

Regional Investment Programme M25 Junction 10/A3 Wisely Interchange Ground Investigation Report Addendum

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Executive Summary

The ground gas, groundwater and surface water monitoring programme for the Road Investment Strategy (RIS) M25 Junction 10 / A3 Wisley Interchange Improvements Scheme (the Scheme) was completed following the completion of the Ground Investigation (GI) for the Scheme. The findings from the GI were reviewed and assessed within the Ground Investigation Report (GIR) [1]. This addendum to the GIR contains the assessment of outstanding potential contaminant linkages (PCLs) (called Source-Pathway-Receptor linkages in the GIR) previously identified in the outline Conceptual Model (CM) but not assessed in the GIR. The findings of the additional work will be discussed in combination with relevant existing data. These outstanding linkages specifically relate to risks to controlled waters, ecological receptors, property, and some human health aspects.

Three additional rounds of ground gas, groundwater and surface water monitoring were undertaken between April and June 2020 by SOCOTEC. During this monitoring programme further ground gas and photoionisation detector (PID) monitoring was undertaken, as well as sampling of groundwater from selected monitoring installations and surface water from selected locations across the Scheme. Selected samples were submitted for laboratory chemical analyses.

The results have been assessed for both potential risks to human health, controlled waters, ecology and property receptors by means Generic Quantitative Risk Assessments (GQRAs).

An assessment was undertaken to compare the locations of identified potential sources of contamination and the exceedances identified within the GQRA. The assessment indicates that there is no significant link between the identified sources and exceedances of human health GAC.

A low risk to controlled waters was identified based on PCLs. Whilst some chemical parameters identified in groundwater, soil-derived leachate and surface water samples exceeded the generic assessment criteria (GAC) screening values, these were considered representative of elevated background concentrations within the wider area and not considered to pose an unacceptable risk to controlled waters.

There were also some less widespread exceedances, such as for the chemical parameters vanadium, benzo(a)pyrene and chloroform, the exceedances generally align with identified sources of the historical landfills in the western section of Area 3, and Wisley Airfield in the south of Area 2; however, these are not considered to form a PCL during construction or operation of the scheme and were therefore not considered to pose an unacceptable risk to controlled waters. The drainage system of the road network was also compared to identified GAC exceedances and found no significant linkage between the current M25 and A3 drainage network and the identified exceedances. Mitigation measures, in addition to those in the Environmental Management Plan (EMP), are considered unnecessary.

The monitoring data and assessment indicated that the level of risk associated with the potential inhalation of vapors from groundwater (including potential perched water) and surface water have been assessed as very low to low. Moreover, elevated soil PID readings previously reported during the GI were considered unlikely to be as a result of interference from hydrogen sulphide generated by pyrite in the Bagshot Formation.

Based on a potential severe consequence but an unlikely likelihood of occurrence, a moderate/low risk from ground gas to construction workers, future maintenance workers and off-site human health and property receptors was identified. This is based on the Gas Screening Value (GSV) (based on the worst case) calculated using the assessment methodology detailed in BS8485:2015+A1:2019 [2] and CIRIA C665 [3] from three round of gas monitoring across the Scheme. This implied that the maximum Characteristic Situation with respect to both carbon dioxide and methane was CS2 (low risk). Further concentrations of hydrogen sulphide and carbon monoxide did not exceed the threshold concentrations for short-term or long-term workplace exposure risk.

The assessments undertaken suggest that the Scheme will not pose an unacceptable risk to ecological receptors.

The risk to on-site and off-site property receptors associated with aggressive ground conditions is considered low, with scheme design to be in line with the geotechnical parameters presented per stratum in Section 5.11 and summarised in Table 5-62 of the GIR [1].

The risk of ground gas will need to be included in any piling risk assessment as per the EMP and ground gas mitigation measures cognisant of the CS2 classification will need to be incorporated within the design of below ground chambers and ducts.

Appropriate health and safety measures should be implemented during any on site works and a safe system of work must always be implemented if entry to a confined space is required and unavoidable and guidance issued by the Health and Safety Executive for working in confined spaces should be followed [4].

In summary, with design and mitigation measures including the adoption of Best Available Techniques (BAT) and based on the updated CSM and risk assessment following completion of post-GI monitoring, it is considered that during operation there will be negligible and minor beneficial effects to baseline conditions. The anticipated negligible and minor effects are considered to be permanent and not significant.

1. Introduction

1.1. Objective and Scope of Report

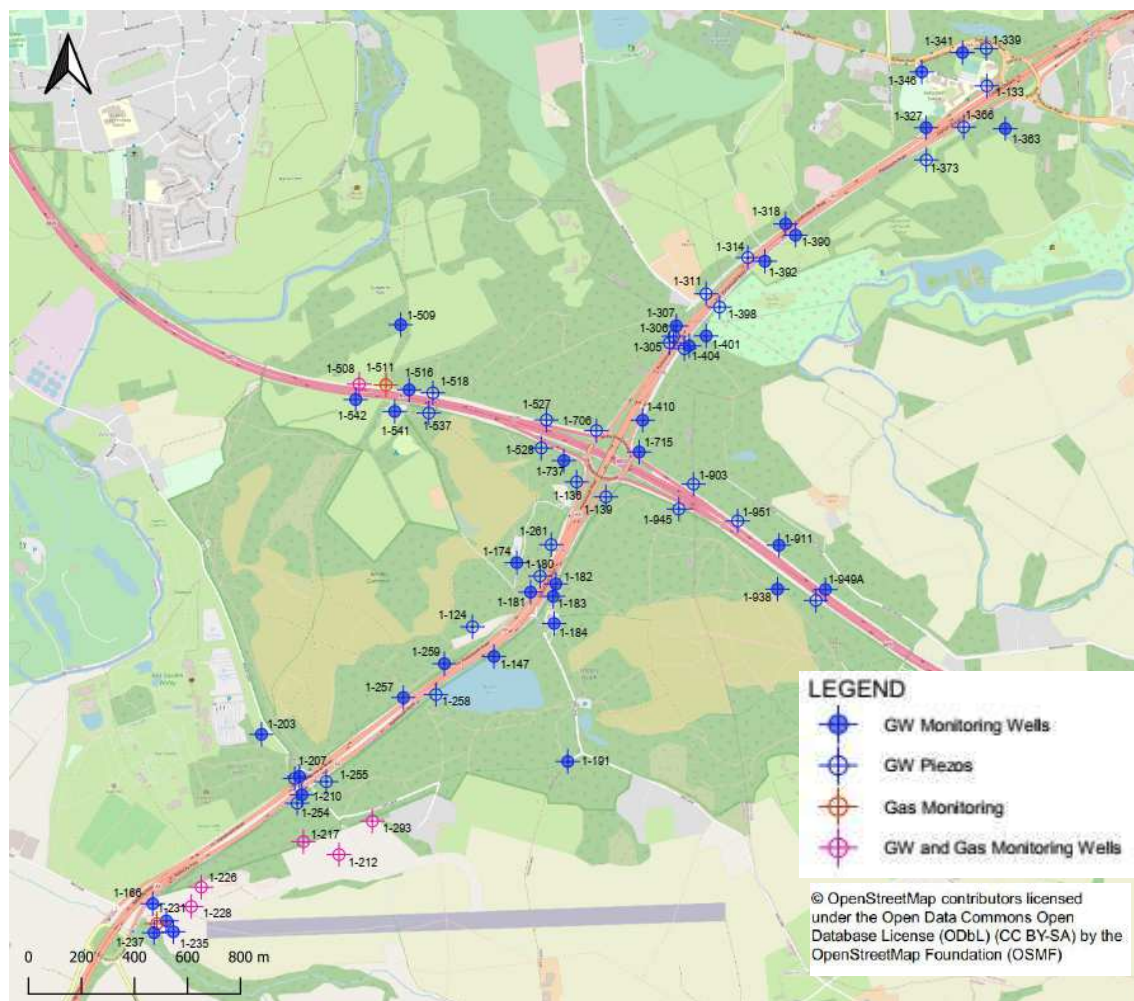
- 1.1.1. The Ground Investigation (GI) for the Road Investment Strategy (RIS) [5] M25 Junction 10/A3 Wisley Interchange Improvement Scheme (the Scheme) was carried out between May 2019 and February 2020. The findings from the GI were reviewed and assessed within the Ground Investigation Report (GIR) reference HE551522-ATK-GEN-XX-RP-CE-000001 [1]. A Scheme location plan is presented as Figure 1-1.

Figure 1-1 – Monitoring Network Location Plan



- 1.1.2. However, the ground gas, groundwater and surface water monitoring programme was ongoing at the time of reporting and only the initial outcomes of the groundwater monitoring were reported therein, namely the interpretation of groundwater level data only to inform the hydrogeological conceptualisation for the Scheme. Only Source-Pathway-Receptor (S-P-R) linkages relating to human health risks from inhalation, ingestion and dermal contact with soil, soil-derived dust and fibres were assessed therein. Whilst soil vapor information was available, the S-P-R linkages relating to vapor inhalation also considers vapors from waters and, therefore, this linkage could not be properly assessed until groundwater monitoring information became available. As such, the controlled waters and ground gas risk assessments, the assessment of human health risks relating to water and the assessment of risk to ecological and property receptors were to be completed once the outstanding information became available.
- 1.1.3. The results and subsequent assessments of ground gas and water quality data obtained during the monitoring and sampling programme are reported in this addendum to the GIR.
- 1.1.4. This document should be read in conjunction with the GIR. The GIR includes information on the Scheme, including site setting and the scope of the GI, the outline conceptual site model (CSM) for the Scheme, and an updated CSM detailing the S-P-R linkages assessed in the GIR and those outstanding. No data, information or assessment presented within the GIR is repeated herein.
- 1.1.5. For reference, S-P-R linkages are hereafter referred to as potential contaminant linkages (PCLs) in line with terminology changes in recently published guidance [6] (refer to section 1.2.1 for details).
- 1.1.6. This addendum to the GIR contains the assessment of outstanding PCLs previously identified in the outline CSM but not assessed in the GIR, including a complete updated CSM covering all PCLs detailed in the outline CSM, based on the assessment of the outstanding identified PCLs.
- 1.1.7. The ground gas, groundwater and surface water monitoring programme was completed by SOCOTEC between April and June 2020, when further ground gas and Photoionisation Detector (PID) monitoring was undertaken, as well as sampling of groundwater from selected wells and surface water from selected locations across and within the vicinity of the Scheme. Sampling locations are presented in Figure 1-2, below. Surface water sampling locations are given in Figure 2-1 later in this report. Selected samples were submitted for laboratory chemical analyses. The factual report of the additional works is provided in Appendix A.
- 1.1.8. The objective of this addendum to the GIR is to:
- Complete a generic quantitative risk assessment (GQRA) of the soil, groundwater and surface water data; and
 - Present an updated CSM for the Scheme based upon the findings of the GQRA assessment.
- 1.1.9. The scope includes an assessment of risk to human health from ground gas, groundwater and surface water and risk to controlled waters from groundwater.
- 1.1.10. The geoenvironmental laboratory certificates and monitoring results are provided in Appendix B.
- 1.1.11. A map of identified potential sources of contamination is presented as appended Drawing 1.

Figure 1-2 – Monitoring Network Location Plan



1.2. Assumptions and Limitations

1.2.1. This report has been produced subject to the following assumptions and limitations:

- No responsibility can be accepted by Atkins for the accuracy of third-party information including reference data contained within site specific database reports.
- This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in legislation may necessitate a re-interpretation of the report in whole or in part after its original submission.
- Due to the inherent variability of the ground conditions between exploratory hole positions, interpretations are subject to the limitations of only assessing a relatively small proportion of sub-surface conditions at the Scheme.
- This report should be read in line with current legislation, statutory requirements and/or industry good practice applicable at the time of the works being undertaken. Any changes in this legislation, guidance or design may dictate the findings provided within this report to be reassessed.
- Monitoring data provide information pertaining to specific discrete locations on particular dates. Recorded ground conditions may differ from the recorded results if this monitoring was to be undertaken on other dates.

- The original GIR was produced in line with Environment Agency Land Contamination: Risk Management (LCRM) 2019 guidance, the relevant guidance at the time. Since the formal withdrawal of Contaminated Land Report (CLR) 11 on 8th October 2020, the Environment Agency published updated LCRM guidance on the same date [6]. This report has been produced in accordance with the latest LCRM guidance.

2. Geoenvironmental Risk Assessment

2.1. Introduction

- 2.1.1. The following sections detail the controlled waters and human health GQRAs that have been undertaken based on the additional monitoring data, as summarised in the SOCOTEC factual report [7] presented in Appendix A.

2.2. Controlled Waters Generic Quantitative Risk Assessment – Additional Assessment

Introduction

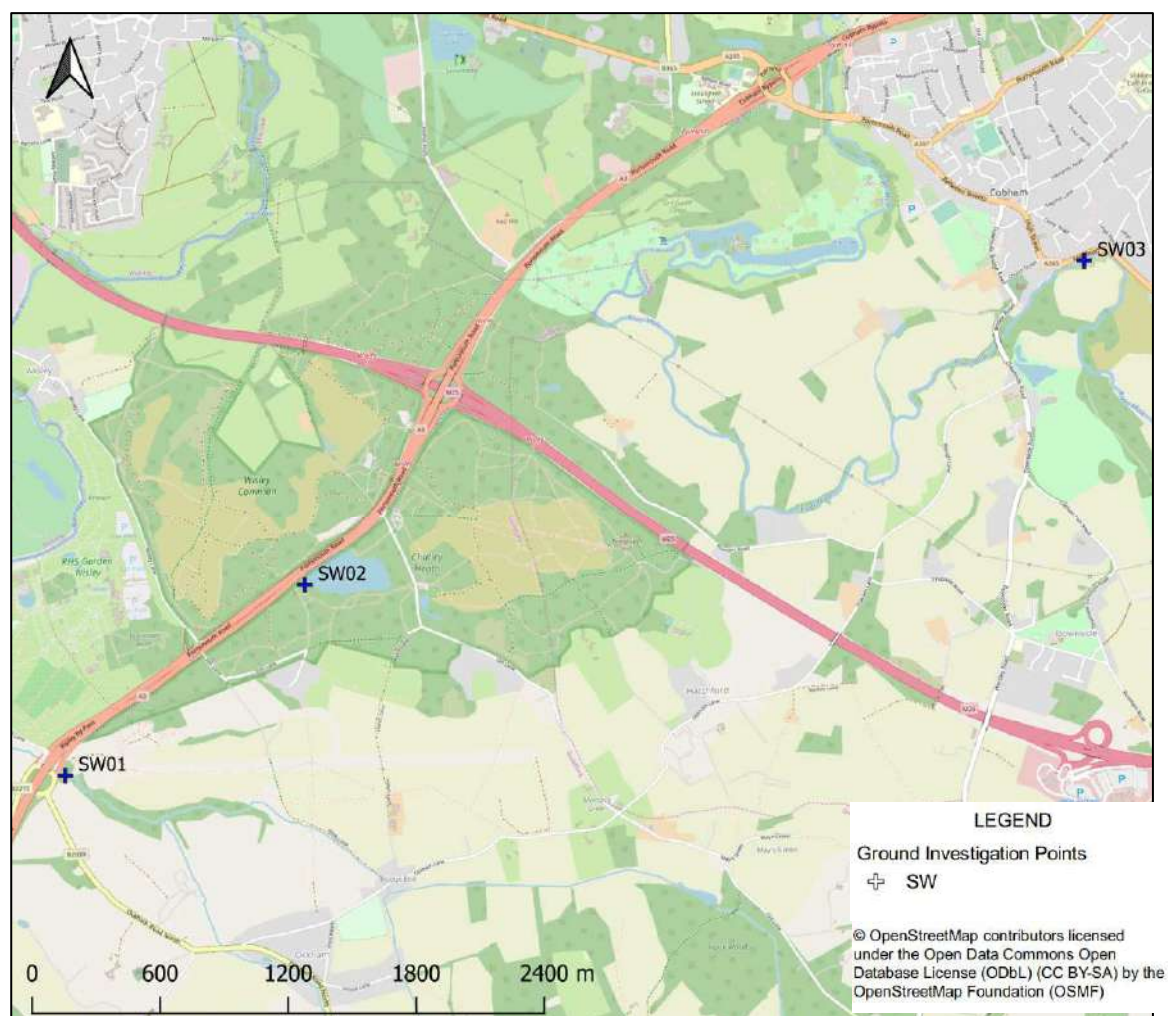
- 2.2.1. Three rounds of groundwater monitoring were undertaken between April and June 2020, during which samples were collected from selected monitoring installations with subsequent chemical testing. Further information on the groundwater testing suite is provided in the GIR [1] and SOCOTEC Factual Report, with the latter presented in Appendix A of this addendum to the GIR. For this assessment no distinction has been made between potential perched water and groundwater as, based on the Scheme geology, permanent perched water is considered unlikely and was not identified during the GI. Any discussion of groundwater includes the potential for perched water.

Methodology

- 2.2.2. The potential risks to the identified receptors were assessed quantitatively by comparison of 104 soil-derived leachate and 139 groundwater analytical results against the Freshwater Environmental Quality Standards (EQS-f), as set out in the 2015 Water Framework Directive (WFD) [8]. Where values are not specified within the WFD, non-statutory guidance values were adopted to assess the potential risk to controlled waters.
- 2.2.3. The Scheme is underlain by permeable geological units, with underlying superficial and bedrock units designated as Secondary A and Principal aquifers. For this reason, the soil-derived leachate and groundwater analytical datasets were also compared against the UK Drinking Water Standards (DWS), as set out in The Water Supply (Water Quality) Regulations 2016 [9]. The EQS-f and DWS standards are collectively referred to as General Assessment Criteria (GAC).
- 2.2.4. The results of the testing for all determinands were also assessed quantitatively against background concentrations within natural materials to provide an indication of the risks posed to the receptors via the pathways identified in the GIR [1]. In line with guidance [8], the Environment Agency Water Framework Directive bioavailability tool (M-BAT) [10] was used to derive site-specific screening values for copper, lead, manganese, nickel and zinc based on the EQS-f long-term bioavailability freshwater concentrations. These screening values were derived from background concentrations within the receiving water bodies measured during the monitoring.

- 2.2.5. During the ground investigation, surface water samples were taken from a River Wey tributary (SW01) and Bolder Mere (SW02), and from the River Mole (SW03) located outside the Scheme boundary. Locations of the samples are presented on Figure 2-1. In line with M-BAT guidance [10], the required parameters to calculate the predicted no-effect concentration (PNEC), which is the concentration at which a chemical will likely have no toxic effect, are average pH, average calcium and median Dissolved Organic Carbon (DOC). For pH, calcium and DOC, these were 7.3 mg/l, 54.5 mg/l and 12.5 mg/l respectively.

Figure 2-1 – Surface Water Monitoring Locations



- 2.2.6. Under the WFD guidance, the PNEC for zinc is adjusted by the addition of a background concentration which is dependent upon the catchment of the receiving water. Background concentrations of zinc have been published in a report produced by the Water Framework Directive – United Kingdom Technical Advisory Group [11]. The background concentration for zinc based on freshwater data for the Thames catchment is 0.002 mg/l. This value, along with average pH, calcium and DOC outlined above, were applied to M-BAT to generate PNEC values (Appendix D).
- 2.2.7. The PNECs generated and used within this assessment are:
- Copper: 0.05456 mg/l;
 - Lead: 0.0148 mg/l;

- Manganese: 0.48916 mg/l;
- Nickel: 0.02422 mg/l; and
- Zinc: 0.04658 mg/l.

2.2.8. EQS-f for ammonium can be adjusted based on the receiving waterbody's elevation and alkalinity as calcium carbonate (CaCO_3), as per the WFG-UKTAG standards [11]. The most recent readings of the Environment Agency's Stratford Brook Above Ockham Mill Stream monitoring point, near the J10 junction (sampling point TH-PWER0319 from 2016 to 2020), have an average CaCO_3 of 93.2 mg/l. The receiving waterbody with the highest elevation is Bolder Mere, which is at an elevation of approximately 18 m AOD. The resulting river classification for ammonia standards is Type 3. The most recent Environment Agency classification of ammonia for the receiving water bodies are "High" and "Good". The standard for a Type 3 High (more stringent than Good) river is 0.3 mg/l total ammonia as nitrogen.

2.2.9. Cadmium can also be adjusted based on the receiving waterbody's alkalinity as CaCO_3 . All surface water receptors are classified as Class 3 as per the WFD and so the EQS-f for cadmium is 0.09 mg/l.

Screening Results

2.2.10. Groundwater, soil-derived leachate, and surface water samples have been screened against the adopted assessment criteria, exceedances of which are available in Appendix C and summarised in Table 2-1 and Table 2-2. Surface water samples from outside the Scheme boundary are not discussed, but are screened and presented in the Appendix for comparison. Concentrations of organic contaminants in soil-derived leachate samples were not screened against GAC, as per the Remedial Targets Methodology advice [12].

2.2.11. The method of screening soil-derived leachate data is considered a conservative approach to risk assessment for controlled waters as the laboratory method utilises conditions to extract the leachate which the site soils are not expected to be exposed to under normal circumstances.

2.2.12. The laboratory method detection limit (MDL) for dichlorophenol, 2-chlorophenol, 4-chlorophenol, pentachlorophenol, anthracene, naphthalene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, hexachlorobutadiene, 4-bromophenyl-phenylether, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, di-n-butylphthalate, hexachlorobenzene, 4-bromophenyl-phenylether, and total trichlorobenzene were greater than their corresponding GAC and, therefore, the results reported less than MDL have not been included in the summary as they are not considered to represent known exceedances. The MDLs for free cyanide, cadmium, hexavalent chromium, mercury, benzo(a)pyrene, and fluoranthene were also greater than their corresponding GACs. Exceedances were reported for these compounds, thus values below the MDL cannot be discounted as they may also represent potential exceedances. Table 2-1 below presents only the exceedances where these determinands were detected above the MDL.

Screening Discussion

2.2.13. Exceedances of the GAC for soil-derived leachate samples and groundwater samples are presented in Table 2-1 and surface water in Table 2-2, below. EQS-f has been used as the GAC unless otherwise stated.

Table 2-1 Soil-derived leachate and groundwater exceedances

Chemical Parameter	GAC (EQS-f /DWS/PNEC) (mg/l)	Leachate			Groundwater		
		Max Conc. (mg/l)	No. of samples	No. of exceedances	Max Conc. (mg/l)	No. of samples	No. of exceedances
Free Cyanide	0.001	0.02	104	2	0.2	117	0
Ammoniacal Nitrogen as N	0.2	2.9	104	14	4.5	117	22
Ammonia	0.3	N/A	0	N/A	0.77	27	4
Ammonium	0.26	N/A	0	N/A	5.79	111	22
Chloride	250	N/A	0	N/A	909	117	18
Benzo(a)pyrene	1.70E-07	N/A	0	N/A	0.01	128	1
Fluoranthene	6.30E-06	N/A	0	N/A	0.01	128	3
Chloroform	0.0025	N/A	0	N/A	0.026	11	1
Cobalt	0.003	0.031	104	14	N/A	0	N/A
Manganese	0.123	2.35	104	2	N/A	0	N/A
Vanadium	0.02	0.065	104	4	N/A	0	N/A
Cadmium	0.00009	0.022	104	18	0.02361	117	55
Hexavalent Chromium	0.0034	0.021	104	3	0.009	117	2
Iron	1	1.73	104	1	75.9	112	45
Iron+	0.2	1.73	104	38	75.9	112	61
Lead*	0.0148	0.015	104	1	0.021	117	1
Mercury	0.00007	0.00013	104	1	0.00005	117	0
Nickel*	0.02422	0.029	104	1	0.696	117	66
Zinc*	0.04658	0.057	104	4	2.809	117	49
Sodium	N/A	59	104	N/A	347	117	N/A
Sodium+	200	59	104	0	347	117	11
*Site specific predicted no effect concentrations (PNEC) calculated using Environment Agency M-BAT							
+DWS derived generic assessment criteria							
N/A is shown where determinand is not tested or where no value is available for specific GAC							

Table 2-2 Surface water exceedances

Chemical Parameter	GAC (EQS-f /DWS/PNE C) (mg/l)	Surface Water		
		Max Conc. (mg/l)	No. of samples	No. of exceedances
Benzo(a)pyrene	0.00000017	0.00002	2	2
Fluoranthene	0.0000063	0.0004	3	3

Metals

- 2.2.14. Greater concentrations and numbers of exceedances of GAC for iron, cadmium, nickel, zinc and sodium were found in groundwater samples than in soil-derived leachate samples. This suggests that the sources of these metals are unlikely to be from soil sources within the Scheme boundary. The presence of iron, nickel, zinc and sodium in groundwater is considered likely to be associated with the dissolution of naturally occurring clay minerals found in the Bagshot Formation [13]. Whilst sources of zinc and cadmium can be either anthropogenic or naturally occurring, there does not appear to be a link between locations where high concentrations have been identified in leachate samples and those locations where high concentrations have been detected in groundwater samples. There also does not appear to be a link between high concentrations in leachate and groundwater samples and any of the identified sources, as shown on Appended Figure 3-1. As concentrations of these determinands are site-wide and not related to identified sources, they are considered likely to be indicative of background levels. This is also considered to include any potential unidentified marginal exceedances of cadmium as it is noted that the MDL for cadmium is greater than the GAC.
- 2.2.15. Whilst not tested for in groundwater, there were marginal exceedances of the EQS-f for vanadium and manganese and more widespread exceedances of cobalt in soil-derived leachate samples. Cobalt exceedances were widespread throughout the Scheme and do not appear to be linked to any of the identified sources and as such are considered to represent background water quality, these are shown on Appended Drawing 1. Manganese exceedances were found in samples taken from locations with no identified sources and from an area of artificial ground. All vanadium exceedances were from exploratory locations in proximity to the footprint of the historical landfills and artificial ground in the south of the study area, near the former Wisley Airfield. While these determinands are found naturally in soils and rock, it is possible that the vanadium exceedances are associated with the landfill and airfield sources in the south of the Scheme.
- 2.2.16. The EQS-f for mercury was marginally exceeded in one soil-derived leachate sample with a relative exceedance of a factor of 1.86. The sample was taken at a depth of 2.6 m below ground level (bgl) from exploratory location 1-147, located at the northern shore of Bolder Mere and from an area that is not in the vicinity of any identified sources. No mercury exceedances were measured in groundwater samples, so the presence of a mercury exceedance in a soil-derived leachate sample is not considered to pose a risk to groundwater. This consideration also applies to any unidentified marginal exceedances as the MDL for mercury is greater than the GAC. Exploratory location 1-147 is hydraulically down-gradient from Bolder Mere, so there is considered to be little risk to the surface water receptor.

- 2.2.17. Screening of the available surface water samples identified no metals exceedances.
- 2.2.18. Lead was measured at concentrations marginally exceeding the EQS-f in one soil-derived leachate sample located near artificial ground and identified sources to the south of Red Hill and one groundwater sample located at Wisley Common which is not located near any identified potential sources. The two samples were taken in separate surface water catchments and in areas separated by a groundwater flow divide, so it is considered unlikely that there is a link between the leachate exceedance and the groundwater exceedance.
- 2.2.19. Hexavalent chromium was measured at concentrations exceeding the EQS-f in three soil-derived leachate samples and two groundwater samples. The exceedances do not appear to be related to any of the identified sources. Concentrations were greater in the soil-derived leachate samples than in the groundwater samples; however, there are no hydraulic linkages between sample locations. It should be noted that the MDL for hexavalent chromium is greater than the GAC which means that there may be some marginal exceedances that were not identified. However, as the five samples with the greatest concentrations do not correspond to identified sources, it is considered unlikely that lower concentrations will reflect an unacceptable risk.

Inorganic Compounds

- 2.2.20. Ammonia and ammonium are related terms based on measurements of nitrogen in a sample. Ammonia only refers to the gaseous NH_3 molecule and ammonium only to the NH_4^+ cation, whilst ammoniacal nitrogen refers to all ammonia forms, including ammonia, ammonium, nitrogen gas, nitrites, nitrates, etc. In groundwater samples, ammonium and ammoniacal nitrogen exceedances were found in the same samples at the same magnitude. There were fewer ammonia exceedances, but these also occurred in the same samples as identified ammonium and ammoniacal nitrogen exceedances. For the ease of comparison of nitrogen concentrations between soil-derived leachate samples and groundwater samples, ammoniacal nitrogen will be considered further below.
- 2.2.21. In soil-derived leachate samples, ammoniacal nitrogen was measured at concentrations of up to 2.9 mg/l at depths of between 0.3 to 6.5 m bgl, whilst in groundwater samples, ammoniacal nitrogen was measured at concentrations of up to 4.5 mg/l. Exceedances of the EQS-f occur in 14 soil-derived leachate samples and in 22 groundwater samples. Exceedances occurred throughout the site and there does not appear to be a relationship between soil-derived leachate exceedances and groundwater exceedances. Whilst some exceedances were measured in proximity to potential sources of potential contamination (mapped on Appended Figure 3-1), such as the former Wisley Airfield to the south-east of the Scheme and in the footprint of historical landfills in the west of the Scheme, exceedances were also measured in samples taken from locations where no potential sources have been identified. It is therefore considered that elevated ammonium concentrations are representative of natural conditions.
- 2.2.22. Concentrations of chloride in groundwater marginally exceeded the EQS-f in 18 groundwater samples taken across the site. High concentrations of chloride can be naturally occurring in salt-rich geology or anthropogenic in origin, such as the use of road salts. However, the spread of exceedances across the Scheme do not appear to be related to any of the identified sources.

- 2.2.23. The EQS-f for free cyanide was exceeded in two soil-derived leachate samples, one slightly hydraulically up-gradient of the historical landfills in the west of the Scheme and the other located north-east of Bolder Mere adjacent to the A3/Portsmouth Road. The results for both samples are the same as the MDL, 0.02 mg/l. The isolated occurrence of these exceedances in locations that do not correspond to identified potential sources and are not considered to reflect widespread conditions or an unacceptable risk. No cyanide was detected in groundwater samples which suggests that there is unlikely to be a connection between the soil-derived leachate exceedances and groundwater. The exceedance located near Bolder Mere is hydraulically down-gradient from the lake, so there is considered to be little risk to the surface water receptor.
- 2.2.24. No exceedances of inorganic compounds were identified within screening of surface water samples. Some compounds, including free cyanide, were not tested for in surface water samples, however no exceedances were identified in groundwater samples and so it is considered unlikely that there will be an unacceptable risk to the surface water receptors.
- 2.2.25. It should be noted that the MDL for free cyanide is greater than the GAC, which means that there may be some marginal exceedances that were not identified. However, as the two samples with the greatest concentrations do not correspond to identified sources, it is considered unlikely that lower concentrations will reflect an unacceptable risk.

Speciated PAHs

- 2.2.26. Concentrations equal to the MDL (0.01 mg/l) for benzo(a)pyrene were detected in one groundwater sample and for fluoranthene in three groundwater samples. Apart from these four samples, there were no other PAHs detected above the MDL.
- 2.2.27. The locations where the three fluoranthene concentrations were detected in groundwater do not appear to be linked to any of the identified potential contamination sources.
- 2.2.28. Benzo(a)pyrene was detected at a concentration of 0.01 mg/l in groundwater from exploratory location 1-235, which is located on the western side of the former Wisley Airfield (in the south-eastern extent of the Scheme), in the footprint of several historical landfills (to the west of the Scheme) and areas of artificial ground.
- 2.2.29. Exceedances of benzo(a)pyrene (3 no.) and fluoranthene (5 no.) were detected in a total of seven surface water samples taken from the River Wey tributary (SW01) and Bolder Mere lake (SW02) and River Mole (SW03). The exceedances were identified at all three samples sites. Screening results are shown in Appendix D and locations of the samples are presented on Figure 2-1.
- 2.2.30. Based the limited identification of PAH compounds in groundwater, it is considered unlikely that the presence of benzo(a)pyrene and fluoranthene at concentrations below or equal to the MDL in groundwater present a viable risk to identified controlled water receptors. There is also potential that detections of PAH compounds in surface waters result from background concentrations, including from atmospheric deposition or discharges to rivers upgradient.

Volatile Organic Compounds

- 2.2.31. One groundwater sample exhibited a concentration of chloroform that was an order of magnitude greater than the EQS-f. The sample was taken from exploratory location 1-341, which is located in the northern extent of the Scheme near Calvin House Nursery & Pre-Prep (located to the north of the A3). While chloroform can be anthropogenic in origin, it can also derive as a by-product from natural abiotic processes. There are no identified contamination sources near this location and chloroform was not detected above the MDL in any other samples. As this is an isolated occurrence of one order of magnitude above the GAC, it is not considered representative of an unacceptable risk.

Controlled Waters Risk Assessment Conclusions

- 2.2.32. Chemical parameters have been detected at elevated concentrations in soil-derived leachate, groundwater and surface water samples collected from within the Scheme boundary. Most exceedances were within one order of magnitude of the GAC and the determinands that exceeded their respective GAC were mostly present at relatively low concentrations (<0.1 mg/l), marginally above the method detection limits. Most of the GAC exceedances were widespread and considered indicative of background concentrations in the wider area. The more localised exceedances, such as hexavalent chromium, lead and fluoranthene, only marginally exceeded their respective GAC with no potential contamination sources identified. As such, these compounds are not considered to present a viable risk to controlled waters receptors.
- 2.2.33. The proximity of sample locations to potential sources of contamination identified in the GIR, such as historical landfills, artificial ground or the former Wisley Airfield (Appended Drawing 1), do not appear to have an influence on the concentration of any of the chemical parameters measured. The concentrations of all chemical parameters do not appear to vary with respect to surface water catchments or groundwater flow divides.
- 2.2.34. It is understood that dissolution of minerals within the Bagshot Formation could be the source of many of the metals measured in exceedance of the GAC [13], such as iron, nickel and sodium. Groundwater movement in the area could transport these chemicals from the aquifer to shallower geological units, particularly in areas of discharge such as in the vicinity of Bolder Mere. As these chemical parameters are considered likely representative of background conditions, they do not form part of an PCL and do not represent an unacceptable risk to controlled waters.
- 2.2.35. Ammoniacal nitrogen was measured at concentrations that exceeded the EQS-f in groundwater samples and soil-derived leachate samples taken from monitoring installations / exploratory locations throughout the Scheme. There is no clear linkage between identified contamination sources within the Scheme boundary and elevated concentrations of ammoniacal nitrogen. Elevated ammoniacal nitrogen concentrations do not appear to be influenced by distance from the groundwater flow divide and are found in areas of recharge, indicating that the recorded concentrations are representative of background levels. The elevated concentrations could be present as a result of the long-established agricultural use of nearby land, the decomposition of inert waste material or from the degradation of organic material. As such, ammoniacal nitrogen does not form part of an PCL within this risk assessment.
- 2.2.36. Ammoniacal nitrogen was measured at concentrations below the EQS-f in surface water samples taken from Bolder Mere, the River Wey and the River Mole.
- 2.2.37. Some isolated exceedances of the organic contaminants benzo(a)pyrene and fluoranthene were measured in groundwater and surface water samples. However, the measured concentrations were equal to the MDL and were not located in areas considered to be linked with potential contamination sources. The isolated nature of the exceedances, and marginal nature of the exceedances indicate that it is unlikely that these, or any unidentified marginal exceedances, reflect larger areas of contamination within the Scheme and are, therefore, not considered to pose an unacceptable risk to controlled waters.

