



INTERPRETATIVE REPORT ON A GEOENVIRONMENTAL & GEOTECHNICAL GROUND INVESTIGATION

Dakota Hotels Manchester Airport

Reference

6338-JPG-XX-XX-RP-G-0604-S2-P02

Date

May 2024

Author

EJS

5 John Charles Way
LEEDS
LS12 6QA

Tel: 0113 263 1155
admin@jpg.group
www.jpg.group





CONTENTS

Confidentiality Statement

Document History

1.0	Introduction	1
1.1	Instruction	1
1.2	Objectives	1
1.3	Scope of Works	1
1.4	Location	1
1.5	Site Description and Topography	2
1.6	Development Proposals	2
1.7	Previous Reports	3
1.8	Limitations	3
2.0	Ground and Groundwater Conditions	4
2.1	Ground Conditions	4
2.2	In-Situ Testing	5
2.3	Geotechnical Laboratory Testing	5
2.4	Groundwater	9
2.5	Ground Gas	9
3.0	Geotechnical and Engineering Assessment	11
3.1	Development Proposals	11
3.2	Earthworks	11
3.3	Foundations and Ground Floor Slab	12
3.4	Ground Floor Slab	13
3.5	Roads, Pavements and Hardstanding Surfaces	13
3.6	Excavations	13
3.7	Obstructions/Existing Services	14
3.8	Chemical Attack on Buried Concrete	14
4.0	Environmental Risk Assessment	15
4.1	Introduction	15
4.2	Assessment Approach	16
4.3	Evaluation of Soils Analysis	17
4.4	Evaluation of Hazardous Ground Gases	20
4.5	Summary of Results	21
4.6	Requirements for Gas Protection Measures	21
4.7	Summary of Potential Sources, Pathways and Receptors	22
4.8	Risk Classification	22
4.9	Mitigation Measures	22
4.10	Classification of Materials for Disposal Offsite	23



APPENDICES

Appendix A Figures/Drawings

Figure 1 - Site Location Plan

Figure 2 - Aerial Photograph

Figure 3 - SPT N Value v Level (m AOD) - Natural Ground

Figure 4A- Rock Strength v Depth (m bgl)

Figure 4B- Rock Strength v Level (m AOD)

JPG. Exploratory Hole Location Plan. Dakota Hotel, Manchester Airport. Drawing No. 6338-JPG-ZZ-ZZ-DR-G-1101 S2 P03. Dated 28 March 2024.

KPP Architects. Proposed Site Plan. Dakota Hotel, Land off Enterprise Way, Wythenshawe. Dated May 2024.

Appendix B HazWasteOnline Waste Classification

Appendix C Notes on Limitations



CONFIDENTIALITY STATEMENT

This report is addressed to and may be relied upon by the following:

Evans Dakota Hotels Limited
Millshaw
LEEDS
LS10 1AB

This report has been prepared for the sole use and reliance of the above-named party. This report shall not be relied upon or transferred to any other parties without the express written authorisation of JPG (Leeds) Limited. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party.

DOCUMENT HISTORY

Revision	Date	Revision Details	Status	Author(s)	Approved
P01	03.05.2024	First Issue	Information	EJS	RJM
P02	31.05.2024	Updated Site Plan	Final	EJS	RJM



EXECUTIVE SUMMARY

Site Address	Dakota Hotel, Manchester Airport
Site Location	NGR 381961 386038.
Current Site Use & Proposed Development	The site has an area of approximately 1.22 hectares (ha) and comprises an irregular shaped relatively level parcel of land. It measures approximately 110m along its north to south axis and 140m along its east to west axis. Vehicular access to the site is off Bailey Lane from the north west. Most of the site is covered with bitmac and crushed stone, with smaller areas of concrete hardstanding. A shallow embankment, approximately 2m high, runs along the south eastern, south western and north western boundaries of the site. Mature and semi-mature trees are located along the north eastern boundary of the site.
Previous Reports	This report should be read in conjunction with the 2024 JPG Geoenvironmental Desk Study report and the 2024 JPG Factual Geoenvironmental Investigation report.
Ground and Groundwater Conditions	Made ground was encountered to depths of between 0.35m bgl and 0.90m bgl. The underlying natural strata typically comprised superficial deposits of Devensian Till, described as firm to stiff, light orangish brown to dark greyish brown slightly sandy, gravelly clay to depths of between 1.00m bgl and 3.15m bgl. The underlying bedrock comprised firm to light greyish brown and dark reddish brown, occasionally mottled grey gravelly clay and sandy occasionally clayey gravel of mudstone. The strength of the underlying bedrock was found to increase with depth, becoming extremely weak, thinly laminated, light grey and brown, de-structured, occasionally distinctly weathered mudstone.
Geotechnical and Engineering Assessment	<p>Earthworks - There will be a requirement to carry out earthworks in order to create a suitable development platform. This will include the importation and compaction of suitable fill materials in order to achieve the required levels. Any earthworks should be carried out in accordance with the Manual of Contract Documents for Highway Works, Volume 1 Specification for Highway Works, Series 600 Earthworks. If consideration is being given to the use of the natural cohesive soils in earthworks as engineered fill, then in order to reduce the moisture content of the material, lime and/or cement should be added to improve the material. Proper selection and control will be required as part of the earthworks. The materials should not be allowed to deteriorate during excavation and compaction and must be sufficiently protected from traffic after placement.</p> <p>Foundations - The selection of foundation type will be largely governed by the thickness of the made ground and the nature of the underlying natural ground. The made ground is unsuitable for the support of structural loads due to variations in material properties. Where the underlying shallow natural ground comprises medium strength and high strength cohesive deposits, allowable bearing capacities of 80kN/m² and 150kN/m² will be available respectively for settlements of less than 25mm. However, based on the nature of the proposed development and relatively high foundation loads it is considered likely that a greater bearing capacity will be required. It is therefore recommended that foundation loads are transferred to deeper natural strata of suitable bearing capacity. It is therefore recommended that a piled foundation solution is adopted.</p> <p>Ground Floor Slab - For a ground bearing floor slab, it is recommended that the formation level is proof rolled and inspected. Any soft or loose materials should be removed and replaced with suitably compacted granular fill. Any proposed earthworks should be designed in order to achieve the specified allowable bearing capacity and limits on settlement.</p> <p>Roads, Pavements and Hardstanding Surfaces - Based on the ground conditions encountered, it is recommended that a design CBR value of 3% is adopted for the natural ground materials. Prior to roads and hardstanding being formed, the formation should be proof rolled and any soft or loose materials should be removed and replaced with well compacted suitable granular materials.</p> <p>Excavations - Based on the nature of the made ground, underlying natural strata and the presence of shallow groundwater. It is considered likely that if excavations were left unsupported, then over time collapse would occur.</p> <p>Obstructions/Existing Services - Based on the findings of the ground investigation, obstructions should be expected. A live water service crosses the site and evidence suggests that an attenuation tank is present in the east of the site. It is recommended that an allowance should be made for breaking out of obstructions and removal of the attenuation tank.</p> <p>Chemical Attack on Buried Concrete - Concrete should be designed to Aggressive Chemical Environment for Concrete (ACEC) Design Sulphate Class DS-1 and ACEC Class AC-1.</p>
Environmental Risk Assessment & Waste Classification	Based on the results of the chemical analysis and hazardous ground gas monitoring, no potential sources of contamination have been identified. Therefore, there is negligible risk to human health or controlled waters. 10 samples of made ground and one sample of natural ground were assessed using HazWasteOnline™ in order to determine the classification of the materials for disposal off-site. All of the samples were classified as non-hazardous.
Hazardous Ground Gases	The ground gas assessment carried out classifies the site as Characteristic Situation (CS) 1 in accordance with BS8485:2015+A1:2019. Therefore, no gas protection measures will be required. No radon protective measures are required.



This sheet is intended as a summary only of the assessment of the site in relation to ground condition. It does not provide a definitive engineering analysis.



1.0 INTRODUCTION

1.1 Instruction

JPG (Leeds) Limited (JPG) has been instructed by Evans Dakota Hotels Limited to provide an interpretive geoenvironmental ground investigation report for a proposed hotel development off Enterprise Way immediately north east of Manchester Airport.

1.2 Objectives

The main objective of the ground investigation and interpretative geoenvironmental report is to identify potential geotechnical and environmental issues that may represent constraints to the proposed development of the site and if required, make recommendations for any remedial works.

1.3 Scope of Works

The scope of works for this interpretative geoenvironmental report includes the following.

- A detailed description of the ground conditions encountered.
- Assessment of potential contaminants to include a Tier 2 generic quantitative risk assessment (GQRA) specific to the proposed end-use using source-pathway-receptor linkages, including a hazardous ground gas risk assessment.
- An assessment of the classification of materials for disposal off-site (not including WAC testing).
- Comments on the likely requirements for remedial measures on the site, to address potential contamination or hazardous ground gas issues.
- Engineering assessment to include recommendations with respect to foundations, ground floor and pavement design.
- Recommendations for further work where appropriate; and,
- Presentation of the findings in a tabular non-technical summary.

1.4 Location

The site is located to the east of Junction 5 of the M56, approximately 500m to the north east of Terminal 2, Manchester Airport. The approximate centre of the site is located at NGR 381961 386038.

A site location plan is provided as Figure 1 in Appendix A.



1.5 Site Description and Topography

The site has an area of approximately 1.22 hectares (ha) and comprises an irregular shaped relatively level parcel of land. It measures approximately 110m along its north to south axis and 140m along its east to west axis. Vehicular access to the site is off Bailey Lane from the north west.

Most of the site is covered with bitmac and crushed stone, with smaller areas of concrete hardstanding.

A shallow embankment, approximately 2m high, runs along the south eastern, south western and north western boundaries of the site.

Mature and semi-mature trees are located along the north eastern boundary of the site.

Most of site is bound by a wooden fence, except for the entrance off Bailey Lane which comprises herras fencing secured with a combination lock. An additional fence/gate with a combination lock is located inside the site, close to the entrance off Bailey Lane.

A water house (wooden box) and water tap (live) were noted in the northern part of the site.

Bailey Lane is located immediately beyond the north western boundary beyond which are units occupied by the Razorblue Group and Etrop Grange Hotel. Woodland and houses are located beyond the site to the north east. A roundabout is located beyond the site to the south east and Enterprise Way is beyond the site to the south west.

Land beyond Enterprise Way to the south west and to the west beyond Bailey Lane are currently under construction.

An aerial photograph of the site is included as Figure 2 in Appendix A.

1.6 Development Proposals

The proposed development comprises a seven-storey hotel building with associated car parking, electrical charging points, service yard and landscaping.

A plan of the proposed development has been provided by the client. This is referenced below, and a copy is provided in Appendix A.

- KPP Architects. Proposed Site Plan. Dakota Hotel, Land off Enterprise Way, Wythenshawe. Dated May 2024.



1.7 Previous Reports

JPG have completed a desk study report and factual ground investigation report for the site, these are referenced below:

- JPG (Leeds) Limited. Geoenvironmental Desk Study Report. Dakota Hotel, Manchester Airport. Report Ref 6338-JPG-XX-XX-RP-G-0601 S2 P03. Dated February 2024.
- JPG (Leeds) Limited. Factual Report on Geoenvironmental Ground Investigation. Dakota Hotel, Manchester Airport. Report Ref 6338-JPG-XX-XX-RP-G-0603 S2 P01. Dated May 2024.

