

RE-DEVELOPMENT OF TY MAWR, YSNYSDERW ROAD, PONTARDAWE, SA8 4EG

Validation Report

Report No. Q1422/VR

July 2025

DOCUMENT CONTROL

Contract Name: Re-Development of Ty Mawr, Ynysderw Rd, Pontardawe

Contract Reference: Q1422

Report Type: Validation Report

Report Reference: Q1422/VR

Date of Report Production: July 2025

Client: T.A.D Builders Ltd, Furnace, Llanelli, SA15 4HT.

Version:	Date:	Prepared by:	Checked by:	Approved by:
1 st Issue	17/07/25	J. Stark	P. Darby	J. Stark
				
		Technical Director, B.Sc. (Hons), C.Geol., FGS	Principal Eng. Geologist, M.Sc., C.Geol., FGS	Technical Director, B.Sc. (Hons), C.Geol., FGS

Disclaimer: Quantum Geotechnic Limited has prepared this report in accordance with the instructions of the above-named Client for their sole and specific use. Any third parties who may use the information contained herein do so at their own risk.

Quantum Geotechnic Ltd, Plas Newydd, Llanedi, Swansea, SA4 0FQ T: 01554 744880 E: info@spencerquantum.co.uk

CONTENTS

1.0	INTRODUCTION	1
1.1	Development Proposals & Background	1
1.2	Commission	1
1.3	Objectives	1
1.4	Limitations	2
2.0	PREVIOUS INVESTIGATIONS AND RECOMMENDATIONS	3
2.1	ESP 2023 Report Conclusions.....	3
2.2	Quantum 2024 Report Conclusions	4
2.3	Remedial & Mitigation Measures of Quantum Report	4
3.0	REMEDICATION & MITIGATION.....	6
3.1	Remediation Works.....	6
3.2	Remediation Options	6
4.0	VERIFICATION AND VALIDATION	7
4.1	General	7
4.2	Provision of Suitable Soil Cover.....	7
4.3	Certification of Imported Soil	7
	APPENDIX 1 – DEVELOPMENT LAYOUT	8
	APPENDIX 2 – PHOTO VALIDATION RECORDS OF SOIL COVER.....	9
	APPENDIX 3 – IMPORTED SOIL TEST CERTIFICATE.....	10

1.0 INTRODUCTION

1.1 Development Proposals & Background

T.A.D. Builders Ltd have re-developed the property at Ty Mawr, Ynysderw Road, Pontardawe, on behalf of their client Pobl Group. This comprised of refurbishment of the existing two-story building and construction of a new extension on the southern part of the property with associated landscaping and infrastructure improvements.

The layout of the site is presented in the Architects Site Plan included in Appendix 1 at a reduced size for ease of presentation.

The development plan shows that the site will be predominantly covered by structures and hard surfacing. Areas of grassed gardens are located on the south-eastern elevation of the existing building footprint.

Two ground investigation reports have been prepared for the development. An initial report was prepared by Earth Science Partnership (ESP) on behalf of the end client, Pobl Group, with a supplementary report by Quantum Geotechnic Ltd (QGL), on behalf of T.A.D. Builders Ltd. These were:

1. Earth Science Partnership Report ESP.8293.02.3827, January 2023, 'Ty Mawr, Pontardawe. Proposed Residential Development – Exploratory Investigation'.
2. Quantum Geotechnic Ltd Report Q1422/GIR (Rev.1), April 2024, 'Re-Development of Ty Mawr, Ynysderw Road, Pontardawe – Ground Investigation Report'.

The Quantum GI report addressed outstanding issues that were highlighted in the earlier ESP report. In the interests of brevity, copies of these reports can be viewed on the Neath Port Talbot County Borough Council Planning Portal. Where relevant, sections of these reports are re-presented in this document.

1.2 Commission

Quantum Geotech was commissioned by T.A.D. Builders Ltd (TAD) to review the ground investigation data and collate all information of mitigation and remediation measures that have been adopted as part of the development of the site by way of verification, to provide a Validation Report in support of the development.