2.3. Human Health Generic Quantitative Risk Assessment – Additional Assessment

Introduction

- 2.3.1. A human health GQRA was presented in the GIR based on the available soil geochemical data collected during the 2019/2020 SOCOTEC ground investigation. Based on the data available at the time of writing the GIR, only PCLs relating to human health risks from inhalation, ingestion and dermal contact with soil, soil-derived dust and fibres could be assessed. The GIR should be referred to for details of the previous assessment, which will not be discussed within this document.
- 2.3.2. Ground gas, groundwater and surface water monitoring and, as necessary, sampling has been completed since the GIR was produced. Following receipt of all outstanding laboratory geochemical data, this section contains the assessment of outstanding PCLs to human health receptors previously identified in the outline CSM but not assessed in the GIR. The findings of the additional work will be discussed in combination with relevant existing data. Risks to human health receptors from ground gas are assessed in Section 2.4.
- 2.3.3. As with the controlled waters assessment the presence of permeant perched water across the scheme is considered unlikely and so perched water and groundwater are considered collectively.
- 2.3.4. Further information on the groundwater testing suite is provided in the GIR [1] and SOCOTEC Factual Report (Appendix A).

Methodology

- Outstanding PCLs to human health assessed herein are associated with the inhalation of vapors from contaminated soil and / or groundwater and migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion. The additional groundwater, surface water and ground gas monitoring programme has been completed and the resulting information has been used to update the CSM and to allow PCLs to be assessed.
- Three rounds of ground gas and vapor monitoring were carried out in 15 installations across the Scheme between April and June 2020. This work comprised monitoring for ground gas and taking readings using a PID to provide an indication of the presence of volatile organic compounds (VOCs) and the intensity of the vapors associated with these compounds at each monitoring location. PID readings were also previously taken from soil samples during the GI. The additional monitoring data are considered to provide a more accurate representation of site conditions and better assess the ability of related vapors to accumulate and/or migrate within the underlying deposits across the Scheme.
- Three rounds of groundwater monitoring were also undertaken between April and June 2020, during which samples were taken from selected monitoring installations with subsequent geochemical testing. Further information on the groundwater testing suite is provided within the factual report [7]. The identified concentrations were assessed quantitatively against Atkins' water screening values (WSV) for a residential land use, derived using the Risk-Based Corrective Action (RBCA) Tool Kit for Chemical Releases (version 2.5), to provide an indication of the risk posed to human health from VOC vapors migrating from these waters. The results of the geochemical testing for metals and inorganics have also been compared to UK DWS and background concentrations within natural materials to provide an indication of the risk posed via ingestion.

- The following discussion provides an overview of the findings of the assessment. The updated CSM is included in Section 4.

Soil Vapor Risk Assessment

Background

- 2.3.5. As reported in the GIR, during the 2019/2020 ground investigation a total of 1,111 PID readings were taken at regular intervals from samples of Made Ground and natural deposits collected from exploratory holes across the Scheme. These generally showed readings of <1 ppm, although several elevated readings were recorded in isolated parts of the Scheme.
- 2.3.6. Visual or olfactory evidence of organic contamination was generally absent within samples from across the Scheme that exhibited PID readings greater than 1 part per million (ppm), and most of the readings were from seemingly unimpacted natural ground. Geochemical testing carried out on a selection of these samples and other samples that indicated elevated PID readings did not generally identify volatile contaminants at significant concentrations.
- 2.3.7. It was considered possible that these observations were as a result of a natural chemical reaction occurring within the soils at the Scheme. This reaction may occur under newly aerobic conditions created by the drilling of boreholes, which may lead to the creation of sulphide gas. This gas is potentially related to the presence of pyrite in the superficial geology, which has been shown to be historically present in a Bagshot Formation unconformity within this area of Surrey, encountered during the widening of the M25 in 1982 [14]. Hydrogen sulphide has the potential to cause interference in measurements made by PIDs leading to false positive readings.
- 2.3.8. Hydrogen sulphide monitoring was undertaken as part of the ground gas monitoring to assess the presence and concentrations of this gas. The findings of the monitoring are discussed below.

Monitoring Programme Findings

- 2.3.9. The monitored wells provided coverage across the whole Scheme area and included installations where elevated soil PID readings were reported during the GI (exploratory locations 1-212, 1-255, 1-392, 1-903, 1-951, 1-938) and others close to areas of elevated soil PID readings. In some instances the elevated soil PID readings were located at shallow depth, so couldn't be targeted by monitoring installations. However, for some boreholes, the strata displaying elevated soil PID readings did correspond with the monitoring well response zone, as was the case in 1-951 where the highest soil PID reading was measured during the GI (5000 ppm). Reference to the GIR should be made for further information on soil PID readings taken during the GI.
- 2.3.10. During the post-GI monitoring programme, all PID readings from borehole installations were measured at <10 ppm, with the maximum reading of 6.0 ppm recorded in exploratory location 1-392. The majority of readings were measured at <1 ppm, with four readings >1ppm.
- 2.3.11. Hydrogen sulphide was generally not detected (<1 ppm) during the ground gas monitoring. A slightly elevated maximum hydrogen sulphide concentration (5 ppm) was identified in exploratory location 1-511. Hydrogen sulphide was not detected in the monitored wells that had previously exhibited elevated soil PID readings. The monitoring results indicate that the source of elevated PID readings is not related to interference from hydrogen sulphide.

Conclusions

- 2.3.12. Whilst soil PID readings observed during the GI indicated that soils presented a potential localised vapor source, low PID readings recorded during the monitoring programme indicate there is a very low level of risk associated with VOCs.
- 2.3.13. This is further supported by:
- the fact that the source of any elevated PID readings is indicated to not be related to interference from hydrogen sulphide generated by pyrite in the Bagshot Formation;
 - geochemical testing of soil samples did not generally identify volatile contaminants at significant concentrations; and
 - the absence of visual or olfactory evidence of organic contamination.

Groundwater Vapor Risk Assessment

- 2.3.14. Three rounds of groundwater sampling were undertaken between April and June 2020. These groundwater samples underwent geochemical testing for a range of contaminants, including organic compounds (benzene, toluene, ethylbenzene and xylene (BTEX), total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAHs)) and those that are volatile. In general, the test results identified concentrations of less than detectable limits, although some TPH bands, BTEX compounds and phenol were present at concentrations marginally above their MDL but were all relatively low (<0.1 mg/l). All volatile compound concentrations in groundwater were below their respective WSV for human health. The water screening results are included in Appendix C.
- 2.3.15. As detailed in the GIR, only very localised hydrocarbon odours were noted on site and the groundwater monitoring provided no indication that free product was present.
- 2.3.16. The WSP report [15] states that localised naphthalene and phenol were identified at concentrations greater than the MDL within groundwater samples taken during the 2014 investigation. Maximum concentrations were generally identified at WS107; however, these concentrations were fairly marginal (<0.1 mg/l).
- 2.3.17. The Capita Symonds GI [16] identified concentrations of PAHs within groundwater and surface water generally below detectable limits or marginally above the MDL (<0.1 mg/l). Analysis of other organic compounds (TPH, BTEX) identified concentrations less than the MDL.
- 2.3.18. Historical groundwater results are also comparable to the recent 2020 groundwater results.

Conclusions

- 2.3.19. Based on the identified concentrations of organic compounds within the groundwater samples and the lack of evidence of significant contamination on site, the level of risk associated with the inhalation of vapors emanating from groundwater is considered to be limited.

Ingestion and Dermal Contact Risk Assessment - Perched Water, Shallow Groundwater and Surface Water

- 2.3.20. No contact with groundwater is anticipated as part of the operation and use of the Scheme development as a road. As such ingestion or dermal contact with soil or groundwater is not considered to pose an unacceptable risk to human receptors. Contact with surface

water is considered unlikely, however concentrations in surface water are not considered to pose an ingestion or dermal contact risk to human health

- 2.3.21. Potential contact with groundwater (including perched water) or surface water by construction workers is expected, however these risks would be mitigated through the implementation of appropriate risk assessment and method statements for the works and control / mitigation measures, such as personal protective equipment, where necessary.
- 2.3.22. Groundwater and surface water results were compared to DWS (see section 2.2). With respect to those contaminants that present a potential risk to health, groundwater samples exceeded the DWS in multiple locations for nickel, with one marginal exceedance of cadmium. As discussed in section 2.2, the determinands that exceeded their respective GAC were generally present at low concentrations (<0.1 mg/l), only marginally above the method detection limits. Most of the GAC exceedances were widespread and are therefore considered indicative of background concentrations. Therefore, the Scheme does not pose a risk to off-site receptors via this PCL.
- 2.3.23. A single marginal surface water sample exceedance was identified for benzo(a)pyrene. This marginal exceedance (0.0001 mg/kg greater than the criteria) is not considered to be evidence of a significant risk if surface water was ingested.
- 2.3.24. There are no generic criteria by which to assess risk to human health via dermal contact with groundwater or surface water, but as a conservative approach it is assumed that groundwater or surface water could potentially pose a risk to human health through dermal contact considering exceedances of the DWS have been identified.
- 2.3.25. However, the chemical parameters in groundwater and surface water are considered likely representative of background conditions, and unlikely to originate from potential sources across the Scheme (see section 2.2). The Scheme, therefore, is considered unlikely to represent an unacceptable risk to human health via shallow groundwater or surface water ingestion and/or dermal contact pathways.

Human Health Risk Assessment Conclusions

- 2.3.26. The monitoring data and findings indicated that the elevated soil PID readings taken during the GI were unlikely to be as a result of interference from hydrogen sulphide generated by pyrite in the Bagshot Formation. The groundwater geochemical testing results and PID readings taken from the borehole installations during the ground gas monitoring generally corroborated GI visual / olfactory evidence and soil geochemical testing data that unacceptably elevated concentrations of volatile organic compounds are not present at the site. Therefore, specific vapor mitigation measures are not considered necessary for the Scheme. Appropriate health and safety measures should be implemented during any on site works and a safe system of work must, however, always be implemented if entry to a confined space is required and unavoidable and guidance issued by the Health and Safety Executive (HSE) for working in confined spaces should be followed [4].
- 2.3.27. Screening of the groundwater geochemical testing results against WSV for human health did not identify unacceptably elevated concentrations of volatile organic compounds, indicating that groundwater is unlikely to pose an unacceptable risk to human health via vapor inhalation. This therefore indicates that surface water is also unlikely to pose a risk to human health via vapor inhalation.
- 2.3.28. Contact with soil and groundwater at the site by future users of the Scheme is considered highly unlikely indicating no significant risk from dermal contact and ingestion.
- 2.3.29. Based on the available information, vapor and groundwater monitoring identified only isolated detectable levels of volatile organic compounds (TPH, BTEX and phenol) present

at concentrations only marginally above their MDLs. In addition, observations during the GI and monitoring did not provide evidence that significant contamination was present at the site and, based on these findings, the level of risk associated with the inhalation of vapors from groundwater (and hence surface water) present at the site is considered to be very low to low.

- 2.3.30. Potentially unacceptable risks exist to users of domestic abstraction wells in the vicinity of the Scheme through ingestion and dermal contact, although it is considered that this is reflective of wider background concentrations, and not due to ground conditions across the Scheme. Therefore, the Scheme does not pose a risk to off-site receptors via this PCL.

2.4. Ground Gas Risk Assessment

- 2.4.1. A maximum of three rounds of gas monitoring were undertaken at eleven exploratory locations typically installed for dedicated gas monitoring purposes across the Scheme between 23 April and 09 June 2020 by SOCOTEC as part of the post GI monitoring (refer to section 2.3.9 for further details). The full set of results are presented in the factual report (Appendix A). The following sections detail the generic ground gas risk assessment.

Methodology

- 2.4.2. The generic ground gas risk assessment has been undertaken in accordance with BS8485:2015+A1:2019 [2] and CIRIA C665 [3].
- 2.4.3. BS8485:2015 + A1:2019 states that hazardous gas flow rates (Q_{hg}) should be calculated for methane and carbon dioxide for every borehole for each visit and suggests the Q_{hg} be presented alongside the gas monitoring results in a database. Q_{hg} is calculated using the maximum gas concentration recorded (unless lower values can be justified) and the steady state flow rate using the below formula:
- $Q_{hg} = \text{Borehole flow rate (l/h)} \times \text{Gas concentration (\% v/v)} / 100$
- 2.4.4. The Gas Screening Value (GSV) is the flow rate of a specific hazardous gas considered to be representative of a site, following assessment of all borehole concentrations and gas flow rates, whilst taking account of other influencing factors. Such factors being, for example, whether a response zone was completely flooded (which can compromise gas data), the temporal/spatial nature of the data set and the acute one-off nature of the risk.
- 2.4.5. BS8485:2015+A1:2019 indicates that a decision must be made to determine whether the maximum Q_{hg} in the dataset is appropriate to represent the site (and thereby be selected as the GSV), or whether maximum gas concentrations and maximum steady state flow rates should be combined from any borehole/visit to derive a “worst case GSV”.
- 2.4.6. The assessment has adopted a conservative approach and has considered negative flow rates as being positive. Gas concentrations below the monitoring equipment’s limit of detection have been assumed to be at the limit of detection (<0.1l/h) for the purposes of the assessment.
- 2.4.7. The GSV considered representative for the site is then used to select a Characteristic Situation (CS) and risk level. This is considered a conservative approach given that the guidance documents specifically relate to risk scenarios for occupied buildings and are not directly applicable to a road improvement scheme.
- 2.4.8. BS8485:2015 + A1:2019 does not include an approach for assessing carbon monoxide or hydrogen sulphide. The following Workplace Exposure Limits (WELs) as outlined within HSE EH40/2005 (updated 2020) document [17] have been adopted for use in a preliminary assessment of carbon monoxide and hydrogen sulphide:

- Carbon monoxide: 30 parts per million (ppm) for long-term (eight hours) exposure limit and 200 ppm for short-term (15 minutes) exposure limit.
- Hydrogen sulphide: 5 ppm for the long-term exposure limit and 10 ppm for the short-term exposure limit.

Ground Gas Results

As discussed in section 2.4.1, a maximum of three rounds of gas monitoring were undertaken from the eleven monitoring installations between 23 April 2020 and 08 June 2020 as part of the post GI monitoring. The exploratory locations monitored were either dedicated gas monitoring installations (1-511 and 1-233), exploratory locations with dual gas and groundwater installations (1-508, 1-293, 1-212, 1-217, 1-226 and 1-228) or exploratory locations with dedicated groundwater installations (1-203, 1-392 and 1-715) that were nevertheless used for gas monitoring due to proximity to sources. A summary of the gas monitoring results with details of the response zone and stratum for each monitoring location is presented in Table 2-3 and figures showing maximum carbon dioxide and maximum methane concentrations are presented in

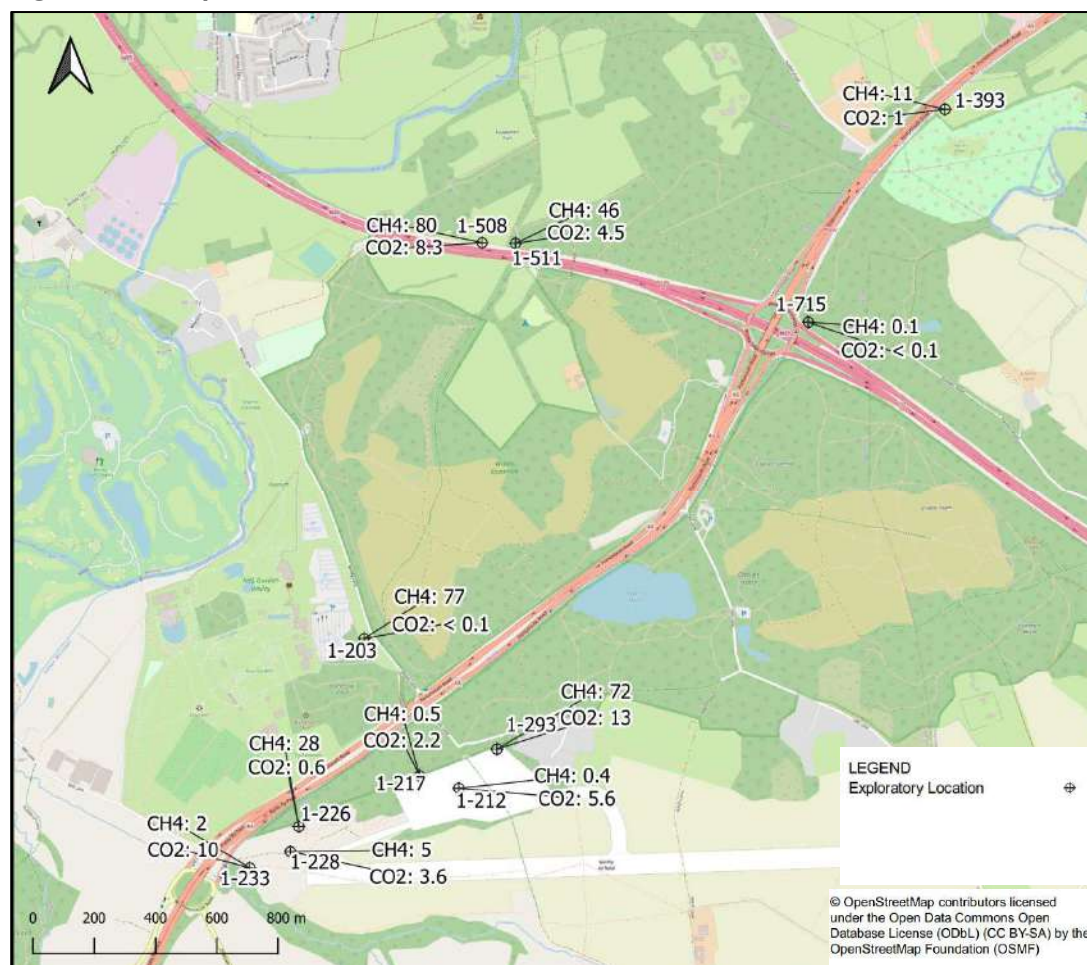
2.4.9. Figure 2-2.

Table 2-3 Summary of gas monitoring results

Hole ID	Response zone (m bgl)	Screened stratum	Maximum Flow (L/H)	Maximum CH ₄ (% vol)	Maximum CO ₂ (% vol)	Minimum O ₂ (% vol)	Maximum H ₂ S (ppm)	Maximum CO (ppm)
1-203 (S)	1.5 – 7.5	RTD / Bagshot	<0.1	77.0	< 0.1	9.2	< 1	6.6
1-212 (S)	1.0 – 1.5	MG	<0.1	0.4	5.6	17.5	< 1	< 1
1-217	2.0 – 7.2	MG / RTD / Bagshot	<0.1	0.5	2.2	12.1	< 1	< 1
1-226	2.5 – 10.0	Bagshot	<0.1	28	0.6	20.0	< 1	< 1
1-228	1.0 – 4.0	RTD	<0.1	5.0	3.6	18.2	< 1	< 1
1-233	1.0 – 2.0	MG / RTD	<0.1	2.0	10.0	14.5	< 1	< 1
1-293	1.0 – 3.0	MG	<0.1	72.0	13.0	1.2	< 1	< 1
1-392 (S)	3.0 – 14.5	Bagshot	1.45	11.0	1.0	19.0	< 1	< 1
1-508 (S)	2.0 – 5.0	MG / RTD	<0.1	80.0	8.3	4.3	< 1	< 1
1-511 (S)	1.5 – 3.0	RTD	0.1	46.0	4.5	18.2	5.0	5.0
1-715 (S)	2.5 – 15.0	Bagshot	<0.1	0.1	< 0.1	21.2	< 1	< 1

Note: MG – Made Ground, RTD – River Terrace Deposits, Bagshot – Bagshot Formation, (S) – Shallow screen well of a dual installation location

Figure 2-2 – Map of Maximum CO₂ and CH₄ Concentrations



2.4.10. The full set of calculated Q_{hg} for each monitoring round at all locations are presented in Appendix E. A summary of maximum Q_{hg} , implied CS and site GSV determined from the gas monitoring are in Table 2-4.

Table 2-4 Summary of maximum hazardous gas flow rates and implied Characteristic Situations

Hole ID	Maximum flow rate (l/hr)	Maximum concentration (% vol)		Q_{hg} / GSV (l/hr)		Implied Maximum Characteristic Situation	
		CH ₄ %	CO ₂ %	CH ₄	CO ₂	CH ₄	CO ₂
1-203 (S) ^	< 0.1	77	< 0.1	0.077	0.00	CS2	CS1
1-212	< 0.1	0.4	5.6	0.0004	0.0056	CS2*	CS2*
1-217	< 0.1	0.5	2.2	0.0005	0.0022	CS1	CS1
1-226	< 0.1	28	0.6	0.028	0.0006	CS2*	CS1
1-228	< 0.1	5	3.6	0.005	0.004	CS2*	CS1
1-233	< 0.1	2.0	10.0	0.002	0.01	CS2*	CS2*
1-293	< 0.1	72.0	13.0	0.072	0.017	CS2	CS2*
1-392^	1.45	11	1.1	0.16	0.016	CS2	CS1
1-508 (S)	< 0.1	80	8.3	0.08	0.008	CS2	CS2*

Hole ID	Maximum flow rate (l/hr)	Maximum concentration (% vol)		Q _{hg} / GSV (l/hr)		Implied Maximum Characteristic Situation	
		CH ₄ %	CO ₂ %	CH ₄	CO ₂	CH ₄	CO ₂
1-511 (S)	0.1	46	4.5	0.046	0.005	CS2*	CS1
1-715 (S) ^	< 0.1	0.1	< 0.1	0.00	0.00	CS1	CS1
Worst Case	0.1[#]	80	13	0.08	0.013	CS2	CS2*

* Characteristic Situation classification increased from CS1 to CS2 where maximum methane or carbon dioxide concentrations exceed 1% and 5% respectively, but where the calculated GSVs have indicated CS1 due to lack of significant gas flow rates as recommended in BS8485:2015+A1:2019.

[#] Based on the maximum representative flow rate of site (discussed detail in section 0)

[^] Designed for groundwater monitoring but used for ground gas monitoring due to proximity to sources.

(S) – Shallow screen well of a dual installation location

Ground Gas Assessment Findings

- 2.4.11. Hydrogen sulphide and carbon monoxide were not identified in most monitoring installations. Carbon monoxide was recorded at a maximum concentration of 6.6 ppm and hydrogen sulphide was recorded at a maximum of 5 ppm and, therefore, these parameters did not exceed the threshold concentrations for short-term or long-term workplace exposure risk.
- 2.4.12. The calculated Q_{hg} implied maximum characteristic situations with respect for methane and carbon dioxide were either CS1 or CS2 in all monitoring installations.
- 2.4.13. The maximum concentration of methane within the Scheme was recorded as 80.0% in exploratory location 1-508 (S), which is located in the western extent of the Scheme adjacent to the M25. The response zone in this borehole was screened within the sandy Made Ground (to a depth of 3.53 m) and the RTD. The nearby exploratory location 1-511 (S) was screened within the RTD and a maximum methane concentration of 46% was recorded.
- 2.4.14. Whilst no obvious source of ground gas was recorded within the Made Ground in ground investigation logs, exploratory location 1-508 (S) is located approximately adjacent to a historical landfill which has been identified as a potential contamination source. The silt deposits in the underlying natural material may also be a contributing factor to high concentrations of gas. Gas flow was recorded at less than or equal to the detectable limit during all monitoring visits undertaken at exploratory locations 1-508 (S) and 1-511 (S), and the implied maximum CS with respect to methane for both exploratory locations equated to CS2 (low risk). No inhabited buildings were noted within 250 m of the two boreholes and, combined with the limited flow, the potential for accumulation and migration of gas, including risk to property, at the western extent of the Scheme is considered to be limited.
- 2.4.15. Other exploratory location where significant methane was identified were 1-203 (S), screened in the RTD from which a concentration of 77% was recorded on 03 June 2020 and 1-293, screened across Made Ground and RTD, with a maximum methane of 72% recorded during the third round of monitoring. However, gas flow at both locations were recorded at less than detectable limits and so the implied maximum CS with respect to methane would be CS2, which indicates a low level of risk. No Made Ground was recorded on the borehole log at 1-203 (S), although rare organic fragments were recorded within the River Terrace Deposits and these may present a potential source of ground gas.
- 2.4.16. 1-203 (S) was only monitored on one occasion and, therefore, it is not possible to say if this concentration is typical of conditions in this location. Location 1-293 was monitored

during each of the three monitoring rounds with the other rounds (1 and 2) reporting maximum methane concentrations of 1.7 and 12 % respectively, indicating that the 72 % is more indicative of background fluctuations than steady high methane concentrations. Consistent with much of the Scheme, gas flow was recorded at less than the detectable limits during all monitoring visits. Given the limited flow identified within this borehole, as per exploratory location 1-508 (S), the potential for accumulation and migration of gas at the site is considered to be limited.

- 2.4.17. The maximum carbon dioxide concentration of 13% was recorded during the third monitoring round on 09 June 2020 within exploratory location 1-293, which is screened in the Made Ground. During the two other monitoring rounds, carbon dioxide concentrations of 1.1% and 7.2% were also recorded in this monitoring installation. The implied maximum CS with respect for carbon dioxide at this location equated to CS2. Given the limited flow identified within this borehole, as per much of the site, the potential for accumulation and migration of gas, including risk to property, in the vicinity of this exploratory location is considered to be limited.
- 2.4.18. A maximum flow rate of 1.45 l/hr was recorded within exploratory location 1-392 during the first monitoring visit on 20 May 2020. However, it should be noted that the borehole's response zone was partially flooded, and a flow rate of < 0.1 l/hr was recorded when it was dry during the second visit.
- 2.4.19. With the exception of the first round of monitoring at exploratory location 1-392 on 20 May 2020, the flow rates were all recorded at or below the detection limit of 0.1 l/hr. As such, the maximum representative flow rate for the site is considered to be 0.1 l/hr.
- 2.4.20. On the basis of measurements in Table 2-4 above, the worst case implied CS derived by combining the maximum observed flow rate (0.1 l/hr) and maximum observed concentrations (80% methane and 13% carbon dioxide) from all monitored boreholes during all monitoring events is CS2, which can be considered as the Scheme GSV for these parameters.
- 2.4.21. The only boreholes to have detectable levels of gas flow were in exploratory location 1-392 in the northern part of the Scheme and exploratory location 1-511(S) in the western part of the Scheme (although this was equal to the detection limit). No inhabited buildings were noted within 250 m of exploratory location 1-511 (S), although a residential property is located approximately 100 m from exploratory location 1-392. The implied CS for this exploratory location with respect for methane was classified as CS2 and CS1 for carbon dioxide, indicating that specific mitigation measures are not necessary.
- 2.4.22. British Standard 8485:2015+A1:2019 indicates that locations with an implied CS1 classification should be considered for upgrade to CS2 where carbon dioxide concentrations exceed 5%. This scenario applies exploratory locations 1-212, 1-226, 1-228, 1-233, 1-508 (S), and 1-511 (S). The guidance states that a CS2 classification relates to a low level of risk and combined with the limited gas flow within the monitoring installations classified as CS2, the level of risk to potential human health and property receptors is considered to be limited.
- 2.4.23. The WSP Wisley Airfield Environmental Interpretative Report [15] reported on gas monitoring carried out in thirteen boreholes at Wisley Airfield during 2014. An assessment was undertaken in line with CIRIA C665 and this identified maximum GSVs related corresponding to CS1 for both methane and carbon dioxide.
- 2.4.24. Elevated concentrations of methane (63.9% v/v) and carbon dioxide (8.9% v/v) were identified within WS103, although in combination with the maximum gas flow of 0.1 l/hr recorded for this borehole, a very low risk (CS1) was identified. The WSP report did state that the identified gas concentrations would represent an increased level of risk (CS4) if using the maximum site-wide gas flow rate, although this is a conservative approach.

WS103 was located approximately 100 m from the nearest residential property; however, as with exploratory location 1-212, WS103 was located outside the main works area with no works proposed between the borehole and the residential property and therefore a pollutant linkage is unlikely. WS103 was the only borehole identified during the WSP investigation to have carbon dioxide and methane concentrations greater than 5% and 1% respectively (Tier 1 levels).

- 2.4.25. Further gas monitoring was undertaken in six monitoring installations during the Capita Symonds GI [16] in 2013. In general, gas concentrations were found to be within the Tier 1 limits, although a carbon monoxide concentration of 188 ppm was identified in BH107, which exceeds the long-term exposure limit but is below the short-term exposure limit. This borehole was located within 50 m of the roundabout at Ockham junction in the southern extent of the Scheme and is not located within 250 m of a residential property and therefore a PCL is considered unlikely.

Conclusions

- 2.4.26. Overall and in accordance with the assessment methodology detailed in BS8485:2015+A1:2019 [2] and CIRIA C665 [3], the calculated GSV (based on the worst case) implied the maximum Characteristic Situation with respect to both carbon dioxide and methane was CS2 (low risk). Further concentrations of hydrogen sulphide and carbon monoxide did not exceed the threshold concentrations for short-term or long-term workplace exposure risk.
- 2.4.27. The risk of ground gas will need to be included in any piling risk assessment as per the Environmental Management Plan (EMP) and ground gas mitigation measures cognisant of the CS2 classification will need to be incorporated within the design of below ground chambers and ducts.
- 2.4.28. Appropriate health and safety measures should also be implemented during any on site works and a safe system of work must always be implemented if entry to a confined space is required and unavoidable and guidance issued by the HSE for working in confined spaces should be followed [4].

2.5. Ecological Risk Assessment

- 2.5.1. The above sections indicate that contamination in soils and groundwater is likely to be representative of wider background concentrations and, where contaminants were identified, they are generally only marginally above the MDL. The Scheme does not include many landscaped areas, although the identified soakaway is likely to provide a habitat for flora and fauna. Whilst the Scheme does include ecologically sensitive areas, including the Ockham and Wisley Commons Site of Special Scientific Interest (SSSI), the assessments carried out within this addendum to the GIR suggest that it is unlikely that the Scheme poses an unacceptable risk to ecological receptors.

2.6. Property Risk Assessment

- 2.6.1. An assessment into the potential aggressivity of soil across the site was completed as part of the GIR (HE551522-ATK-GEN-XX-RP-CE-000001) section 5.11 and summarised in Table 5-62. Scheme design is to be in line with the geotechnical parameters presented per stratum in Section 5.11 and summarised in Table 5-62 of the main GIR. As such, following the implementation of appropriate mitigation measures (ground investigation, assessment and design), the risk to property within the Scheme, including piles / foundations and underground services, is considered low.
- 2.6.2. Whilst, for design purposes, concrete design values within the scheme boundary are based on the mean of the highest two of the sulphate tests results and the lowest of the

pH determinations for soil and groundwater, baseline sulphate values were typically well below the GAC across the study area and a mean of approximately pH 5 was determined in all groundwater samples. As low pH values have been observed across the study area, the risk to off-site property receptors associated with the aggressivity of ground conditions during construction and operation of the Scheme is considered to remain the same as at baseline.

- 2.6.3. A low risk to property associated with ground gas has been assessed herein in section 2.4. This is based on a maximum Characteristic Situation with respect to both carbon dioxide and methane of CS2 (low risk). However, as noted above, ground gas risks will need to be included in any piling risk assessment and ground gas mitigation measures will need to be incorporated within the design of below ground chambers and ducts (see section 2.4.27). Health and safety requirements are detailed in section 2.4.28.

3. Source/Exceedance Location Comparison

- 3.1.1. A comparison between the sources of potential contamination, as identified during the GI, and a representative range of the locations of exceedances from the human health and controlled waters GQRAs, has been undertaken. Appended Figure 3-1 presents identified potential sources of contamination and has been compared to human health exceedances in soil as per the GIR [1] and controlled waters exceedances in groundwater as per the Section 2 GQRA.
- 3.1.2. Only one of the three human health public open space GAC exceedances identified in soil is located in the vicinity of an identified potential source of contamination; concerning an exceedance of benzo(a)pyrene at exploratory location 1-252, located in the southern section of Area 2 of the Scheme. This exploratory location is situated in proximity to one of the historical Wisley Airfield landfills, which could potentially be the source of the exceedance. The remaining two exceedances with respect to human health are not in the vicinity of any potential source of contamination. Overall, it is considered that there is a no significant identifiable link between the identified sources and exceedances of human health screening.
- 3.1.3. The identified exceedances for groundwater are more widespread across the Scheme as discussed in Section 2.2. There is a potential link between exceedances of controlled waters GAC and historical landfill/pollution incidents within the Scheme. For example, the exceedances identified within the vicinity of the historical landfills in the western section of Area 3, and Wisley Airfield in the south of Area 2, are generally of a greater magnitude than the average exceedances observed across the Scheme. No statistical assessment of the identified exceedances has been undertaken in relation to these connections.
- 3.1.4. A search of the M25/A3 highway drainage network, based on topographical survey HE551522-BBA-VTO-WHL_AL_SCHME-M3-VT-000001, identified a single location of a soakaway, present as part of the current drainage network. A visual comparison between the location of this soakaway and the human health and controlled waters exceedances identified in the GQRA has been undertaken. No linkage between the current M25 and A3 drainage network and the identified GAC exceedances has been identified.

4. Updated Conceptual Model and Impact Assessment

- 4.1.1. In line with Environment Agency guidance [6] and in line with the methodology presented in the Environmental Statement [18], the updated CSM presented in Table 5-66 of the GIR has been further updated and revised based on the findings of the assessment contained in this addendum to the GIR. This process has allowed the outstanding PCLs recorded in the updated CSM presented in the GIR to be reassessed and for any relevant pollutant linkages (RPLs) to be identified.
- 4.1.2. As noted in section 1.1.2, only some PCLs relating to human health risks from inhalation, ingestion and dermal contact with soil, soil-derived dust and fibres underwent full assessment within the GIR. PCLs relating to ground gas and those associated with groundwater and surface water are dependent on monitoring data and chemical testing. These were not available at the time of preparation of the main GIR and could not be assessed within the main GIR. Monitoring information and additional laboratory chemical testing information has since become available and the outstanding PCLs can now be assessed. The relevant assessments have been included in sections 2.2 to 2.5 of this report and the CSM has been updated in line with the findings of these assessments.
- 4.1.3. A qualitative assessment of the level of risk associated with each PCL has been undertaken based on the recommendations of R&D66 [19] and WFD [8]. This is provided within the updated CSM. In line with R&D66, where a risk level of moderate or above has been assessed, further assessment and possible remedial measures may be required.
- 4.1.4. For all sources and receptors, the probabilities of the baseline risks (and consequently for construction without mitigation, construction with mitigation, and operation) have been changed according to the conclusions of the respective GQRAs.
- 4.1.5. A summary of the updated CSM and Risk Assessment is presented in Table 4-1 and the complete updated CSM is provided in Appendix F. The updated Impact Assessment is presented in Table 4-2 below. Where a risk and / or impact has been updated following this assessment it has been presented in bold.
- 4.1.6. The assessed risks have either remained the same or decreased based on the baseline assessment presented in the GIR and this addendum. The corresponding updated land quality impact assessment presented in Table 4-2 indicates that the impact of the scheme is negligible to minor beneficial and not significant.
- 4.1.7. Geology identified within the GI was as anticipated and so the magnitude and significance and corresponding impact have not been altered from the original assessment presented in the Environmental Statement [18] which is not reproduced here.