This interpretative report should be read in conjunction with the above referenced reports.

1.8 Limitations

The general limitations to the nature of the investigation are outlined in Appendix C.



2.0 GROUND AND GROUNDWATER CONDITIONS

2.1 Ground Conditions

The ground investigation confirmed a general surface covering of bitmac and/or gravel over made ground and natural strata comprising superficial deposits and residual soils of extremely weak mudstone of the Pennine Lower Coal Measures Formation.

Bitmac, which covered most the site, comprised two distinct layers. A surface wearing course to a maximum depth of 0.08m (WS103), typically this was encountered to a depth of 0.05m bgl. This was underlain by a base course comprising sandy gravel of bitmac to 0.30m bgl.

Made ground was encountered beneath the bitmac or from the ground surface to depths of between 0.35m bgl and 0.90m bgl.

Both granular and cohesive made ground was encountered and was described as the following:

- Dark to light greyish brown, occasionally black, occasionally clayey, sandy gravel.
- Multicoloured, predominantly greyish brown gravel.
- Dark brown, occasionally black, gravelly sand.
- Yellowish brown sandy gravel (crushed rock subbase).
- Dark orangish brown and reddish brown, occasionally sandy, gravelly clay.

The made ground included gravels, cobbles and boulders of concrete, brick, sandstone, quartzite, mudstone, coal, tarmac, coal, limestone and tiles.

A black plastic geotextile was encountered site wide at the base of the made ground.

The underlying natural strata typically comprised superficial deposits of Devensian Till, described as firm to stiff, light orangish brown to dark greyish brown slightly sandy, gravelly clay to depths of between 1.00m bgl and 3.15m bgl.

The underlying bedrock comprised firm to light greyish brown and dark reddish brown, occasionally mottled grey. Gravelly clay and sandy occasionally clayey gravel of mudstone. This is considered to be representative of residual soils, i.e. completely weathered mudstone of the Bollin Mudstone Member.

The strength of the underlying bedrock was found to increase with depth, becoming extremely weak, thinly laminated, light grey and brown, de-structured, occasionally distinctly weathered mudstone.



2.2 In-Situ Testing

The results of the in-situ standard penetration testing (SPTs) carried out in the rotary cored boreholes and window sample boreholes have been plotted against level (m AOD). The results have been corrected in accordance with the energy ratio of the testing equipment.

The plot is presented as Figure 3 in Appendix A and the SPT data (uncorrected) is included on the exploratory hole logs provided in Appendix B.

The results show a correlation of increasing strength with depth in the natural ground.

2.3 Geotechnical Laboratory Testing

The testing suite was designed to classify the materials. In addition, samples of rock core were submitted to assess their strength.

Rock Strength Testing

Rock strength testing was carried out by Professional Soils Laboratory (PSL). 49 samples were submitted for Point Load Strength Index testing and one sample was submitted for Uniaxial Compressive Strength (UCS) testing.

A summary of the laboratory uniaxial compressive strength (UCS) test is provided in Table 2.3.1.

Table 2.3.1 – Summary of Laboratory Uniaxial Compressive Strength (UCS) Test

Exp. Hole	Top of Sample Depth (m bgl)	Rock Type	Uniaxial Compressive Strength (MPa)	Strength
BHRC101	9.67	Mudstone	2.78	Very weak

The results of the point load index (PLI) tests have been corrected in accordance with Broch & Franklin (1972). The Is_{50} value has been multiplied by a factor of 24 in order to obtain an approximate UCS.

The equivalent UCS values based on the results of the PLI tests and multiplication factor are provided in Table 2.3.2.

Table 2.3.2 – Summary of Laboratory Point Load Index (PLI) Tests

Exp. Hole	Top Depth (m bgl)	Orientation Perp/Par	Point Load Index (PLI)	Calculated Uniaxial Compressive Strength (MPa)	Strength*
BHRC101	3.5	Perp	0.07	1.68	Very weak
	3.63	Perp	0.11	2.64	Very weak
	6.6	Perp	0.06	1.44	Very weak
	7	Perp	0.12	2.88	Very weak
	7.58	Par	0.02	0.48	Extremely weak
	7.65	Perp	0.14	3.36	Very weak
	7.9	Perp	0.1	2.4	Very weak
	9	Perp	0.22	5.28	Weak
	10.4	Perp	0.22	5.28	Weak



Exp. Hole	Top Depth (m bgl)	Orientation Perp/Par	Point Load Index (PLI)	Calculated Uniaxial Compressive Strength (MPa)	Strength*
	10.5	Perp	0.23	5.52	Weak
	12.05	Perp	0.05	1.2	Very weak
	12.7	Perp	0.08	1.92	Very weak
	13.62	Perp	0.29	6.96	Weak
	14.78	Perp	0.06	1.44	Very weak
	15.82	Perp	0.15	3.6	Very weak
	17.84	Perp	0.13	3.12	Very weak
	19.72	Perp	0.1	2.4	Very weak
	19.98	Perp	0.21	5.04	Weak
	20.97	Perp	0.19	4.56	Very weak
	21.6	Perp	0.36	8.64	Weak
BHRC102	5.17	Perp	0.18	4.32	Very weak
	6	Perp	0.38	9.12	Weak
	6.38	Perp	0.02	0.48	Extremely weak
	7.4	Perp	0.25	6	Very weak
	9.7	Perp	0.82	19.68	Weak
	10.1	Perp	0.31	7.44	Weak
	11.35	Perp	0.23	5.52	Weak
	12.1	Par	0.06	1.44	Very weak
	14.15	Perp	0.08	1.92	Very weak
	15.3	Perp	0.14	3.36	Very weak
	15.65	Perp	0.14	3.36	Very weak
	16.55	Perp	0.62	14.88	Weak
	16.85	Perp	0.14	3.36	Very weak
	17.55	Perp	0.34	8.16	Weak
	18.2	Perp	0.94	22.56	Weak
	19.8	Perp	0.81	19.44	Weak
	20.6	Perp	0.77	18.48	Weak
BHRC103	11.06	Perp	1.09	26.16	Medium strong
	12.22	Perp	0.17	4.08	Very weak
	14.05	Perp	0.02	0.48	Extremely weak
	14.62	Par	0.02	0.48	Extremely weak
	15.2	Perp	0.01	0.24	Extremely weak
	16.4	Perp	0.2	4.8	Very weak
	17.7	Perp	0.23	5.52	Weak
	18.7	Perp	0.2	4.8	Very weak
	19.3	Perp	0.26	6.24	Very weak
	20.85	Perp	0.29	6.96	Very weak
	21.3	Perp	0.12	2.88	Very weak
	23.25	Perp	1.08	35.92	Medium strong

The calculated uniaxial compressive strengths, based on the point load I_{s50} value, multiplied by a factor of 24 range between extremely weak and weak. Two of the tests, undertaken on samples at depths of 11.06m bgl and 23.25m bgl result in a strength of medium strong.



The results for all the rock strength tests have been plotted against depth (m bgl) and level (m AOD) and are presented as Figures 4A and 4B respectively in Appendix A.

There is no clear correlation of increasing strength with depth.

It should be noted that due to the weak nature of the bedrock it was not possible to select more samples to submit for UCS testing. Most of the bedrock was suitable for point load testing.

Moisture Content and Atterberg Limits

Moisture content and Atterberg limits testing has been carried out on 12 samples, comprising 10 of natural cohesive soil and two of cohesive made ground. The results are summarised in Table 2.3.3.

Table 2.3.3 – Summary of Moisture Content and Atterberg Limit Testing

Material	Moisture Content (%)		Atterberg Limits Modified Plasticity Index (%)	
	No of samples	Range	No of samples	Range
Cohesive Made Ground	2	Both 15	2	8.9 – 12.6
Natural Cohesive Soil	10	9.8 - 34	10	2.7 - 22

The moisture contents of the natural cohesive material typically range between 15% and 21%. The results of the modified plasticity indices for the natural cohesive soil typically ranges between 13% and 22%, indicating low to medium plasticity.

The Plasticity Indices reported have been modified based on the percentage of particles smaller than 425µm. The results indicate that the natural cohesive material is of low to medium plasticity, indicating a low to medium potential for volume change.

Particle Size Distribution

Particle size distribution/sedimentation testing has been carried out on two samples of natural cohesive material, one sample of natural granular material and three samples of cohesive made ground. The tests were carried out to confirm the field description of the materials and inform the earthworks classification. The results are summarised in Table 2.3.4.

Table 2.3.4 – Summary of Particle Size Distribution/Sedimentation Testing

Trial Pit	Depth (m bgl)	Material	Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
TP102	1.00	Firm orangish brown slightly gravelly sandy CLAY	0	3	30	38	29
TP103	0.40	MADE GROUND: Yellowish brown slightly sandy clayey GRAVEL	0	87	6	7	
TP106	0.70	Firm light orangish brown and mottled grey sandy CLAY	0	0	16	48	36
TP109	0.30	MADE GROUND: Reddish brown gravelly sandy CLAY	0	25	16	34	25
HP2	Bund	MADE GROUND: Brown gravelly very sandy CLAY	0	13	39	29	19

MG = Made Ground



Compaction Testing

Five soil samples, comprising three of natural cohesive, one of cohesive made ground and one granular made ground were submitted for dry density/moisture content relationship testing. The tests were carried out using a 2.5kg and a 4.5kg rammer. The results are summarised in Table 2.3.5.

Table 2.3.5 – Summary of Compaction Test Results

Exp. Hole	Depth (m bgl)	Material	Compaction Hammer	Particle Density (Mg/m ³)	Natural Moisture Content (NMC)	Max. Dry Density (Mg/m ³)	Optimum Moisture Content (OMC)	Suitability for Compaction and Range of Acceptable Moisture Contents*
TP102	1.00	Firm orangish brown slightly gravelly sandy CLAY	2.5kg	2.65	24	1.72	18	Unsuitable Too wet 17.5% to 23%
			4.5kg			1.84	15	Unsuitable Too wet 14% to 19%
TP103	0.40	MADE GROUND: Yellowish brown slightly sandy clayey GRAVEL.	2.5kg	2.7	9	2.09	9	Suitable 8.5% to 13.5%
			4.5kg			2.19	7	Suitable 6.5% to 11%
TP106	0.70	Firm light orangish brown and mottled grey sandy CLAY	2.5kg	2.66	21	1.74	18	Suitable 17% to 23%
			4.5kg			1.84	15	Unsuitable Too wet 14.5% to 19.5%
TP109	0.30	MADE GROUND: Reddish brown gravelly sandy CLAY	2.5kg	2.7	17	1.91	13	Suitable 13% to 18%
			4.5kg			2.05	10	Unsuitable Too wet 9.5% to 14%
HP2	Bund	MADE GROUND: Brown gravelly very sandy CLAY	2.5kg	2.6	12	1.80	15	Unsuitable Too dry 14.5% to 20%
			4.5kg			1.65	12	Suitable 12% to 16.5%

* To achieve >95% of Maximum Dry Density and <5% Air Voids.

Suitability for compaction is defined as achieving greater than 95% of the maximum dry density and less than 5% air voids.