A summary of the two ground investigation conclusions and recommendations are presented in Section 2 herein.

Whilst no formal Remediation Strategy Report was prepared for the development, the QGL report presented a Remediation Options Appraisal within the GIR. The remediation requirements stated therein were adopted by TAD as the remediation and practicable mitigation measures required as feasible solutions for the development of the site.

1.3 Objectives

In order to break pollutant linkages and thus eliminate the potential risk to future site residents, it is necessary to prevent harmful exposure to localised elevated levels of potential contaminants. Pollutant linkages can be broken by removal or treatment of the contaminant source, or by preventing the intake/uptake of contaminants by removing or blocking viable migration pathways.

The objective of this Validation Report is as follows:

- Summarise any identified areas of contamination on site and recommended remediation requirements

- Detail the mitigation measures incorporated into the construction and any remediation undertaken, to demonstrate the effectiveness of any measures
- Satisfy the requirements to discharge remaining Planning Conditions set by Neath Port Talbot County Borough Council for the proposed development

This report is written in line with the requirements stipulated in current Government advice in relation to Land Contamination Risk Management: <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm/lcrm-stage-3-remediation-and-verification>.

1.4 Limitations

The recommendations and opinions expressed in this report are based on the data contained in the two GI reports referenced in Section 1.1 and from any relevant records from during the construction phase.

Whilst every effort has been made to interpret the conditions between investigation locations, such information is only indicative, and liability cannot be accepted for its accuracy. Information provided from other sources is taken in good faith and SQL cannot guarantee its accuracy.

The information contained in this report is intended for the use of T.A.D. Builders Ltd. QGL can take no responsibility for the use of this information by any third party or for uses other than that described in this report.

2.0 PREVIOUS INVESTIGATIONS AND RECOMMENDATIONS

2.1 ESP 2023 Report Conclusions

ESP conducted a ground investigation for the end client in 2023. That report assessed the risks to the site from potential contamination, as well as presenting advice on geotechnical matters.

From the findings of the investigation the Report included a Risk Evaluation matrix of relevant pollutant linkages by way of a Conceptual Site Model (as Table 7 in ESP Report) as below.

Table 7 - Revised Risk Evaluation & Relevant Pollutant Linkages (RPL)

Source	Pathway	Receptor	Classification of Consequence	Classification of Probability	Risk Category	Further Investigation or Remedial Action to be Taken
Potential contaminants in shallow soils particularly anticipated Made Ground	Direct contact/ inhalation/ ingestion of contaminated soil or dust	Site Users (residents)	Medium – potential for chronic levels.	Low likelihood ²	Moderate/Low Risk	See Section 7.0. For further discussion.
	Direct contact/ inhalation/ ingestion of contaminated soil or dust	Construction/ Maintenance Workers	Minor – standard PPE likely to be sufficient	Low likelihood ²	Low Risk	
	Leaching of soil contaminants	Impact on Groundwater /Potable Water	Mild – site lies on Secondary Aquifer	Likely ²	Moderate Risk	See Section 7.0. For further discussion.
	Leaching of soil contaminants	Impact on River Tawe	Medium – site lies adjacent to river	Likely ²	Moderate Risk	
Asbestos in shallow soils	Inhalation of fibres	Construction/ Maintenance Workers	Medium – potential for chronic levels	Low Likelihood	Low Risk	No evidence of asbestos encountered.
Soil sulphate and pyrite	Aggressive groundwater	Buried Concrete	Mild – damage to structures	High likelihood	Moderate/Low Risk	Generally low levels of pH/sulphate identified, however, slightly advanced concrete class required.
Hazardous ground gas/vapours	Asphyxiation/poisoning. Injury due to explosion.	Site Users/Visitors.	Severe – acute risk.	Likely ³	High Risk	Monitoring of ground gas wells is ongoing .
	Damage through explosion.	Building/Property	Severe – acute risk.		High Risk	
	Asphyxiation/poisoning. Injury due to explosion.	Construction and Maintenance Workers.	Severe – acute risk.		High Risk	
Radon gas	Migration into Buildings	Site Users (residents)	Medium – potential for chronic levels	Likely ⁴	Moderate/High Risk	Risk identified in environmental report – see Appendix C.
Notes: 1. This table, updates, Table 4 in Section 3.2.2. 2. Contamination risk assessed in line with proposed end use. 3. Ground gas monitoring is ongoing. 4. Environmental data report (Appendix C) identifies that full Radon protection is required.						