Table 4-1 Updated Conceptual Site Model and Risk Assessment

Source	Receptor	Pathway	Classification of risk at baseline (assuming reasonable worst case scenario)	Classification of risk (construction without mitigation)	Mitigation measures	Classification of risk (construction with mitigation)	Classification of risk (operation)			
<p>Potential sources of contamination (including soil, water, vapors and ground gases) <u>within the Scheme</u> include:</p> <ul style="list-style-type: none">•Localised benzo(a)pyrene within Made Ground to the south of J10 off-slip•Localised PAH within Made Ground at the southern end of Stratford Brook Underbridge and Wisley Lane Realignment•Localised nickel within Bagshot Formation to the south of J10 off-slip•Localised lead to the north of J10 off-slip•Localised asbestos south of Stratford Brook Underbridge and Wisley Lane Realignment•Potential VOC vapors at isolated locations across the Scheme. PID monitoring indicated <10 ppm•Isolated marginally elevated concentrations of organic compounds (TPH, phenol and PAH), hexavalent chromium and lead within groundwater (<0.1 mg/l)•Isolated marginally elevated concentrations of PAHs in surface water (<0.1 mg/l)•Ground gas including isolated carbon dioxide and methane above Tier 1 levels	Human Health (within the Scheme) •Construction workers and future site maintenance workers	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Receptor not present on-site during baseline	Moderate/Low Risk	Implementation of measures in the Environmental Management Plan (EMP) such as good management of stockpiles in accordance with Environment Agency Pollution Prevention Guidelines (PPG), implementation of pollution incident control e.g. plant drip trays and spill kits. Implementation of dust management systems.	Low Risk	Low Risk			
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater		Low Risk		Low Risk				
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion		Moderate/Low Risk		Moderate/Low Risk				
		Inhalation, ingestion and dermal contact with contaminants within surface water		Low Risk		Low Risk				
		Inhalation of vapors from contaminated soil and / or water		Low Risk		Low Risk				
	Human Health (within the Scheme) •Members of the public using public rights of way (non motorised users).	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Moderate/Low Risk	Receptor not present on-site during construction		Risk Assessment and Method Statements (RAMS) to be completed prior to construction and risk management with appropriate PPE. Implementation of a safe system of work if entry to a confined space is required and unavoidable. Guidance issued by the HSE for working in confined spaces should be followed. Piling Risk Assessment (PRA) to consider the risk of ground gas. See section 10.9 of the Environmental Statement for further details.	Receptor not present on-site during construction	Low Risk		
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Low Risk					Low Risk		
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Moderate/Low Risk					Moderate/Low Risk		
		Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk					Low Risk		
		Inhalation of vapors from contaminated soil and / or water	Very Low Risk				Low Risk			
		Human Health (within the study area) •Local residents (including Elm Corner)	Inhalation, ingestion and dermal contact with contaminants in windblown soil-derived dust/fibres				Moderate/Low Risk	Moderate/Low Risk	Low Risk	Low Risk
			Inhalation, ingestion and dermal contact with				Low Risk	Low Risk	Low Risk	Low Risk

Source	Receptor	Pathway	Classification of risk at baseline (assuming reasonable worst case scenario)	Classification of risk (construction without mitigation)	Mitigation measures	Classification of risk (construction with mitigation)	Classification of risk (operation)
	<ul style="list-style-type: none"> •School children and staff (e.g. Feltonfleet School) •Workers and visitors at nearby commercial premises and recreational facilities •Members of the public using public rights of way (non motorised users). 	contaminants within perched water and shallow groundwater					
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Moderate/Low Risk	Moderate/Low Risk		Moderate/Low Risk	Moderate/Low Risk
		Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk	Low Risk		Low Risk	Low Risk
		Inhalation of vapors from contaminated soil and / or water	Low Risk	Low Risk		Low Risk	Low Risk
	Controlled Waters (within the Scheme) <ul style="list-style-type: none"> •Groundwater (superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (Stratford Brook, River Mole, unnamed drains and ditches. 	Leaching / vertical migration of contaminants in soils to underlying groundwater	Low Risk	Low Risk	PRA and use of appropriate piling methods. Implementation of measures in the EMP such as good management of stockpiles in accordance with Environment Agency PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 of Environmental Statement for further details.	Low Risk	Low Risk
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater	Low Risk	Low Risk		Low Risk	Low Risk
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk		Low Risk	Low Risk
		Migration of contamination via surface waters	Low Risk	Low Risk		Low Risk	Low Risk
	Controlled Waters (within the study area) <ul style="list-style-type: none"> •Groundwater (Superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (River Wey, Bolder Mere, Pond Farm Pond, Manor Pond and unnamed drains, ditches and ponds. 	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Low Risk	Low Risk		Low Risk	Low Risk
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Low Risk	Low Risk		Low Risk	Low Risk
		Lateral migration of contamination in groundwater	Low Risk	Low Risk		Low Risk	Low Risk
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk		Low Risk	Low Risk
		Migration of contamination via surface waters	Low Risk	Low Risk		Low Risk	Low Risk

Source	Receptor	Pathway	Classification of risk at baseline (assuming reasonable worst case scenario)	Classification of risk (construction without mitigation)	Mitigation measures	Classification of risk (construction with mitigation)	Classification of risk (operation)
	Ecology •Thames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient Woodland.	Leaching / vertical migration of contaminants followed by lateral migration of contamination in groundwater connected to bog/ surface water	Low Risk	Low Risk	Implementation of measures in the EMP such as good management of stockpiles in accordance with EA PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 of Environmental Statement for further details.	Low Risk	Low Risk
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk		Low Risk	Low Risk
	Property (within the Scheme) •Piles and other foundations •Historic remains/structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Low Risk	Moderate/Low Risk	Implementation of measures in the EMP. PRA to consider the risk of ground gas. See section 10.9 of Environmental Statement for further details.	Low Risk	Low Risk
		Migration of ground gases or vapors along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Moderate/Low Risk	Moderate/Low Risk		Moderate/Low Risk	Moderate/Low Risk
	Property (within the study area) •Residential, commercial and industrial properties •Historic remains/structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Low Risk	Moderate/Low Risk		Low Risk	Low Risk
		Migration of ground gases or vapors along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Moderate/Low Risk	Moderate/Low Risk		Moderate/Low Risk	Moderate/Low Risk
	Off-site sources of contamination (including soil, water, vapors and ground gases) including: •Made Ground/infill material of unknown quality associated with the construction of Feltonfleet School, the railway, RHS Wisley and other existing infrastructure;	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Receptor not present on-site during baseline	Moderate/Low Risk	RAMS to be completed prior to construction and risk management with appropriate PPE. Implementation of a safe system of work if entry to a confined space is required and unavoidable. Guidance issued by the HSE for working in confined spaces should be followed.	Low Risk	Low Risk
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater		Low Risk		Low Risk	Low Risk
		Migration and accumulation of ground gases followed by inhalation or ignition		Moderate/Low Risk		Moderate/Low Risk	Moderate/Low Risk

Source	Receptor	Pathway	Classification of risk at baseline (assuming reasonable worst case scenario)	Classification of risk (construction without mitigation)	Mitigation measures	Classification of risk (construction with mitigation)	Classification of risk (operation)
<ul style="list-style-type: none"> •material of unknown quality associated with the infilling/potential infilling of former water features and mineral extraction pits; • five recorded pollution incidents (minor severity and occurred prior to 1998); •wider area of the former Wisley Airfield and associated activities (historical GI identified some contamination); •farms and agricultural land use; •the railway; •five historical landfills; and •potentially contaminative land uses (current and historical), including vehicle service stations, electricity substation, sewage treatment, gas works, asphalt and coated macadam laying contractors, garden machinery services, vehicle dealers, wood and furniture polishers, picture frame renovators, pest control service, small business park and stationery printers. 		causing asphyxiation and/or explosion			PRA to consider the risk of ground gas. See section 10.9 of Environmental Statement for further details.		
		Inhalation, ingestion and dermal contact with contaminants within surface water		Low Risk		Low Risk	Low Risk
		Inhalation of vapors from contaminated soil and / or water		Low Risk		Low Risk	Low Risk
	Human Health (within the Scheme) •Members of the public using public rights of way (non motorised users)	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Low Risk	Receptor not present on-site during Construction		Receptor not present on-site during Construction	Low Risk
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Low Risk				Low Risk
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Moderate/Low Risk				Moderate/Low Risk
		Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk				Low Risk
		Inhalation of vapors from contaminated soil and / or water	Low Risk				Low Risk
	Controlled Waters (within the Scheme) •Groundwater (superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (Stratford Brook, River Mole, unnamed drains, ditches and ponds).	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Low Risk	Low Risk	PRA and use of appropriate piling methods. Implementation of measures in the EMP such as good management of stockpiles in accordance with Environment Agency PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 of Environmental Statement for further details.	Low Risk	Low Risk
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Low Risk	Low Risk		Low Risk	Low Risk
		Lateral migration of contamination in groundwater	Low Risk	Low Risk		Low Risk	Low Risk
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk		Low Risk	Low Risk
		Migration of contamination via surface waters	Low Risk	Low Risk		Low Risk	Low Risk

Source	Receptor	Pathway	Classification of risk at baseline (assuming reasonable worst case scenario)	Classification of risk (construction without mitigation)	Mitigation measures	Classification of risk (construction with mitigation)	Classification of risk (operation)
	Ecology •Thames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient Woodland.	Leaching / vertical migration of contaminants followed by lateral migration of contamination in groundwater connected to bog/ surface water	Low Risk	Low Risk	Implementation of measures in the EMP such as good management of stockpiles in accordance with EA PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 of Environmental Statement for further details	Low Risk	Low Risk
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk		Low Risk	Low Risk
	Property (within the Scheme) •Piles and other foundations •Historic remains/ structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Moderate/Low Risk	Moderate/Low Risk	Design to be in line with the geotechnical parameters presented per stratum in Section 5.11 and summarised in Table 5-62 of the main GIR. Implementation of measures in the EMP. PRA to consider the risk of ground gas. See section 10.9 of Environmental Statement for further details.	Low Risk	Low Risk
		Migration of ground gases or vapors along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Moderate/Low Risk	Moderate/Low Risk		Moderate/Low Risk	Moderate/Low Risk

Table 4-2 Updated Impact Assessment

Source	Receptor	Pathway	Classification of risk (baseline)	Classification of risk (construction without mitigation)	Impact (construction without mitigation)	Classification of risk (construction with mitigation)	Impact (construction with mitigation)	Classification of risk (operation)	Impact (during operation phase assuming mitigation was implemented)
<p>Potential sources of contamination (including soil, water, vapors and ground gases) <u>within the Scheme</u> include:</p> <p>•Localised benzo(a)pyrene within Made Ground to the south of J10 off-slip</p> <p>•Localised PAH within Made Ground at the southern end of Stratford Brook Underbridge and Wisley Lane Realignment</p> <p>•Localised nickel within Bagshot Formation to the south of J10 off-slip</p> <p>•Localised lead to the north of J10 off-slip</p> <p>•Localised asbestos south of Stratford Brook Underbridge and Wisley Lane Realignment</p> <p>•Potential VOC vapors at isolated locations across the Scheme. PID monitoring indicated <10 ppm</p> <p>•Isolated marginally elevated concentrations of organic compounds (TPH, phenol and PAH), hexavalent chromium and lead within groundwater (<0.1 mg/l)</p>	<p>Human Health (within the Scheme)</p> <p>•Construction workers and future site maintenance workers</p>	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	<p>Receptor not present on-site during baseline</p>	Moderate/Low Risk	<p>(Impact predicted to be moderate adverse given sensitivity of receptor)</p>	Low Risk	<p>(Impact predicted to be negligible given reduced likelihood of pathway being realised)</p>	Low Risk	<p>(Impact predicted to be negligible given reduced likelihood of pathway being realised)</p>
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater		Low Risk		Low Risk		Low Risk	
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion		Moderate/Low Risk		Moderate/Low Risk		Moderate/Low Risk	
		Inhalation, ingestion and dermal contact with contaminants within surface water		Low Risk		Low Risk		Low Risk	
		Inhalation of vapors from contaminated soil and / or water		Low Risk		Low Risk		Low Risk	
	<p>Human Health (within the Scheme)</p> <p>•Members of the public using public rights of way (non motorised users).</p>	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Moderate/Low Risk	<p>Receptor not present on-site during construction</p>				Low Risk	Minor Beneficial
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Low Risk					Low Risk	Negligible
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Moderate/Low Risk					Moderate/Low Risk	Negligible
		Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk					Low Risk	Negligible
		Inhalation of vapors from contaminated soil and / or water	Low Risk					Low Risk	Negligible
	<p>Human Health (within the study area)</p> <p>•Local residents (including Elm Corner)</p> <p>•School children and staff (e.g. Feltonfleet School)</p> <p>•Workers and visitors at nearby commercial premises and recreational facilities</p> <p>•Members of the public using public rights of way (non motorised users).</p>	Inhalation, ingestion and dermal contact with contaminants in windblown soil-derived dust/fibres	Moderate/Low Risk	Moderate/Low Risk	Negligible	Low Risk	Minor Beneficial	Low Risk	Minor Beneficial
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible
		Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Inhalation of vapors from contaminated soil and / or water	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
	<p>Controlled Waters (within the Scheme)</p> <p>•Groundwater (superficial Principal</p>	Leaching / vertical migration of contaminants in soils to underlying groundwater	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible

Source	Receptor	Pathway	Classification of risk (baseline)	Classification of risk (construction without mitigation)	Impact (construction without mitigation)	Classification of risk (construction with mitigation)	Impact (construction with mitigation)	Classification of risk (operation)	Impact (during operation phase assuming mitigation was implemented)
<ul style="list-style-type: none"> Isolated marginally elevated concentrations of PAHs in surface water (<0.1 mg/l) Ground gas including isolated carbon dioxide and methane above Tier 1 levels 	and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (Stratford Brook, River Mole, unnamed drains and ditches.	Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Migration of contamination via surface waters	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
	Controlled Waters (within the study area) •Groundwater (Superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (River Wey, Bolder Mere, Pond Farm Pond, Manor Pond and unnamed drains, ditches and ponds.	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Lateral migration of contamination in groundwater	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Migration of contamination via surface waters	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
	Ecology •Thames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient Woodland.	Leaching / vertical migration of contaminants followed by lateral migration of contamination in groundwater connected to bog/ surface water	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
	Property (within the Scheme) •Piles and other foundations •Historic remains/structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Low Risk	Moderate/Low Risk	Minor Adverse	Low Risk	Negligible	Low Risk	Negligible
		Migration of ground gases or vapors along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible
	Property (within the study area) •Residential, commercial and industrial properties •Historic remains/structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Low Risk	Moderate/Low Risk	Minor Adverse	Low Risk	Negligible	Low Risk	Negligible
		Migration of ground gases or vapors along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible
Off-site sources of contamination (including soil,	Human Health (within the Scheme) •Construction workers and future site maintenance workers.	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Receptor not present on-site during baseline	Moderate/Low Risk	(Impact predicted to be moderate	Low Risk	Impact predicted to be minor	Low Risk	(Impact predicted to be negligible given

Source	Receptor	Pathway	Classification of risk (baseline)	Classification of risk (construction without mitigation)	Impact (construction without mitigation)	Classification of risk (construction with mitigation)	Impact (construction with mitigation)	Classification of risk (operation)	Impact (during operation phase assuming mitigation was implemented)
<p>water, vapors and ground gases) including:</p> <p>•Made Ground/infill material of unknown quality associated with the construction of Feltonfleet School, the railway, RHS Wisley and other existing infrastructure;</p> <p>•material of unknown quality associated with the infilling/potential infilling of former water features and mineral extraction pits;</p> <p>• five recorded pollution incidents (minor severity and occurred prior to 1998);</p> <p>•wider area of the former Wisley Airfield and associated activities (historical GI identified some contamination);</p> <p>•farms and agricultural land use;</p> <p>•the railway;</p> <p>•five historical landfills; and</p> <p>•potentially contaminative land uses (current and historical), including vehicle service stations, electricity substation, sewage treatment, gas</p>		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater		Low Risk	adverse given sensitivity of receptor)	Low Risk	adverse given the mitigation measures	Low Risk	reduced likelihood of pathway being realised)
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion		Moderate/Low Risk		Moderate/Low Risk		Moderate/Low Risk	
		Inhalation, ingestion and dermal contact with contaminants within surface water		Low Risk		Low Risk		Low Risk	
		Inhalation of vapors from contaminated soil and / or water		Low Risk		Low Risk		Low Risk	
	Human Health (within the Scheme) •Members of the public using public rights of way (non motorised users)	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Low Risk	Receptor not present on-site during construction				Low Risk	Negligible
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Low Risk					Low Risk	Negligible
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Moderate/Low Risk					Moderate/Low Risk	Negligible
		Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk					Low Risk	Negligible
		Inhalation of vapors from contaminated soil and / or water	Low Risk					Low Risk	Negligible
	Controlled Waters (within the Scheme) •Groundwater (superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (Stratford Brook, River Mole, unnamed drains, ditches and ponds).	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Lateral migration of contamination in groundwater	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Migration of contamination via surface waters	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
	Ecology •Thames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient Woodland.	Leaching / vertical migration of contaminants followed by lateral migration of contamination in groundwater connected to bog/ surface water	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible

Source	Receptor	Pathway	Classification of risk (baseline)	Classification of risk (construction without mitigation)	Impact (construction without mitigation)	Classification of risk (construction with mitigation)	Impact (construction with mitigation)	Classification of risk (operation)	Impact (during operation phase assuming mitigation was implemented)
works, asphalt and coated macadam laying contractors, garden machinery services, vehicle dealers, wood and furniture polishers, picture frame renovators, pest control service, small business park and stationery printers.	Property (within the Scheme) •Piles and other foundations •Historic remains/ structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Moderate/Low Risk	Moderate/Low Risk	Negligible	Low Risk	Minor Beneficial	Low Risk	Minor Beneficial
		Migration of ground gases or vapors along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Moderate/Low Risk	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible	Moderate/Low Risk	Negligible

5. Conclusion

- 5.1.1. This addendum to the GIR has considered the results of monitoring carried out between April and June 2020 by SOCOTEC to allow outstanding PCLs previously identified in the outline CSM but not assessed in the GIR to be evaluated.
- 5.1.2. The controlled waters assessment indicated that cobalt, iron, cadmium, nickel, zinc, sodium, ammonium and chloride have been identified at levels considered representative of background concentrations. Other identified parameters, benzo(a)pyrene, fluoranthene, chloroform, hexavalent chromium, lead, mercury, vanadium, manganese and cyanide, were measured at concentrations exceeding the GAC, but did not form part of a PCL. Overall risks to controlled waters are considered to be low and therefore mitigation measures in addition to those in the EMP are considered unnecessary.
- 5.1.3. With regards to risks to human health, the monitoring data and assessment indicated that the potential for inhalation of vapors from and the ingestion of and dermal contact with groundwater and surface water to pose a risk is considered unlikely resulting in a moderate/low risk; therefore, additional mitigation measures to those in the Environmental Management Plan (EMP) are considered unnecessary. Moreover, elevated soil PID readings previously reported during the GI were considered unlikely to be as a result of interference from hydrogen sulphide generated by pyrite in the Bagshot Formation.
- 5.1.4. Based on a potential severe consequence but an unlikely likelihood of occurrence, a moderate/low risk from ground gas to construction workers, future maintenance workers and off-site human health and property receptors was identified. This is based on the Gas Screening Value (GSV) (based on the worst case) calculated using the assessment methodology detailed in BS8485:2015+A1:2019 [2] and CIRIA C665 [3] from three round of gas monitoring across the Scheme. This implied that the maximum Characteristic Situation with respect to both carbon dioxide and methane was CS2 (low risk). Further concentrations of hydrogen sulphide and carbon monoxide did not exceed the threshold concentrations for short-term or long-term workplace exposure risk.
- 5.1.5. The risk of ground gas will be assessed in the piling risk assessment as per the EMP and ground gas mitigation measures cognisant of the CS2 classification will need to be incorporated within the design of below ground chambers and ducts.
- 5.1.6. The risk to on-site and off-site property receptors associated with aggressive ground conditions is considered low, with scheme design to be in line with the geotechnical parameters presented per stratum in Section 5.11 and summarised in Table 5-62 of the GIR [1].
- 5.1.7. The assessments undertaken suggest that the Scheme will not pose an unacceptable risk to ecological receptors.
- 5.1.8. An assessment was undertaken to compare the locations of identified potential sources of contamination and the exceedances identified within the GQRA. The assessment indicates that there is no significant link between the identified sources and exceedances of human health GAC. With respect to controlled waters, this assessment identified that concentrations of determinands may be slightly elevated within the vicinity of the historical landfills in the western section of Area 3, and Wisley Airfield in the south of Area 2 compared to the rest of the Scheme.
- 5.1.9. The drainage system of the road network was also compared to identified exceedances and found no significant linkage between the current M25 and A3 drainage network and the identified GAC exceedances.
- 5.1.10. Appropriate health and safety measures should be implemented during any on site works and a safe system of work must always be implemented if entry to a confined space is required and unavoidable with respect to both vapors and ground gas and guidance issued by the Health and Safety Executive for working in confined spaces should be followed [4].

- 5.1.11. In summary, with design and mitigation measures including the adoption of Best Available Techniques (BAT) and based on the updated CSM and risk assessment following completion of post-GI monitoring, it is considered that during operation there will be negligible and minor beneficial effects to baseline conditions. The anticipated negligible and minor effects are considered to be permanent and not significant.

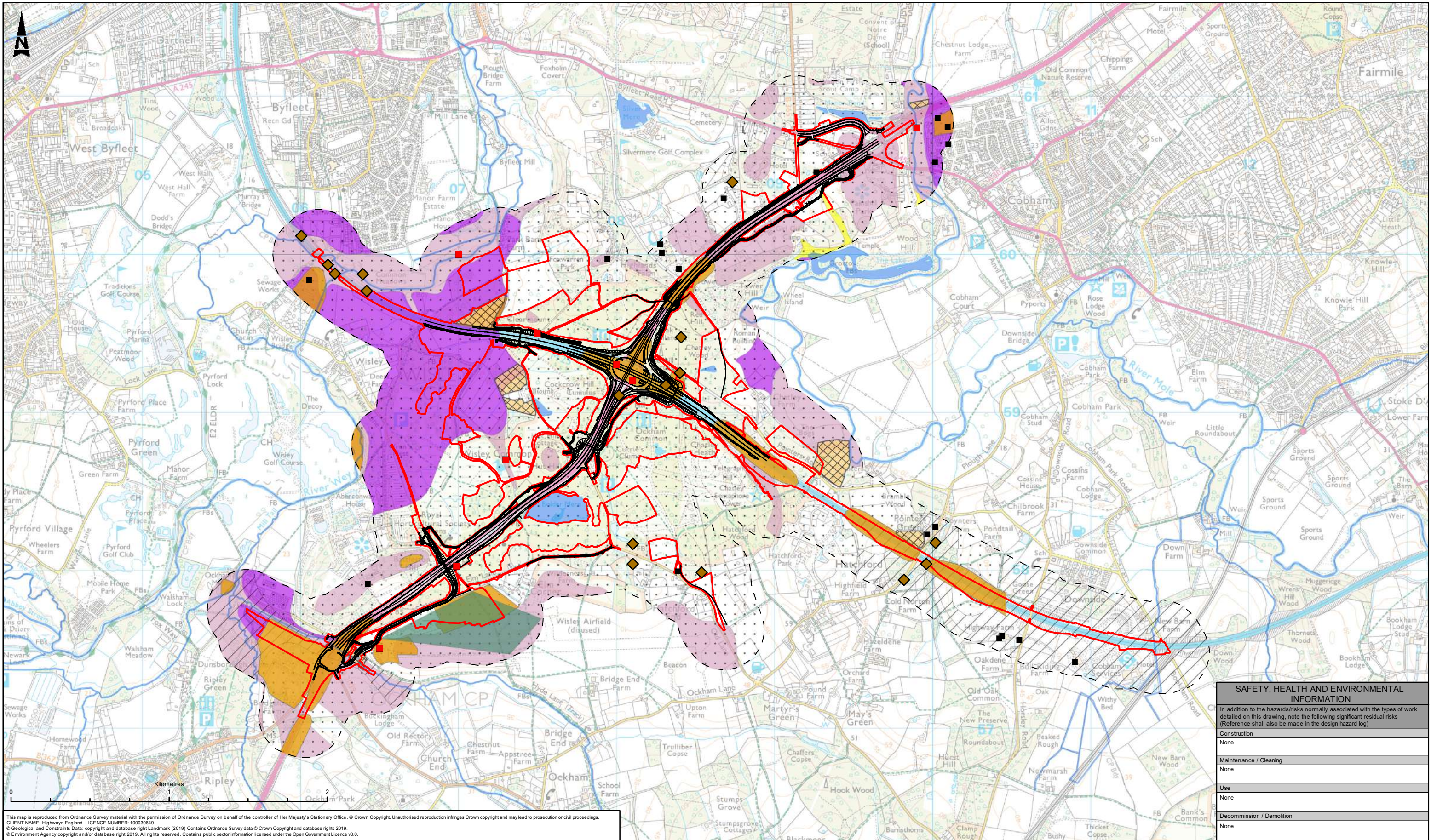
6. References

- [1] Atkins, "Road Investment Strategy – M25 J10 / A3 Wisley Interchange Improvements. HE551522-ATK-GEN-XX-RP-CE-000001," Highways England, November 2020.
- [2] British Standards Institution, "S8485: Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings," British Standards Institution, London, 2015.
- [3] CIRIA, "C665 - Assessing Risks Posed by Hazardous Ground Gases to Buildings.," CIRIA, London, 2007.
- [4] Health and Safety Executive, "Safe work in confined spaces (Confined Space Regulations 1997). Approved Code of Practice and guidance. L101. 3rd Edition.," 2014.
- [5] Department for Transport & Highways, "Road Investment Strategy: 2015 to 2020," 2014.
- [6] Environment Agency, "Land Contamination Risk Assessment," October 2020. [Online]. Available: <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>. [Accessed 19 01 2021].
- [7] SOCOTEC, "Ground Investigation for the Regional Investment Programme M25 J10-A3 Wisley Interchange Improvements, Factual Report on Ground Investigation - Addendum Monitoring Report," July 2020.
- [8] European Parliament, "Water Framework Directive 2000/60/EC," 2000.
- [9] United Kingdom Parliament, "The Water Supply (Water Quality) Regulations," 2016.
- [10] Environment Agency, "Water Framework Directive Metal Bioavailability Assessment Tool (M-BAT), version 3," 2013.
- [11] Water Framework Directive – United Kingdom Technical Advisory Group (WFD-UKTAG), "Estimation of background reference concentrations for metals in UK freshwater," 2012.
- [12] Environment Agency, "Hydrogeological Risk Assessment.: Remedial Targets Methodology," 2006.
- [13] S. K. a. D. Wagner, "The Mineralogy, geochemistry and surface area of mudrocks from the London Clay Formation of southern England," British Geological Survey, 81pp. (IR06/60), Nottingham, UK, 2006.
- [14] J. F. & F. K. Potter, "A Bracklesham—Bagshot Beds unconformity in the London Basin," *Proceedings of the Geologists' Association: Volume 97, Issue 1*, pp. 87-90, 1986.
- [15] WSP, "Wisley Airfield: Environmental Interpretative Report," 2014.
- [16] Capita Symonds, "In-vessel composting access road, Wisley Airfield. Interpretative report on site investigation on north bank of Ockham Stream," 2013.
- [17] Health and Safety Executive, "H40/2005 Workplace Exposure Limits," Health and Safety Executive, London, 2020.

- [18] Highways England, "M25 Junction 10/A3 WEisley Interchange TR010030 6.3 Environmental Statment Chapter 10: Geology and Soils, TR010030/App/6.3".
- [19] Environment Agency and NHBC, "Guidance for the Safe Development of Housing on Land Affected by Contamination. R&D Publication 66.," 2008.

Drawings

Drawing 1 – Geology and Soils: Sources of Potential Land Contamination



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LEGEND

DCO Boundary

250m Study Area

Proposed Engineering Design

Surface Water Courses

Surface Water Bodies

Artificial Ground

Potentially Infilled Land

Other Potentially Contaminative Activities and Incidents

Pollution Incidents

Contaminated Land Use

Landfill

Approximate Location of Wisley Airfield

Bedrock Aquifer

Secondary Aquifer - A

Unproductive Strata

Superficial Aquifer

Principal Aquifer

Secondary Aquifer - A

Secondary Aquifer - Undifferentiated

Description

Status

Revision

Drawn

Checked

Reviewed

Authorised

Issue Date

Description

Status

Revision

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Client

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HE551522 - ATK - EGT

Location

XX - GS - GI - 000001

Type

Role

Number

1 of 1

Rev

C02

Project

HE551522 - ATK - EGT

Originator

XX - GS - GI - 000001

Volume

1 of 1

Original Size

A3

Scale

1:22,000

Project Ref. No.

Sheet

1 of 1

Rev

C02

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made in the design hazard log)

Construction

None

Maintenance / Cleaning

None

Use

None

Decommission / Demolition

None

Project Title

ROAD IMPROVEMENT PROGRAMME M25 Junction 10

Drawing Title

DRAWING 1: GEOLOGY AND SOILS, SOURCES OF POTENTIAL LAND CONTAMINATION

Drawing Number

HE551522 - ATK - EGT

Appendices

Appendix A. SOCOTEC Factual Report

GROUND INVESTIGATION FOR THE REGIONAL INVESTMENT PROGRAMME M25 J10 - A3 WISLEY INTERCHANGE IMPROVEMENTS

FACTUAL REPORT ON GROUND INVESTIGATION – ADDENDUM MONITORING REPORT

Report No D9008-19A

July 2020

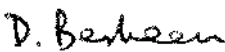


Issue No 1

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Report No D9008-19A

July 2020

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1 July 2020	Draft report	NAME and QUALIFICATIONS D Beskeen BSc FGS	NAME and QUALIFICATIONS Miles Martin BSc MSc MIScT CGeol EurGeol FGS	NAME and QUALIFICATIONS Miles Martin BSc MSc MIScT CGeol EurGeol FGS
		SIGNATURE 	SIGNATURE 	SIGNATURE 
		NAME and QUALIFICATIONS	NAME and QUALIFICATIONS	NAME and QUALIFICATIONS
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2	MONITORING AND SAMPLING.....	1
	2.1 Instrumentation.....	1
	2.2 Groundwater Monitoring and Sampling.....	2
	2.3 Gas Monitoring	2
3	LABORATORY TESTING.....	2
4	REFERENCES.....	4

APPENDIX A INSTRUMENTATION AND MONITORING**APPENDIX B GEOENVIRONMENTAL LABORATORY TEST RESULTS**

1 INTRODUCTION

SOCOTEC UK Limited was commissioned in February 2019 by Geoffrey Osborne Limited (Osborne), on behalf of Highways England, with Atkins Limited (Atkins) designated as the Investigation Supervisor, to carry out a ground investigation at the M25 J10 / A3 Wisley Interchange in Surrey. The investigation was required to obtain geotechnical and geoenvironmental information for proposed works which include widening of the M25 and A3 carriageways, widening of the interchange, improvements to existing local access roads and construction of new access roads.

The scope of the investigation was specified by Atkins and comprised boreholes, trial pits, in situ testing, monitoring, laboratory testing and reporting. The investigation was performed in accordance with the contract specification, the general requirements of BS 5930 (2015), BS EN 1997-2 (2007), BS EN ISO 22475-1 (2006) and other relevant related standards identified below.

This report forms an addendum to, and should be read in conjunction with, the main ground investigation report (SOCOTEC Report No. D9008-19, Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements, May 2020). It presents the results of the monitoring which took place during fieldwork (May 2019 to February 2020) and the post-fieldwork monitoring programme which concluded in June 2020. The information is also presented as digital data as defined in AGS (2017).

2 MONITORING AND SAMPLING

2.1 Instrumentation

Gas and groundwater monitoring instrumentation was installed in selected boreholes, as specified by Atkins. Installation details are summarised in Appendix A.

2.2 Groundwater Monitoring and Sampling

Records of groundwater monitoring carried out by SOCOTEC during and after the fieldwork period are presented in Appendix A.



Groundwater level readings were obtained with a dip meter. Data loggers were also installed in the following exploratory holes: 1-113A, 1-147, 1-181, 1-203, 1-235, 1-341, 1-363A, 1-404, 1-541, 1-715, 1-737 (including barometric data logger) and 1-949A. The data loggers were set to record at one hour intervals and a summary of the calculated water levels is presented in Appendix A. The full dataset is available in the AGS file which accompanies this report. No data is available for the data logger installed in 1-949A because SOCOTEC were unable to gain access following completion of fieldwork.

Groundwater samples were obtained from installations using low-flow methodology in which a flow rate of 0.5 litres per minute or less was maintained while the in situ parameters were monitored at 3 minute intervals. Samples were recovered once the parameters had stabilised for three consecutive readings within a pre-defined variance as specified by Atkins:

- pH \pm 0.1
- Conductivity \pm 3%
- Redox \pm 10mv
- Dissolved Oxygen \pm 10% for values greater than 0.5mg/l. If three readings in a row are less than 0.5mg/l, values considered stable

A surface water sample was also obtained and referenced Bolder Mere Lake.

2.3 Gas Monitoring

Records of gas and volatile organic compound (VOC) monitoring carried out by SOCOTEC after the fieldwork period are summarised in Appendix A. The full dataset which includes site conditions is available in the AGS file which accompanies this report.

An interface probe was used following gas and VOC monitoring. No free product or Non-Aqueous Phase Liquids were detected.

3 LABORATORY TESTING

Geoenvironmental laboratory testing was scheduled by Atkins on the water samples recovered by SOCOTEC. The testing is summarised in the table below and the results are presented in Appendix B. The test suites are defined in the contract specification (document reference HE551522-ATK-VGT-XX-SP-CE-000005, 16 July 2019).

**TABLE 1 : SUMMARY OF GEOENVIRONMENTAL LABORATORY TESTING**

TYPE	QUANTITY	REMARKS
Suite F1 – Water samples (General Suite)	119	
Suite F2 – Water samples (Organics Suite)	119	
Suite F3 – Water samples (Volatile Organics Suite)	6	

Each test report contains an Analytical and Deviating Sample Overview which details the required analysis and provides the reasons for any samples which have been classified deviant with respect to the analytes.



4 REFERENCES

- AGS : 2017 : Electronic transfer of geotechnical and geoenvironmental data (Edition 4.0.4 February 2017). Association of Geotechnical and Geoenvironmental Specialists.
- BS 5930 : 2015 : Code of practice for ground investigations. British Standards Institution.
- BS EN 1997-2 : 2007 Incorporating corrigendum June 2010 : Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing. British Standards Institution.
- BS EN ISO 22475-1 : 2006 : Geotechnical investigation and testing – Sampling methods and groundwater measurements - Part 1 Technical principles for execution. British Standards Institution.
- D9008-19, Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements, Factual Report. May 2020. SOCOTEC UK Limited.
- Regional Investment Programme M25 J10 / A3 Wisley Interchange Improvements, Ground Investigation Specification Version 4.1, document reference HE551522-ATK-VGT-XX-SP-CE-000005. July 2019. Atkins Limited.



