A013-1	A013-2	AL10-1	AL10-2	AL11-1	AL11-2	AM10-1	AM10-2
AGS Ref.										
Depth	0.50 - 0.50	1.20 - 1.20	0.30 - 0.30	1.80 - 1.80	0.10 - 0.10	2.00 - 2.00	0.30 - 0.30	1.40 - 1.40	0.20 - 0.20	1.90 - 1.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021
Asbestos ID in Solid Samples		13-Jan-2021		14-Jan-2021	18-Jan-2021		18-Jan-2021		18-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	19-Jan-2021	19-Jan-2021	19-Jan-2021	14-Jan-2021	14-Jan-2021	19-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	19-Jan-2021
EPH CWG GC (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021
GRO by GC-FID (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021
Metals in solid samples by OES	18-Jan-2021	19-Jan-2021	18-Jan-2021	18-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	18-Jan-2021	15-Jan-2021	18-Jan-2021
PAH by GCMS	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021
pH	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021
Phenols by HPLC (S)	15-Jan-2021	15-Jan-2021	19-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021
Sample description	13-Jan-2021	13-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021
Total Organic Carbon	18-Jan-2021	18-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	18-Jan-2021
TPH CWG GC (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021
VOC MS (S)	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021

Lab Sample No(s)	23527550	23527559	23527563	23527310	23527315	23527320	23527326	23527335	23527341	23527374
Customer Sample Ref.	AM11-1	AM11-2	AM12-1	AM12-2	AM13-1	AM13-2	AM14-1	AM14-2	AM14-3	AO15-1
AGS Ref.										
Depth	0.20 - 0.20	1.80 - 1.80	0.10 - 0.10	2.10 - 2.10	0.00 - 0.80	1.50 - 1.50	0.20 - 0.20	1.80 - 1.80	2.10 - 2.10	0.40 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	19-Jan-2021	18-Jan-2021	18-Jan-2021	19-Jan-2021
Asbestos ID in Solid Samples	18-Jan-2021		18-Jan-2021		13-Jan-2021		18-Jan-2021		18-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	14-Jan-2021	14-Jan-2021	19-Jan-2021	14-Jan-2021	14-Jan-2021	19-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	19-Jan-2021
EPH CWG GC (S)	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	15-Jan-2021
GRO by GC-FID (S)	15-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	18-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
Metals in solid samples by OES	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	19-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	19-Jan-2021
PAH by GCMS	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
pH	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021
Phenols by HPLC (S)	14-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021	18-Jan-2021	14-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021
Sample description	12-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021	12-Jan-2021	12-Jan-2021	12-Jan-2021	13-Jan-2021
Total Organic Carbon	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	18-Jan-2021	18-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	18-Jan-2021
TPH CWG GC (S)	15-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	14-Jan-2021	15-Jan-2021	18-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
VOC MS (S)	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021

Lab Sample No(s)	23527380	23527390	23527397	23527402	23527407	23527414	23527425	23527429	23527434	23527450
Customer Sample Ref.	AO15-2	AO16-1	AO16-2	AP15-1	AP15-2	AP16-1	AP16-2	AQ17-1	AQ17-2	AQ18-1
AGS Ref.										
Depth	1.20 - 1.20	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50	1.60 - 1.60	0.40 - 0.40	1.80 - 1.80	0.20 - 0.20	1.90 - 1.90	0.40 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021
Asbestos ID in Solid Samples	14-Jan-2021		18-Jan-2021		18-Jan-2021		18-Jan-2021		18-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021
EPH CWG GC (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
GRO by GC-FID (S)	18-Jan-2021	18-Jan-2021	15-Jan-2021	18-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	14-Jan-2021
Metals in solid samples by OES	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021
PAH by GCMS	19-Jan-2021	19-Jan-2021	19-Jan-2021	15-Jan-2021	19-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
pH	14-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	14-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021
Phenols by HPLC (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
Sample description	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021
Total Organic Carbon	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021	19-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021
TPH CWG GC (S)	18-Jan-2021	18-Jan-2021	15-Jan-2021	18-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
VOC MS (S)	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021

CERTIFICATE OF ANALYSIS

SDG:	210112-39	**Client Reference:**	P18-669	**Report Number:**	583697
Location:	Llanwern	**Order Number:**		**Superseded Report:**	

Lab Sample No(s)	23527463	23527472	23527505	23527519	23527483	23527493	23527529
Customer Sample Ref.	AQ18-2	AQ18-3	AQ20-1	AQ20-2	AR19-1	AR19-2	AR20-1
AGS Ref.							
Depth	1.00 - 1.00	2.20 - 2.20	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.30 - 1.30	0.60 - 0.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021
Asbestos ID in Solid Samples	18-Jan-2021		18-Jan-2021		19-Jan-2021		18-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021
EPH CWG GC (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021
GRO by GC-FID (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	14-Jan-2021	19-Jan-2021
Metals in solid samples by OES	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021
PAH by GCMS	15-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	15-Jan-2021
pH	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021
Phenols by HPLC (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021	18-Jan-2021
Sample description	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021	13-Jan-2021
Total Organic Carbon	19-Jan-2021	18-Jan-2021	18-Jan-2021	18-Jan-2021	19-Jan-2021	19-Jan-2021	19-Jan-2021
TPH CWG GC (S)	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	15-Jan-2021	19-Jan-2021
VOC MS (S)	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021	14-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	01 February 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210120-68
Your Reference:	P18-669
Location:	Llanwern
Report No:	584985

We received 38 samples on Wednesday January 20, 2021 and 38 of these samples were scheduled for analysis which was completed on Monday February 01, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23577280	AG7-1		0.50 - 0.50	18/01/2021
23577255	AG8-1		0.40 - 0.40	18/01/2021
23577263	AG8-2		1.50 - 1.50	18/01/2021
23577284	AH6-1		0.40 - 0.40	18/01/2021
23577289	AH6-2		2.00 - 2.00	18/01/2021
23577269	AH7-1		0.40 - 0.40	18/01/2021
23577276	AH7-2		1.50 - 1.50	18/01/2021
23577467	AH8-1		0.10 - 0.10	18/01/2021
23577235	AH8-2		1.00 - 1.00	18/01/2021
23577244	AH8-3		2.00 - 2.00	18/01/2021
23577249	AH8-4		3.90 - 3.90	18/01/2021
23577450	AI6-1		0.10 - 0.10	18/01/2021
23577459	AI6-2		1.60 - 1.60	18/01/2021
23577433	AI7-1		0.40 - 0.40	18/01/2021
23577438	AI7-2		1.30 - 1.30	18/01/2021
23577358	AI8-1		0.40 - 4.00	18/01/2021
23577424	AI8-2		2.00 - 2.00	18/01/2021
23577224	AI10-1		0.40 - 0.40	18/01/2021
23577295	AI10-2		1.70 - 1.70	18/01/2021
23577300	AJ10-1		0.50 - 0.50	19/01/2021
23577304	AJ10-2		1.90 - 1.90	19/01/2021
23577315	AJ12-1		0.60 - 0.60	19/01/2021
23577319	AJ12-2		2.00 - 2.00	19/01/2021
23577325	AJ13-1		0.20 - 0.20	19/01/2021
23577333	AJ13-2		2.00 - 2.00	19/01/2021
23577337	AJ14-1		0.50 - 0.50	19/01/2021
23577342	AJ14-2		2.00 - 2.00	19/01/2021
23577353	AJ15-1		0.50 - 0.50	19/01/2021
23577364	AJ15-2		1.60 - 1.60	19/01/2021
23577370	AJ16-1		1.00 - 1.00	19/01/2021
23577378	AJ16-2		1.50 - 1.50	19/01/2021
23577384	AJ16-3		2.50 - 2.50	19/01/2021
23577390	AJ17-1		0.80 - 0.80	19/01/2021
23577401	AJ17-2		1.90 - 1.90	19/01/2021
23577405	AJ18-1		0.70 - 0.70	19/01/2021
23577409	AJ18-2		1.10 - 1.10	19/01/2021
23577418	AJ18-3		2.30 - 2.30	19/01/2021
23577310	AK10-1		0.30 - 0.30	19/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23577280			23577255			23577263		23577284			23577289			23577269			23577276		23577467
Customer Sample Reference			AG7-1			AG8-1			AG8-2		AH6-1			AH6-2			AH7-1			AH7-2		AH8-1
AGS Reference																							
Depth (m)			0.50 - 0.50			0.40 - 0.40			1.50 - 1.50		0.40 - 0.40			2.00 - 2.00			0.40 - 0.40			1.50 - 1.50		0.10 - 0.10
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19	X			X							X			X							X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X				
EPH CWG GC (S)	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38			X			X		X		X			X			X		X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X				
PAH by GCMS	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X				
pH	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X				
Sample description	All	NDPs: 0 Tests: 36		X			X		X		X			X			X		X				
Total Organic Carbon	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X				
VOC MS (S)	All	NDPs: 0 Tests: 38			X			X		X		X			X			X		X			

23577358	AI8-1		0.40 - 4.00	250g Amber Jar (ALE210)	S		x			x		x				x		x		x		x	
				1kg TUB with Handle (ALE260)	S			x															
23577438	AI7-2		1.30 - 1.30	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S		x			x		x				x		x		x				
23577433	AI7-1		0.40 - 0.40	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S		x			x		x				x		x		x		x		
				1kg TUB with Handle (ALE260)	S			x															
23577459	AI6-2		1.60 - 1.60	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S		x			x		x				x		x		x		x		
23577450	AI6-1		0.10 - 0.10	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S		x			x		x				x		x		x		x		
				1kg TUB with Handle (ALE260)	S			x															
23577249	AH8-4		3.90 - 3.90	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S		x			x		x				x		x		x		x		
23577244	AH8-3		2.00 - 2.00	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S		x			x		x				x		x		x		x		
				1kg TUB with Handle (ALE260)	S			x															
23577235	AH8-2		1.00 - 1.00	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S		x			x		x				x		x		x		x		
23577467	AH8-1		0.10 - 0.10	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S		x			x		x				x		x		x		x		

CERTIFICATE OF ANALYSIS

SDG: 210120-68 **Client Reference:** P18-669 **Report Number:** 584985
Location: Llanwern **Order Number:** 108282 **Superseded Report:**

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23577358	23577424	23577224		23577295	23577300		23577304			23577315		23577319	23577325				
Customer Sample Reference			AI8-1	AI8-2	AI10-1		AI10-2	AJ10-1		AJ10-2			AJ12-1		AJ12-2	AJ13-1				
AGS Reference																					
Depth (m)			0.40 - 4.00	2.00 - 2.00	0.40 - 0.40		1.70 - 1.70	0.50 - 0.50		1.90 - 1.90			0.60 - 0.60		2.00 - 2.00	0.20 - 0.20				
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)		
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19				X						X			X						X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38	X		X			X		X		X			X			X		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X		
PAH by GCMS	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X		
pH	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X		
Sample description	All	NDPs: 0 Tests: 36		X			X		X		X			X			X				
Total Organic Carbon	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X			X		X		X			X			X		X		
VOC MS (S)	All	NDPs: 0 Tests: 38	X		X			X		X		X			X			X		X	

23577384	AJ16-3		2.50 - 2.50	250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S		X												
23577378	AJ16-2		1.50 - 1.50	60g VOC (ALE215)	S					X									X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X		
23577370	AJ16-1		1.00 - 1.00	60g VOC (ALE215)	S					X									X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S		X												
23577364	AJ15-2		1.60 - 1.60	60g VOC (ALE215)	S					X									X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X		
23577353	AJ15-1		0.50 - 0.50	60g VOC (ALE215)	S					X									X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S		X												
23577342	AJ14-2		2.00 - 2.00	60g VOC (ALE215)	S					X									X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X		
23577337	AJ14-1		0.50 - 0.50	60g VOC (ALE215)	S					X									X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X		
				1kg TUB with Handle (ALE260)	S		X												
23577333	AJ13-2		2.00 - 2.00	60g VOC (ALE215)	S					X									X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X		
23577325	AJ13-1		0.20 - 0.20	60g VOC (ALE215)	S					X									X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23577384	23577390	23577401		23577405		23577409		23577418		23577310			
Customer Sample Reference			AJ16-3	AJ17-1	AJ17-2		AJ18-1		AJ18-2		AJ18-3		AK10-1			
AGS Reference																
Depth (m)			2.50 - 2.50	0.80 - 0.80	1.90 - 1.90		0.70 - 0.70		1.10 - 1.10		2.30 - 2.30		0.30 - 0.30			
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38		X			X		X			X		X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19				X					X						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 38		X			X		X			X		X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 38		X			X		X			X		X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38	X		X			X		X			X		X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X			X		X			X		X		X	
PAH by GCMS	All	NDPs: 0 Tests: 38		X			X		X			X		X		X	
pH	All	NDPs: 0 Tests: 38		X			X		X			X		X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X			X		X			X		X		X	
Sample description	All	NDPs: 0 Tests: 36		X			X		X			X		X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 38		X			X		X			X		X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X			X		X			X		X		X	
VOC MS (S)	All	NDPs: 0 Tests: 38	X		X			X		X			X		X		X

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23577280	AG7-1	0.50 - 0.50	Dark Brown	Sand	Vegetation	Stones
23577255	AG8-1	0.40 - 0.40	Dark Brown	Stone/Soil	Oil/Petroleum	Stones
23577263	AG8-2	1.50 - 1.50	Dark Brown	Stone/Soil	None	Stones
23577284	AH6-1	0.40 - 0.40	Dark Brown	Sandy Loam	Stones	None
23577289	AH6-2	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	Stones
23577269	AH7-1	0.40 - 0.40	Dark Brown	Sandy Loam	Stones	None
23577276	AH7-2	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	None
23577467	AH8-1	0.10 - 0.10	Dark Brown	Loamy Sand	Vegetation	Stones
23577235	AH8-2	1.00 - 1.00	Dark Brown	Stone/Soil	None	Stones
23577244	AH8-3	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	None
23577249	AH8-4	3.90 - 3.90	Dark Brown	Stone/Soil	None	Stones
23577450	AI6-1	0.10 - 0.10	Dark Brown	Sand	Vegetation	Stones
23577459	AI6-2	1.60 - 1.60	Dark Brown	Sand	Vegetation	Stones
23577433	AI7-1	0.40 - 0.40	Dark Brown	Stone/Soil	Vegetation	Stones
23577438	AI7-2	1.30 - 1.30	Black	Stone/Soil	Oil/Petroleum	Stones
23577358	AI8-1	0.40 - 4.00	Dark Brown	Sand	Stones	N/A
23577424	AI8-2	2.00 - 2.00	Dark Brown	N/A	None	Stones
23577224	AI10-1	0.40 - 0.40	Dark Brown	Sand	Stones	None
23577295	AI10-2	1.70 - 1.70	Dark Brown	Loamy Sand	Stones	Brick
23577300	AJ10-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23577304	AJ10-2	1.90 - 1.90	Dark Brown	Stone/Soil	None	Stones
23577315	AJ12-1	0.60 - 0.60	Dark Brown	Sand	Stones	None
23577319	AJ12-2	2.00 - 2.00	Dark Brown	Sand	Stones	N/A
23577325	AJ13-1	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	None
23577333	AJ13-2	2.00 - 2.00	Dark Brown	Sand	Stones	N/A
23577337	AJ14-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
23577342	AJ14-2	2.00 - 2.00	Dark Brown	Sand	Stones	Brick
23577353	AJ15-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	N/A
23577364	AJ15-2	1.60 - 1.60	Dark Brown	Sand	Stones	None
23577370	AJ16-1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
23577378	AJ16-2	1.50 - 1.50	Dark Brown	Sand	Stones	None
23577384	AJ16-3	2.50 - 2.50	Dark Brown	Loamy Sand	Stones	None
23577390	AJ17-1	0.80 - 0.80	Dark Brown	Sandy Loam	Stones	None
23577401	AJ17-2	1.90 - 1.90	Dark Brown	Loamy Sand	Stones	None
23577405	AJ18-1	0.70 - 0.70	Dark Brown	Sand	Stones	Vegetation
23577409	AJ18-2	1.10 - 1.10	Grey	Sand	Stones	None
23577418	AJ18-3	2.30 - 2.30	Dark Brown	Sand	Stones	N/A
23577310	AK10-1	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG7-1	AG8-1	AG8-2	AH6-1	AH6-2	AH7-1
			Depth (m)	0.50 - 0.50	0.40 - 0.40	1.50 - 1.50	0.40 - 0.40	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577280	23577255	23577263	23577284	23577289	23577269
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.4	9.5	15	9.9	10	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	24.8 #	<12 M	23 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0111 #	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0111 #	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 #	<0.035 #	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		3.88 #	2.26 #	2.26 #	24.1 #	1.28 #	9.45 #
pH	1 pH Units	TM133		11.3 M	11.1 #	10.5 #	8.95 M	10.4 M	9.29 M
Cyanide, Total	<1 mg/kg	TM153		1.04 M	1.41 #	2.63 #	4.46 M	6.68 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.16 M	5.08 #	6.09 #	6.03 M	5.98 M	4.02 M
Cadmium	<0.02 mg/kg	TM181		0.529 M	0.371 #	<0.02 #	0.0677 M	1.55 M	0.0282 M
Chromium	<0.9 mg/kg	TM181		505 M	215 #	108 #	43.9 M	8.61 M	210 M
Copper	<1.4 mg/kg	TM181		30.3 M	22.1 #	13.8 #	13.4 M	10.1 M	8.55 M
Iron	<1000 mg/kg	TM181		153000 #	114000 #	54600 #	56200 #	29300 #	94700 #
Lead	<0.7 mg/kg	TM181		55.7 M	28.1 #	18.1 #	39.5 M	179 M	17.3 M
Manganese	<0.13 mg/kg	TM181		20400 M	17000 #	12300 #	6260 M	2340 M	12600 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<0.14 #	<0.14 #	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		23.4 M	9.95 #	13.6 #	11.5 M	16 M	7.23 M
Selenium	<1 mg/kg	TM181		11.8 #	6.3 #	5.37 #	3.54 #	1.06 #	5.09 #
Vanadium	<0.2 mg/kg	TM181		411 #	157 #	110 #	73.9 #	42 #	184 #
Zinc	<1.9 mg/kg	TM181		184 M	75.7 #	77.1 #	910 M	124 M	103 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AH7-2	AH8-1	AH8-2	AH8-3	AH8-4	AI6-1
			Depth (m)	1.50 - 1.50	0.10 - 0.10	1.00 - 1.00	2.00 - 2.00	3.90 - 3.90	0.10 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577276	23577467	23577235	23577244	23577249	23577450
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.2	13	9.7	11	13	8.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	93.4 M	<12 #	<12 M	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.1 M	<0.01 M	<0.01 #	0.0112 M	0.0116 #	0.0219 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.1 M	0.0115 M	<0.01 #	0.0224 M	0.0232 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.15 M	<0.015 M	<0.015 #	<0.015 M	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.35 M	<0.035 M	<0.035 #	<0.035 M	<0.035 #	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		12.3 #	7.6 #	6.71 #	13 #	30.7 #	20 #
pH	1 pH Units	TM133		11 M	8.89 M	9.17 #	11.3 M	11 #	8.89 M
Cyanide, Total	<1 mg/kg	TM153		1.27 M	<1 M	<1 #	<1 M	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	5.96 M	16 #	4.3 M	6.32 #	2.77 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.215 M	<0.2 #	0.164 M	<0.2 #	0.121 M
Chromium	<0.9 mg/kg	TM181		332 M	148 M	448 #	127 M	288 #	35.2 M
Copper	<1.4 mg/kg	TM181		18.1 M	21.9 M	29.2 #	19.3 M	22.1 #	9.14 M
Iron	<1000 mg/kg	TM181		96700 #	62800 #	112000 #	85300 #	97400 #	52400 #
Lead	<0.7 mg/kg	TM181		44.8 M	31.2 M	182 #	32.3 M	18.7 #	14.9 M
Manganese	<0.13 mg/kg	TM181		24100 M	10400 M	3340 #	17400 M	25000 #	9580 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 #	<0.14 M	<1.4 #	0.581 M
Nickel	<0.2 mg/kg	TM181		42.6 M	13.1 M	33.6 #	10 M	11.1 #	10.4 M
Selenium	<1 mg/kg	TM181		12 #	4.29 #	<10 #	5.72 #	10.2 #	4.47 #
Vanadium	<0.2 mg/kg	TM181		444 #	181 #	74.1 #	165 #	199 #	103 #
Zinc	<1.9 mg/kg	TM181		41.9 M	154 M	283 #	82.3 M	71.5 #	86.5 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI6-2	AI7-1	AI7-2	AI8-1	AI8-2	AI10-1
			Depth (m)	1.60 - 1.60	0.40 - 0.40	1.30 - 1.30	0.40 - 4.00	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577459	23577433	23577438	23577358	23577424	23577224
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	7.5	12	6.8	7.1	8.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	<12 #	<12 M	25.4	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 #	<0.01 M	<0.01	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 #	<0.01 M	<0.01	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 #	<0.015 M	<0.015	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 #	<0.035 #	<0.035 M	<0.035	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		5.69 #	21 #	32.6 #	3.79 #	0.619	6.31 #
pH	1 pH Units	TM133		9.38 M	9.72 #	10.9 #	12 M	9.27	9.39 M
Cyanide, Total	<1 mg/kg	TM153		1.12 M	<1 #	<1 #	<1 M	4.42	<1 M
Arsenic	<0.6 mg/kg	TM181		7.05 M	<6 #	<6 #	<6 M	6.52	5.36 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.228 #	<0.2 #	<0.2 M	0.231	0.271 M
Chromium	<0.9 mg/kg	TM181		157 M	348 #	384 #	589 M	8.3	11.5 M
Copper	<1.4 mg/kg	TM181		17.4 M	<14 #	<14 #	<14 M	6.31	9.89 M
Iron	<1000 mg/kg	TM181		64900 #	104000 #	104000 #	112000 #	39800	34600 #
Lead	<0.7 mg/kg	TM181		21.6 M	15.5 #	<7 #	10.1 M	11.8	31.2 M
Manganese	<0.13 mg/kg	TM181		8500 M	22500 #	23900 #	32400 M	2010	14200 M
Mercury	<0.1 mg/kg	TM181		<0.14 M	<1.4 #	<1.4 #	<1.4 M	<0.14	<0.14 M
Nickel	<0.2 mg/kg	TM181		18.2 M	7.43 #	41.8 #	5.7 M	5.96	9.23 M
Selenium	<1 mg/kg	TM181		3.38 #	10.6 #	12.2 #	17.2 #	1.03	5.71 #
Vanadium	<0.2 mg/kg	TM181		130 #	311 #	276 #	478 #	15.7	25.9 #
Zinc	<1.9 mg/kg	TM181		73.6 M	87.1 #	38.9 #	59.9 M	50.8	148 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI10-2	AJ10-1	AJ10-2	AJ12-1	AJ12-2	AJ13-1
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.90 - 1.90	0.60 - 0.60	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577295	23577300	23577304	23577315	23577319	23577325
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	19	11	8.2	12	7.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.14 #	10.2 #	6.05 #	1.78 #	1.37 #	5.4 #
pH	1 pH Units	TM133		9.29 M	9.77 M	9.07 #	10.9 M	10.1 M	9.23 M
Cyanide, Total	<1 mg/kg	TM153		1.92 M	2.67 M	<1 #	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.01 M	1.86 M	8.03 #	15.9 M	7.5 M	7.34 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.628 M	1.05 #	<0.2 M	<0.02 M	0.591 M
Chromium	<0.9 mg/kg	TM181		<0.9 M	3.22 M	99 #	<9 M	<0.9 M	<9 M
Copper	<1.4 mg/kg	TM181		15.5 M	3.83 M	18.5 #	90.7 M	16.6 M	22.2 M
Iron	<1000 mg/kg	TM181		82100 #	207000 #	94100 #	345000 #	40400 #	70200 #
Lead	<0.7 mg/kg	TM181		15.7 M	1110 M	199 #	27.4 M	11.8 M	30.8 M
Manganese	<0.13 mg/kg	TM181		3120 M	872 M	6530 #	4020 M	1470 M	1940 M
Mercury	<0.1 mg/kg	TM181		<0.14 M	0.261 M	<0.14 #	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		23.5 M	3.63 M	15.5 #	147 M	27.6 M	30.9 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	1.95 #	<10 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		50.5 #	17.6 #	248 #	20.1 #	24.3 #	28.8 #
Zinc	<1.9 mg/kg	TM181		61.6 M	260 M	537 #	22.5 M	51.9 M	198 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ13-2	AJ14-1	AJ14-2	AJ15-1	AJ15-2	AJ16-1
			Depth (m)	2.00 - 2.00	0.50 - 0.50	2.00 - 2.00	0.50 - 0.50	1.60 - 1.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577333	23577337	23577342	23577353	23577364	23577370
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	9.1	10	10	9.3	5.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2 #	12.1 #	1.47 #	7.24 #	4.31 #	1.14 #
pH	1 pH Units	TM133		10 M	9 M	9.29 M	10.6 M	8.94 M	9.08 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.02 M	15.5 M	6.42 M	16.6 M	8.23 M	3.32 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	1.04 M	0.163 M	0.0295 M	0.334 M	0.103 M
Chromium	<0.9 mg/kg	TM181		9.74 M	<9 M	18.1 M	14.7 M	10.2 M	<0.9 M
Copper	<1.4 mg/kg	TM181		19.5 M	21.5 M	17.9 M	19.3 M	19.6 M	8.96 M
Iron	<1000 mg/kg	TM181		60800 #	190000 #	24100 #	64000 #	28800 #	49900 #
Lead	<0.7 mg/kg	TM181		13.2 M	151 M	20.9 M	50.7 M	11.6 M	14.4 M
Manganese	<0.13 mg/kg	TM181		2250 M	14500 M	1480 M	4480 M	888 M	4630 M
Mercury	<0.1 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		20.4 M	20.1 M	18.3 M	11.8 M	20.4 M	8.44 M
Selenium	<1 mg/kg	TM181		1 #	<10 #	<1 #	<1 #	<1 #	1.98 #
Vanadium	<0.2 mg/kg	TM181		36.7 #	49.5 #	39 #	44.9 #	28.1 #	17.6 #
Zinc	<1.9 mg/kg	TM181		67 M	350 M	72.3 M	459 M	49.1 M	44.4 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ16-2	AJ16-3	AJ17-1	AJ17-2	AJ18-1	AJ18-2
			Depth (m)	1.50 - 1.50	2.50 - 2.50	0.80 - 0.80	1.90 - 1.90	0.70 - 0.70	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577378	23577384	23577390	23577401	23577405	23577409
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	14	7.3	11	17	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.418 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.935 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.792 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	2.15 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.02 #	3.84 #	0.357 #	2.71 #	17.4 #	2.9 #
pH	1 pH Units	TM133		9.87 M	9.3 M	10 M	9.04 M	8.99 M	10.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.52 M	7.98 M	2.06 M	5.09 M	8.6 M	0.815 M
Cadmium	<0.02 mg/kg	TM181		0.781 M	0.233 M	0.0357 M	0.0769 M	0.479 M	0.0389 M
Chromium	<0.9 mg/kg	TM181		24.7 M	84.6 M	4.6 M	30.4 M	77.2 M	6.03 M
Copper	<1.4 mg/kg	TM181		18.2 M	19.7 M	<1.4 M	8.31 M	19.8 M	2.15 M
Iron	<1000 mg/kg	TM181		62000 #	44900 #	9660 #	22800 #	36700 #	15000 #
Lead	<0.7 mg/kg	TM181		10.5 M	21.8 M	4.64 M	9.28 M	20.4 M	6.8 M
Manganese	<0.13 mg/kg	TM181		2940 M	1700 M	690 M	2840 M	4190 M	2800 M
Mercury	<0.1 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		15.1 M	20.7 M	2.83 M	12.5 M	14.6 M	2.75 M
Selenium	<1 mg/kg	TM181		1.01 #	<1 #	1.29 #	1.65 #	1.73 #	1.18 #
Vanadium	<0.2 mg/kg	TM181		62.8 #	44.2 #	6.49 #	69.7 #	78.9 #	10.3 #
Zinc	<1.9 mg/kg	TM181		156 M	67 M	17 M	35.9 M	108 M	28.7 M

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ18-3	AK10-1
			Depth (m)	2.30 - 2.30	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021
			Sample Time	.	.
			Date Received	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68
			Lab Sample No.(s)	23577418	23577310
			AGS Reference		
Moisture Content Ratio (% of as received sample)	%	PM024		13	8.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		3.79 #	5.1 #
pH	1 pH Units	TM133		8.95 M	9.07 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.59 M	6.06 M
Cadmium	<0.02 mg/kg	TM181		2.18 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		18.3 M	<0.9 M
Copper	<1.4 mg/kg	TM181		25.4 M	8.78 M
Iron	<1000 mg/kg	TM181		19900 #	56700 #
Lead	<0.7 mg/kg	TM181		15.3 M	28.4 M
Manganese	<0.13 mg/kg	TM181		746 M	1960 M
Mercury	<0.1 mg/kg	TM181		<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24 M	11 M
Selenium	<1 mg/kg	TM181		<1 #	1.17 #
Vanadium	<0.2 mg/kg	TM181		37 #	19.1 #
Zinc	<1.9 mg/kg	TM181		58.5 M	98.8 M

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG7-1	AG8-1	AG8-2	AH6-1	AH6-2	AH7-1
			Depth (m)	0.50 - 0.50	0.40 - 0.40	1.50 - 1.50	0.40 - 0.40	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577280	23577255	23577263	23577284	23577289	23577269
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.2	91.1	83.6	84.5	88.6	88.6
Acenaphthene-d10 % recovery**	%	TM218		89.2	91	90.3	87	90	88.8
Phenanthrene-d10 % recovery**	%	TM218		94.1	95	94.9	87.9	88.7	92.3
Chrysene-d12 % recovery**	%	TM218		88.6	82.5	86.1	84.5	78.1	81.1
Perylene-d12 % recovery**	%	TM218		79.9	83.1	77.8	73.5	73.4	81.5
Naphthalene	<9 µg/kg	TM218		137 M	1830 #	4900 #	175 M	1240 M	255 M
Acenaphthylene	<12 µg/kg	TM218		139 M	1520 #	1130 #	303 M	272 M	286 M
Acenaphthene	<8 µg/kg	TM218		20.6 M	637 #	311 #	14.3 M	166 M	17.7 M
Fluorene	<10 µg/kg	TM218		22.9 M	1210 #	1010 #	38.9 M	746 M	99.9 M
Phenanthrene	<15 µg/kg	TM218		240 M	3330 #	2730 #	436 M	2610 M	721 M
Anthracene	<16 µg/kg	TM218		109 M	1160 #	750 #	140 M	491 M	227 M
Fluoranthene	<17 µg/kg	TM218		618 M	7260 #	5590 #	1400 M	2630 M	1730 M
Pyrene	<15 µg/kg	TM218		551 M	5600 #	5540 #	1150 M	1870 M	1320 M
Benz(a)anthracene	<14 µg/kg	TM218		482 M	2970 #	2400 #	1120 M	624 M	953 M
Chrysene	<10 µg/kg	TM218		413 M	2760 #	1850 #	1010 M	652 M	859 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		898 M	5140 #	3190 #	1920 M	639 M	1650 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		271 M	1550 #	938 #	658 M	177 M	688 M
Benzo(a)pyrene	<15 µg/kg	TM218		538 M	3350 #	1940 #	1280 M	399 M	989 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		626 M	3670 #	1590 #	1300 M	304 M	926 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		117 M	492 #	344 #	272 M	66.7 M	173 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		705 M	4140 #	1480 #	1200 M	266 M	918 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		5890	46600	35700	12400	13100	11800

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AH7-2	AH8-1	AH8-2	AH8-3	AH8-4	AI6-1
			Depth (m)	1.50 - 1.50	0.10 - 0.10	1.00 - 1.00	2.00 - 2.00	3.90 - 3.90	0.10 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577276	23577467	23577235	23577244	23577249	23577450
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93	78.8	82.1	82.7	88.2	88.8
Acenaphthene-d10 % recovery**	%	TM218		96.2	81.1	84.8	86.4	92.3	90.9
Phenanthrene-d10 % recovery**	%	TM218		91.8	82.4	87	85.1	91.1	91.3
Chrysene-d12 % recovery**	%	TM218		87.8	80.3	86	81.1	79.8	86.1
Perylene-d12 % recovery**	%	TM218		90.4	72.4	78.3	74.5	82.6	87.5
Naphthalene	<9 µg/kg	TM218		80600 M	144 M	237 #	19900 M	25800 #	1970 M
Acenaphthylene	<12 µg/kg	TM218		18600 M	906 M	1240 #	6210 M	5780 #	716 M
Acenaphthene	<8 µg/kg	TM218		2190 M	<40 M	<40 #	614 M	864 #	28.8 M
Fluorene	<10 µg/kg	TM218		34000 M	96.6 M	86.8 #	7810 M	7610 #	132 M
Phenanthrene	<15 µg/kg	TM218		163000 M	783 M	1730 #	30200 M	24400 #	929 M
Anthracene	<16 µg/kg	TM218		27000 M	380 M	660 #	5300 M	4850 #	591 M
Fluoranthene	<17 µg/kg	TM218		143000 M	4820 M	9190 #	26700 M	22900 #	1280 M
Pyrene	<15 µg/kg	TM218		91800 M	4280 M	7850 #	18000 M	15700 #	946 M
Benz(a)anthracene	<14 µg/kg	TM218		50500 M	3300 M	4750 #	9140 M	7350 #	686 M
Chrysene	<10 µg/kg	TM218		35700 M	3190 M	4320 #	6820 M	5820 #	537 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		61000 M	7640 M	8990 #	11100 M	9510 #	1330 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		20800 M	2110 M	2470 #	3470 M	2790 #	395 M
Benzo(a)pyrene	<15 µg/kg	TM218		41900 M	4380 M	5560 #	7600 M	6190 #	870 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		32200 M	4050 M	5170 #	5560 M	5000 #	1630 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		5410 M	843 M	947 #	1110 M	838 #	224 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		27600 M	4000 M	5280 #	4980 M	4430 #	2110 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		835000	40900	58500	165000	150000	14400

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI6-2	AI7-1	AI7-2	AI8-1	AI8-2	AI10-1
			Depth (m)	1.60 - 1.60	0.40 - 0.40	1.30 - 1.30	0.40 - 4.00	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577459	23577433	23577438	23577358	23577424	23577224
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.5	87.8	89.5	77.7	84.6	70.1
Acenaphthene-d10 % recovery**	%	TM218		86.2	89.6	90	78.2	88.6	72.8
Phenanthrene-d10 % recovery**	%	TM218		85.7	90.9	91.4	83.7	95.9	74.4
Chrysene-d12 % recovery**	%	TM218		81.8	87.1	81.7	87	91.9	75.4
Perylene-d12 % recovery**	%	TM218		75.1	77.9	81.6	85.7	81.8	70.2
Naphthalene	<9 µg/kg	TM218		2280 M	182 #	938 #	31 M	838	101 M
Acenaphthylene	<12 µg/kg	TM218		224 M	101 #	78.9 #	<12 M	99.8	139 M
Acenaphthene	<8 µg/kg	TM218		36.1 M	9.42 #	60.6 #	<8 M	79.2	<80 M
Fluorene	<10 µg/kg	TM218		159 M	19.8 #	98.1 #	<10 M	136	<100 M
Phenanthrene	<15 µg/kg	TM218		565 M	269 #	434 #	50.6 M	325	371 M
Anthracene	<16 µg/kg	TM218		127 M	79.3 #	101 #	<16 M	93.4	<160 M
Fluoranthene	<17 µg/kg	TM218		350 M	701 #	542 #	166 M	562	828 M
Pyrene	<15 µg/kg	TM218		291 M	539 #	388 #	127 M	499	618 M
Benz(a)anthracene	<14 µg/kg	TM218		161 M	417 #	185 #	67.6 M	185	434 M
Chrysene	<10 µg/kg	TM218		128 M	361 #	166 #	70.4 M	197	487 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		235 M	593 #	270 #	129 M	202	799 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		82 M	201 #	88.8 #	35.9 M	73.3	226 M
Benzo(a)pyrene	<15 µg/kg	TM218		187 M	385 #	147 #	62.7 M	178	455 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		228 M	414 #	172 #	66.5 M	136	472 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		41 M	85.4 #	<23 #	<23 M	27.9	<230 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		280 M	389 #	157 #	62.5 M	148	439 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		5370	4740	3830	869	3780	5370

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI10-2	AJ10-1	AJ10-2	AJ12-1	AJ12-2	AJ13-1
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.90 - 1.90	0.60 - 0.60	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577295	23577300	23577304	23577315	23577319	23577325
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.2	94.4	86.4	88.1	87.9	80.4
Acenaphthene-d10 % recovery**	%	TM218		82.2	91	90.6	94.6	91.5	84.3
Phenanthrene-d10 % recovery**	%	TM218		84.9	92.3	93.8	94.2	91.2	87.8
Chrysene-d12 % recovery**	%	TM218		88	84.1	86	83.3	86.7	86.6
Perylene-d12 % recovery**	%	TM218		88.6	82.5	73.2	89.9	93	80
Naphthalene	<9 µg/kg	TM218		55.3 M	2090 M	224 #	33.1 M	<9 M	51.2 M
Acenaphthylene	<12 µg/kg	TM218		23.9 M	556 M	90.1 #	<12 M	<12 M	27.8 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<80 M	<8 #	20.6 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218		<10 M	343 M	50.9 #	33 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218		64.1 M	1680 M	372 #	176 M	20.5 M	95.5 M
Anthracene	<16 µg/kg	TM218		20.4 M	860 M	187 #	29.4 M	<16 M	21.8 M
Fluoranthene	<17 µg/kg	TM218		149 M	4040 M	788 #	195 M	<17 M	166 M
Pyrene	<15 µg/kg	TM218		125 M	3140 M	614 #	175 M	<15 M	132 M
Benz(a)anthracene	<14 µg/kg	TM218		102 M	1990 M	375 #	82.9 M	<14 M	112 M
Chrysene	<10 µg/kg	TM218		116 M	1620 M	318 #	108 M	13.8 M	119 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		186 M	2580 M	370 #	133 M	21.8 M	227 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		55.5 M	816 M	133 #	33 M	<14 M	75.5 M
Benzo(a)pyrene	<15 µg/kg	TM218		117 M	1570 M	257 #	64.6 M	<15 M	110 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		110 M	1220 M	179 #	60.2 M	<18 M	117 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<230 M	41.3 #	<23 M	<23 M	25.2 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		99 M	1070 M	165 #	59 M	<24 M	108 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1220	23600	4160	1200	<118	1390