The required actions that required further assessment were deemed to be:

Required Further Actions:

- Completion of ground gas and groundwater level monitoring and provision of addendum report.
- Undertaking of supplementary, deep, investigation below the proposed extension to allow confirmation of type and likely performance of foundation options, and installation of deeper ground gas wells.
- Once the scheme is finalised, review of contamination assessment to ensure it remains valid and suitable for proposed end use.
- Further consideration of the potential impact of volumetrically unstable (slag) deposits via a detailed trial pitting exercise.
- Assessment of potential for spontaneous combustion, which could be combined with the undertaking the trial pit exercise identified above.

2.2 Quantum 2024 Report Conclusions

The supplementary investigation scope undertaken by Quantum allowed the ESP Risk Matrix to be updated as below.

Source-Risk	Pathway	Receptor	Pre 2 nd GI Risk Category	Current Risk Level / Observations
Potentially Contaminated Shallow Soils	Contact/Ingestion	Site User (Residents)	Moderate/Low Risk	Low - Moderate Risk. Slightly elevated selected heavy metal concentrations have been identified. Mitigation measures such as suitable clean soil cover should be implemented.
		Site Workers	Low Risk	Low Risk. No acute risk. Appropriate PPE & Welfare arrangements needed.
	Leaching of Soil Contaminants	Groundwater	Moderate Risk	Some elevated levels identified in initial GI. No elevated concentrations in 2 nd GI from leachate or groundwater. Low Risk
		River Tawe	Moderate Risk	
Asbestos in Soils	Inhalation of Fibres	Construction Workers	Low Risk	No further action. Low Risk
Ground Gases	Asphyxiation/ Poisoning.	Site User	High Risk	Gas Risk Assessment concludes CS1 classification. Low Risk
	Explosion	Construction Workers	High Risk	
	Explosion	Building	High Risk	
Radon Gas	Migration into Buildings	Site Users	Moderate/High Risk	Full Radon Protection Measures

The conclusions drawn from the revised Conceptual Site Model were that a low risk exists to groundwater and controlled waters from residual contamination in the soils or groundwater body. A low risk was also concluded from potentially harmful ground gases.

A low to moderate risk could be realised from possible contamination from heavy metals in soils to the site end users adopting a residential end use without plant uptake scenario, as indicated to be more applicable by the Local Authority CLO.

2.3 Remedial & Mitigation Measures of Quantum Report

The following remedial options were recommended by Quantum in the 2024 Report:

In order to address the potential risk from contamination within the soils to the site end users, some form of mitigation should be considered to sever the linkage between source (the soils) and receptor (end users).

This can be achieved by adoption of a cover system. There are two broad categories of cover system available for use in the remediation of contaminated land: an engineered cover system, or a simple cover system. The former is used to provide complete separation of receptor from the source. These can limit upward migration of contaminants and control downward infiltration of water. The soils have been found to only be marginally above the adopted assessment criteria threshold, and the groundwater has been concluded to not be impacted by leachable contamination. Therefore, a simple cover system would seem to be appropriate in this case.

A simple cover system provides a reduction of risk to human health and to provide a suitable medium for plant growth.

As a general rule, a cover system of 600mm in garden areas is recommended by Local Authorities. As this development will not include private garden areas and where vegetable growth will not take place, then a minimum cover system layer of 450mm may be applied.

If no planting of vegetables is permitted as part of the development, the need for a no-dig barrier, such as a separating membrane, is not warranted.

Any soils imported to form the cover system will require to be tested or certified that they are 'suitable for use'.

In accordance with the Welsh Land Contamination Working Group publication 'Requirements for the Chemical testing of Imported Materials for Various End Uses and Validation of Cover Systems' the number of representative samples required for analysis is dependent on the volume of each source soil.