Based on the results of the compaction testing, the samples of made ground are typically considered suitable for compaction. The sample from HP2 was a little too dry to achieve suitable compaction. The results for the samples of natural ground were typically suitable when subjected to lighter compaction with the 2.5kg hammer, but too wet when the 4.5kg hammer was used.



California Bearing Ratio Testing

The sample from the bund was submitted for California Bearing Ratio testing. The sample was compacted with a 2.5kg rammer. The result is summarised in Table 2.3.6 below.

Table 2.3.6 – Summary of California Bearing Ratio Testing

Sample Ref.	Depth (m bgl)	Material	CBR Value Top (%)	CBR Value Base (%)	Report CBR Average (%) *
HP2	Bund	Soft orangish brown and grey slightly sandy CLAY.	19.4	19.3	19.35

* To report a CBR average, the results from each end of the sample must be within +/- 10% of the mean value.

2.4 Groundwater

During the ground investigation, groundwater was encountered in TP105 at 2.00m bgl, TP108 at 3.20m bgl and BHRC102 from 4.50m bgl. No other water strikes were encountered during the investigation.

Gas and groundwater monitoring wells were installed in four of the window sample boreholes and two of the rotary cored boreholes. Groundwater monitoring has been carried out on six occasions between 8 March and 11 April 2024.

A summary of the monitored groundwater levels is provided in Table 2.4 below.

Table 2.4 – Summary of Monitored Groundwater Levels

Location	Water level during monitoring (m bgl)					
	08/03/2024	14/03/2024	19/03/2024	28/03/2024	03/04/2024	11/04/2024
WS101	1.65	Dry	1.50	1.30	1.30	1.20
WS103	1.75	Dry	1.60	1.50	1.40	1.45
WS104	1.40	1.70	1.50	1.40	1.20	1.05
WS105	1.80	Dry	Dry	1.50	1.50	1.35
BHRC10 1	2.00	2.00	2.00	1.80	1.80	1.85
BHRC10 3	2.00	2.20	2.10	2.00	1.85	2.00

It should be noted that the groundwater conditions recorded are based on observations made at the time that site work and monitoring was carried out. Groundwater levels are likely to vary owing to seasonal and weather-related effects.

2.5 Ground Gas

Hazardous ground gas monitoring has been undertaken on six occasions between 8 March and 11 April 2024. The works were carried out using a portable gas meter in accordance with the standard JGP methodology and included measurements of methane, carbon dioxide, oxygen, hydrogen sulphide, carbon monoxide, gas flows and atmospheric pressure.



The results of the gas monitoring are provided in the factual geoenvironmental ground investigation report and a summary of gas monitoring results is provided in Section 5 of this report.



3.0 GEOTECHNICAL AND ENGINEERING ASSESSMENT

3.1 Development Proposals

The proposed development comprises a seven-storey hotel building with associated car parking, electrical charging points, service yard and landscaping.

A plan of the proposed development has been provided by the client. This is referenced below, and a copy is provided in Appendix A.

- KPP Architects. Ground Floor & Car Park Plan. Dakota Manchester Airport. Dated April 2024.

3.2 Earthworks

There will be a requirement to carry out earthworks in order to create a suitable development platform. This will include the importation and compaction of suitable fill materials in order to achieve the required levels.

The results of the laboratory compaction testing indicate that the made ground soils are generally suitable for use under light compaction and that the natural cohesive soils are typically suitable when subjected to lighter compaction, but too wet under heavier compaction.

Any earthworks should be carried out in accordance with the Manual of Contract Documents for Highway Works, Volume 1 Specification for Highway Works, Series 600 Earthworks.

If consideration is being given to the use of the natural cohesive soils in earthworks as engineered fill, then in order to reduce the moisture content of the material, lime and/or cement should be added to improve the material. The addition of lime will result in a reduction in the moisture content and plasticity of the material, which will ultimately lead to an increase in strength.

The following document provides guidance on the assessment of the suitability of materials for improvement or stabilisation. Reference in this document is made to the Specification for Highways Works (MCHW).

- The Highways Agency Design Manual for Roads and Bridges, Advice Note HA 74/07, Volume 4, Section 1, Part 6, 'Treatment of Fill and Capping Materials Using Either Lime or Cement or Both' (HA74/07).

Improvement involves the almost immediate chemical and physical effects that the addition of lime has on the material. Normally only 1% to 2% of lime is required to be added to unsuitable materials in order to modify the material to render it suitable for use as general fill.



Once mixed the material is allowed to mellow (for 24 to 72 hours), this is the period of time when the material and lime mixture is left undisturbed after light compaction to allow the migration of the lime through the material clods created during mixing and for the improvement processes to take place.

If sufficient lime above that required for full improvement (termed the fixation level) is present in the mix, then this is termed stabilisation. Stabilisation is a long-term effect on cohesive materials to produce capping. Not all cohesive materials can be stabilised, but all materials can be improved.

The testing requirements for the suitability of the material for improvement are less onerous than those for stabilisation. Other than the need to be aware of the potential for material to swell over time due to the presence of elevated concentrations of sulphates, which can react with the lime.

Proper selection and control will be required as part of the earthworks. The materials should not be allowed to deteriorate during excavation and compaction and must be sufficiently protected from traffic after placement.

3.3 Foundations and Ground Floor Slab

Made ground was encountered to depths of between 0.35m bgl and 0.90m bgl. The underlying natural strata typically comprised superficial deposits of Devensian Till, described as firm to stiff, light orangish brown to dark greyish brown slightly sandy, gravelly clay to depths of between 1.00m bgl and 3.15m bgl. The underlying bedrock comprised firm to light greyish brown and dark reddish brown, occasionally mottled grey gravelly clay and sandy occasionally clayey gravel of mudstone. The strength of the underlying bedrock was found to increase with depth, becoming extremely weak, thinly laminated, light grey and brown, de-structured, occasionally distinctly weathered mudstone.

The selection of foundation type will be largely governed by the thickness of the made ground and the nature of the underlying natural ground. The made ground is unsuitable for the support of structural loads due to variations in material properties.

Where the underlying shallow natural ground comprises medium strength and high strength cohesive deposits, allowable bearing capacities of 80kN/m² and 150kN/ m² will be available respectively for settlements of less than 25mm.

However, based on the nature of the proposed development and relatively high foundation loads it is considered likely that a greater bearing capacity will be required. It is therefore recommended that foundation loads are transferred to deeper natural strata of suitable bearing capacity. It is therefore recommended that a piled foundation solution is adopted.

The carrying capacity of piles depends on their size, the ground conditions and on their method of installation. Pile design and installation is an ever-evolving process for contractors. It is recommended that specialist piling contractors are consulted as to the suitability and carrying capacity of their piles for the ground conditions on site.



3.4 Ground Floor Slab

For a ground bearing floor slab, it is recommended that the formation level is proof rolled and inspected. Any soft or loose materials should be removed and replaced with suitably compacted granular fill.

Any proposed earthworks should be designed in order to achieve the specified allowable bearing capacity and limits on settlement for the proposed ground floor slab.

3.5 Roads, Pavements and Hardstanding Surfaces

Based on the ground conditions encountered, it is recommended that a design CBR value of 3% is adopted for the natural ground materials.

Any earthworks/ground improvement works should be designed in order to provide a suitable CBR value for the proposed development.

Prior to roads and hardstanding being formed, the formation should be proof rolled and any soft or loose materials should be removed and replaced with well compacted suitable granular materials.

Materials with high fines content will deteriorate rapidly due to water ingress and tracking by construction plant. Adequate protection of formation levels will be required to maintain the strength of the material.

3.6 Excavations

Based on the nature of the made ground, underlying natural strata and the presence of shallow groundwater. It is considered likely that if excavations were left unsupported, then over time collapse would occur.

Good working practice with respect to drainage of excavations and formations will be required to protect materials. Any excavation for structural foundations must be covered without delay with blinding concrete to prevent softening by water.

The requirement for temporary support of excavations should be assessed on an individual basis and in any case, excavations of greater than 1.20m depth requiring man entry will require temporary support in accordance with HSE guidance. Alternatively, the sides of the excavation will need to be battered back for the safety of operatives. Guidance on safe batter slopes can be obtained from CIRIA Report 97 Trenching Practice.



3.7 Obstructions/Existing Services

Based on the findings of the ground investigation, obstructions should be expected.

Most of the site is covered with hardstanding of bitmac and concrete up to 0.30m thick. Cobbles and boulders of concrete, brick, sandstone, mudstone and limestone were encountered across the site within the made ground and extending into the shallow natural strata.

A live water service crosses the site and evidence suggests that an attenuation tank is present in the east of the site.

It is recommended that an allowance should be made for breaking out of obstructions and removal of the attenuation tank as part of the proposed works.

3.8 Chemical Attack on Buried Concrete

Laboratory testing has been undertaken on samples of the made ground, natural ground, and groundwater to determine the sulphate content and acidity and hence the concrete class required for buried concrete.

Laboratory testing of the made ground recorded water-soluble sulphate contents ranging between 3.57mg/l and 69.1mg/l and pH values of between 8.1 and 8.9.

Laboratory testing of the natural ground recorded water-soluble sulphate contents ranging between <10mg/l and 59mg/l and pH values of between 7.7 and 9.1.

In the groundwater, sulphate contents of 31.5mg/l and 54.8mg/l and pH values of 7.7 and 7.9 were recorded.

Foundations are likely to come into contact with made ground, natural ground and the underlying groundwater. On this basis it is recommended that concrete should be designed to Aggressive Chemical Environment for Concrete (ACEC) Design Sulphate Class DS-1 and ACEC Class AC-1, based on mobile groundwater conditions.

The site has been assessed in accordance with BRE Special Digest 1:2005 'Concrete in Aggressive Ground'. It has been assessed in accordance with the requirements for a brownfield site.



4.0 ENVIRONMENTAL RISK ASSESSMENT

4.1 Introduction

The statutory definition of contaminated land is given in the Environmental Protection Act, Part IIA, Section 78, 1990, which was introduced by the Environment Act, Section 57, Department of Environment, 1995 and is defined as:

Land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that:

- Significant harm is being caused or there is a significant possibility of such harm being caused (where harm is defined as harm to health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property); and/or
- Significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused (by the land).

The presence of contaminated materials on a site is generally only of concern if an actual or potentially unacceptable risk exists. The potential for harm to occur requires three conditions to be satisfied:

- **Sources** – The presence of substances (potential contaminants/pollutants), in or under the ground, that may cause harm or pollution.
- **Receptors** - The presence of a receptor which may be harmed, e.g. the water environment or humans, buildings, fauna and flora; and
- **Pathway** - The existence of a linkage between the Source and the Receptor.

In summary, the presence of measurable concentrations of contaminants within the ground and subsurface environment does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and an unacceptable risk of harm to available receptors.

The nature and importance of both pathways and receptors, which are relevant to a particular site, will vary according to the sensitivity of the intended end use of the site and the sites characteristics and environmental setting.