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ13-2	AJ14-1	AJ14-2	AJ15-1	AJ15-2	AJ16-1
			Depth (m)	2.00 - 2.00	0.50 - 0.50	2.00 - 2.00	0.50 - 0.50	1.60 - 1.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577333	23577337	23577342	23577353	23577364	23577370
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.9	87.7	78.2	88.5	88.2	84.6
Acenaphthene-d10 % recovery**	%	TM218		91.7	89.5	80.9	93.4	90.1	89.5
Phenanthrene-d10 % recovery**	%	TM218		93.2	89.2	82.9	93.9	87.4	89.2
Chrysene-d12 % recovery**	%	TM218		85.2	81.1	82.8	86.2	83.4	79.9
Perylene-d12 % recovery**	%	TM218		87.6	72.5	80.3	87	78.8	71.2
Naphthalene	<9 µg/kg	TM218		15.9 M	56.1 M	12.8 M	142 M	<9 M	31.6 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	17.1 M	<12 M	139 M	<12 M	101 M
Acenaphthene	<8 µg/kg	TM218		<8 M	14.8 M	<8 M	<40 M	<8 M	8.54 M
Fluorene	<10 µg/kg	TM218		<10 M	38.3 M	<10 M	<50 M	<10 M	16.6 M
Phenanthrene	<15 µg/kg	TM218		42.5 M	204 M	32.2 M	329 M	29.3 M	89.2 M
Anthracene	<16 µg/kg	TM218		<16 M	58.6 M	<16 M	113 M	<16 M	48.7 M
Fluoranthene	<17 µg/kg	TM218		58.2 M	323 M	46.7 M	700 M	25.6 M	247 M
Pyrene	<15 µg/kg	TM218		47.2 M	327 M	42.2 M	577 M	20.7 M	213 M
Benz(a)anthracene	<14 µg/kg	TM218		36.7 M	226 M	44.5 M	414 M	<14 M	194 M
Chrysene	<10 µg/kg	TM218		36.5 M	221 M	49 M	398 M	18 M	277 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		61.3 M	443 M	82.4 M	865 M	17.6 M	373 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		19 M	99.3 M	27.3 M	237 M	<14 M	125 M
Benzo(a)pyrene	<15 µg/kg	TM218		33.3 M	201 M	40.6 M	470 M	<15 M	237 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		31.1 M	175 M	41.6 M	595 M	<18 M	295 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	51.3 M	<23 M	<115 M	<23 M	58.3 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		34.5 M	186 M	38.1 M	532 M	<24 M	292 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		416	2640	457	5510	<118	2610

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ16-2	AJ16-3	AJ17-1	AJ17-2	AJ18-1	AJ18-2
			Depth (m)	1.50 - 1.50	2.50 - 2.50	0.80 - 0.80	1.90 - 1.90	0.70 - 0.70	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577378	23577384	23577390	23577401	23577405	23577409
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		84.9	88.3	88	83	72.4	96
Acenaphthene-d10 % recovery**	%	TM218		89	88.9	90.1	90.4	73.4	94
Phenanthrene-d10 % recovery**	%	TM218		86.6	85.7	89.5	95.5	73.6	94
Chrysene-d12 % recovery**	%	TM218		82.8	75.7	87.7	88.8	75.9	83
Perylene-d12 % recovery**	%	TM218		78	71	85.1	91.5	75.5	88
Naphthalene	<9 µg/kg	TM218		16.9 M	23.7 M	1010 M	87.7 M	376 M	26300 M
Acenaphthylene	<12 µg/kg	TM218		14.6 M	<12 M	<12 M	<12 M	292 M	<600 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	272 M	86.7 M	145 M	2960 M
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	174 M	56.7 M	350 M	989 M
Phenanthrene	<15 µg/kg	TM218		48 M	55.7 M	522 M	312 M	4470 M	6190 M
Anthracene	<16 µg/kg	TM218		<16 M	<16 M	97 M	64.8 M	996 M	1240 M
Fluoranthene	<17 µg/kg	TM218		70.2 M	58.5 M	162 M	240 M	8020 M	1970 M
Pyrene	<15 µg/kg	TM218		67.6 M	51.8 M	98.4 M	173 M	6310 M	1190 M
Benz(a)anthracene	<14 µg/kg	TM218		50.3 M	31.1 M	38.9 M	109 M	4720 M	<700 M
Chrysene	<10 µg/kg	TM218		51.1 M	33.9 M	30.2 M	103 M	5060 M	<500 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		84.8 M	31.2 M	47.2 M	172 M	7950 M	<750 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		23.9 M	<14 M	<14 M	51.9 M	2280 M	<700 M
Benzo(a)pyrene	<15 µg/kg	TM218		47.7 M	25.8 M	29 M	94.7 M	4840 M	<750 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		43.7 M	25.8 M	25.2 M	75.7 M	4370 M	<900 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	<23 M	<23 M	834 M	<1150 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		44.3 M	<24 M	26.8 M	75.7 M	4170 M	<1200 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		563	338	2540	1700	55200	40900

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ18-3	AK10-1				
			Depth (m)	2.30 - 2.30	0.30 - 0.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	19/01/2021	19/01/2021				
			Sample Time	.	.				
			Date Received	20/01/2021	20/01/2021				
			SDG Ref	210120-68	210120-68				
			Lab Sample No.(s)	23577418	23577310				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.9	86				
Acenaphthene-d10 % recovery**	%	TM218		89.8	89.1				
Phenanthrene-d10 % recovery**	%	TM218		88.9	92.5				
Chrysene-d12 % recovery**	%	TM218		81.3	81.4				
Perylene-d12 % recovery**	%	TM218		73.6	70.2				
Naphthalene	<9 µg/kg	TM218		73.9 M	26.4 M				
Acenaphthylene	<12 µg/kg	TM218		<12 M	23.1 M				
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M				
Fluorene	<10 µg/kg	TM218		<10 M	<10 M				
Phenanthrene	<15 µg/kg	TM218		107 M	126 M				
Anthracene	<16 µg/kg	TM218		<16 M	28.5 M				
Fluoranthene	<17 µg/kg	TM218		77.1 M	239 M				
Pyrene	<15 µg/kg	TM218		66.9 M	182 M				
Benz(a)anthracene	<14 µg/kg	TM218		43.4 M	158 M				
Chrysene	<10 µg/kg	TM218		51.1 M	140 M				
Benzo(b)fluoranthene	<15 µg/kg	TM218		79.9 M	232 M				
Benzo(k)fluoranthene	<14 µg/kg	TM218		21.6 M	61 M				
Benzo(a)pyrene	<15 µg/kg	TM218		42.8 M	124 M				
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		40.7 M	115 M				
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	29.3 M				
Benzo(g,h,i)perylene	<24 µg/kg	TM218		42.6 M	107 M				
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		647	1590				

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG7-1	AG8-1	AG8-2	AH6-1	AH6-2	AH7-1
			Depth (m)	0.50 - 0.50	0.40 - 0.40	1.50 - 1.50	0.40 - 0.40	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577280	23577255	23577263	23577284	23577289	23577269
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		82.4	113	89.9	84.2	116	73.9
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	12.2	40.1	<10	38.9	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	38.9	92	<10	88.8	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	91	373	<10	592	13.3
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	49400	79400	<1000	4180	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		28900	672000	1190000	7550	63200	11900
Aliphatics >C21-C35	<1000 µg/kg	TM414		34400	122000	1450000	14400	31100	6240
Aliphatics >C35-C44	<1000 µg/kg	TM414		14100	5450	249000	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		77500	849000	2970000	22600	98600	18300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		98100	1130000	3340000	130000	110000	46800
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	86.6	341	<10	367	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	32.2	72	<10	63.3	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	59.9	248	<10	394	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	2420	20400	<1000	2070	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	18200	23100	<1000	1250	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1000	123000	133000	4030	3300	4460
Aromatics > EC21-EC35	<1000 µg/kg	TM414		16200	121000	188000	77700	3820	20400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3160	18500	8630	25200	<1000	3140
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	2710	<1000	2400	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		20600	283000	373000	107000	11400	28500
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		98100	1130000	3340000	130000	112000	46800
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	142	505	<50	719	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	179	661	<50	825	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	321	1170	<20	1540	<20

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AH7-2	AH8-1	AH8-2	AH8-3	AH8-4	AI6-1
			Depth (m)	1.50 - 1.50	0.10 - 0.10	1.00 - 1.00	2.00 - 2.00	3.90 - 3.90	0.10 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577276	23577467	23577235	23577244	23577249	23577450
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97.6	95.9	71.4	88.9	91.5	48.8 4
Aliphatics >C5-C6	<10 µg/kg	TM089		352	<10	<10	42.6	44.1	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		2080	<10	<10	162	176	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		20300	<10	<10	1880	1160	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<10000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		133000	<1000	<1000	27900	30800	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1590000	27900	20300	213000	251000	3710
Aliphatics >C21-C35	<1000 µg/kg	TM414		391000	3490	7800	39900	43700	1460
Aliphatics >C35-C44	<1000 µg/kg	TM414		<10000	<1000	<1000	5550	5230	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		2120000	32100	29200	287000	331000	5580
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		4080000	259000	207000	730000	783000	98600
Aromatics >EC5-EC7	<10 µg/kg	TM089		329	<10	<10	164	212	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		1850	<10	<10	288	232	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		13500	<10	<10	1250	770	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		132000	<1000	<1000	25800	37000	2060
Aromatics > EC12-EC16	<1000 µg/kg	TM414		197000	2580	1000	47400	43100	1560
Aromatics > EC16-EC21	<1000 µg/kg	TM414		772000	53000	44800	166000	169000	43700
Aromatics > EC21-EC35	<1000 µg/kg	TM414		749000	140000	109000	179000	177000	35300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		113000	31200	23000	25600	26000	10400
Aromatics > EC40-EC44	<1000 µg/kg	TM414		20400	7590	5120	6010	4600	1390
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		1960000	227000	178000	443000	452000	93000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		4120000	259000	207000	734000	785000	98600
Total Aliphatics >C5-C10	<50 µg/kg	TM089		22700	<50	<50	2090	1380	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		15700	<50	<50	1710	1210	<50 4
GRO >C5-C10	<20 µg/kg	TM089		38400	<20	<20	3790	2590	<20 4

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
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aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI6-2	AI7-1	AI7-2	AI8-1	AI8-2	AI10-1
			Depth (m)	1.60 - 1.60	0.40 - 0.40	1.30 - 1.30	0.40 - 4.00	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577459	23577433	23577438	23577358	23577424	23577224
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		83.7	36.9 4	15.8 4	98.5	87.6	73.4
Aliphatics >C5-C6	<10 µg/kg	TM089		23.4	<10 4	19.2 4	<10	28	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		39.8	<10 4	30.5 4	<10	50.6	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		70.2	<10 4	47.5 4	<10	95.8	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	2670	<1000	1820	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		75900	12100	72100	11300	73900	2950
Aliphatics >C21-C35	<1000 µg/kg	TM414		22600	3860	12600	37000	28800	1790
Aliphatics >C35-C44	<1000 µg/kg	TM414		2500	<1000	<1000	4870	5070	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		102000	16400	87400	53300	110000	5010
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		152000	35100	105000	57800	143000	77900
Aromatics >EC5-EC7	<10 µg/kg	TM089		71.4	<10 4	11.3 4	<10	82.9	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		12.9	<10 4	<10 4	<10	20.4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		46.8	<10 4	31.6 4	<10	63.5	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		6290	<1000	1580	<1000	1210	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		2440	<1000	1460	<1000	2060	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		6720	3060	8590	<1000	16200	2240
Aromatics > EC21-EC35	<1000 µg/kg	TM414		28500	13400	5000	2870	12700	33300
Aromatics >EC35-EC44	<1000 µg/kg	TM414		6980	1590	<1000	<1000	<1000	37100
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1370	<1000	<1000	<1000	<1000	8360
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		50900	18700	17600	<5000	33200	72900
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		153000	35100	105000	53300	143000	77900
Total Aliphatics >C5-C10	<50 µg/kg	TM089		133	<50 4	97.2 4	<50	174	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		131	<50 4	<50 4	<50	167	<50
GRO >C5-C10	<20 µg/kg	TM089		264	<20 4	97.2 4	<20	341	<20

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI10-2	AJ10-1	AJ10-2	AJ12-1	AJ12-2	AJ13-1
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.90 - 1.90	0.60 - 0.60	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577295	23577300	23577304	23577315	23577319	23577325
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		116	86	85.7	79.8	89.4	68.8 4
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	12.4	17.9	29.4	<10	<10 4
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	13.6	20.2	41.4	<10	<10 4
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	11.2	52.6	645	<10	<10 4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	31200	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	35200	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1030	2000	<1000	127000	1300	3180
Aliphatics >C21-C35	<1000 µg/kg	TM414		2680	10400	1290	1350000	7850	9690
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	3540	<1000	900000	<1000	2190
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	16000	<5000	2450000	9640	15400
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		14200	75300	10500	2590000	11400	33100
Aromatics >EC5-EC7	<10 µg/kg	TM089		10.4	<10	<10	<10	<10	<10 4
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10 4
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	35.8	429	<10	<10 4
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	1590	<1000	3580	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	8240	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	12700	1510	13400	<1000	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		5770	36700	5770	108000	<1000	14000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		4100	7490	<1000	7840	<1000	3540
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	2120	<1000	<1000	<1000	1130
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		10300	59300	8450	141000	<5000	17700
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		10300	75300	<10000	2590000	<10000	33100
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	90.7	715	<50	<50 4
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	429	<50	<50 4
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	90.7	1140	<20	<20 4

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
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*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ13-2	AJ14-1	AJ14-2	AJ15-1	AJ15-2	AJ16-1
			Depth (m)	2.00 - 2.00	0.50 - 0.50	2.00 - 2.00	0.50 - 0.50	1.60 - 1.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577333	23577337	23577342	23577353	23577364	23577370
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		118	104	86.8	59 4	73.1	79.7
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	14.3	<10	<10 4	<10	26.5
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	19.8	<10	<10 4	<10	29.7
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	15.4	<10	<10 4	<10	25.4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	23000	<1000	1910	1510	12800
Aliphatics >C16-C21	<1000 µg/kg	TM414		3210	110000	1030	9250	4650	38900
Aliphatics >C21-C35	<1000 µg/kg	TM414		11500	570000	7680	32100	13600	169000
Aliphatics >C35-C44	<1000 µg/kg	TM414		4210	125000	<1000	22500	1350	71300
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		20000	828000	9430	66000	21100	292000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		30600	902000	13500	156000	24800	343000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	17
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	3420	<1000	<1000	<1000	2710
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	8250	<1000	3660	<1000	3610
Aromatics > EC21-EC35	<1000 µg/kg	TM414		8830	60400	2820	77200	2670	43100
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1620	1830	<1000	8610	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	6030	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		10600	73900	<5000	90100	<5000	50700
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		30600	902000	<10000	156000	21100	343000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50	81.6
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20 4	<20	81.6

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

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1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ16-2	AJ16-3	AJ17-1	AJ17-2	AJ18-1	AJ18-2
			Depth (m)	1.50 - 1.50	2.50 - 2.50	0.80 - 0.80	1.90 - 1.90	0.70 - 0.70	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577378	23577384	23577390	23577401	23577405	23577409
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		96.5	100	110	86.4	104	97
Aliphatics >C5-C6	<10 µg/kg	TM089		14.7	21.1	31.3	<10	13.2	20.9
Aliphatics >C6-C8	<10 µg/kg	TM089		18.1	35.1	59.3	<10	16.8	31.9
Aliphatics >C8-C10	<10 µg/kg	TM089		18.1	36.3	48.6	<10	13.2	118
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	7320
Aliphatics >C12-C16	<1000 µg/kg	TM414		3810	<1000	<1000	<1000	<1000	34000
Aliphatics >C16-C21	<1000 µg/kg	TM414		8770	1730	<1000	<1000	1010	33600
Aliphatics >C21-C35	<1000 µg/kg	TM414		23800	8620	3480	<1000	4230	362000
Aliphatics >C35-C44	<1000 µg/kg	TM414		7190	1310	2480	<1000	<1000	432000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		43600	12000	6340	<5000	5620	868000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		49800	16700	14500	<10000	168000	1340000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		11.3	24.6	32.4	<10	<10	78.1
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	43600
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1380	72700
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	32700	27600
Aromatics > EC21-EC35	<1000 µg/kg	TM414		4780	3440	5280	2000	107000	315000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	1080	<1000	21800	11800
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	2540	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		6240	<5000	8160	<5000	163000	471000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		49900	12100	14700	<10000	168000	1340000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		50.9	92.4	139	<50	<50	171
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	78.1
GRO >C5-C10	<20 µg/kg	TM089		50.9	92.4	139	<20	<20	249

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ18-3	AK10-1				
			Depth (m)	2.30 - 2.30	0.30 - 0.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	19/01/2021	19/01/2021				
			Sample Time	.	.				
			Date Received	20/01/2021	20/01/2021				
			SDG Ref	210120-68	210120-68				
			Lab Sample No.(s)	23577418	23577310				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		86.7	76.6				
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10				
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10				
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10				
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000				
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000				
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	1970				
Aliphatics >C21-C35	<1000 µg/kg	TM414		2810	11600				
Aliphatics >C35-C44	<1000 µg/kg	TM414		3090	<1000				
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		5900	14000				
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		11500	55100				
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10				
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10				
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000				
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000				
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000				
Aromatics > EC21-EC35	<1000 µg/kg	TM414		4000	30700				
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1250	10000				
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	2080				
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		5560	41100				
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		11500	55100				
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50				
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50				
GRO >C5-C10	<20 µg/kg	TM089		<20	<20				

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG7-1	AG8-1	AG8-2	AH6-1	AH6-2	AH7-1
			Depth (m)	0.50 - 0.50	0.40 - 0.40	1.50 - 1.50	0.40 - 0.40	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577280	23577255	23577263	23577284	23577289	23577269
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	114	111	113	113	115
Toluene-d8**	%	TM116		99.6	97.5	97.2	98.6	99.7	98.7
4-Bromofluorobenzene**	%	TM116		97.2	90.6	89.6	95	98	96.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 #	<200 #	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	266 #	1480 #	<180 M	390 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 #	320 #	<140 M	238 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 #	<80 #	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	549 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 #	<200 #	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	1110 #	2900 #	<260 M	1000 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	0.549	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	2350	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AH7-2	AH8-1	AH8-2	AH8-3	AH8-4	AI6-1
			Depth (m)	1.50 - 1.50	0.10 - 0.10	1.00 - 1.00	2.00 - 2.00	3.90 - 3.90	0.10 - 0.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577276	23577467	23577235	23577244	23577249	23577450
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	112	109	120	116	104
Toluene-d8**	%	TM116		92.6	100	98.2	96.9	97.4	97
4-Bromofluorobenzene**	%	TM116		85.1	95.7	92.8	96.5	94.6	87.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200 #	<200 M
Benzene	<9 µg/kg	TM116		1370 M	<180 M	<180 #	376 M	623 #	<180 M
Toluene	<7 µg/kg	TM116		4510 M	<140 M	<140 #	478 M	432 #	<140 M
Ethylbenzene	<4 µg/kg	TM116		835 M	<80 M	<80 #	<80 M	<80 #	<80 M
p/m-Xylene	<10 µg/kg	TM116		19000 #	<200 #	<200 #	1190 #	618 #	<200 #
o-Xylene	<10 µg/kg	TM116		4430 M	<200 M	<200 #	298 M	<200 #	<200 M
Naphthalene	<13 µg/kg	TM116		183000 M	<260 M	<260 #	49800 M	34100 #	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		23.4	<0.4	<0.4	1.49	0.618	<0.4
Sum of BTEX	<40 µg/kg	TM116		30100	<800	<800	2340	1670	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI6-2	AI7-1	AI7-2	AI8-1	AI8-2	AI10-1
			Depth (m)	1.60 - 1.60	0.40 - 0.40	1.30 - 1.30	0.40 - 4.00	2.00 - 2.00	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021	18/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577459	23577433	23577438	23577358	23577424	23577224
			AGS Reference						
Dibromofluoromethane**	%	TM116		114	103	108	112	109	110
Toluene-d8**	%	TM116		98.1	93.1	98.9	98.3	99.1	96.6
4-Bromofluorobenzene**	%	TM116		96.8	81.7	100	96.1	99.5	90.9
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 #	<2000 #	<200 M	<200	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 #	<1800 #	<180 M	<180	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 #	<1400 #	<140 M	<140	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 #	<800 #	<80 M	<80	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<2000 #	<200 #	<200	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 #	<2000 #	<200 M	<200	<200 M
Naphthalene	<13 µg/kg	TM116		692 M	<260 #	<2600 #	<260 M	1120	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<8000	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI10-2	AJ10-1	AJ10-2	AJ12-1	AJ12-2	AJ13-1
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.90 - 1.90	0.60 - 0.60	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577295	23577300	23577304	23577315	23577319	23577325
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	114	120	114	110	117
Toluene-d8**	%	TM116		98.6	99	99.7	95.8	98.4	97.5
4-Bromofluorobenzene**	%	TM116		93.4	95.9	96.5	90.9	93	95.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 #	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 #	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 #	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 #	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ13-2	AJ14-1	AJ14-2	AJ15-1	AJ15-2	AJ16-1
			Depth (m)	2.00 - 2.00	0.50 - 0.50	2.00 - 2.00	0.50 - 0.50	1.60 - 1.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577333	23577337	23577342	23577353	23577364	23577370
			AGS Reference						
Dibromofluoromethane**	%	TM116		112	108	118	114	113	109
Toluene-d8**	%	TM116		98.7	97.4	98.5	99.6	98	96.2
4-Bromofluorobenzene**	%	TM116		96.5	90.2	96.4	95.8	94.1	92.2
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ16-2	AJ16-3	AJ17-1	AJ17-2	AJ18-1	AJ18-2
			Depth (m)	1.50 - 1.50	2.50 - 2.50	0.80 - 0.80	1.90 - 1.90	0.70 - 0.70	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			SDG Ref	210120-68	210120-68	210120-68	210120-68	210120-68	210120-68
			Lab Sample No.(s)	23577378	23577384	23577390	23577401	23577405	23577409
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	112	110	110	106	110
Toluene-d8**	%	TM116		98.5	99.8	99	103	97.9	98.6
4-Bromofluorobenzene**	%	TM116		96.4	98.1	97.7	93.1	89	94.9
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	286 M	1210 M	<260 M	4290 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ18-3	AK10-1				
			Depth (m)	2.30 - 2.30	0.30 - 0.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	19/01/2021	19/01/2021				
			Sample Time	.	.				
			Date Received	20/01/2021	20/01/2021				
			SDG Ref	210120-68	210120-68				
			Lab Sample No.(s)	23577418	23577310				
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	111				
Toluene-d8**	%	TM116		98.3	98.7				
4-Bromofluorobenzene**	%	TM116		91.9	92.8				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M				
Benzene	<9 µg/kg	TM116		<180 M	<180 M				
Toluene	<7 µg/kg	TM116		<140 M	<140 M				
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M				
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #				
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M				
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M				
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4				
Sum of BTEX	<40 µg/kg	TM116		<800	<800				

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AG7-1 0.50 - 0.50 SOLID 18/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577280 TM048	26/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AG8-1 0.40 - 0.40 SOLID 18/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577255 TM048	26/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AH6-2 2.00 - 2.00 SOLID 18/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577289 TM048	26/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AH7-1 0.40 - 0.40 SOLID 18/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577269 TM048	26/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AH8-1 0.10 - 0.10 SOLID 18/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577467 TM048	26/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AH8-3 2.00 - 2.00 SOLID 18/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577244 TM048	26/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AI6-1 0.10 - 0.10 SOLID 18/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577450 TM048	26/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AI7-1 0.40 - 0.40 SOLID 18/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577433 TM048	26/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AI8-1 0.40 - 4.00 SOLID 18/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577358 TM048	26/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AI10-1 0.40 - 0.40 SOLID 18/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577224 TM048	26/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ10-2 1.90 - 1.90 SOLID 19/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577304 TM048	26/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ12-1 0.60 - 0.60 SOLID 19/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577315 TM048	26/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ13-1 0.20 - 0.20 SOLID 19/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577325 TM048	26/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ14-1 0.50 - 0.50 SOLID 19/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577337 TM048	26/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ15-1 0.50 - 0.50 SOLID 19/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577353 TM048	27/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ16-1 1.00 - 1.00 SOLID 19/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577370 TM048	26/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ16-3 2.50 - 2.50 SOLID 19/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577384 TM048	27/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AJ17-2 1.90 - 1.90 SOLID 19/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577401 TM048	26/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AJ18-2 1.10 - 1.10 SOLID 19/01/2021 00:00:00 20/01/2021 05:00:00 210120-68 23577409 TM048	26/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	23577280	23577255	23577263	23577284	23577289	23577269	23577276	23577467	23577235	23577244
Customer Sample Ref.	AG7-1	AG8-1	AG8-2	AH6-1	AH6-2	AH7-1	AH7-2	AH8-1	AH8-2	AH8-3
AGS Ref.										
Depth	0.50 - 0.50	0.40 - 0.40	1.50 - 1.50	0.40 - 0.40	2.00 - 2.00	0.40 - 0.40	1.50 - 1.50	0.10 - 0.10	1.00 - 1.00	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	28-Jan-2021
Asbestos ID in Solid Samples	26-Jan-2021	26-Jan-2021			26-Jan-2021	26-Jan-2021		26-Jan-2021		26-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021
EPH CWG GC (S)	30-Jan-2021	30-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	30-Jan-2021	30-Jan-2021	25-Jan-2021
GRO by GC-FID (S)	27-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
Metals in solid samples by OES	28-Jan-2021	28-Jan-2021	27-Jan-2021	26-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	28-Jan-2021	26-Jan-2021	28-Jan-2021
PAH by GCMS	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	26-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
pH	22-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	22-Jan-2021	22-Jan-2021	21-Jan-2021
Phenols by HPLC (S)	28-Jan-2021	25-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	25-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
Sample description	21-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	21-Jan-2021	21-Jan-2021	20-Jan-2021
Total Organic Carbon	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021
TPH CWG GC (S)	30-Jan-2021	30-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	30-Jan-2021	30-Jan-2021	27-Jan-2021
VOC MS (S)	25-Jan-2021	27-Jan-2021	27-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	27-Jan-2021	25-Jan-2021	27-Jan-2021	26-Jan-2021

Lab Sample No(s)	23577249	23577450	23577459	23577433	23577438	23577358	23577424	23577224	23577295	23577300
Customer Sample Ref.	AH8-4	AI6-1	AI6-2	AI7-1	AI7-2	AI8-1	AI8-2	AI10-1	AI10-2	AJ10-1
AGS Ref.										
Depth	3.90 - 3.90	0.10 - 0.10	1.60 - 1.60	0.40 - 0.40	1.30 - 1.30	0.40 - 4.00	2.00 - 2.00	0.40 - 0.40	1.70 - 1.70	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	27-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
Asbestos ID in Solid Samples		26-Jan-2021		26-Jan-2021		26-Jan-2021		26-Jan-2021		
Cyanide Comp/Free/Total/Thiocyanate	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021
EPH CWG GC (S)	30-Jan-2021	30-Jan-2021	25-Jan-2021	30-Jan-2021	30-Jan-2021	25-Jan-2021	25-Jan-2021	30-Jan-2021	25-Jan-2021	25-Jan-2021
GRO by GC-FID (S)	27-Jan-2021	28-Jan-2021	27-Jan-2021	28-Jan-2021	28-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
Metals in solid samples by OES	27-Jan-2021	28-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	30-Jan-2021
PAH by GCMS	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
pH	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021
Phenols by HPLC (S)	28-Jan-2021	25-Jan-2021	25-Jan-2021	28-Jan-2021	28-Jan-2021	22-Jan-2021	25-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
Sample description	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021
Total Organic Carbon	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021
TPH CWG GC (S)	30-Jan-2021	30-Jan-2021	27-Jan-2021	30-Jan-2021	30-Jan-2021	27-Jan-2021	28-Jan-2021	30-Jan-2021	27-Jan-2021	27-Jan-2021
VOC MS (S)	26-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	26-Jan-2021

Lab Sample No(s)	23577304	23577315	23577319	23577325	23577333	23577337	23577342	23577353	23577364	23577370
Customer Sample Ref.	AJ10-2	AJ12-1	AJ12-2	AJ13-1	AJ13-2	AJ14-1	AJ14-2	AJ15-1	AJ15-2	AJ16-1
AGS Ref.										
Depth	1.90 - 1.90	0.60 - 0.60	2.00 - 2.00	0.20 - 0.20	2.00 - 2.00	0.50 - 0.50	2.00 - 2.00	0.50 - 0.50	1.60 - 1.60	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021
Asbestos ID in Solid Samples	26-Jan-2021	26-Jan-2021		26-Jan-2021		26-Jan-2021		27-Jan-2021		26-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021
EPH CWG GC (S)	30-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	30-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021
GRO by GC-FID (S)	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
Metals in solid samples by OES	28-Jan-2021	01-Feb-2021	25-Jan-2021	26-Jan-2021	25-Jan-2021	26-Jan-2021	27-Jan-2021	26-Jan-2021	28-Jan-2021	27-Jan-2021
PAH by GCMS	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
pH	22-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021
Phenols by HPLC (S)	25-Jan-2021	25-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021
Sample description	21-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021
Total Organic Carbon	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	27-Jan-2021	26-Jan-2021
TPH CWG GC (S)	30-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	30-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
VOC MS (S)	26-Jan-2021	26-Jan-2021	27-Jan-2021	26-Jan-2021	27-Jan-2021	27-Jan-2021	26-Jan-2021	26-Jan-2021	27-Jan-2021	27-Jan-2021

Validated

CERTIFICATE OF ANALYSIS

SDG:	210120-68	**Client Reference:**	P18-669	**Report Number:**	584985
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Lab Sample No(s)	23577378	23577384	23577390	23577401	23577405	23577409	23577418	23577310
Customer Sample Ref.	AJ16-2	AJ16-3	AJ17-1	AJ17-2	AJ18-1	AJ18-2	AJ18-3	AK10-1
AGS Ref.								
Depth	1.50 - 1.50	2.50 - 2.50	0.80 - 0.80	1.90 - 1.90	0.70 - 0.70	1.10 - 1.10	2.30 - 2.30	0.30 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
Asbestos ID in Solid Samples		27-Jan-2021		26-Jan-2021		26-Jan-2021		
Cyanide Comp/Free/Total/Thiocyanate	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021
EPH CWG GC (S)	30-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021
GRO by GC-FID (S)	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
Metals in solid samples by OES	28-Jan-2021	28-Jan-2021	26-Jan-2021	28-Jan-2021	28-Jan-2021	26-Jan-2021	26-Jan-2021	25-Jan-2021
PAH by GCMS	22-Jan-2021	22-Jan-2021	22-Jan-2021	25-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021
pH	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021
Phenols by HPLC (S)	25-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	25-Jan-2021	28-Jan-2021	28-Jan-2021
Sample description	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021	20-Jan-2021
Total Organic Carbon	27-Jan-2021	26-Jan-2021	26-Jan-2021	26-Jan-2021	27-Jan-2021	26-Jan-2021	26-Jan-2021	25-Jan-2021
TPH CWG GC (S)	30-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
VOC MS (S)	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
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BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	03 February 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210121-44
Your Reference:	P18-669
Location:	Llanwern
Report No:	585477

This report has been revised and directly supersedes 585026 in its entirety.

We received 21 samples on Thursday January 21, 2021 and 21 of these samples were scheduled for analysis which was completed on Wednesday February 03, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23584634	AF2-1		0.60 - 0.60	20/01/2021
23584642	AF2-2		1.30 - 1.30	20/01/2021
23584623	AF4-1		0.50 - 0.50	20/01/2021
23584630	AF4-2		1.60 - 1.60	20/01/2021
23584610	AF5-1		0.50 - 0.50	20/01/2021
23584617	AF5-2		1.80 - 1.80	20/01/2021
23584648	AG2-1		0.30 - 0.30	20/01/2021
23584593	AG6-1		0.30 - 0.30	20/01/2021
23584600	AG6-2		1.50 - 1.50	20/01/2021
23584664	AH2-1		0.50 - 0.50	20/01/2021
23584669	AH2-2		1.50 - 1.50	20/01/2021
23584575	AJ19-1		1.00 - 1.00	19/01/2021
23584656	AJ19-2		2.00 - 2.00	19/01/2021
23584678	AJ19-3		3.00 - 3.00	19/01/2021
23584719	AK16-1		0.50 - 0.50	19/01/2021
23584584	AK16-2		1.30 - 1.30	19/01/2021
23584702	AK17-1		0.50 - 0.50	19/01/2021
23584710	AK17-2		1.30 - 1.30	19/01/2021
23584698	AK18-1		1.00 - 1.00	19/01/2021
23584684	AK19-1		0.50 - 0.50	19/01/2021
23584691	AK19-2		1.90 - 1.90	19/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			23584634	AF2-1		0.60 - 0.60	1kg TUB with Handle (ALE260)	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			23584642	AF2-2		1.30 - 1.30	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			23584623	AF4-1		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			23584630	AF4-2		1.60 - 1.60	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			23584610	AF5-1		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			23584617	AF5-2		1.80 - 1.80	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			23584648	AG2-1		0.30 - 0.30	1kg TUB with Handle (ALE260)	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			23584593	AG6-1		0.30 - 0.30	1kg TUB with Handle (ALE260)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 21		X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11	X				1kg TUB with Handle (ALE260)	S
						X	1kg TUB with Handle (ALE260)	S
							1kg TUB with Handle (ALE260)	S
							1kg TUB with Handle (ALE260)	S
						X	1kg TUB with Handle (ALE260)	S
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2					1kg TUB with Handle (ALE260)	S
							1kg TUB with Handle (ALE260)	S
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 21		X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
EPH CWG GC (S)	All	NDPs: 0 Tests: 21		X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
GRO by GC-FID (S)	All	NDPs: 0 Tests: 21			X		60g VOC (ALE215)	S
					X		60g VOC (ALE215)	S
					X		60g VOC (ALE215)	S
					X		60g VOC (ALE215)	S
					X		60g VOC (ALE215)	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 21		X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 21		X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
pH	All	NDPs: 0 Tests: 21		X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 21		X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
Sample description	All	NDPs: 0 Tests: 21		X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
Total Organic Carbon	All	NDPs: 0 Tests: 21		X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
TPH CWG GC (S)	All	NDPs: 0 Tests: 21		X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
				X			250g Amber Jar (ALE210)	S
VOC MS (S)	All	NDPs: 0 Tests: 21			X		60g VOC (ALE215)	S
					X		60g VOC (ALE215)	S
					X		60g VOC (ALE215)	S
					X		60g VOC (ALE215)	S
					X		60g VOC (ALE215)	S

23584584	AK16-2		1.30 - 1.30	250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x		
23584719	AK16-1		0.50 - 0.50	60g VOC (ALE215)	S						x									x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x		
				1kg TUB with Handle (ALE260)	S		x													
23584678	AJ19-3		3.00 - 3.00	60g VOC (ALE215)	S						x									x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x		
				1kg TUB with Handle (ALE260)	S		x													
23584656	AJ19-2		2.00 - 2.00	60g VOC (ALE215)	S						x									x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x		
23584575	AJ19-1		1.00 - 1.00	60g VOC (ALE215)	S						x									x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x		
				1kg TUB with Handle (ALE260)	S		x													
23584669	AH2-2		1.50 - 1.50	60g VOC (ALE215)	S						x									x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x		
				1kg TUB with Handle (ALE260)	S		x													
23584664	AH2-1		0.50 - 0.50	60g VOC (ALE215)	S						x									x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x		
23584600	AG6-2		1.50 - 1.50	60g VOC (ALE215)	S						x									x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x		
23584593	AG6-1		0.30 - 0.30	60g VOC (ALE215)	S						x									x
				250g Amber Jar (ALE210)	S	x			x	x		x	x	x	x	x	x	x		

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23584584	23584702		23584710	23584698	23584684	23584691					
Customer Sample Reference			AK16-2	AK17-1		AK17-2	AK18-1	AK19-1	AK19-2					
AGS Reference														
Depth (m)			1.30 - 1.30	0.50 - 0.50		1.30 - 1.30	1.00 - 1.00	0.50 - 0.50	1.90 - 1.90					
Container			60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
Sample Type			S	S	S	S	S	S	S	S	S	S	S	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 21			X		X		X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11		X							X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2		X										
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 21			X		X		X			X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 21			X		X		X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 21	X			X		X		X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 21			X		X		X			X		
PAH by GCMS	All	NDPs: 0 Tests: 21			X		X		X			X		
pH	All	NDPs: 0 Tests: 21			X		X		X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 21			X		X		X			X		
Sample description	All	NDPs: 0 Tests: 21			X		X		X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 21			X		X		X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 21			X		X		X			X		
VOC MS (S)	All	NDPs: 0 Tests: 21	X			X		X		X			X	