The document states: "It is strongly recommended that, before importing any material to site, the intended sampling regime for that material is discussed and agreed in advance with the Local Authority LPA/CLO/EHO".

Sampling and analysis of the soil/aggregate/stone once imported will be required in addition to any taken at source.

The thickness of the soil cover layer will require validation.

3.0 REMEDIATION & MITIGATION

3.1 Remediation Works

The objectives for the remediation scheme at the site were as follows:

- Fulfil regulatory requirements in order to satisfy Planning Conditions.
- To ensure the site condition is suitable for the proposed future use, in this case to comprise residential housing.
- To highlight and thus ensure that any remediation works are addressed and then managed such that operational risks are controlled to protect 3rd parties and the wider environment.
- To highlight and ensure that post-remediation there are no residual unacceptable contaminated land risks associated with the site.

3.2 Remediation Options

The two phases of ground investigation works identified potential and actual pollutant linkages that could affect the development of the site.

These were limited to raised heavy metal contamination. All other risks had been mitigated sufficiently by investigation and assessment.

The table below summarises the risks highlighted by the investigation works and details the mitigation adopted during construction of the works.

Remedial Actions Summary

Risk	Proposed Action / Mitigation / Strategy
Raised heavy metal concentrations in soils which could pose an unacceptable risk to human health.	The remedial option presented in QG Report to address this was: • Provide 450mm of suitable inert cover in landscaped areas

4.0 VERIFICATION AND VALIDATION

4.1 General

Site records have been reviewed and verified by Quantum to demonstrate that the Remediation Criteria highlighted in Section 3 herein has been achieved as appropriate. Dialogue has also been undertaken with the site management to provide confidence that correct procedures have been followed throughout.

4.2 Provision of Suitable Soil Cover

The designed mitigation for the development of the site was the requirement for 450mm of clean imported soil cover to the site in soft landscaped areas, that would then provide adequate remediation for the strategy stated in the Quantum Report.

The series of record photographs taken on site on 18th June 2025 clearly demonstrate the required thickness of imported soil cover in areas of soft landscaping.

The records included in Appendix 2 demonstrate the thickness and quality of imported soils thus validating the remediation carried out to satisfactorily protect the site end users from any potential contaminants of concern.

4.3 Certification of Imported Soil

The test certificate included in Appendix 3 verifies the quality of imported soil to site to act as capping in areas of soft landscaping.

The record included in Appendix 3 demonstrates the suitability of the imported soils, thus validating the remediation carried out to satisfactorily protect the site end users from any potential contaminants of concern.

APPENDIX 1 – DEVELOPMENT LAYOUT

Revisions		
A	10.10.21	Layouts updated for planning submission
B	29.05.22	Updated following design review
C	15.06.22	Updated following revised tree survey & drainage design
D	26.09.22	Layout updated to show bike store / drying area and updated bin store
E	31.05.23	Parking layout updated & amended in line with SUDs design
F	01.06.23	Rain Garden omitted

Hard & Soft landscaping key

- Red brindle colour Tobermore Hydropave Pedesta permeable block paving to parking courtyard with kerb edgings - extend of permeable paving as per SUDs layout
- Red brindle Tobermore block paving (non-permeable) to parking courtyard
- Tobermore Tegula block paving to paths / gardens
- Indicates grassed areas - Provide topsoil and turfing as section Q30 and D20
- Indicates rain gardens as per SUDs strategy (See engineering / landscaping layout for full details)

Indicates new 1.8m high hit and miss timber fence

- See Catherine Etchel landscaping layouts for detail of all planting / species

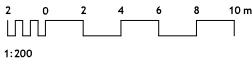
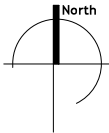
- See Hydrock drawings for details of SUDs strategy

Schedule of accommodation

6no. 2b3p Apartments
6no. 1b2p Apartments

Total 12 homes

12 Parking spaces
Bin store
Amenity space



Notes

Do not scale from this drawing. Use figured dimensions only, which are displayed in millimeters unless stated otherwise. The contractor is requested to check all dimensions before work is put in hand. Any discrepancies within the drawing should be reported prior to commencement of works.