APPENDIX A

INSTRUMENTATION AND MONITORING

Installation Summary	A1
Groundwater Monitoring	A2
Groundwater Monitoring – Data logger Summary	A3
Post-fieldwork Gas Monitoring Summary	A4

Installation Summary

Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Pipe Diameter, mm	Instrument Base, mbgl	Response Zone Range, mbgl	Pipe Top Details	Headworks	Remarks
1-113A (1)	SP	11/02/2020	50	4.00	2.00 to 5.00	Open	Raised cover	Water level datalogger installed
1-124 (S)	SPIE	18/07/2019	19	14.20	13.50 to 15.50	Open	Raised cover	
1-136 (S)	SPIE	07/06/2019	19	7.00	5.80 to 7.80	Open	Raised cover	
1-139 (S)	SPIE	10/07/2019	19	7.80	7.50 to 7.90	Open	Raised cover	
1-147 (1)	SP	10/10/2019	50	12.00	1.50 to 12.00	Open	Raised Cover	Water level datalogger installed
1-152 (D)	SP	13/02/2020	50	15.00	8.50 to 15.50	Gas tap	Raised Cover	
1-152 (S)	SP	13/02/2020	50	5.50	0.40 to 6.00	Gas tap	Raised Cover	
1-166 (1)	SP	12/11/2019	50	10.00	2.00 to 10.50	Gas tap	Flush Cover	
1-174 (D)	SP	07/06/2019	50	18.00	13.00 to 18.00	Gas tap	Flush cover	
1-174 (S)	SP	07/06/2019	50	8.00	3.00 to 8.00	Gas tap	Flush cover	
1-180 (S)	SPIE	21/06/2019	19	6.80	6.00 to 7.00	Open	Raised cover	
1-181 (S)	SP	20/06/2019	50	8.00	3.00 to 8.00	Open	Raised cover	Water level datalogger installed
1-182 (D)	SP	31/07/2019	19	28.00	27.50 to 28.50	Open	Raised cover	
1-182 (S)	SP	31/07/2019	50	10.00	6.00 to 10.00	Open	Raised Cover	
1-183 (S)	SP	06/08/2019	50	20.00	4.00 to 20.00	Open	Raised cover	
1-184 (S)	SP	26/07/2019	50	19.00	15.00 to 19.00	Open	Flush cover	
1-191 (S)	SP	07/08/2019	50	14.50	3.00 to 14.50	Open	Raised cover	
1-203 (D)	SP	11/11/2019	50	18.50	50.00 to 18.50	Gas tap	Flush cover	Water level datalogger installed
1-203 (S)	SP	11/11/2019	50	7.50	1.50 to 8.00	Gas tap	Flush cover	
1-207 (1)	SP	13/11/2019	50	7.50	1.50 to 8.00	Gas tap	Flush Cover	
1-207 (2)	SPIE	13/11/2019	19	21.00	20.00 to 22.00	Gas tap	Flush Cover	
1-208 (1)	SPIE	24/11/2019	19	7.00	6.00 to 8.00	Gas tap	Flush Cover	
1-209 (1)	SPIE	23/10/2019	19	6.00	5.00 to 7.00	Open	Raised Cover	
Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well				Project Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements D9008-19 Carried out for Geoffrey Osborne Limited				Table A1

Installation Summary

Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Pipe Diameter, mm	Instrument Base, mbgl	Response Zone Range, mbgl	Pipe Top Details	Headworks	Remarks
1-210 (1)	SP	15/10/2019	50	12.50	2.50 to 13.00	Open	Raised Cover	
1-211 (1)	SPIE	25/09/2019	19	5.80	4.00 to 6.00	Open	Raised Cover	
1-212 (D)	SP	15/08/2019	50	10.00	2.75 to 10.50	Gas tap	Flush Cover	
1-212 (S)	SP	15/08/2019	50	2.00	1.00 to 2.25	Gas tap	Flush Cover	
1-217 (1)	SP	24/10/2019	50	7.50	2.00 to 8.00	Gas tap	Flush Cover	
1-226 (1)	SP	15/11/2019	50	10.00	2.00 to 10.50	Gas tap	Raised Cover	
1-228 (1)	SP	26/11/2019	50	4.00	1.00 to 4.00	Gas tap	Flush Cover	
1-231 (1)	SP	27/11/2019	50	10.00	5.00 to 10.45	Gas tap	Flush cover	
1-233 (1)	SP	26/11/2019	50	2.00	1.00 to 2.00	Gas tap	Flush Cover	
1-235 (1)	SP	01/11/2019	50	10.00	8.50 to 30.00	Gas tap	Flush Cover	Water level datalogger installed
1-237 (1)	SP	06/12/2019	50	13.00	2.80 to 13.50	Gas tap	Flush Cover	
1-237 (2)	SPIE	06/12/2019	19	18.50	17.50 to 19.00	Gas tap	Flush Cover	
1-252A (1)	SPIE	31/01/2020	19	15.00	14.00 to 16.00	Open	Flush Cover	
1-253 (1)	SPIE	01/02/2020	19	6.70	6.00 to 8.00	Open	Flush Cover	
1-254 (1)	SPIE	30/10/2019	19	8.00	7.00 to 9.00	Gas tap	Raised Cover	
1-255 (1)	SPIE	11/11/2019	19	14.60	14.00 to 16.00	Open	Raised Cover	
1-257 (D)	SP	27/06/2019	50	21.50	18.50 to 22.00	Gas tap	Raised cover	
1-257 (S)	SP	27/06/2019	50	6.00	3.00 to 6.00	Gas tap	Raised cover	
1-258 (1)	SPIE	03/12/2019	19	4.50	4.00 to 5.00	Gas tap	Flush Cover	
1-259 (S)	SP	18/06/2019	50	7.00	3.00 to 7.00	Open	Raised cover	
1-261 (1)	SPIE	15/07/2019	19	28.20	27.50 to 29.50	Gas tap	Flush Cover	
1-270A (1)	SP	22/07/2019	50	3.50	1.50 to 3.50	Open	Flush cover	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well




Project
Project No.
Carried out for

Ground Investigation for the Regional Investment Programme
M25 J10 - A3 Wisley Interchange Improvements
D9008-19
Geoffrey Osborne Limited

Table

A1

Installation Summary

Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Pipe Diameter, mm	Instrument Base, mbgl	Response Zone Range, mbgl	Pipe Top Details	Headworks	Remarks
1-293 (1)	SP	27/11/2019	50	3.00	1.00 to 3.00	Gas tap	Flush Cover	
1-305 (1)	SPIE	03/10/2019	19	11.00	20.00 to 23.00	Gas tap	Raised Cover	
1-306 (1)	SPIE	24/09/2019	19	20.00	19.00 to 21.00	Open	Raised Cover	
1-307 (D)	SPIE	01/10/2019	19	28.00	27.00 to 29.00	Open	Raised Cover	
1-307 (S)	SP	01/10/2019	50	14.00	0.50 to 14.50	Gas tap	Raised Cover	
1-311 (1)	SPIE	30/09/2019	19	17.70	17.00 to 19.00	Open	Flush Cover	
1-314 (1)	SPIE	16/09/2019	19	9.00	8.00 to 10.00	Open	Flush Cover	
1-318 (1)	SP	24/09/2019	50	14.00	2.00 to 14.50	Gas tap	Flush Cover	
1-327 (S)	SP	22/08/2019	50	11.00	5.00 to 11.00	Gas tap	Flush cover	
1-333 (1)	SPIE	28/10/2019	19	12.00	11.00 to 13.00	Gas tap	Flush Cover	
1-339 (1)	SPIE	30/10/2019	19	20.00	19.00 to 21.00	Gas tap	Flush Cover	
1-341 (1)	SP	23/10/2019	50	13.50	7.50 to 14.00	Gas tap	Flush Cover	Water level datalogger installed
1-346 (D)	SP	02/08/2019	50	12.00	6.00 to 12.00	Open	Raised cover	
1-346 (S)	SP	02/08/2019	50	4.00	2.00 to 4.00	Open	Raised cover	
1-363A (S)	SP	30/08/2019	50	20.00	4.50 to 20.00	Gas tap	Flush cover	Water level datalogger installed
1-366 (1)	SPIE	14/01/2020	19	6.00	0.50 to 6.30	Open	Flush Cover	
1-373 (1)	SPIE	10/10/2019	19	5.00	4.00 to 6.00	Open	Flush Cover	
1-382 (1)	SPIE	10/12/2019	19	12.00	11.00 to 13.00	Gas tap	Flush Cover	
1-390 (D)	SP	08/08/2019	50	23.00	20.00 to 23.50	Open	Flush Cover	
1-390 (S)	SP	08/08/2019	50	6.00	3.00 to 6.00	Open	Flush Cover	
1-392 (S)	SP	27/08/2019	50	14.50	3.00 to 15.28	Gas tap	Flush Cover	
1-398 (1)	SPIE	17/09/2019	19	9.00	8.00 to 9.00	Gas tap	Flush Cover	
1-401 (1)	SP	30/08/2019	50	20.00	4.50 to 20.50	Open	Flush Cover	
Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well 				Project Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements D9008-19 Project No. Carried out for Geoffrey Osborne Limited				Table A1

Installation Summary

Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Pipe Diameter, mm	Instrument Base, mbgl	Response Zone Range, mbgl	Pipe Top Details	Headworks	Remarks
1-404 (1)	SP	10/09/2019	50	8.00	5.50 to 8.50	Gas tap	Flush Cover	
1-404 (2)	SP	10/09/2019	50	27.00	21.50 to 27.50	Gas tap	Flush Cover	Water level datalogger installed
1-405 (S)	SPIE	23/08/2019	19	25.20	24.50 to 26.50	Open	Raised cover	
1-410 (S)	SP	08/08/2019	50	10.00	7.00 to 10.00	Open	Raised cover	
1-508 (D)	SPIE	22/07/2019	19	17.20	16.20 to 18.20	Gas tap	Raised cover	
1-508 (S)	SP	22/07/2019	50	5.00	2.00 to 5.50	Gas tap	Raised cover	
1-509 (D)	SPIE	02/07/2019	19	18.00	17.50 to 18.50	Open	Raised cover	
1-509 (S)	SP	02/07/2019	50	12.50	10.00 to 13.00	Open	Raised cover	
1-511 (S)	SP	20/06/2019	50	3.00	1.40 to 3.10	Gas tap	Raised cover	
1-516 (D)	SP	16/07/2019	50	23.00	20.00 to 23.50	Gas tap	Raised cover	
1-516 (S)	SP	16/07/2019	19	10.00	9.50 to 10.10	Gas tap	Raised cover	
1-518A (S)	SPIE	19/07/2019	19	26.50	25.50 to 27.50	Open	Raised cover	
1-527 (S)	SPIE	18/06/2019	19	5.80	5.00 to 6.00	Open	Raised cover	
1-528 (S)	SPIE	22/05/2019	19	13.00	11.00 to 13.00	Gas tap	Flush cover	
1-537 (S)	SPIE	10/06/2019	19	7.50	6.00 to 8.00	Open	Raised cover	
1-541 (D)	SP	03/07/2019	50	20.00	16.00 to 20.00	Gas tap	Raised cover	
1-541 (S)	SP	04/07/2019	50	6.00	5.00 to 6.00	Gas tap	Raised cover	Water level datalogger installed
1-542 (D)	SP	09/07/2019	50	19.30	17.50 to 19.40	Gas tap	Raised cover	
1-542 (S)	SP	10/07/2019	50	3.40	2.00 to 3.50	Gas tap	Raised cover	
1-706 (S)	SPIE	26/07/2019	19	16.75	16.00 to 17.00	Open	Raised cover	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



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Installation Summary

Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Pipe Diameter, mm	Instrument Base, mbgl	Response Zone Range, mbgl	Pipe Top Details	Headworks	Remarks
1-715 (S)	SP	15/08/2019	50	15.00	2.50 to 15.00	Gas tap	Raised cover	Water level datalogger installed
1-737 (S)	SP	03/06/2019	50	8.00	3.00 to 8.00	Gas tap	Raised cover	Water level & barometric datalogger installed
1-903 (1)	SPIE	28/09/2019	19	23.50	23.00 to 25.00	Gas tap	Flush Cover	
1-911 (1)	SP	03/12/2019	50	25.00	10.00 to 25.50	Open	Flush Cover	
1-938 (1)	SP	24/11/2019	50	6.50	2.00 to 7.00	Gas tap	Raised Cover	
1-938 (2)	SPIE	24/10/2019	19	26.00	25.00 to 27.00	Gas tap	Raised Cover	
1-945 (S)	SPIE	01/08/2019	19	10.00	9.00 to 11.00	Open	Raised cover	
1-948A (1)	SPIE	19/11/2019	19	8.50	7.50 to 9.00	Gas tap	Raised Cover	
1-949A (1)	SP	20/11/2019	50	7.00	2.00 to 7.50	Gas tap	Flush Cover	
1-951 (1)	SPIE	25/11/2019	19	17.10	16.50 to 18.50	Gas tap	Raised Cover	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



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Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-124 (S)	SPIE	14.20	23/07/2019 04:09:00	1.24	
1-124 (S)	SPIE	14.20	26/07/2019 09:02:00	1.62	
1-124 (S)	SPIE	14.20	30/07/2019 08:55:00	1.83	
1-124 (S)	SPIE	14.20	06/08/2019 16:03:00	2.06	
1-124 (S)	SPIE	14.20	15/08/2019 13:45:00	2.40	
1-124 (S)	SPIE	14.20	20/08/2019 12:32:00	2.44	
1-124 (S)	SPIE	14.20	29/08/2019 10:15:00	2.82	
1-124 (S)	SPIE	14.20	13/09/2019 13:21:00	3.24	
1-124 (S)	SPIE	14.20	19/09/2019 10:12:00	3.36	
1-124 (S)	SPIE	14.20	02/10/2019 00:00:00	3.95	
1-124 (S)	SPIE	14.20	18/10/2019 10:07:00	3.84	
1-124 (S)	SPIE	14.20	15/11/2019 08:00:00	4.10	
1-124 (S)	SPIE	14.20	21/11/2019 13:30:00	4.15	
1-124 (S)	SPIE	14.20	27/11/2019 08:50:00	4.25	
1-124 (S)	SPIE	14.20	17/12/2019 11:00:00	4.40	
1-124 (S)	SPIE	14.20	14/01/2020 10:40:00	4.72	
1-124 (S)	SPIE	14.20	27/01/2020 12:00:00	4.76	
1-124 (S)	SPIE	14.20	03/02/2020 00:00:00	4.86	
1-124 (S)	SPIE	14.20	13/02/2020 00:00:00	4.92	
1-124 (S)	SPIE	14.20	24/02/2020 10:00:00	5.00	
1-124 (S)	SPIE	14.20	24/04/2020 13:25:00	5.26	
1-124 (S)	SPIE	14.20	15/05/2020 00:00:00	5.40	
1-124 (S)	SPIE	14.20	29/05/2020 00:00:00	5.53	
1-136 (S)	SPIE	7.00	19/06/2019 09:45:00	Dry	
1-136 (S)	SPIE	7.00	24/06/2019 00:00:00	Dry	
1-136 (S)	SPIE	7.00	15/07/2019 10:30:00	Dry	
1-136 (S)	SPIE	7.00	23/07/2019 15:30:00	Dry	
1-136 (S)	SPIE	7.00	23/07/2019 16:45:00	Dry	
1-136 (S)	SPIE	7.00	24/07/2019 15:30:00	Dry	
1-136 (S)	SPIE	7.00	26/07/2019 12:50:00	Dry	
1-136 (S)	SPIE	7.00	30/07/2019 14:15:00	Dry	
1-136 (S)	SPIE	7.00	06/08/2019 12:55:00	Dry	
1-136 (S)	SPIE	7.00	15/08/2019 10:37:00	Dry	
1-136 (S)	SPIE	7.00	20/08/2019 11:30:00	Dry	
1-136 (S)	SPIE	7.00	29/08/2019 10:05:00	Dry	
1-136 (S)	SPIE	7.00	13/09/2019 00:00:00	Dry	
1-136 (S)	SPIE	7.00	19/09/2019 00:00:00	Dry	
1-136 (S)	SPIE	7.00	02/10/2019 00:00:00	Dry	
1-136 (S)	SPIE	7.00	18/10/2019 10:44:00	Dry	
1-136 (S)	SPIE	7.00	15/11/2019 08:05:00	Dry	
1-136 (S)	SPIE	7.00	21/11/2019 13:35:00	Dry	
1-136 (S)	SPIE	7.00	27/11/2019 10:55:00	Dry	
1-136 (S)	SPIE	7.00	17/12/2019 03:15:00	Dry	
1-136 (S)	SPIE	7.00	14/01/2020 13:50:00	Dry	
1-136 (S)	SPIE	7.00	27/01/2020 12:00:00	Dry	
1-136 (S)	SPIE	7.00	03/02/2020 12:00:00	6.99	
1-136 (S)	SPIE	7.00	13/02/2020 12:00:00	7.18	
1-136 (S)	SPIE	7.00	24/02/2020 09:00:00	Dry	
1-139 (S)	SPIE	7.80	15/07/2019 15:20:00	Dry	
1-139 (S)	SPIE	7.80	26/07/2019 14:00:00	Dry	
1-139 (S)	SPIE	7.80	30/07/2019 14:45:00	Dry	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



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Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-139 (S)	SPIE	7.80	06/08/2019 17:10:00	Dry	
1-139 (S)	SPIE	7.80	15/08/2019 11:30:00	Dry	
1-139 (S)	SPIE	7.80	20/08/2019 16:30:00	Dry	
1-139 (S)	SPIE	7.80	29/08/2019 12:30:00	Dry	
1-139 (S)	SPIE	7.80	19/09/2019 00:00:00	Dry	
1-139 (S)	SPIE	7.80	02/10/2019 00:00:00	Dry	
1-139 (S)	SPIE	7.80	18/10/2019 14:10:00	Dry	
1-139 (S)	SPIE	7.80	15/11/2019 12:45:00	Dry	
1-139 (S)	SPIE	7.80	21/11/2019 10:30:00	Dry	
1-139 (S)	SPIE	7.80	27/11/2019 14:05:00	Dry	
1-139 (S)	SPIE	7.80	18/12/2019 11:15:00	Dry	
1-139 (S)	SPIE	7.80	14/01/2020 10:00:00	Dry	
1-139 (S)	SPIE	7.80	22/01/2020 12:00:00	Dry	
1-139 (S)	SPIE	7.80	04/02/2020 00:00:00	Dry	
1-139 (S)	SPIE	7.80	11/02/2020 00:00:00	Dry	
1-139 (S)	SPIE	7.80	25/02/2020 00:00:00	Dry	
1-139 (S)	SPIE	7.80	24/04/2020 11:00:00	Dry	
1-139 (S)	SPIE	7.80	05/05/2020 00:00:00	Dry	
1-139 (S)	SPIE	7.80	29/05/2020 00:00:00	Dry	
1-147 (1)	SP	12.00	14/01/2020 14:15:00	0.86	
1-147 (1)	SP	12.00	22/01/2020 12:00:00	0.82	
1-147 (1)	SP	12.00	04/02/2020 12:00:00	0.76	
1-147 (1)	SP	12.00	11/02/2020 12:00:00	0.75	
1-147 (1)	SP	12.00	24/02/2020 11:40:00	0.71	
1-147 (1)	SP	12.00	23/04/2020 09:30:00	0.82	
1-147 (1)	SP	12.00	11/05/2020 14:45:00	0.87	
1-147 (1)	SP	12.00	27/05/2020 11:00:00	0.92	
1-152 (D)	SP	15.00	24/02/2020 12:50:00	0.52	
1-152 (D)	SP	15.00	04/05/2020 00:00:00	0.80	
1-152 (D)	SP	15.00	22/05/2020 00:00:00	0.99	
1-152 (D)	SP	15.00	09/06/2020 00:00:00	0.96	
1-152 (S)	SP	5.50	24/02/2020 12:50:00	0.36	
1-152 (S)	SP	5.50	04/05/2020 00:00:00	0.42	
1-152 (S)	SP	5.50	19/05/2020 15:45:00	0.89	
1-152 (S)	SP	5.50	22/05/2020 00:00:00	0.89	
1-152 (S)	SP	5.50	04/06/2020 14:30:00	1.17	
1-166 (1)	SP	10.00	18/12/2019 14:15:00	2.60	
1-166 (1)	SP	10.00	15/01/2020 14:20:00	2.40	
1-166 (1)	SP	10.00	27/01/2020 12:00:00	2.33	
1-166 (1)	SP	10.00	24/02/2020 14:00:00	2.15	
1-166 (1)	SP	10.00	23/04/2020 12:45:00	2.40	
1-166 (1)	SP	10.00	11/05/2020 11:30:00	2.60	
1-166 (1)	SP	10.00	27/05/2020 14:45:00	2.69	
1-174 (D)	SP	18.00	13/06/2019 08:10:00	4.02	
1-174 (D)	SP	18.00	19/06/2019 10:15:00	4.29	
1-174 (D)	SP	18.00	24/06/2019 00:00:00	4.03	
1-174 (D)	SP	18.00	15/07/2019 09:45:00	4.07	
1-174 (D)	SP	18.00	26/07/2019 09:36:00	4.37	
1-174 (D)	SP	18.00	30/07/2019 15:15:00	4.39	
1-174 (D)	SP	18.00	06/08/2019 16:25:00	4.42	
1-174 (D)	SP	18.00	15/08/2019 12:41:00	4.50	
Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well 			Project Ground Investigation for the Regional Investment Programme Project No. M25 J10 - A3 Wisley Interchange Improvements Carried out for D9008-19 Geoffrey Osborne Limited		A2

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-174 (D)	SP	18.00	20/08/2019 16:00:00	4.43	
1-174 (D)	SP	18.00	29/08/2019 09:30:00	4.57	
1-174 (D)	SP	18.00	13/09/2019 12:58:00	4.61	
1-174 (D)	SP	18.00	19/09/2019 10:09:00	4.68	
1-174 (D)	SP	18.00	02/10/2019 00:00:00	5.89	
1-174 (D)	SP	18.00	18/10/2019 12:20:00	4.44	
1-174 (D)	SP	18.00	15/11/2019 09:00:00	4.20	
1-174 (D)	SP	18.00	21/11/2019 13:40:00	4.18	
1-174 (D)	SP	18.00	27/11/2019 08:35:00	4.12	
1-174 (D)	SP	18.00	16/12/2019 13:13:00	4.00	
1-174 (D)	SP	18.00	14/01/2020 09:05:00	3.50	
1-174 (D)	SP	18.00	27/01/2020 12:00:00	3.58	
1-174 (D)	SP	18.00	03/02/2020 00:00:00	3.58	
1-174 (D)	SP	18.00	13/02/2020 00:00:00	3.54	
1-174 (D)	SP	18.00	24/02/2020 09:05:00	3.42	
1-174 (D)	SP	18.00	05/05/2020 00:00:00	3.47	
1-174 (D)	SP	18.00	06/05/2020 11:20:00	3.47	
1-174 (D)	SP	18.00	21/05/2020 15:15:00	3.53	
1-174 (S)	SP	8.00	11/06/2019 09:10:00	2.42	
1-174 (S)	SP	8.00	19/06/2019 10:00:00	2.69	
1-174 (S)	SP	8.00	24/06/2019 00:00:00	2.44	
1-174 (S)	SP	8.00	15/07/2019 09:46:00	2.48	
1-174 (S)	SP	8.00	26/07/2019 09:34:00	2.87	
1-174 (S)	SP	8.00	30/07/2019 15:10:00	2.90	
1-174 (S)	SP	8.00	06/08/2019 16:27:00	3.00	
1-174 (S)	SP	8.00	15/08/2019 12:37:00	3.12	
1-174 (S)	SP	8.00	20/08/2019 16:00:00	3.11	
1-174 (S)	SP	8.00	29/08/2019 09:30:00	3.30	
1-174 (S)	SP	8.00	13/09/2019 12:57:00	3.45	
1-174 (S)	SP	8.00	19/09/2019 10:08:00	3.48	
1-174 (S)	SP	8.00	02/10/2019 00:00:00	5.83	
1-174 (S)	SP	8.00	18/10/2019 12:21:00	4.44	
1-174 (S)	SP	8.00	15/11/2019 09:00:00	3.24	
1-174 (S)	SP	8.00	21/11/2019 01:40:00	3.05	
1-174 (S)	SP	8.00	27/11/2019 08:35:00	2.93	
1-174 (S)	SP	8.00	16/12/2019 13:05:00	2.60	
1-174 (S)	SP	8.00	14/01/2020 09:10:00	1.96	
1-174 (S)	SP	8.00	27/01/2020 12:00:00	1.86	
1-174 (S)	SP	8.00	03/02/2020 00:00:00	1.88	
1-174 (S)	SP	8.00	13/02/2020 00:00:00	1.88	
1-174 (S)	SP	8.00	24/02/2020 09:08:00	1.70	
1-174 (S)	SP	8.00	05/05/2020 00:00:00	1.77	
1-174 (S)	SP	8.00	06/05/2020 10:30:00	1.56	
1-174 (S)	SP	8.00	21/05/2020 14:15:00	1.64	
1-180 (S)	SPIE	6.80	24/06/2019 00:00:00	4.43	
1-180 (S)	SPIE	6.80	15/07/2019 08:40:00	4.45	
1-180 (S)	SPIE	6.80	26/07/2019 09:26:00	4.83	
1-180 (S)	SPIE	6.80	30/07/2019 09:20:00	4.88	
1-180 (S)	SPIE	6.80	06/08/2019 16:17:00	4.96	
1-180 (S)	SPIE	6.80	15/08/2019 13:07:00	5.04	
1-180 (S)	SPIE	6.80	20/08/2019 12:20:00	5.09	
Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well 			Project Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements D9008-19 Project No. D9008-19 Carried out for Geoffrey Osborne Limited		A2

Groundwater Monitoring


Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-180 (S)	SPIE	6.80	29/08/2019 09:25:00	5.15	
1-180 (S)	SPIE	6.80	13/09/2019 13:07:00	5.31	
1-180 (S)	SPIE	6.80	19/09/2019 09:58:00	5.50	
1-180 (S)	SPIE	6.80	02/10/2019 00:00:00	5.49	
1-180 (S)	SPIE	6.80	18/10/2019 12:33:00	5.33	
1-180 (S)	SPIE	6.80	15/11/2019 08:50:00	5.00	
1-180 (S)	SPIE	6.80	21/11/2019 13:50:00	5.08	
1-180 (S)	SPIE	6.80	27/11/2019 08:40:00	5.04	
1-180 (S)	SPIE	6.80	17/12/2019 11:00:00	4.75	
1-180 (S)	SPIE	6.80	14/01/2020 09:15:00	4.07	
1-180 (S)	SPIE	6.80	27/01/2020 12:00:00	3.90	
1-180 (S)	SPIE	6.80	03/02/2020 00:00:00	3.82	
1-180 (S)	SPIE	6.80	13/02/2020 00:00:00	3.70	
1-180 (S)	SPIE	6.80	24/02/2020 09:20:00	3.45	
1-180 (S)	SPIE	6.80	05/05/2020 00:00:00	3.04	
1-181 (S)	SP	8.00	24/06/2019 09:20:00	3.70	
1-181 (S)	SP	8.00	15/07/2019 09:00:00	3.65	
1-181 (S)	SP	8.00	26/07/2019 09:15:00	4.06	
1-181 (S)	SP	8.00	30/07/2019 09:12:00	4.10	
1-181 (S)	SP	8.00	06/08/2019 16:10:00	4.20	
1-181 (S)	SP	8.00	15/08/2019 08:05:00	4.25	
1-181 (S)	SP	8.00	20/08/2019 12:10:00	4.21	
1-181 (S)	SP	8.00	29/08/2019 09:20:00	4.40	
1-181 (S)	SP	8.00	13/09/2019 13:12:00	4.57	
1-181 (S)	SP	8.00	19/09/2019 10:00:00	4.64	
1-181 (S)	SP	8.00	02/10/2019 00:00:00	5.02	
1-181 (S)	SP	8.00	18/10/2019 12:30:00	4.73	
1-181 (S)	SP	8.00	15/11/2019 08:55:00	4.55	
1-181 (S)	SP	8.00	21/11/2019 14:00:00	4.52	
1-181 (S)	SP	8.00	27/11/2019 08:45:00	4.45	
1-181 (S)	SP	8.00	16/12/2019 13:20:00	4.30	
1-181 (S)	SP	8.00	14/01/2020 09:15:00	3.56	
1-181 (S)	SP	8.00	27/01/2020 12:00:00	3.26	
1-181 (S)	SP	8.00	03/02/2020 00:00:00	3.39	
1-181 (S)	SP	8.00	13/02/2020 00:00:00	3.05	
1-181 (S)	SP	8.00	24/02/2020 09:30:00	2.80	
1-181 (S)	SP	8.00	27/04/2020 13:45:00	2.46	
1-181 (S)	SP	8.00	12/05/2020 14:30:00	2.59	
1-181 (S)	SP	8.00	15/05/2020 00:00:00	2.59	
1-181 (S)	SP	8.00	28/05/2020 14:45:00	2.77	
1-182 (D)	SP	28.00	15/08/2019 11:45:00	5.42	
1-182 (D)	SP	28.00	20/08/2019 16:10:00	6.49	
1-182 (D)	SP	28.00	29/08/2019 12:05:00	6.66	
1-182 (D)	SP	28.00	19/09/2019 00:00:00	6.29	
1-182 (D)	SP	28.00	18/10/2019 14:00:00	6.43	
1-182 (D)	SP	28.00	15/11/2019 12:30:00	6.90	
1-182 (D)	SP	28.00	21/11/2019 10:20:00	6.60	
1-182 (D)	SP	28.00	27/11/2019 14:00:00	6.79	
1-182 (D)	SP	28.00	17/12/2019 10:55:00	6.62	
1-182 (D)	SP	28.00	14/01/2020 09:45:00	6.47	
1-182 (D)	SP	28.00	22/01/2020 12:00:00	6.10	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



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D9008-19
Carried out for
Geoffrey Osborne Limited

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-182 (D)	SP	28.00	04/02/2020 12:00:00	6.00	
1-182 (D)	SP	28.00	11/02/2020 00:00:00	5.74	
1-182 (D)	SP	28.00	25/02/2020 00:00:00	5.42	
1-182 (D)	SP	28.00	22/04/2020 00:00:00	4.78	
1-182 (D)	SP	28.00	07/05/2020 10:00:00	4.94	
1-182 (D)	SP	28.00	26/05/2020 15:15:00	6.96	
1-182 (S)	SP	10.00	15/08/2019 00:00:00	6.48	
1-182 (S)	SP	10.00	20/08/2019 16:10:00	6.49	
1-182 (S)	SP	10.00	29/08/2019 12:05:00	6.02	
1-182 (S)	SP	10.00	19/09/2019 00:00:00	6.83	
1-182 (S)	SP	10.00	18/10/2019 14:01:00	6.40	
1-182 (S)	SP	10.00	15/11/2019 12:15:00	6.54	
1-182 (S)	SP	10.00	21/11/2019 10:20:00	6.85	
1-182 (S)	SP	10.00	27/11/2019 14:00:00	6.60	
1-182 (S)	SP	10.00	17/12/2019 10:55:00	6.60	
1-182 (S)	SP	10.00	14/01/2020 00:00:00	6.12	
1-182 (S)	SP	10.00	22/01/2020 12:00:00	5.90	
1-182 (S)	SP	10.00	04/02/2020 12:00:00	5.91	
1-182 (S)	SP	10.00	11/02/2020 00:00:00	5.69	
1-182 (S)	SP	10.00	25/02/2020 00:00:00	5.40	
1-182 (S)	SP	10.00	22/04/2020 15:15:00	4.74	
1-182 (S)	SP	10.00	07/05/2020 09:20:00	4.77	
1-182 (S)	SP	10.00	26/05/2020 15:15:00	4.95	
1-182 (S)	SP	10.00	04/06/2020 13:20:00	4.81	
1-183 (S)	SP	20.00	15/08/2019 11:58:00	7.25	
1-183 (S)	SP	20.00	20/08/2019 16:15:00	6.72	
1-183 (S)	SP	20.00	29/08/2019 12:00:00	6.78	
1-183 (S)	SP	20.00	19/09/2019 00:00:00	7.01	
1-183 (S)	SP	20.00	15/11/2019 00:00:00	7.18	
1-183 (S)	SP	20.00	21/11/2019 10:15:00	6.96	
1-183 (S)	SP	20.00	27/11/2019 13:55:00	6.85	
1-183 (S)	SP	20.00	18/12/2019 10:45:00	6.80	
1-183 (S)	SP	20.00	14/01/2020 09:35:00	6.35	
1-183 (S)	SP	20.00	22/01/2020 12:00:00	6.06	
1-183 (S)	SP	20.00	04/02/2020 12:00:00	6.04	
1-183 (S)	SP	20.00	11/02/2020 00:00:00	5.92	
1-183 (S)	SP	20.00	25/02/2020 00:00:00	5.59	
1-183 (S)	SP	20.00	05/05/2020 00:00:00	5.10	
1-184 (S)	SP	19.00	06/08/2019 16:55:00	7.90	
1-184 (S)	SP	19.00	08/08/2019 14:11:00	7.92	
1-184 (S)	SP	19.00	13/08/2019 14:25:00	7.94	
1-184 (S)	SP	19.00	15/08/2019 10:52:00	8.16	
1-184 (S)	SP	19.00	19/08/2019 09:30:00	8.19	
1-184 (S)	SP	19.00	20/08/2019 13:30:00	8.19	
1-184 (S)	SP	19.00	28/08/2019 11:20:00	7.99	
1-184 (S)	SP	19.00	29/08/2019 13:00:00	8.02	
1-184 (S)	SP	19.00	02/09/2019 18:20:00	8.02	
1-184 (S)	SP	19.00	19/09/2019 00:00:00	8.16	
1-184 (S)	SP	19.00	02/10/2019 00:00:00	6.54	
1-184 (S)	SP	19.00	04/10/2019 00:00:00	8.17	
1-184 (S)	SP	19.00	17/10/2019 00:00:00	6.37	
Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well 			Project Ground Investigation for the Regional Investment Programme Project No. M25 J10 - A3 Wisley Interchange Improvements D9008-19 Carried out for Geoffrey Osborne Limited		A2