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23584634	AF2-1	0.60 - 0.60	Black	Sand	None	Stones
23584642	AF2-2	1.30 - 1.30	Dark Brown	Loamy Sand	Stones	None
23584623	AF4-1	0.50 - 0.50	Dark Brown	Stone/Soil	None	Stones
23584630	AF4-2	1.60 - 1.60	Dark Brown	Sand	None	Stones
23584610	AF5-1	0.50 - 0.50	Black	Sand	None	Stones
23584617	AF5-2	1.80 - 1.80	Dark Brown	Sandy Loam	Stones	Brick
23584648	AG2-1	0.30 - 0.30	Black	Sand	None	Stones
23584593	AG6-1	0.30 - 0.30	Dark Brown	Sand	Vegetation	Stones
23584600	AG6-2	1.50 - 1.50	Dark Brown	Stone/Soil	None	Stones
23584664	AH2-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23584669	AH2-2	1.50 - 1.50	Dark Brown	N/A	Vegetation	Stones
23584575	AJ19-1	1.00 - 1.00	Dark Brown	Sand	None	Stones
23584656	AJ19-2	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	None
23584678	AJ19-3	3.00 - 3.00	Dark Brown	Sandy Loam	Stones	None
23584719	AK16-1	0.50 - 0.50	Dark Brown	Sand	None	Stones
23584584	AK16-2	1.30 - 1.30	Light Brown	Sandy Loam	Stones	None
23584702	AK17-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Fibres
23584710	AK17-2	1.30 - 1.30	Dark Brown	Sandy Loam	Stones	None
23584698	AK18-1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
23584684	AK19-1	0.50 - 0.50	Dark Brown	Sand	None	Stones
23584691	AK19-2	1.90 - 1.90	Dark Brown	Stone/Soil	None	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AF2-1	AF2-2	AF4-1	AF4-2	AF5-1	AF5-2
			Depth (m)	0.60 - 0.60	1.30 - 1.30	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584634	23584642	23584623	23584630	23584610	23584617
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		17	14	7.4	15	9.7	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	0.0118 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		88.4 #	6.31 #	1.4 #	4.24 #	25.7 #	6.02 #
pH	1 pH Units	TM133		8.68 M	8.61 M	12.1 #	11 M	11 M	9.37 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	9.96 M	<1 #	1.16 M	<1 M	5.96 M
Arsenic	<0.6 mg/kg	TM181		5.02 M	8.62 M	2.13 #	5.76 M	3.55 M	10.5 M
Cadmium	<0.02 mg/kg	TM181		0.195 M	0.111 M	0.166 #	0.303 M	<0.02 M	0.335 M
Chromium	<0.9 mg/kg	TM181		91.2 M	8.02 M	453 #	56.1 M	91.1 M	94.1 M
Copper	<1.4 mg/kg	TM181		22.2 M	26.7 M	14.2 #	11.7 M	10.1 M	15.9 M
Iron	<1000 mg/kg	TM181		36800 #	23500 #	120000 #	43300 #	66300 #	58300 #
Lead	<0.7 mg/kg	TM181		22.3 M	22.1 M	16.7 #	19 M	66.1 M	28.5 M
Manganese	<0.13 mg/kg	TM181		4380 M	920 M	33300 #	8530 M	8770 M	7040 M
Mercury	<0.1 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 #	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13.7 M	29.2 M	6.83 #	16.5 M	6.26 M	17.8 M
Selenium	<1 mg/kg	TM181		2.02 #	<1 #	14.9 #	2.63 #	2.05 #	2.11 #
Vanadium	<0.2 mg/kg	TM181		96.1 #	23.1 #	396 #	107 #	99.2 #	85.8 #
Zinc	<1.9 mg/kg	TM181		72.7 M	81.8 M	37.5 #	62.3 M	89.8 M	114 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG2-1	AG6-1	AG6-2	AH2-1	AH2-2	AJ19-1
			Depth (m)	0.30 - 0.30	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584648	23584593	23584600	23584664	23584669	23584575
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	9.3	11	9.6	12	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	38.8 #	<12 M	<12	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0118 M	<0.01 M	<0.01 #	0.0111 M	0.0113	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0354 M	<0.01 M	<0.01 #	<0.01 M	<0.01	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0472 M	<0.035 M	<0.035 #	<0.035 M	<0.035	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		>100 #	28.1 #	4.17 #	18.4 #	2.52	1.88 #
pH	1 pH Units	TM133		8.15 M	9.09 M	9.44 #	9.53 M	9.68	9.98 M
Cyanide, Total	<1 mg/kg	TM153		3.08 M	<1 M	3.2 #	8.34 M	2.17	<1 M
Arsenic	<0.6 mg/kg	TM181		11.2 M	5.96 M	7.36 #	9.47 M	7.52	3.87 M
Cadmium	<0.02 mg/kg	TM181		0.256 M	<0.02 M	0.289 #	<0.02 M	0.136	0.173 M
Chromium	<0.9 mg/kg	TM181		14.5 M	244 M	34.2 #	198 M	25.1	13.5 M
Copper	<1.4 mg/kg	TM181		21.6 M	26.6 M	10.8 #	22.5 M	8.07	9.16 M
Iron	<1000 mg/kg	TM181		45500 #	92600 #	25600 #	85300 #	30000	18600 #
Lead	<0.7 mg/kg	TM181		51.7 M	26.1 M	34.5 #	29.3 M	7.77	17.7 M
Manganese	<0.13 mg/kg	TM181		1720 M	16900 M	2980 #	9410 M	2300	1090 M
Mercury	<0.1 mg/kg	TM181		0.622 M	<0.14 M	<0.14 #	0.558 M	<0.14	<0.14 M
Nickel	<0.2 mg/kg	TM181		11.3 M	10.8 M	10.6 #	23.4 M	18.4	6.88 M
Selenium	<1 mg/kg	TM181		<1 #	3.86 #	1.81 #	1.83 #	<1	<1 #
Vanadium	<0.2 mg/kg	TM181		21.1 #	185 #	45.2 #	129 #	26.6	14.9 #
Zinc	<1.9 mg/kg	TM181		112 M	136 M	126 #	137 M	42.8	67.3 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/a					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ19-2	AJ19-3	AK16-1	AK16-2	AK17-1	AK17-2
			Depth (m)	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584656	23584678	23584719	23584584	23584702	23584710
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.8	6.4	13	13	13	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	28.2 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		1.24 #	3.74 #	9.52 #	2.28 #	8.96 #	2.67 #
pH	1 pH Units	TM133		9.2 M	9.02 M	10.6 M	10.6 M	10.4 M	10.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.98 M	<1 M	<1 M	1.98 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.74 M	4.67 M	21.6 M	9.34 M	<6 M	8.53 M
Cadmium	<0.02 mg/kg	TM181		0.0462 M	0.271 M	0.878 M	0.28 M	0.939 M	0.0453 M
Chromium	<0.9 mg/kg	TM181		8.9 M	12.3 M	93.7 M	30.8 M	33.7 M	37.6 M
Copper	<1.4 mg/kg	TM181		13.1 M	15 M	27.6 M	21.3 M	560 M	20.2 M
Iron	<1000 mg/kg	TM181		20600 #	15200 #	137000 #	53400 #	180000 #	40000 #
Lead	<0.7 mg/kg	TM181		12.7 M	29.8 M	101 M	33.7 M	36.1 M	29 M
Manganese	<0.13 mg/kg	TM181		826 M	663 M	8070 M	2180 M	3420 M	2130 M
Mercury	<0.1 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		16.6 M	11.4 M	31.7 M	24.3 M	16.9 M	24.3 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	11.1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		23.2 #	15.4 #	128 #	56.9 #	248 #	57.2 #
Zinc	<1.9 mg/kg	TM181		42.6 M	68.2 M	301 M	86.9 M	178 M	73.5 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						0.073 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						0.0079 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304						0.0809 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK18-1	AK19-1	AK19-2			
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.90 - 1.90			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	19/01/2021	19/01/2021	19/01/2021			
			Sample Time	.	.	.			
			Date Received	21/01/2021	21/01/2021	21/01/2021			
			SDG Ref	210121-44	210121-44	210121-44			
			Lab Sample No.(s)	23584698	23584684	23584691			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	7.2	12			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #			
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #			
Soil Organic Matter (SOM)	<0.35 %	TM132		1.29 #	5.9 #	4.72 #			
pH	1 pH Units	TM133		11 M	10.7 M	10.6 #			
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #			
Arsenic	<0.6 mg/kg	TM181		<6 M	6.89 M	6.92 #			
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.173 M	0.231 #			
Chromium	<0.9 mg/kg	TM181		23.2 M	11.7 M	84.4 #			
Copper	<1.4 mg/kg	TM181		<14 M	6.14 M	11.9 #			
Iron	<1000 mg/kg	TM181		21500 #	43700 #	138000 #			
Lead	<0.7 mg/kg	TM181		4.66 M	30.5 M	20.4 #			
Manganese	<0.13 mg/kg	TM181		5550 M	1490 M	9730 #			
Mercury	<0.1 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 #			
Nickel	<0.2 mg/kg	TM181		2.5 M	9.45 M	10.7 #			
Selenium	<1 mg/kg	TM181		<10 #	<1 #	<1 #			
Vanadium	<0.2 mg/kg	TM181		28.9 #	32.6 #	69.2 #			
Zinc	<1.9 mg/kg	TM181		54.7 M	77.5 M	50.3 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
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*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AF2-1	AF2-2	AF4-1	AF4-2	AF5-1	AF5-2
			Depth (m)	0.60 - 0.60	1.30 - 1.30	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584634	23584642	23584623	23584630	23584610	23584617
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		84.5	91.9	84.4	86.8	76	81.6
Acenaphthene-d10 % recovery**	%	TM218		84.1	92.3	86.5	86.4	81.1	85
Phenanthrene-d10 % recovery**	%	TM218		81.8	96	88	86	76.5	86.4
Chrysene-d12 % recovery**	%	TM218		75.4	85.5	82.9	79.5	71.4	81.2
Perylene-d12 % recovery**	%	TM218		71.4	84.2	81.7	82	72.2	77
Naphthalene	<9 µg/kg	TM218		55.2 M	381 M	35.7 #	182 M	446 M	207 M
Acenaphthylene	<12 µg/kg	TM218		118 M	129 M	32.5 #	<12 M	543 M	150 M
Acenaphthene	<8 µg/kg	TM218		22.7 M	474 M	14.2 #	<8 M	<40 M	14.9 M
Fluorene	<10 µg/kg	TM218		86.1 M	131 M	12.6 #	<10 M	127 M	40.2 M
Phenanthrene	<15 µg/kg	TM218		729 M	248 M	157 #	32.1 M	1700 M	405 M
Anthracene	<16 µg/kg	TM218		214 M	130 M	50.8 #	<16 M	678 M	135 M
Fluoranthene	<17 µg/kg	TM218		1230 M	1030 M	361 #	31.6 M	5070 M	1140 M
Pyrene	<15 µg/kg	TM218		917 M	753 M	274 #	24.7 M	3980 M	903 M
Benz(a)anthracene	<14 µg/kg	TM218		570 M	499 M	190 #	<14 M	2610 M	644 M
Chrysene	<10 µg/kg	TM218		631 M	495 M	209 #	15 M	2690 M	648 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		854 M	782 M	308 #	19.6 M	4580 M	1050 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		269 M	233 M	91.6 #	<14 M	1380 M	312 M
Benzo(a)pyrene	<15 µg/kg	TM218		487 M	428 M	168 #	<15 M	2480 M	581 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		422 M	366 M	152 #	<18 M	2220 M	517 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		96.6 M	79 M	36.2 #	<23 M	507 M	112 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		374 M	383 M	147 #	<24 M	2140 M	493 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		7080	6540	2240	305	31100	7350

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

PAH by GCMS

Results Legend

#	ISO17025 accredited.
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aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG2-1	AG6-1	AG6-2	AH2-1	AH2-2	AJ19-1
			Depth (m)	0.30 - 0.30	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584648	23584593	23584600	23584664	23584669	23584575
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		84.3	83.5	85.1	82.4	84.5	75.1
Acenaphthene-d10 % recovery**	%	TM218		88.7	86.8	89.1	86.9	87.3	80.4
Phenanthrene-d10 % recovery**	%	TM218		87.1	88.2	91.6	90.4	89.6	80.6
Chrysene-d12 % recovery**	%	TM218		80.4	83.4	84.3	85.7	85.6	72.7
Perylene-d12 % recovery**	%	TM218		73.8	80.1	82.8	81.9	84.2	71.2
Naphthalene	<9 µg/kg	TM218		1630 M	124 M	196 #	241 M	1070	1700 M
Acenaphthylene	<12 µg/kg	TM218		3850 M	292 M	74.2 #	466 M	267	<60 M
Acenaphthene	<8 µg/kg	TM218		532 M	10.7 M	<8 #	<8 M	<8	235 M
Fluorene	<10 µg/kg	TM218		4580 M	30 M	23.2 #	102 M	144	82 M
Phenanthrene	<15 µg/kg	TM218		37500 M	385 M	117 #	1130 M	1440	432 M
Anthracene	<16 µg/kg	TM218		10600 M	147 M	28.2 #	477 M	554	99.2 M
Fluoranthene	<17 µg/kg	TM218		61100 M	2510 M	178 #	4330 M	3350	230 M
Pyrene	<15 µg/kg	TM218		40100 M	2280 M	146 #	3260 M	2350	166 M
Benz(a)anthracene	<14 µg/kg	TM218		24100 M	1600 M	121 #	2140 M	1430	84.9 M
Chrysene	<10 µg/kg	TM218		23200 M	1630 M	142 #	2120 M	1420	102 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		31300 M	3280 M	291 #	3470 M	2080	159 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		9560 M	899 M	92.2 #	1030 M	658	<70 M
Benzo(a)pyrene	<15 µg/kg	TM218		17300 M	1820 M	191 #	1960 M	1150	<75 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		12900 M	1730 M	214 #	1730 M	996	<90 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		3110 M	368 M	41 #	390 M	216	<115 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		11300 M	1610 M	243 #	1630 M	895	<120 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		293000	18700	2100	24500	18000	3290

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ19-2	AJ19-3	AK16-1	AK16-2	AK17-1	AK17-2
			Depth (m)	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584656	23584678	23584719	23584584	23584702	23584710
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.4	83	80	84.6	73.5	84.3
Acenaphthene-d10 % recovery**	%	TM218		87.9	85.2	82.4	83.9	78	88.2
Phenanthrene-d10 % recovery**	%	TM218		91.1	88.1	81.6	82.2	74.9	91
Chrysene-d12 % recovery**	%	TM218		81.2	81.6	78.1	75.7	71	83.1
Perylene-d12 % recovery**	%	TM218		78.1	81.2	75.5	75	70.2	79.3
Naphthalene	<9 µg/kg	TM218		112 M	16.3 M	31.5 M	19.1 M	<90 M	23.7 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	<12 M	<24 M	17.4 M	<120 M	<12 M
Acenaphthene	<8 µg/kg	TM218		15.4 M	<8 M	46.6 M	<8 M	<80 M	10.1 M
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	41.8 M	16.6 M	<100 M	<10 M
Phenanthrene	<15 µg/kg	TM218		59.4 M	38.7 M	521 M	160 M	<150 M	119 M
Anthracene	<16 µg/kg	TM218		<16 M	<16 M	157 M	31.4 M	<160 M	31.6 M
Fluoranthene	<17 µg/kg	TM218		61.7 M	56.2 M	1450 M	185 M	<170 M	193 M
Pyrene	<15 µg/kg	TM218		51.3 M	46.4 M	1490 M	149 M	<150 M	151 M
Benz(a)anthracene	<14 µg/kg	TM218		30.7 M	27.7 M	953 M	71.9 M	<140 M	110 M
Chrysene	<10 µg/kg	TM218		42.7 M	34.3 M	892 M	75.1 M	<100 M	118 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		56.4 M	42 M	1340 M	104 M	<150 M	186 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		16 M	<14 M	459 M	33.5 M	<140 M	52.2 M
Benzo(a)pyrene	<15 µg/kg	TM218		29.8 M	21.6 M	959 M	63 M	<150 M	109 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		30.2 M	20.2 M	597 M	49 M	<180 M	90.7 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	133 M	<23 M	<230 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		34.5 M	<24 M	594 M	54.6 M	<240 M	94.1 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		541	303	9670	1030	<1180	1290

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK18-1	AK19-1	AK19-2			
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.90 - 1.90			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	19/01/2021	19/01/2021	19/01/2021			
			Sample Time	.	.	.			
			Date Received	21/01/2021	21/01/2021	21/01/2021			
			SDG Ref	210121-44	210121-44	210121-44			
			Lab Sample No.(s)	23584698	23584684	23584691			
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83	95.6	84.4			
Acenaphthene-d10 % recovery**	%	TM218		88.2	97	85.8			
Phenanthrene-d10 % recovery**	%	TM218		90.8	92.6	84.9			
Chrysene-d12 % recovery**	%	TM218		81.2	84.6	78.2			
Perylene-d12 % recovery**	%	TM218		78.3	79.6	78.8			
Naphthalene	<9 µg/kg	TM218		15.1 M	<45 M	33.8 #			
Acenaphthylene	<12 µg/kg	TM218		<12 M	<60 M	17.9 #			
Acenaphthene	<8 µg/kg	TM218		<8 M	<40 M	<8 #			
Fluorene	<10 µg/kg	TM218		<10 M	<50 M	<10 #			
Phenanthrene	<15 µg/kg	TM218		63.8 M	273 M	91.9 #			
Anthracene	<16 µg/kg	TM218		<16 M	<80 M	24.3 #			
Fluoranthene	<17 µg/kg	TM218		94.6 M	482 M	184 #			
Pyrene	<15 µg/kg	TM218		78.9 M	390 M	149 #			
Benz(a)anthracene	<14 µg/kg	TM218		45.3 M	243 M	100 #			
Chrysene	<10 µg/kg	TM218		54.7 M	271 M	109 #			
Benzo(b)fluoranthene	<15 µg/kg	TM218		79.6 M	395 M	166 #			
Benzo(k)fluoranthene	<14 µg/kg	TM218		20.3 M	124 M	48.1 #			
Benzo(a)pyrene	<15 µg/kg	TM218		43 M	218 M	98.6 #			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		39.1 M	209 M	77.1 #			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<115 M	<23 #			
Benzo(g,h,i)perylene	<24 µg/kg	TM218		47.4 M	211 M	84.1 #			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		582	2820	1180			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AF2-1	AF2-2	AF4-1	AF4-2	AF5-1	AF5-2
			Depth (m)	0.60 - 0.60	1.30 - 1.30	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584634	23584642	23584623	23584630	23584610	23584617
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		72.5	94.5	93.6	127	47.8 4	98.9
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	34.8	<10	22.4	<10 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	46.4	<10	36.6	<10 4	21.9
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	66.1	<10	36.6	<10 4	29.9
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	1090	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		1260	5340	1000	1400	6320	7100
Aliphatics >C21-C35	<1000 µg/kg	TM414		4340	3270	19800	8420	13800	3540
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	<1000	5420	1260	1840	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		5680	10200	26300	11600	22800	11300
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		38300	21300	30000	16500	128000	62500
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	27.8	<10	17.7	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	22	<10	<10	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	44.1	<10	24.8	<10 4	19.6
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	2050	<1000	<1000	2080	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		6210	2890	<1000	<1000	15900	7630
Aromatics > EC21-EC35	<1000 µg/kg	TM414		22000	4450	2390	3140	75300	35800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		4180	<1000	<1000	<1000	10800	6480
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	2140	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		32600	11100	<5000	<5000	105000	51200
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		38300	21600	26300	11700	128000	62600
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	147	<50	95.6	<50 4	51.8
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	94	<50	<50	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	241	<20	95.6	<20 4	51.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG2-1	AG6-1	AG6-2	AH2-1	AH2-2	AJ19-1
			Depth (m)	0.30 - 0.30	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584648	23584593	23584600	23584664	23584669	23584575
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		39.7 4	74.2	88.2	84.9	107	117
Aliphatics >C5-C6	<10 µg/kg	TM089		17.7 4	<10	21.3	<10	17	34.4
Aliphatics >C6-C8	<10 µg/kg	TM089		94.4 4	<10	32.5	<10	80.2	44.4
Aliphatics >C8-C10	<10 µg/kg	TM089		70.8 4	<10	56	<10	227	73.3
Aliphatics >C10-C12	<1000 µg/kg	TM414		<5000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<5000	<1000	<1000	<1000	<1000	1550
Aliphatics >C16-C21	<1000 µg/kg	TM414		7990	2670	10600	2860	<1000	3640
Aliphatics >C21-C35	<1000 µg/kg	TM414		25700	3730	4410	7640	2060	2610
Aliphatics >C35-C44	<1000 µg/kg	TM414		<5000	<1000	<1000	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		36300	6590	16000	11400	<5000	8140
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		4000000	88400	40700	123000	47400	216000
Aromatics >EC5-EC7	<10 µg/kg	TM089		17.7 4	<10	288	<10	650	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		17.7 4	<10	14.6	<10	166	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		47.2 4	<10	37	<10	151	48.8
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<5000	<1000	1420	<1000	2400	2750
Aromatics > EC12-EC16	<1000 µg/kg	TM414		96300	<1000	<1000	1220	<1000	4480
Aromatics > EC16-EC21	<1000 µg/kg	TM414		966000	11500	<1000	18300	7750	2430
Aromatics > EC21-EC35	<1000 µg/kg	TM414		2610000	56600	15900	74200	30500	121000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		284000	13100	6020	17400	3610	76700
Aromatics > EC40-EC44	<1000 µg/kg	TM414		32700	1570	<1000	2150	<1000	7740
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		3960000	81800	24700	112000	44700	208000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		4000000	88400	41200	123000	45600	216000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		183 4	<50	110	<50	324	152
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		82.6 4	<50	339	<50	967	<50
GRO >C5-C10	<20 µg/kg	TM089		266 4	<20	449	<20	1290	152

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ19-2	AJ19-3	AK16-1	AK16-2	AK17-1	AK17-2
			Depth (m)	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584656	23584678	23584719	23584584	23584702	23584710
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		71.1	74.2	81.5	121	83.2	83.2
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		15.5	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		24.4	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	<1000	5800	1410	4850	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	11400	18400	13200	13800	4190
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	3440	17800	10400	1170	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	15000	43000	25000	20200	<5000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		33500	21900	194000	41300	137000	31000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		16.7	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	9890	<1000	<1000	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		22700	5500	118000	14500	88100	20600
Aromatics >EC35-EC44	<1000 µg/kg	TM414		8940	<1000	21800	1660	27300	5150
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1180	<1000	13800	<1000	5400	1100
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		32500	6860	151000	16300	117000	26000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		32500	21900	194000	41300	137000	26000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK18-1	AK19-1	AK19-2			
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.90 - 1.90			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	19/01/2021	19/01/2021	19/01/2021			
			Sample Time	.	.	.			
			Date Received	21/01/2021	21/01/2021	21/01/2021			
			SDG Ref	210121-44	210121-44	210121-44			
			Lab Sample No.(s)	23584698	23584684	23584691			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		72.4	72	77.4			
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10			
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10			
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10			
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aliphatics >C12-C16	<1000 µg/kg	TM414		2180	<1000	2430			
Aliphatics >C16-C21	<1000 µg/kg	TM414		6100	2950	8310			
Aliphatics >C21-C35	<1000 µg/kg	TM414		21600	7950	21900			
Aliphatics >C35-C44	<1000 µg/kg	TM414		8740	<1000	12100			
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		38700	11700	44800			
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		51000	91300	68900			
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10			
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	1590	<1000			
Aromatics > EC21-EC35	<1000 µg/kg	TM414		10400	49700	20200			
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1420	28100	3160			
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	5650	1200			
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		12300	79600	24100			
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		51000	91300	68900			
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50			
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50			
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20			

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AF2-1	AF2-2	AF4-1	AF4-2	AF5-1	AF5-2
			Depth (m)	0.60 - 0.60	1.30 - 1.30	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584634	23584642	23584623	23584630	23584610	23584617
			AGS Reference						
Dibromofluoromethane**	%	TM116		115	105	107	111	102	107
Toluene-d8**	%	TM116		96.1	104	98.6	100	96.7	97.9
4-Bromofluorobenzene**	%	TM116		78.7	93.3	96.8	95.4	87.4	96.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 #	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 #	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 #	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 #	559 M	355 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AG2-1	AG6-1	AG6-2	AH2-1	AH2-2	AJ19-1
			Depth (m)	0.30 - 0.30	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584648	23584593	23584600	23584664	23584669	23584575
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	113	110	108	113	114
Toluene-d8**	%	TM116		94.8	97.2	98.9	98.7	98.6	99.7
4-Bromofluorobenzene**	%	TM116		77.4	91.9	99	93.7	95.6	99.1
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200	<200 M
Benzene	<9 µg/kg	TM116		229 M	<180 M	214 #	<180 M	296	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 #	<140 M	<140	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 #	<80 M	<80	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 #	<200 M	<200	<200 M
Naphthalene	<13 µg/kg	TM116		604 M	<260 M	<260 #	<260 M	<260	641 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ19-2	AJ19-3	AK16-1	AK16-2	AK17-1	AK17-2
			Depth (m)	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021	21/01/2021
			SDG Ref	210121-44	210121-44	210121-44	210121-44	210121-44	210121-44
			Lab Sample No.(s)	23584656	23584678	23584719	23584584	23584702	23584710
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	112	112	119	111	114
Toluene-d8**	%	TM116		100	96.9	98.3	100	97.5	99.4
4-Bromofluorobenzene**	%	TM116		101	95.3	93.5	98.5	94.8	97.1
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK18-1	AK19-1	AK19-2			
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.90 - 1.90			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	19/01/2021	19/01/2021	19/01/2021			
			Sample Time	.	.	.			
			Date Received	21/01/2021	21/01/2021	21/01/2021			
			SDG Ref	210121-44	210121-44	210121-44			
			Lab Sample No.(s)	23584698	23584684	23584691			
			AGS Reference						
Dibromofluoromethane**	%	TM116		112	120	115			
Toluene-d8**	%	TM116		99.7	99.1	99.5			
4-Bromofluorobenzene**	%	TM116		99.4	96	95.9			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 #			
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 #			
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 #			
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 #			
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #			
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 #			
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 #			
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4			
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800			

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AF2-1 0.60 - 0.60 SOLID 20/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584634 TM048	27/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AF4-1 0.50 - 0.50 SOLID 20/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584623 TM048	27/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AF5-1 0.50 - 0.50 SOLID 20/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584610 TM048	27/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AG2-1 0.30 - 0.30 SOLID 20/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584648 TM048	27/01/21	Eva Guerra	loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AG6-1 0.30 - 0.30 SOLID 20/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584593 TM048	27/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AH2-2 1.50 - 1.50 SOLID 20/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584669 TM048	27/01/21	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ19-1 1.00 - 1.00 SOLID 19/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584575 TM048	27/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AJ19-3 3.00 - 3.00 SOLID 19/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584678 TM048	27/01/21	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AK16-1 0.50 - 0.50 SOLID 19/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584719 TM048	27/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AK17-1 0.50 - 0.50 SOLID 19/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584702 TM048	27/01/2021	Agnieszka Chelmowska	Loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AK19-2 1.90 - 1.90 SOLID 19/01/2021 00:00:00 21/01/2021 05:00:00 210121-44 23584691 TM048	27/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	AG2-1	None (#)	N/a	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.30 - 0.30					
Sample Type	SOLID					
Date Sampled	20/01/2021 00:00:00					
Date Receieved	21/01/2021 05:00:00					
SDG	210121-44					
Original Sample	23584648					
Method Number	TM304					
Cust. Sample Ref.	AK17-1	None (#)	N/A	0.0730 (#)	0.0079 (#)	0.0809 (#)
Depth (m)	0.50 - 0.50					
Sample Type	SOLID					
Date Sampled	19/01/2021 00:00:00					
Date Receieved	21/01/2021 05:00:00					
SDG	210121-44					
Original Sample	23584702					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210121-44	**Client Reference:**	P18-669	**Report Number:**	585477
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585026

Test Completion Dates

Lab Sample No(s)	23584634	23584642	23584623	23584630	23584610	23584617	23584648	23584593	23584600	23584664
Customer Sample Ref.	AF2-1	AF2-2	AF4-1	AF4-2	AF5-1	AF5-2	AG2-1	AG6-1	AG6-2	AH2-1
AGS Ref.										
Depth	0.60 - 0.60	1.30 - 1.30	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50	1.80 - 1.80	0.30 - 0.30	0.30 - 0.30	1.50 - 1.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
Asbestos ID in Solid Samples	27-Jan-2021		27-Jan-2021		27-Jan-2021		27-Jan-2021	27-Jan-2021		
Asbestos Quantification - Full							03-Feb-2021			
Cyanide Comp/Free/Total/Thiocyanate	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021
EPH CWG GC (S)	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	30-Jan-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021
GRO by GC-FID (S)	28-Jan-2021	01-Feb-2021	29-Jan-2021	28-Jan-2021	29-Jan-2021	29-Jan-2021	28-Jan-2021	30-Jan-2021	29-Jan-2021	28-Jan-2021
Metals in solid samples by OES	28-Jan-2021	28-Jan-2021	30-Jan-2021	29-Jan-2021	30-Jan-2021	28-Jan-2021	28-Jan-2021	30-Jan-2021	28-Jan-2021	28-Jan-2021
PAH by GCMS	27-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021
pH	22-Jan-2021	21-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	21-Jan-2021
Phenols by HPLC (S)	28-Jan-2021	28-Jan-2021	28-Jan-2021	29-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
Sample description	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021
Total Organic Carbon	28-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	27-Jan-2021	28-Jan-2021
TPH CWG GC (S)	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	30-Jan-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021
VOC MS (S)	28-Jan-2021	28-Jan-2021	28-Jan-2021	27-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	27-Jan-2021

Lab Sample No(s)	23584669	23584575	23584656	23584678	23584719	23584584	23584702	23584710	23584698	23584684
Customer Sample Ref.	AH2-2	AJ19-1	AJ19-2	AJ19-3	AK16-1	AK16-2	AK17-1	AK17-2	AK18-1	AK19-1
AGS Ref.										
Depth	1.50 - 1.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50	1.30 - 1.30	0.50 - 0.50	1.30 - 1.30	1.00 - 1.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
Asbestos ID in Solid Samples	27-Jan-2021	27-Jan-2021		27-Jan-2021	27-Jan-2021		27-Jan-2021			
Asbestos Quantification - Full							03-Feb-2021			
Cyanide Comp/Free/Total/Thiocyanate	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
EPH CWG GC (S)	01-Feb-2021	01-Feb-2021	30-Jan-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021
GRO by GC-FID (S)	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	30-Jan-2021	28-Jan-2021	30-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
Metals in solid samples by OES	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	29-Jan-2021	26-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
PAH by GCMS	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021
pH	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	22-Jan-2021	21-Jan-2021	22-Jan-2021	21-Jan-2021	21-Jan-2021	22-Jan-2021
Phenols by HPLC (S)	28-Jan-2021	28-Jan-2021	29-Jan-2021	28-Jan-2021	29-Jan-2021	29-Jan-2021	28-Jan-2021	28-Jan-2021	29-Jan-2021	28-Jan-2021
Sample description	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021	21-Jan-2021
Total Organic Carbon	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	26-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
TPH CWG GC (S)	01-Feb-2021	01-Feb-2021	30-Jan-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021
VOC MS (S)	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021

Lab Sample No(s)	23584691
Customer Sample Ref.	AK19-2
AGS Ref.	
Depth	1.90 - 1.90
Type	Soil/Solid (S)
Ammonium Soil by Titration	28-Jan-2021
Asbestos ID in Solid Samples	27-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	27-Jan-2021
EPH CWG GC (S)	01-Feb-2021
GRO by GC-FID (S)	28-Jan-2021
Metals in solid samples by OES	28-Jan-2021
PAH by GCMS	25-Jan-2021
pH	22-Jan-2021
Phenols by HPLC (S)	28-Jan-2021
Sample description	21-Jan-2021
Total Organic Carbon	28-Jan-2021
TPH CWG GC (S)	01-Feb-2021
VOC MS (S)	27-Jan-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	04 February 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210123-50
Your Reference:	P18-669
Location:	Llanwern
Report No:	585596

We received 17 samples on Saturday January 23, 2021 and 17 of these samples were scheduled for analysis which was completed on Thursday February 04, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23598989	AK11-1		0.10 - 0.10	22/01/2021
23598983	AK12-1		0.60 - 0.60	22/01/2021
23598972	AK13-1		1.00 - 1.00	21/01/2021
23598976	AK13-2		2.00 - 2.00	22/01/2021
23598918	AL3-1		0.30 - 0.30	22/01/2021
23598941	AL6-1		0.80 - 0.80	22/01/2021
23598905	AL7-1		0.40 - 0.40	22/01/2021
23598913	AL7-2		1.50 - 1.50	22/01/2021
23598894	AL10-1		0.50 - 0.50	22/01/2021
23598901	AL10-2		1.80 - 1.80	22/01/2021
23598960	AL15-1		0.50 - 0.50	21/01/2021
23598967	AL15-2		1.40 - 1.40	21/01/2021
23598889	AL16-1		0.60 - 0.60	21/01/2021
23598948	AL16-2		1.50 - 1.50	21/01/2021
23598955	AL16-3		3.00 - 3.00	21/01/2021
23598925	AM5-1		1.00 - 1.00	22/01/2021
23598935	AM5-2		1.90 - 1.90	22/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23598989		23598983		23598972		23598976		23598918		23598941		23598905		23598913	
Customer Sample Reference			AK11-1		AK12-1		AK13-1		AK13-2		AL3-1		AL6-1		AL7-1		AL7-2	
AGS Reference																		
Depth (m)			0.10 - 0.10		0.60 - 0.60		1.00 - 1.00		2.00 - 2.00		0.30 - 0.30		0.80 - 0.80		0.40 - 0.40		1.50 - 1.50	
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 17		X		X		X			X		X		X		X		X	X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9	X							X				X						X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 17		X		X		X			X		X		X		X			X
EPH CWG GC (S)	All	NDPs: 0 Tests: 17		X		X		X			X		X		X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 17			X		X		X			X				X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 17		X		X		X			X		X		X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 17		X		X		X			X		X		X		X			X
pH	All	NDPs: 0 Tests: 17		X		X		X			X		X		X		X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 17		X		X		X			X		X		X		X			X
Sample description	All	NDPs: 0 Tests: 16		X		X		X			X		X		X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 17		X		X		X			X		X		X		X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 17		X		X		X			X		X		X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 17			X		X		X			X				X		X		

23598925	AM5-1		1.00 - 1.00	250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X															
23598955	AL16-3		3.00 - 3.00	60g VOC (ALE215)	S					X												X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X															
23598948	AL16-2		1.50 - 1.50	60g VOC (ALE215)	S					X												X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X					
23598889	AL16-1		0.60 - 0.60	60g VOC (ALE215)	S					X												X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X															
23598967	AL15-2		1.40 - 1.40	60g VOC (ALE215)	S					X												X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X			X	X				
				1kg TUB with Handle (ALE260)	S		X															
23598960	AL15-1		0.50 - 0.50	60g VOC (ALE215)	S					X												X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X					
23598901	AL10-2		1.80 - 1.80	60g VOC (ALE215)	S					X												X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X															
23598894	AL10-1		0.50 - 0.50	60g VOC (ALE215)	S					X												X
				250g Amber Jar (ALE210)	S	X		X	X		X	X	X	X	X	X	X					
23598913	AL7-2		1.50 - 1.50	60g VOC (ALE215)	S					X												X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23598925		23598935
Customer Sample Reference			AM5-1		AM5-2
AGS Reference					
Depth (m)			1.00 - 1.00		1.90 - 1.90
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 17		X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 17		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 17		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 17	X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 17		X	
PAH by GCMS	All	NDPs: 0 Tests: 17		X	
pH	All	NDPs: 0 Tests: 17		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 17		X	
Sample description	All	NDPs: 0 Tests: 16		X	
Total Organic Carbon	All	NDPs: 0 Tests: 17		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 17		X	
VOC MS (S)	All	NDPs: 0 Tests: 17	X		X

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23598989	AK11-1	0.10 - 0.10	Dark Brown	Sandy Loam	Stones	None
23598983	AK12-1	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	None
23598972	AK13-1	1.00 - 1.00	Dark Brown	Sand	Stones	None
23598976	AK13-2	2.00 - 2.00	Dark Brown	Sand	Stones	Brick
23598918	AL3-1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
23598941	AL6-1	0.80 - 0.80	Light Brown	Loamy Sand	Stones	None
23598905	AL7-1	0.40 - 0.40	Dark Brown	Sand	Stones	Brick
23598913	AL7-2	1.50 - 1.50	Dark Brown	Rubble/Soil	None	None
23598894	AL10-1	0.50 - 0.50	Light Brown	Loamy Sand	Stones	None
23598901	AL10-2	1.80 - 1.80	Dark Brown	Loamy Sand	Stones	None
23598960	AL15-1	0.50 - 0.50	Dark Brown	Sand	Stones	Brick
23598967	AL15-2	1.40 - 1.40	Dark Brown	Sand	Vegetation	Brick
23598889	AL16-1	0.60 - 0.60	Dark Brown	Sand	Stones	None
23598948	AL16-2	1.50 - 1.50	Dark Brown	Sand	Stones	Brick
23598955	AL16-3	3.00 - 3.00	Dark Brown	Sand	Stones	Vegetation
23598925	AM5-1	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
23598935	AM5-2	1.90 - 1.90	Dark Brown	Sand	Stones	Brick

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK11-1	AK12-1	AK13-1	AK13-2	AL3-1	AL6-1
			Depth (m)	0.10 - 0.10	0.60 - 0.60	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	21/01/2021	22/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598989	23598983	23598972	23598976	23598918	23598941
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.5	11	8.8	16	11	7.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0219 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		20.3 #	0.945 #	2.16 #	3.29 #	<0.35 #	1.39 #
pH	1 pH Units	TM133		9.07 M	9.83 M	11 M	10.7 M	11.5 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.82 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.5 M	8.16 M	6.15 M	8.59 M	6.59 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.936 M	<0.2 M	0.702 M	2.03 M	0.493 M	0.397 M
Chromium	<0.9 mg/kg	TM181		10.6 M	9.55 M	186 M	89.7 M	163 M	69.9 M
Copper	<1.4 mg/kg	TM181		<14 M	<14 M	19.8 M	38.6 M	<14 M	<14 M
Iron	<1000 mg/kg	TM181		149000 #	38300 #	108000 #	49100 #	67200 #	26600 #
Lead	<0.7 mg/kg	TM181		77.2 M	21.5 M	27.7 M	284 M	18.3 M	16.3 M
Manganese	<0.13 mg/kg	TM181		3380 M	2070 M	11000 M	2920 M	16300 M	5360 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		10.4 M	18.2 M	10.6 M	20.2 M	14.4 M	5.06 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	13 #	<10 #
Vanadium	<0.2 mg/kg	TM181		47.1 #	27.8 #	176 #	66.8 #	256 #	94.1 #
Zinc	<1.9 mg/kg	TM181		150 M	59.4 M	75.7 M	1010 M	86.2 M	73.9 M