Copyright of this drawing belongs solely to CMKA Ltd. This drawing must only be used for the purpose for which it is supplied and its contents must not be reproduced for any purpose without written permission.

**CHAMBERLAIN
MOSS
KING**
architecture

97a Glebe Street | Penarth
Vale of Glamorgan | CF64 1EE
T. 02920 306400
chamberlainkingmoss.co.uk

Project	TY MAWR, PONTARDAWE
Project number	N331 - T
Client	POBL GROUP LTD
Title	Proposed site plan
Drawing number	A005
Scale	1 : 200 at A1
Revision	F
Status	PLANNING
Drawn	MM
Date	20.09.2021

Proposed site plan
1 : 200

APPENDIX 2 – PHOTO VALIDATION RECORDS OF SOIL COVER



Plate 1: 450mm Thickness of Topsoil (Pit 1)



Plate 2: Inspection Hole Position (Pit 1)



Plate 3: 450mm Thickness of Topsoil (Pit 2)



Plate 4: Topsoil (Pit 2)



Plate 5: 450mm Thickness of Topsoil (Pit 3)



Plate 6: Topsoil (Pit 3)

APPENDIX 3 – IMPORTED SOIL TEST CERTIFICATE

Freeland Horticulture Ltd
Rosedale Nursery
College Road
Hextable
Kent BR8 7LT

Attention: Philippa Lambourne

Our Ref: SLC-1341-SA

15 November 2024

Dear Philippa

Topsoil Analysis Report: Gilfach Topsoil – November 2024

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes and its compliance with the current British Standard for topsoil (BS3882).

SOIL SAMPLING & EXAMINATION

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as dark brown, slightly moist and friable with a well-developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

LABORATORY ANALYSIS

The topsoil sample was submitted to a UKAS and MCERTS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- ⊕ pH & electrical conductivity values;
- ⊕ major plant nutrients (N, P, K, Mg) & organic matter content;
- ⊕ particle size distribution and stone content;
- ⊕ heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- ⊕ sulphate, sulphur, sulphide;
- ⊕ total cyanide and total (mono) phenols;
- ⊕ speciated PAHs (US EPA16)
- ⊕ banded aromatic and aliphatic petroleum hydrocarbons (C₅-C₃₅).
- ⊕ Asbestos

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

COMMENTS**pH & Electrical Conductivity (salinity) Values**

The sample was alkaline in nature (pH 8.5) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil:water extract was (717 μ S/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by CaSO₄ extract (BS3882 requirement) fell below the maximum specified value (3300 μ S/cm) given in BS3882:2015.

Organic Matter & Nutrient Status

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

The C:N ratio of the sample was acceptable for general landscape purposes

Particle Size Distribution & Stone Content

The sample contained 85% sand and fell into the loamy sand texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (9.5%). As such, stones will not restrict the use of the soil for landscaping purposes.

Potential Contaminants

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any site-specific assessment criteria, the concentrations that affect human health have been compared with the 'residential with homegrown produce' land use in the Suitable For Use Levels presented in 'The LQM/CIEH S4Us' for Human Health Risk Assessment (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels' for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that would exceed their respective guideline values.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, loamy sand. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Gilfach, Neath
Month/Year	November 24
Our Ref	1341-SA
Date	15 November 2024

Composite sample

pH Value & Salinity

pH value (1:2.5 soil/water ext)	units	8.5
Electrical Conductivity (1:2.5 soil/water ext)	µS/cm	717
Electrical Conductivity (1:2.5 soil/CaSO4 ext)	µS/cm	2836

Organic Matter & Nutrient Status

Organic Matter (LOI)	%	6.2
Organic Carbon (Derived)	%	3.6
Total Nitrogen	%	0.256
Carbon:Nitrogen Ratio	:1	14.1
Available Phosphorus	mg/l	73.2
Available Potassium	mg/l	1111
Available Magnesium	mg/l	211