Legislation and guidance on the assessment of contaminated sites acknowledges the need for a tiered risk-based approach. This is set out in the Environment Agency's manual *Land contamination: risk management* (published in October 2020 and last updated in July 2023) and comprises the following stages of risk assessment:

Tier 1: Preliminary risk assessment (PRA)	As part of this assessment, the overall site objectives are defined. Current and historical information about the site and the potential contaminants expected to be present are assessed and an outline conceptual model (CM) is developed. The risks are assessed qualitatively, and the findings reported in the PRA (or desk study). The report recommends what further works would be required in order to assess whether the site is suitable for its proposed use.
Tier 2: Generic quantitative risk assessment (GQRA)	The GQRA uses Generic Assessment Criteria and a standard set of generic assumptions based on specific end uses in order to assess the risks to receptors. It includes the collection of more detailed information including laboratory analysis of soil and water samples in order to inform and assess the risks.
Tier 3: Detailed quantitative risk assessment (DQRA)	If pollutant linkages are confirmed as part of the GQRA, these are known as relevant pollutant linkages (RPLs) and further detailed assessment is required. At this tier, detailed site-specific information is collected to estimate the risk or to develop site-specific assessment criteria (SSAC). This may include collecting information about the receptor.

A Tier 1 Assessment has been prepared for the site by JPG and is reported in the Geoenvironmental Desk Study Report (Ref. 6338-JPG-XX-XX-RP-G-0601-S2-P01, dated February 2024).

This environmental risk assessment undertaken by JPG constitutes a Tier 2 Generic Quantitative Risk Assessment (GQRA) and has been carried out in accordance with the Environment Agency's *Land contamination: risk management guidance*.

4.2 Assessment Approach

Human Health

The results of the chemical analysis for each determinand will be assessed against their respective GAC. These include the LQM/CIEH Suitable 4 Use Levels (S4UL) and Category 4 Screening Levels (C4SL) which were developed using the UK Contaminated Land Exposure Assessment (CLEA) Framework Documents and Software.

The CLEA model uses generic assumptions about the fate and transport of chemicals in the environment and a generic conceptual model (referred to as generic land use scenarios) for site conditions and human behaviour, to estimate child and adult exposures to soil contaminants for those living, working and/or playing on contaminated sites over long time periods.



The S4UL and C4SL screening levels have been derived for a variety of land uses including residential, allotments, commercial and public open space.

In the absence of S4UL and C4SL for potential contaminants, appropriate alternative GAC will be used.

Controlled Waters

Based on the environmental setting of the site, the leachate and groundwater chemical testing results have been compared against Generic Assessment Criteria (GAC) threshold values based on the Water Supply (Water Quality) Regulations (Drinking Water Standards) and the Water Framework Directive threshold values.

An exceedance of a threshold value does not directly imply there is an unacceptable risk, however, it indicates that the exceedance should be further assessed via the qualitative source-pathway-receptor approach.

4.3 Evaluation of Soils Analysis

Initially, the results of the chemical analysis for each potential contaminant will be compared directly with their respective GAC. Based on the current development proposals for the site, i.e. an hotel, the results of the chemical analysis for the soil samples have been assessed against GAC for a commercial end use.

If any significant exceedances of the GAC are noted, then the results will be subject to statistical analysis if appropriate. An outline of the methodology of the statistical analysis is presented in Appendix B.

10 samples of made ground and one sample of natural ground were submitted for chemical analysis. A summary of the results is provided below.

Human Health – Soils

The results have been compared directly with their respective GAC and are summarised in Table 4.3.1.



Table 4.3.1 – Summary of Chemical Analysis for Soil Samples

Determinand	GAC for Commercial End Use (mg/kg)	Sample Mean (mg/kg)	Range of Results (mg/kg)	Do any samples exceed the GAC?
Metals and Metalloids				
Arsenic	640 ⁽¹⁾	6.61	3.6 - 13	No
Cadmium	190 ⁽¹⁾	<0.2	<0.2 – 0.5	No
Chromium	8600 ⁽¹⁾	21.8	11 – 39	No
Hexavalent Chromium	33 ⁽¹⁾	<1.8	<1.8	No
Copper	68,000 ⁽¹⁾	12.68	7.50 - 20	No
Lead	2,330 ⁽²⁾	10.45	5.1 – 15	No
Mercury (Inorganic)	1,100 ⁽¹⁾	<0.3	<0.3	No
Nickel	980 ⁽¹⁾	23.56	9.1 – 35	No
Selenium	12,000 ⁽¹⁾	<1.0	<1.0	No
Zinc	730,000 ⁽¹⁾	51.27	31 – 77	No
Inorganics				
Cyanide (free)	20 ⁽²⁾	<1.0	<1.0	No
Phenols				
Total Phenols	440* ⁽¹⁾	<1.0	<1.0	No
Poly Aromatic Hydrocarbons				
Naphthalene	190* ⁽¹⁾	<0.05	<0.05	No
Acenaphthylene	83,000*(1)	<0.05	<0.05	No
Acenaphthene	84,000*(1)	<0.05	<0.05-0.14	No
Fluorene	63,000*(1)	<0.05	<0.05 – 0.18	No
Phenanthrene	22,000*(1)	<0.05	<0.05 – 1.5	No
Anthracene	520,000*(1)	<0.05	<0.05 – 0.41	No
Fluoranthene	23,000*(1)	<0.05	<0.05 – 3.5	No
Pyrene	54,000*(1)	<0.05	<0.05 – 3.4	No
Benz(a)anthracene	170*(1)	<0.05	<0.05 – 1.9	No
Chrysene	350*(1)	<0.05	<0.05 – 2.4	No
Benzo(b)fluoranthene	44*(1)	<0.05	<0.05 – 3.7	No
Benzo(k)fluoranthene	1,200*(1)	<0.05	<0.05 – 1.2	No
Benzo(a)pyrene	35*(1)	<0.05	<0.05 – 2.9	No
Indeno(123-cd) pyrene	500*(1)	<0.05	<0.05 – 1.6	No
Dibenzo(ah)anthracene	3.5*(1)	<0.05	<0.05	No
Benzo(ghi)perylene	3,900*(1)	<0.05	<0.05 – 2.1	No

(1) S4UL * BASED ON 1% SOM, (2) C4SL

None of the determinands were recorded at concentrations in excess of their respective GAC for commercial end use.

All 11 samples were submitted for an asbestos screen, no asbestos was detected.

Evaluation of Controlled Waters Analysis

Four samples of made ground were submitted for leachability analysis. The results for each determinand were compared directly with their respective GAC, the results are summarised in Table 4.3.2.



Table 4.3.2 – Summary of Leachability Results

Determinand	GAC (µg/l)	WS101 0.30m	TP108 0.50m	TP109 0.20m	HP1 0.20m
Metals and Metalloids					
Arsenic	10 (1)	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	5 (1)	< 0.08	< 0.08	< 0.08	< 0.08
Chromium	50 (1)	3.2	2.8	0.5	2.1
Copper	2000 (1)	10	18	3.5	9.3
Lead	10 (1)	< 1.0	< 1.0	< 1.0	2.8
Mercury	1 (1)	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	20 (1)	1.9	1.7	0.5	1.5
Selenium	10 (1)	< 4.0	< 4.0	< 4.0	< 4.0
Zinc	5000 (1)*	12	13	3.1	16
Inorganics					
Cyanide Free	50 (1)	< 1	< 1	< 1	< 1
Poly Aromatic Hydrocarbons					
Naphthalene	4.24 (2)	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	0.193 (2)	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	0.0122 (2)	< 0.01	< 0.01	< 0.01	< 0.01
Benzo (a) pyrene	0.01 (1)	< 0.01	< 0.01	< 0.01	< 0.01
Sum of: Benzo (b) fluoranthene, Benzo (k) fluoranthene, Indeno (1,2,3-c,d) pyrene, and; Benzo (g,h,i) perylene	0.1 (1)	< 0.01	< 0.01	< 0.01	< 0.01
Phenols					
Phenol	14.9 (2)	2.4	2.2	3.5	1.8

(1) Water Supply (Water Quality) Regulations *Historical 1989 Threshold Value.

(2) Water Framework Directive 2015, Surface Water, Maximum Threshold Value.

None of the determinands were recorded in excess of their respective GAC.

Two samples of groundwater were submitted for chemical analysis. The results for each determinand were compared directly with their respective GAC. The results are summarised in Table 4.3.3.



Table 4.3.3 – Summary of Groundwater Results

Determinand	GAC (µg/l)	BH101 1.80m	BH103 2.00m
Metals and Metalloids			
Arsenic	50(1)	1.71	2.24
Cadmium	5(1)	0.02	0.03
Chromium (total)	50(1)	0.6	< 0.2
Copper	2000(1)	3.2	1.3
Lead	10(1)	< 0.2	< 0.2
Mercury	1(1)	< 0.05	< 0.05
Nickel	20(1)	1	0.6
Selenium	10(1)	< 0.6	0.7
Zinc	5000(1)	4.8	1.2
Inorganics			
Cyanide (Free)	50(1)	< 1.0	< 1.0
Sulphate as SO ₄	250,000(1)	31.5	54.8
pH	6.5-9.5(1)	7.9	7.7
Poly Aromatic Hydrocarbons			
Naphthalene	4.24(2)	< 0.01	< 0.01
Anthracene	0.193(2)	< 0.01	< 0.01
Fluoranthene	0.0122(2)	< 0.01	< 0.01
Benzo(a)pyrene	0.01(1)	< 0.01	< 0.01
Sum of: Benzo (b) fluoranthene, Benzo (k) fluoranthene, Indeno (1,2,3-c,d) pyrene, and; Benzo (g,h,i) perylene.	0.1 (1)	< 0.01	< 0.01
Phenols			
Phenol	14.9(2)	< 1.0	< 1.0

(1) Water Supply (Water Quality) Regulations *Historical 1989 Threshold Value.

(2) Water Framework Directive 2015, Surface Water, Maximum Threshold Value.

None of the determinands were recorded at concentrations in excess of their respective GAC.

4.4 Evaluation of Hazardous Ground Gases

Based on the desk study information and ground conditions encountered, it was considered that there was the potential for the presence of concentrations of elevated concentration of hazardous ground gases on the site.

In order to assess the potential risks posed to the proposed development from hazardous ground gases, monitoring wells were installed in two of the rotary cored boreholes and four of the window sample boreholes.

Ground gas monitoring has been undertaken on six occasions. The works were carried out using a portable infrared gas meter in accordance with the standard JPG methodology and included the measurement of methane, carbon dioxide, oxygen, hydrogen sulphide, carbon monoxide, gas flows and atmospheric pressure.



4.5 Summary of Results

The results of the hazardous ground gas monitoring are provided on the site visit record sheets in the factual geo-environmental ground investigation report. A summary of the results is provided below:

- No peak or steady concentrations of methane in excess of 1% v/v were recorded. A maximum peak and steady concentration of 0.6% v/v was recorded in WS103 during the second visit.
- Steady concentrations of carbon dioxide in excess of 5% v/v were recorded on two occasions in WS103 during the second and fourth visits. Concentrations of 5.9% v/v and 7.1% v/v respectively were recorded. Typical steady concentrations ranged up to 3.5% v/v.
- A single reduced oxygen concentrations (i.e. <16%v/v) of 14.5% v/v was recorded in WS103 during the fourth visit. No other reduced oxygen concentrations were recorded.
- No significant concentrations of hydrogen sulphide (H₂S) or carbon monoxide (CO) were recorded.
- A positive peak flow of 12.3 l/hr was recorded in WS103 during the fourth visit, no other peak flows of >5.1 l/hr were recorded.
- Positive steady flows of 3.4 l/hr (BHRC103), 2.1 l/hr and 2 l/hr (both BHRC101) were recorded during first, second and third visits respectively. No other steady flows of >0.8 l/hr were recorded.