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL7-1	AL7-2	AL10-1	AL10-2	AL15-1	AL15-2
			Depth (m)	0.40 - 0.40	1.50 - 1.50	0.50 - 0.50	1.80 - 1.80	0.50 - 0.50	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	22/01/2021	22/01/2021	21/01/2021	21/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598905	23598913	23598894	23598901	23598960	23598967
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.4	5	11	8.7	12	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		<0.35 #	1.37 #	4.38 #	2.36 #	46.4 #	7.05 #
pH	1 pH Units	TM133		8.67 M	9.31 #	9.06 M	9.41 M	10.4 M	9.66 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.93 #	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.26 M	<6 #	9.07 M	6.06 M	7.4 M	10.3 M
Cadmium	<0.02 mg/kg	TM181		1.02 M	0.21 #	0.564 M	0.219 M	0.336 M	0.637 M
Chromium	<0.9 mg/kg	TM181		101 M	12.4 #	102 M	18.1 M	81.1 M	33.4 M
Copper	<1.4 mg/kg	TM181		39.8 M	<14 #	51.4 M	15.5 M	41 M	26.9 M
Iron	<1000 mg/kg	TM181		30900 #	37000 #	51600 #	40100 #	56800 #	47700 #
Lead	<0.7 mg/kg	TM181		57.4 M	13.4 #	32.2 M	17.4 M	167 M	37.7 M
Manganese	<0.13 mg/kg	TM181		2430 M	1980 #	3910 M	3930 M	4800 M	1510 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<1.4 #	<1.4 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		15.9 M	8.87 #	16.9 M	13.3 M	13.9 M	26.9 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		73.4 #	46.4 #	139 #	33.4 #	73.6 #	65.1 #
Zinc	<1.9 mg/kg	TM181		146 M	38.6 #	99.1 M	47.5 M	115 M	129 M

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL16-1	AL16-2	AL16-3	AM5-1	AM5-2
			Depth (m)	0.60 - 0.60	1.50 - 1.50	3.00 - 3.00	1.00 - 1.00	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/01/2021	21/01/2021	21/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598889	23598948	23598955	23598925	23598935
			AGS Reference					
Moisture Content Ratio (% of as received sample)	%	PM024		7.9	9.3	7.4	10	8.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		66.9 #	2.29 #	2.07 #	2.67 #	4.67 #
pH	1 pH Units	TM133		11.8 M	9.9 M	9.93 M	7.88 M	9.06 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	5.13 M
Arsenic	<0.6 mg/kg	TM181		6.59 M	7.87 M	7.95 M	<6 M	7.12 M
Cadmium	<0.02 mg/kg	TM181		0.79 M	0.403 M	0.544 M	0.501 M	1.29 M
Chromium	<0.9 mg/kg	TM181		58 M	35 M	42.3 M	40.3 M	24.6 M
Copper	<1.4 mg/kg	TM181		18.7 M	14.3 M	16.6 M	<14 M	17.6 M
Iron	<1000 mg/kg	TM181		80300 #	46100 #	76700 #	47400 #	288000 #
Lead	<0.7 mg/kg	TM181		30.8 M	21.2 M	11.1 M	8.47 M	27.6 M
Manganese	<0.13 mg/kg	TM181		4140 M	2260 M	2520 M	6760 M	4960 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M	1.48 M
Nickel	<0.2 mg/kg	TM181		15.8 M	16.3 M	17 M	7.31 M	11.2 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		73.4 #	56 #	69.4 #	69.8 #	157 #
Zinc	<1.9 mg/kg	TM181		185 M	80.4 M	55 M	297 M	147 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK11-1	AK12-1	AK13-1	AK13-2	AL3-1	AL6-1
			Depth (m)	0.10 - 0.10	0.60 - 0.60	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	21/01/2021	22/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598989	23598983	23598972	23598976	23598918	23598941
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		84.7	88.5	83.2	84.1	85	84.8
Acenaphthene-d10 % recovery**	%	TM218		83.6	87.5	86.6	89.9	88.1	80.2
Phenanthrene-d10 % recovery**	%	TM218		82.2	86.4	93.4	88.1	88.7	82.4
Chrysene-d12 % recovery**	%	TM218		71.3	82.9	106	97.9	88.2	83.1
Perylene-d12 % recovery**	%	TM218		70.3	80.7	97	92.6	90.9	87.2
Naphthalene	<9 µg/kg	TM218		23.1 M	27.2 M	<180 M	75.7 M	13.5 M	<45 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	20.6 M	<240 M	112 M	15.2 M	<60 M
Acenaphthene	<8 µg/kg	TM218		<8 M	<8 M	<160 M	<40 M	<8 M	<40 M
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	<200 M	<50 M	<10 M	<50 M
Phenanthrene	<15 µg/kg	TM218		38.7 M	43.9 M	<300 M	412 M	153 M	<75 M
Anthracene	<16 µg/kg	TM218		<16 M	<16 M	<320 M	124 M	26.4 M	<80 M
Fluoranthene	<17 µg/kg	TM218		39.4 M	78.7 M	<340 M	908 M	408 M	162 M
Pyrene	<15 µg/kg	TM218		31.1 M	61.5 M	<300 M	713 M	376 M	143 M
Benz(a)anthracene	<14 µg/kg	TM218		27.8 M	49.2 M	<280 M	435 M	238 M	119 M
Chrysene	<10 µg/kg	TM218		36.9 M	60.5 M	<200 M	401 M	262 M	131 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		45.7 M	76.2 M	<300 M	612 M	480 M	199 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<14 M	20.7 M	<280 M	233 M	141 M	<70 M
Benzo(a)pyrene	<15 µg/kg	TM218		22.4 M	40.8 M	<300 M	364 M	268 M	144 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		23.8 M	37.9 M	<360 M	337 M	280 M	151 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	<460 M	<115 M	38.8 M	<115 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<24 M	40.7 M	<480 M	273 M	273 M	153 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		289	558	<2360	5000	2970	1200

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL7-1	AL7-2	AL10-1	AL10-2	AL15-1	AL15-2
			Depth (m)	0.40 - 0.40	1.50 - 1.50	0.50 - 0.50	1.80 - 1.80	0.50 - 0.50	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	22/01/2021	22/01/2021	21/01/2021	21/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598905	23598913	23598894	23598901	23598960	23598967
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.2	89.6	88.3	86.1	84.8	85
Acenaphthene-d10 % recovery**	%	TM218		91.9	89.7	87.1	84.5	86.9	83.7
Phenanthrene-d10 % recovery**	%	TM218		101	91.2	87.1	81.2	85.7	84.8
Chrysene-d12 % recovery**	%	TM218		109	88.3	80.5	78.1	77.4	79.8
Perylene-d12 % recovery**	%	TM218		101	95.9	81.5	80.6	78.8	80.4
Naphthalene	<9 µg/kg	TM218		<90 M	1930 #	30.9 M	43.2 M	<9 M	119 M
Acenaphthylene	<12 µg/kg	TM218		<120 M	37.8 #	13.9 M	26.5 M	<12 M	379 M
Acenaphthene	<8 µg/kg	TM218		<80 M	21.5 #	<8 M	<8 M	<8 M	21.6 M
Fluorene	<10 µg/kg	TM218		<100 M	32.8 #	37.5 M	<10 M	<10 M	389 M
Phenanthrene	<15 µg/kg	TM218		<150 M	89.1 #	245 M	109 M	20.2 M	9790 M
Anthracene	<16 µg/kg	TM218		<160 M	<16 #	34.6 M	20.2 M	<16 M	2670 M
Fluoranthene	<17 µg/kg	TM218		<170 M	99.4 #	241 M	241 M	26.3 M	15400 M
Pyrene	<15 µg/kg	TM218		<150 M	72.2 #	166 M	161 M	21.8 M	10000 M
Benz(a)anthracene	<14 µg/kg	TM218		<140 M	60.4 #	90.5 M	86.3 M	16.3 M	4680 M
Chrysene	<10 µg/kg	TM218		<100 M	62.8 #	81.5 M	70.3 M	15.9 M	3550 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		<150 M	89.1 #	119 M	118 M	19 M	3560 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<140 M	27 #	34.4 M	49.8 M	<14 M	1330 M
Benzo(a)pyrene	<15 µg/kg	TM218		<150 M	51.6 #	90.7 M	72 M	<15 M	3160 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<180 M	51.3 #	78.8 M	70.1 M	<18 M	2420 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<230 M	<23 #	<23 M	<23 M	<23 M	514 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<240 M	43.7 #	71.6 M	55.1 M	<24 M	2060 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		<1180	2670	1340	1120	120	60100

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL16-1	AL16-2	AL16-3	AM5-1	AM5-2
			Depth (m)	0.60 - 0.60	1.50 - 1.50	3.00 - 3.00	1.00 - 1.00	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/01/2021	21/01/2021	21/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598889	23598948	23598955	23598925	23598935
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		86.9	88.4	87.5	86.4	90.6
Acenaphthene-d10 % recovery**	%	TM218		89	87.1	88.2	90.8	84.7
Phenanthrene-d10 % recovery**	%	TM218		88.1	86.4	89.1	93.8	84.2
Chrysene-d12 % recovery**	%	TM218		80.7	84.1	85.8	112	88.5
Perylene-d12 % recovery**	%	TM218		82.9	90	85.7	94.2	85.1
Naphthalene	<9 µg/kg	TM218		94.4 M	38.7 M	23.3 M	<180 M	<90 M
Acenaphthylene	<12 µg/kg	TM218		32.7 M	<12 M	<12 M	<240 M	<120 M
Acenaphthene	<8 µg/kg	TM218		12.4 M	26.7 M	<8 M	<160 M	<80 M
Fluorene	<10 µg/kg	TM218		17.1 M	28.1 M	<10 M	<200 M	<100 M
Phenanthrene	<15 µg/kg	TM218		241 M	79.1 M	45.4 M	<300 M	<150 M
Anthracene	<16 µg/kg	TM218		59.2 M	18.1 M	<16 M	<320 M	<160 M
Fluoranthene	<17 µg/kg	TM218		378 M	50 M	45.4 M	<340 M	<170 M
Pyrene	<15 µg/kg	TM218		295 M	39.3 M	32.8 M	<300 M	<150 M
Benz(a)anthracene	<14 µg/kg	TM218		182 M	20.9 M	17.8 M	<280 M	<140 M
Chrysene	<10 µg/kg	TM218		173 M	25.2 M	23.1 M	<200 M	<100 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		220 M	33 M	24.5 M	<300 M	<150 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		89.3 M	<14 M	<14 M	<280 M	<140 M
Benzo(a)pyrene	<15 µg/kg	TM218		167 M	16.7 M	<15 M	<300 M	<150 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		140 M	<18 M	<18 M	<360 M	<180 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		27.7 M	<23 M	<23 M	<460 M	<230 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		136 M	<24 M	<24 M	<480 M	<240 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		2260	376	212	<2360	<1180

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK11-1	AK12-1	AK13-1	AK13-2	AL3-1	AL6-1
			Depth (m)	0.10 - 0.10	0.60 - 0.60	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	21/01/2021	22/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598989	23598983	23598972	23598976	23598918	23598941
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		114	107	86.4	145 4	107	89.8
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		5200	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		19400	<1000	3880	6000	1030	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		23100	2510	7420	16000	4570	<1000
Aliphatics >C35-C44	<1000 µg/kg	TM414		4620	1890	2110	2200	<1000	2050
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		52300	<5000	13400	24700	5750	<5000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		70200	23500	117000	56300	14900	14700
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	2260	<1000	1540	<1000
Aromatics > EC21-EC35	<1000 µg/kg	TM414		14600	12700	73600	24000	6600	6800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2920	6260	28200	6810	<1000	4790
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1590	3340	1270	<1000	1440
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		17900	19100	104000	31600	9140	11900
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		70200	19100	117000	56300	14900	11900
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50 4	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20 4	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL7-1	AL7-2	AL10-1	AL10-2	AL15-1	AL15-2
			Depth (m)	0.40 - 0.40	1.50 - 1.50	0.50 - 0.50	1.80 - 1.80	0.50 - 0.50	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	22/01/2021	22/01/2021	21/01/2021	21/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598905	23598913	23598894	23598901	23598960	23598967
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		119	86.7	119	88	88.1	76.8
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	20.5	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	20.5	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	13.7	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	9430	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	2320	27900	<1000	13400	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	<1000	101000	<1000	57400	8150
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	<1000	30400	<1000	34300	3620
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	<5000	168000	<5000	106000	12000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		<10000	39100	186000	<10000	344000	31600
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	1140	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	3240	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	<1000	1210	37600	2840
Aromatics > EC21-EC35	<1000 µg/kg	TM414		4230	17000	15000	4000	173000	14400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	18700	1300	<1000	23200	2410
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	6320	<1000	<1000	2460	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		5350	36000	17400	6230	238000	19600
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		<10000	36000	186000	<10000	344000	31600
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	54.7	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	54.7	<20

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL16-1	AL16-2	AL16-3	AM5-1	AM5-2
			Depth (m)	0.60 - 0.60	1.50 - 1.50	3.00 - 3.00	1.00 - 1.00	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/01/2021	21/01/2021	21/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598889	23598948	23598955	23598925	23598935
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		87.4	88.3	85.7	82.8	96
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	1270	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		3640	1930	<1000	5480	4520
Aliphatics >C21-C35	<1000 µg/kg	TM414		51800	6810	7420	9930	5870
Aliphatics >C35-C44	<1000 µg/kg	TM414		16000	1040	2380	1060	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		71700	11000	10800	17100	10900
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		87500	23000	17500	228000	49700
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	1230	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	<1000	2350	1240
Aromatics > EC21-EC35	<1000 µg/kg	TM414		14000	10800	5550	131000	26200
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	76800	10700
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	23600	2000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		15700	12000	6700	211000	38800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		87500	23000	17500	228000	49700
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AK11-1	AK12-1	AK13-1	AK13-2	AL3-1	AL6-1
			Depth (m)	0.10 - 0.10	0.60 - 0.60	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	21/01/2021	22/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598989	23598983	23598972	23598976	23598918	23598941
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	111	111	109	110	109
Toluene-d8**	%	TM116		97.6	96.3	97.1	96.9	98.9	98
4-Bromofluorobenzene**	%	TM116		101	97.6	101	101	102	105
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL7-1	AL7-2	AL10-1	AL10-2	AL15-1	AL15-2
			Depth (m)	0.40 - 0.40	1.50 - 1.50	0.50 - 0.50	1.80 - 1.80	0.50 - 0.50	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	22/01/2021	22/01/2021	21/01/2021	21/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598905	23598913	23598894	23598901	23598960	23598967
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	108	108	109	110	113
Toluene-d8**	%	TM116		98.3	98.7	98.4	97.6	97.3	98
4-Bromofluorobenzene**	%	TM116		102	102	101	102	96.7	98.4
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 #	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 #	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 #	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 #	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AL16-1	AL16-2	AL16-3	AM5-1	AM5-2
			Depth (m)	0.60 - 0.60	1.50 - 1.50	3.00 - 3.00	1.00 - 1.00	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	21/01/2021	21/01/2021	21/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-50	210123-50	210123-50	210123-50	210123-50
			Lab Sample No.(s)	23598889	23598948	23598955	23598925	23598935
			AGS Reference					
Dibromofluoromethane**	%	TM116		108	118	108	113	110
Toluene-d8**	%	TM116		98.4	98.8	99.3	97	98.7
4-Bromofluorobenzene**	%	TM116		103	104	103	103	105
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK11-1 0.10 - 0.10 SOLID 22/01/2021 00:00:00 23/01/2021 05:00:00 210123-50 23598989 TM048	29/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AK13-2 2.00 - 2.00 SOLID 22/01/2021 00:00:00 23/01/2021 05:00:00 210123-50 23598976 TM048	29/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL6-1 0.80 - 0.80 SOLID 22/01/2021 00:00:00 23/01/2021 05:00:00 210123-50 23598941 TM048	29/01/21	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL7-2 1.50 - 1.50 SOLID 22/01/2021 00:00:00 23/01/2021 05:00:00 210123-50 23598913 TM048	29/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL10-2 1.80 - 1.80 SOLID 22/01/2021 00:00:00 23/01/2021 05:00:00 210123-50 23598901 TM048	29/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL15-2 1.40 - 1.40 SOLID 21/01/2021 00:00:00 23/01/2021 05:00:00 210123-50 23598967 TM048	29/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL16-1 0.60 - 0.60 SOLID 21/01/2021 00:00:00 23/01/2021 05:00:00 210123-50 23598889 TM048	29/01/21	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AL16-3 3.00 - 3.00 SOLID 21/01/2021 00:00:00 23/01/2021 05:00:00 210123-50 23598955 TM048	29/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AM5-1 1.00 - 1.00 SOLID 22/01/2021 00:00:00 23/01/2021 05:00:00 210123-50 23598925 TM048	29/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210123-50	**Client Reference:**	P18-669	**Report Number:**	585596
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	23598989	23598983	23598972	23598976	23598918	23598941	23598905	23598913	23598894	23598901
Customer Sample Ref.	AK11-1	AK12-1	AK13-1	AK13-2	AL3-1	AL6-1	AL7-1	AL7-2	AL10-1	AL10-2
AGS Ref.										
Depth	0.10 - 0.10	0.60 - 0.60	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	0.40 - 0.40	1.50 - 1.50	0.50 - 0.50	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	29-Jan-2021	29-Jan-2021	01-Feb-2021	29-Jan-2021	29-Jan-2021	01-Feb-2021	29-Jan-2021	29-Jan-2021	01-Feb-2021	01-Feb-2021
Asbestos ID in Solid Samples	29-Jan-2021			29-Jan-2021		29-Jan-2021		29-Jan-2021		29-Jan-2021
Cyanide Comp/Free/Total/Thiocyanate	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	01-Feb-2021	28-Jan-2021	28-Jan-2021
EPH CWG GC (S)	02-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021
GRO by GC-FID (S)	03-Feb-2021	03-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
Metals in solid samples by OES	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	02-Feb-2021	03-Feb-2021	03-Feb-2021
PAH by GCMS	28-Jan-2021	02-Feb-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
pH	28-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	27-Jan-2021	28-Jan-2021
Phenols by HPLC (S)	01-Feb-2021	29-Jan-2021	02-Feb-2021	29-Jan-2021	29-Jan-2021	02-Feb-2021	01-Feb-2021	29-Jan-2021	02-Feb-2021	01-Feb-2021
Sample description	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021
Total Organic Carbon	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
TPH CWG GC (S)	03-Feb-2021	03-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
VOC MS (S)	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021

Lab Sample No(s)	23598960	23598967	23598889	23598948	23598955	23598925	23598935
Customer Sample Ref.	AL15-1	AL15-2	AL16-1	AL16-2	AL16-3	AM5-1	AM5-2
AGS Ref.							
Depth	0.50 - 0.50	1.40 - 1.40	0.60 - 0.60	1.50 - 1.50	3.00 - 3.00	1.00 - 1.00	1.90 - 1.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	29-Jan-2021	29-Jan-2021	01-Feb-2021	29-Jan-2021	01-Feb-2021	29-Jan-2021	29-Jan-2021
Asbestos ID in Solid Samples		29-Jan-2021	29-Jan-2021		29-Jan-2021	29-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	28-Jan-2021	28-Jan-2021	01-Feb-2021	01-Feb-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
EPH CWG GC (S)	02-Feb-2021	02-Feb-2021	02-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021
GRO by GC-FID (S)	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
Metals in solid samples by OES	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
PAH by GCMS	29-Jan-2021	28-Jan-2021	29-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
pH	27-Jan-2021	28-Jan-2021	29-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
Phenols by HPLC (S)	01-Feb-2021	29-Jan-2021	01-Feb-2021	29-Jan-2021	29-Jan-2021	02-Feb-2021	29-Jan-2021
Sample description	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021
Total Organic Carbon	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
TPH CWG GC (S)	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
VOC MS (S)	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	05 February 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210123-55
Your Reference:	P18-669
Location:	Llanwern
Report No:	585835

This report has been revised and directly supersedes 585642 in its entirety.

We received 21 samples on Saturday January 23, 2021 and 21 of these samples were scheduled for analysis which was completed on Friday February 05, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23599122	AC1-1		0.50 - 0.50	20/01/2021
23599126	AC1-2		1.50 - 1.50	20/01/2021
23599110	AD1-1		0.40 - 0.40	20/01/2021
23599117	AD1-2		1.10 - 1.10	20/01/2021
23599097	AE1-1		0.30 - 0.30	20/01/2021
23599106	AE1-2		1.40 - 1.40	20/01/2021
23599088	AF1-1		0.70 - 0.70	20/01/2021
23599092	AF1-2		1.50 - 1.50	20/01/2021
23599148	AG3-1		0.80 - 0.80	20/01/2021
23599152	AG3-2		1.90 - 1.90	20/01/2021
23599156	AH3-1		0.50 - 0.50	20/01/2021
23599163	AH3-2		1.50 - 1.50	20/01/2021
23599167	AI2-1		0.50 - 0.50	20/01/2021
23599072	AI3-1		0.50 - 0.50	20/01/2021
23599133	AI3-2		1.20 - 1.20	20/01/2021
23599175	AJ2-1		0.50 - 0.50	20/01/2021
23599180	AJ2-2		1.50 - 1.50	20/01/2021
23599078	AJ3-1		0.30 - 0.30	20/01/2021
23599083	AJ3-2		1.70 - 1.70	20/01/2021
23599137	AL17-1		0.50 - 0.50	22/01/2021
23599143	AL17-2		1.90 - 1.90	22/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23599122		23599126		23599110		23599117		23599097		23599106		23599088		23599092	
Customer Sample Reference			AC1-1		AC1-2		AD1-1		AD1-2		AE1-1		AE1-2		AF1-1		AF1-2	
AGS Reference																		
Depth (m)			0.50 - 0.50		1.50 - 1.50		0.40 - 0.40		1.10 - 1.10		0.30 - 0.30		1.40 - 1.40		0.70 - 0.70		1.50 - 1.50	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 21	X			X		X			X		X			X		X					X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11			X					X					X						X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3																					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 21	X			X		X			X		X			X		X					X
EPH CWG GC (S)	All	NDPs: 0 Tests: 21	X			X		X			X		X			X		X					X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 21		X			X		X			X		X			X		X				
Metals in solid samples by OES	All	NDPs: 0 Tests: 21	X			X		X			X		X			X		X					X
PAH by GCMS	All	NDPs: 0 Tests: 21	X			X		X			X		X			X		X					X
pH	All	NDPs: 0 Tests: 21	X			X		X			X		X			X		X					X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 21	X			X		X			X		X			X		X					X
Sample description	All	NDPs: 0 Tests: 21	X			X		X			X		X			X		X					X
Total Organic Carbon	All	NDPs: 0 Tests: 21	X			X		X			X		X			X		X					X
TPH CWG GC (S)	All	NDPs: 0 Tests: 21	X			X		X			X		X			X		X					X
VOC MS (S)	All	NDPs: 0 Tests: 21		X			X		X			X		X			X		X				

23599175	AJ2-1		0.50 - 0.50	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23599133	AI3-2		1.20 - 1.20	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23599072	AI3-1		0.50 - 0.50	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
23599167	AI2-1		0.50 - 0.50	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x	x															
23599163	AH3-2		1.50 - 1.50	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23599156	AH3-1		0.50 - 0.50	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x	x															
23599152	AG3-2		1.90 - 1.90	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
23599148	AG3-1		0.80 - 0.80	60g VOC (ALE215)	S								x										x
				250g Amber Jar (ALE210)	S	x				x	x		x	x	x	x	x	x	x	x			
				1kg TUB with Handle (ALE260)	S		x																
23599092	AF1-2		1.50 - 1.50	60g VOC (ALE215)	S								x										x

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23599180		23599078		23599083			23599137			23599143	
Customer Sample Reference			AJ2-2		AJ3-1		AJ3-2			AL17-1			AL17-2	
AGS Reference														
Depth (m)			1.50 - 1.50		0.30 - 0.30		1.70 - 1.70			0.50 - 0.50			1.90 - 1.90	
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 21		X		X			X		X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11	X					X					X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3											X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 21		X		X			X		X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 21		X		X			X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 21			X		X			X		X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 21		X		X			X		X			X	
PAH by GCMS	All	NDPs: 0 Tests: 21		X		X			X		X			X	
pH	All	NDPs: 0 Tests: 21		X		X			X		X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 21		X		X			X		X			X	
Sample description	All	NDPs: 0 Tests: 21		X		X			X		X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 21		X		X			X		X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 21		X		X			X		X			X	
VOC MS (S)	All	NDPs: 0 Tests: 21			X		X			X		X			X

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23599122	AC1-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	N/A
23599126	AC1-2	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	None
23599110	AD1-1	0.40 - 0.40	Dark Brown	Sand	Stones	None
23599117	AD1-2	1.10 - 1.10	Dark Brown	Sandy Loam	Stones	None
23599097	AE1-1	0.30 - 0.30	Dark Brown	Sand	Stones	None
23599106	AE1-2	1.40 - 1.40	Dark Brown	Loamy Sand	Stones	None
23599088	AF1-1	0.70 - 0.70	Dark Brown	Sand	Stones	Brick
23599092	AF1-2	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	None
23599148	AG3-1	0.80 - 0.80	Grey	Sand	Stones	None
23599152	AG3-2	1.90 - 1.90	Dark Brown	Sandy Loam	Stones	None
23599156	AH3-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
23599163	AH3-2	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	None
23599167	AI2-1	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
23599072	AI3-1	0.50 - 0.50	Dark Brown	Sand	Stones	None
23599133	AI3-2	1.20 - 1.20	Dark Brown	Sandy Loam	Stones	None
23599175	AJ2-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
23599180	AJ2-2	1.50 - 1.50	Dark Brown	Stone/Soil	Stones	None
23599078	AJ3-1	0.30 - 0.30	Dark Brown	Sand	Stones	None
23599083	AJ3-2	1.70 - 1.70	Dark Brown	Stone/Soil	Stones	None
23599137	AL17-1	0.50 - 0.50	Dark Brown	Sand	Stones	Brick
23599143	AL17-2	1.90 - 1.90	Dark Brown	Sand	Stones	Brick

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AC1-1	AC1-2	AD1-1	AD1-2	AE1-1	AE1-2
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.40 - 0.40	1.10 - 1.10	0.30 - 0.30	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599122	23599126	23599110	23599117	23599097	23599106
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	9.5	14	7.8	12	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0672 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.0672 M
Soil Organic Matter (SOM)	<0.35 %	TM132		13.2 #	1.05 #	3.02 #	16.6 #	6.17 #	20.7 #
pH	1 pH Units	TM133		11 M	8.67 M	8.93 M	9.44 M	10.2 M	8.76 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.15 M	6.49 M	<6 M	<6 M	6.92 M	9.06 M
Cadmium	<0.02 mg/kg	TM181		1.1 M	0.38 M	<0.2 M	<0.2 M	0.362 M	0.497 M
Chromium	<0.9 mg/kg	TM181		219 M	113 M	17.9 M	22.5 M	161 M	26 M
Copper	<1.4 mg/kg	TM181		22 M	14 M	<14 M	<14 M	24 M	19.8 M
Iron	<1000 mg/kg	TM181		101000 #	51200 #	12000 #	<10000 #	54300 #	32800 #
Lead	<0.7 mg/kg	TM181		67.8 M	9.38 M	<7 M	<7 M	58.3 M	24.4 M
Manganese	<0.13 mg/kg	TM181		12800 M	10900 M	3550 M	5620 M	13500 M	2590 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		16.1 M	20.8 M	5.25 M	5.52 M	16.3 M	25.4 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	7.72 #	<10 #
Vanadium	<0.2 mg/kg	TM181		224 #	93 #	26 #	64.8 #	151 #	44.4 #
Zinc	<1.9 mg/kg	TM181		218 M	63.2 M	31.7 M	30.1 M	113 M	110 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AF1-1	AF1-2	AG3-1	AG3-2	AH3-1	AH3-2
			Depth (m)	0.70 - 0.70	1.50 - 1.50	0.80 - 0.80	1.90 - 1.90	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599088	23599092	23599148	23599152	23599156	23599163
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	12	18	10	15	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	34 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.305 M	0.0111 M	0.0236 M	0.0113 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	1.09 M	0.0222 M	0.0826 M	0.0113 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	1.05 M	<0.015 M	0.0472 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	2.44 M	<0.035 M	0.153 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		2.36 #	1.78 #	7.95 #	5.4 #	64.8 #	24.1 #
pH	1 pH Units	TM133		8.33 M	7.9 M	7.77 M	11.7 M	11.9 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	6.9 M	213 M	17.2 M	45.2 M	13.7 M
Arsenic	<0.6 mg/kg	TM181		12.7 M	7.47 M	<6 M	<6 M	<6 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.54 M	0.492 M	0.318 M	<0.2 M	0.543 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		25.6 M	13 M	37.7 M	555 M	262 M	541 M
Copper	<1.4 mg/kg	TM181		29.7 M	<14 M	91.8 M	49.1 M	19.9 M	19.9 M
Iron	<1000 mg/kg	TM181		42700 #	30600 #	23000 #	186000 #	93800 #	200000 #
Lead	<0.7 mg/kg	TM181		26.6 M	16.6 M	47 M	31.9 M	10.6 M	8.73 M
Manganese	<0.13 mg/kg	TM181		1150 M	542 M	2530 M	42200 M	16400 M	43100 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<1.4 M	1.96 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		42.7 M	33.7 M	20.3 M	10.6 M	7.44 M	5.33 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	28.6 #	<10 #	27.3 #
Vanadium	<0.2 mg/kg	TM181		43.3 #	16.4 #	44.4 #	639 #	305 #	691 #
Zinc	<1.9 mg/kg	TM181		97 M	77.4 M	345 M	55.5 M	83.6 M	19.4 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI2-1	AI3-1	AI3-2	AJ2-1	AJ2-2	AJ3-1
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599167	23599072	23599133	23599175	23599180	23599078
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	15	7.8	8.5	4.8	17
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0234 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0112 M	0.0585 M	<0.01 M	0.0109 M	<0.01 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0585 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.14 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		10.3 #	>100 #	5.52 #	11.8 #	1.69 #	>100 #
pH	1 pH Units	TM133		11.8 M	10.4 M	11.7 M	9.52 M	8.95 #	8.78 M
Cyanide, Total	<1 mg/kg	TM153		7.34 M	6.53 M	3.64 M	2.96 M	3.75 #	2.87 M
Arsenic	<0.6 mg/kg	TM181		<6 M	<6 M	<6 M	6.64 M	<6 #	<6 M
Cadmium	<0.02 mg/kg	TM181		0.658 M	0.414 M	<0.2 M	0.487 M	0.265 #	0.29 M
Chromium	<0.9 mg/kg	TM181		451 M	88.8 M	579 M	55.4 M	<9 #	28.8 M
Copper	<1.4 mg/kg	TM181		<14 M	18.4 M	18 M	56.1 M	<14 #	15.5 M
Iron	<1000 mg/kg	TM181		119000 #	19300 #	170000 #	80200 #	23000 #	16200 #
Lead	<0.7 mg/kg	TM181		38.8 M	27.9 M	8.34 M	26.6 M	<7 #	32.1 M
Manganese	<0.13 mg/kg	TM181		24700 M	2600 M	36900 M	3550 M	1100 #	1990 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 #	<1.4 M
Nickel	<0.2 mg/kg	TM181		<2 M	6.28 M	28.7 M	21.5 M	9.2 #	7.03 M
Selenium	<1 mg/kg	TM181		12.2 #	<10 #	24.7 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		372 #	52.1 #	721 #	65 #	13.9 #	33.6 #
Zinc	<1.9 mg/kg	TM181		134 M	104 M	<19 M	79.1 M	35.7 #	118 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ3-2	AL17-1	AL17-2			
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.90 - 1.90			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	20/01/2021	22/01/2021	22/01/2021			
			Sample Time	.	.	.			
			Date Received	23/01/2021	23/01/2021	23/01/2021			
			SDG Ref	210123-55	210123-55	210123-55			
			Lab Sample No.(s)	23599083	23599137	23599143			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	12	9.2			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M			
Soil Organic Matter (SOM)	<0.35 %	TM132		83.8 #	4.98 #	2.09 #			
pH	1 pH Units	TM133		8.95 #	10.4 M	10.3 M			
Cyanide, Total	<1 mg/kg	TM153		1.89 #	<1 M	<1 M			
Arsenic	<0.6 mg/kg	TM181		<6 #	<6 M	<6 M			
Cadmium	<0.02 mg/kg	TM181		<0.2 #	0.326 M	<0.2 M			
Chromium	<0.9 mg/kg	TM181		<9 #	48.5 M	24.3 M			
Copper	<1.4 mg/kg	TM181		<14 #	<14 M	<14 M			
Iron	<1000 mg/kg	TM181		<10000 #	36600 #	20700 #			
Lead	<0.7 mg/kg	TM181		8.38 #	40.3 M	12.9 M			
Manganese	<0.13 mg/kg	TM181		1290 #	3750 M	2790 M			
Mercury	<0.1 mg/kg	TM181		<1.4 #	<1.4 M	<1.4 M			
Nickel	<0.2 mg/kg	TM181		2.78 #	10.8 M	9.06 M			
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #			
Vanadium	<0.2 mg/kg	TM181		10.8 #	53.8 #	43.2 #			
Zinc	<1.9 mg/kg	TM181		35.2 #	99.3 M	44.3 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				N/A			
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AC1-1	AC1-2	AD1-1	AD1-2	AE1-1	AE1-2
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.40 - 0.40	1.10 - 1.10	0.30 - 0.30	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599122	23599126	23599110	23599117	23599097	23599106
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.2	85.1	86.8	86.1	84.2	85.3
Acenaphthene-d10 % recovery**	%	TM218		87.3	85.7	89.1	86.1	84.7	84.4
Phenanthrene-d10 % recovery**	%	TM218		90.1	82.4	90.6	85.8	83.7	85.9
Chrysene-d12 % recovery**	%	TM218		88	73	81.3	76.1	75.5	76.4
Perylene-d12 % recovery**	%	TM218		89.9	73.6	70.2	74.9	70.8	73.9
Naphthalene	<9 µg/kg	TM218		860 M	126 M	82.8 M	83.4 M	109 M	107 M
Acenaphthylene	<12 µg/kg	TM218		551 M	41.9 M	44.4 M	35.3 M	36.8 M	55.6 M
Acenaphthene	<8 µg/kg	TM218		79.1 M	<8 M	<8 M	<8 M	<8 M	9.13 M
Fluorene	<10 µg/kg	TM218		499 M	22.6 M	30.1 M	15.7 M	21.4 M	22.6 M
Phenanthrene	<15 µg/kg	TM218		3380 M	114 M	395 M	131 M	238 M	186 M
Anthracene	<16 µg/kg	TM218		891 M	26.7 M	69.7 M	35.8 M	52.4 M	43.1 M
Fluoranthene	<17 µg/kg	TM218		5630 M	131 M	434 M	157 M	375 M	339 M
Pyrene	<15 µg/kg	TM218		4160 M	92.5 M	334 M	118 M	280 M	250 M
Benz(a)anthracene	<14 µg/kg	TM218		2300 M	48.6 M	237 M	89.5 M	202 M	179 M
Chrysene	<10 µg/kg	TM218		2040 M	46.5 M	251 M	85.7 M	225 M	170 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		2850 M	67.4 M	293 M	148 M	364 M	268 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		998 M	20.5 M	114 M	45.8 M	99.4 M	84.4 M
Benzo(a)pyrene	<15 µg/kg	TM218		1750 M	37.7 M	206 M	83.8 M	177 M	166 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1470 M	32.5 M	221 M	83.2 M	175 M	174 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		238 M	<23 M	50.5 M	<23 M	33.5 M	38.8 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1160 M	29.6 M	162 M	76.1 M	151 M	154 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		28900	837	2920	1190	2540	2250

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AF1-1	AF1-2	AG3-1	AG3-2	AH3-1	AH3-2
			Depth (m)	0.70 - 0.70	1.50 - 1.50	0.80 - 0.80	1.90 - 1.90	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599088	23599092	23599148	23599152	23599156	23599163
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.1	87.8	86.6	86.1	85.9	86.8
Acenaphthene-d10 % recovery**	%	TM218		86.3	87.7	89.6	82.7	89.7	85.4
Phenanthrene-d10 % recovery**	%	TM218		83.7	83.2	92.8	87.7	90.5	87.6
Chrysene-d12 % recovery**	%	TM218		76.6	72.2	109	85.4	96.6	81.3
Perylene-d12 % recovery**	%	TM218		79.5	72.6	103	87.8	93.9	83.8
Naphthalene	<9 µg/kg	TM218		<9 M	14.7 M	102000 M	8340 M	27500 M	3150 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	<12 M	35300 M	2000 M	7710 M	794 M
Acenaphthene	<8 µg/kg	TM218		<8 M	117 M	28600 M	3280 M	1030 M	105 M
Fluorene	<10 µg/kg	TM218		<10 M	<10 M	49700 M	3510 M	10200 M	946 M
Phenanthrene	<15 µg/kg	TM218		27.2 M	23.8 M	191000 M	14400 M	57500 M	4010 M
Anthracene	<16 µg/kg	TM218		<16 M	<16 M	46800 M	3630 M	17500 M	964 M
Fluoranthene	<17 µg/kg	TM218		21.4 M	<17 M	216000 M	16200 M	71000 M	4310 M
Pyrene	<15 µg/kg	TM218		18.1 M	17.1 M	149000 M	11400 M	49900 M	3060 M
Benz(a)anthracene	<14 µg/kg	TM218		<14 M	<14 M	99000 M	7240 M	29600 M	1720 M
Chrysene	<10 µg/kg	TM218		13.8 M	20.2 M	82900 M	5850 M	26100 M	1530 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		16.9 M	19.8 M	136000 M	8280 M	36000 M	1520 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		<14 M	<14 M	43400 M	2680 M	12200 M	615 M
Benzo(a)pyrene	<15 µg/kg	TM218		<15 M	<15 M	87600 M	6870 M	22700 M	1390 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		<18 M	<18 M	69300 M	5490 M	18400 M	1090 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	<23 M	11700 M	1080 M	3260 M	241 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<24 M	<24 M	55000 M	4780 M	13900 M	974 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		<118	212	1400000	105000	405000	26400