Particle Size Analysis & Stones

Clay (<0.002mm)	%	6
Silt (0.063-0.002mm)	%	9
Sand (2.0-0.063mm)	%	85
Texture Class	UK Class	Sandy Loam

Stones 2-20mm	% by DW	0.6
Stones 20-50mm	% by DW	0.0
Stones >50mm	% by DW	0.0

Potential Contaminants

Total Arsenic (As)	mg/kg	5.6
Total Cadmium (Cd)	mg/kg	0.21
Total Chromium (Cr)	mg/kg	48.3
Hexavalent Chromium (Cr ^{VI})	mg/kg	0.4
Total Copper (Cu)	mg/kg	16.8
Total Lead (Pb)	mg/kg	17.1
Total Mercury (Hg)	mg/kg	<0.2
Total Nickel (Ni)	mg/kg	30.0
Total Selenium (Se)	mg/kg	0.14
Total Zinc (Zn)	mg/kg	84.9
Total Beryllium (Be)	mg/kg	<1
Total Barium (Ba)	mg/kg	50.3
Total Vanadium (V)	mg/kg	10.7
Hot Water Soluble Boron (B)	mg/kg	1.2
Total Cyanide (CN)	mg/kg	<1
Elemental Sulphur (S)	mg/kg	<5
Easily Liberated Sulphide (S ²⁻)	mg/kg	<1
Water Soluble Sulphate (SO ₄ ²⁻)	mg/l	47.0
Total Phenols Index	mg/kg	<1
Asbestos Screen	-	N.D.

Chain of Custody requires Freeland Ticket: 01322 619161

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Gilfach, Neath
Month/Year	November 24
Our Ref	1341-SA
Date	15 November 2024

Polyaromatic Hydrocarbons

Naphthalene	mg/kg	<0.05
Acenaphthylene	mg/kg	<0.05
Acenaphthene	mg/kg	<0.05
Fluorene	mg/kg	<0.05
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.05
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo[a]anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo[b]fluoranthene	mg/kg	<0.1
Benzo[k]fluoranthene	mg/kg	<0.1
Benzo[a]pyrene	mg/kg	<0.1
Indeno[1,2,3-cd]pyrene	mg/kg	<0.1
Dibenzo[a,h]anthracene	mg/kg	<0.1
Benzo[g,h,i]perylene	mg/kg	<0.1
Total PAHs sum US EPA 16	mg/kg	<1

Banded Petroleum Hydrocarbons

Aliphatic TPH >C ₅ -C ₈	mg/kg	<0.05
Aliphatic TPH >C ₈ -C ₉	mg/kg	<0.05
Aliphatic TPH >C ₈ -C ₁₀	mg/kg	<0.05
Aliphatic TPH >C ₁₀ -C ₁₂	mg/kg	<10
Aliphatic TPH >C ₁₂ -C ₁₆	mg/kg	<10
Aliphatic TPH >C ₁₆ -C ₂₁	mg/kg	<10
Aliphatic TPH >C ₂₁ -C ₃₅	mg/kg	11.0
Aliphatic TPH >C ₃₅ -C ₄₄	mg/kg	<12

Aromatic TPH >C ₅ -C ₇	mg/kg	<0.05
Aromatic TPH >C ₇ -C ₈	mg/kg	0.10
Aromatic TPH >C ₈ -C ₁₀	mg/kg	<0.05
Aromatic TPH >C ₁₀ -C ₁₂	mg/kg	<10
Aromatic TPH >C ₁₂ -C ₁₆	mg/kg	<10
Aromatic TPH >C ₁₆ -C ₂₁	mg/kg	<10
Aromatic TPH >C ₂₁ -C ₃₅	mg/kg	41.0
Aromatic TPH >C ₃₅ -C ₄₄	mg/kg	<12

Total Petroleum Hydrocarbons (C ₅ -C ₄₄)	mg/kg	59.1
---	-------	------

BTEX

Benzene	mg/kg	<0.02
Toluene	mg/kg	<0.2
Ethyl Benzene	mg/kg	<0.04
m- & p- Xylene	mg/kg	<0.2
o-Xylene	mg/kg	<0.1