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-184 (S)	SP	19.00	15/11/2019 12:30:00		Flooded
1-184 (S)	SP	19.00	21/11/2019 10:10:00	6.30	
1-184 (S)	SP	19.00	27/11/2019 13:55:00	6.00	
1-184 (S)	SP	19.00	17/12/2019 11:36:00	6.10	
1-184 (S)	SP	19.00	14/01/2020 09:50:00	7.21	
1-184 (S)	SP	19.00	22/01/2020 12:00:00	7.07	
1-184 (S)	SP	19.00	04/02/2020 12:00:00	5.95	
1-184 (S)	SP	19.00	11/02/2020 00:00:00	5.40	
1-184 (S)	SP	19.00	24/02/2020 11:50:00	6.12	Measurement affected by flooding.
1-184 (S)	SP	19.00	22/04/2020 14:30:00	6.69	
1-184 (S)	SP	19.00	06/05/2020 16:45:00	7.10	
1-184 (S)	SP	19.00	26/05/2020 14:30:00	7.30	
1-184 (S)	SP	19.00	04/06/2020 12:15:00	7.37	
1-191 (S)	SP	14.50	08/08/2019 15:25:00	2.17	
1-191 (S)	SP	14.50	13/08/2019 14:50:00	2.83	
1-191 (S)	SP	14.50	15/08/2019 12:14:00	2.66	
1-191 (S)	SP	14.50	19/08/2019 09:45:00	2.25	
1-191 (S)	SP	14.50	20/08/2019 12:00:00	2.25	
1-191 (S)	SP	14.50	28/08/2019 11:10:00	2.30	
1-191 (S)	SP	14.50	29/08/2019 13:20:00	2.35	
1-191 (S)	SP	14.50	02/09/2019 16:20:00	2.44	
1-191 (S)	SP	14.50	19/09/2019 00:00:00	2.46	
1-191 (S)	SP	14.50	02/10/2019 00:00:00	2.38	
1-191 (S)	SP	14.50	04/10/2019 00:00:00	2.40	
1-191 (S)	SP	14.50	17/10/2019 00:00:00	2.32	
1-191 (S)	SP	14.50	15/11/2019 13:15:00	2.13	
1-191 (S)	SP	14.50	21/11/2019 10:50:00	2.00	
1-191 (S)	SP	14.50	27/11/2019 13:45:00	1.90	
1-191 (S)	SP	14.50	18/12/2019 12:20:00	1.70	
1-191 (S)	SP	14.50	15/01/2020 11:00:00	1.35	
1-191 (S)	SP	14.50	22/01/2020 12:00:00	1.17	
1-191 (S)	SP	14.50	11/02/2020 00:00:00	1.02	
1-191 (S)	SP	14.50	24/02/2020 11:15:00	1.03	
1-191 (S)	SP	14.50	30/04/2020 14:45:00	1.15	
1-191 (S)	SP	14.50	18/05/2020 15:00:00	1.15	
1-191 (S)	SP	14.50	03/06/2020 15:30:00	1.52	
1-203 (D)	SP	18.50	29/11/2019 10:00:00	2.00	
1-203 (D)	SP	18.50	16/12/2019 13:32:00	1.89	
1-203 (D)	SP	18.50	14/01/2020 15:40:00	1.68	
1-203 (D)	SP	18.50	27/01/2020 12:00:00	1.66	
1-203 (D)	SP	18.50	04/02/2020 12:00:00	1.60	
1-203 (D)	SP	18.50	11/02/2020 00:00:00	1.66	
1-203 (D)	SP	18.50	25/02/2020 00:00:00	1.52	
1-203 (D)	SP	18.50	30/04/2020 10:30:00	1.37	
1-203 (D)	SP	18.50	18/05/2020 11:00:00	1.77	
1-203 (D)	SP	18.50	03/06/2020 12:30:00	1.98	
1-203 (S)	SP	7.50	29/11/2019 10:05:00	1.87	
1-203 (S)	SP	7.50	16/12/2019 13:30:00	1.66	
1-203 (S)	SP	7.50	14/01/2020 15:35:00	1.30	
1-203 (S)	SP	7.50	27/01/2020 12:00:00	1.20	
1-203 (S)	SP	7.50	04/02/2020 12:00:00	1.22	

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1-203 (S)	SP	7.50	11/02/2020 00:00:00	1.12	
1-203 (S)	SP	7.50	25/02/2020 00:00:00		No reading taken.
1-203 (S)	SP	7.50	30/04/2020 09:30:00	1.15	
1-203 (S)	SP	7.50	18/05/2020 10:00:00	1.45	
1-203 (S)	SP	7.50	03/06/2020 11:40:00	1.74	
1-207 (1)	SP	7.50	16/12/2019 13:55:00	2.05	
1-207 (1)	SP	7.50	14/01/2020 15:55:00	2.32	
1-207 (1)	SP	7.50	27/01/2020 12:00:00	2.13	
1-207 (1)	SP	7.50	04/02/2020 12:00:00	2.13	
1-207 (1)	SP	7.50	11/02/2020 00:00:00	2.00	
1-207 (1)	SP	7.50	25/02/2020 00:00:00	0.91	
1-207 (1)	SP	7.50	30/04/2020 12:45:00	1.89	
1-207 (1)	SP	7.50	18/05/2020 12:00:00	2.21	
1-207 (1)	SP	7.50	03/06/2020 13:30:00	2.42	
1-207 (2)	SPIE	21.00	16/12/2019 13:50:00	2.78	
1-207 (2)	SPIE	21.00	14/01/2020 16:00:00	2.52	
1-207 (2)	SPIE	21.00	27/01/2020 12:00:00	2.20	
1-207 (2)	SPIE	21.00	04/02/2020 12:00:00	2.20	
1-207 (2)	SPIE	21.00	11/02/2020 00:00:00	2.07	
1-207 (2)	SPIE	21.00	25/02/2020 00:00:00	1.63	
1-207 (2)	SPIE	21.00	30/04/2020 00:00:00	1.95	
1-207 (2)	SPIE	21.00	18/05/2020 12:30:00	2.10	
1-207 (2)	SPIE	21.00	03/06/2020 14:15:00	3.49	
1-208 (1)	SPIE	7.00	29/11/2019 11:00:00	4.20	
1-208 (1)	SPIE	7.00	16/12/2019 14:34:00	3.30	
1-208 (1)	SPIE	7.00	14/01/2020 15:50:00	2.90	
1-208 (1)	SPIE	7.00	27/01/2020 12:00:00	2.70	
1-208 (1)	SPIE	7.00	04/02/2020 12:00:00	2.65	
1-208 (1)	SPIE	7.00	11/02/2020 00:00:00	2.63	
1-208 (1)	SPIE	7.00	25/02/2020 00:00:00	2.25	
1-209 (1)	SPIE	6.00	22/11/2019 09:30:00	3.30	
1-209 (1)	SPIE	6.00	27/11/2019 14:45:00	3.30	
1-209 (1)	SPIE	6.00	16/12/2019 16:05:00	3.24	
1-209 (1)	SPIE	6.00	14/01/2020 14:45:00	2.40	
1-209 (1)	SPIE	6.00	27/01/2020 12:00:00	2.25	
1-209 (1)	SPIE	6.00	04/02/2020 12:00:00	2.19	
1-209 (1)	SPIE	6.00	10/02/2020 00:00:00	3.05	
1-209 (1)	SPIE	6.00	25/02/2020 00:00:00	1.75	
1-209 (1)	SPIE	6.00	04/05/2020 00:00:00	2.08	
1-209 (1)	SPIE	6.00	22/05/2020 00:00:00	1.85	
1-209 (1)	SPIE	6.00	05/06/2020 00:00:00	2.25	
1-210 (1)	SP	12.50	21/11/2019 15:35:00	3.45	
1-210 (1)	SP	12.50	27/11/2019 14:50:00	3.40	
1-210 (1)	SP	12.50	16/12/2019 15:55:00	3.30	
1-210 (1)	SP	12.50	14/01/2020 14:40:00	2.76	
1-210 (1)	SP	12.50	27/01/2020 12:00:00	2.64	
1-210 (1)	SP	12.50	04/02/2020 12:00:00	2.60	
1-210 (1)	SP	12.50	10/02/2020 00:00:00	2.44	
1-210 (1)	SP	12.50	25/02/2020 00:00:00	2.14	
1-210 (1)	SP	12.50	05/05/2020 00:00:00	2.24	
1-210 (1)	SP	12.50	20/05/2020 16:00:00	2.57	

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1-210 (1)	SP	12.50	08/06/2020 11:30:00	2.95	
1-211 (1)	SPIE	5.80	21/11/2019 00:00:00	1.25	
1-211 (1)	SPIE	5.80	27/11/2019 14:30:00	1.20	
1-211 (1)	SPIE	5.80	16/12/2019 16:15:00	0.58	
1-211 (1)	SPIE	5.80	14/01/2020 14:30:00	0.59	
1-211 (1)	SPIE	5.80	27/01/2020 12:00:00	0.49	
1-211 (1)	SPIE	5.80	04/02/2020 12:00:00	0.43	
1-211 (1)	SPIE	5.80	10/02/2020 00:00:00	0.41	
1-211 (1)	SPIE	5.80	25/02/2020 00:00:00	0.34	
1-211 (1)	SPIE	5.80	04/05/2020 00:00:00	0.81	
1-211 (1)	SPIE	5.80	22/05/2020 00:00:00	0.86	
1-211 (1)	SPIE	5.80	05/06/2020 00:00:00	1.18	
1-212 (D)	SP	10.00	18/12/2019 12:50:00	0.85	
1-212 (D)	SP	10.00	14/01/2020 15:00:00	0.75	
1-212 (D)	SP	10.00	27/01/2020 12:00:00	0.95	
1-212 (D)	SP	10.00	10/02/2020 00:00:00	1.12	
1-212 (D)	SP	10.00	25/02/2020 00:00:00	1.08	
1-212 (D)	SP	10.00	10/03/2020 10:28:00	0.86	
1-212 (D)	SP	10.00	24/04/2020 00:00:00	0.74	
1-212 (D)	SP	10.00	24/04/2020 09:00:00	0.74	
1-212 (D)	SP	10.00	27/04/2020 11:45:00	0.74	
1-212 (D)	SP	10.00	12/05/2020 13:45:00	1.27	
1-212 (D)	SP	10.00	15/05/2020 00:00:00	2.40	
1-212 (D)	SP	10.00	15/05/2020 00:00:00	1.27	
1-212 (D)	SP	10.00	28/05/2020 00:00:00	2.00	
1-212 (D)	SP	10.00	28/05/2020 11:00:00	2.00	
1-212 (S)	SP	2.00	18/12/2019 12:45:00	1.15	
1-212 (S)	SP	2.00	14/01/2020 15:05:00	0.90	
1-212 (S)	SP	2.00	27/01/2020 12:00:00	0.80	
1-212 (S)	SP	2.00	10/02/2020 00:00:00	0.55	
1-212 (S)	SP	2.00	25/02/2020 11:30:00	0.35	
1-212 (S)	SP	2.00	10/03/2020 10:25:00	0.48	
1-212 (S)	SP	2.00	24/04/2020 09:10:00	0.77	
1-212 (S)	SP	2.00	27/04/2020 11:15:00	0.77	
1-212 (S)	SP	2.00	12/05/2020 12:05:00	0.61	
1-212 (S)	SP	2.00	15/05/2020 10:15:00	0.61	
1-212 (S)	SP	2.00	28/05/2020 10:30:00	0.86	
1-217 (1)	SP	7.50	18/12/2019 13:25:00	2.20	
1-217 (1)	SP	7.50	14/01/2020 15:20:00	2.30	
1-217 (1)	SP	7.50	27/01/2020 12:00:00	2.53	
1-217 (1)	SP	7.50	10/02/2020 00:00:00	2.16	
1-217 (1)	SP	7.50	25/02/2020 00:00:00	2.22	
1-217 (1)	SP	7.50	10/03/2020 10:42:00	2.18	
1-217 (1)	SP	7.50	24/04/2020 09:41:00	2.43	
1-217 (1)	SP	7.50	27/04/2020 10:00:00	2.43	
1-217 (1)	SP	7.50	15/05/2020 09:48:00	2.45	
1-217 (1)	SP	7.50	28/05/2020 12:00:00	2.55	
1-226 (1)	SP	10.00	18/12/2019 14:00:00	1.92	
1-226 (1)	SP	10.00	15/01/2020 14:15:00	1.24	
1-226 (1)	SP	10.00	27/01/2020 12:00:00	1.30	
1-226 (1)	SP	10.00	10/02/2020 00:00:00	1.14	

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1-226 (1)	SP	10.00	25/02/2020 12:43:00	0.94	
1-226 (1)	SP	10.00	10/03/2020 11:15:00	0.78	
1-226 (1)	SP	10.00	23/04/2020 14:00:00	1.47	
1-226 (1)	SP	10.00	11/05/2020 00:00:00	1.69	
1-226 (1)	SP	10.00	27/05/2020 12:30:00	1.96	
1-228 (1)	SP	4.00	18/12/2019 13:40:00	3.95	
1-228 (1)	SP	4.00	15/01/2020 14:10:00	Dry	
1-228 (1)	SP	4.00	27/01/2020 12:00:00	3.95	
1-228 (1)	SP	4.00	10/02/2020 00:00:00	3.90	
1-228 (1)	SP	4.00	25/02/2020 00:00:00	3.69	
1-228 (1)	SP	4.00	10/03/2020 11:04:00	3.60	
1-228 (1)	SP	4.00	23/04/2020 13:05:00	Dry	
1-228 (1)	SP	4.00	11/05/2020 00:00:00	3.97	
1-228 (1)	SP	4.00	27/05/2020 12:20:00	Dry	
1-231 (1)	SP	10.00	18/12/2019 14:30:00	2.80	
1-231 (1)	SP	10.00	15/01/2020 14:40:00	2.53	
1-231 (1)	SP	10.00	27/01/2020 12:00:00	2.55	
1-231 (1)	SP	10.00	10/02/2020 00:00:00	2.50	
1-231 (1)	SP	10.00	24/02/2020 13:45:00	2.40	
1-231 (1)	SP	10.00	23/04/2020 11:20:00	1.22	
1-231 (1)	SP	10.00	11/05/2020 13:30:00	2.69	
1-231 (1)	SP	10.00	27/05/2020 13:45:00	2.95	
1-233 (1)	SP	2.00	15/01/2020 14:30:00	0.85	
1-233 (1)	SP	2.00	27/01/2020 12:00:00	0.79	
1-233 (1)	SP	2.00	10/02/2020 00:00:00	0.60	
1-233 (1)	SP	2.00	25/02/2020 13:21:00	0.47	
1-233 (1)	SP	2.00	10/03/2020 11:45:00	0.32	
1-233 (1)	SP	2.00	12/05/2020 00:00:00	1.64	
1-233 (1)	SP	2.00	29/05/2020 00:00:00	1.95	
1-233 (1)	SP	2.00	05/06/2020 00:00:00	2.13	
1-233 (1)	SP	2.00	05/06/2020 00:00:00	2.13	
1-235 (1)	SP	10.00	18/12/2019 14:40:00	2.75	
1-235 (1)	SP	10.00	15/01/2020 14:50:00	2.80	
1-235 (1)	SP	10.00	27/01/2020 12:00:00	2.80	
1-235 (1)	SP	10.00	10/02/2020 00:00:00	2.67	
1-235 (1)	SP	10.00	24/02/2020 13:50:00	2.45	
1-235 (1)	SP	10.00	06/05/2020 13:00:00	3.03	
1-235 (1)	SP	10.00	21/05/2020 10:45:00	2.95	
1-235 (1)	SP	10.00	09/06/2020 00:00:00	3.06	
1-237 (1)	SP	13.00	18/12/2019 15:05:00	1.36	
1-237 (1)	SP	13.00	15/01/2020 15:05:00	1.00	
1-237 (1)	SP	13.00	27/01/2020 12:00:00	0.92	
1-237 (1)	SP	13.00	10/02/2020 00:00:00		Bung stuck.
1-237 (1)	SP	13.00	25/02/2020 00:00:00	0.75	
1-237 (1)	SP	13.00	06/05/2020 14:45:00	0.86	
1-237 (1)	SP	13.00	21/05/2020 12:30:00	1.25	
1-237 (1)	SP	13.00	09/06/2020 00:00:00	1.24	
1-237 (2)	SPIE	18.50	18/12/2019 15:00:00	0.62	
1-237 (2)	SPIE	18.50	15/01/2020 15:00:00	0.35	
1-237 (2)	SPIE	18.50	27/01/2020 12:00:00	0.80	
1-237 (2)	SPIE	18.50	10/02/2020 00:00:00	0.69	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well




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Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-237 (2)	SPIE	18.50	25/02/2020 00:00:00	0.77	
1-237 (2)	SPIE	18.50	06/05/2020 14:45:00	0.96	
1-237 (2)	SPIE	18.50	21/05/2020 11:45:00	1.05	
1-237 (2)	SPIE	18.50	09/06/2020 00:00:00	1.13	
1-252A (1)	SPIE	15.00	24/02/2020 00:00:00		Flush cover stuck.
1-252A (1)	SPIE	15.00	04/05/2020 00:00:00	Dry	Check depth of installation inconsistent with subsequent readings. Hole ID possibly incorrect.
1-252A (1)	SPIE	15.00	22/05/2020 00:00:00	3.69	
1-252A (1)	SPIE	15.00	05/06/2020 00:00:00	3.68	
1-253 (1)	SPIE	6.70	04/05/2020 00:00:00	2.05	
1-253 (1)	SPIE	6.70	22/05/2020 00:00:00	2.20	
1-253 (1)	SPIE	6.70	05/06/2020 00:00:00	2.25	
1-254 (1)	SPIE	8.00	22/11/2019 09:40:00	3.77	
1-254 (1)	SPIE	8.00	27/11/2019 14:55:00	3.70	
1-254 (1)	SPIE	8.00	16/12/2019 15:29:00	3.70	
1-254 (1)	SPIE	8.00	14/01/2020 14:35:00	3.43	
1-254 (1)	SPIE	8.00	27/01/2020 00:00:00	3.35	
1-254 (1)	SPIE	8.00	04/02/2020 12:00:00	2.94	
1-254 (1)	SPIE	8.00	10/02/2020 00:00:00	3.00	
1-254 (1)	SPIE	8.00	25/02/2020 00:00:00	2.96	
1-254 (1)	SPIE	8.00	04/05/2020 00:00:00	2.82	
1-254 (1)	SPIE	8.00	15/05/2020 00:00:00	2.79	
1-254 (1)	SPIE	8.00	22/05/2020 00:00:00	2.91	
1-254 (1)	SPIE	8.00	05/06/2020 10:20:00	3.27	
1-255 (1)	SPIE	14.60	21/11/2019 15:40:00	3.20	
1-255 (1)	SPIE	14.60	27/11/2019 14:40:00	3.17	
1-255 (1)	SPIE	14.60	16/12/2019 15:02:00	2.76	
1-255 (1)	SPIE	14.60	14/01/2020 14:50:00	2.51	
1-255 (1)	SPIE	14.60	27/01/2020 12:00:00	2.46	
1-255 (1)	SPIE	14.60	04/02/2020 12:00:00	2.46	
1-255 (1)	SPIE	14.60	10/02/2020 00:00:00	2.36	
1-255 (1)	SPIE	14.60	25/02/2020 00:00:00	2.23	
1-255 (1)	SPIE	14.60	04/05/2020 00:00:00	2.43	
1-255 (1)	SPIE	14.60	22/05/2020 00:00:00	2.51	
1-255 (1)	SPIE	14.60	05/06/2020 00:00:00	2.85	
1-257 (D)	SP	21.50	03/07/2019 10:00:00	1.10	
1-257 (D)	SP	21.50	15/07/2019 14:40:00	1.03	
1-257 (D)	SP	21.50	23/07/2019 08:44:00	1.23	
1-257 (D)	SP	21.50	26/07/2019 08:44:00	1.31	
1-257 (D)	SP	21.50	30/07/2019 08:26:00	1.31	
1-257 (D)	SP	21.50	06/08/2019 15:40:00	1.39	
1-257 (D)	SP	21.50	15/08/2019 08:48:00	1.32	
1-257 (D)	SP	21.50	20/08/2019 09:40:00	1.32	
1-257 (D)	SP	21.50	29/08/2019 10:30:00	1.45	
1-257 (D)	SP	21.50	19/09/2019 00:00:00	1.54	
1-257 (D)	SP	21.50	02/10/2019 00:00:00	1.63	
1-257 (D)	SP	21.50	18/10/2019 10:20:00	0.98	
1-257 (D)	SP	21.50	15/11/2019 10:30:00	0.44	
1-257 (D)	SP	21.50	21/11/2019 13:15:00	0.58	
1-257 (D)	SP	21.50	27/11/2019 09:05:00	0.45	
1-257 (D)	SP	21.50	17/12/2019 11:35:00	0.47	

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Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-257 (D)	SP	21.50	14/01/2020 11:05:00	0.25	
1-257 (D)	SP	21.50	27/01/2020 12:00:00	0.24	
1-257 (D)	SP	21.50	03/02/2020 00:00:00	0.12	
1-257 (D)	SP	21.50	13/02/2020 00:00:00	0.15	
1-257 (D)	SP	21.50	24/02/2020 14:30:00	0.15	
1-257 (D)	SP	21.50	27/04/2020 15:25:00	0.44	
1-257 (D)	SP	21.50	12/05/2020 16:00:00	0.66	
1-257 (D)	SP	21.50	15/05/2020 00:00:00	0.66	
1-257 (D)	SP	21.50	18/05/2020 16:00:00	0.87	
1-257 (D)	SP	21.50	28/05/2020 13:45:00	0.89	
1-257 (S)	SP	6.00	08/07/2019 09:30:00	0.93	
1-257 (S)	SP	6.00	15/07/2019 14:45:00	0.93	
1-257 (S)	SP	6.00	23/07/2019 08:45:00	1.16	
1-257 (S)	SP	6.00	26/07/2019 08:46:00	1.27	
1-257 (S)	SP	6.00	30/07/2019 08:24:00	1.24	
1-257 (S)	SP	6.00	06/08/2019 15:43:00	1.32	
1-257 (S)	SP	6.00	15/08/2019 08:49:00	1.20	
1-257 (S)	SP	6.00	20/08/2019 09:40:00	1.20	
1-257 (S)	SP	6.00	29/08/2019 10:30:00	1.37	
1-257 (S)	SP	6.00	19/09/2019 00:00:00	1.50	
1-257 (S)	SP	6.00	02/10/2019 00:00:00	1.58	
1-257 (S)	SP	6.00	18/10/2019 10:21:00	0.80	
1-257 (S)	SP	6.00	15/11/2019 10:30:00	0.31	
1-257 (S)	SP	6.00	21/11/2019 13:15:00	0.44	
1-257 (S)	SP	6.00	27/11/2019 09:05:00	0.38	
1-257 (S)	SP	6.00	17/12/2019 11:25:00	0.20	
1-257 (S)	SP	6.00	14/01/2020 11:10:00	0.15	
1-257 (S)	SP	6.00	27/01/2020 12:00:00	0.16	
1-257 (S)	SP	6.00	03/02/2020 00:00:00	0.12	
1-257 (S)	SP	6.00	13/02/2020 00:00:00	0.25	
1-257 (S)	SP	6.00	24/02/2020 14:40:00	0.12	
1-257 (S)	SP	6.00	27/04/2020 14:45:00	0.42	
1-257 (S)	SP	6.00	12/05/2020 15:20:00	0.53	
1-257 (S)	SP	6.00	15/05/2020 00:00:00	0.53	
1-257 (S)	SP	6.00	28/05/2020 13:00:00	0.90	
1-258 (1)	SPIE	4.50	18/12/2019 11:55:00	1.50	
1-258 (1)	SPIE	4.50	14/01/2020 14:00:00	0.65	
1-258 (1)	SPIE	4.50	22/01/2020 12:00:00	1.63	
1-258 (1)	SPIE	4.50	04/02/2020 12:00:00	0.62	
1-258 (1)	SPIE	4.50	11/02/2020 00:00:00	1.67	
1-258 (1)	SPIE	4.50	24/02/2020 11:30:00	1.66	
1-258 (1)	SPIE	4.50	30/04/2020 00:00:00	1.54	
1-258 (1)	SPIE	4.50	18/05/2020 00:00:00	1.30	
1-258 (1)	SPIE	4.50	03/06/2020 00:00:00	1.48	
1-259 (S)	SP	7.00	19/06/2019 16:50:00	1.58	
1-259 (S)	SP	7.00	24/06/2019 09:10:00	1.65	
1-259 (S)	SP	7.00	15/07/2019 09:20:00	1.52	
1-259 (S)	SP	7.00	26/07/2019 13:33:00	2.12	
1-259 (S)	SP	7.00	30/07/2019 08:34:00	2.12	
1-259 (S)	SP	7.00	06/08/2019 15:52:00	2.20	
1-259 (S)	SP	7.00	08/08/2019 15:15:00	2.20	
Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well			Project Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements D9008-19 Carried out for Geoffrey Osborne Limited		A2

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Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-259 (S)	SP	7.00	13/08/2019 14:05:00	2.17	
1-259 (S)	SP	7.00	15/08/2019 08:35:00	2.18	
1-259 (S)	SP	7.00	19/08/2019 09:00:00	2.15	
1-259 (S)	SP	7.00	20/08/2019 09:30:00	2.15	
1-259 (S)	SP	7.00	28/08/2019 10:40:00	2.33	
1-259 (S)	SP	7.00	29/08/2019 09:05:00	2.32	
1-259 (S)	SP	7.00	02/09/2019 16:00:00	2.38	
1-259 (S)	SP	7.00	19/09/2019 10:32:00	2.46	
1-259 (S)	SP	7.00	02/10/2019 00:00:00	2.58	
1-259 (S)	SP	7.00	04/10/2019 00:00:00	2.29	
1-259 (S)	SP	7.00	17/10/2019 00:00:00	2.25	
1-259 (S)	SP	7.00	21/11/2019 13:20:00	1.30	
1-259 (S)	SP	7.00	24/11/2019 09:00:00	1.70	
1-259 (S)	SP	7.00	17/12/2019 11:50:00	1.30	
1-259 (S)	SP	7.00	14/01/2020 00:00:00	1.10	
1-259 (S)	SP	7.00	27/01/2020 12:00:00	0.91	
1-259 (S)	SP	7.00	03/02/2020 00:00:00	0.90	
1-259 (S)	SP	7.00	13/02/2020 00:00:00	0.74	
1-259 (S)	SP	7.00	24/02/2020 14:30:00	0.67	
1-259 (S)	SP	7.00	28/04/2020 12:30:00	1.29	
1-259 (S)	SP	7.00	05/05/2020 00:00:00	1.19	
1-259 (S)	SP	7.00	14/05/2020 14:00:00	1.17	
1-259 (S)	SP	7.00	15/05/2020 00:00:00	1.45	
1-259 (S)	SP	7.00	09/06/2020 15:30:00	1.84	
1-261 (1)	SPIE	28.20	26/07/2019 13:05:00	5.48	
1-261 (1)	SPIE	28.20	30/07/2019 09:30:00	5.52	
1-261 (1)	SPIE	28.20	31/07/2019 10:45:00	5.38	
1-261 (1)	SPIE	28.20	06/08/2019 16:37:00	5.83	
1-261 (1)	SPIE	28.20	15/08/2019 13:27:00	5.82	
1-261 (1)	SPIE	28.20	20/08/2019 12:25:00	5.81	
1-261 (1)	SPIE	28.20	29/08/2019 12:35:00	5.75	
1-261 (1)	SPIE	28.20	19/09/2019 09:52:00	6.04	
1-261 (1)	SPIE	28.20	02/10/2019 00:00:00	5.85	
1-261 (1)	SPIE	28.20	18/10/2019 12:40:00	5.43	
1-261 (1)	SPIE	28.20	15/11/2019 08:45:00	5.22	
1-261 (1)	SPIE	28.20	21/11/2019 14:05:00	5.20	
1-261 (1)	SPIE	28.20	27/11/2019 08:30:00	5.00	
1-261 (1)	SPIE	28.20	14/01/2020 09:00:00	4.85	
1-261 (1)	SPIE	28.20	27/01/2020 12:00:00	5.29	
1-261 (1)	SPIE	28.20	03/02/2020 12:00:00	5.05	
1-261 (1)	SPIE	28.20	13/02/2020 00:00:00	4.64	
1-261 (1)	SPIE	28.20	24/02/2020 10:00:00	4.46	
1-261 (1)	SPIE	28.20	24/04/2020 13:11:00	5.06	
1-261 (1)	SPIE	28.20	15/05/2020 00:00:00	4.17	
1-261 (1)	SPIE	28.20	29/05/2020 00:00:00	4.17	
1-293 (1)	SP	3.00	18/12/2019 13:05:00	2.40	
1-293 (1)	SP	3.00	14/01/2020 15:00:00	2.44	
1-293 (1)	SP	3.00	27/01/2020 12:00:00	2.46	
1-293 (1)	SP	3.00	10/02/2020 00:00:00	2.33	
1-293 (1)	SP	3.00	25/02/2020 11:09:00	2.36	
1-293 (1)	SP	3.00	10/03/2020 10:05:00	2.34	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



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1-293 (1)	SP	3.00	05/05/2020 00:00:00	2.46	
1-293 (1)	SP	3.00	06/05/2020 00:00:00	2.46	
1-293 (1)	SP	3.00	21/05/2020 00:00:00	2.57	
1-293 (1)	SP	3.00	28/05/2020 00:00:00	2.65	
1-293 (1)	SP	3.00	09/06/2020 08:45:00	Dry	
1-305 (1)	SPIE	11.00	18/10/2019 13:12:00	10.49	
1-305 (1)	SPIE	11.00	15/11/2019 13:45:00	10.70	
1-305 (1)	SPIE	11.00	21/11/2019 08:55:00	10.55	
1-305 (1)	SPIE	11.00	27/11/2019 11:25:00	Dry	
1-305 (1)	SPIE	11.00	18/12/2019 09:42:00	Dry	
1-305 (1)	SPIE	11.00	15/01/2020 09:20:00	10.82	
1-305 (1)	SPIE	11.00	27/01/2020 12:00:00	Dry	
1-305 (1)	SPIE	11.00	03/02/2020 12:00:00	Dry	
1-305 (1)	SPIE	11.00	11/02/2020 00:00:00	Dry	
1-305 (1)	SPIE	11.00	24/02/2020 10:15:00	10.94	
1-305 (1)	SPIE	11.00	24/04/2020 15:35:00	11.03	
1-305 (1)	SPIE	11.00	15/05/2020 00:00:00	Dry	
1-305 (1)	SPIE	11.00	29/05/2020 10:00:00	11.05	
1-306 (1)	SPIE	20.00	02/10/2019 00:00:00	0.54	
1-306 (1)	SPIE	20.00	18/10/2019 13:10:00	1.56	
1-306 (1)	SPIE	20.00	15/11/2019 13:40:00	2.00	
1-306 (1)	SPIE	20.00	21/11/2019 08:50:00	2.16	
1-306 (1)	SPIE	20.00	27/11/2019 11:20:00	2.30	
1-306 (1)	SPIE	20.00	18/12/2019 09:37:00	17.04	
1-306 (1)	SPIE	20.00	15/01/2020 09:25:00	17.13	
1-306 (1)	SPIE	20.00	27/01/2020 12:00:00	17.00	
1-306 (1)	SPIE	20.00	03/02/2020 12:00:00	17.09	
1-306 (1)	SPIE	20.00	11/02/2020 00:00:00	17.10	
1-306 (1)	SPIE	20.00	24/02/2020 11:00:00	17.12	
1-306 (1)	SPIE	20.00	24/04/2020 15:27:00	17.17	
1-306 (1)	SPIE	20.00	15/05/2020 00:00:00	17.14	
1-306 (1)	SPIE	20.00	29/05/2020 00:00:00	17.10	
1-307 (D)	SPIE	28.00	18/10/2019 13:05:00	11.72	
1-307 (D)	SPIE	28.00	15/11/2019 13:35:00	11.49	
1-307 (D)	SPIE	28.00	21/11/2019 08:45:00	11.33	
1-307 (D)	SPIE	28.00	27/11/2019 11:15:00	12.30	
1-307 (D)	SPIE	28.00	18/12/2019 09:31:00	12.42	
1-307 (D)	SPIE	28.00	15/01/2020 09:30:00	12.24	
1-307 (D)	SPIE	28.00	27/01/2020 12:00:00	12.08	
1-307 (D)	SPIE	28.00	03/02/2020 12:00:00	11.97	
1-307 (D)	SPIE	28.00	11/02/2020 00:00:00	12.01	
1-307 (D)	SPIE	28.00	24/02/2020 10:30:00	10.27	
1-307 (D)	SPIE	28.00	24/04/2020 15:01:00	11.25	
1-307 (D)	SPIE	28.00	05/05/2020 00:00:00	11.27	
1-307 (D)	SPIE	28.00	15/05/2020 00:00:00	12.08	
1-307 (D)	SPIE	28.00	02/06/2020 00:00:00	12.21	
1-307 (S)	SP	14.00	18/10/2019 13:07:00	11.14	
1-307 (S)	SP	14.00	15/11/2019 01:35:00	12.14	
1-307 (S)	SP	14.00	21/11/2019 08:45:00	12.60	
1-307 (S)	SP	14.00	27/11/2019 11:15:00	13.13	
1-307 (S)	SP	14.00	18/12/2019 09:27:00	10.47	

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1-307 (S)	SP	14.00	15/01/2020	09:35:00	10.18	
1-307 (S)	SP	14.00	27/01/2020	12:00:00	10.20	
1-307 (S)	SP	14.00	03/02/2020	12:00:00	10.52	
1-307 (S)	SP	14.00	11/02/2020	00:00:00	10.38	
1-307 (S)	SP	14.00	24/02/2020	10:20:00	12.01	
1-307 (S)	SP	14.00	24/04/2020	15:10:00	11.39	
1-307 (S)	SP	14.00	05/05/2020	00:00:00	11.39	
1-307 (S)	SP	14.00	15/05/2020	00:00:00	12.64	
1-307 (S)	SP	14.00	02/06/2020	00:00:00	12.37	
1-311 (1)	SPIE	17.70	18/10/2019	00:00:00		No access.
1-311 (1)	SPIE	17.70	15/11/2019	13:45:00	11.70	
1-311 (1)	SPIE	17.70	21/11/2019	08:30:00	Dry	
1-311 (1)	SPIE	17.70	27/11/2019	11:10:00	Dry	
1-311 (1)	SPIE	17.70	18/12/2019	09:50:00	Dry	
1-311 (1)	SPIE	17.70	15/01/2020	09:45:00	16.85	
1-311 (1)	SPIE	17.70	27/01/2020	12:00:00	Dry	
1-311 (1)	SPIE	17.70	03/02/2020	10:00:00	Dry	
1-311 (1)	SPIE	17.70	11/02/2020	00:00:00	Dry	
1-311 (1)	SPIE	17.70	24/02/2020	15:20:00	Dry	
1-311 (1)	SPIE	17.70	04/05/2020	00:00:00	Dry	
1-311 (1)	SPIE	17.70	22/05/2020	00:00:00	Dry	
1-311 (1)	SPIE	17.70	04/06/2020	00:00:00	Dry	
1-314 (1)	SPIE	9.00	18/10/2019	00:00:00		No access.
1-314 (1)	SPIE	9.00	15/11/2019	14:00:00	5.40	
1-314 (1)	SPIE	9.00	21/11/2019	08:35:00	Dry	
1-314 (1)	SPIE	9.00	27/11/2019	11:00:00	Dry	
1-314 (1)	SPIE	9.00	18/12/2019	10:04:00	Dry	
1-314 (1)	SPIE	9.00	15/01/2020	09:45:00	Dry	
1-314 (1)	SPIE	9.00	27/01/2020	12:00:00	Dry	
1-314 (1)	SPIE	9.00	03/02/2020	12:00:00	Dry	
1-314 (1)	SPIE	9.00	11/02/2020	00:00:00	Dry	
1-314 (1)	SPIE	9.00	24/02/2020	15:30:00	9.09	
1-318 (1)	SP	14.00	02/10/2019	00:00:00	5.16	
1-318 (1)	SP	14.00	18/10/2019	13:22:00	5.03	
1-318 (1)	SP	14.00	15/11/2019	14:00:00	5.40	
1-318 (1)	SP	14.00	21/11/2019	08:40:00	5.20	
1-318 (1)	SP	14.00	27/11/2019	11:05:00	10.40	
1-318 (1)	SP	14.00	18/12/2019	10:12:00	10.05	
1-318 (1)	SP	14.00	15/01/2020	09:55:00	9.97	
1-318 (1)	SP	14.00	27/01/2020	12:00:00	8.82	
1-318 (1)	SP	14.00	03/02/2020	12:00:00	9.83	
1-318 (1)	SP	14.00	11/02/2020	00:00:00	9.90	
1-318 (1)	SP	14.00	24/02/2020	15:40:00	9.82	
1-318 (1)	SP	14.00	04/05/2020	15:40:00	7.22	
1-318 (1)	SP	14.00	19/05/2020	14:30:00	7.88	
1-318 (1)	SP	14.00	04/06/2020	11:00:00	7.27	
1-327 (S)	SP	11.00	18/10/2019	00:00:00		Could not locate
1-327 (S)	SP	11.00	18/12/2019	16:20:00	9.20	
1-327 (S)	SP	11.00	29/01/2020	12:00:00		No access.
1-327 (S)	SP	11.00	17/02/2020	11:38:00	1.17	
1-327 (S)	SP	11.00	04/05/2020	00:00:00	1.04	