Two of the monitoring visits were carried out during periods of regionally falling atmospheric pressure, three during rising atmospheric pressure and one during a period of steady atmospheric pressure. Barometric pressures during the monitoring period ranged between 965mB and 1017mB.

4.6 Requirements for Gas Protection Measures

The results of the hazardous ground gas monitoring have been assessed in accordance with BS8485:2015+A1:2019, 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'.

Gas screening values (GSV) have been calculated based on worst-case conditions and typical conditions, including typical conditions for individual boreholes.

Based on the worst-case conditions, i.e. highest peak gas concentration and peak flow for methane and highest steady gas concentration and highest steady flow for carbon dioxide, GSVs of 0.738 l/hr for methane and 0.241 l/hr for carbon dioxide have been calculated. This would result in the site being classified as characteristic situation (CS) 2.



The gas concentrations recorded are considered to be typical with no outliers. However, the recorded steady flows of 2 l/hr, 2.1 l/hr and 3.4 l/hr and peak flow of 12.3 l/hr, are not considered to be typical and have been removed from the data set.

Based on the typical results for individual boreholes, maximum GSVs of 0.012 l/hr and 0.0426 l/hr have been calculated for methane and carbon dioxide respectively.

Based on the worst-case typical values recorded (i.e. highest typical peak gas concentration and flow for methane and highest typical steady gas concentration and flow for carbon dioxide), GSVs of 0.03 l/hr for methane and 0.0568 l/hr for carbon dioxide have been calculated.

In both of these instances, this would result in the site being classified as CS1.

Based on the above, it is recommended that CS1 is adopted for the site in accordance with BS8485:2015+A1:2019.

Radon Risk

The site is not shown to be within a radon affected area as defined by Public Health England with less than 1% of properties are above the action level.

In accordance with the Building Research Establishment (BRE) publication BR211, no radon protective measures are required for new properties constructed on the site.

4.7 Summary of Potential Sources, Pathways and Receptors

Based on the results of the chemical analysis and hazardous ground gas monitoring, no potential sources of contamination have been identified.

4.8 Risk Classification

Based on the updated conceptual site model, there is negligible risk to human health or controlled waters.

4.9 Mitigation Measures

Although no potential sources of contamination have been identified on the site, and no risk to potential receptors have been identified, consideration should be given to implementing the following mitigation measures for development and maintenance workers.

Development and Maintenance Workers

- Site workers involved in groundworks should use appropriate PPE, i.e. overalls and gloves. Appropriate health and safety measures, e.g. washing hands prior to eating or drinking, should also be enforced.



- Site workers involved in groundworks should take the necessary measures to ensure that all works in excavations and confined spaces are carried out in accordance with best practice in order to prevent exposure to potentially hazardous ground gases.
- During development of the site, all workers should remain vigilant to the possible risk of encountering areas of potentially contaminated material. Should potentially contaminated material be encountered, site management should be informed. Further testing may then be required to assess the risk to health and safety of the site workers and the environment.
- All employers involved in works at the site should produce an appropriate method statement and risk assessment, to which all employees should comply, e.g. working in confined spaces. Reference should also be made to the appropriate HSE and other guidance for working on contaminated and potentially contaminated sites.

4.10 Classification of Materials for Disposal Offsite

10 samples of made ground and one sample of natural ground were assessed using HazWasteOnline™ in order to determine the classification of the materials for disposal off-site.

Based on the results of the chemical analysis, all of the samples were classified as non-hazardous. Details of the classification generated by HazWasteOnline™ are provided in Appendix B.

The results of the chemical analysis and waste classification should be forwarded to the landfill operator to confirm this assessment and provide a price for disposal.



Appendix A Figures/Drawings



Figure 1 – Site Location Plan

Site	Dakota Hotel, Manchester Airport
Client	Evans Dakota Hotels Limited
Job Number	6338
Scale	NTS



Figure 2 – Aerial Photograph

Site	Dakota Hotel, Manchester Airport
Client	Evans Dakota Hotels Limited
Job Number	6338
Scale	NTS

Figure 3: SPT N Value vs Level (m AOD) - Natural Ground

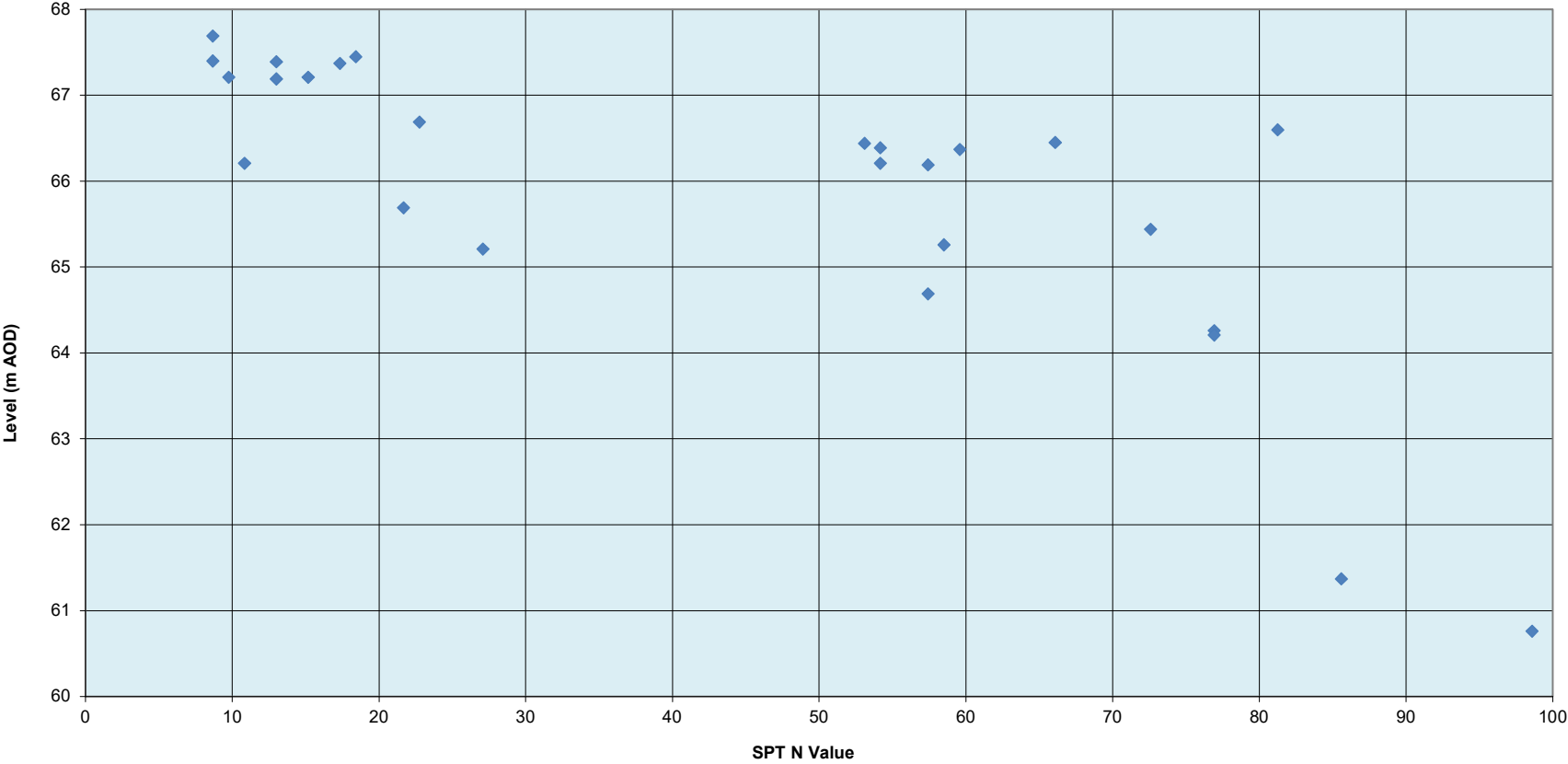
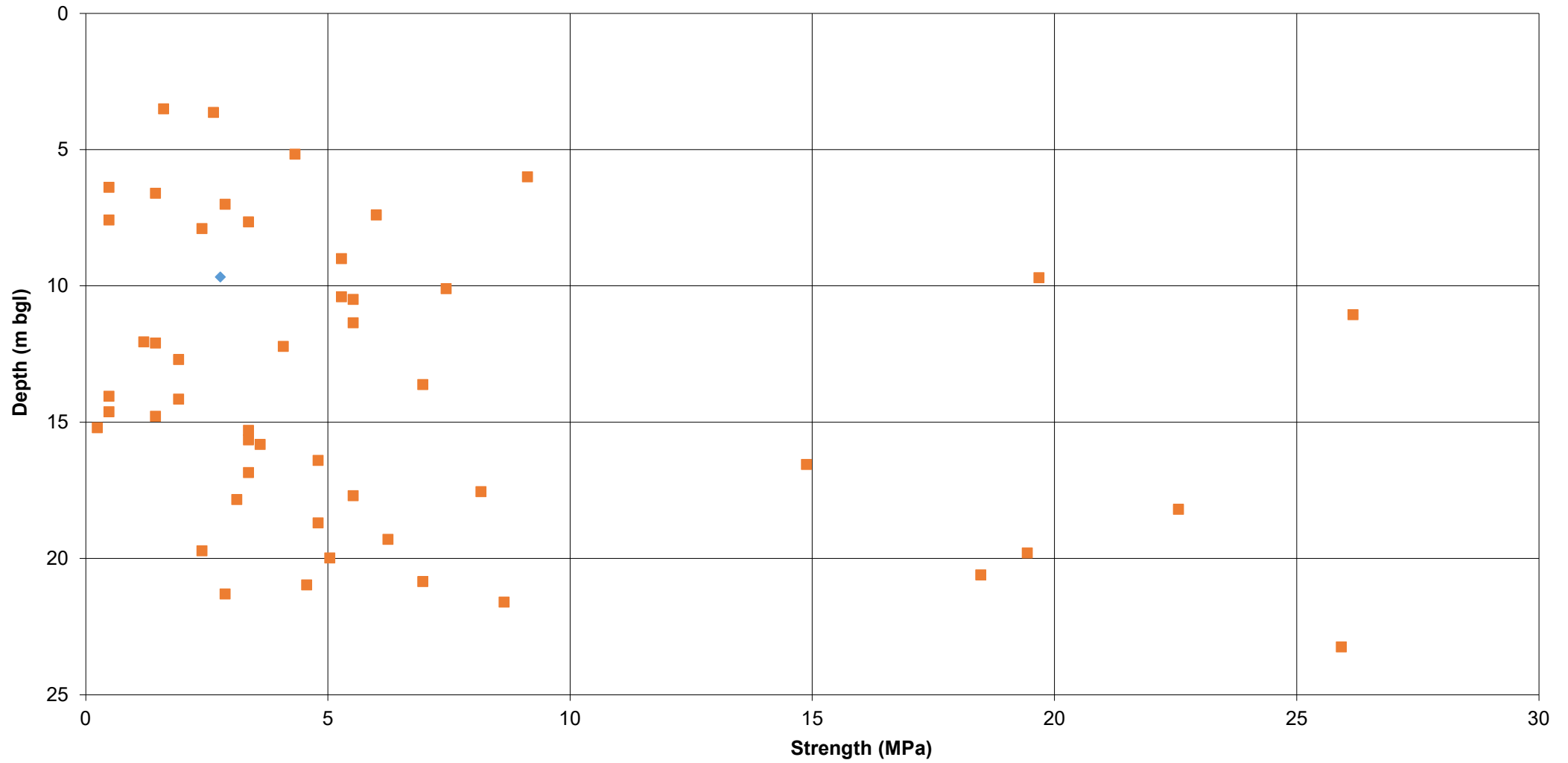