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI2-1	AI3-1	AI3-2	AJ2-1	AJ2-2	AJ3-1
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599167	23599072	23599133	23599175	23599180	23599078
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.2	83.6	85	81	84.5	82.6
Acenaphthene-d10 % recovery**	%	TM218		88.4	88	88.2	84.1	88.8	83.9
Phenanthrene-d10 % recovery**	%	TM218		93	99.6	87.4	86.4	93.6	83.5
Chrysene-d12 % recovery**	%	TM218		112	81.6	75.7	76.9	106	76.6
Perylene-d12 % recovery**	%	TM218		107	78.2	75.5	72.5	100	74.1
Naphthalene	<9 µg/kg	TM218		1960 M	3930 M	490 M	14700 M	7610 #	921 M
Acenaphthylene	<12 µg/kg	TM218		1270 M	4850 M	284 M	1010 M	13500 #	434 M
Acenaphthene	<8 µg/kg	TM218		203 M	1980 M	49.4 M	89.7 M	1880 #	34.6 M
Fluorene	<10 µg/kg	TM218		1300 M	5040 M	204 M	556 M	25100 #	106 M
Phenanthrene	<15 µg/kg	TM218		9490 M	25500 M	1140 M	4110 M	123000 #	1040 M
Anthracene	<16 µg/kg	TM218		2300 M	7970 M	329 M	1390 M	22300 #	364 M
Fluoranthene	<17 µg/kg	TM218		14300 M	46400 M	2470 M	8260 M	133000 #	2430 M
Pyrene	<15 µg/kg	TM218		10300 M	32500 M	1960 M	6990 M	88300 #	1860 M
Benz(a)anthracene	<14 µg/kg	TM218		6370 M	21300 M	1350 M	4360 M	41300 #	1570 M
Chrysene	<10 µg/kg	TM218		5870 M	18500 M	1290 M	3730 M	36500 #	1320 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		8850 M	27200 M	1900 M	5950 M	50100 #	1580 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		2680 M	8770 M	691 M	1740 M	17300 #	854 M
Benzo(a)pyrene	<15 µg/kg	TM218		5120 M	17100 M	1130 M	3750 M	31000 #	1620 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		4240 M	12700 M	1010 M	2910 M	25500 #	1720 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		735 M	3340 M	227 M	743 M	5560 #	376 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		3380 M	10400 M	994 M	2540 M	19900 #	1750 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		78300	248000	15500	62800	642000	18000

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ3-2	AL17-1	AL17-2			
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.90 - 1.90			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	20/01/2021	22/01/2021	22/01/2021			
			Sample Time	.	.	.			
			Date Received	23/01/2021	23/01/2021	23/01/2021			
			SDG Ref	210123-55	210123-55	210123-55			
			Lab Sample No.(s)	23599083	23599137	23599143			
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		84	85.2	85.9			
Acenaphthene-d10 % recovery**	%	TM218		86.3	90.1	89.6			
Phenanthrene-d10 % recovery**	%	TM218		83.6	101	88.8			
Chrysene-d12 % recovery**	%	TM218		73.6	96.4	76.9			
Perylene-d12 % recovery**	%	TM218		72.4	84.8	75.2			
Naphthalene	<9 µg/kg	TM218		108 #	<45 M	15.6 M			
Acenaphthylene	<12 µg/kg	TM218		98 #	<60 M	16.9 M			
Acenaphthene	<8 µg/kg	TM218		<8 #	<40 M	<8 M			
Fluorene	<10 µg/kg	TM218		21 #	<50 M	<10 M			
Phenanthrene	<15 µg/kg	TM218		191 #	<75 M	52.6 M			
Anthracene	<16 µg/kg	TM218		70.7 #	<80 M	45 M			
Fluoranthene	<17 µg/kg	TM218		399 #	106 M	92 M			
Pyrene	<15 µg/kg	TM218		314 #	90.4 M	60.9 M			
Benz(a)anthracene	<14 µg/kg	TM218		260 #	<70 M	43 M			
Chrysene	<10 µg/kg	TM218		236 #	62.7 M	48.3 M			
Benzo(b)fluoranthene	<15 µg/kg	TM218		352 #	103 M	58.7 M			
Benzo(k)fluoranthene	<14 µg/kg	TM218		138 #	<70 M	19.8 M			
Benzo(a)pyrene	<15 µg/kg	TM218		302 #	<75 M	36 M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		345 #	<90 M	29 M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		56.5 #	<115 M	<23 M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218		317 #	<120 M	29.1 M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		3210	<590	547			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AC1-1	AC1-2	AD1-1	AD1-2	AE1-1	AE1-2
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.40 - 0.40	1.10 - 1.10	0.30 - 0.30	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599122	23599126	23599110	23599117	23599097	23599106
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		76.1 @	127 @	75.6 @	93.7 @	75.9	81.8 @
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 @	15.4 @	<10 @	<10 @	<10	<10 @
Aliphatics >C6-C8	<10 µg/kg	TM089		<10 @	46.2 @	<10 @	<10 @	<10	<10 @
Aliphatics >C8-C10	<10 µg/kg	TM089		<10 @	75.9 @	<10 @	<10 @	<10	<10 @
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1000	1210	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		6880	1580	4060	<1000	<1000	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		27900	1450	10700	3690	1260	3810
Aliphatics >C35-C44	<1000 µg/kg	TM414		7500	<1000	2470	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		43300	<5000	17700	<5000	<5000	<5000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		131000	<10000	28300	49100	<10000	20600
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10	<10 @
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 @	<10 @	<10 @	<10 @	<10	<10 @
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10 @	50.6 @	<10 @	<10 @	<10	<10 @
Aromatics > EC10-EC12	<1000 µg/kg	TM414		1530	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		2210	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		20900	<1000	1770	<1000	1510	1920
Aromatics > EC21-EC35	<1000 µg/kg	TM414		56700	2860	7710	35500	4440	12700
Aromatics >EC35-EC44	<1000 µg/kg	TM414		5850	<1000	1020	8630	<1000	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		1410	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		87200	<5000	10600	44600	7080	15800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		131000	<10000	28300	44600	<10000	15800
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 @	138 @	<50 @	<50 @	<50	<50 @
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 @	50.6 @	<50 @	<50 @	<50	<50 @
GRO >C5-C10	<20 µg/kg	TM089		<20 @	188 @	<20 @	<20 @	<20	<20 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AF1-1	AF1-2	AG3-1	AG3-2	AH3-1	AH3-2
			Depth (m)	0.70 - 0.70	1.50 - 1.50	0.80 - 0.80	1.90 - 1.90	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599088	23599092	23599148	23599152	23599156	23599163
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		79.7	102 @	33.8 4 @	94.8 @	19.3 4 @	86.8
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10 @	85.4 4 @	14.4 @	23.6 4 @	24.9
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10 @	285 4 @	40 @	93.2 4 @	45.2
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10 @	517 4 @	75.5 @	126 4 @	71.2
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	5860	<1000	1330	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	55800	8110	11000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	<1000	601000	53700	117000	11600
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	<1000	379000	49300	151000	25700
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	<1000	67100	9010	23400	3680
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	<5000	1110000	120000	303000	41900
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		<10000	<10000	4410000	1320000	1050000	156000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10 @	456 4 @	13.3 @	169 4 @	17
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10 @	120 4 @	<10 @	34.2 4 @	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10 @	345 4 @	50 @	83.8 4 @	47.5
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	169000	17000	40900	3980
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	239000	40700	46600	8310
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	<1000	866000	324000	204000	30400
Aromatics > EC21-EC35	<1000 µg/kg	TM414		1020	<1000	1730000	696000	404000	61900
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	<1000	294000	118000	50600	9350
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	38000	17000	5360	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		<5000	<5000	3300000	1200000	746000	114000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		<10000	<10000	4410000	1320000	1050000	156000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50 @	888 4 @	130 @	243 4 @	141
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50 @	921 4 @	63.3 @	287 4 @	64.4
GRO >C5-C10	<20 µg/kg	TM089		<20	<20 @	1810 4 @	193 @	530 4 @	206

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI2-1	AI3-1	AI3-2	AJ2-1	AJ2-2	AJ3-1
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599167	23599072	23599133	23599175	23599180	23599078
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		44.7 4 @	35.9 4 @	94.4 @	45 4 @	127	92.2
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4 @	24.6 4 @	28.2 @	12 4 @	<10	33.9
Aliphatics >C6-C8	<10 µg/kg	TM089		71.7 4 @	81.9 4 @	43.4 @	38.3 4 @	<10	36.3
Aliphatics >C8-C10	<10 µg/kg	TM089		47 4 @	84.2 4 @	93.2 @	51.4 4 @	<10	31.5
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	5380	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		4620	11500	4230	2250	<1000	1440
Aliphatics >C16-C21	<1000 µg/kg	TM414		21600	24000	56400	12100	<1000	45300
Aliphatics >C21-C35	<1000 µg/kg	TM414		20400	49000	15900	9830	<1000	12900
Aliphatics >C35-C44	<1000 µg/kg	TM414		2610	11100	<1000	<1000	<1000	1110
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		49800	101000	76600	25200	<5000	60800
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		256000	1250000	120000	388000	26700	291000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4 @	23.4 4 @	11.9 @	<10 4 @	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4 @	15.2 4 @	<10 @	<10 4 @	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		31.4 4 @	56.2 4 @	61.8 @	33.9 4 @	<10	20.6
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2450	11500	<1000	3820	<1000	1240
Aromatics > EC12-EC16	<1000 µg/kg	TM414		5880	54900	1240	7370	<1000	2360
Aromatics > EC16-EC21	<1000 µg/kg	TM414		36300	273000	14500	78900	3860	19900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		126000	718000	23700	243000	18200	170000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		36200	91800	3380	29500	3070	36500
Aromatics > EC40-EC44	<1000 µg/kg	TM414		7590	9000	<1000	3640	<1000	4940
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		207000	1150000	43300	363000	25600	230000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		256000	1250000	120000	388000	25600	291000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		119 4 @	191 4 @	165 @	102 4 @	<50	102
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4 @	94.8 4 @	73.7 @	<50 4 @	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		119 4 @	285 4 @	238 @	102 4 @	<20	102

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ3-2	AL17-1	AL17-2			
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.90 - 1.90			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	20/01/2021	22/01/2021	22/01/2021			
			Sample Time	.	.	.			
			Date Received	23/01/2021	23/01/2021	23/01/2021			
			SDG Ref	210123-55	210123-55	210123-55			
			Lab Sample No.(s)	23599083	23599137	23599143			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		129	92.7	104			
Aliphatics >C5-C6	<10 µg/kg	TM089		23.6	<10	<10			
Aliphatics >C6-C8	<10 µg/kg	TM089		29.5	18.2	<10			
Aliphatics >C8-C10	<10 µg/kg	TM089		28.3	29.6	<10			
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	3580	11300			
Aliphatics >C16-C21	<1000 µg/kg	TM414		16100	7530	18100			
Aliphatics >C21-C35	<1000 µg/kg	TM414		5190	6350	12000			
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	3710	6020			
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		21800	21200	47400			
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		50800	37600	60800			
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089		18.9	19.4	<10			
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000			
Aromatics > EC16-EC21	<1000 µg/kg	TM414		3160	<1000	<1000			
Aromatics > EC21-EC35	<1000 µg/kg	TM414		21400	11500	7660			
Aromatics >EC35-EC44	<1000 µg/kg	TM414		3130	4850	4630			
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	1070			
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		29000	16500	13400			
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		50900	37700	60800			
Total Aliphatics >C5-C10	<50 µg/kg	TM089		81.4	<50	<50			
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50			
GRO >C5-C10	<20 µg/kg	TM089		81.4	<20	<20			

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AC1-1	AC1-2	AD1-1	AD1-2	AE1-1	AE1-2
			Depth (m)	0.50 - 0.50	1.50 - 1.50	0.40 - 0.40	1.10 - 1.10	0.30 - 0.30	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599122	23599126	23599110	23599117	23599097	23599106
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	107	106	106	108	110 @
Toluene-d8**	%	TM116		99	97.1	99.7	98	97.9	97.2 @
4-Bromofluorobenzene**	%	TM116		98.3	97.7	96.8	98.7	94.9	94.4 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 @ M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 @ M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 @ #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 @ M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4 @
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AF1-1	AF1-2	AG3-1	AG3-2	AH3-1	AH3-2
			Depth (m)	0.70 - 0.70	1.50 - 1.50	0.80 - 0.80	1.90 - 1.90	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599088	23599092	23599148	23599152	23599156	23599163
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	115	100	114	97.5	102
Toluene-d8**	%	TM116		98.9	99.4	92.9	96.7	86.7	100
4-Bromofluorobenzene**	%	TM116		101	101	83.7	97.1	74.8	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	258 M	<180 M	481 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	21400 M	9240 M	21800 M	744 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AI2-1	AI3-1	AI3-2	AJ2-1	AJ2-2	AJ3-1
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021	20/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021	23/01/2021
			SDG Ref	210123-55	210123-55	210123-55	210123-55	210123-55	210123-55
			Lab Sample No.(s)	23599167	23599072	23599133	23599175	23599180	23599078
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	106 @	106	102	113	102
Toluene-d8**	%	TM116		95.1	96.6 @	99	93.8	98	95
4-Bromofluorobenzene**	%	TM116		90.8	91.9 @	98.6	87.1	97.4	88.4
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<2000 @ M	<200 M	<200 M	<200 #	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<1800 @ M	<180 M	<180 M	<180 #	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<1400 @ M	<140 M	<140 M	<140 #	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<800 @ M	<80 M	<80 M	<80 #	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<2000 @ #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<2000 @ M	<200 M	<200 M	<200 #	<200 M
Naphthalene	<13 µg/kg	TM116		1040 M	4610 @ M	577 M	729 M	<260 #	527 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<4 @	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<8000 @	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ3-2	AL17-1	AL17-2			
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.90 - 1.90			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	20/01/2021	22/01/2021	22/01/2021			
			Sample Time	.	.	.			
			Date Received	23/01/2021	23/01/2021	23/01/2021			
			SDG Ref	210123-55	210123-55	210123-55			
			Lab Sample No.(s)	23599083	23599137	23599143			
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	119	113			
Toluene-d8**	%	TM116		97.5	98.9	98.2			
4-Bromofluorobenzene**	%	TM116		99.2	100	100			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 #	<200 M	<200 M			
Benzene	<9 µg/kg	TM116		<180 #	<180 M	<180 M			
Toluene	<7 µg/kg	TM116		<140 #	<140 M	<140 M			
Ethylbenzene	<4 µg/kg	TM116		<80 #	<80 M	<80 M			
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #			
o-Xylene	<10 µg/kg	TM116		<200 #	<200 M	<200 M			
Naphthalene	<13 µg/kg	TM116		<260 #	<260 M	<260 M			
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4			
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800			

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AC1-2 1.50 - 1.50 SOLID 20/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599126 TM048	29/01/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AD1-2 1.10 - 1.10 SOLID 20/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599117 TM048	29/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AE1-2 1.40 - 1.40 SOLID 20/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599106 TM048	29/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AF1-2 1.50 - 1.50 SOLID 20/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599092 TM048	29/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AG3-1 0.80 - 0.80 SOLID 20/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599148 TM048	29/01/21	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AH3-1 0.50 - 0.50 SOLID 20/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599156 TM048	29/01/2021	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AI2-1 0.50 - 0.50 SOLID 20/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599167 TM048	29/01/2021	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AI3-1 0.50 - 0.50 SOLID 20/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599072 TM048	29/01/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AJ2-2 1.50 - 1.50 SOLID 20/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599180 TM048	29/01/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AJ3-2 1.70 - 1.70 SOLID 20/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599083 TM048	29/01/21	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	AL17-2 1.90 - 1.90 SOLID 22/01/2021 00:00:00 23/01/2021 05:00:00 210123-55 23599143 TM048	29/01/2021	Marcin Magdziarek	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	AH3-1	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.50 - 0.50					
Sample Type	SOLID					
Date Sampled	20/01/2021 00:00:00					
Date Received	23/01/2021 05:00:00					
SDG	210123-55					
Original Sample	23599156					
Method Number	TM304					
Cust. Sample Ref.	AI2-1	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.50 - 0.50					
Sample Type	SOLID					
Date Sampled	20/01/2021 00:00:00					
Date Received	23/01/2021 05:00:00					
SDG	210123-55					
Original Sample	23599167					
Method Number	TM304					
Cust. Sample Ref.	AL17-2	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	1.90 - 1.90					
Sample Type	SOLID					
Date Sampled	22/01/2021 00:00:00					
Date Received	23/01/2021 05:00:00					
SDG	210123-55					
Original Sample	23599143					
Method Number	TM304					

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210123-55	**Client Reference:**	P18-669	**Report Number:**	585835
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585642

Test Completion Dates

Lab Sample No(s)	23599122	23599126	23599110	23599117	23599097	23599106	23599088	23599092	23599148	23599152
Customer Sample Ref.	AC1-1	AC1-2	AD1-1	AD1-2	AE1-1	AE1-2	AF1-1	AF1-2	AG3-1	AG3-2
AGS Ref.										
Depth	0.50 - 0.50	1.50 - 1.50	0.40 - 0.40	1.10 - 1.10	0.30 - 0.30	1.40 - 1.40	0.70 - 0.70	1.50 - 1.50	0.80 - 0.80	1.90 - 1.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Feb-2021	29-Jan-2021	01-Feb-2021	29-Jan-2021	01-Feb-2021	01-Feb-2021	29-Jan-2021	29-Jan-2021	29-Jan-2021	01-Feb-2021
Asbestos ID in Solid Samples		29-Jan-2021		29-Jan-2021		29-Jan-2021		29-Jan-2021	29-Jan-2021	
Cyanide Comp/Free/Total/Thiocyanate	01-Feb-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	01-Feb-2021	28-Jan-2021
EPH CWG GC (S)	01-Feb-2021	02-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	02-Feb-2021	01-Feb-2021	01-Feb-2021	02-Feb-2021	02-Feb-2021
GRO by GC-FID (S)	04-Feb-2021	03-Feb-2021	04-Feb-2021	04-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	04-Feb-2021	04-Feb-2021	03-Feb-2021
Metals in solid samples by OES	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	02-Feb-2021
PAH by GCMS	28-Jan-2021	27-Jan-2021	29-Jan-2021	27-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	27-Jan-2021	28-Jan-2021	28-Jan-2021
pH	27-Jan-2021	28-Jan-2021	27-Jan-2021	28-Jan-2021	26-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	27-Jan-2021
Phenols by HPLC (S)	02-Feb-2021	01-Feb-2021	29-Jan-2021	01-Feb-2021	01-Feb-2021	02-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	02-Feb-2021
Sample description	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021
Total Organic Carbon	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
TPH CWG GC (S)	04-Feb-2021	03-Feb-2021	04-Feb-2021	04-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	04-Feb-2021	04-Feb-2021	03-Feb-2021
VOC MS (S)	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021

Lab Sample No(s)	23599156	23599163	23599167	23599072	23599133	23599175	23599180	23599078	23599083	23599137
Customer Sample Ref.	AH3-1	AH3-2	AI2-1	AI3-1	AI3-2	AJ2-1	AJ2-2	AJ3-1	AJ3-2	AL17-1
AGS Ref.										
Depth	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.70 - 1.70	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	29-Jan-2021	29-Jan-2021	01-Feb-2021	29-Jan-2021	29-Jan-2021	29-Jan-2021	29-Jan-2021	29-Jan-2021	29-Jan-2021	29-Jan-2021
Asbestos ID in Solid Samples	29-Jan-2021		29-Jan-2021	29-Jan-2021			29-Jan-2021		29-Jan-2021	
Asbestos Quantification - Full	03-Feb-2021		04-Feb-2021							
Cyanide Comp/Free/Total/Thiocyanate	01-Feb-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
EPH CWG GC (S)	02-Feb-2021	02-Feb-2021	02-Feb-2021	01-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	01-Feb-2021	01-Feb-2021	02-Feb-2021
GRO by GC-FID (S)	03-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
Metals in solid samples by OES	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	02-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
PAH by GCMS	28-Jan-2021	28-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	29-Jan-2021	29-Jan-2021	27-Jan-2021
pH	28-Jan-2021	27-Jan-2021	28-Jan-2021	28-Jan-2021	27-Jan-2021	27-Jan-2021	28-Jan-2021	27-Jan-2021	28-Jan-2021	28-Jan-2021
Phenols by HPLC (S)	02-Feb-2021	01-Feb-2021	29-Jan-2021	01-Feb-2021	29-Jan-2021	29-Jan-2021	01-Feb-2021	01-Feb-2021	29-Jan-2021	01-Feb-2021
Sample description	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021	25-Jan-2021
Total Organic Carbon	03-Feb-2021	03-Feb-2021	02-Feb-2021	05-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
TPH CWG GC (S)	03-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
VOC MS (S)	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021

Lab Sample No(s)	23599143
Customer Sample Ref.	AL17-2
AGS Ref.	
Depth	1.90 - 1.90
Type	Soil/Solid (S)
Ammonium Soil by Titration	29-Jan-2021
Asbestos ID in Solid Samples	29-Jan-2021
Asbestos Quantification - Full	03-Feb-2021
Cyanide Comp/Free/Total/Thiocyanate	28-Jan-2021
EPH CWG GC (S)	01-Feb-2021
GRO by GC-FID (S)	03-Feb-2021
Metals in solid samples by OES	03-Feb-2021
PAH by GCMS	27-Jan-2021
pH	28-Jan-2021
Phenols by HPLC (S)	29-Jan-2021
Sample description	25-Jan-2021
Total Organic Carbon	03-Feb-2021
TPH CWG GC (S)	03-Feb-2021
VOC MS (S)	03-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
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Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
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Website: www.alsenvironmental.co.uk

Rodgers Leask
Office 225
2430/2440
Aztec West
Almondsbury
Bristol
BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	08 February 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210126-90
Your Reference:	P18-669
Location:	Llanwern
Report No:	586027

This report has been revised and directly supersedes 585971 in its entirety.

We received 23 samples on Tuesday January 26, 2021 and 23 of these samples were scheduled for analysis which was completed on Monday February 08, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23610200	AA1-1		0.20 - 0.20	22/01/2021
23610208	AA1-2		1.80 - 1.80	22/01/2021
23610191	AB1-1		0.30 - 0.30	25/01/2021
23610195	AB1-2		1.60 - 1.60	25/01/2021
23610107	AN6-1		0.30 - 0.30	22/01/2021
23610168	AQ7-1		0.50 - 0.50	22/01/2021
23610181	V1-1		0.50 - 0.50	25/01/2021
23610186	V1-2		1.40 - 1.40	25/01/2021
23610176	V2-1		1.10 - 1.10	25/01/2021
23610163	W2-1		0.30 - 0.30	25/01/2021
23610172	W2-2		1.30 - 1.30	25/01/2021
23610116	X1-1		0.50 - 0.50	22/01/2021
23610120	X1-2		1.10 - 1.10	22/01/2021
23610128	X2-1		0.80 - 0.80	22/01/2021
23610132	X2-2		2.00 - 2.00	22/01/2021
23610220	Y1-1		0.50 - 0.50	22/01/2021
23610111	Y1-2		1.30 - 1.30	22/01/2021
23610149	Y2-1		0.30 - 0.30	25/01/2021
23610154	Y2-2		1.00 - 1.00	25/01/2021
23610212	Z1-1		0.50 - 0.50	22/01/2021
23610216	Z1-2		1.20 - 1.20	22/01/2021
23610138	Z2-1		0.40 - 0.40	25/01/2021
23610143	Z2-2		1.30 - 1.30	25/01/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23610200		23610208		23610191		23610195		23610107		23610168		23610181		23610186	
Customer Sample Reference			AA1-1		AA1-2		AB1-1		AB1-2		AN6-1		AQ7-1		V1-1		V1-2	
AGS Reference																		
Depth (m)			0.20 - 0.20		1.80 - 1.80		0.30 - 0.30		1.60 - 1.60		0.30 - 0.30		0.50 - 0.50		0.50 - 0.50		1.40 - 1.40	
Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 23		X		X			X		X			X		X		X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 12	X					X					X							X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 23		X		X			X		X			X		X		X			X
EPH CWG GC (S)	All	NDPs: 0 Tests: 23		X		X			X		X			X		X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 23			X		X			X		X			X		X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 23		X		X			X		X			X		X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 23		X		X			X		X			X		X		X			X
pH	All	NDPs: 0 Tests: 23		X		X			X		X			X		X		X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 23		X		X			X		X			X		X		X			X
Sample description	All	NDPs: 0 Tests: 23		X		X			X		X			X		X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 23		X		X			X		X			X		X		X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 23		X		X			X		X			X		X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 23			X		X			X		X			X		X		X		

23610220	Y1-1		0.50 - 0.50	250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23610132	X2-2		2.00 - 2.00	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23610128	X2-1		0.80 - 0.80	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X	X															
23610120	X1-2		1.10 - 1.10	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23610116	X1-1		0.50 - 0.50	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23610172	W2-2		1.30 - 1.30	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
23610163	W2-1		0.30 - 0.30	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23610176	V2-1		1.10 - 1.10	60g VOC (ALE215)	S						X												X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X					
				1kg TUB with Handle (ALE260)	S		X																
23610186	V1-2		1.40 - 1.40	60g VOC (ALE215)	S						X												X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23610220	23610111		23610149		23610154		23610212		23610216		23610138		23610143	
Customer Sample Reference			Y1-1	Y1-2		Y2-1		Y2-2		Z1-1		Z1-2		Z2-1		Z2-2	
AGS Reference																	
Depth (m)			0.50 - 0.50	1.30 - 1.30		0.30 - 0.30		1.00 - 1.00		0.50 - 0.50		1.20 - 1.20		0.40 - 0.40		1.30 - 1.30	
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 23		X			X		X			X		X			X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 12				X					X					X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 23		X			X		X			X		X			X		X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 23		X			X		X			X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 23	X		X			X		X			X		X			X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 23		X			X		X			X		X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 23		X			X		X			X		X			X		X	
pH	All	NDPs: 0 Tests: 23		X			X		X			X		X			X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 23		X			X		X			X		X			X		X	
Sample description	All	NDPs: 0 Tests: 23		X			X		X			X		X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 23		X			X		X			X		X			X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 23		X			X		X			X		X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 23	X		X			X		X			X		X			X		X

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23610200	AA1-1	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
23610208	AA1-2	1.80 - 1.80	Dark Brown	Stone/Soil	Stones	None
23610191	AB1-1	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
23610195	AB1-2	1.60 - 1.60	Dark Brown	Loamy Sand	Stones	None
23610107	AN6-1	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
23610168	AQ7-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
23610181	V1-1	0.50 - 0.50	Black	Sand	None	Stones
23610186	V1-2	1.40 - 1.40	Dark Brown	Sandy Clay Loam	Stones	N/A
23610176	V2-1	1.10 - 1.10	Dark Brown	Sand	None	Stones
23610163	W2-1	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	None
23610172	W2-2	1.30 - 1.30	Dark Brown	Sand	None	Stones
23610116	X1-1	0.50 - 0.50	Dark Brown	Sand	None	Stones
23610120	X1-2	1.10 - 1.10	Dark Brown	N/A	None	Stones
23610128	X2-1	0.80 - 0.80	Dark Brown	Sand	None	Stones
23610132	X2-2	2.00 - 2.00	Dark Brown	Sand	None	Stones
23610220	Y1-1	0.50 - 0.50	Black	Sand	None	Stones
23610111	Y1-2	1.30 - 1.30	Dark Brown	Loamy Sand	Stones	None
23610149	Y2-1	0.30 - 0.30	Dark Brown	Sandy Clay Loam	Stones	None
23610154	Y2-2	1.00 - 1.00	Grey	Sand	Stones	None
23610212	Z1-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Crushed Brick
23610216	Z1-2	1.20 - 1.20	Dark Brown	Sandy Loam	Stones	None
23610138	Z2-1	0.40 - 0.40	Black	Sand	None	Stones
23610143	Z2-2	1.30 - 1.30	Black	Sand	None	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AA1-1	AA1-2	AB1-1	AB1-2	AN6-1	AQ7-1
			Depth (m)	0.20 - 0.20	1.80 - 1.80	0.30 - 0.30	1.60 - 1.60	0.30 - 0.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	25/01/2021	25/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610200	23610208	23610191	23610195	23610107	23610168
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.7	10	11	15	13	17
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0219 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0219 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0329 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0767 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		4.36 #	3.43 #	5.17 #	0.993 #	6.96 #	13.3 #
pH	1 pH Units	TM133		11.4 M	9.77 #	9.71 M	10.4 M	8.8 M	8.88 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 M	<1 M	1.04 M
Arsenic	<0.6 mg/kg	TM181		14.4 M	6.63 #	9.16 M	8.89 M	12.5 M	6.99 M
Cadmium	<0.02 mg/kg	TM181		1.2 M	0.277 #	1.27 M	0.608 M	0.45 M	0.966 M
Chromium	<0.9 mg/kg	TM181		212 M	17.3 #	115 M	42.1 M	32.1 M	217 M
Copper	<1.4 mg/kg	TM181		60.7 M	<14 #	27.2 M	<14 M	23.7 M	24.6 M
Iron	<1000 mg/kg	TM181		98900 #	27100 #	108000 #	25600 #	48400 #	91300 #
Lead	<0.7 mg/kg	TM181		80 M	14.5 #	77.9 M	11.5 M	62.9 M	81 M
Manganese	<0.13 mg/kg	TM181		11800 M	1360 #	8010 M	5150 M	2470 M	17200 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<1.4 #	<1.4 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		31.2 M	20.7 #	25.1 M	14.2 M	22.2 M	15.9 M
Selenium	<1 mg/kg	TM181		10.2 #	<10 #	<10 #	<10 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		239 #	25.4 #	132 #	78.4 #	58.7 #	303 #
Zinc	<1.9 mg/kg	TM181		238 M	58.4 #	243 M	65.8 M	182 M	2940 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V1-1	V1-2	V2-1	W2-1	W2-2	X1-1
			Depth (m)	0.50 - 0.50	1.40 - 1.40	1.10 - 1.10	0.30 - 0.30	1.30 - 1.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/01/2021	25/01/2021	25/01/2021	25/01/2021	25/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610181	23610186	23610176	23610163	23610172	23610116
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		19	16	4.1	12	11	5.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0104 M	<0.01 M	0.0113 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		>100 #	29.1 #	18.3 #	39.5 #	40.7 #	4.65 #
pH	1 pH Units	TM133		10.4 M	8.23 M	12.8 M	10.4 M	12.6 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		3.23 M	<1 M	17.1 M	<1 M	1.29 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.2 M	7.26 M	<6 M	<6 M	6.14 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.554 M	<0.2 M	0.779 M	0.949 M	0.731 M	0.778 M
Chromium	<0.9 mg/kg	TM181		115 M	17.9 M	557 M	124 M	321 M	544 M
Copper	<1.4 mg/kg	TM181		44.3 M	27 M	27.6 M	15.2 M	29.4 M	20.7 M
Iron	<1000 mg/kg	TM181		39800 #	23200 #	137000 #	75800 #	108000 #	142000 #
Lead	<0.7 mg/kg	TM181		23.8 M	35.6 M	10.4 M	78 M	19.1 M	8.77 M
Manganese	<0.13 mg/kg	TM181		6680 M	1080 M	37000 M	9550 M	24700 M	22200 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		18.4 M	30.7 M	11.1 M	9.88 M	14.7 M	14.4 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	16.5 #	<10 #	12.2 #	12 #
Vanadium	<0.2 mg/kg	TM181		117 #	34.3 #	1290 #	196 #	277 #	331 #
Zinc	<1.9 mg/kg	TM181		90.2 M	128 M	63 M	282 M	116 M	125 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	X1-2	X2-1	X2-2	Y1-1	Y1-2	Y2-1
			Depth (m)	1.10 - 1.10	0.80 - 0.80	2.00 - 2.00	0.50 - 0.50	1.30 - 1.30	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	22/01/2021	22/01/2021	22/01/2021	25/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610120	23610128	23610132	23610220	23610111	23610149
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		3.7	6.9	13	8.1	16	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		<0.35 #	1.19 #	46.5 #	84 #	4.09 #	4.57 #
pH	1 pH Units	TM133		10.1 #	12.8 M	12.7 M	9.88 M	9.49 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 #	<6 M	6.46 M	7.24 M	13.8 M	10.7 M
Cadmium	<0.02 mg/kg	TM181		<0.2 #	0.817 M	0.93 M	0.666 M	0.882 M	1.51 M
Chromium	<0.9 mg/kg	TM181		<9 #	366 M	216 M	536 M	23.9 M	261 M
Copper	<1.4 mg/kg	TM181		<14 #	43.2 M	37.1 M	20.9 M	26.5 M	37.2 M
Iron	<1000 mg/kg	TM181		<10000 #	231000 #	126000 #	167000 #	45100 #	114000 #
Lead	<0.7 mg/kg	TM181		<7 #	<7 M	38.1 M	8.65 M	41.5 M	145 M
Manganese	<0.13 mg/kg	TM181		787 #	32600 M	24100 M	23200 M	933 M	14500 M
Mercury	<0.1 mg/kg	TM181		<1.4 #	<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		3.81 #	16.3 M	28.8 M	2.97 M	49.3 M	19.2 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	18.2 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		5.82 #	562 #	569 #	313 #	41.7 #	326 #
Zinc	<1.9 mg/kg	TM181		25 #	46.7 M	90.5 M	112 M	107 M	503 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Y2-2	Z1-1	Z1-2	Z2-1	Z2-2
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.20 - 1.20	0.40 - 0.40	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/01/2021	22/01/2021	22/01/2021	25/01/2021	25/01/2021
			Sample Time	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610154	23610212	23610216	23610138	23610143
			AGS Reference					
Moisture Content Ratio (% of as received sample)	%	PM024		9.2	11	14	6.4	26
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0113 M	<0.01 M	<0.01 M	0.0135 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0113 M	<0.01 M	<0.01 M	0.0135 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		27.1 #	9.24 #	17 #	>100 #	>100 #
pH	1 pH Units	TM133		12.7 M	11.3 M	11.2 M	8.92 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	2.7 M
Arsenic	<0.6 mg/kg	TM181		<6 M	10.8 M	7.18 M	<6 M	17.6 M
Cadmium	<0.02 mg/kg	TM181		0.541 M	1.19 M	0.853 M	0.385 M	0.851 M
Chromium	<0.9 mg/kg	TM181		344 M	138 M	71.3 M	19.6 M	48.5 M
Copper	<1.4 mg/kg	TM181		<14 M	22.5 M	15 M	31.1 M	93.8 M
Iron	<1000 mg/kg	TM181		109000 #	81600 #	60700 #	16400 #	47500 #
Lead	<0.7 mg/kg	TM181		11.5 M	77.5 M	45.3 M	39.9 M	46.3 M
Manganese	<0.13 mg/kg	TM181		35200 M	7990 M	4750 M	1450 M	1800 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		2.68 M	15.9 M	11.7 M	10.8 M	32.2 M
Selenium	<1 mg/kg	TM181		17.4 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		757 #	216 #	77.9 #	27.8 #	37.5 #
Zinc	<1.9 mg/kg	TM181		51.5 M	266 M	215 M	123 M	1040 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AA1-1	AA1-2	AB1-1	AB1-2	AN6-1	AQ7-1
			Depth (m)	0.20 - 0.20	1.80 - 1.80	0.30 - 0.30	1.60 - 1.60	0.30 - 0.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	25/01/2021	25/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610200	23610208	23610191	23610195	23610107	23610168
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.4	87.1	92.3	85.7	89.2	89
Acenaphthene-d10 % recovery**	%	TM218		85.4	88.9	94.5	84.6	89.8	90.1
Phenanthrene-d10 % recovery**	%	TM218		85.8	87.8	95	84.8	90	90.6
Chrysene-d12 % recovery**	%	TM218		78.4	81.2	88.4	81.9	84.5	85.5
Perylene-d12 % recovery**	%	TM218		78.7	80.3	90.3	83.2	87.4	82
Naphthalene	<9 µg/kg	TM218		2170 M	168 #	297 M	70.4 M	155 M	253 M
Acenaphthylene	<12 µg/kg	TM218		842 M	34.6 #	151 M	16.9 M	193 M	550 M
Acenaphthene	<8 µg/kg	TM218		131 M	9.74 #	23.9 M	<8 M	18.6 M	33.9 M
Fluorene	<10 µg/kg	TM218		784 M	33.6 #	105 M	13.7 M	162 M	248 M
Phenanthrene	<15 µg/kg	TM218		4370 M	158 #	717 M	80.4 M	1150 M	3230 M
Anthracene	<16 µg/kg	TM218		1120 M	35.5 #	224 M	<16 M	406 M	1220 M
Fluoranthene	<17 µg/kg	TM218		7040 M	225 #	1530 M	130 M	1880 M	11200 M
Pyrene	<15 µg/kg	TM218		4860 M	162 #	1140 M	101 M	1290 M	8920 M
Benz(a)anthracene	<14 µg/kg	TM218		2730 M	96.4 #	743 M	58.7 M	736 M	4470 M
Chrysene	<10 µg/kg	TM218		2090 M	81.4 #	640 M	51.8 M	668 M	3590 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		3200 M	98.2 #	1010 M	65.8 M	603 M	4500 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1110 M	40.9 #	343 M	26.2 M	292 M	1920 M
Benzo(a)pyrene	<15 µg/kg	TM218		2180 M	81 #	656 M	52.8 M	620 M	4280 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		1850 M	71.6 #	609 M	58.2 M	514 M	3810 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		286 M	<23 #	93.2 M	<23 M	88.9 M	546 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1350 M	58.7 #	476 M	43.1 M	428 M	3260 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		36100	1350	8760	770	9200	52100