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1-327 (S)	SP	11.00	19/05/2020	13:00:00	1.38	
1-327 (S)	SP	11.00	22/05/2020	00:00:00	1.72	
1-333 (1)	SPIE	12.00	17/10/2019	12:25:00	9.40	
1-333 (1)	SPIE	12.00	18/12/2019	12:05:00	9.80	
1-333 (1)	SPIE	12.00	29/01/2020	12:00:00		No access.
1-333 (1)	SPIE	12.00	04/05/2020	00:00:00	9.13	
1-333 (1)	SPIE	12.00	22/05/2020	00:00:00	9.18	
1-333 (1)	SPIE	12.00	09/06/2020	00:00:00	9.02	
1-339 (1)	SPIE	20.00	18/12/2019	13:30:00	17.80	
1-339 (1)	SPIE	20.00	29/01/2020	12:00:00		No access.
1-339 (1)	SPIE	20.00	17/02/2020	14:45:00	0.66	
1-339 (1)	SPIE	20.00	04/05/2020	00:00:00	1.02	
1-339 (1)	SPIE	20.00	22/05/2020	00:00:00	1.26	
1-339 (1)	SPIE	20.00	09/06/2020	00:00:00	1.68	
1-341 (1)	SP	13.50	18/12/2019	14:00:00	7.61	
1-341 (1)	SP	13.50	29/01/2020	12:00:00		No access.
1-341 (1)	SP	13.50	17/02/2020	12:50:00	7.20	
1-341 (1)	SP	13.50	04/05/2020	11:10:00	7.11	
1-341 (1)	SP	13.50	19/05/2020	10:30:00	7.10	
1-341 (1)	SP	13.50	09/06/2020	00:00:00	7.11	
1-346 (D)	SP	12.00	15/08/2019	14:54:00	3.70	
1-346 (D)	SP	12.00	20/08/2019	15:01:00	3.63	
1-346 (D)	SP	12.00	18/10/2019	00:00:00		Could not locate
1-346 (D)	SP	12.00	18/12/2019	15:47:00	3.45	
1-346 (D)	SP	12.00	29/01/2020	12:00:00		No access.
1-346 (D)	SP	12.00	17/02/2020	12:10:00	2.68	
1-346 (D)	SP	12.00	04/05/2020	00:00:00	2.75	
1-346 (D)	SP	12.00	19/05/2020	12:00:00	2.83	
1-346 (D)	SP	12.00	22/05/2020	00:00:00	3.18	
1-346 (S)	SP	4.00	15/08/2019	14:50:00	3.35	
1-346 (S)	SP	4.00	20/08/2019	15:00:00	3.30	
1-346 (S)	SP	4.00	18/10/2019	00:00:00		Could not locate
1-346 (S)	SP	4.00	18/12/2019	15:47:00	2.75	
1-346 (S)	SP	4.00	29/01/2020	00:00:00		No access.
1-346 (S)	SP	4.00	17/02/2020	12:00:00	1.66	
1-346 (S)	SP	4.00	04/05/2020	00:00:00	1.89	
1-346 (S)	SP	4.00	19/05/2020	11:35:00	2.08	
1-346 (S)	SP	4.00	22/05/2020	00:00:00	2.68	
1-363A (S)	SP	20.00	02/10/2019	00:00:00	10.33	
1-363A (S)	SP	20.00	15/11/2019	14:40:00	10.40	
1-363A (S)	SP	20.00	21/11/2019	09:30:00	10.32	
1-363A (S)	SP	20.00	27/11/2019	11:45:00	10.25	
1-363A (S)	SP	20.00	18/12/2019	14:52:00	10.40	
1-363A (S)	SP	20.00	15/01/2020	10:30:00	10.25	
1-363A (S)	SP	20.00	27/01/2020	12:00:00	10.23	
1-363A (S)	SP	20.00	04/02/2020	00:00:00	10.29	
1-363A (S)	SP	20.00	11/02/2020	00:00:00	10.22	
1-363A (S)	SP	20.00	24/02/2020	13:00:00	10.08	
1-363A (S)	SP	20.00	05/05/2020	00:00:00	10.10	
1-363A (S)	SP	20.00	20/05/2020	13:30:00	10.02	
1-363A (S)	SP	20.00	08/06/2020	12:30:00	10.10	

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1-366 (1)	SPIE	6.00	24/02/2020 00:00:00		No access.
1-366 (1)	SPIE	6.00	04/05/2020 00:00:00	4.72	
1-366 (1)	SPIE	6.00	22/05/2020 00:00:00	4.69	
1-366 (1)	SPIE	6.00	04/06/2020 00:00:00	4.69	
1-373 (1)	SPIE	5.00	29/01/2020 12:00:00		No access.
1-373 (1)	SPIE	5.00	09/06/2020 00:00:00	1.34	
1-382 (1)	SPIE	12.00	27/01/2020 12:00:00	7.86	
1-382 (1)	SPIE	12.00	04/02/2020 12:00:00	7.97	
1-382 (1)	SPIE	12.00	11/02/2020 00:00:00	7.90	
1-382 (1)	SPIE	12.00	24/02/2020 13:45:00	7.82	
1-382 (1)	SPIE	12.00	05/05/2020 00:00:00	7.93	
1-382 (1)	SPIE	12.00	22/05/2020 00:00:00	7.97	
1-382 (1)	SPIE	12.00	09/06/2020 00:00:00	8.10	
1-390 (D)	SP	23.00	15/11/2019 11:55:00	11.30	
1-390 (D)	SP	23.00	22/11/2019 08:35:00	11.80	
1-390 (D)	SP	23.00	27/11/2019 12:10:00	12.65	
1-390 (D)	SP	23.00	17/12/2019 03:50:00	12.10	
1-390 (D)	SP	23.00	15/01/2020 10:50:00	12.12	
1-390 (D)	SP	23.00	27/01/2020 12:00:00	12.07	
1-390 (D)	SP	23.00	04/02/2020 12:00:00	11.95	
1-390 (D)	SP	23.00	11/02/2020 00:00:00	11.92	
1-390 (D)	SP	23.00	24/02/2020 13:20:00	11.77	
1-390 (D)	SP	23.00	05/05/2020 00:00:00	11.43	
1-390 (D)	SP	23.00	20/05/2020 12:30:00	11.83	
1-390 (D)	SP	23.00	08/06/2020 14:45:00	11.87	
1-390 (S)	SP	6.00	15/11/2019 11:55:00	4.70	
1-390 (S)	SP	6.00	22/11/2019 08:35:00	4.72	
1-390 (S)	SP	6.00	27/11/2019 12:10:00	4.60	
1-390 (S)	SP	6.00	17/12/2019 03:30:00	4.50	
1-390 (S)	SP	6.00	15/01/2020 10:45:00	4.26	
1-390 (S)	SP	6.00	27/01/2020 12:00:00	4.20	
1-390 (S)	SP	6.00	04/02/2020 12:00:00	4.14	
1-390 (S)	SP	6.00	11/02/2020 00:00:00	4.10	
1-390 (S)	SP	6.00	24/02/2020 13:20:00	4.00	
1-390 (S)	SP	6.00	05/05/2020 00:00:00	4.06	
1-390 (S)	SP	6.00	20/05/2020 11:30:00	2.90	
1-390 (S)	SP	6.00	08/06/2020 12:40:00	3.82	
1-392 (S)	SP	14.50	15/11/2019 12:00:00	13.90	
1-392 (S)	SP	14.50	22/11/2019 08:30:00	Dry	
1-392 (S)	SP	14.50	29/01/2020 12:00:00		No access.
1-392 (S)	SP	14.50	20/05/2020 09:05:00	Dry	
1-392 (S)	SP	14.50	08/06/2020 13:15:00	Dry	
1-398 (1)	SPIE	9.00	02/10/2019 00:00:00	Dry	
1-398 (1)	SPIE	9.00	04/10/2019 00:00:00	Dry	
1-398 (1)	SPIE	9.00	15/11/2019 15:00:00	Dry	
1-398 (1)	SPIE	9.00	21/11/2019 09:40:00	Dry	
1-398 (1)	SPIE	9.00	27/11/2019 12:00:00	Dry	
1-398 (1)	SPIE	9.00	18/12/2019 15:35:00	Dry	
1-398 (1)	SPIE	9.00	15/01/2020 10:50:00		No access.
1-398 (1)	SPIE	9.00	22/01/2020 12:00:00	Dry	
1-398 (1)	SPIE	9.00	04/02/2020 12:00:00		No access.

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1-398 (1)	SPIE	9.00	24/02/2020 13:10:00		No access.
1-398 (1)	SPIE	9.00	24/02/2020 16:20:00	Dry	
1-401 (1)	SP	20.00	19/09/2019 00:00:00	19.47	
1-401 (1)	SP	20.00	02/10/2019 00:00:00	20.00	
1-401 (1)	SP	20.00	21/11/2019 11:20:00	Dry	
1-401 (1)	SP	20.00	27/11/2019 13:35:00	Dry	
1-401 (1)	SP	20.00	19/12/2019 09:19:00	Dry	
1-401 (1)	SP	20.00	15/01/2020 12:50:00	Dry	
1-401 (1)	SP	20.00	22/01/2020 12:00:00	Dry	
1-401 (1)	SP	20.00	04/02/2020 12:00:00	Dry	
1-401 (1)	SP	20.00	10/02/2020 00:00:00	Dry	
1-401 (1)	SP	20.00	24/02/2020 10:40:00	Dry	
1-401 (1)	SP	20.00	15/05/2020 00:00:00	Dry	
1-404 (1)	SP	8.00	02/10/2019 00:00:00	Dry	
1-404 (1)	SP	8.00	21/11/2019 11:15:00	Dry	
1-404 (1)	SP	8.00	27/11/2019 13:20:00	Dry	
1-404 (1)	SP	8.00	19/12/2019 09:08:00	8.12	
1-404 (1)	SP	8.00	15/01/2020 12:40:00	Dry	
1-404 (1)	SP	8.00	22/01/2020 12:00:00	Dry	
1-404 (1)	SP	8.00	04/02/2020 12:00:00	8.10	
1-404 (1)	SP	8.00	10/02/2020 12:00:00	8.30	
1-404 (1)	SP	8.00	24/02/2020 10:45:00	8.07	
1-404 (1)	SP	8.00	24/04/2020 10:30:00	Dry	
1-404 (1)	SP	8.00	15/05/2020 00:00:00	8.03	
1-404 (1)	SP	8.00	29/05/2020 00:00:00	Dry	
1-404 (2)	SP	27.00	02/10/2019 00:00:00	19.66	
1-404 (2)	SP	27.00	21/11/2019 11:15:00	19.35	
1-404 (2)	SP	27.00	27/11/2019 13:20:00	19.37	
1-404 (2)	SP	27.00	19/12/2019 09:11:00	19.90	
1-404 (2)	SP	27.00	15/01/2020 12:30:00	19.90	
1-404 (2)	SP	27.00	22/01/2020 12:00:00	19.65	
1-404 (2)	SP	27.00	04/02/2020 12:00:00	19.66	
1-404 (2)	SP	27.00	10/02/2020 00:00:00	19.58	
1-404 (2)	SP	27.00	24/02/2020 10:50:00	19.30	
1-404 (2)	SP	27.00	24/04/2020 10:20:00	20.15	
1-404 (2)	SP	27.00	15/05/2020 00:00:00	19.16	
1-404 (2)	SP	27.00	29/05/2020 00:00:00	19.03	
1-405 (S)	SPIE	25.20	29/08/2019 00:00:00	0.50	
1-405 (S)	SPIE	25.20	19/09/2019 00:00:00	1.64	
1-405 (S)	SPIE	25.20	21/11/2019 11:10:00	6.50	
1-405 (S)	SPIE	25.20	27/11/2019 13:25:00	6.75	
1-405 (S)	SPIE	25.20	19/12/2019 09:00:00	18.00	
1-405 (S)	SPIE	25.20	15/01/2020 12:25:00	16.16	
1-405 (S)	SPIE	25.20	22/01/2020 12:00:00	16.20	
1-405 (S)	SPIE	25.20	04/02/2020 12:00:00	16.27	
1-405 (S)	SPIE	25.20	10/02/2020 00:00:00	16.30	
1-405 (S)	SPIE	25.20	24/02/2020 11:10:00	16.05	
1-405 (S)	SPIE	25.20	24/04/2020 10:40:00	16.84	
1-405 (S)	SPIE	25.20	15/05/2020 00:00:00	17.26	
1-405 (S)	SPIE	25.20	29/05/2020 00:00:00	16.24	
1-410 (S)	SP	10.00	13/08/2019 15:30:00	6.84	


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1-410 (S)	SP	10.00	15/08/2019	15:25:00	6.85	
1-410 (S)	SP	10.00	20/08/2019	14:00:00	6.74	
1-410 (S)	SP	10.00	29/08/2019	15:00:00	6.71	
1-410 (S)	SP	10.00	02/09/2019	16:45:00	5.94	
1-410 (S)	SP	10.00	19/09/2019	00:00:00	6.68	
1-410 (S)	SP	10.00	02/10/2019	00:00:00	7.00	
1-410 (S)	SP	10.00	21/11/2019	11:25:00	6.59	
1-410 (S)	SP	10.00	27/11/2019	13:10:00	6.55	
1-410 (S)	SP	10.00	18/12/2019	14:17:00	6.32	
1-410 (S)	SP	10.00	15/01/2020	12:15:00	6.25	
1-410 (S)	SP	10.00	22/01/2020	12:00:00	6.01	
1-410 (S)	SP	10.00	04/02/2020	12:00:00	6.22	
1-410 (S)	SP	10.00	10/02/2020	00:00:00	6.11	
1-410 (S)	SP	10.00	24/02/2020	10:25:00	5.40	
1-410 (S)	SP	10.00	22/04/2020	12:40:00	6.15	
1-410 (S)	SP	10.00	07/05/2020	13:20:00	6.21	
1-410 (S)	SP	10.00	26/05/2020	12:45:00	6.39	
1-508 (D)	SPIE	17.20	23/07/2019	16:02:00	3.92	
1-508 (D)	SPIE	17.20	24/07/2019	10:50:00	3.38	
1-508 (D)	SPIE	17.20	26/07/2019	11:07:00	3.65	
1-508 (D)	SPIE	17.20	30/07/2019	11:45:00	3.76	
1-508 (D)	SPIE	17.20	06/08/2019	14:02:00	3.80	
1-508 (D)	SPIE	17.20	15/08/2019	09:12:00	3.79	
1-508 (D)	SPIE	17.20	20/08/2019	10:10:00	3.78	
1-508 (D)	SPIE	17.20	19/09/2019	00:00:00	4.08	
1-508 (D)	SPIE	17.20	02/10/2019	00:00:00	3.52	
1-508 (D)	SPIE	17.20	18/10/2019	00:00:00		Could not access - cows in field
1-508 (D)	SPIE	17.20	15/11/2019	10:35:00	3.32	
1-508 (D)	SPIE	17.20	21/11/2019	14:10:00	3.33	
1-508 (D)	SPIE	17.20	27/11/2019	09:40:00	3.19	
1-508 (D)	SPIE	17.20	17/12/2019	12:05:00	2.99	
1-508 (D)	SPIE	17.20	14/01/2020	12:00:00	3.11	
1-508 (D)	SPIE	17.20	27/01/2020	12:00:00	2.81	
1-508 (D)	SPIE	17.20	03/02/2020	12:00:00	2.77	
1-508 (D)	SPIE	17.20	13/02/2020	00:00:00	2.62	
1-508 (D)	SPIE	17.20	24/02/2020	13:50:00	2.65	
1-508 (D)	SPIE	17.20	24/02/2020	15:40:00	2.65	
1-508 (D)	SPIE	17.20	28/04/2020	10:45:00	2.99	
1-508 (D)	SPIE	17.20	05/05/2020	00:00:00	2.95	
1-508 (D)	SPIE	17.20	13/05/2020	11:20:00	3.35	
1-508 (D)	SPIE	17.20	15/05/2020	00:00:00	3.38	
1-508 (D)	SPIE	17.20	01/06/2020	16:00:00	3.69	
1-508 (S)	SP	5.00	23/07/2019	16:04:00	3.02	
1-508 (S)	SP	5.00	24/07/2019	11:35:00	2.78	
1-508 (S)	SP	5.00	26/07/2019	11:09:00	3.68	
1-508 (S)	SP	5.00	30/07/2019	11:40:00	3.80	
1-508 (S)	SP	5.00	06/08/2019	14:04:00	3.87	
1-508 (S)	SP	5.00	15/08/2019	09:14:00	3.80	
1-508 (S)	SP	5.00	20/08/2019	10:11:00	3.85	
1-508 (S)	SP	5.00	29/08/2019	10:45:00	3.99	
1-508 (S)	SP	5.00	19/09/2019	00:00:00	3.90	
Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well 			Project Ground Investigation for the Regional Investment Programme Project No. M25 J10 - A3 Wisley Interchange Improvements D9008-19 Carried out for Geoffrey Osborne Limited			A2

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-508 (S)	SP	5.00	02/10/2019 12:05:00	4.10	
1-508 (S)	SP	5.00	18/10/2019 00:00:00		No access - cows in field
1-508 (S)	SP	5.00	15/11/2019 10:35:00	3.40	
1-508 (S)	SP	5.00	21/11/2019 14:10:00	3.33	
1-508 (S)	SP	5.00	27/11/2019 09:40:00	3.19	
1-508 (S)	SP	5.00	17/12/2019 12:00:00	2.98	
1-508 (S)	SP	5.00	14/01/2020 12:05:00	2.84	
1-508 (S)	SP	5.00	27/01/2020 12:00:00	2.82	
1-508 (S)	SP	5.00	03/02/2020 12:00:00	2.72	
1-508 (S)	SP	5.00	13/02/2020 00:00:00	2.58	
1-508 (S)	SP	5.00	24/02/2020 13:50:00	2.58	
1-508 (S)	SP	5.00	24/02/2020 15:40:00	2.58	
1-508 (S)	SP	5.00	28/04/2020 13:40:00	2.96	
1-508 (S)	SP	5.00	05/05/2020 00:00:00	2.90	
1-508 (S)	SP	5.00	13/05/2020 12:30:00	3.04	
1-508 (S)	SP	5.00	15/05/2020 00:00:00	2.98	
1-508 (S)	SP	5.00	01/06/2020 16:00:00	3.27	
1-509 (D)	SPIE	18.00	15/07/2019 11:25:00	2.66	
1-509 (D)	SPIE	18.00	26/07/2019 11:17:00	3.20	
1-509 (D)	SPIE	18.00	30/07/2019 12:15:00	3.33	
1-509 (D)	SPIE	18.00	06/08/2019 14:14:00	3.20	
1-509 (D)	SPIE	18.00	15/08/2019 09:22:00	3.30	
1-509 (D)	SPIE	18.00	20/08/2019 15:42:00	3.38	
1-509 (D)	SPIE	18.00	29/08/2019 09:25:00	3.44	
1-509 (D)	SPIE	18.00	19/09/2019 00:00:00	3.35	
1-509 (D)	SPIE	18.00	02/10/2019 00:00:00	3.52	
1-509 (D)	SPIE	18.00	18/10/2019 00:00:00		No access - cows in field
1-509 (D)	SPIE	18.00	15/11/2019 10:45:00	3.50	
1-509 (D)	SPIE	18.00	21/11/2019 14:15:00	3.50	
1-509 (D)	SPIE	18.00	27/11/2019 09:50:00	2.90	
1-509 (D)	SPIE	18.00	17/12/2019 14:00:00	2.41	
1-509 (D)	SPIE	18.00	14/01/2020 11:55:00	2.66	
1-509 (D)	SPIE	18.00	27/01/2020 12:00:00	2.78	
1-509 (D)	SPIE	18.00	03/02/2020 12:00:00	2.42	
1-509 (D)	SPIE	18.00	13/02/2020 00:00:00	1.13	
1-509 (D)	SPIE	18.00	24/02/2020 15:50:00	0.79	
1-509 (D)	SPIE	18.00	28/04/2020 14:45:00	2.39	
1-509 (D)	SPIE	18.00	13/05/2020 12:45:00	2.74	
1-509 (D)	SPIE	18.00	15/05/2020 00:00:00	2.45	
1-509 (D)	SPIE	18.00	02/06/2020 13:45:00	2.80	
1-509 (S)	SP	12.50	15/07/2019 11:20:00	2.95	
1-509 (S)	SP	12.50	26/07/2019 11:19:00	3.26	
1-509 (S)	SP	12.50	30/07/2019 11:55:00	3.33	
1-509 (S)	SP	12.50	06/08/2019 14:15:00	3.26	
1-509 (S)	SP	12.50	15/08/2019 09:25:00	3.48	
1-509 (S)	SP	12.50	20/08/2019 15:41:00	3.31	
1-509 (S)	SP	12.50	29/08/2019 00:00:00	3.32	
1-509 (S)	SP	12.50	13/09/2019 00:00:00	3.10	
1-509 (S)	SP	12.50	19/09/2019 00:00:00	3.50	
1-509 (S)	SP	12.50	02/10/2019 00:00:00	4.81	
1-509 (S)	SP	12.50	18/10/2019 00:00:00		No access - cows in field

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



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D9008-19
Carried out for
Geoffrey Osborne Limited


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Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-509 (S)	SP	12.50	15/11/2019 10:45:00	2.90	
1-509 (S)	SP	12.50	21/11/2019 14:15:00	3.00	
1-509 (S)	SP	12.50	27/11/2019 09:50:00	3.05	
1-509 (S)	SP	12.50	17/12/2019 13:05:00	2.91	
1-509 (S)	SP	12.50	14/01/2020 11:50:00	2.64	
1-509 (S)	SP	12.50	27/01/2020 12:00:00	2.49	
1-509 (S)	SP	12.50	03/02/2020 12:00:00	2.70	
1-509 (S)	SP	12.50	13/02/2020 00:00:00	2.42	
1-509 (S)	SP	12.50	24/02/2020 15:50:00	2.15	
1-509 (S)	SP	12.50	28/04/2020 00:00:00	2.80	
1-509 (S)	SP	12.50	13/05/2020 13:45:00	2.43	
1-509 (S)	SP	12.50	15/05/2020 00:00:00	2.52	
1-509 (S)	SP	12.50	02/06/2020 14:30:00	2.77	
1-511 (S)	SP	3.00	24/06/2019 00:00:00	Dry	
1-511 (S)	SP	3.00	15/07/2019 11:00:00	Dry	
1-511 (S)	SP	3.00	23/07/2019 16:11:00	Dry	
1-511 (S)	SP	3.00	26/07/2019 11:00:00	Dry	
1-511 (S)	SP	3.00	30/07/2019 11:25:00	Dry	
1-511 (S)	SP	3.00	06/08/2019 13:56:00	Dry	
1-511 (S)	SP	3.00	15/08/2019 09:34:00	Dry	
1-511 (S)	SP	3.00	20/08/2019 10:20:00	Dry	
1-511 (S)	SP	3.00	29/08/2019 10:45:00	Dry	
1-511 (S)	SP	3.00	13/09/2019 00:00:00	Dry	
1-511 (S)	SP	3.00	19/09/2019 00:00:00	Dry	
1-511 (S)	SP	3.00	02/10/2019 00:00:00	Dry	
1-511 (S)	SP	3.00	18/10/2019 11:35:00	Dry	
1-511 (S)	SP	3.00	15/11/2019 10:45:00	Dry	
1-511 (S)	SP	3.00	21/11/2019 14:45:00	Dry	
1-511 (S)	SP	3.00	27/11/2019 10:00:00	Dry	
1-511 (S)	SP	3.00	17/12/2019 11:00:00	Dry	
1-511 (S)	SP	3.00	14/01/2020 12:10:00	2.58	
1-511 (S)	SP	3.00	27/01/2020 12:00:00	2.59	
1-511 (S)	SP	3.00	03/02/2020 12:00:00	2.70	
1-511 (S)	SP	3.00	13/02/2020 00:00:00	2.88	
1-511 (S)	SP	3.00	24/04/2020 14:00:00	2.80	
1-511 (S)	SP	3.00	15/05/2020 13:00:00	2.18	
1-511 (S)	SP	3.00	29/05/2020 13:00:00	2.61	
1-516 (D)	SP	23.00	23/07/2019 10:00:00	5.10	
1-516 (D)	SP	23.00	23/07/2019 16:19:00	5.07	
1-516 (D)	SP	23.00	26/07/2019 10:46:00	5.24	
1-516 (D)	SP	23.00	30/07/2019 11:13:00	5.30	
1-516 (D)	SP	23.00	06/08/2019 13:50:00	5.29	
1-516 (D)	SP	23.00	15/08/2019 09:41:00	5.29	
1-516 (D)	SP	23.00	20/08/2019 10:32:00	5.30	
1-516 (D)	SP	23.00	29/08/2019 10:40:00	5.37	
1-516 (D)	SP	23.00	13/09/2019 00:00:00	5.59	
1-516 (D)	SP	23.00	19/09/2019 00:00:00	5.50	
1-516 (D)	SP	23.00	02/10/2019 00:00:00	5.78	
1-516 (D)	SP	23.00	18/10/2019 11:30:00	5.30	
1-516 (D)	SP	23.00	15/11/2019 10:50:00	5.00	
1-516 (D)	SP	23.00	21/11/2019 14:20:00	4.95	

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-516 (D)	SP	23.00	27/11/2019 10:10:00	4.90	
1-516 (D)	SP	23.00	17/12/2019 01:00:00	4.71	
1-516 (D)	SP	23.00	14/01/2020 12:20:00	4.76	
1-516 (D)	SP	23.00	27/01/2020 12:00:00	4.52	
1-516 (D)	SP	23.00	03/02/2020 12:00:00	4.52	
1-516 (D)	SP	23.00	13/02/2020 00:00:00	4.41	
1-516 (D)	SP	23.00	24/02/2020 15:20:00	4.41	
1-516 (D)	SP	23.00	28/04/2020 15:45:00	4.58	
1-516 (D)	SP	23.00	05/05/2020 00:00:00	4.62	
1-516 (D)	SP	23.00	13/05/2020 15:20:00	4.69	
1-516 (D)	SP	23.00	15/05/2020 00:00:00	4.69	
1-516 (D)	SP	23.00	01/06/2020 15:25:00	4.88	
1-516 (S)	SP	10.00	23/07/2019 10:30:00	3.32	
1-516 (S)	SP	10.00	23/07/2019 16:16:00	3.31	
1-516 (S)	SP	10.00	26/07/2019 10:45:00	3.40	
1-516 (S)	SP	10.00	30/07/2019 11:16:00	3.48	
1-516 (S)	SP	10.00	06/08/2019 13:47:00	3.51	
1-516 (S)	SP	10.00	15/08/2019 09:41:00	3.56	
1-516 (S)	SP	10.00	20/08/2019 10:30:00	3.66	
1-516 (S)	SP	10.00	29/08/2019 10:40:00	4.68	
1-516 (S)	SP	10.00	13/09/2019 00:00:00	4.92	
1-516 (S)	SP	10.00	19/09/2019 00:00:00	3.88	
1-516 (S)	SP	10.00	02/10/2019 00:00:00	4.22	
1-516 (S)	SP	10.00	18/10/2019 11:28:00	4.18	
1-516 (S)	SP	10.00	15/11/2019 10:55:00	4.30	
1-516 (S)	SP	10.00	21/11/2019 14:20:00	4.24	
1-516 (S)	SP	10.00	27/11/2019 10:10:00	4.32	
1-516 (S)	SP	10.00	17/12/2019 10:05:00	4.45	
1-516 (S)	SP	10.00	14/01/2020 12:15:00	4.56	
1-516 (S)	SP	10.00	27/01/2020 12:00:00	4.53	
1-516 (S)	SP	10.00	03/02/2020 12:00:00	4.56	
1-516 (S)	SP	10.00	13/02/2020 00:00:00	4.55	
1-516 (S)	SP	10.00	24/02/2020 15:20:00	4.55	
1-516 (S)	SP	10.00	29/04/2020 11:45:00	4.42	
1-516 (S)	SP	10.00	05/05/2020 00:00:00	4.42	
1-516 (S)	SP	10.00	13/05/2020 14:30:00	4.66	
1-516 (S)	SP	10.00	15/05/2020 00:00:00	4.66	
1-516 (S)	SP	10.00	01/06/2020 12:30:00	4.82	
1-518A (S)	SPIE	26.50	23/07/2019 09:40:00	10.71	
1-518A (S)	SPIE	26.50	23/07/2019 16:24:00	10.79	
1-518A (S)	SPIE	26.50	26/07/2019 10:38:00	10.90	
1-518A (S)	SPIE	26.50	30/07/2019 11:05:00	10.97	
1-518A (S)	SPIE	26.50	06/08/2019 13:40:00	11.00	
1-518A (S)	SPIE	26.50	15/08/2019 09:47:00	11.10	
1-518A (S)	SPIE	26.50	20/08/2019 11:00:00	11.10	
1-518A (S)	SPIE	26.50	29/08/2019 10:30:00	11.15	
1-518A (S)	SPIE	26.50	18/10/2019 11:24:00	11.10	
1-518A (S)	SPIE	26.50	15/11/2019 11:00:00	11.70	
1-518A (S)	SPIE	26.50	21/11/2019 14:25:00	11.17	
1-518A (S)	SPIE	26.50	27/11/2019 10:15:00	11.15	
1-518A (S)	SPIE	26.50	17/12/2019 12:55:00	11.05	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well


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Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-518A (S)	SPIE	26.50	14/01/2020 12:25:00	10.86	
1-518A (S)	SPIE	26.50	27/01/2020 12:00:00	10.84	
1-518A (S)	SPIE	26.50	03/02/2020 12:00:00	10.77	
1-518A (S)	SPIE	26.50	13/02/2020 00:00:00	10.26	
1-518A (S)	SPIE	26.50	24/02/2020 15:10:00	10.66	
1-518A (S)	SPIE	26.50	24/04/2020 13:47:00	10.74	
1-518A (S)	SPIE	26.50	15/05/2020 00:00:00	10.76	
1-518A (S)	SPIE	26.50	29/05/2020 00:00:00	10.87	
1-527 (S)	SPIE	5.80	19/06/2019 10:45:00	3.04	
1-527 (S)	SPIE	5.80	15/07/2019 11:50:00	2.76	
1-527 (S)	SPIE	5.80	26/07/2019 11:15:00	3.15	
1-527 (S)	SPIE	5.80	30/07/2019 13:15:00	2.90	
1-527 (S)	SPIE	5.80	06/08/2019 14:30:00	3.23	
1-527 (S)	SPIE	5.80	15/08/2019 10:02:00	3.27	
1-527 (S)	SPIE	5.80	20/08/2019 15:56:00	3.25	
1-527 (S)	SPIE	5.80	29/08/2019 09:15:00	3.26	
1-527 (S)	SPIE	5.80	13/09/2019 00:00:00	3.34	
1-527 (S)	SPIE	5.80	19/09/2019 00:00:00	3.34	
1-527 (S)	SPIE	5.80	02/10/2019 00:00:00	3.33	
1-527 (S)	SPIE	5.80	18/10/2019 11:05:00	3.36	
1-527 (S)	SPIE	5.80	21/11/2019 14:30:00	3.26	
1-527 (S)	SPIE	5.80	27/11/2019 10:20:00	3.15	
1-527 (S)	SPIE	5.80	17/12/2019 15:05:00	3.05	
1-527 (S)	SPIE	5.80	14/01/2020 12:35:00	2.70	
1-527 (S)	SPIE	5.80	27/01/2020 12:00:00	2.60	
1-527 (S)	SPIE	5.80	03/02/2020 12:00:00	2.58	
1-527 (S)	SPIE	5.80	13/02/2020 00:00:00	2.55	
1-527 (S)	SPIE	5.80	24/04/2020 14:16:00	2.25	
1-527 (S)	SPIE	5.80	15/05/2020 00:00:00	2.33	
1-527 (S)	SPIE	5.80	29/05/2020 00:00:00	2.42	
1-528 (S)	SPIE	13.00	19/06/2019 09:15:00	2.60	
1-528 (S)	SPIE	13.00	24/06/2019 09:50:00	2.60	
1-528 (S)	SPIE	13.00	15/07/2019 10:00:00	2.60	
1-528 (S)	SPIE	13.00	23/07/2019 16:32:00	2.90	
1-528 (S)	SPIE	13.00	26/07/2019 12:18:00	2.90	
1-528 (S)	SPIE	13.00	30/07/2019 13:50:00	2.84	
1-528 (S)	SPIE	13.00	06/08/2019 12:35:00	2.98	
1-528 (S)	SPIE	13.00	15/08/2019 10:20:00	3.00	
1-528 (S)	SPIE	13.00	20/08/2019 11:12:00	3.00	
1-528 (S)	SPIE	13.00	29/08/2019 09:50:00	3.09	
1-528 (S)	SPIE	13.00	13/09/2019 00:00:00	3.21	
1-528 (S)	SPIE	13.00	19/09/2019 11:14:00	3.12	
1-528 (S)	SPIE	13.00	02/10/2019 00:00:00	3.11	
1-528 (S)	SPIE	13.00	04/10/2019 00:00:00	3.06	
1-528 (S)	SPIE	13.00	18/10/2019 10:36:00	2.87	
1-528 (S)	SPIE	13.00	21/11/2019 14:35:00	2.80	
1-528 (S)	SPIE	13.00	27/11/2019 10:40:00	2.75	
1-528 (S)	SPIE	13.00	17/12/2019 03:00:00	2.50	
1-528 (S)	SPIE	13.00	14/01/2020 13:40:00	2.37	
1-528 (S)	SPIE	13.00	27/01/2020 12:00:00	2.25	
1-528 (S)	SPIE	13.00	03/02/2020 12:00:00	2.25	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