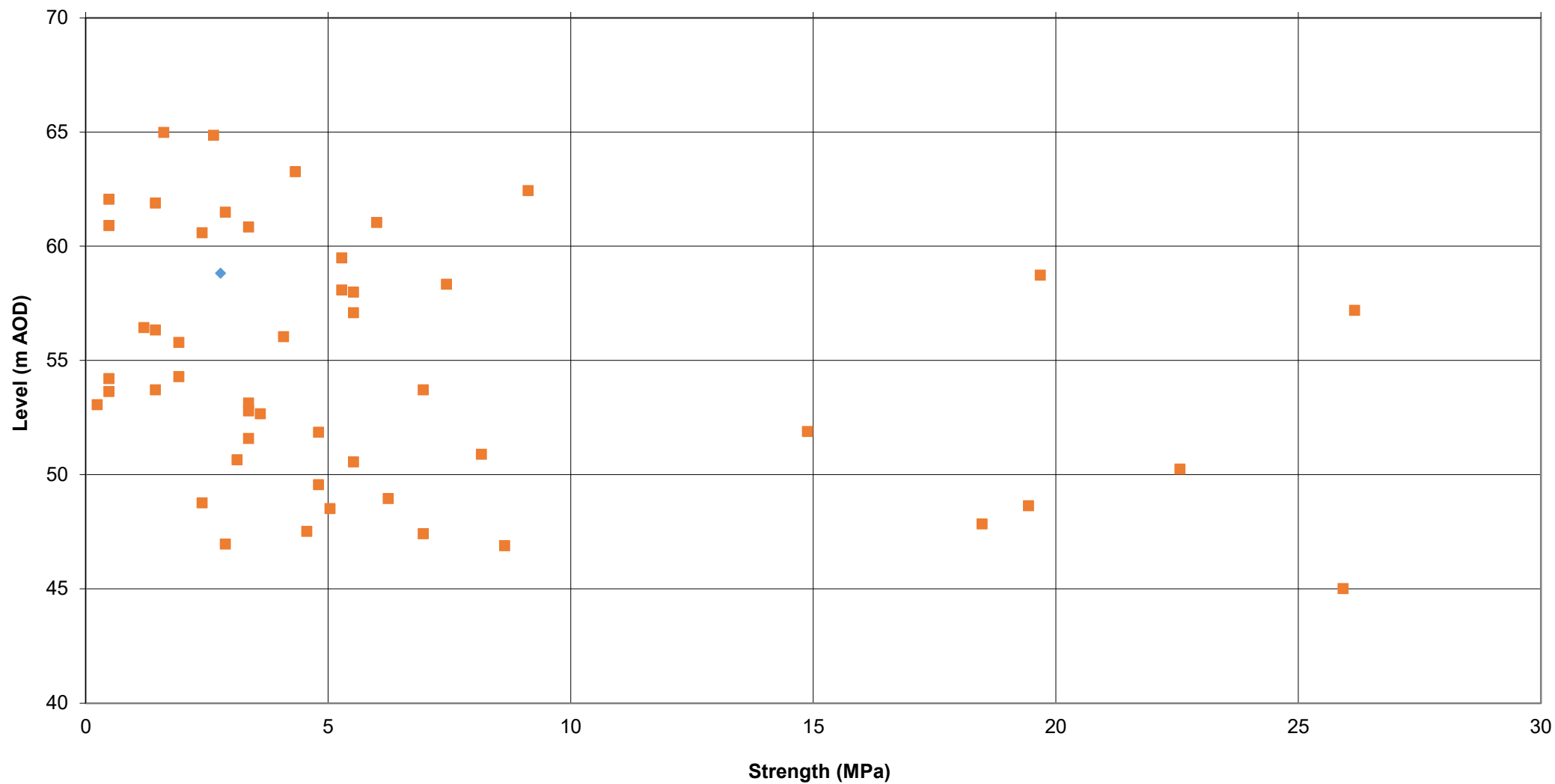
Figure 4A - Rock Strength vs Depth (m bgl)



◆ UCS (Laboratory Test)

■ Point Load Index (IS50 x 24)

Figure 4B - Rock Strength vs. Level (m AOD)



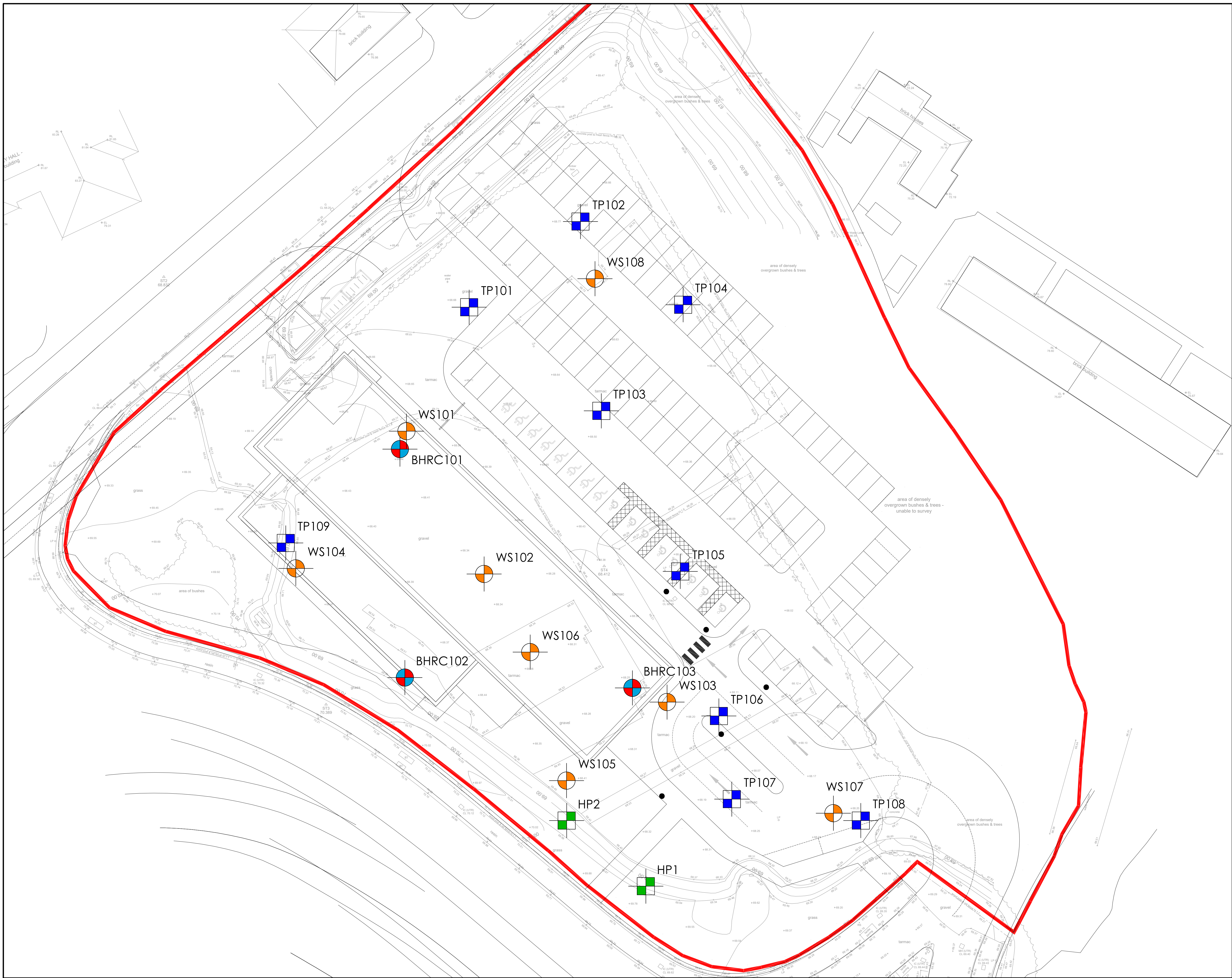
DO NOT SCALE (A1)

NOTES

EHLF LEGEND

- TP TRIAL PIT
- WS WINDOW SAMPLE BOREHOLE
- BHRC CABLE PERCUSSIVE BOREHOLE WITH ROTARY CORED FOLLOW ON
- HP HAND PIT

0m 6.25m 12.5m
SCALE 1:250



P03	ASBUILT LOCATIONS, TOPOGRAPHICAL SURVEY AND SITE PLAN.	28.03.24	RJM	EJS
P02	ADDITIONAL TRIAL PIT	22.02.24	RJM	EJS
P01	PROPOSED LOCATIONS	12.02.24	DMH	EJS
REV	DESCRIPTION	DATE	CHK	BY