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V1-1	V1-2	V2-1	W2-1	W2-2	X1-1
			Depth (m)	0.50 - 0.50	1.40 - 1.40	1.10 - 1.10	0.30 - 0.30	1.30 - 1.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/01/2021	25/01/2021	25/01/2021	25/01/2021	25/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610181	23610186	23610176	23610163	23610172	23610116
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.6	77.6	86.5	82.1	80.9	85.7
Acenaphthene-d10 % recovery**	%	TM218		82.4	81.5	86.6	80.5	79.7	82.3
Phenanthrene-d10 % recovery**	%	TM218		84.9	82.1	84.8	79.8	75.1	80.6
Chrysene-d12 % recovery**	%	TM218		85.6	117	83.6	76.3	81	76.5
Perylene-d12 % recovery**	%	TM218		84.4	112	82.7	72.4	80.9	77.1
Naphthalene	<9 µg/kg	TM218		14300 M	314 M	573 M	1250 M	398 M	187 M
Acenaphthylene	<12 µg/kg	TM218		8530 M	494 M	101 M	806 M	281 M	94.7 M
Acenaphthene	<8 µg/kg	TM218		358 M	<80 M	29.7 M	49.4 M	98.8 M	<8 M
Fluorene	<10 µg/kg	TM218		10500 M	455 M	73.1 M	405 M	129 M	36.8 M
Phenanthrene	<15 µg/kg	TM218		72800 M	3380 M	956 M	3650 M	1570 M	491 M
Anthracene	<16 µg/kg	TM218		28300 M	1830 M	190 M	1230 M	475 M	110 M
Fluoranthene	<17 µg/kg	TM218		99800 M	8770 M	2060 M	7170 M	4300 M	958 M
Pyrene	<15 µg/kg	TM218		65400 M	5540 M	1710 M	5340 M	3600 M	684 M
Benz(a)anthracene	<14 µg/kg	TM218		32100 M	4070 M	1170 M	3600 M	2620 M	386 M
Chrysene	<10 µg/kg	TM218		31300 M	3320 M	1520 M	3140 M	2840 M	379 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		37400 M	3300 M	2160 M	4850 M	3830 M	512 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		12600 M	1240 M	788 M	1630 M	1060 M	158 M
Benzo(a)pyrene	<15 µg/kg	TM218		24800 M	2960 M	1470 M	2870 M	3060 M	334 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		22300 M	2530 M	1590 M	2640 M	3210 M	352 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		4170 M	542 M	269 M	491 M	538 M	61.1 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		18400 M	1920 M	1270 M	2230 M	2450 M	265 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		483000	40700	15900	41300	30400	5010

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	X1-2	X2-1	X2-2	Y1-1	Y1-2	Y2-1
			Depth (m)	1.10 - 1.10	0.80 - 0.80	2.00 - 2.00	0.50 - 0.50	1.30 - 1.30	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	22/01/2021	22/01/2021	22/01/2021	25/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610120	23610128	23610132	23610220	23610111	23610149
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87	82.8	84.6	76	87.7	89.3
Acenaphthene-d10 % recovery**	%	TM218		83.3	85.1	82.4	79	89.3	90.4
Phenanthrene-d10 % recovery**	%	TM218		79.6	85.3	80.1	80.1	88.3	89.8
Chrysene-d12 % recovery**	%	TM218		77.9	95.3	78.2	113	82	83.3
Perylene-d12 % recovery**	%	TM218		85.6	103	80.4	110	85.3	86.8
Naphthalene	<9 µg/kg	TM218		14.3 #	241 M	134 M	1980 M	36.9 M	75.7 M
Acenaphthylene	<12 µg/kg	TM218		21 #	<60 M	26.7 M	6590 M	23.7 M	20.6 M
Acenaphthene	<8 µg/kg	TM218		<8 #	652 M	70.3 M	326 M	<8 M	25.8 M
Fluorene	<10 µg/kg	TM218		<10 #	290 M	36.2 M	8870 M	<10 M	29 M
Phenanthrene	<15 µg/kg	TM218		76.8 #	3790 M	937 M	71800 M	87 M	237 M
Anthracene	<16 µg/kg	TM218		17.6 #	907 M	133 M	23000 M	19.6 M	56.5 M
Fluoranthene	<17 µg/kg	TM218		124 #	7350 M	1730 M	92900 M	174 M	477 M
Pyrene	<15 µg/kg	TM218		84.7 #	7100 M	1530 M	60400 M	124 M	418 M
Benz(a)anthracene	<14 µg/kg	TM218		52.6 #	4930 M	972 M	33900 M	87 M	247 M
Chrysene	<10 µg/kg	TM218		57.1 #	4830 M	1140 M	26200 M	70.8 M	225 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		53 #	5830 M	1310 M	29800 M	112 M	247 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		20.6 #	2330 M	594 M	13200 M	44 M	100 M
Benzo(a)pyrene	<15 µg/kg	TM218		41.1 #	5880 M	1110 M	25000 M	79.2 M	240 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		44.3 #	3920 M	1110 M	21100 M	72.6 M	195 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 #	712 M	188 M	3610 M	<23 M	34.6 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		33.5 #	3680 M	947 M	16200 M	62.9 M	184 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		640	52400	12000	435000	993	2810

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Y2-2	Z1-1	Z1-2	Z2-1	Z2-2
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.20 - 1.20	0.40 - 0.40	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/01/2021	22/01/2021	22/01/2021	25/01/2021	25/01/2021
			Sample Time	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610154	23610212	23610216	23610138	23610143
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		85.7	85.5	87.3	86.8	83.8
Acenaphthene-d10 % recovery**	%	TM218		87.3	86.4	89.1	76.2	84.2
Phenanthrene-d10 % recovery**	%	TM218		87.8	85.8	88.5	84.9	83.1
Chrysene-d12 % recovery**	%	TM218		81.7	76.9	81.4	81.6	75.8
Perylene-d12 % recovery**	%	TM218		81	77	83.4	70.8	71.6
Naphthalene	<9 µg/kg	TM218		205 M	2400 M	1300 M	303 M	4870 M
Acenaphthylene	<12 µg/kg	TM218		619 M	1460 M	114 M	99.6 M	416 M
Acenaphthene	<8 µg/kg	TM218		17.1 M	419 M	17.1 M	<8 M	98 M
Fluorene	<10 µg/kg	TM218		162 M	2730 M	71 M	33.9 M	260 M
Phenanthrene	<15 µg/kg	TM218		1650 M	15400 M	420 M	707 M	1990 M
Anthracene	<16 µg/kg	TM218		544 M	4720 M	133 M	96.9 M	512 M
Fluoranthene	<17 µg/kg	TM218		6460 M	17200 M	768 M	967 M	4430 M
Pyrene	<15 µg/kg	TM218		4520 M	12000 M	574 M	707 M	3170 M
Benz(a)anthracene	<14 µg/kg	TM218		3180 M	6210 M	352 M	562 M	3210 M
Chrysene	<10 µg/kg	TM218		2220 M	5030 M	309 M	712 M	3280 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		4510 M	5790 M	414 M	974 M	4820 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		1430 M	2430 M	151 M	294 M	1520 M
Benzo(a)pyrene	<15 µg/kg	TM218		2660 M	5140 M	284 M	468 M	3300 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		2310 M	4040 M	256 M	448 M	3370 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		444 M	786 M	46.1 M	95.1 M	732 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		1940 M	3440 M	214 M	389 M	2570 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		32900	89200	5430	6860	38600

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AA1-1	AA1-2	AB1-1	AB1-2	AN6-1	AQ7-1
			Depth (m)	0.20 - 0.20	1.80 - 1.80	0.30 - 0.30	1.60 - 1.60	0.30 - 0.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	25/01/2021	25/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610200	23610208	23610191	23610195	23610107	23610168
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		82.5	90	114	125	73	70.2
Aliphatics >C5-C6	<10 µg/kg	TM089		39.5	15.7	<10	35.1	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		78.9	26.9	19.2	60.8	<10	13.2
Aliphatics >C8-C10	<10 µg/kg	TM089		63.6	17.9	23.7	48	<10	12
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		3620	<1000	<1000	<1000	<1000	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		11200	<1000	3980	<1000	<1000	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		35300	<1000	13300	<1000	<1000	4840
Aliphatics >C35-C44	<1000 µg/kg	TM414		7050	<1000	3040	<1000	<1000	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		57600	<5000	21000	<5000	<5000	5980
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		183000	<10000	50600	<10000	13900	113000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		11	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		42.7	11.2	15.8	31.6	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		2670	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		4700	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		32200	<1000	6750	<1000	4870	23900
Aromatics > EC21-EC35	<1000 µg/kg	TM414		79200	<1000	20100	1240	7430	72400
Aromatics >EC35-EC44	<1000 µg/kg	TM414		6920	<1000	1940	<1000	<1000	9330
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	1250
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		126000	<5000	29600	<5000	13700	107000
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		184000	<10000	50700	<10000	13700	113000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		182	60.5	<50	144	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		53.7	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		236	60.5	<20	144	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V1-1	V1-2	V2-1	W2-1	W2-2	X1-1
			Depth (m)	0.50 - 0.50	1.40 - 1.40	1.10 - 1.10	0.30 - 0.30	1.30 - 1.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/01/2021	25/01/2021	25/01/2021	25/01/2021	25/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610181	23610186	23610176	23610163	23610172	23610116
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		32.3	101	78.4 4	37.2 4	87.6	91.3
Aliphatics >C5-C6	<10 µg/kg	TM089		23.4	11.9	10.4 4	<10 4	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		105	51.2	34.4 4	11.4 4	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		84.9	102	38.6 4	<10 4	<10	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	1030	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		6610	8050	5480	4680	4380	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		114000	11500	19900	13900	17600	<1000
Aliphatics >C21-C35	<1000 µg/kg	TM414		13300	8690	128000	40900	50300	11900
Aliphatics >C35-C44	<1000 µg/kg	TM414		1250	<1000	37700	4410	5060	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		136000	29100	191000	65000	77700	13100
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		839000	243000	245000	285000	172000	24000
Aromatics >EC5-EC7	<10 µg/kg	TM089		59	<10	<10 4	<10 4	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		46.7	<10	11.5 4	<10 4	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		56.6	67.8	25 4	<10 4	<10	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		10000	<1000	<1000	2440	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		28200	3500	<1000	6570	1350	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		258000	46300	4660	45600	14500	1980
Aromatics > EC21-EC35	<1000 µg/kg	TM414		363000	145000	43900	151000	68600	7680
Aromatics >EC35-EC44	<1000 µg/kg	TM414		44400	18000	3890	15100	9800	<1000
Aromatics > EC40-EC44	<1000 µg/kg	TM414		5520	2050	<1000	2690	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		703000	214000	53500	220000	94600	10900
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		839000	243000	245000	285000	172000	24000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		213	165	83.4 4	<50 4	<50	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		162	67.8	<50 4	<50 4	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		375	233	83.4 4	<20 4	<20	<20

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	X1-2	X2-1	X2-2	Y1-1	Y1-2	Y2-1
			Depth (m)	1.10 - 1.10	0.80 - 0.80	2.00 - 2.00	0.50 - 0.50	1.30 - 1.30	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	22/01/2021	22/01/2021	22/01/2021	25/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610120	23610128	23610132	23610220	23610111	23610149
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		84	99.8	92.4	44.7 4	90.3	124
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10	10.9 4	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	50 4	<10	20.5
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	101 4	<10	35.3
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	<1000	<1000	5180	<1000	7130
Aliphatics >C16-C21	<1000 µg/kg	TM414		<1000	6210	9790	19200	<1000	23300
Aliphatics >C21-C35	<1000 µg/kg	TM414		<1000	47400	62600	28400	1230	219000
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	16800	16000	2510	<1000	80500
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		<5000	70700	89400	56100	<5000	330000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		<10000	144000	112000	316000	<10000	371000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10 4	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	67.5 4	<10	23.9
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	1990	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	8230	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	8660	3680	58600	1370	2080
Aromatics > EC21-EC35	<1000 µg/kg	TM414		<1000	53700	18000	174000	3480	34800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	10800	1030	17400	<1000	3490
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1310	<1000	1550	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		<5000	73300	22800	260000	5850	40800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		<10000	144000	112000	317000	<10000	371000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	162 4	<50	55.9
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	67.5 4	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	230 4	<20	55.9

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Y2-2	Z1-1	Z1-2	Z2-1	Z2-2
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.20 - 1.20	0.40 - 0.40	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/01/2021	22/01/2021	22/01/2021	25/01/2021	25/01/2021
			Sample Time	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610154	23610212	23610216	23610138	23610143
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		124	86.1	74.7	28.9 4	98.5
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	33.9	<10	<10 4	47.3
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	68.9	28.1	<10 4	83.7
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	57.6	29.3	<10 4	78.3
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	3730	<1000	4440	<1000
Aliphatics >C16-C21	<1000 µg/kg	TM414		2370	11400	<1000	16600	3520
Aliphatics >C21-C35	<1000 µg/kg	TM414		6970	55900	4280	34000	4950
Aliphatics >C35-C44	<1000 µg/kg	TM414		<1000	38600	<1000	4190	<1000
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		9810	110000	<5000	60000	9110
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		104000	314000	15700	198000	86900
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	10.2	<10	<10 4	23
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	11.3	<10	<10 4	20.3
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	38.4	19.9	<10 4	52.7
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	2670	1270	1870	6520
Aromatics > EC12-EC16	<1000 µg/kg	TM414		1800	10700	<1000	5600	2400
Aromatics > EC16-EC21	<1000 µg/kg	TM414		24600	62100	2300	23900	15200
Aromatics > EC21-EC35	<1000 µg/kg	TM414		60900	118000	6320	97400	49700
Aromatics >EC35-EC44	<1000 µg/kg	TM414		6680	10400	<1000	9180	3930
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	1340	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		94200	204000	11000	138000	77800
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		104000	314000	11100	198000	87200
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	160	57.3	<50 4	209
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	59.9	<50	<50 4	95.9
GRO >C5-C10	<20 µg/kg	TM089		<20	220	57.3	<20 4	305

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AA1-1	AA1-2	AB1-1	AB1-2	AN6-1	AQ7-1
			Depth (m)	0.20 - 0.20	1.80 - 1.80	0.30 - 0.30	1.60 - 1.60	0.30 - 0.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	25/01/2021	25/01/2021	22/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610200	23610208	23610191	23610195	23610107	23610168
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	120	111	112	109	110
Toluene-d8**	%	TM116		96.1	96.4	97.5	98.1	96.7	96.7
4-Bromofluorobenzene**	%	TM116		87.9	94.2	91.7	93.4	88.9	89.7
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 #	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 #	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 #	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 #	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		1030 M	<260 #	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	V1-1	V1-2	V2-1	W2-1	W2-2	X1-1
			Depth (m)	0.50 - 0.50	1.40 - 1.40	1.10 - 1.10	0.30 - 0.30	1.30 - 1.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/01/2021	25/01/2021	25/01/2021	25/01/2021	25/01/2021	22/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610181	23610186	23610176	23610163	23610172	23610116
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	112	112	101	111	118
Toluene-d8**	%	TM116		95.5	97.2	97.1	91.8	98	97.4
4-Bromofluorobenzene**	%	TM116		80.9	91.2	91.7	74.3	93.2	94.5
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		2890 M	<260 M	<260 M	468 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	X1-2	X2-1	X2-2	Y1-1	Y1-2	Y2-1
			Depth (m)	1.10 - 1.10	0.80 - 0.80	2.00 - 2.00	0.50 - 0.50	1.30 - 1.30	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/01/2021	22/01/2021	22/01/2021	22/01/2021	22/01/2021	25/01/2021
			Sample Time	.	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610120	23610128	23610132	23610220	23610111	23610149
			AGS Reference						
Dibromofluoromethane**	%	TM116		116	115	114	99.6	110	131
Toluene-d8**	%	TM116		99.6	98	97.9	93.8	97.7	97.2
4-Bromofluorobenzene**	%	TM116		94.1	95.3	94.6	77.8	89.6	94.9
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Y2-2	Z1-1	Z1-2	Z2-1	Z2-2
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.20 - 1.20	0.40 - 0.40	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	25/01/2021	22/01/2021	22/01/2021	25/01/2021	25/01/2021
			Sample Time	.	.	.	.	.
			Date Received	26/01/2021	26/01/2021	26/01/2021	26/01/2021	26/01/2021
			SDG Ref	210126-90	210126-90	210126-90	210126-90	210126-90
			Lab Sample No.(s)	23610154	23610212	23610216	23610138	23610143
			AGS Reference					
Dibromofluoromethane**	%	TM116		115	111	121	106	107
Toluene-d8**	%	TM116		98.8	96.3	95.8	99	98.1
4-Bromofluorobenzene**	%	TM116		96.1	89	90.1	102	95.2
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<2000 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<1800 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<1400 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<800 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<2000 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<2000 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	1490 M	995 M	<2600 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<8000	<800

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AA1-1 0.20 - 0.20 SOLID 22/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610200 TM048	03/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AB1-1 0.30 - 0.30 SOLID 25/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610191 TM048	03/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AN6-1 0.30 - 0.30 SOLID 22/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610107 TM048	02/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	V1-2 1.40 - 1.40 SOLID 25/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610186 TM048	03/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	V2-1 1.10 - 1.10 SOLID 25/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610176 TM048	01/02/21	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	W2-1 0.30 - 0.30 SOLID 25/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610163 TM048	01/02/21	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	X1-1 0.50 - 0.50 SOLID 22/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610116 TM048	01/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	X2-1 0.80 - 0.80 SOLID 22/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610128 TM048	01/02/2021	Marcin Magdziarek	Loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	Y1-1 0.50 - 0.50 SOLID 22/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610220 TM048	01/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	Y2-1 0.30 - 0.30 SOLID 25/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610149 TM048	01/02/21	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	Z1-1 0.50 - 0.50 SOLID 22/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610212 TM048	03/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	Z2-1 0.40 - 0.40 SOLID 25/01/2021 00:00:00 26/01/2021 05:00:00 210126-90 23610138 TM048	02/02/2021	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	X2-1	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.80 - 0.80					
Sample Type	SOLID					
Date Sampled	22/01/2021 00:00:00					
Date Received	26/01/2021 05:00:00					
SDG	210126-90					
Original Sample	23610128					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210126-90	**Client Reference:**	P18-669	**Report Number:**	586027
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	585971

Test Completion Dates

Lab Sample No(s)	23610200	23610208	23610191	23610195	23610107	23610168	23610181	23610186	23610176	23610163
Customer Sample Ref.	AA1-1	AA1-2	AB1-1	AB1-2	AN6-1	AQ7-1	V1-1	V1-2	V2-1	W2-1
AGS Ref.										
Depth	0.20 - 0.20	1.80 - 1.80	0.30 - 0.30	1.60 - 1.60	0.30 - 0.30	0.50 - 0.50	0.50 - 0.50	1.40 - 1.40	1.10 - 1.10	0.30 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021
Asbestos ID in Solid Samples	03-Feb-2021		03-Feb-2021		02-Feb-2021			03-Feb-2021	01-Feb-2021	01-Feb-2021
Cyanide Comp/Free/Total/Thiocyanate	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021
EPH CWG GC (S)	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021
GRO by GC-FID (S)	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021
Metals in solid samples by OES	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
PAH by GCMS	29-Jan-2021	29-Jan-2021	29-Jan-2021	28-Jan-2021	29-Jan-2021	29-Jan-2021	28-Jan-2021	29-Jan-2021	28-Jan-2021	29-Jan-2021
pH	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
Phenols by HPLC (S)	03-Feb-2021	29-Jan-2021	02-Feb-2021	02-Feb-2021	01-Feb-2021	02-Feb-2021	03-Feb-2021	02-Feb-2021	29-Jan-2021	03-Feb-2021
Sample description	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
Total Organic Carbon	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021
TPH CWG GC (S)	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021
VOC MS (S)	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	03-Feb-2021

Lab Sample No(s)	23610172	23610116	23610120	23610128	23610132	23610220	23610111	23610149	23610154	23610212
Customer Sample Ref.	W2-2	X1-1	X1-2	X2-1	X2-2	Y1-1	Y1-2	Y2-1	Y2-2	Z1-1
AGS Ref.										
Depth	1.30 - 1.30	0.50 - 0.50	1.10 - 1.10	0.80 - 0.80	2.00 - 2.00	0.50 - 0.50	1.30 - 1.30	0.30 - 0.30	1.00 - 1.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021
Asbestos ID in Solid Samples		01-Feb-2021		01-Feb-2021		01-Feb-2021		01-Feb-2021		03-Feb-2021
Asbestos Quantification - Full				08-Feb-2021						
Cyanide Comp/Free/Total/Thiocyanate	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021	01-Feb-2021
EPH CWG GC (S)	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021	02-Feb-2021
GRO by GC-FID (S)	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021
Metals in solid samples by OES	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021
PAH by GCMS	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	29-Jan-2021	29-Jan-2021	29-Jan-2021	29-Jan-2021	29-Jan-2021
pH	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021	28-Jan-2021
Phenols by HPLC (S)	03-Feb-2021	01-Feb-2021	03-Feb-2021	01-Feb-2021	02-Feb-2021	29-Jan-2021	03-Feb-2021	03-Feb-2021	01-Feb-2021	02-Feb-2021
Sample description	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021	27-Jan-2021
Total Organic Carbon	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	05-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021
TPH CWG GC (S)	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021
VOC MS (S)	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	04-Feb-2021	03-Feb-2021	03-Feb-2021	03-Feb-2021	04-Feb-2021	03-Feb-2021

Lab Sample No(s)	23610216	23610138	23610143
Customer Sample Ref.	Z1-2	Z2-1	Z2-2
AGS Ref.			
Depth	1.20 - 1.20	0.40 - 0.40	1.30 - 1.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	01-Feb-2021	01-Feb-2021	01-Feb-2021
Asbestos ID in Solid Samples		02-Feb-2021	
Cyanide Comp/Free/Total/Thiocyanate	01-Feb-2021	01-Feb-2021	01-Feb-2021
EPH CWG GC (S)	02-Feb-2021	02-Feb-2021	02-Feb-2021
GRO by GC-FID (S)	04-Feb-2021	04-Feb-2021	04-Feb-2021
Metals in solid samples by OES	03-Feb-2021	03-Feb-2021	03-Feb-2021
PAH by GCMS	29-Jan-2021	02-Feb-2021	28-Jan-2021
pH	28-Jan-2021	28-Jan-2021	28-Jan-2021
Phenols by HPLC (S)	29-Jan-2021	03-Feb-2021	03-Feb-2021
Sample description	27-Jan-2021	27-Jan-2021	27-Jan-2021
Total Organic Carbon	04-Feb-2021	08-Feb-2021	08-Feb-2021
TPH CWG GC (S)	04-Feb-2021	04-Feb-2021	04-Feb-2021
VOC MS (S)	03-Feb-2021	04-Feb-2021	04-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Rodgers Leask
Office 225
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BS32 4QA

Attention: Elliot Thomas

CERTIFICATE OF ANALYSIS

Date of report Generation:	24 February 2021
Customer:	Rodgers Leask
Sample Delivery Group (SDG):	210211-154
Your Reference:	P18-669
Location:	Llanwern
Report No:	588010

This report has been revised and directly supersedes 587493 in its entirety.

We received 18 samples on Thursday February 11, 2021 and 18 of these samples were scheduled for analysis which was completed on Wednesday February 24, 2021. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
23709291	AJ5-1		0.60 - 0.60	10/02/2021
23709374	AS5-1		0.50 - 0.50	10/02/2021
23709378	AS5-2		2.00 - 2.00	10/02/2021
23709365	AT5-1		0.40 - 0.40	10/02/2021
23709370	AT5-2		1.30 - 1.30	10/02/2021
23709347	AU5-1		0.70 - 0.70	10/02/2021
23709357	AU5-2		1.60 - 1.60	10/02/2021
23709361	AU5-3		2.30 - 2.30	10/02/2021
23709332	AU6-1		0.50 - 0.50	10/02/2021
23709339	AU6-2		1.70 - 1.70	10/02/2021
23709308	AV6-1		0.50 - 0.50	10/02/2021
23709319	AV6-2		1.20 - 1.20	10/02/2021
23709328	AV6-3		2.00 - 2.00	10/02/2021
23709389	SPIA-1		0.20 - 0.20	10/02/2021
23709398	SPIA-2		0.20 - 0.20	10/02/2021
23709303	U30-1		0.60 - 0.60	09/02/2021
23709298	U31-1		1.00 - 1.00	09/02/2021
23709286	U32-1		0.50 - 0.50	09/02/2021

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23709291		23709374		23709378		23709365		23709370		23709347		23709357		23709361	
Customer Sample Reference			AU5-1		AS5-1		AS5-2		AT5-1		AT5-2		AU5-1		AU5-2		AU5-3	
AGS Reference																		
Depth (m)			0.60 - 0.60		0.50 - 0.50		2.00 - 2.00		0.40 - 0.40		1.30 - 1.30		0.70 - 0.70		1.60 - 1.60		2.30 - 2.30	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 18	X		X			X		X			X			X		X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9					X					X			X					X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1												X							
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 18	X		X			X		X			X			X		X			X
EPH CWG GC (S)	All	NDPs: 0 Tests: 18	X		X			X		X			X			X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 18		X		X			X		X			X			X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 18	X		X			X		X			X			X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 18	X		X			X		X			X			X		X			X
pH	All	NDPs: 0 Tests: 18	X		X			X		X			X			X		X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 18	X		X			X		X			X			X		X			X
Sample description	All	NDPs: 0 Tests: 18	X		X			X		X			X			X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 18	X		X			X		X			X			X		X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 18	X		X			X		X			X			X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 18		X		X			X		X			X			X		X		

23709303	U30-1		0.60 - 0.60	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23709398	SPIA-2		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23709389	SPIA-1		0.20 - 0.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23709328	AV6-3		2.00 - 2.00	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23709319	AV6-2		1.20 - 1.20	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23709308	AV6-1		0.50 - 0.50	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23709339	AU6-2		1.70 - 1.70	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
23709332	AU6-1		0.50 - 0.50	60g VOC (ALE215)	S						X								X
				250g Amber Jar (ALE210)	S	X			X	X		X	X	X	X	X	X	X	
				1kg TUB with Handle (ALE260)	S		X												
23709361	AU5-3		2.30 - 2.30	60g VOC (ALE215)	S						X								X

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			23709298					23709286
Customer Sample Reference			U31-1					U32-1
AGS Reference								
Depth (m)			1.00 - 1.00					0.50 - 0.50
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 18	X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 18	X			X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 18	X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 18		X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 18	X			X	
PAH by GCMS	All	NDPs: 0 Tests: 18	X			X	
pH	All	NDPs: 0 Tests: 18	X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 18	X			X	
Sample description	All	NDPs: 0 Tests: 18	X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 18	X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 18	X			X	
VOC MS (S)	All	NDPs: 0 Tests: 18		X			X

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
23709291	AJ5-1	0.60 - 0.60	Dark Brown	Stone/Soil	Stones	None
23709374	AS5-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Brick
23709378	AS5-2	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	None
23709365	AT5-1	0.40 - 0.40	Light Brown	Sandy Clay Loam	Stones	None
23709370	AT5-2	1.30 - 1.30	Red	Sandy Clay Loam	Stones	Brick
23709347	AU5-1	0.70 - 0.70	Light Brown	Sandy Clay Loam	Stones	None
23709357	AU5-2	1.60 - 1.60	Dark Brown	Sandy Loam	Stones	Vegetation
23709361	AU5-3	2.30 - 2.30	Dark Brown	Sandy Clay Loam	Stones	None
23709332	AU6-1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
23709339	AU6-2	1.70 - 1.70	Black	Loamy Sand	Stones	Vegetation
23709308	AV6-1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
23709319	AV6-2	1.20 - 1.20	Dark Brown	Silty Clay Loam	Stones	None
23709328	AV6-3	2.00 - 2.00	Dark Brown	Sandy Silt Loam	Stones	None
23709389	SPIA-1	0.20 - 0.20	Dark Brown	Sandy Silt Loam	Vegetation	None
23709398	SPIA-2	0.20 - 0.20	Dark Brown	Silt Loam	Vegetation	Stones
23709303	U30-1	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	Brick
23709298	U31-1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Brick
23709286	U32-1	0.50 - 0.50	Light Brown	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ5-1	AS5-1	AS5-2	AT5-1	AT5-2	AU5-1
			Depth (m)	0.60 - 0.60	0.50 - 0.50	2.00 - 2.00	0.40 - 0.40	1.30 - 1.30	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709291	23709374	23709378	23709365	23709370	23709347
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.4	20	23	14	14	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		19.2 #	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	0.0375 M	<0.01 M	0.0468 M	0.0117 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	0.026 M	0.0117 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	0.0585 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		0.779 #	4.98 #	6.93 #	4.43 #	10.3 #	6.55 #
pH	1 pH Units	TM133		8.49 #	10.4 M	8.78 M	10.4 M	10.7 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 M	18.7 M	<1 M	6.9 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 #	6.61 M	14.3 M	7.08 M	9.76 M	10.2 M
Cadmium	<0.02 mg/kg	TM181		<0.2 #	1.96 M	13 M	0.95 M	3.38 M	2.12 M
Chromium	<0.9 mg/kg	TM181		120 #	129 M	579 M	138 M	39.6 M	588 M
Copper	<1.4 mg/kg	TM181		<14 #	27.3 M	63.6 M	34.6 M	88.3 M	64.7 M
Iron	<1000 mg/kg	TM181		32300 #	62800 #	258000 #	45100 #	47100 #	104000 #
Lead	<0.7 mg/kg	TM181		7.03 #	163 M	1040 M	56.4 M	255 M	135 M
Manganese	<0.13 mg/kg	TM181		8150 #	8480 M	29900 M	5900 M	1940 M	12700 M
Mercury	<0.1 mg/kg	TM181		<1 #	<1 M	<1 M	<1 M	1.97 M	<1 M
Nickel	<0.2 mg/kg	TM181		9.86 #	20.1 M	41.3 M	22.7 M	29.4 M	26.1 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		82.4 #	247 #	593 #	107 #	56.9 #	490 #
Zinc	<1.9 mg/kg	TM181		40.2 #	618 M	5270 M	208 M	1260 M	559 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							0
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AU5-2	AU5-3	AU6-1	AU6-2	AV6-1	AV6-2
			Depth (m)	1.60 - 1.60	2.30 - 2.30	0.50 - 0.50	1.70 - 1.70	0.50 - 0.50	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709357	23709361	23709332	23709339	23709308	23709319
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	24	25	22	13	6.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	123 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.013 M	0.0132 M	<0.01 M	<0.01 M	0.069 M	0.172 M
Cresols	<0.01 mg/kg	TM062 (S)		0.013 M	0.0132 M	0.0134 M	<0.01 M	<0.01 M	0.0107 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.069 M	0.183 M
Soil Organic Matter (SOM)	<0.35 %	TM132		9.28 #	6.62 #	39.1 #	18.3 #	2.79 #	2.72 #
pH	1 pH Units	TM133		10.7 M	9.18 M	7.7 M	11.4 M	12.5 M	11.4 M
Cyanide, Total	<1 mg/kg	TM153		23.1 M	37.2 M	1.11 M	9.79 M	4.42 M	6.99 M
Arsenic	<0.6 mg/kg	TM181		19.7 M	17.7 M	17.7 M	13.7 M	<6 M	16.9 M
Cadmium	<0.02 mg/kg	TM181		21.9 M	16.5 M	0.913 M	12.6 M	6.38 M	7.44 M
Chromium	<0.9 mg/kg	TM181		267 M	115 M	17.2 M	551 M	430 M	172 M
Copper	<1.4 mg/kg	TM181		85.3 M	63.7 M	52.8 M	55.3 M	38 M	117 M
Iron	<1000 mg/kg	TM181		349000 #	261000 #	22100 #	254000 #	192000 #	467000 #
Lead	<0.7 mg/kg	TM181		1920 M	1370 M	564 M	1070 M	494 M	447 M
Manganese	<0.13 mg/kg	TM181		23600 M	13400 M	624 M	26300 M	33500 M	14600 M
Mercury	<0.1 mg/kg	TM181		<1 M	<1 M	<1 M	<1 M	<1 M	1.39 M
Nickel	<0.2 mg/kg	TM181		52.3 M	44 M	21.2 M	28.5 M	39.2 M	40.1 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	11.8 #	<10 #
Vanadium	<0.2 mg/kg	TM181		945 #	460 #	23.6 #	485 #	1490 #	472 #
Zinc	<1.9 mg/kg	TM181		9230 M	6550 M	187 M	5520 M	2100 M	1920 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AV6-3	SPIA-1	SPIA-2	U30-1	U31-1	U32-1
			Depth (m)	2.00 - 2.00	0.20 - 0.20	0.20 - 0.20	0.60 - 0.60	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	09/02/2021	09/02/2021	09/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709328	23709389	23709398	23709303	23709298	23709286
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		31	29	25	7.6	5.1	8.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0141 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0282 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132		8.83 #	21.7 #	13.8 #	2.55 #	1.55 #	0.91 #
pH	1 pH Units	TM133		9.84 M	8.2 M	8.25 M	11 M	10.4 M	10 M
Cyanide, Total	<1 mg/kg	TM153		184 M	69.9 M	49.5 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		22.2 M	36.5 M	21.3 M	<6 M	15.2 M	6.14 M
Cadmium	<0.02 mg/kg	TM181		24 M	37.5 M	24.6 M	0.689 M	2.56 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		104 M	135 M	547 M	25.3 M	62.3 M	6.78 M
Copper	<1.4 mg/kg	TM181		82 M	96.9 M	70.9 M	<14 M	46.9 M	16.6 M
Iron	<1000 mg/kg	TM181		417000 #	301000 #	234000 #	38800 #	284000 #	40100 #
Lead	<0.7 mg/kg	TM181		2070 M	6320 M	3260 M	25.7 M	<7 M	1.55 M
Manganese	<0.13 mg/kg	TM181		14400 M	11200 M	24000 M	3590 M	5660 M	4120 M
Mercury	<0.1 mg/kg	TM181		1.34 M	1.1 M	<1 M	<1 M	<1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181		59.2 M	59.4 M	42.5 M	6.52 M	27.3 M	12.1 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	12.1 #	<10 #	<10 #	2.38 #
Vanadium	<0.2 mg/kg	TM181		379 #	156 #	467 #	38.5 #	71.4 #	40.3 #
Zinc	<1.9 mg/kg	TM181		10600 M	21100 M	11800 M	132 M	58.6 M	29.4 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ5-1	AS5-1	AS5-2	AT5-1	AT5-2	AU5-1
			Depth (m)	0.60 - 0.60	0.50 - 0.50	2.00 - 2.00	0.40 - 0.40	1.30 - 1.30	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709291	23709374	23709378	23709365	23709370	23709347
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.7	103	100	102	101	100
Acenaphthene-d10 % recovery**	%	TM218		97.5	101	97.4	101	98.5	99.3
Phenanthrene-d10 % recovery**	%	TM218		98.3	106	98.2	101	98	98.7
Chrysene-d12 % recovery**	%	TM218		88.8	94.2	102	96.6	103	92.3
Perylene-d12 % recovery**	%	TM218		90.4	88.4	93	97.6	98.5	91.6
Naphthalene	<9 µg/kg	TM218		15.5 #	60.6 M	31.5 M	175 M	57.6 M	69.4 M
Acenaphthylene	<12 µg/kg	TM218		15.1 #	21.8 M	<12 M	21.6 M	<60 M	17.6 M
Acenaphthene	<8 µg/kg	TM218		<8 #	25.8 M	<8 M	143 M	54.2 M	47.5 M
Fluorene	<10 µg/kg	TM218		<10 #	34.1 M	<10 M	105 M	<50 M	58.5 M
Phenanthrene	<15 µg/kg	TM218		38.9 #	219 M	68.6 M	1160 M	410 M	352 M
Anthracene	<16 µg/kg	TM218		<16 #	56.2 M	<16 M	236 M	189 M	99.5 M
Fluoranthene	<17 µg/kg	TM218		85.5 #	423 M	114 M	1460 M	1720 M	499 M
Pyrene	<15 µg/kg	TM218		68.1 #	373 M	101 M	1180 M	1540 M	430 M
Benz(a)anthracene	<14 µg/kg	TM218		61.1 #	227 M	68.8 M	636 M	1450 M	249 M
Chrysene	<10 µg/kg	TM218		62.1 #	278 M	78.6 M	519 M	1570 M	245 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		126 #	379 M	121 M	896 M	2060 M	410 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		37.5 #	108 M	38.2 M	318 M	717 M	126 M
Benzo(a)pyrene	<15 µg/kg	TM218		72.5 #	202 M	67.2 M	570 M	1130 M	244 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		75.5 #	173 M	51.7 M	449 M	799 M	207 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 #	38.1 M	<23 M	68.4 M	218 M	36.2 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		66.8 #	178 M	58.7 M	402 M	748 M	188 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		725	2800	799	8330	12600	3280