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Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-528 (S)	SPIE	13.00	13/02/2020 00:00:00	2.16	
1-528 (S)	SPIE	13.00	24/02/2020 15:30:00	1.99	
1-528 (S)	SPIE	13.00	24/04/2020 14:45:00	2.20	
1-528 (S)	SPIE	13.00	15/05/2020 00:00:00	2.27	
1-528 (S)	SPIE	13.00	29/05/2020 00:00:00	2.38	
1-537 (S)	SPIE	7.50	19/06/2019 09:00:00	7.35	
1-537 (S)	SPIE	7.50	24/06/2019 00:00:00	Dry	
1-537 (S)	SPIE	7.50	15/07/2019 12:00:00	Dry	
1-537 (S)	SPIE	7.50	26/07/2019 10:27:00	Dry	
1-537 (S)	SPIE	7.50	30/07/2019 10:46:00	Dry	
1-537 (S)	SPIE	7.50	06/08/2019 13:30:00	Dry	
1-537 (S)	SPIE	7.50	15/08/2019 14:05:00	Dry	
1-537 (S)	SPIE	7.50	20/08/2019 12:41:00	Dry	
1-537 (S)	SPIE	7.50	29/08/2019 10:20:00	Dry	
1-537 (S)	SPIE	7.50	13/09/2019 00:00:00	Dry	
1-537 (S)	SPIE	7.50	13/09/2019 14:15:00	Dry	
1-537 (S)	SPIE	7.50	19/09/2019 00:00:00	Dry	
1-537 (S)	SPIE	7.50	02/10/2019 12:00:00	Dry	
1-537 (S)	SPIE	7.50	18/10/2019 12:10:00	Dry	
1-537 (S)	SPIE	7.50	15/11/2019 11:10:00	Dry	
1-537 (S)	SPIE	7.50	21/11/2019 14:40:00	Dry	
1-537 (S)	SPIE	7.50	27/11/2019 09:35:00	Dry	
1-537 (S)	SPIE	7.50	17/12/2019 12:45:00	Dry	
1-537 (S)	SPIE	7.50	14/01/2020 11:20:00	Dry	
1-537 (S)	SPIE	7.50	27/01/2020 12:00:00	Dry	
1-537 (S)	SPIE	7.50	03/02/2020 12:00:00	Dry	
1-537 (S)	SPIE	7.50	13/02/2020 00:00:00	Dry	
1-537 (S)	SPIE	7.50	24/02/2020 15:00:00	Dry	
1-537 (S)	SPIE	7.50	05/05/2020 00:00:00	Dry	
1-541 (D)	SP	20.00	08/07/2019 09:15:00	2.74	
1-541 (D)	SP	20.00	15/07/2019 13:10:00	2.48	
1-541 (D)	SP	20.00	23/07/2019 12:45:00	2.52	
1-541 (D)	SP	20.00	24/07/2019 12:45:00	2.52	
1-541 (D)	SP	20.00	26/07/2019 09:55:00	3.98	
1-541 (D)	SP	20.00	30/07/2019 10:08:00	2.98	
1-541 (D)	SP	20.00	06/08/2019 15:00:00	3.01	
1-541 (D)	SP	20.00	15/08/2019 14:14:00	3.00	
1-541 (D)	SP	20.00	20/08/2019 12:50:00	3.04	
1-541 (D)	SP	20.00	29/08/2019 09:30:00	3.10	
1-541 (D)	SP	20.00	13/09/2019 13:59:00	3.19	
1-541 (D)	SP	20.00	19/09/2019 00:00:00	3.30	
1-541 (D)	SP	20.00	02/10/2019 00:00:00	3.16	
1-541 (D)	SP	20.00	18/10/2019 12:07:00	2.92	
1-541 (D)	SP	20.00	15/11/2019 11:15:00	2.66	
1-541 (D)	SP	20.00	21/11/2019 14:50:00	2.72	
1-541 (D)	SP	20.00	27/11/2019 09:15:00	2.55	
1-541 (D)	SP	20.00	17/12/2019 12:25:00	2.36	
1-541 (D)	SP	20.00	14/01/2020 11:30:00	2.33	
1-541 (D)	SP	20.00	27/01/2020 12:00:00	2.22	
1-541 (D)	SP	20.00	03/02/2020 12:00:00	2.13	
1-541 (D)	SP	20.00	13/02/2020 00:00:00	2.11	


Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



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 Carried out for

Ground Investigation for the Regional Investment Programme
 M25 J10 - A3 Wisley Interchange Improvements
 D9008-19
 Geoffrey Osborne Limited

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-541 (D)	SP	20.00	24/02/2020 10:14:00	2.03	
1-541 (D)	SP	20.00	26/04/2020 13:30:00	2.67	
1-541 (D)	SP	20.00	14/05/2020 13:00:00	2.35	
1-541 (D)	SP	20.00	02/06/2020 13:15:00	2.52	
1-541 (S)	SP	6.00	08/07/2019 09:10:00	1.58	
1-541 (S)	SP	6.00	15/07/2019 12:30:00	2.60	
1-541 (S)	SP	6.00	23/07/2019 13:20:00	2.61	
1-541 (S)	SP	6.00	24/07/2019 13:20:00	2.61	
1-541 (S)	SP	6.00	26/07/2019 09:53:00	4.98	
1-541 (S)	SP	6.00	30/07/2019 10:10:00	3.98	
1-541 (S)	SP	6.00	06/08/2019 15:02:00	3.95	
1-541 (S)	SP	6.00	15/08/2019 14:18:00	3.90	
1-541 (S)	SP	6.00	20/08/2019 12:49:00	3.90	
1-541 (S)	SP	6.00	29/08/2019 09:30:00	3.89	
1-541 (S)	SP	6.00	13/09/2019 13:57:00	3.86	
1-541 (S)	SP	6.00	19/09/2019 00:00:00	3.90	
1-541 (S)	SP	6.00	02/10/2019 00:00:00	3.90	
1-541 (S)	SP	6.00	18/10/2019 12:06:00	3.89	
1-541 (S)	SP	6.00	15/11/2019 11:20:00	3.90	
1-541 (S)	SP	6.00	21/11/2019 14:50:00	3.93	
1-541 (S)	SP	6.00	27/11/2019 09:15:00	3.86	
1-541 (S)	SP	6.00	17/12/2019 12:25:00	3.93	
1-541 (S)	SP	6.00	14/01/2020 11:25:00	2.84	
1-541 (S)	SP	6.00	27/01/2020 12:00:00	2.73	
1-541 (S)	SP	6.00	03/02/2020 12:00:00	2.75	
1-541 (S)	SP	6.00	13/02/2020 00:00:00	2.82	
1-541 (S)	SP	6.00	24/02/2020 13:14:00	1.80	
1-541 (S)	SP	6.00	29/04/2020 12:45:00	2.27	
1-541 (S)	SP	6.00	14/05/2020 11:45:00	2.30	
1-541 (S)	SP	6.00	02/06/2020 12:05:00	2.60	
1-542 (D)	SP	19.30	15/07/2019 14:15:00	0.83	
1-542 (D)	SP	19.30	23/07/2019 14:00:00	0.92	
1-542 (D)	SP	19.30	24/07/2019 14:00:00	0.92	
1-542 (D)	SP	19.30	26/07/2019 10:12:00	1.16	
1-542 (D)	SP	19.30	30/07/2019 10:36:00	1.16	
1-542 (D)	SP	19.30	06/08/2019 15:19:00	1.23	
1-542 (D)	SP	19.30	15/08/2019 14:31:00	1.20	
1-542 (D)	SP	19.30	20/08/2019 15:27:00	1.20	
1-542 (D)	SP	19.30	13/09/2019 19:22:00	1.30	
1-542 (D)	SP	19.30	19/09/2019 00:00:00	1.30	
1-542 (D)	SP	19.30	02/10/2019 00:00:00	1.24	
1-542 (D)	SP	19.30	18/10/2019 11:55:00	1.50	
1-542 (D)	SP	19.30	15/11/2019 11:25:00	0.65	
1-542 (D)	SP	19.30	21/11/2019 14:55:00	0.63	
1-542 (D)	SP	19.30	27/11/2019 09:30:00	0.62	
1-542 (D)	SP	19.30	17/12/2019 12:30:00	0.37	
1-542 (D)	SP	19.30	14/01/2020 11:40:00	0.30	
1-542 (D)	SP	19.30	27/01/2020 12:00:00	0.30	
1-542 (D)	SP	19.30	03/02/2020 12:00:00	0.18	
1-542 (D)	SP	19.30	13/02/2020 00:00:00	0.18	
1-542 (D)	SP	19.30	24/02/2020 14:00:00		No access due to flooding.
Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well 			Project Ground Investigation for the Regional Investment Programme Project No. M25 J10 - A3 Wisley Interchange Improvements Carried out for D9008-19 Geoffrey Osborne Limited		A2

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date dd/mm/yyyy	Time hh:mm:ss	Groundwater depth, mbgl	Comments
1-542 (D)	SP	19.30	27/05/2020	15:50:00	0.73	
1-542 (D)	SP	19.30	09/06/2020	00:00:00	0.86	
1-542 (S)	SP	3.40	15/07/2019	14:20:00	0.87	
1-542 (S)	SP	3.40	23/07/2019	14:45:00	1.01	
1-542 (S)	SP	3.40	24/07/2019	14:45:00	1.01	
1-542 (S)	SP	3.40	26/07/2019	10:10:00	1.18	
1-542 (S)	SP	3.40	30/07/2019	10:35:00	1.18	
1-542 (S)	SP	3.40	06/08/2019	15:21:00	1.27	
1-542 (S)	SP	3.40	15/08/2019	14:27:00	1.27	
1-542 (S)	SP	3.40	20/08/2019	15:29:00	1.26	
1-542 (S)	SP	3.40	13/09/2019	14:05:00	1.49	
1-542 (S)	SP	3.40	19/09/2019	00:00:00	1.54	
1-542 (S)	SP	3.40	02/10/2019	00:00:00	1.43	
1-542 (S)	SP	3.40	18/10/2019	11:56:00	1.10	
1-542 (S)	SP	3.40	15/11/2019	11:30:00	0.52	
1-542 (S)	SP	3.40	21/11/2019	14:55:00	0.63	
1-542 (S)	SP	3.40	27/11/2019	09:30:00	0.64	
1-542 (S)	SP	3.40	17/12/2019	12:35:00	0.20	
1-542 (S)	SP	3.40	14/01/2020	11:35:00	0.20	
1-542 (S)	SP	3.40	27/01/2020	12:00:00	0.71	
1-542 (S)	SP	3.40	03/02/2020	12:00:00	0.18	
1-542 (S)	SP	3.40	13/02/2020	00:00:00	0.10	
1-542 (S)	SP	3.40	24/02/2020	00:00:00		No access due to flooding.
1-542 (S)	SP	3.40	29/05/2020	00:00:00	0.72	
1-542 (S)	SP	3.40	09/06/2020	00:00:00	0.72	
1-706 (S)	SPIE	16.75	30/07/2019	13:30:00	4.03	
1-706 (S)	SPIE	16.75	31/07/2019	14:30:00	4.75	
1-706 (S)	SPIE	16.75	06/08/2019	14:45:00	6.02	
1-706 (S)	SPIE	16.75	15/08/2019	15:55:00	6.18	
1-706 (S)	SPIE	16.75	20/08/2019	15:15:00	6.18	
1-706 (S)	SPIE	16.75	29/08/2019	11:20:00	6.38	
1-706 (S)	SPIE	16.75	19/09/2019	00:00:00	6.48	
1-706 (S)	SPIE	16.75	02/10/2019	00:00:00	6.56	
1-706 (S)	SPIE	16.75	18/10/2019	11:10:00	6.65	
1-706 (S)	SPIE	16.75	15/11/2019	11:35:00	6.56	
1-706 (S)	SPIE	16.75	21/11/2019	13:45:00	6.36	
1-706 (S)	SPIE	16.75	27/11/2019	10:30:00	6.23	
1-706 (S)	SPIE	16.75	17/12/2019	02:00:00	5.93	
1-706 (S)	SPIE	16.75	14/01/2020	12:40:00	5.70	
1-706 (S)	SPIE	16.75	27/01/2020	00:00:00	5.68	
1-706 (S)	SPIE	16.75	03/02/2020	12:00:00	5.69	
1-706 (S)	SPIE	16.75	13/02/2020	00:00:00	5.67	
1-706 (S)	SPIE	16.75	24/04/2020	14:22:00	5.30	
1-706 (S)	SPIE	16.75	15/05/2020	00:00:00	5.36	
1-706 (S)	SPIE	16.75	29/05/2020	00:00:00	5.37	
1-715 (S)	SP	15.00	19/08/2019	10:45:00	5.40	
1-715 (S)	SP	15.00	19/08/2019	16:30:00	5.37	
1-715 (S)	SP	15.00	20/08/2019	14:09:00	5.40	
1-715 (S)	SP	15.00	29/08/2019	14:30:00	5.90	
1-715 (S)	SP	15.00	19/09/2019	00:00:00	6.00	
1-715 (S)	SP	15.00	02/10/2019	00:00:00	6.03	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



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Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-715 (S)	SP	15.00	21/11/2019 11:30:00	5.72	
1-715 (S)	SP	15.00	27/11/2019 13:00:00	5.60	
1-715 (S)	SP	15.00	18/12/2019 13:53:00	5.38	
1-715 (S)	SP	15.00	15/01/2020 12:10:00	5.32	
1-715 (S)	SP	15.00	22/01/2020 12:00:00	5.15	
1-715 (S)	SP	15.00	04/02/2020 12:00:00	4.18	
1-715 (S)	SP	15.00	10/02/2020 00:00:00	5.08	
1-715 (S)	SP	15.00	24/02/2020 10:05:00	4.85	
1-715 (S)	SP	15.00	22/04/2020 11:20:00	5.10	
1-715 (S)	SP	15.00	07/05/2020 12:30:00	5.06	
1-715 (S)	SP	15.00	22/05/2020 09:45:00	5.12	
1-715 (S)	SP	15.00	26/05/2020 11:30:00	5.22	
1-737 (S)	SP	8.00	05/06/2019 13:30:00	6.46	
1-737 (S)	SP	8.00	19/06/2019 09:30:00	5.16	
1-737 (S)	SP	8.00	24/06/2019 00:00:00	4.96	
1-737 (S)	SP	8.00	15/07/2019 10:10:00	4.76	
1-737 (S)	SP	8.00	23/07/2019 16:39:00	5.15	
1-737 (S)	SP	8.00	26/07/2019 12:24:00	5.22	
1-737 (S)	SP	8.00	30/07/2019 14:02:00	5.23	
1-737 (S)	SP	8.00	06/08/2019 12:45:00	5.27	
1-737 (S)	SP	8.00	15/08/2019 10:29:00	5.30	
1-737 (S)	SP	8.00	20/08/2019 11:17:00	5.28	
1-737 (S)	SP	8.00	29/08/2019 10:15:00	5.31	
1-737 (S)	SP	8.00	13/09/2019 00:00:00	6.34	
1-737 (S)	SP	8.00	19/09/2019 00:00:00	5.32	
1-737 (S)	SP	8.00	02/10/2019 00:00:00	5.10	
1-737 (S)	SP	8.00	18/10/2019 10:40:00	5.41	
1-737 (S)	SP	8.00	15/11/2019 11:40:00	5.47	
1-737 (S)	SP	8.00	21/11/2019 15:00:00	5.40	
1-737 (S)	SP	8.00	27/11/2019 10:45:00	5.40	
1-737 (S)	SP	8.00	17/12/2019 16:00:00	5.30	
1-737 (S)	SP	8.00	14/01/2020 13:45:00	4.90	
1-737 (S)	SP	8.00	27/01/2020 12:00:00	4.81	
1-737 (S)	SP	8.00	03/02/2020 12:00:00	4.81	
1-737 (S)	SP	8.00	13/02/2020 14:00:00	4.82	
1-737 (S)	SP	8.00	24/02/2020 16:00:00	4.70	
1-737 (S)	SP	8.00	29/04/2020 14:30:00	4.34	
1-737 (S)	SP	8.00	14/05/2020 10:00:00	4.42	
1-737 (S)	SP	8.00	02/06/2020 15:20:00	4.36	
1-903 (1)	SPIE	23.50	02/10/2019 00:00:00		No access.
1-903 (1)	SPIE	23.50	18/12/2019 14:04:00	5.10	
1-903 (1)	SPIE	23.50	15/01/2020 12:00:00	5.03	
1-903 (1)	SPIE	23.50	22/01/2020 12:00:00	4.94	
1-903 (1)	SPIE	23.50	04/02/2020 10:00:00	4.92	
1-903 (1)	SPIE	23.50	10/02/2020 00:00:00	4.87	
1-903 (1)	SPIE	23.50	24/02/2020 09:50:00	4.65	
1-903 (1)	SPIE	23.50	24/04/2020 11:43:00	4.93	
1-903 (1)	SPIE	23.50	15/05/2020 00:00:00	4.94	
1-903 (1)	SPIE	23.50	22/05/2020 10:00:00	4.98	
1-903 (1)	SPIE	23.50	29/05/2020 11:15:00	5.04	
1-911 (1)	SP	25.00	18/12/2019 13:24:00	11.00	

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Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-911 (1)	SP	25.00	29/01/2020 12:00:00	10.94	
1-911 (1)	SP	25.00	04/02/2020 00:00:00	10.84	
1-911 (1)	SP	25.00	10/02/2020 00:00:00	10.84	
1-911 (1)	SP	25.00	24/02/2020 09:20:00	10.60	
1-911 (1)	SP	25.00	20/05/2020 00:00:00	10.96	
1-911 (1)	SP	25.00	22/05/2020 00:00:00	10.96	
1-911 (1)	SP	25.00	08/06/2020 09:45:00	11.22	
1-938 (1)	SP	6.50	22/11/2019 09:05:00	Dry	
1-938 (1)	SP	6.50	27/11/2019 12:40:00	Dry	
1-938 (1)	SP	6.50	18/12/2019 11:05:00	6.35	
1-938 (1)	SP	6.50	15/01/2020 11:35:00	Dry	
1-938 (1)	SP	6.50	27/01/2020 12:00:00	4.66	
1-938 (1)	SP	6.50	04/02/2020 12:00:00	5.53	
1-938 (1)	SP	6.50	10/02/2020 00:00:00	4.70	
1-938 (1)	SP	6.50	24/02/2020 12:00:00	4.60	
1-938 (1)	SP	6.50	04/05/2020 00:00:00	6.19	
1-938 (1)	SP	6.50	22/05/2020 00:00:00	5.90	
1-938 (1)	SP	6.50	22/05/2020 00:00:00	5.90	
1-938 (1)	SP	6.50	05/06/2020 00:00:00	5.93	
1-938 (1)	SP	6.50	05/06/2020 00:00:00	5.93	
1-938 (2)	SPIE	26.00	22/11/2019 09:05:00	Dry	
1-938 (2)	SPIE	26.00	27/11/2019 12:40:00	Dry	
1-938 (2)	SPIE	26.00	18/12/2019 11:07:00	Dry	
1-938 (2)	SPIE	26.00	15/01/2020 11:30:00	Dry	
1-938 (2)	SPIE	26.00	27/01/2020 12:00:00	25.95	
1-938 (2)	SPIE	26.00	04/02/2020 12:00:00	25.95	
1-938 (2)	SPIE	26.00	10/02/2020 00:00:00	26.02	
1-938 (2)	SPIE	26.00	24/02/2020 12:15:00	26.25	
1-938 (2)	SPIE	26.00	04/05/2020 00:00:00	26.08	
1-938 (2)	SPIE	26.00	22/05/2020 10:23:00	26.08	
1-938 (2)	SPIE	26.00	05/06/2020 11:17:00	26.23	
1-945 (S)	SPIE	10.00	15/08/2019 11:10:00	7.50	
1-945 (S)	SPIE	10.00	20/08/2019 16:50:00	6.89	
1-945 (S)	SPIE	10.00	29/08/2019 12:50:00	6.46	
1-945 (S)	SPIE	10.00	18/10/2019 14:18:00	5.48	
1-945 (S)	SPIE	10.00	15/11/2019 12:55:00	5.35	
1-945 (S)	SPIE	10.00	21/11/2019 10:35:00	5.35	
1-945 (S)	SPIE	10.00	27/11/2019 14:15:00	5.36	
1-945 (S)	SPIE	10.00	17/12/2019 11:20:00	5.41	
1-945 (S)	SPIE	10.00	14/01/2020 10:20:00	5.82	
1-945 (S)	SPIE	10.00	22/01/2020 12:00:00	5.93	
1-945 (S)	SPIE	10.00	11/02/2020 00:00:00	5.94	
1-945 (S)	SPIE	10.00	25/02/2020 00:00:00	5.66	
1-945 (S)	SPIE	10.00	24/04/2020 12:22:00	5.79	
1-945 (S)	SPIE	10.00	15/05/2020 00:00:00	9.88	
1-945 (S)	SPIE	10.00	29/05/2020 00:00:00	6.01	
1-948A (1)	SPIE	8.50	18/12/2019 10:55:00	Dry	
1-948A (1)	SPIE	8.50	15/01/2020 11:20:00	Dry	
1-948A (1)	SPIE	8.50	27/01/2020 00:00:00	Dry	
1-948A (1)	SPIE	8.50	04/02/2020 12:00:00	Dry	
1-948A (1)	SPIE	8.50	10/02/2020 00:00:00	Dry	
Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well			Project Ground Investigation for the Regional Investment Programme Project No. M25 J10 - A3 Wisley Interchange Improvements D9008-19 Carried out for Geoffrey Osborne Limited		A2



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Instrument Reference	Instrument Type	Instrument Base, mbgl	Date dd/mm/yyyy	Time hh:mm:ss	Groundwater depth, mbgl	Comments
1-948A (1)	SPIE	8.50	24/02/2020	11:50:00	Dry	
1-948A (1)	SPIE	8.50	04/05/2020	00:00:00	Dry	
1-949A (1)	SP	7.00	18/12/2019	11:55:00	2.26	
1-949A (1)	SP	7.00	29/01/2020	12:00:00		No access.
1-951 (1)	SPIE	17.10	18/12/2019	13:41:00	6.67	
1-951 (1)	SPIE	17.10	15/01/2020	11:45:00	6.24	
1-951 (1)	SPIE	17.10	22/01/2020	12:00:00	6.22	
1-951 (1)	SPIE	17.10	04/02/2020	12:00:00	6.33	
1-951 (1)	SPIE	17.10	10/02/2020	00:00:00	6.36	
1-951 (1)	SPIE	17.10	24/02/2020	09:35:00	6.26	
1-951 (1)	SPIE	17.10	04/05/2020	00:00:00	6.25	
1-951 (1)	SPIE	17.10	22/05/2020	09:10:00	6.30	
1-951 (1)	SPIE	17.10	05/06/2020	09:25:00	6.38	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well



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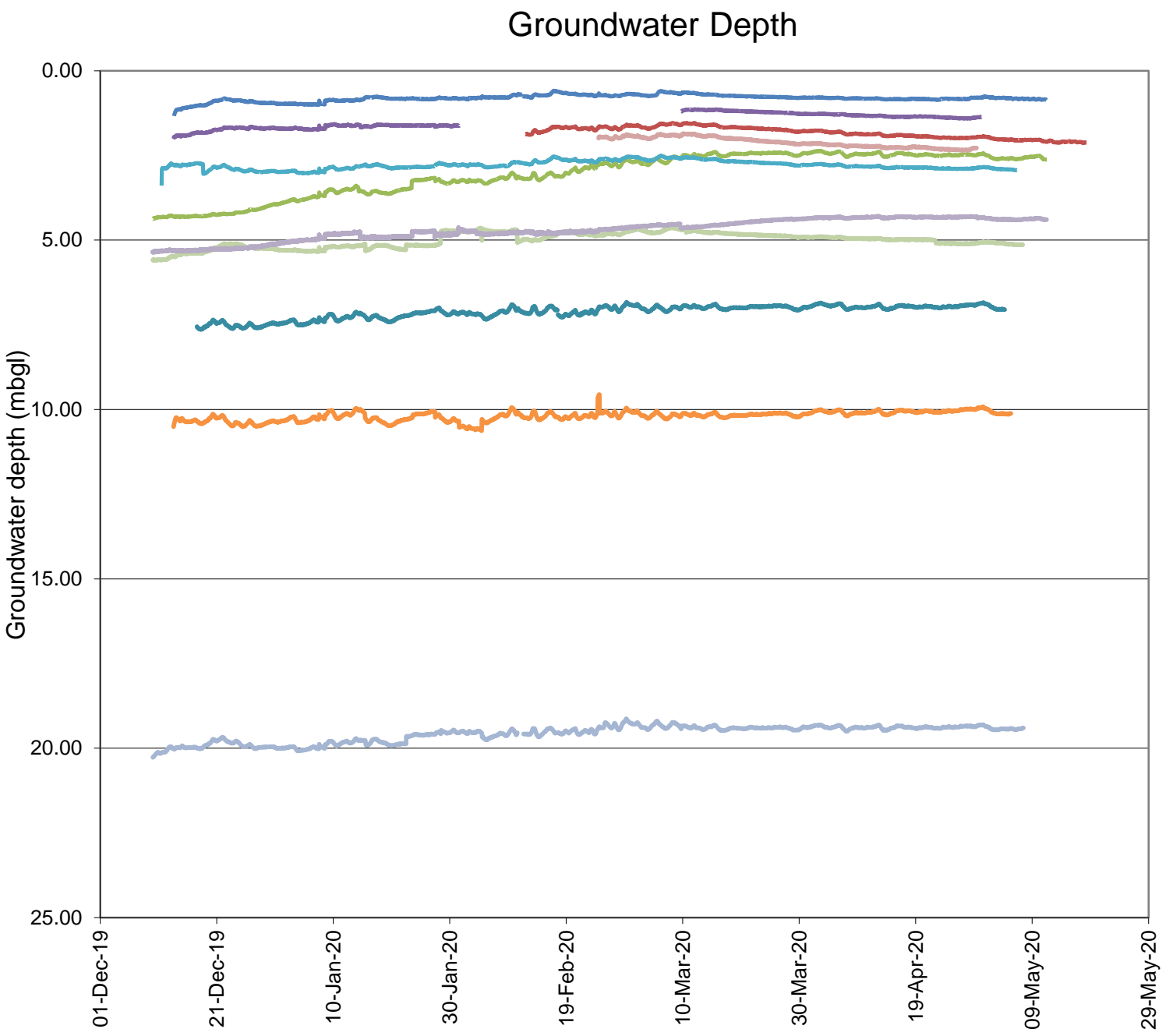
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Figure

A3

Post-fieldwork Gas Monitoring Summary



Location	Date	Air Temp, oC	Baro Press, mbar	Diff Press (pk), pa	Diff Press (st), pa	Gas Flow Rate(pk), l/hr	Gas Flow Rate(st), l/hr	VOC (pk), ppmv	VOC (st), ppmv	CH4 (pk), %vol	CH4 (st), %vol	CH4 (pk), %LEL	CH4 (st), %LEL	CO2 (pk), %vol	CO2 (st), %vol	O2 (pk), %vol	O2 (st), %vol	H2S (pk), ppm	H2S (st), ppm	CO (pk), ppm	CO (st), ppm
1-203 (S)	03/06/2020 00:00:00	16	998																		
1-203 (S)	03/06/2020 09:38:00			<1	<1	<0.1	<0.1														
1-203 (S)	03/06/2020 09:39:00							0.1	0.1												
1-203 (S)	03/06/2020 09:40:00									77	77	100	100	<0.1	<0.1	14.8	9.2	<1	<1	6.6	6.6
1-212 (D)	24/04/2020 00:00:00	15	1007																		
1-212 (D)	24/04/2020 09:29:00			1	1	0.61	0.61														
1-212 (D)	24/04/2020 09:29:30							1.3	<0.1												
1-212 (D)	24/04/2020 09:30:00									<0.1	<0.1	<0.1	<0.1	32	32	9.1	9.1	<0.1	<0.1	<0.1	<0.1
1-212 (D)	15/05/2020 00:00:00	16	1012																		
1-212 (D)	15/05/2020 10:15:00			5	5	10.1	10.1	0.1	0.1	2.4	1.8	52.6	33.3	1.5	1.5	20.8	20	<1	<1	<1	<1
1-212 (D)	15/05/2020 10:15:30																				
1-212 (D)	28/05/2020 00:00:00	15	1025																		
1-212 (D)	28/05/2020 08:31:00			25	4	10.5	10.5														
1-212 (D)	28/05/2020 08:33:00							0.1	0.1												
1-212 (D)	28/05/2020 08:35:00									0.1	0.1	2.8	2.5	2.8	0.6	21.2	21	<1	<1	<1	<1
1-217 (1)	24/04/2020 00:00:00	12	1005																		
1-217 (1)	24/04/2020 09:03:00									0.2	0.2	1.5	1.5	2.2	0.4	21	21	<0.1	<0.1	<0.1	<0.1
1-217 (1)	24/04/2020 09:04:00							1.5	<0.1												
1-217 (1)	24/04/2020 09:05:00			<1	<1	<0.1	<0.1														
1-217 (1)	15/05/2020 00:00:00	16	1012																		
1-217 (1)	15/05/2020 09:45:00			<1	<1	<0.1	<0.1														
1-217 (1)	15/05/2020 09:46:30							0	0												
1-217 (1)	15/05/2020 09:48:00									0.5	0.5	9.6	9.6	0.7	0.1	21.3	21.3	<1	<1	<1	<1
1-217 (1)	28/05/2020 00:00:00	15	1025																		
1-217 (1)	28/05/2020 10:35:00			<1	<1	<0.1	<0.1														
1-217 (1)	28/05/2020 10:36:30							0.1	0.1												
1-217 (1)	28/05/2020 10:38:00									0.2	0.2	4.3	4	0.2	0.1	20.9	20.9	<1	<1	<1	<1
1-226 (1)	23/04/2020 00:00:00	24	1010																		
1-226 (1)	23/04/2020 13:25:00			<1	<1	<0.1	<0.1														
1-226 (1)	23/04/2020 13:26:00							0.1	<0.1												
1-226 (1)	23/04/2020 13:28:00									28	28	100	100	<0.1	<0.1	21	21	<0.1	<0.1	<0.1	<0.1
1-226 (1)	11/05/2020 00:00:00	8	1004																		
1-226 (1)	11/05/2020 09:06:00			<1	<1	<0.1	<0.1														
1-226 (1)	11/05/2020 09:08:00							0	0												
1-226 (1)	11/05/2020 09:10:00									0.2	0.1	2.9	1.7	0.6	<0.1	21.5	21.4	<1	<1	<1	<1
1-226 (1)	27/05/2020 00:00:00	23	1025																		
1-226 (1)	27/05/2020 12:00:00			<1	<1	<0.1	<0.1														
1-226 (1)	27/05/2020 12:02:30							0.1	0.1												
1-226 (1)	27/05/2020 12:05:00									0.2	0.2	4.1	4.1	0.6	<0.1	21.2	21.2	<1	<1	<1	<1
1-228 (1)	23/04/2020 00:00:00	24	1011																		
1-228 (1)	23/04/2020 13:00:00			<1	<1	<0.1	<0.1														
1-228 (1)	23/04/2020 13:02:00							0.2	0.2												
1-228 (1)	23/04/2020 13:05:00									5	4.3	96	85	3.6	3.6	19.2	18.2	<0.1	<0.1	<0.1	<0.1
1-228 (1)	11/05/2020 00:00:00	8	1004																		
1-228 (1)	11/05/2020 09:34:00			<1	<1	<0.1	<0.1														
1-228 (1)	11/05/2020 09:36:00							0	0												
1-228 (1)	11/05/2020 09:38:00									0.2	0.2	3.3	3	2.9	2.9	19.5	19.5	<1	<1	<1	<1
1-228 (1)	27/05/2020 12:20:00			<1	<1	<0.1	<0.1														
1-228 (1)	27/05/2020 12:25:00	24	1025							2.5	1.9	53	38.3	3	2.8	18.7	18.6	<1	<1	<1	<1
1-233 (1)	12/05/2020 00:00:00	12	1009																		

Post-fieldwork Gas Monitoring Summary



Location	Date	Air Temp, oC	Baro Press, mbar	Diff Press (pk), pa	Diff Press (st), pa	Gas Flow Rate(pk), l/hr	Gas Flow Rate(st), l/hr	VOC (pk), ppmv	VOC (st), ppmv	CH4 (pk), %vol	CH4 (st), %vol	CH4 (pk), %LEL	CH4 (st), %LEL	CO2 (pk), %vol	CO2 (st), %vol	O2 (pk), %vol	O2 (st), %vol	H2S (pk), ppm	H2S (st), ppm	CO (pk), ppm	CO (st), ppm
1-233 (1)	12/05/2020 11:04:00			<1	<1	<0.1	<0.1														
1-233 (1)	12/05/2020 11:06:00							0.1	0.1												
1-233 (1)	12/05/2020 11:08:00									2	2	39	39	2.7	2.3	19.6	18.9	<1	<1	<1	<1
1-233 (1)	05/06/2020 00:00:00	14	985																		
1-233 (1)	05/06/2020 10:44:00			<1	<1	<0.1	<0.1	3.5	3.2	0.2	0.1	3	2.5	10	9.4	14.8	14.8	<1	<1	<1	<1
1-254 (1)	15/05/2020 00:00:00	16	1015																		
1-254 (1)	15/05/2020 10:51:00			<1	<1	<0.1	<0.1														
1-254 (1)	15/05/2020 10:53:00							0	0												
1-254 (1)	15/05/2020 10:55:00									0.1	0.1	3.5	3.2	<0.1	<0.1	21	20.9	<1	<1	<1	<1
1-254 (1)	05/06/2020 00:00:00	14	985																		
1-254 (1)	05/06/2020 10:11:00			<1	<1	<0.1	<0.1	0.4	0.3	0.1	0.1	2.8	2.8	1.4	1.4	20.2	19.2	<1	<1	11.8	10.3
1-293 (1)	06/05/2020 00:00:00	18	1014																		
1-293 (1)	06/05/2020 14:14:00			<1	<1	<0.1	<0.1														
1-293 (1)	06/05/2020 14:16:00							0.7	0.5												
1-293 (1)	06/05/2020 14:18:00									1.7	1.7	30.7	30.7	1.1	<0.1	21	20.9	<0.1	<0.1	<0.1	<0.1
1-293 (1)	28/05/2020 00:00:00	16	1025																		
1-293 (1)	28/05/2020 11:03:00			<1	<1	<0.1	<0.1			12	5.6	100	100	7.2	3.7	16.1	16.1	<1	<1	<1	<1
1-293 (1)	09/06/2020 00:00:00	13	1008																		
1-293 (1)	09/06/2020 08:43:00			<1	<1	<0.1	<0.1	0.6	0	72	33.5	100	100	13	5.8	12.4	12.4	<1	<1	<1	<1
1-392 (S)	20/05/2020 00:00:00	18	1012																		
1-392 (S)	20/05/2020 09:05:00			3	3	1.45	1.45	0.1	0.1	2	1.5	39	26.5	1.1	1.1	20	19.1	<1	<1	<1	<1
1-392 (S)	08/06/2020 00:00:00	16	1006																		
1-392 (S)	08/06/2020 13:12:00			<1	<1	<0.1	<0.1														
1-392 (S)	08/06/2020 13:13:30							6	3.2												
1-392 (S)	08/06/2020 13:15:00									11	10	100	100	<0.1	<0.1	21.2	21.2	<1	<1	<1	<1
1-508 (D)	28/04/2020 00:00:00	8	993																		
1-508 (D)	28/04/2020 09:18:00			<1	<1	<0.1	<0.1														
1-508 (D)	28/04/2020 09:19:30							0.1	0.1												
1-508 (D)	28/04/2020 09:21:00									0.1	0.1	1.2	1.2	7.2	7.2	18.7	18.7	<0.1	<0.1	<0.1	<0.1
1-508 (S)	13/05/2020 00:00:00	11	1006																		
1-508 (S)	13/05/2020 09:02:00			<1	<1	<0.1	<0.1														
1-508 (S)	13/05/2020 09:06:00							0.1	0.1												
1-508 (S)	13/05/2020 09:10:00									1.1	0.2	9.5	9.5	8.3	7.8	19.4	4.3	<1	<1	<1	<1
1-508 (S)	01/06/2020 00:00:00	25	1014																		
1-508 (S)	01/06/2020 14:00:00			<1	<1	<0.1	<0.1			80	76	100	100	<0.1	<0.1	12.5	8.2	<1	<1	<1	<1
1-511 (S)	24/04/2020 00:00:00	22	1008																		
1-511 (S)	24/04/2020 13:58:00			<1	<1	<0.1	<0.1														
1-511 (S)	24/04/2020 13:59:00							<0.1	<0.1												
1-511 (S)	24/04/2020 14:00:00									<0.1	<0.1	1	1	4.2	4.2	18.2	18.2	<0.1	<0.1	<0.1	<0.1
1-511 (S)	15/05/2020 00:00:00	16	1015																		
1-511 (S)	15/05/2020 12:47:00			<1	<1	0.1	0.1														
1-511 (S)	15/05/2020 12:49:30							0	0												
1-511 (S)	15/05/2020 12:52:00									0.2	0.2	4.3	4.3	4.5	3.8	19.1	18.8	5	<0.1	5	<0.1
1-511 (S)	29/05/2020 00:00:00	24	1020																		
1-511 (S)	29/05/2020 12:51:00			<1	<1	<0.1	<0.1														
1-511 (S)	29/05/2020 12:54:00									46	45.5	100	100	<0.1	<0.1	20.5	20.4	<1	<1	<1	<1
1-715 (S)	22/05/2020 00:00:00	13	1004																		
1-715 (S)	22/05/2020 09:33:00			<1	<1	<0.1	<0.1														