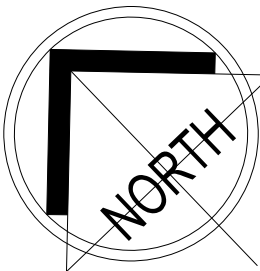
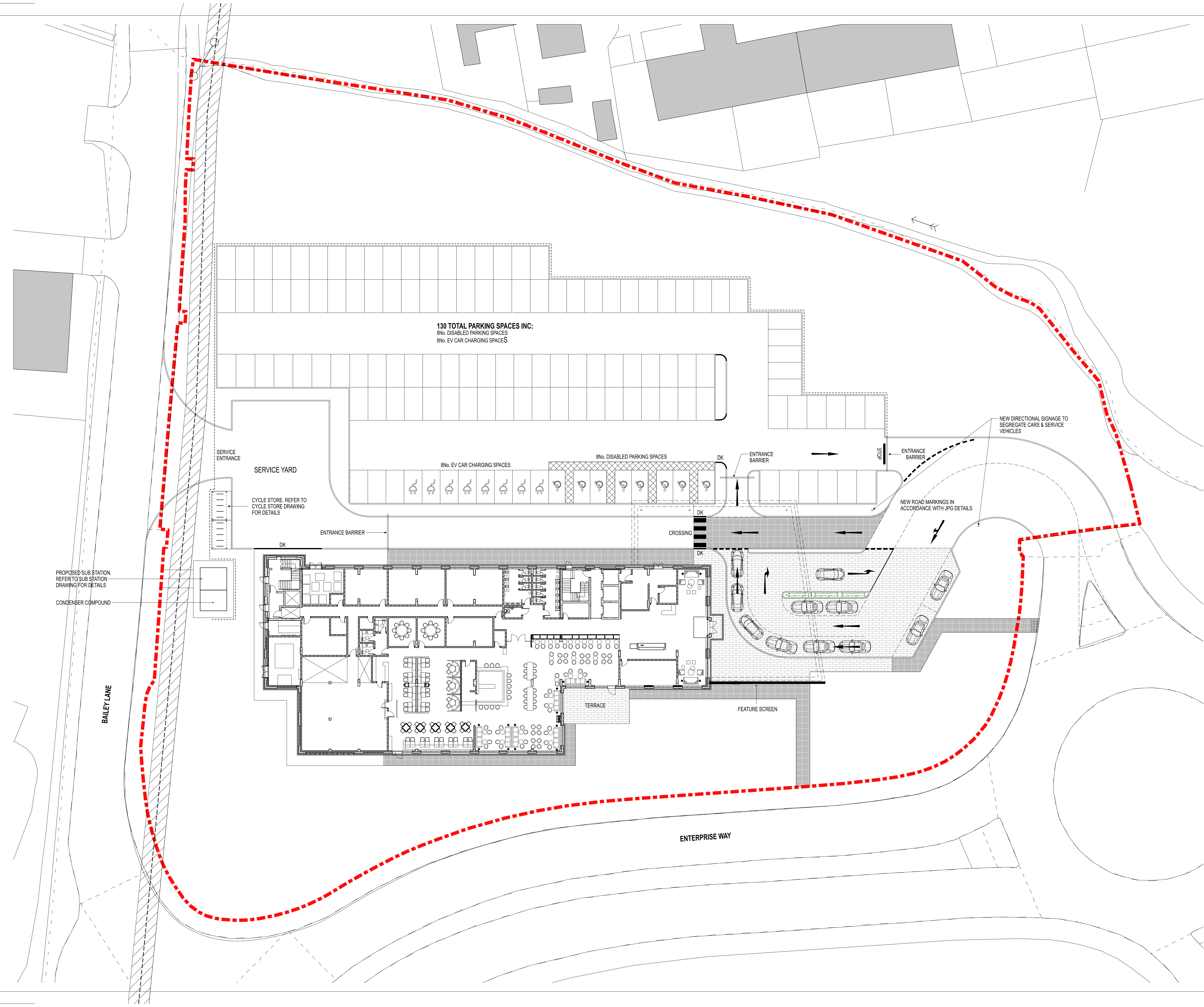
Project
DAKOTA HOTEL
MANCHESTER AIRPORT

Drawing Title
EXPLORATORY HOLE LOCATION PLAN

INFORMATION



Notes:
This drawing is the sole copyright of KPP Architects Ltd and reproduction in any form is forbidden unless permission is obtained in writing.
Do not scale from this drawing. Any discrepancies on site should be brought to the attention of KPP Architects Ltd.
Work and materials must comply with the current building regulations and codes of practice and be read in conjunction with building specifications and other sub-contractors information. All materials are to be installed in strict accordance with the recommendations of the manufacturers.



Rev	Description	By	Chkd	Date

Client

EVANS DAKOTA HOTELS LTD.

Product Title
DAKOTA HOTEL
LAND OFF ENTERPRISE WAY
WYTHENSHAW

Drawing Title
PROPOSED SITE PLAN

KPP
ARCHITECTS
Lodge House
12 Town Street
Horsforth, Leeds LS184RJ
T : +44 (0) 113 2390460
E : architects@kpp-leeds.co.uk
W : www.kpp-leeds.co.uk

Scale	Size	Date	Drawn	Checked
1:250	A1	MAY '24	JH	.
Status	PRELIMINARY			
KPP Job No	2019-08			Rev
Number	3001			P1



Appendix B HazWasteOnline Waste Classification

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



7X7DJ-GK0NW-DS2T3

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in **pale yellow**.

Job name

Dakota, Manchester Airport

Description/Comments

Project

6338

Site

Manchester

Classified by

Name: **Dominic Horne**
 Date: **02 May 2024 07:34 GMT**
 Telephone: **0113 263 1155**
 Company: **JPG (LEEDS) Ltd**
5 John Charles Way
Leeds
LS12 6QA

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification
 Most recent 3 year Refresher

Date

11 Mar 2020
 06 Dec 2022

Next 3 year Refresher due by Dec 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Bailey Lane, Manchester

Post Code **M90 4AB**

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Redevelopment of derelict land.

Description of the specific process, sub-process and/or activity that created the waste

Nominal cut and fill operation for the construction of a commercial building.

Description of the waste

Made ground typically comprising yellowish brown and dark greyish brown slightly clayey sandy GRAVEL.



Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS101	0.30	Non Hazardous		3
2	WS102	0.20	Non Hazardous		5
3	WS103	0.30	Non Hazardous		7
4	WS104	0.50	Non Hazardous		9
5	TP108	0.50	Non Hazardous		11
6	TP107	0.80	Non Hazardous		13
7	TP105	0.30	Non Hazardous		15
8	TP104	0.40	Non Hazardous		17
9	TP101	0.20	Non Hazardous		19
10	HP1	0.20	Non Hazardous		21
11	TP109	0.20	Non Hazardous		23

Related documents

#	Name	Description
1	JPG WASTE STREAM V21	waste stream template used to create this Job

Report

Created by: Dominic Horne

Created date: 02 May 2024 07:34 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	25
Appendix B: Rationale for selection of metal species	26
Appendix C: Version	26

Classification of sample: WS101

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS101	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.30 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
5.6%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.6% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				4.4 mg/kg	1.32	5.809 mg/kg	0.000581 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	23.385 mg/kg	0.00234 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				7.5 mg/kg	1.126	8.444 mg/kg	0.000844 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	8.7 mg/kg	1.56	13.57 mg/kg	0.00087 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348 mg/kg	<0.0000348 %			<LOD
		215-696-3	1344-48-5								
8	nickel { nickel chromate }				18 mg/kg	2.976	53.573 mg/kg	0.00536 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
10	zinc { zinc chromate }				42 mg/kg	2.774	116.514 mg/kg	0.0117 %			
	024-007-00-3	236-878-9	13530-65-9								
11	pH				8.3 pH		8.3 pH	8.3 pH			
			pH								
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
13	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	● acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
15	● acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	● fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
17	● phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	● anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	● fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	● pyrene	204-927-3	129-00-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.07 mg/kg		0.07 mg/kg	0.000007 %		
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	● indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	● benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
29	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0226 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
●	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS102

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS102	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
5.5%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.5% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				7.8 mg/kg	1.32	10.299 mg/kg	0.00103 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21 mg/kg	1.462	30.693 mg/kg	0.00307 %			
		215-160-9	1308-38-9								
4	copper { dicopper oxide; copper (I) oxide }				17 mg/kg	1.126	19.14 mg/kg	0.00191 %			
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	13 mg/kg	1.56	20.278 mg/kg	0.0013 %			
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348 mg/kg	<0.0000348 %			<LOD
		215-696-3	1344-48-5								
7	nickel { nickel chromate }				27 mg/kg	2.976	80.359 mg/kg	0.00804 %			
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
9	zinc { zinc chromate }				77 mg/kg	2.774	213.609 mg/kg	0.0214 %			
	024-007-00-3	236-878-9	13530-65-9								
10	pH				8.1 pH		8.1 pH	8.1 pH			
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
12	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0373 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS103

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS103	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.30 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
4.2%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 4.2% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				6.3 mg/kg	1.32	8.318 mg/kg	0.000832 %		
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
		215-160-9	1308-38-9							
5	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	14.637 mg/kg	0.00146 %		
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	11 mg/kg	1.56	17.158 mg/kg	0.0011 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348 mg/kg	<0.0000348 %		<LOD
		215-696-3	1344-48-5							
8	nickel { nickel chromate }				24 mg/kg	2.976	71.43 mg/kg	0.00714 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
	034-002-00-8									
10	zinc { zinc chromate }				53 mg/kg	2.774	147.03 mg/kg	0.0147 %		
	024-007-00-3	236-878-9	13530-65-9							
11	pH				8.2 pH		8.2 pH	8.2 pH		
			pH							
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
13	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	● acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
15	● acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	● fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
17	● phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	● anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	● fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	● pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	● indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	● benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
29	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0289 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
●	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS104

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS104	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
16%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 16% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				6.9 mg/kg	1.32	9.11 mg/kg	0.000911 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				34 mg/kg	1.462	49.693 mg/kg	0.00497 %			
		215-160-9	1308-38-9								
4	copper { dicopper oxide; copper (I) oxide }				10 mg/kg	1.126	11.259 mg/kg	0.00113 %			
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	5.1 mg/kg	1.56	7.955 mg/kg	0.00051 %			
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348 mg/kg	<0.0000348 %			<LOD
		215-696-3	1344-48-5								
7	nickel { nickel chromate }				30 mg/kg	2.976	89.288 mg/kg	0.00893 %			
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
9	zinc { zinc chromate }				50 mg/kg	2.774	138.707 mg/kg	0.0139 %			
	024-007-00-3	236-878-9	13530-65-9								
10	pH				8.2 pH		8.2 pH	8.2 pH			
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
12	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0309 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP108

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP108	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
5.9%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.9% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				4.8 mg/kg	1.32	6.338 mg/kg	0.000634 %		
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17 mg/kg	1.462	24.846 mg/kg	0.00248 %		
		215-160-9	1308-38-9							
5	copper { dicopper oxide; copper (I) oxide }				8.6 mg/kg	1.126	9.683 mg/kg	0.000968 %		
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	8.6 mg/kg	1.56	13.414 mg/kg	0.00086 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348 mg/kg	<0.0000348 %		<LOD
		215-696-3	1344-48-5							
8	nickel { nickel chromate }				20 mg/kg	2.976	59.525 mg/kg	0.00595 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
	034-002-00-8									
10	zinc { zinc chromate }				47 mg/kg	2.774	130.385 mg/kg	0.013 %		
	024-007-00-3	236-878-9	13530-65-9							
11	pH				8.4 pH		8.4 pH	8.4 pH		
			pH							
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
13	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	● acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
15	● acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	● fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
17	● phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	● anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	● fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	● pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	● indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	● benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
29	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0249 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
●	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP107

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP107	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.80 m		
Moisture content:		
18%		
(no correction)		

Hazard properties

None identified

Determinands

Moisture content: 18% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				13 mg/kg	1.32	17.164 mg/kg		0.00172 %		
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg		<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				39 mg/kg	1.462	57.001 mg/kg		0.0057 %		
		215-160-9	1308-38-9								
4	copper { dicopper oxide; copper (I) oxide }				20 mg/kg	1.126	22.518 mg/kg		0.00225 %		
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead chromate }			1	5.6 mg/kg	1.56	8.735 mg/kg		0.00056 %		
	082-004-00-2	231-846-0	7758-97-6								
6	mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348 mg/kg		<0.0000348 %		<LOD
		215-696-3	1344-48-5								
7	nickel { nickel chromate }				35 mg/kg	2.976	104.169 mg/kg		0.0104 %		
	028-035-00-7	238-766-5	14721-18-7								
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg		<0.000141 %		<LOD
	034-002-00-8										
9	zinc { zinc chromate }				59 mg/kg	2.774	163.675 mg/kg		0.0164 %		
	024-007-00-3	236-878-9	13530-65-9								
10	pH				7.7 pH		7.7 pH		7.7 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg		<0.000188 %		<LOD
	006-007-00-5										
12	naphthalene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		201-469-6	83-32-9								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0376 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP105