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
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*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AU5-2	AU5-3	AU6-1	AU6-2	AV6-1	AV6-2
			Depth (m)	1.60 - 1.60	2.30 - 2.30	0.50 - 0.50	1.70 - 1.70	0.50 - 0.50	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709357	23709361	23709332	23709339	23709308	23709319
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		99.3	89.5	98.7	98.9	95.4	97.1
Acenaphthene-d10 % recovery**	%	TM218		93.7	94.3	98.4	95.3	98.1	94.9
Phenanthrene-d10 % recovery**	%	TM218		91.9	94.2	95.5	94	99.4	94.6
Chrysene-d12 % recovery**	%	TM218		72.9	83.6	90.6	88.1	88.5	100
Perylene-d12 % recovery**	%	TM218		59.6	83.1	90.6	73.7	87	88.5
Naphthalene	<9 µg/kg	TM218		28.1 M	47.2 M	41 M	20.7 M	44.1 M	121 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	<12 M	20.7 M	<12 M	<12 M	93.5 M
Acenaphthene	<8 µg/kg	TM218		<8 M	26.5 M	36.1 M	<8 M	74 M	77.6 M
Fluorene	<10 µg/kg	TM218		<10 M	33.1 M	45.7 M	<10 M	37.4 M	54 M
Phenanthrene	<15 µg/kg	TM218		119 M	301 M	339 M	80.9 M	691 M	662 M
Anthracene	<16 µg/kg	TM218		23.9 M	67.1 M	66.8 M	<16 M	122 M	197 M
Fluoranthene	<17 µg/kg	TM218		233 M	508 M	675 M	149 M	1320 M	1820 M
Pyrene	<15 µg/kg	TM218		217 M	424 M	523 M	109 M	1240 M	1900 M
Benz(a)anthracene	<14 µg/kg	TM218		121 M	285 M	402 M	69.2 M	705 M	1290 M
Chrysene	<10 µg/kg	TM218		153 M	311 M	461 M	70.1 M	710 M	1620 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		219 M	416 M	712 M	120 M	1160 M	2410 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		66.4 M	143 M	219 M	31.6 M	373 M	707 M
Benzo(a)pyrene	<15 µg/kg	TM218		108 M	250 M	371 M	51.4 M	837 M	1530 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		92.7 M	185 M	307 M	43.7 M	592 M	1170 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	33.4 M	65.6 M	<23 M	84.1 M	222 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		84.9 M	182 M	260 M	49.3 M	550 M	1200 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		1470	3210	4550	794	8540	15100

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AV6-3	SPIA-1	SPIA-2	U30-1	U31-1	U32-1
			Depth (m)	2.00 - 2.00	0.20 - 0.20	0.20 - 0.20	0.60 - 0.60	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	09/02/2021	09/02/2021	09/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709328	23709389	23709398	23709303	23709298	23709286
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.7	98	96.6	107	100	96.9
Acenaphthene-d10 % recovery**	%	TM218		91.5	94.7	94.5	105	103	100
Phenanthrene-d10 % recovery**	%	TM218		83.3	88.6	86.2	108	105	102
Chrysene-d12 % recovery**	%	TM218		72.4	68.4	72.6	96.2	97.7	93.1
Perylene-d12 % recovery**	%	TM218		58.6	52.1	55.4	94	101	96.2
Naphthalene	<9 µg/kg	TM218		28.7 M	88.4 M	126 M	110 M	113 M	91.5 M
Acenaphthylene	<12 µg/kg	TM218		<12 M	<12 M	27.1 M	40.9 M	62.1 M	34.9 M
Acenaphthene	<8 µg/kg	TM218		<8 M	48.9 M	53.8 M	<8 M	8.43 M	71 M
Fluorene	<10 µg/kg	TM218		<10 M	91.1 M	117 M	21.5 M	42.4 M	45.5 M
Phenanthrene	<15 µg/kg	TM218		64 M	748 M	1020 M	208 M	367 M	294 M
Anthracene	<16 µg/kg	TM218		<16 M	158 M	226 M	49.4 M	93.8 M	68.2 M
Fluoranthene	<17 µg/kg	TM218		92.3 M	899 M	1140 M	281 M	520 M	359 M
Pyrene	<15 µg/kg	TM218		100 M	761 M	981 M	219 M	370 M	344 M
Benz(a)anthracene	<14 µg/kg	TM218		58.1 M	515 M	577 M	132 M	312 M	170 M
Chrysene	<10 µg/kg	TM218		71.7 M	648 M	700 M	168 M	300 M	170 M
Benzo(b)fluoranthene	<15 µg/kg	TM218		97.3 M	1110 M	1430 M	249 M	508 M	247 M
Benzo(k)fluoranthene	<14 µg/kg	TM218		28.1 M	318 M	325 M	73 M	154 M	75.7 M
Benzo(a)pyrene	<15 µg/kg	TM218		42.8 M	453 M	552 M	114 M	283 M	131 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218		35.6 M	350 M	433 M	125 M	264 M	123 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	78.5 M	116 M	26.6 M	46.8 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218		39.9 M	382 M	447 M	133 M	229 M	105 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218		658	6650	8270	1950	3670	2330

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ5-1	AS5-1	AS5-2	AT5-1	AT5-2	AU5-1
			Depth (m)	0.60 - 0.60	0.50 - 0.50	2.00 - 2.00	0.40 - 0.40	1.30 - 1.30	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709291	23709374	23709378	23709365	23709370	23709347
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		88.1	74.4	86.3	94.9	87.7	117
Aliphatics >C5-C6	<10 µg/kg	TM089		0	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	23.8
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	51.2
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		<1000	2940	<1000	<1000	1790	1120
Aliphatics >C16-C21	<1000 µg/kg	TM414		2560	12800	5670	3460	5670	5800
Aliphatics >C21-C35	<1000 µg/kg	TM414		10300	102000	31700	19800	28100	80100
Aliphatics >C35-C44	<1000 µg/kg	TM414		1590	36600	7010	5270	13900	22600
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		14800	154000	45200	29300	49800	110000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		32400	197000	60200	43200	71400	135000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10	<10	<10	34.5
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		<1000	2030	1610	1940	2490	3370
Aromatics > EC21-EC35	<1000 µg/kg	TM414		14800	37600	12300	11000	17500	20000
Aromatics >EC35-EC44	<1000 µg/kg	TM414		2170	2220	<1000	<1000	<1000	2190
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		17600	42500	15000	14000	21600	25600
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		32400	197000	60200	43200	71400	135000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	75
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	<50	<50	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20	<20	<20	75

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AU5-2	AU5-3	AU6-1	AU6-2	AV6-1	AV6-2
			Depth (m)	1.60 - 1.60	2.30 - 2.30	0.50 - 0.50	1.70 - 1.70	0.50 - 0.50	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709357	23709361	23709332	23709339	23709308	23709319
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		79.1	87.7	61 4	100	95	89.1
Aliphatics >C5-C6	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	10.7
Aliphatics >C6-C8	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	31.1
Aliphatics >C8-C10	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	63.4
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	1990	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		1740	1090	1260	1320	10800	6030
Aliphatics >C16-C21	<1000 µg/kg	TM414		11100	5430	5180	7110	31000	20700
Aliphatics >C21-C35	<1000 µg/kg	TM414		45800	29400	32200	16800	122000	91200
Aliphatics >C35-C44	<1000 µg/kg	TM414		12900	7770	5390	1270	47100	45200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		71700	45700	44700	26600	211000	164000
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		94700	84700	212000	36700	273000	221000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		<10	<10	<10 4	<10	<10	41.9
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	6640	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	<1000	3050	<1000	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		1540	3700	18900	<1000	9720	6530
Aromatics > EC21-EC35	<1000 µg/kg	TM414		19800	26800	122000	7840	46800	46800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		1530	1330	23000	<1000	3990	3030
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	2670	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		23100	38900	167000	10100	61200	57200
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		94700	84700	212000	36700	273000	221000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50	<50	<50 4	<50	<50	105
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50	0	<50 4	<50	<50	<50
GRO >C5-C10	<20 µg/kg	TM089		<20	<20	<20 4	<20	<20	105

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AV6-3	SPIA-1	SPIA-2	U30-1	U31-1	U32-1
			Depth (m)	2.00 - 2.00	0.20 - 0.20	0.20 - 0.20	0.60 - 0.60	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	09/02/2021	09/02/2021	09/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709328	23709389	23709398	23709303	23709298	23709286
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		134 4	72.6	70.1	47 4	57 4	85.5
Aliphatics >C5-C6	<10 µg/kg	TM089		<10 4	<10	<10	<10 4	<10 4	<10
Aliphatics >C6-C8	<10 µg/kg	TM089		11.5 4	<10	<10	<10 4	<10 4	<10
Aliphatics >C8-C10	<10 µg/kg	TM089		15.8 4	<10	<10	<10 4	<10 4	<10
Aliphatics >C10-C12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aliphatics >C12-C16	<1000 µg/kg	TM414		6340	1340	1180	4070	<1000	1680
Aliphatics >C16-C21	<1000 µg/kg	TM414		20600	43100	26500	17300	2330	9870
Aliphatics >C21-C35	<1000 µg/kg	TM414		50300	209000	136000	81500	17900	57200
Aliphatics >C35-C44	<1000 µg/kg	TM414		12900	85100	54900	27100	5600	25200
Total Aliphatics >C10-C44	<5000 µg/kg	TM414		90700	339000	219000	130000	26300	93900
Total Aliphatics & Aromatics >C10-C44	<10000 µg/kg	TM414		118000	435000	294000	207000	42600	108000
Aromatics >EC5-EC7	<10 µg/kg	TM089		<10 4	<10	<10	<10 4	<10 4	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089		<10 4	<10	<10	<10 4	<10 4	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089		10.1 4	<10	<10	<10 4	<10 4	<10
Aromatics > EC10-EC12	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Aromatics > EC12-EC16	<1000 µg/kg	TM414		<1000	1470	<1000	2570	<1000	<1000
Aromatics > EC16-EC21	<1000 µg/kg	TM414		3160	9760	8070	5150	2350	1890
Aromatics > EC21-EC35	<1000 µg/kg	TM414		22900	83400	64500	66000	12600	10800
Aromatics >EC35-EC44	<1000 µg/kg	TM414		<1000	1610	1480	2230	<1000	1180
Aromatics > EC40-EC44	<1000 µg/kg	TM414		<1000	<1000	<1000	<1000	<1000	<1000
Total Aromatics > EC10-EC44	<5000 µg/kg	TM414		27500	96200	74600	76300	16400	14200
Total Aliphatics & Aromatics >C5-C44	<10000 µg/kg	TM414		118000	435000	294000	207000	42600	108000
Total Aliphatics >C5-C10	<50 µg/kg	TM089		<50 4	<50	<50	<50 4	<50 4	<50
Total Aromatics >EC5-EC10	<50 µg/kg	TM089		<50 4	<50	<50	<50 4	<50 4	<50
GRO >C5-C10	<20 µg/kg	TM089		<20 4	<20	<20	<20 4	<20 4	<20

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AJ5-1	AS5-1	AS5-2	AT5-1	AT5-2	AU5-1
			Depth (m)	0.60 - 0.60	0.50 - 0.50	2.00 - 2.00	0.40 - 0.40	1.30 - 1.30	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709291	23709374	23709378	23709365	23709370	23709347
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	107	113	105	105	105
Toluene-d8**	%	TM116		99.2	100	99.2	100	99.5	99.4
4-Bromofluorobenzene**	%	TM116		98.9	100	99.4	101	99.3	101
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 #	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 #	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 #	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 #	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 #	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 #	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AU5-2	AU5-3	AU6-1	AU6-2	AV6-1	AV6-2
			Depth (m)	1.60 - 1.60	2.30 - 2.30	0.50 - 0.50	1.70 - 1.70	0.50 - 0.50	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021	10/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709357	23709361	23709332	23709339	23709308	23709319
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	105	104	104	110	104
Toluene-d8**	%	TM116		100	98.9	99	98.7	100	99.3
4-Bromofluorobenzene**	%	TM116		98.4	101	95.5	98.2	102	98.9
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	AV6-3	SPIA-1	SPIA-2	U30-1	U31-1	U32-1
			Depth (m)	2.00 - 2.00	0.20 - 0.20	0.20 - 0.20	0.60 - 0.60	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	10/02/2021	10/02/2021	10/02/2021	09/02/2021	09/02/2021	09/02/2021
			Sample Time	.	.	.	.	.	.
			Date Received	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
			SDG Ref	210211-154	210211-154	210211-154	210211-154	210211-154	210211-154
			Lab Sample No.(s)	23709328	23709389	23709398	23709303	23709298	23709286
			AGS Reference						
Dibromofluoromethane**	%	TM116		95.6	107	116	98.9	102	103
Toluene-d8**	%	TM116		99.6	98.2	98.7	97.5	99	101
4-Bromofluorobenzene**	%	TM116		101	96.1	99.7	86.4	91.7	98.3
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Benzene	<9 µg/kg	TM116		<180 M	<180 M	<180 M	<180 M	<180 M	<180 M
Toluene	<7 µg/kg	TM116		<140 M	<140 M	<140 M	<140 M	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116		<80 M	<80 M	<80 M	<80 M	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116		<200 #	<200 #	<200 #	<200 #	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116		<200 M	<200 M	<200 M	<200 M	<200 M	<200 M
Naphthalene	<13 µg/kg	TM116		<260 M	<260 M	<260 M	<260 M	<260 M	<260 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Sum of BTEX	<40 µg/kg	TM116		<800	<800	<800	<800	<800	<800

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AS5-2 2.00 - 2.00 SOLID 10/02/2021 00:00:00 11/02/2021 05:00:00 210211-154 23709378 TM048	17/02/2021	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AT5-2 1.30 - 1.30 SOLID 10/02/2021 00:00:00 11/02/2021 05:00:00 210211-154 23709370 TM048	19/02/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AU5-1 0.70 - 0.70 SOLID 10/02/2021 00:00:00 11/02/2021 05:00:00 210211-154 23709347 TM048	18/02/2021	Agnieszka Chelmowska	Fibre Bundle in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AU5-3 2.30 - 2.30 SOLID 10/02/2021 00:00:00 11/02/2021 05:00:00 210211-154 23709361 TM048	18/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AU6-1 0.50 - 0.50 SOLID 10/02/2021 00:00:00 11/02/2021 05:00:00 210211-154 23709332 TM048	19/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AV6-2 1.20 - 1.20 SOLID 10/02/2021 00:00:00 11/02/2021 05:00:00 210211-154 23709319 TM048	18/02/2021	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SPIA-2 0.20 - 0.20 SOLID 10/02/2021 00:00:00 11/02/2021 05:00:00 210211-154 23709398 TM048	19/02/2021	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	U30-1 0.60 - 0.60 SOLID 09/02/2021 00:00:00 11/02/2021 05:00:00 210211-154 23709303 TM048	18/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	U32-1 0.50 - 0.50 SOLID 09/02/2021 00:00:00 11/02/2021 05:00:00 210211-154 23709286 TM048	18/02/2021	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	AU5-1	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.70 - 0.70					
Sample Type	SOLID					
Date Sampled	10/02/2021 00:00:00					
Date Received	11/02/2021 05:00:00					
SDG	210211-154					
Original Sample	23709347					
Method Number	TM304					

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	210211-154	**Client Reference:**	P18-669	**Report Number:**	588010
Location:	Llanwern	**Order Number:**	108282	**Superseded Report:**	587493

Test Completion Dates

Lab Sample No(s)	23709291	23709374	23709378	23709365	23709370	23709347	23709357	23709361	23709332	23709339
Customer Sample Ref.	AJ5-1	AS5-1	AS5-2	AT5-1	AT5-2	AU5-1	AU5-2	AU5-3	AU6-1	AU6-2
AGS Ref.										
Depth	0.60 - 0.60	0.50 - 0.50	2.00 - 2.00	0.40 - 0.40	1.30 - 1.30	0.70 - 0.70	1.60 - 1.60	2.30 - 2.30	0.50 - 0.50	1.70 - 1.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021	18-Feb-2021
Asbestos ID in Solid Samples			17-Feb-2021		19-Feb-2021	18-Feb-2021		18-Feb-2021	19-Feb-2021	
Asbestos Quantification - Full						24-Feb-2021				
Cyanide Comp/Free/Total/Thiocyanate	16-Feb-2021	17-Feb-2021	16-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	16-Feb-2021	18-Feb-2021	18-Feb-2021	16-Feb-2021
EPH CWG GC (S)	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021
GRO by GC-FID (S)	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021
Metals in solid samples by OES	19-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
PAH by GCMS	17-Feb-2021	16-Feb-2021	18-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	18-Feb-2021
pH	15-Feb-2021	16-Feb-2021	16-Feb-2021	15-Feb-2021	16-Feb-2021	16-Feb-2021	15-Feb-2021	16-Feb-2021	16-Feb-2021	15-Feb-2021
Phenols by HPLC (S)	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021
Sample description	13-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	13-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021	12-Feb-2021
Total Organic Carbon	18-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
TPH CWG GC (S)	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021
VOC MS (S)	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021

Lab Sample No(s)	23709308	23709319	23709328	23709389	23709398	23709303	23709298	23709286
Customer Sample Ref.	AV6-1	AV6-2	AV6-3	SPIA-1	SPIA-2	U30-1	U31-1	U32-1
AGS Ref.								
Depth	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	0.20 - 0.20	0.20 - 0.20	0.60 - 0.60	1.00 - 1.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021
Asbestos ID in Solid Samples		18-Feb-2021			19-Feb-2021	18-Feb-2021		18-Feb-2021
Cyanide Comp/Free/Total/Thiocyanate	17-Feb-2021	17-Feb-2021	18-Feb-2021	18-Feb-2021	16-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021
EPH CWG GC (S)	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021
GRO by GC-FID (S)	17-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021	18-Feb-2021	18-Feb-2021	17-Feb-2021
Metals in solid samples by OES	18-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021
PAH by GCMS	17-Feb-2021	18-Feb-2021	18-Feb-2021	18-Feb-2021	19-Feb-2021	16-Feb-2021	17-Feb-2021	17-Feb-2021
pH	15-Feb-2021	16-Feb-2021	15-Feb-2021	15-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021
Phenols by HPLC (S)	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021	17-Feb-2021
Sample description	13-Feb-2021	13-Feb-2021	13-Feb-2021	13-Feb-2021	13-Feb-2021	13-Feb-2021	13-Feb-2021	13-Feb-2021
Total Organic Carbon	18-Feb-2021	17-Feb-2021	18-Feb-2021	18-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021
TPH CWG GC (S)	17-Feb-2021	17-Feb-2021	18-Feb-2021	17-Feb-2021	17-Feb-2021	18-Feb-2021	18-Feb-2021	17-Feb-2021
VOC MS (S)	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021	16-Feb-2021

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Appendix H

Geotechnical Testing Summary and Certificates

Soil ID	Compaction				General	Particle Distribution											
						Fines											
	Optimum Moisture Content (%)	Max Dry Density (Mg/m3)	Natural Moisture Content (%)	Assumed/ Measured Particle Density (Mg/m3)	Water Content (%)	Clay % (<0.004mm)	Silt % (0.004 - 0.062mm)	% Fines (<0.062)	Sand % (0.062 - 2mm)	Gravel % (2-63mm)	Cobbles % (64-124mm)	Total	Initial Moisture Content %	Density on a saturated and surface-dried basis (Mg/m3)	Partilcle density on an oven-dried basis (Mg/m3)	Apparent Particle Density	Total Expansion (%)
AC1-1 (1.1)	10	2.07		2.75	12.3			10.8	19.2	70	0	100		2.49	2.38		0.15
AD1-1	13	1.82		2.5	20.9			8.4	33.6	58	0	100		1.94	1.84		
AE1-1												0					0.75
AF2-1 (0.2)	10	2.07		2.78	14.2			20.6	28.4	51	0	100		2.5	2.41		
AF1-1 (0.7)	10	2.09		2.8	12.7			12.5	22.5	65	0	100		2.57	2.49		
AF1-1 (0.9)	7.5	3.20		3	4.8			2.6	5.4	92	0	100		2.62	2.57		1.30
AF3-1 (0.2)	13	1.91		2.68	15.9			12.2	23.8	64	0	100		2.45	2.35	2.62	-0.34
AF4-1 (0.5)	12	2.12		3	9.7			0.4	10.6	89	0	100		2.97	2.86		
AG1-1	16	1.49		2.05	10.7			3	15	81	1	100		2.44	2.39		0.04
AG2-1	16	1.22		1.55	28.3			3.1	8.9	85	3	100		1.23	1.15		0.10
AG3-1	9.5	2.35		3.2	10.9			2.5	9.5	88	0	100		2.96	2.87		
AG4-1 (1.7)	18	1.68		2.5	17.7			23.7	22.3	54	0	100		2.6	2.49	2.79	
AG5-1 (2.3)	12	1.93		2.7	11.3			2.1	12.9	80	5	100		2.82	2.71	3.04	0.90
AG6-1	9.5	2.08		2.75	13.7			7	21	67	5	100		2.1	1.99		0.30
AG7-1 (0.5)	13	2.18		3.35	10.3			1	16	78	5	100		2.69	2.58		
AG8 (0.2)	10	2.12		2.85	14.4			9.5	25.5	65	0	100		2.5	2.42		0.25
AH1-1	8.1	2.07		2.6	15.4			19.6	20.4	55	5	100		2.68	2.63		
AH2-1	10	2.01		2.7	10.1			4.2	8.8	79	8	100		2.41	2.33		
AH2-1 (2)	15	1.74		2.4	19.2			4.7	13.3	82	0	100		1.45	1.36	1.5	
AH3-1	14	1.76		2.6	14.7			10.6	24.4	65	0	100		2.35	2.23		
AH4-1 (2)	15	1.80		2.55	8.1			2.4	9.6	84	4	100		3.27	3.21	3.43	-0.38
AH5-1 (2.7)	15	1.78		2.5	11.8			6.5	13.5	71	9	100		2.47	2.37	2.64	
AH6-1	12	1.86		2.5	15.6			12.5	27.5	60	0	100		1.99	1.93		0.30
AH7-1	13	2.17		3.2	10.5			6.1	18.9	75	0	100		2.46	2.39		
AH8 (0.1)	10	2.10		2.84	18.5			23	28	49	0	100		2.63	2.57		1.25
AH8 (0.1)	10	2.10		2.84	18.5			23	28	49	0	100		2.63	2.57		1.25
AI-I-1 (0.2)	13	2.10		3.1	13.5			8.2	20.8	61	10	100		2.64	2.54	2.82	
AI1-1	10	1.55		1.89	17.6			5.4	13.6	77.5	3.5	100		1.42	1.34		1.79
AI-I-2 (0.2)	15	1.40		2.75	38			26	25	48	1	100		2.49	2.39	2.66	
AI2-1 (1.3)	12	1.80		2.4	11			3	12	85	0	100		2.35	2.25	2.49	1.1
AI2-1	11	1.94		2.65	13.5			2.5	25.5	72	0	100		2.66	2.56		
AI3-1	13	1.37		1.83	23.1			8	32	60	0	100		1.92	1.79		3.20
AI-1-3	16	1.88		2.9	14.5			6.4	19.6	60	14	100		2.49	2.4	2.63	1.25
AI6-1 (0.1)	?	?			18.2			14	29	57	0	100		2.38	2.29	2.52	4.30
AI7-1 (0.4)	12	2.14		3.1	11.8			7.6	14.4	78	0	100		2.69	2.57	2.91	1.10
AI8-1 (0.4)	11	2.04		2.8	11.9			2.6	16.4	81	0	100		2.49	2.36	2.72	
AJ1-1	9.4	1.90		2.4	11.5			5.2	9.8	80	5	100		2.38	2.25		
AJ1-1-1.0	9.4	1.90		2.4								0		2.38	2.25		
AJ2-1	8	2.22		2.8	7			4	8	88	0	100		2.61	2.56		0.90
AJ3-1	16	1.46		2.08	20.3			9.5	19.5	71	0	100		1.42	1.35		0.00
AJ4-1	11	2.03		2.75	8			5.6	16	72.4	6	100		2.61	2.5		0.57
AJ6-1	5.7	1.99		2.3	18.7			12.9	25.1	56	6	100		2.49	2.4		
AJ7-1	11	1.91		2.6	17			12.5	21.5	64	2	100		2.41	2.34		
AJ8-1	15	1.82		2.65	29.6			13.5	41.5	43	2	100		2.74	2.71		1.05

Soil ID	Compaction				General	Particle Distribution											
						Fines											
	Optimum Moisture Content (%)	Max Dry Density (Mg/m3)	Natural Moisture Content (%)	Assumed/ Measured Particle Density (Mg/m3)	Water Content (%)	Clay % (<0.004mm)	Silt % (0.004 - 0.062mm)	% Fines (<0.062)	Sand % (0.062 - 2mm)	Gravel % (2-63mm)	Cobbles % (64-124mm)	Total	Initial Moisture Content %	Density on a saturated and surface-dried basis (Mg/m3)	Partilcle density on an oven-dried basis (Mg/m3)	Apparent Particle Density	Total Expansion (%)
AJ9-1 @ 1.10m	16	1.92		2.65	14.5			17.7	20.3	53	9	100		2.65	2.57	2.78	2.80
AK1-1	11	2.03		2.7	15.7			16	20	64	0	100		2.5	2.42		0.58
AK2-1	12	2.30		3.4	11.4			6.6	12.4	76	5	100		3.02	2.95		
AK3-1	9.5	2.01		2.75	10.7			2.5	14	70.5	13	100		2.4	2.32		
AK4-1 (1.40)	9	2.04		2.9	10.2			4	27	68	0	99		2.78	2.63	3.1	-0.4
AK5-1	14	1.82		2.6	14			5.4	14.6	65	15	100		2.5	2.38		0.77
AK8-1 @ 1.45m	16	1.88		2.65	9.3			9.6	15.4	65	10	100		2.4	2.33	2.51	3.10
AK9-1 @ 0.80m	16	1.92		2.65	10.9			12.4	13.6	66	8	100		2.51	2.44	2.63	2.90
AK10-1	9	2.13		2.8	10.6			10.7	23.3	66	0	100		2.53	2.47		
AL1-1	5.2	2.00		2.3	6.5			0.4	6.6	88	5	100		3.1	3.02		4.47
AL2-1	8.7	1.97		2.5	10.2			3.5	17.5	64	15	100		2.41	2.32		0.18
AL05-1	8	2.18		2.9	16.3			10.8	26.2	63	0	100		2.65	2.57		0.50
AL7-1	12	2.07		2.8	22.3			23	19	58	0	100		2.58	2.51		0.15
AL9-1 @ 2.20m	15	1.91		2.65	8			12.1	19.9	68	0	100		2.46	2.4	2.55	
AL10-1	11	2.22		3.1	9.6			5.7	12.3	76	6	100		2.47	2.4		0.33
AL11-1	13	1.98		2.85	11.9			12	22	59	7	100		2.48	2.38	2.64	
AL12-1	17	1.80		2.75	8.8			20.4	20.6	53	6	100		2.69	2.59	2.87	0.40
AL13-1	12	2.06		2.8	15.9			14.2	24.8	55	6	100		2.65	2.56		
AL14-1	13	1.95		2.75	14.4			6.2	29.8	61	3	100		2.46	2.34		0.12
AL15-1 0.4m	12	1.91		2.65	12.8			6.5	15.5	78	0	100		2.38	2.28	2.55	
AL16-1 (1.3)	9.1	2.14		2.8	9.8			2.1	19.9	78	0	100		2.95	2.88	3.1	4.50
AL16-1 2.9m	6.8	1.89		2.3	8.6			2.3	14.7	83	0	100		2.52	2.44	2.66	0.20
AL16-1 (2.9)												0					0.24
AM1-1	6.6	2.10		2.55	10.5			4	11	77	8	100		2.48	2.41		0.21
AM2-1	8.7	2.09		2.7	7.4			3.2	10.8	79	7	100		2.37	2.3		
AM9-1	18	2.38		2.65													
AM9-1 (1.00)					8.2			6.1	15.9	78	0	100		2.42	2.35	2.53	0.1
AM10-1	7.3	2.42		3.05	10.1			10	33	53	4	100		2.56	2.48		
AM11-1	12	2.01		2.75	12.4			7.8	23.2	61	8	100		2.42	2.31	2.59	0.25
AM12-1					8.1			2.2	12.8	83	2	100					0.25
AM13-1	10	2.03		2.65	11.5			4.8	33.2	61	1	100		2.47	2.38		
AM14-1	7.9	1.85		2.35	11.9			3.5	22.5	74	0	100		2.37	2.28	2.51	
AM15-1	13	1.72		2.3	20.2			8.3	26.7	64	1	100		2.26	2.13		
AM16-1	13	2.00		2.85	16.6			7.9	30.1	60	2	100		2.6	2.51	2.78	3.99
AM16-1	8.5	2.44		3.3	11.7			7.5	22.5	70	0	100		2.77	2.66	2.99	2.00
AN1-1	9.10	2.12		2.75	16.20			15.20	16.80	58.00	10.00	100		2.55	2.43		
AN2-1 (1.70)	11.5	2.00		2.7	18.2			11	33	56	0	100		1.36	1.14	1.46	
AN3-1	17	2.37		2.65													
AN3-1 (0.50)					18.8			28.9	22.1	42	7	100		2.49	2.43	2.59	
AN4-1	17	2.37		2.65													
AN4-1 (1.40)					8.8			4.2	20.8	75	0	100		2.52	2.45	2.63	
AN6-1	10	2.06		2.75	16.1			16.9	18.1	59	6	100		2.53	2.45		1.50
AN9-1	17	2.38		2.65													
AN9-1 (1.20)					8.5			4.2	10.8	78	7	100		2.22	1.97	2.61	0.02

Soil ID	Compaction				General	Particle Distribution											
						Fines											
	Optimum Moisture Content (%)	Max Dry Density (Mg/m3)	Natural Moisture Content (%)	Assumed/ Measured Particle Density (Mg/m3)	Water Content (%)	Clay % (<0.004mm)	Silt % (0.004 - 0.062mm)	% Fines (<0.062)	Sand % (0.062 - 2mm)	Gravel % (2-63mm)	Cobbles % (64-124mm)	Total	Initial Moisture Content %	Density on a saturated and surface-dried basis (Mg/m3)	Partilcle density on an oven-dried basis (Mg/m3)	Apparent Particle Density	Total Expansion (%)
AN10-1	11	2.11		2.85	11.4			2.6	25.4	66	6	100		2.56	2.47		
AN11-1	12	1.55		1.95	17.6			6	31	48	15	100		1.93	1.83		0.04
AN12-1	15	1.76		2.45	13.9			8.1	27.9	62	2	100		2.36	2.26		
AN13-1	13	1.93		2.75	15			13.5	21.5	64	1	100		2.45	2.35		2.86
AN14-1	13	2.70		1.92	15.1			2.8	23.2	70	4	100		2.41	2.3		
AO1-1	8.80	2.32		3.20	13.60			10.00	25.00	53.00	12.00	100		2.55	2.43		0.48
AO3-1	17	2.39		2.65													
AO3-1 (0.50)					12.5			12	29	48	11	100		2.28	2.18	2.41	0.1
AO5-1 @ 1.20m	17.00	1.92		2.65	16.90			12.50	18.50	49.00	20.00	100.00		2.47	2.40	2.59	3.00
AO6-1 @ 0.90m	16.00	1.90		2.65	11.40			11.10	16.90	72.00	0.00	100.00		2.56	2.50	2.68	2.70
AO9-1	17	2.39		2.65													
AO9-1 (0.50)					6.3			7.5	16.5	65	11	100		2.54	2.47	2.64	
AO12-1	16	1.84		2.75	18.5			5.5	25.5	64	5	100		2.32	2.21	2.48	
AO13-1	11	2.00		2.8	13.6			3.9	15.1	78	3	100		2.46	2.36	2.61	0.35
AP1-1	6.10	2.40		3.00	13.10			16.70	35.30	46.00	2.00	100		2.48	2.38		
AP9-1	16	2.38		2.65													
AP9-1 (1.50)					9.7			9.6	13.4	73	4	100		2.45	2.39	2.54	0.1
AP3-1	16	2.39		2.65													
AP3-1 (0.50)					22.5			8.5	20.5	71	0	100		2.23	2.12	2.38	
AP4-1	18	2.37		2.65													
AP4-1 (1.90)					13.7			11.2	19.8	69	0	100		2.36	2.27	2.49	0.13
AP5-1 @ 1.60m	16.00	1.92		2.65	16.10			17.30	18.70	64.00	0.00	100.00		2.41	2.34	2.50	2.70
AP10-1	7.1	2.09		2.7	12.4			6.3	19.7	65	9	100		2.49	2.74		0.28
AQ-1	0.86	1.99		2.5	23.4			14.2	27.8	58	0	100		2.44	2.33		0.36
AQ1-1	8.60	1.99		2.50	23.40			14.20	27.80	58.00	0.00	100		2.44	2.33		0.50
AQ9-1	18	2.38		2.65													
AQ9-1 (1.40)					12.6			12	15	65	8	100		2.55	2.51	2.61	0.1
AQ10-1	8.7	2.60		3.55	12.6			9.3	21.7	65	4	100		2.64	2.54		
AR1-1	17	2.38		2.65													
AR1-1 (2.00)					13.7			13.7	18.3	68	0	100		2.72	2.66	2.82	
AR2-1	10.00	1.97		2.80	22.20			19.00	22.00	59.00	0.00	100		2.62	2.49		
AR4-1	17	1.88		3.2	31.7			12.1	33.9	54	0	100		2.85	2.72		
AR9-1	17	2.37		2.65													
AR9-1 (1.00)					13.2			5.7	16.3	78	0	100		2.33	2.23	2.49	
AR10-1	7	2.25		2.75	7.8			13.8	58.2	28	0	100		2.64	2.6		0.10
AR11-1	7	2.25		2.8	7.6			16.6	53.4	30	0	100		2.68	2.59		
AS2-1	17	2.39		2.65													
AS2-1 (1.50)					20.2			8.5	27.5	64	0	100		2.77	2.67	2.97	-1.58
AS3-1	14.00	2.00		3.00	21.30			24.50	19.50	55.00	1.00	100		2.67	2.57		0.75
AS4-1	8.3	2.23		2.9	8.2			4	18	75	3	100		2.72	2.67		-0.40
AS5-1	14	1.85		2.7	17.4			18	21	61	0	100		2.55	2.44		0.40
AS6	11	2.35		3.4	12			2.5	20.5	77	0	100		2.97	2.88		10.10
AS7	15	1.79		2.65	26.8			8.4	27.6	64	0	100		2.37	2.27		
AS9-1	7.8	2.31		2.95	11.1			10.7	33.3	42	14	100		2.91	2.8		

Soil ID	Compaction				General	Particle Distribution											
						Fines											
	Optimum Moisture Content (%)	Max Dry Density (Mg/m3)	Natural Moisture Content (%)	Assumed/ Measured Particle Density (Mg/m3)	Water Content (%)	Clay % (<0.004mm)	Silt % (0.004 - 0.062mm)	% Fines (<0.062)	Sand % (0.062 - 2mm)	Gravel % (2-63mm)	Cobbles % (64-124mm)	Total	Initial Moisture Content %	Density on a saturated and surface-dried basis (Mg/m3)	Partilcle density on an oven-dried basis (Mg/m3)	Apparent Particle Density	Total Expansion (%)
AT3-1	18	2.38		2.65													
AT3-1 (2.50)					14.4			5.6	24.4	70	0	100		2.85	2.76	3.05	2.3
AT4-1	13.00	1.93		2.80	24.50			21.50	18.50	51.00	9.00	100		2.59	2.47		
AT4-1	13	1.93		2.8	24.5			21.5	18.5	54	6	100		2.59	2.47		
AT5-1	13	2.05		2.9	15.2			33.8	27.2	39	0	100		2.55	2.43		
AT6-1	15	2.13		3.4	21.4			12.7	22.3	60	5	100		3.07	2.96		0.20
AT7-1	18	2.38		2.65													
AT7-1 (1.80)					10.4			2.4	12.6	85	0	100		2.69	2.62	2.8	
AV4-1	18	2.38		2.65													
AV4-1 (1.80)					18.4			9.4	17.6	73	0	100		3.03	2.94	3.23	
AT9-1 (0.90)	11	2.07		3	13.1			19.9	26.1	54	0	100		2.7	2.61	2.88	0
AT9-1	13	2.23		3.25	12.8			3.2	22.8	71	3	100		3.03	2.92		7.18
AU5-1	12	1.86		2.6	12.9			25.3	27.7	47	0	100		2.43	2.27		
AU6-1	15	2.08		3.25	20.7			20.1	21.9	52	6	100		2.33	2.19		1.70
AU7-1	15	2.15		3.4	18.6			6.7	25.3	68	0	100		2.88	2.77		
AV4-1	18	2.38		2.65													
AV4-1 (1.80)					18.4			9.4	17.6	73	0	100		3.03	2.94	3.23	
AV5-1	16	2.40		2.65													
AV5-1 (1.00)					14			12.4	18.6	69	0	100		2.78	2.71	2.9	
AV6-1	13	2.15		3.3	14.9			10.9	18.1	71	0	100		3.03	2.92		1.10
AW6-1	17	2.38		2.65													
AW6-1 (1.00)					18.2			12.4	18.6	69	0	100		1.93	1.88	1.98	

celtest
INDEPENDENT MATERIALS TESTING | DIAMOND DRILLING & SAWING

St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 31 January 2023
Test Report Ref: TR 927594

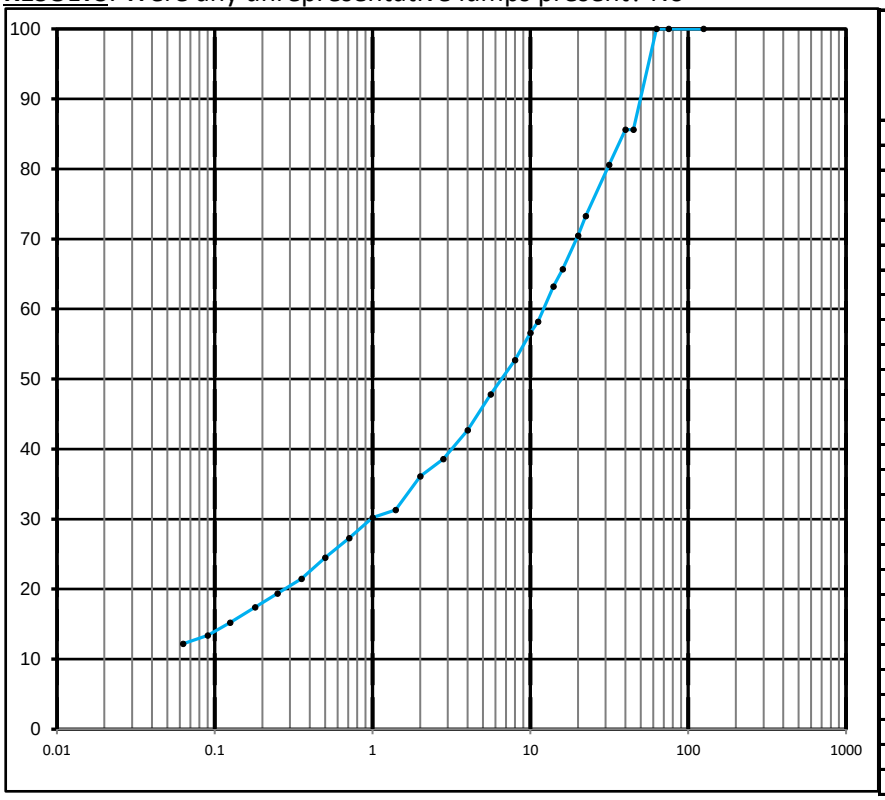
LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Particle Size Distribution (PSD) of a aggregate sample-washing and sieving method in accordance with **BS EN 933-1: 2012.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S107420**	Method of Sampling:	**Unknown**
Client Ref. No:	**AF3-1 - 0.2**	Sampled By:	**Client (Test results apply to sample as received)**
Date and Time of Sampling:	**Unknown**	Tested By:	**BR**
Date of Receipt at Lab:	**16/12/2022**		
Date of Start of Test:	**12/01/2023**		
Sampling Location:	**AF3-1 - 0.2**		
Material Description	**Granular Material**		

RESULTS: Were any unrepresentative lumps present? No



BS Test Sieve Size	Percentage By Mass Passing	Specification Limit
125.0 mm	100	
75.0 mm	100	
63.0 mm	100	
45.0 mm	86	
40.0 mm	86	
31.5 mm	81	
22.4 mm	73	
20.0 mm	71	
16.0 mm	66	
14.0 mm	63	
11.2 mm	58	
10.0 mm	57	
8.0 mm	53	
5.6 mm	48	
4.0 mm	43	
2.8 mm	39	
2.0 mm	36	
1.4 mm	31	
1.0 mm	30	
0.710 mm	27	
0.500 mm	25	
0.355 mm	22	
0.250 mm	19	
0.180 mm	17	
0.125 mm	15	
0.090 mm	13	
0.063 mm	12.2	

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These results relate only to the items tested.

Comments:

None

Report checked and approved by:

Chantelle Kopec-Williams
Job Coordinator

St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 31 January 2023
Test Report Ref: TR 927595

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S107420**
Client Ref. No:	**AF3-1 - 0.2**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**16/12/2022**
Date of Start of Test:	**12/01/2023**
Sampling Location:	**AF3-1 - 0.2**
Name of Source:	**Former Llanwern Steelworks**
Method of Sampling:	**Unknown**
Sampled By:	**Client (Test results apply to sample as received)**
Tested By:	**BR**
Material Description:	**Granular Material**
Target Specification:	**N/A**

RESULTS:

Water Content (%) =	**15.9**

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These results relate only to the items tested.

Comments:	Report checked and approved by:
None	Chantelle Kopec-Williams Job Coordinator

St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 30 March 2023
Test Report Ref: TR 927596

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Dry Density and Moisture Content Relationship of soil using a 4.5kg Rammer Method in accordance with BS 1377: 4: 1990 Clause 3.6

SAMPLE DETAILS:

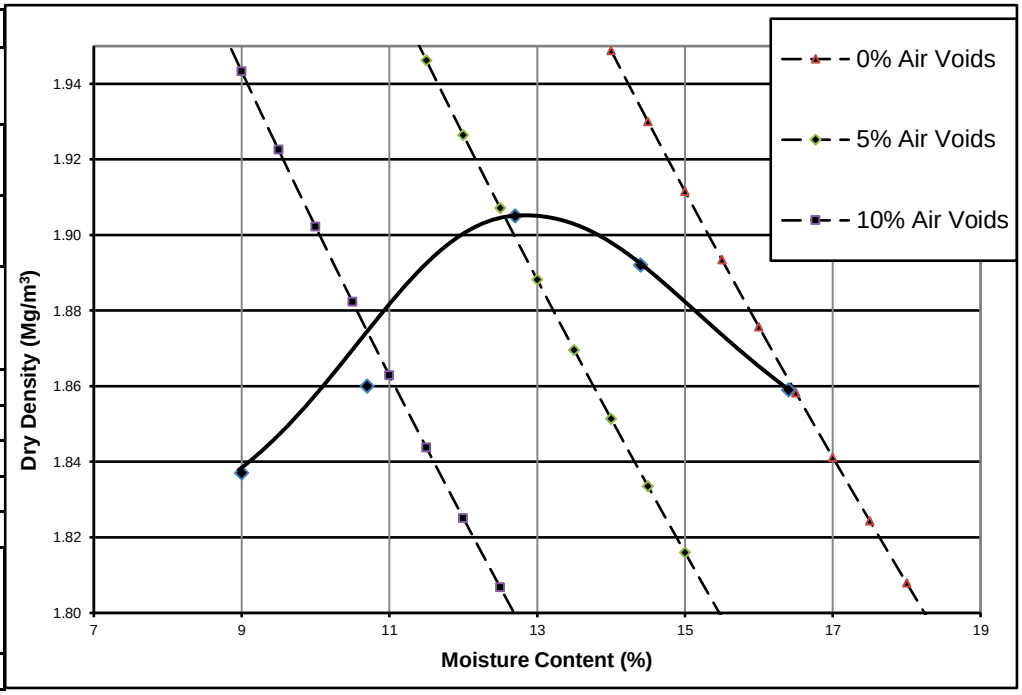
Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S107420**	Method of Sampling:	**Unknown**
Client Ref. :	**AF3-1 - 0.2**	Sampled By:	**Client (Test results apply to sample as received)**
Date and Time of Sampling:	**Unknown**	Tested By:	**JA**
Date of Receipt at Lab:	**16/12/2022**	Sample Preparation Procedure:	**Zone X**
Date of Start of Test:	**30/03/2023**	Sample Preparation Method:	**Separate batches**
Sampling Location:	**AF3-1 - 0.2**		
Soil Description:	**Granular Material**		

RESULTS:

Particle Density: 2.68Mg/m3 (Assumed)

Retained on 37.5mm Sieve:	14
Retained on 20mm Sieve:	51

Moisture Content (%)	Dry Density Mg/m^3
9.0	1.84
10.7	1.86
12.7	1.91
14.4	1.89
16.4	1.86
Optimum Moisture Content (%)	**Maximum Dry Density Mg/m^3**
13.0	**1.91**



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These results relate only to the items tested.

Comments:
None

Report checked and approved by:

Chantelle Kopec-Williams
Job Coordinator

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St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 20 February 2023
Test Report Ref: TR 927597

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Particle Density and water absorption for aggregate sample between 4 mm and 31.5mm, in accordance with **BS EN 1097-6: 2013 Clause 8**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S107420**
Client Ref. No:	**AF3-1 - 0.2**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**16/12/2022**
Date of Start of Test:	**20/02/2023**
Sampling Location:	**AF3-1 - 0.2**
Name of Source:	**Former Llanwern Steelworks**
Method of Sampling:	**Unknown**
Sampled By:	**Client (Test results apply to sample as received)**
Tested By:	**DW**
Material Description:	**Granular Material**
Target Specification:	**N/A**

RESULTS:

Particle density on an oven-dried basis =	**2.35 Mg/m³**
Particle density on a saturated and surface-dried basis =	**2.45 Mg/m³**
Apparent Particle density =	**2.62 Mg/m³**
Water absorption (of dry mass) =	**4.4 %**

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These results relate only to the items tested.

Comments:	Report checked and approved by:
None	Chantelle Kopec-Williams Job Coordinator

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St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 21 February 2023
Test Report Ref: TR 927598

LABORATORY TEST REPORT

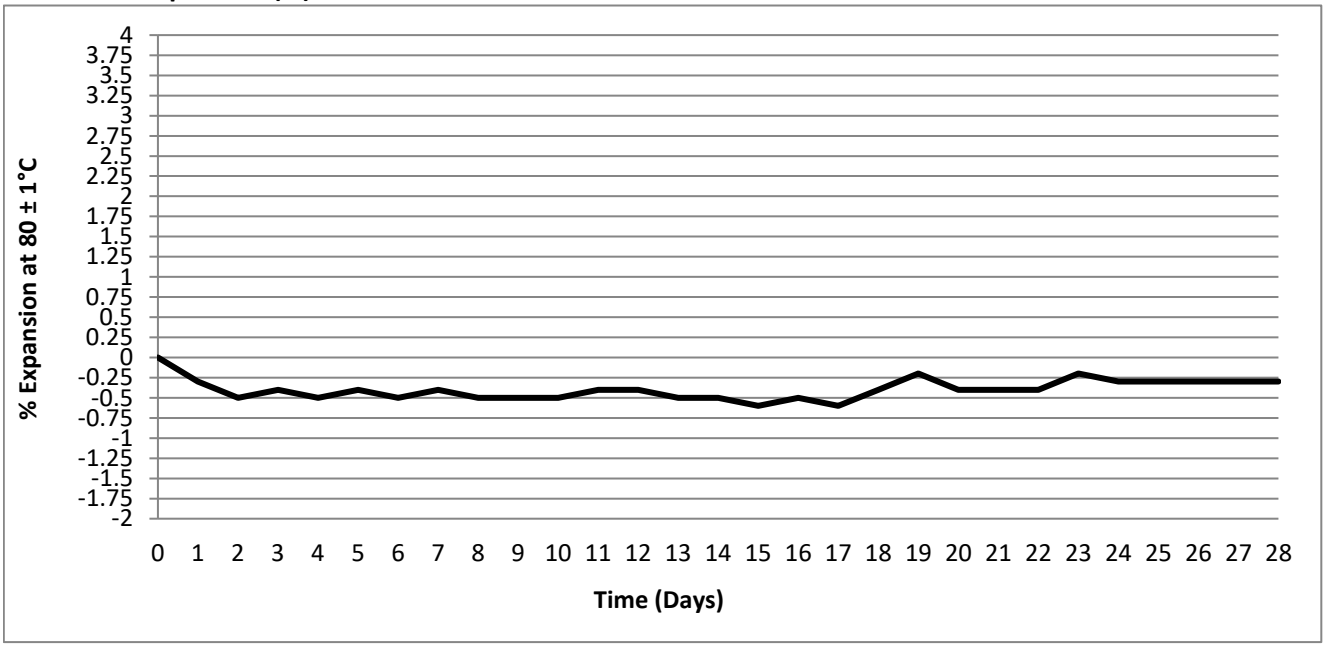
TEST REQUIREMENTS: To determine the Expansion of Steel Slag over 28 days at 80°C by **BRE in-house method (BR 481 Part B - Appendix B)**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S107420**
Client Ref. No:	**AF3-1 - 0.2**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**16/12/2022**
Date of Start of Test:	**20/02/2023**
Sampling Location:	**AF3-1 - 0.2**
Name of Source:	**Former Llanwern Steelworks**
Method of Sampling:	**Unknown**
Sampled By:	**Client (Test results apply to sample as received)**
Tested By:	**AW**
Material Description:	**Granular Material**
Target Specification:	**N/A**

RESULTS:

Total Expansion at 28 days (%) = -0.34
Maximum Expansion (%) = -0.2



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Comments:

% of material retained on the 20mm sieve = 34

Report checked and approved by:

Chantelle Kopec-Williams
Job Coordinator

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St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 31 January 2023
Test Report Ref: TR 927599

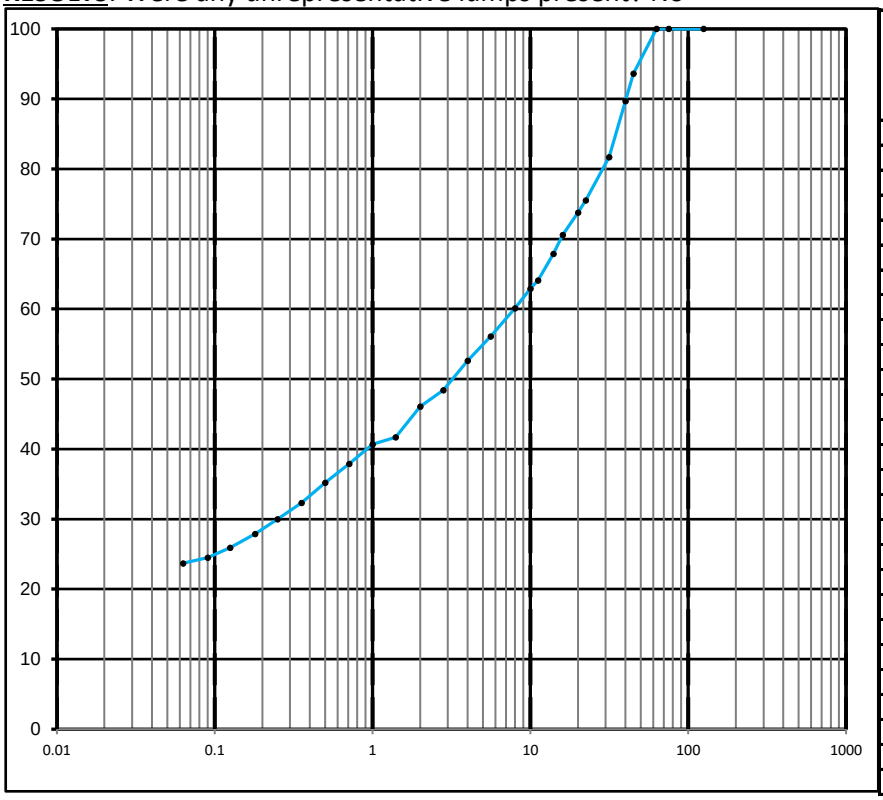
LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Particle Size Distribution (PSD) of a aggregate sample- washing and sieving method in accordance with **BS EN 933-1: 2012.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S107420**	Method of Sampling:	**Unknown**
Client Ref. No:	**AG4-1 - 1.7**	Sampled By:	**Client (Test results apply to sample as received)**
Date and Time of Sampling:	**Unknown**	Tested By:	**BR**
Date of Receipt at Lab:	**16/12/2022**		
Date of Start of Test:	**12/01/2023**		
Sampling Location:	**AG4-1 - 1.7**		
Material Description	**Granular Material**		

RESULTS: Were any unrepresentative lumps present? No



BS Test Sieve Size	Percentage By Mass Passing	Specification Limit
125.0 mm	100	
75.0 mm	100	
63.0 mm	100	
45.0 mm	94	
40.0 mm	90	
31.5 mm	82	
22.4 mm	76	
20.0 mm	74	
16.0 mm	71	
14.0 mm	68	
11.2 mm	64	
10.0 mm	63	
8.0 mm	60	
5.6 mm	56	
4.0 mm	53	
2.8 mm	48	
2.0 mm	46	
1.4 mm	42	
1.0 mm	41	
0.710 mm	38	
0.500 mm	35	
0.355 mm	32	
0.250 mm	30	
0.180 mm	28	
0.125 mm	26	
0.090 mm	25	
0.063 mm	23.7	

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These results relate only to the items tested.

Comments:

None

Report checked and approved by:

Chantelle Kopec-Williams
Job Coordinator

St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 31 January 2023
Test Report Ref: TR 927600

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S107420**
Client Ref. No:	**AG4-1 - 1.7**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**16/12/2022**
Date of Start of Test:	**12/01/2023**
Sampling Location:	**AG4-1 - 1.7**
Name of Source:	**Former Llanwern Steelworks**
Method of Sampling:	**Unknown**
Sampled By:	**Client (Test results apply to sample as received)**
Tested By:	**BR**
Material Description:	**Granular Material**
Target Specification:	**N/A**

RESULTS:

Water Content (%) =	**17.7**

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Comments:	Report checked and approved by:
None	Chantelle Kopec-Williams Job Coordinator

St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 15 February 2023
Test Report Ref: TR 927601

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Dry Density and Moisture Content Relationship of soil using a 4.5kg Rammer Method in accordance with BS 1377: 4: 1990 Clause 3.6

SAMPLE DETAILS:

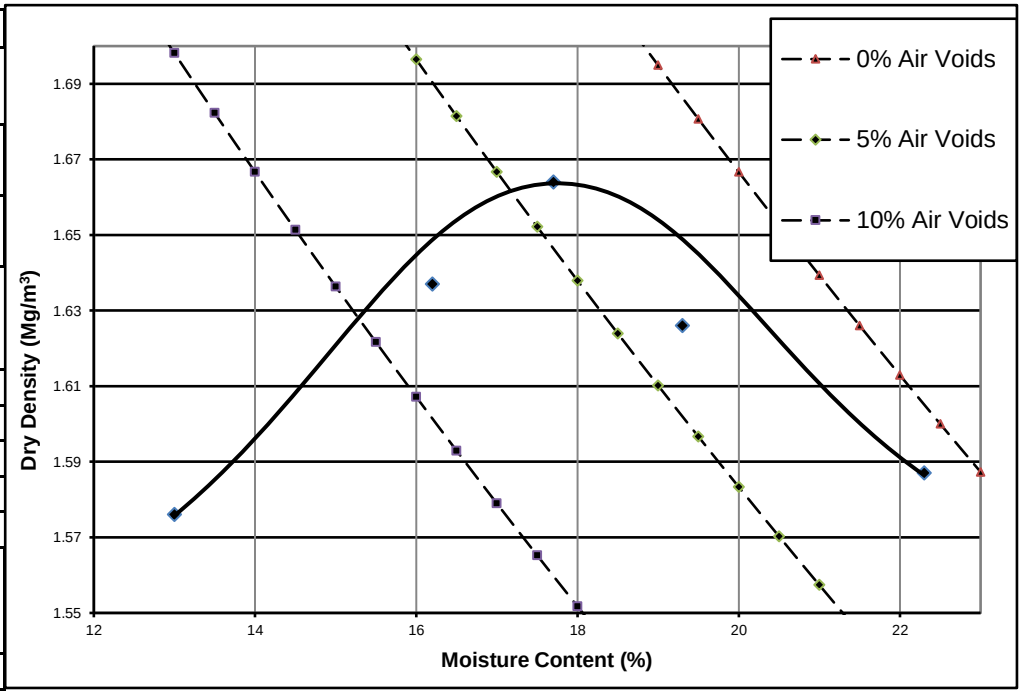
Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S107420**	Method of Sampling:	**Unknown**
Client Ref. :	**AG4-1 - 1.7**	Sampled By:	**Client (Test results apply to sample as received)**
Date and Time of Sampling:	**Unknown**	Tested By:	**JA**
Date of Receipt at Lab:	**16/12/2022**	Sample Preparation Procedure:	**Zone X**
Date of Start of Test:	**08/02/2023**	Sample Preparation Method:	**Separate batches**
Sampling Location:	**AG4-1 - 1.7**		
Soil Description:	**Granular Material**		

RESULTS:

Particle Density: 2.5Mg/m3 (Assumed)

Retained on 37.5mm Sieve:	15
Retained on 20mm Sieve:	32

Moisture Content (%)	Dry Density Mg/m^3
13.0	1.58
16.2	1.64
17.7	1.66
19.3	1.63
22.3	1.59
Optimum Moisture Content (%)	**Maximum Dry Density Mg/m^3**
18.0	**1.68**



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These results relate only to the items tested.

Comments:
None

Report checked and approved by:

Chantelle Kopec-Williams
Job Coordinator

St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 20 February 2023
Test Report Ref: TR 927602

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Particle Density and water absorption for aggregate sample between 4 mm and 31.5mm, in accordance with **BS EN 1097-6: 2013 Clause 8**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S107420**
Client Ref. No:	**AG4-1 - 1.7**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**16/12/2022**
Date of Start of Test:	**20/02/2023**
Sampling Location:	**AG4-1 - 1.7**
Name of Source:	**Former Llanwern Steelworks**
Method of Sampling:	**Unknown**
Sampled By:	**Client (Test results apply to sample as received)**
Tested By:	**DW**
Material Description:	**Granular Material**
Target Specification:	**N/A**

RESULTS:

Particle density on an oven-dried basis =	**2.49 Mg/m³**
Particle density on a saturated and surface-dried basis =	**2.60 Mg/m³**
Apparent Particle density =	**2.79 Mg/m³**
Water absorption (of dry mass) =	**4.4 %**

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These results relate only to the items tested.

Comments:	Report checked and approved by:
None	Chantelle Kopec-Williams Job Coordinator

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St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 31 January 2023
Test Report Ref: TR 927603

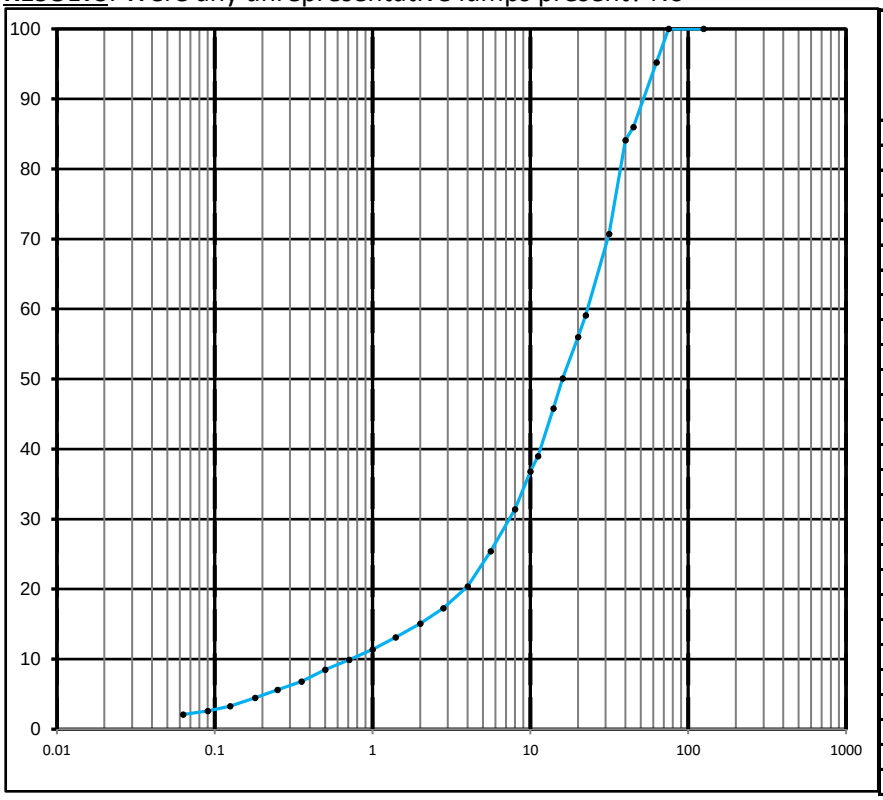
LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Particle Size Distribution (PSD) of a aggregate sample- washing and sieving method in accordance with **BS EN 933-1: 2012.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S107420**	Method of Sampling:	**Unknown**
Client Ref. No:	**AG5-1 - 2.3**	Sampled By:	**Client (Test results apply to sample as received)**
Date and Time of Sampling:	**Unknown**	Tested By:	**BR**
Date of Receipt at Lab:	**16/12/2022**		
Date of Start of Test:	**12/01/2023**		
Sampling Location:	**AG5-1 - 2.3**		
Material Description	**Granular Material**		

RESULTS: Were any unrepresentative lumps present? No



BS Test Sieve Size	Percentage By Mass Passing	Specification Limit
125.0 mm	100	
75.0 mm	100	
63.0 mm	95	
45.0 mm	86	
40.0 mm	84	
31.5 mm	71	
22.4 mm	59	
20.0 mm	56	
16.0 mm	50	
14.0 mm	46	
11.2 mm	39	
10.0 mm	37	
8.0 mm	31	
5.6 mm	25	
4.0 mm	20	
2.8 mm	17	
2.0 mm	15	
1.4 mm	13	
1.0 mm	11	
0.710 mm	10	
0.500 mm	8	
0.355 mm	7	
0.250 mm	6	
0.180 mm	4	
0.125 mm	3	
0.090 mm	3	
0.063 mm	2.1	

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These results relate only to the items tested.

Comments:

None

Report checked and approved by:

Chantelle Kopec-Williams
Job Coordinator

St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 31 January 2023
Test Report Ref: TR 927604

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Water Content of aggregates by – drying in a ventilated oven according to **BS EN 1097-5: 2008**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S107420**
Client Ref. No:	**AG5-1 - 2.3**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**16/12/2022**
Date of Start of Test:	**12/01/2023**
Sampling Location:	**AG5-1 - 2.3**
Name of Source:	**Former Llanwern Steelworks**
Method of Sampling:	**Unknown**
Sampled By:	**Client (Test results apply to sample as received)**
Tested By:	**BR**
Material Description:	**Granular Material**
Target Specification:	**N/A**

RESULTS:

Water Content (%) =	**11.3**

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These results relate only to the items tested.

Comments:	Report checked and approved by:
None	Chantelle Kopec-Williams Job Coordinator

St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 30 March 2023
Test Report Ref: TR 927605

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Dry Density and Moisture Content Relationship of soil using a 4.5kg Rammer Method in accordance with BS 1377: 4: 1990 Clause 3.6

SAMPLE DETAILS:

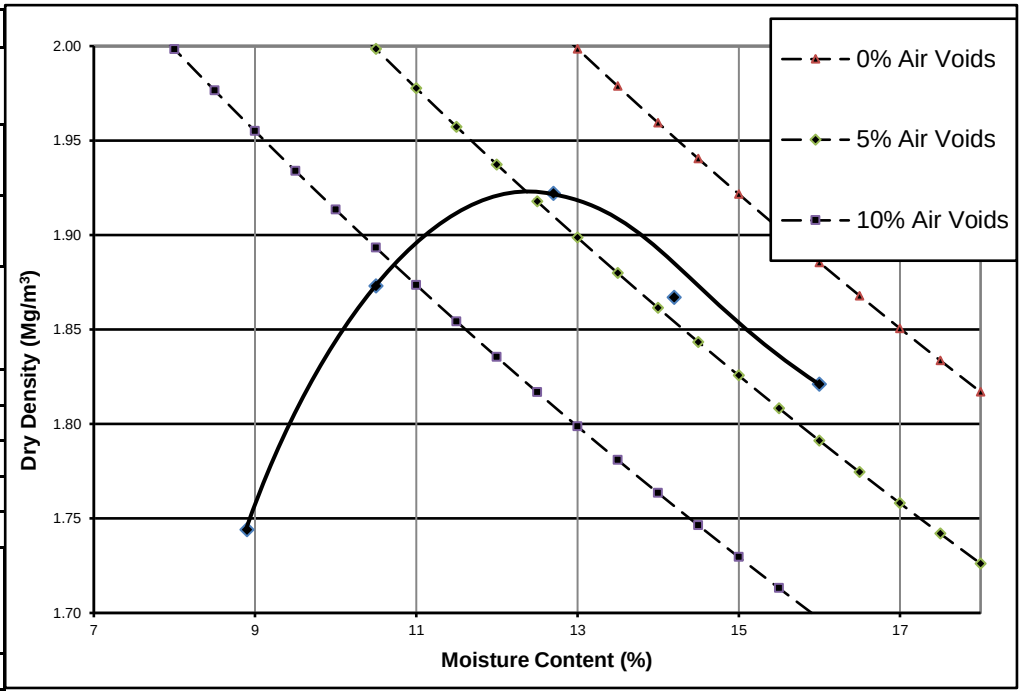
Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S107420**	Method of Sampling:	**Unknown**
Client Ref. :	**AG5-1 - 2.3**	Sampled By:	**Client (Test results apply to sample as received)**
Date and Time of Sampling:	**Unknown**	Tested By:	**JA**
Date of Receipt at Lab:	**16/12/2022**	Sample Preparation Procedure:	**Zone X**
Date of Start of Test:	**29/03/2023**	Sample Preparation Method:	**Separate batches**
Sampling Location:	**AG5-1 - 2.3**		
Soil Description:	**Granular Material**		

RESULTS:

Particle Density: 2.7Mg/m3 (Assumed)

Retained on 37.5mm Sieve:	20
Retained on 20mm Sieve:	46

Moisture Content (%)	Dry Density Mg/m^3
8.9	1.74
10.5	1.87
12.7	1.92
14.2	1.87
16.0	1.82
Optimum Moisture Content (%)	**Maximum Dry Density Mg/m^3**
12.0	**1.93**



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These results relate only to the items tested.

Comments:
None

Report checked and approved by:
Chantelle Kopec-Williams
Job Coordinator

St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 20 February 2023
Test Report Ref: TR 927606

LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Particle Density and water absorption for aggregate sample between 4 mm and 31.5mm, in accordance with **BS EN 1097-6: 2013 Clause 8**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S107420**
Client Ref. No:	**AG5-1 - 2.3**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**16/12/2022**
Date of Start of Test:	**20/02/2023**
Sampling Location:	**AG5-1 - 2.3**
Name of Source:	**Former Llanwern Steelworks**
Method of Sampling:	**Unknown**
Sampled By:	**Client (Test results apply to sample as received)**
Tested By:	**DW**
Material Description:	**Granular Material**
Target Specification:	**N/A**

RESULTS:

Particle density on an oven-dried basis =	**2.71 Mg/m³**
Particle density on a saturated and surface-dried basis =	**2.82 Mg/m³**
Apparent Particle density =	**3.04 Mg/m³**
Water absorption (of dry mass) =	**4.0 %**

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These results relate only to the items tested.

Comments:	Report checked and approved by:
None	Chantelle Kopec-Williams Job Coordinator

St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
Birmingham
B31 2TS

Date: 21 February 2023
Test Report Ref: TR 927607

LABORATORY TEST REPORT

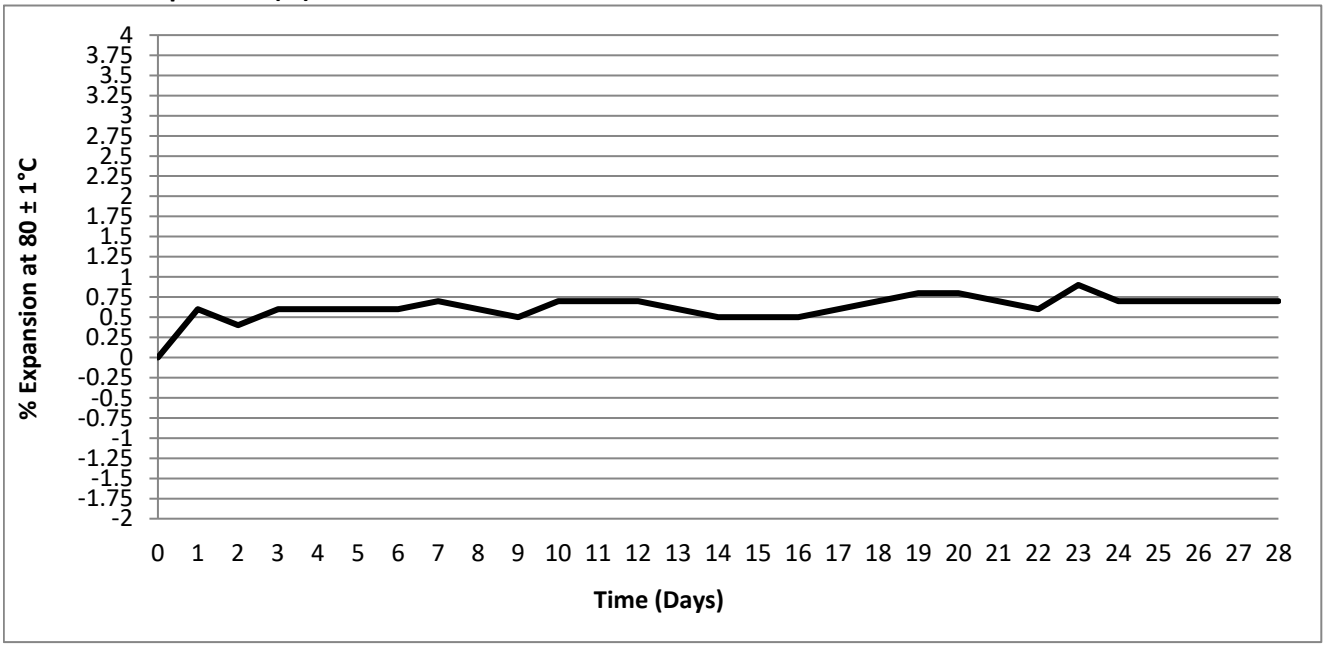
TEST REQUIREMENTS: To determine the Expansion of Steel Slag over 28 days at 80°C by **BRE in-house method (BR 481 Part B - Appendix B)**

SAMPLE DETAILS:

Certificate of sampling received:	**No**
Laboratory Ref. No:	**S107420**
Client Ref. No:	**AG5-1 - 2.3**
Date and Time of Sampling:	**Unknown**
Date of Receipt at Lab:	**16/12/2022**
Date of Start of Test:	**20/02/2023**
Sampling Location:	**AG5-1 - 2.3**
Name of Source:	**Former Llanwern Steelworks**
Method of Sampling:	**Unknown**
Sampled By:	**Client (Test results apply to sample as received)**
Tested By:	**AW**
Material Description:	**Granular Material**
Target Specification:	**N/A**

RESULTS:

Total Expansion at 28 days (%) = 0.7
Maximum Expansion (%) = 0.9



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These results relate only to the items tested.

Comments:

% of material retained on the 20mm sieve = 37

Report checked and approved by:

Chantelle Kopec-Williams
Job Coordinator

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St Modwen Developments (Llanwern) Limited
Two Devon Way
Longbridge
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B31 2TS

Date: 31 January 2023
Test Report Ref: TR 927608

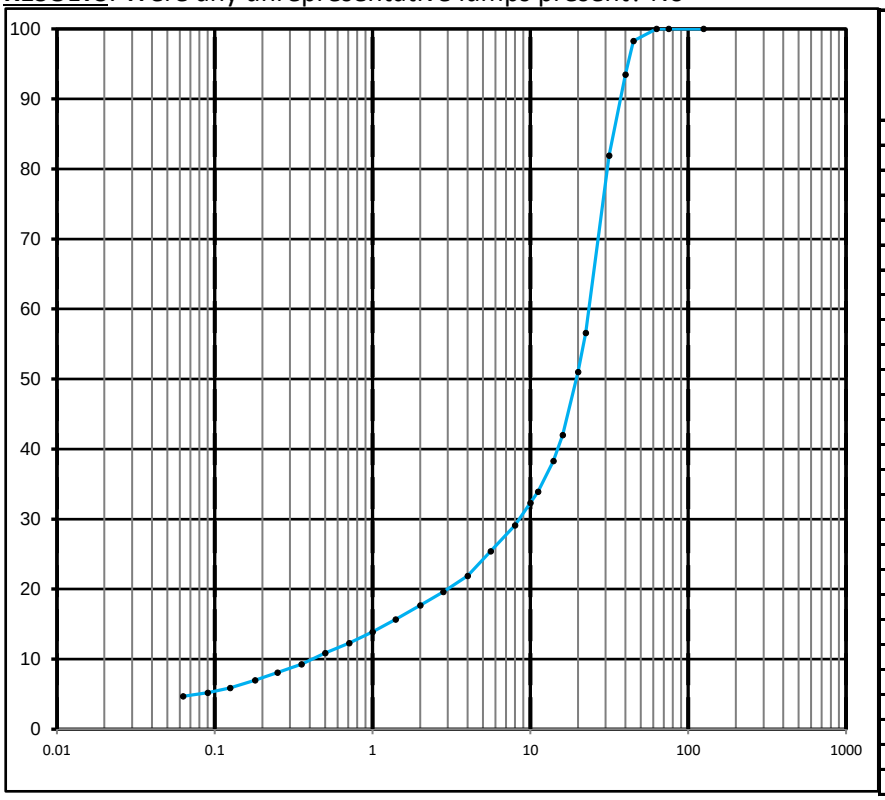
LABORATORY TEST REPORT

TEST REQUIREMENTS: To determine the Particle Size Distribution (PSD) of a aggregate sample- washing and sieving method in accordance with **BS EN 933-1: 2012.**

SAMPLE DETAILS:

Certificate of sampling received:	**No**	Name of Source:	**Former Llanwern Steelworks**
Laboratory Ref. No:	**S107420**	Method of Sampling:	**Unknown**
Client Ref. No:	**AH2-1 - 2**	Sampled By:	**Client (Test results apply to sample as received)**
Date and Time of Sampling:	**Unknown**	Tested By:	**BR**
Date of Receipt at Lab:	**16/12/2022**		
Date of Start of Test:	**12/01/2023**		
Sampling Location:	**AH2-1 - 2**		
Material Description	**Granular Material**		

RESULTS: Were any unrepresentative lumps present? No



BS Test Sieve Size	Percentage By Mass Passing	Specification Limit
125.0 mm	100	
75.0 mm	100	
63.0 mm	100	
45.0 mm	98	
40.0 mm	94	
31.5 mm	82	
22.4 mm	57	
20.0 mm	51	
16.0 mm	42	
14.0 mm	38	
11.2 mm	34	
10.0 mm	32	
8.0 mm	29	
5.6 mm	25	
4.0 mm	22	
2.8 mm	20	
2.0 mm	18	
1.4 mm	16	
1.0 mm	14	
0.710 mm	12	
0.500 mm	11	
0.355 mm	9	
0.250 mm	8	
0.180 mm	7	
0.125 mm	6	
0.090 mm	5	
0.063 mm	4.7	

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These results relate only to the items tested.

Comments:

None

Report checked and approved by:

Chantelle Kopec-Williams
Job Coordinator