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP105	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.30 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6.2%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.2% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	 arsenic { arsenic trioxide }				7 mg/kg	1.32	9.242	mg/kg	0.000924 %		
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				0.2 mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	048-002-00-0	215-146-2	1306-19-0								
3	 chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
	024-001-00-0	215-607-8	1333-82-0								
4	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19 mg/kg	1.462	27.77	mg/kg	0.00278 %		
		215-160-9	1308-38-9								
5	 copper { dicopper oxide; copper (I) oxide }				17 mg/kg	1.126	19.14	mg/kg	0.00191 %		
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	11 mg/kg	1.56	17.158	mg/kg	0.0011 %		
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348	mg/kg	<0.0000348 %		<LOD
		215-696-3	1344-48-5								
8	 nickel { nickel chromate }				25 mg/kg	2.976	74.407	mg/kg	0.00744 %		
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8										
10	 zinc { zinc chromate }				57 mg/kg	2.774	158.126	mg/kg	0.0158 %		
	024-007-00-3	236-878-9	13530-65-9								
11	 pH				8.3 pH		8.3	pH	8.3 pH		
			pH								
12	 cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5										
13	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	● acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
15	● acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	● fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
17	● phenanthrene	201-581-5	85-01-8		0.11 mg/kg		0.11 mg/kg	0.000011 %		
18	● anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	● fluoranthene	205-912-4	206-44-0		0.15 mg/kg		0.15 mg/kg	0.000015 %		
20	● pyrene	204-927-3	129-00-0		0.16 mg/kg		0.16 mg/kg	0.000016 %		
21	benzo[a]anthracene	601-033-00-9	200-280-6		0.08 mg/kg		0.08 mg/kg	0.000008 %		
22	chrysene	601-048-00-0	205-923-4		0.12 mg/kg		0.12 mg/kg	0.000012 %		
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.21 mg/kg		0.21 mg/kg	0.000021 %		
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.06 mg/kg		0.06 mg/kg	0.000006 %		
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.15 mg/kg		0.15 mg/kg	0.000015 %		
26	● indeno[123-cd]pyrene	205-893-2	193-39-5		0.19 mg/kg		0.19 mg/kg	0.000019 %		
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	● benzo[ghi]perylene	205-883-8	191-24-2		0.21 mg/kg		0.21 mg/kg	0.000021 %		
29	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.031 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
●	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP104	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.40 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6.4% (no correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.4% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				4.4 mg/kg	1.32	5.809 mg/kg	0.000581 %		
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	14.637 mg/kg	0.00146 %		
	029-002-00-X	215-270-7	1317-39-1							
5	lead { lead chromate }			1	14 mg/kg	1.56	21.837 mg/kg	0.0014 %		
	082-004-00-2	231-846-0	7758-97-6							
6	mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348 mg/kg	<0.0000348 %		<LOD
		215-696-3	1344-48-5							
7	nickel { nickel chromate }				25 mg/kg	2.976	74.407 mg/kg	0.00744 %		
	028-035-00-7	238-766-5	14721-18-7							
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
	034-002-00-8									
9	zinc { zinc chromate }				59 mg/kg	2.774	163.675 mg/kg	0.0164 %		
	024-007-00-3	236-878-9	13530-65-9							
10	pH				8.8 pH		8.8 pH	8.8 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
12	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
13	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
14	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0306 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP101

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP101	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
8%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 8% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				4.8 mg/kg	1.32	6.338 mg/kg	0.000634 %		
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17 mg/kg	1.462	24.846 mg/kg	0.00248 %		
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	14.637 mg/kg	0.00146 %		
	029-002-00-X	215-270-7	1317-39-1							
5	lead { lead chromate }			1	10 mg/kg	1.56	15.598 mg/kg	0.001 %		
	082-004-00-2	231-846-0	7758-97-6							
6	mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348 mg/kg	<0.0000348 %		<LOD
		215-696-3	1344-48-5							
7	nickel { nickel chromate }				21 mg/kg	2.976	62.502 mg/kg	0.00625 %		
	028-035-00-7	238-766-5	14721-18-7							
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
	034-002-00-8									
9	zinc { zinc chromate }				42 mg/kg	2.774	116.514 mg/kg	0.0117 %		
	024-007-00-3	236-878-9	13530-65-9							
10	pH				8.6 pH		8.6 pH	8.6 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
12	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
13	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
14	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	phenanthrene	201-581-5	85-01-8		0.66 mg/kg		0.66 mg/kg	0.000066 %		
17	anthracene	204-371-1	120-12-7		0.16 mg/kg		0.16 mg/kg	0.000016 %		
18	fluoranthene	205-912-4	206-44-0		0.92 mg/kg		0.92 mg/kg	0.000092 %		
19	pyrene	204-927-3	129-00-0		0.96 mg/kg		0.96 mg/kg	0.000096 %		
20	benzo[a]anthracene	601-033-00-9	200-280-6		0.39 mg/kg		0.39 mg/kg	0.000039 %		
21	chrysene	601-048-00-0	205-923-4		0.5 mg/kg		0.5 mg/kg	0.00005 %		
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.51 mg/kg		0.51 mg/kg	0.000051 %		
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.26 mg/kg		0.26 mg/kg	0.000026 %		
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.46 mg/kg		0.46 mg/kg	0.000046 %		
25	indeno[123-cd]pyrene	205-893-2	193-39-5		0.23 mg/kg		0.23 mg/kg	0.000023 %		
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		0.38 mg/kg		0.38 mg/kg	0.000038 %		
28	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0245 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: HP1

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
HP1	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
3.8%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 3.8% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				3.6 mg/kg	1.32	4.753 mg/kg	0.000475 %		
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.5 mg/kg	1.142	0.571 mg/kg	0.0000571 %		
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
		215-160-9	1308-38-9							
5	copper { dicopper oxide; copper (I) oxide }				8.4 mg/kg	1.126	9.457 mg/kg	0.000946 %		
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	15 mg/kg	1.56	23.397 mg/kg	0.0015 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348 mg/kg	<0.0000348 %		<LOD
		215-696-3	1344-48-5							
8	nickel { nickel chromate }				9.1 mg/kg	2.976	27.084 mg/kg	0.00271 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
	034-002-00-8									
10	zinc { zinc chromate }				31 mg/kg	2.774	85.999 mg/kg	0.0086 %		
	024-007-00-3	236-878-9	13530-65-9							
11	pH				8.9 pH		8.9 pH	8.9 pH		
			pH							
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
13	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
14	● acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
15	● acenaphthene	201-469-6	83-32-9		0.14 mg/kg		0.14 mg/kg	0.000014 %			
16	● fluorene	201-695-5	86-73-7		0.18 mg/kg		0.18 mg/kg	0.000018 %			
17	● phenanthrene	201-581-5	85-01-8		1.5 mg/kg		1.5 mg/kg	0.00015 %			
18	● anthracene	204-371-1	120-12-7		0.41 mg/kg		0.41 mg/kg	0.000041 %			
19	● fluoranthene	205-912-4	206-44-0		3.5 mg/kg		3.5 mg/kg	0.00035 %			
20	● pyrene	204-927-3	129-00-0		3.4 mg/kg		3.4 mg/kg	0.00034 %			
21	benzo[a]anthracene	601-033-00-9	200-280-6		1.9 mg/kg		1.9 mg/kg	0.00019 %			
22	chrysene	601-048-00-0	205-923-4		2.4 mg/kg		2.4 mg/kg	0.00024 %			
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		3.7 mg/kg		3.7 mg/kg	0.00037 %			
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		1.2 mg/kg		1.2 mg/kg	0.00012 %			
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		2.9 mg/kg		2.9 mg/kg	0.00029 %			
26	● indeno[123-cd]pyrene	205-893-2	193-39-5		1.6 mg/kg		1.6 mg/kg	0.00016 %			
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
28	● benzo[ghi]perylene	205-883-8	191-24-2		2.1 mg/kg		2.1 mg/kg	0.00021 %			
29	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
Total:									0.0192 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
●	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP109

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP109	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 13% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				9.7 mg/kg	1.32	12.807 mg/kg	0.00128 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				28 mg/kg	1.462	40.924 mg/kg	0.00409 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				12 mg/kg	1.126	13.511 mg/kg	0.00135 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	13 mg/kg	1.56	20.278 mg/kg	0.0013 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury(II) sulfide }				<0.3 mg/kg	1.16	<0.348 mg/kg	<0.0000348 %			<LOD
		215-696-3	1344-48-5								
8	nickel { nickel chromate }				25 mg/kg	2.976	74.407 mg/kg	0.00744 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
10	zinc { zinc chromate }				47 mg/kg	2.774	130.385 mg/kg	0.013 %			
	024-007-00-3	236-878-9	13530-65-9								
11	pH				8.5 pH		8.5 pH	8.5 pH			
			pH								
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
13	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	● acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
15	● acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	● fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
17	● phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	● anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	● fluoranthene	205-912-4	206-44-0		0.1 mg/kg		0.1 mg/kg	0.00001 %		
20	● pyrene	204-927-3	129-00-0		0.11 mg/kg		0.11 mg/kg	0.000011 %		
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	● indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	● benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
29	phenol	604-001-00-2	203-632-7		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0294 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
●	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

■ **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **mercury(II) sulfide** (EC Number: 215-696-3, CAS Number: 1344-48-5)

Description/Comments: Data from ECHA's C&L and SDS Sigma Aldrich V6 dated 17/9/2019

Threshold for EUH031 based on calculation method in WM3 Box C12.1

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/8530>

Data source date: 14 May 2020

Hazard Statements: EUH031 >= 1 % , EUH031 , Skin Sens. 1; H317 , STOT RE 2; H373

■ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

■ **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

■ **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

■ **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

■ **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

■ **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2; H351

■ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides.

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight.

mercury {mercury(II) sulfide}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight.

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide]

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021

HazWasteOnline Classification Engine Version: 2024.122.6042.11191 (01 May 2024)

HazWasteOnline Database: 2024.122.6042.11191 (01 May 2024)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

GB MCL List v2.0 - version 2.0 of 20th October 2023

GB MCL List v3.0 - version 3.0 of 11th January 2024

GB MCL List v4.0 - version 4.0 of 2nd March 2024



Appendix C Notes on Limitations



General

JPG (Leeds) Limited have prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from JPG (Leeds) Limited; a charge may be levied against such approval.

JPG (Leeds) Limited accepts no responsibility or liability for:

- a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and
- b) the use of this document by any third party with whom an agreement has not been executed.

Phase I Desk Study Reports

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including any information provided by the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties where appropriate. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, JPG (Leeds) Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Geo-Environmental Investigations

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics and ground and groundwater conditions to allow a reasonable assessment of the environmental risks together with engineering and development implications.

The objectives of the investigation have been limited to establishing the risks associated with potential human receptors, building materials, the environment (including adjacent land) and controlled waters (surface water and groundwater).

The number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" of contamination where concentrations may be significantly higher than those actually encountered.

The risk assessment and opinions provided, inter alia, take into consideration currently available guidance values relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

5 John Charles Way
LEEDS
LS12 6QA

Tel: 0113 263 1155
admin@jpg.group
www.jpg.group