Post-fieldwork Gas Monitoring Summary



Location	Date	Air Temp, oC	Baro Press, mbar	Diff Press (pk), pa	Diff Press (st), pa	Gas Flow Rate(pk), l/hr	Gas Flow Rate(st), l/hr	VOC (pk), ppmv	VOC (st), ppmv	CH4 (pk), %vol	CH4 (st), %vol	CH4 (pk), %LEL	CH4 (st), %LEL	CO2 (pk), %vol	CO2 (st), %vol	O2 (pk), %vol	O2 (st), %vol	H2S (pk), ppm	H2S (st), ppm	CO (pk), ppm	CO (st), ppm
1-715 (S)	22/05/2020 09:35:30							0.1	0.1												
1-715 (S)	22/05/2020 09:38:00									0.1	0.1	2.7	1.9	<0.1	<0.1	21.3	21.2	<1	<1	<1	<1
1-903 (1)	22/05/2020 00:00:00	14	1004																		
1-903 (1)	22/05/2020 09:49:00			<1	<1	<0.1	<0.1														
1-903 (1)	22/05/2020 09:51:00							0.1	0.1												
1-903 (1)	22/05/2020 09:53:00									0.2	0.2	3.7	3.5	<0.1	<0.1	21.3	21.1	<1	<1	<1	<1
1-903 (1)	29/05/2020 00:00:00	19	1018																		
1-903 (1)	29/05/2020 11:06:00			<1	<1	<0.1	<0.1														
1-903 (1)	29/05/2020 11:07:30							0.1	0.1												
1-903 (1)	29/05/2020 11:09:00									0.1	0.1	2.3	2.3	<0.1	<0.1	21.4	21.2	<1	<1	<1	<1
1-938 (1)	22/05/2020 00:00:00	14	1004																		
1-938 (1)	22/05/2020 10:23:00			<1	<1	<0.1	<0.1	0.1	0.1	0.2	0.1	4.4	3.9	1.2	1.1	19.9	19.6	<1	<1	<1	<1
1-938 (1)	05/06/2020 00:00:00	15	985																		
1-938 (1)	05/06/2020 11:15:00			<1	<1	<0.1	<0.1														
1-938 (1)	05/06/2020 11:16:00							0.3	0.2												
1-938 (1)	05/06/2020 11:17:00									0.2	0.2	4.5	4.1	1.6	1.4	19.9	19.7	<1	<1	<1	<1
1-951 (1)	22/05/2020 00:00:00	13	1004																		
1-951 (1)	22/05/2020 09:07:00			<1	<1	<0.1	<0.1	0.1	0	0.1	0.1	1.7	1.5	<0.1	<0.1	21.1	21.1	<1	<1	<1	<1
1-951 (1)	05/06/2020 00:00:00	14	985																		
1-951 (1)	05/06/2020 09:19:00			<1	<1	<0.1	<0.1														
1-951 (1)	05/06/2020 09:20:00							0.3	0.2												
1-951 (1)	05/06/2020 09:21:00									21	17	100	100	<0.1	<0.1	21	21	<1	<1	<1	<1

APPENDIX B

GEOENVIRONMENTAL LABORATORY TEST RESULTS

Test Report - Water

EXR/301247, EXR/301599, EXR/303118, EXR/303123
EXR/303168, EXR/303258, EXR/303260, EXR/303261
EXR/303324, EXR/303409, EXR/303448, EXR/303549
EXR/303662, EXR/303712, EXR/303751, EXR/303829
EXR/304177, EXR/304194, EXR/304197, EXR/304202
EXR/304239, EXR/304240, EXR/304250, EXR/304389
EXR/304392, EXR/304458, EXR/304459, EXR/304614
EXR/304617

TEST REPORT

Report No. EXR/301247 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 2 samples described in this report were registered for analysis by SOCOTEC UK Limited on 11-Mar-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 23-Mar-2020

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Method Descriptions (Page 9)
Table of Report Notes (Page 10)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham



Operations Manager
Energy & Waste Services

Date of Issue: 23-Mar-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Sample Analysis

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

W301247

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W301247

Consignment No W169356
Date Logged 11-Mar-2020
In-House Report Due 19-Mar-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	Matrix Type	Sampled	CALONH4	CUSTOMER	PHOSCALC	GROHSA	ICPMSW	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
					Ammoniacal Nitrogen as NH4 Calc	Report A	Ammonia (Free) as N calc	GRO-HSA GCFID (AA)	Nickel as Ni MS (Dissolved)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/2047182	BH1-737 7.00	Unclassified		09/03/20	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/2047183	Bolder Mere Lake EW 0.30	Unclassified		09/03/20	✓																	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Where individual results are flagged see report notes for status.

Sample Analysis

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

W301247

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W301247

Consignment No W169356
Date Logged 11-Mar-2020
In-House Report Due 19-Mar-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

WSLM3	pH units	Temperature C°	WSLM20	Biochemical Oxygen Demand	WSLM13	Dissolved Organic Carbon	TPH by GC(Si)	SFAS	SFAPI	PHENOL	PAHMSW	Chromium VI. as Cr (Kone)	Ammoniacal Nitrogen (Kone)	KONENS	Chloride as Cl (Kone)	Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR	MethodID	Description	ID Number
	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓			
EX/2047182																		09/03/20	Unclassified	BH1-737 7.00
EX/2047183																		09/03/20	Unclassified	Bolder Mere Lake EW 0.30

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
Analysis Required	
Analysis dependant upon trigger result - Note: due date may be affected if triggered	
No analysis scheduled	
Analysis Subcontracted - Note: due date may vary	

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³ @ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▮ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham
Site : D9008-19 M25 Jct 10
Report Number : W30_1247

TEST REPORT

Report No. EXR/301599 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 2 samples described in this report were registered for analysis by SOCOTEC UK Limited on 18-Mar-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 26-Mar-2020

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham



Operations Manager
Energy & Waste Services

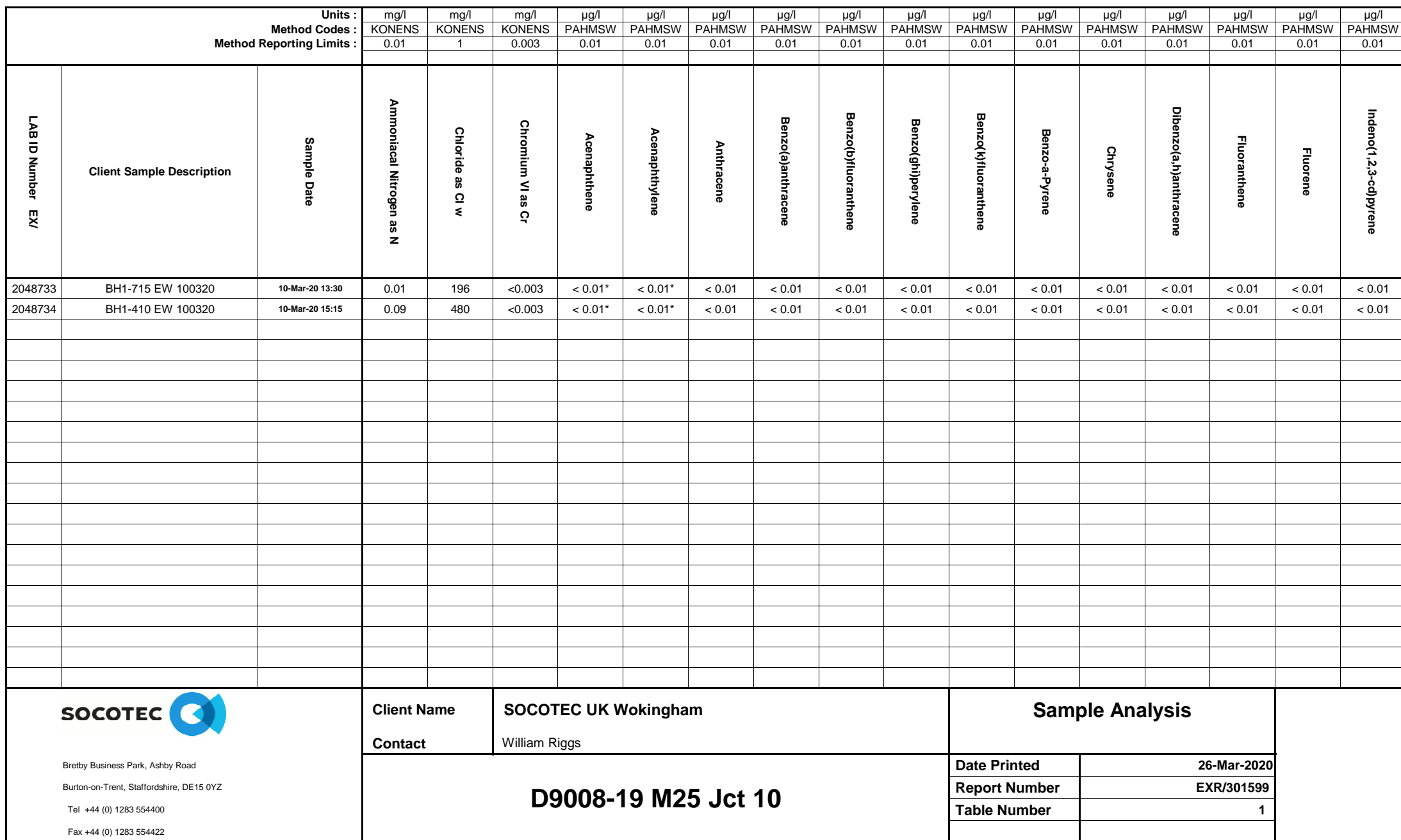
Date of Issue: 26-Mar-2020

Tests marked 'N' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.



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Burton-on-Trent, Staffordshire, DE15 0YZ
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Fax +44 (0) 1283 554422

Client Name

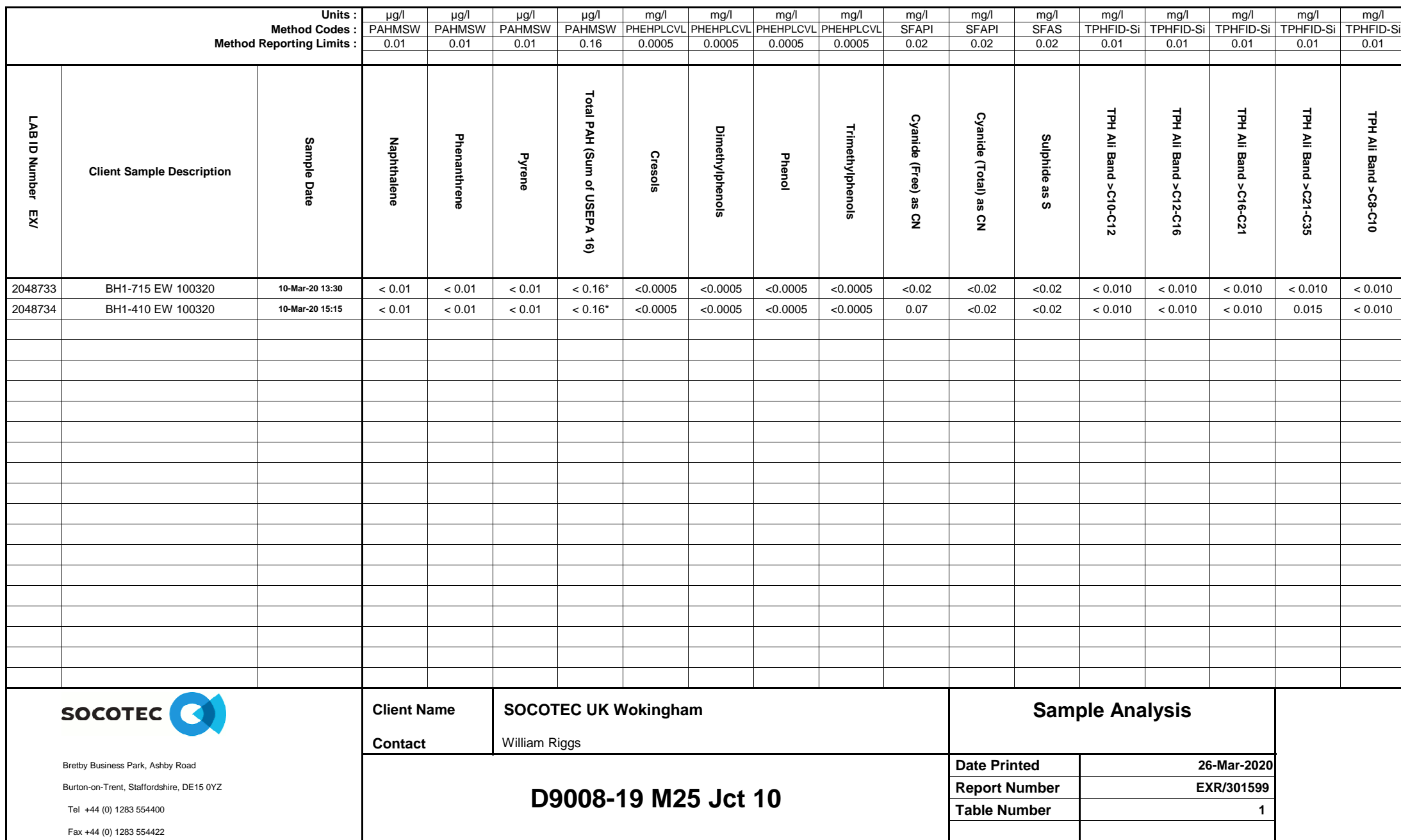
Contact

SOCOTEC UK Wokingham
William Riggs

D9008-19 M25 Jct 10

Sample Analysis

Date Printed	26-Mar-2020
Report Number	EXR/301599
Table Number	1



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Client Name

Contact

SOCOTEC UK Wokingham
William Riggs

D9008-19 M25 Jct 10

Sample Analysis

Date Printed	26-Mar-2020
Report Number	EXR/301599
Table Number	1

[illegible]

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Client Name
Contact

SOCOTEC UK Wokingham
William Riggs

D9008-19 M25 Jct 10

Sample Analysis

Date Printed	26-Mar-2020
Report Number	EXR/301599
Table Number	1

Sample Analysis

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

W301599

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W301599

Consignment No W169514
Date Logged 18-Mar-2020
In-House Report Due 24-Mar-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CUST SERV	FMSH/CALC	GROHSA	ICPMSW	Nickel as Ni MS (Dissolved)	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR	Iron as Fe (Dissolved) VAR
		Matrix Type	Sampled			GRO-HSA GC/FID (AA)																
				Report A	Ammonia (Free) as N calc																	
EX/2048733	BH1-715	Unclassified	10/03/20																			
EX/2048734	BH1-410	Unclassified	10/03/20			C																

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.
Where individual results are flagged see report notes for status.

Sample Analysis

SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

W301599

Customer	SOCOTEC UK Wokingham
Site	D9008-19 M25 Jct 10
Report No	W301599

Consignment No W169514

Date Logged 18-Mar-2020

In-House Report Due 24-Mar-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

	pH units	WSLM3 Temperature C°	WSLM20 Biochemical Oxygen Demand	WSLM13 Dissolved Organic Carbon	TPHFID-SI Total Organic Carbon	SFA TPH by GC(Si)	SFAS Sulphide as S SFA	SFAPI Cyanide (Total) as CN SFA	PHEHPL-CVL Phenols by HPLC (Low Level)	PAHMSW PAH GC-MS (16)	KONENS Chromium VI. as Cr (Kone)	KONENS Ammoniacal Nitrogen (Kone)	KONENS Chloride as Cl (Kone)	KONENS Boron as B (Dissolved) VAR	ICPMAITVAR	MethodID	Matrix Type	Description	ID Number
	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
EX/2048733			✗			✗	✗	✗								10/03/20	Unclassified	BH1-715	
EX/2048734			✗			✗	✗									10/03/20	Unclassified	BH1-410	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

- | | |
|---|--|
| A | The sample was received in an inappropriate container for this analysis |
| B | The sample was received without the correct preservation for this analysis |
| C | Headspace present in the sample container |
| D | The sampling date was not supplied so holding time may be compromised - applicable to all analysis |
| E | Sample processing did not commence within the appropriate holding time |
| F | Sample processing did not commence within the appropriate handling time |

Requested Analysis Key

- | | |
|---|---|
| | Analysis Required |
| | Analysis dependant upon trigger result - Note: due date may be affected if triggered |
| | No analysis scheduled |
| ^ | Analysis Subcontracted - Note: due date may vary |

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.
Where individual results are flagged see report notes for status.

Report Number : W/EXR/301599

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
PAHMSW	EX2048733 EX2048734	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Acenaphthylene, Acenaphthene) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_1599

TEST REPORT

Report No. EXR/303118 (Ver. 2)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 25-Apr-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 07-May-2020

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham



Operations Manager
Energy & Waste Services

Date of Issue: 07-May-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

LAB ID Number EX/		Client Sample Description	Sample Date	Units : Method Codes : Method Reporting Limits :																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
				mg/l ICP-WAT/VAR	mg/l KONENS	mg/l KONENS	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Burton-on-Trent, Staffordshire, DE15 0YZ
Tel +44 (0) 1283 554400
Fax +44 (0) 1283 554422

Client Name
Contact

SOCOTEC UK Wokingham
William Riggs

Sample Analysis

Date Printed	07-May-2020
Report Number	EXR/303118
Table Number	1

D9008-19 M25 Jct 10

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303118

Consignment No W171176
Date Logged 25-Apr-2020
In-House Report Due 04-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICPMSW										ICPWATVAR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				Selenium as Se MS (Dissolved)	Mercury as Hg MS (Dissolved)	Arsenic as As MS (Dissolved)	Zinc as Zn MS (Dissolved)	Lead as Pb MS (Dissolved)	Copper as Cu MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Chromium as Cr MS (Dissolved)	Nickel as Ni MS (Dissolved)	GRO-HSA GCFID (AA)	Ammonia (Free) as N calc	Report A	Ammoniacal Nitrogen as NH4 Calc	Potassium as K (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Calcium as Ca (Dissolved) VAR	Total Sulphur as SO4 (Diss) VAR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
EX/2056225	1-715 12.00	Unclassified		22/04/20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303118

Consignment No W171176
Date Logged 25-Apr-2020
In-House Report Due 04-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID	ICP/WT/VAR		PAHMSW	PHE/PLC/VL	SF/API		SF/AS	TPH/FID-Si	WSLM/13		WSLM/20	WSLM/3	
					Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR			Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA			Dissolved Organic Carbon	Total Organic Carbon			pH units
EX/2056225	1-715 12.00	Unclassified	22/04/20	MethodID	✓				✓				✓				
EX/2056226	1-410 7.50	Unclassified	22/04/20		✓					✓				✓			
EX/2056227	1-184 13.00	Unclassified	22/04/20		✓					✓				✓			
EX/2056228	1-182 8.00	Unclassified	22/04/20		✓					✓				✓			

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
PAHMSW	EX/205225 - 228	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Fluoranthene & Pyrene) . These circumstances should be taken into consideration when utilising the data.
WSLM20	EX2056225-6228	The BOD results for all samples on this job were associated with a Quality Control batch failure so as a result the UKAS accreditation has been removed. The results have been provided for information purposes because the labile nature of the samples mean that repeat analysis could not be undertaken. The AQC was lower than the target value for the test so as such your sample results may have been affected in the same way.
WSLM20	EX2056227	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
TPHFID-Si	EX2056225 to EX2056228	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) on the aliphatic fraction . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3118

TEST REPORT

Report No. EXR/303123 (Ver. 2)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 25-Apr-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 07-May-2020

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham



Operations Manager
Energy & Waste Services

Date of Issue: 07-May-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303123

Consignment No W171203
Date Logged 25-Apr-2020
In-House Report Due 05-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	Sampled	CALCNH4	CUSTSERV	FNH3CALC	GROHSA	Nickel as Ni MS (Dissolved)	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2056252	1-147 8.00	Unclassified		23/04/20				E	✓									✓	✓			
EX/2056253	1-231 5.00	Unclassified		23/04/20				E	✓									✓	✓			
EX/2056254	1-166 6.00	Unclassified		23/04/20					✓									✓	✓			
EX/2056255	1-226 6.00	Unclassified		23/04/20					✓									✓	✓			

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303123

Consignment No W171203
Date Logged 25-Apr-2020
In-House Report Due 05-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID	ICPWATVAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI		SFAS	TPHFID-Si	WSLM13		WSLM20	WSLM3
					Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR				Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA	Sulphide as S SFA	TPH by GC(Si)	Total Organic Carbon	Dissolved Organic Carbon	Biochemical Oxygen Demand	Temperature C°
EX/2056252	1-147 8.00	Unclassified	23/04/20			✓				✓							
EX/2056253	1-231 5.00	Unclassified	23/04/20			✓				✓							
EX/2056254	1-166 6.00	Unclassified	23/04/20			✓				✓							
EX/2056255	1-226 6.00	Unclassified	23/04/20			✓				✓							

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
PAHMSW	EX/2056252 - 55	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Fluoranthene & Pyrene) . These circumstances should be taken into consideration when utilising the data.
WSLM20	EX2056252-6255	The BOD results for all samples on this job were associated with a Quality Control batch failure so as a result the UKAS accreditation has been removed. The results have been provided for information purposes because the labile nature of the samples mean that repeat analysis could not be undertaken. The AQC was lower than the target value for the test so as such your sample results may have been affected in the same way.
WSLM20	EX2056253-6255	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
TPHFID-Si	EX2056252 TO EX2056255	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) on the aliphatic fraction . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3123

TEST REPORT

Report No. EXR/303168 (Ver. 2)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 28-Apr-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 20-May-2020

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham



Operations Manager
Energy & Waste Services

Date of Issue: 20-May-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

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[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303168

Consignment No W171232
Date Logged 28-Apr-2020
In-House Report Due 06-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC/NH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR					
		Matrix Type	Sampled							Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2056496	1-217	Unclassified	27/04/20	✓				✓		✓	✓	✓	✓	✓
EX/2056497	1-212	Unclassified	27/04/20					✓						
EX/2056498	1-212	Unclassified	27/04/20					✓						
					Report A									
					Ammoniacal Nitrogen as NH4 Calc									
					Nickel as Ni MS (Dissolved)			✓						
					Chromium as Cr MS (Dissolved)			✓						
					Cadmium as Cd MS (Dissolved)			✓						
					Copper as Cu MS (Dissolved)			✓						
					Lead as Pb MS (Dissolved)			✓						
					Zinc as Zn MS (Dissolved)			✓						
					Arsenic as As MS (Dissolved)			✓						
					Mercury as Hg MS (Dissolved)			✓						
					Selenium as Se MS (Dissolved)			✓						

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303168

Consignment No W171232
Date Logged 28-Apr-2020
In-House Report Due 06-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID	ICPWT/VAR		PAHMSW	PHEHPLCVL	SFAS	SFAPL	TPHFID-SI	WSLM13		WSLM20	WSLM3		
					Sampled							Cyanide (Total) as CN SFA				Total Organic Carbon	
EX/2056496	1-217	Unclassified	27/04/20		✓				✓			✓				✓	
EX/2056497	1-212	Unclassified	27/04/20		✓				✓			✓					
EX/2056498	1-212	Unclassified	27/04/20		✓				✓			✓					

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/303168

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
PAHMSW	EX/2056496-97	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted to improve the signal to noise ratio but in doing so, the detection limit for this test has been elevated.
WSLM20	EX/2056496, 6497, 6498	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.

Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3168

TEST REPORT

Report No. EXR/303258 (Ver. 4)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 01-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 08-Jun-2020

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 14)
Analytical and Deviating Sample Overview (Pages 15 to 16)
Table of Additional Report Notes (Page 17)
Table of Method Descriptions (Page 18)
Table of Report Notes (Page 19)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim



Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 08-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]


[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

LAB ID Number EX/		Client Sample Description	Sample Date	Units : Method Codes : Method Reporting Limits :																	
				ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW	ug/l VOCHSAW
				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2057038	1-516 EW 290420 6.00	29-Apr-20 11:15	2,2-Dichloropropane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
2057039	1-516 EW 280420 7.00	28-Apr-20 15:45	2-Chlorotoluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
2057040	1-541 EW 290420 7.00	29-Apr-20 13:30	1,4-Dichlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
2057041	1-541 EW 290420 5.00	29-Apr-20 12:45	Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			4-Chlorotoluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			Bromobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			Bromochloromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			Bromodichloromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			Bromoform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			Bromomethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			Carbon Tetrachloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			Chlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			Chloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			Chloroform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			Chloromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
			cis 1,3-Dichloropropene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
 SOCOTEC Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422				Client Name Contact	Sample Analysis																
					SOCOTEC UK Wokingham William Riggs																
					D9008-19 M25 Jct 10																
					Date Printed 08-Jun-2020																
					Report Number EXR/303258																
Table Number 1																					

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303258

Consignment No W171319
Date Logged 01-May-2020
In-House Report Due 04-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC_NH3	CALC_NH4	CUSTSERV	GROHSA	ICPMSW	ICPWATVAR					
		Matrix Type	Sampled							Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2057038	1-516 6.00	Unclassified			✓			✓		✓	✓	✓	✓	✓
EX/2057039	1-516 7.00	Unclassified							✓					
EX/2057040	1-541 7.00	Unclassified							✓					
EX/2057041	1-541 5.00	Unclassified			✓			✓						

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303258

Consignment No W171319
Date Logged 01-May-2020
In-House Report Due 04-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICPWTATVAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI		SFAS	SVOC	TPHFID-Si	VOCHSAW	WSLM13		WSLM20	WSLM3
				Iron as Fe (Dissolved) VAR					Cyanide (Free) as CN SFA	Cyanide (Total) as CN SFA					Total Organic Carbon	Dissolved Organic Carbon		
EX/2057038	1-516 6.00	Unclassified																
EX/2057039	1-516 7.00	Unclassified															E	
EX/2057040	1-541 7.00	Unclassified																
EX/2057041	1-541 5.00	Unclassified																

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
PAHMSW	EX2057038	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
WSLM20	EX2057039-7041	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
TPHFID-Si	EX2057038 TO EX2057041	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) . These circumstances should be taken into consideration when utilising the data.
VOCHSAW	EX2057038	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Naphthalene, 2,2-Dichloropropane) . These circumstances should be taken into consideration when utilising the data.
VOCHSAW	EX2057038	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Chloromethane) . These circumstances should be taken into consideration when utilising the data.
SVOCSW	EX2057038	Due to matrix interference, the Surrogate recovery for this Test is below the required QMS specification. All other Laboratory Process Controls meet the requirements of the QMS unless otherwise stated. These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	SVOCSW	As Received	Determination of Semi Volatile Organic Compounds (SVOC) by DCM extraction followed by GCMS detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	VOCHSAW	As Received	Determination of Volatile Organics Compounds by Headspace GCMS
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3258

TEST REPORT

Report No. EXR/303260 (Ver. 4)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 01-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 05-Jun-2020

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 14)
Analytical and Deviating Sample Overview (Pages 15 to 16)
Table of Additional Report Notes (Page 17)
Table of Method Descriptions (Page 18)
Table of Report Notes (Page 19)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim



Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 05-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303260

Consignment No W171320
Date Logged 01-May-2020
In-House Report Due 04-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALCNH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW										ICPWATVAR				
		Matrix Type	Sampled															Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2057044	1-508 7.00	Unclassified	28/04/20	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/2057045	1-259 5.00	Unclassified	28/04/20																			
EX/2057046	1-508 4.00	Unclassified	28/04/20																			
EX/2057047	1-509 6.00	Unclassified	28/04/20																			
EX/2057048	1-737 6.00	Unclassified	29/04/20																			

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key					
A	The sample was received in an inappropriate container for this analysis				
B	The sample was received without the correct preservation for this analysis				
C	Headpace present in the sample container				
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis				
E	Sample processing did not commence within the appropriate holding time				
F	Sample processing did not commence within the appropriate handling time				
Requested Analysis Key					
	Analysis Required				
	Analysis dependant upon trigger result - Note: due date may be affected if triggered				
	No analysis scheduled				
	Analysis Subcontracted - Note: due date may vary				
	^				

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303260

Consignment No W171320
Date Logged 01-May-2020
In-House Report Due 04-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID	ICPWTATVAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI		SFAS	SVOC	TPHFID-SI	VOCHSAW	WSLM13		WSLM20
					Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR				Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA					Temperature C°	pH units	
EX/2057044	1-508 7.00	Unclassified	28/04/20		✓					✓		✓						✓
EX/2057045	1-259 5.00	Unclassified	28/04/20							✓								
EX/2057046	1-508 4.00	Unclassified	28/04/20							✓					E			
EX/2057047	1-509 6.00	Unclassified	28/04/20															
EX/2057048	1-737 6.00	Unclassified	29/04/20															

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
PAHMSW	EX2057044, 46	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
WSLM20	EX2057044	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the raw data falls outside of the capability of the instrumentation. The non-accredited value is given but should be used for guidance only.
WSLM20	EX2057045, 7047, 7048	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
TPHFID-Si	EX2057044 TO EX2057048	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) . These circumstances should be taken into consideration when utilising the data.
VOCHSAW	EX2057046	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Naphthalene, 2,2-Dichloropropane) . These circumstances should be taken into consideration when utilising the data.
VOCHSAW	EX2057046	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Chloromethane) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	SVOCSW	As Received	Determination of Semi Volatile Organic Compounds (SVOC) by DCM extraction followed by GCMS detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	VOCHSAW	As Received	Determination of Volatile Organics Compounds by Headspace GCMS
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3260

TEST REPORT

Report No. EXR/303261 (Ver. 2)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 01-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 13-May-2020

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim



Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 13-May-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303261

Consignment No W171321
Date Logged 01-May-2020
In-House Report Due 12-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC/NH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR					
		Matrix Type	Sampled							Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2057049	1-181	Unclassified	27/04/20							✓	✓	✓	✓	✓
EX/2057050	1-257 (D)	Unclassified	27/04/20							✓	✓	✓	✓	✓
EX/2057051	1-257 (S)	Unclassified	27/04/20							✓	✓	✓	✓	✓
					Ammoniacal Nitrogen as NH4 Calc			Nickel as Ni MS (Dissolved)		✓	✓	✓	✓	✓
								Chromium as Cr MS (Dissolved)		✓	✓	✓	✓	✓
								Cadmium as Cd MS (Dissolved)		✓	✓	✓	✓	✓
					Report A			Copper as Cu MS (Dissolved)		✓	✓	✓	✓	✓
								Lead as Pb MS (Dissolved)		✓	✓	✓	✓	✓
								Zinc as Zn MS (Dissolved)		✓	✓	✓	✓	✓
								Arsenic as As MS (Dissolved)		✓	✓	✓	✓	✓
								Mercury as Hg MS (Dissolved)		✓	✓	✓	✓	✓
								Selenium as Se MS (Dissolved)		✓	✓	✓	✓	✓

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary
	^

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303261

Consignment No W171321
Date Logged 01-May-2020
In-House Report Due 12-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID	ICPWT/VAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI	SFAS	TPHFID-Si	WSLM13	WSLM20	WSLM3
					Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR									
EX/2057049	1-181	Unclassified	27/04/20	MethodID	Sampled	Matrix Type	KONENS		PAHMSW	PHEHPLCVL	SFAPI	SFAS	TPHFID-Si	WSLM13	WSLM20
EX/2057050	1-257(D)	Unclassified	27/04/20												
EX/2057051	1-257(S)	Unclassified	27/04/20												

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary
	^

Report Number : W/EXR/303261

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
PAHMSW	EX2057050	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
WSLM,20	EX2057049-7051	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
TPHFID-Si	EX2057049 TO EX2057051	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) . These circumstances should be taken into consideration when utilising the data.

Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3261

TEST REPORT



Report No. EXR/303324 (Ver. 2)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 02-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 27-May-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 27-May-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303324

Consignment No W171387
Date Logged 02-May-2020
In-House Report Due 13-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	Sampled	Matrix Type	Test Method Accredited to ISO17025	1-191	EX/2057350	1-203	EX/2057351	1-203	EX/2057352	1-207	EX/2057353

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303324

Consignment No W171387
Date Logged 02-May-2020
In-House Report Due 13-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICP/WT/VAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI		SFAS	TPHFID-Si	WSLM13	Dissolved Organic Carbon		WSLM20	WSLM3
									Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA	Sulphide as S SFA	TPH by GC(Si)	Total Organic Carbon	Biochemical Oxygen Demand		Temperature C°	pH units
EX/2057350	1-191	Groundwater	Test Method Accredited to ISO17025			✓	✓		✓	✓	✓	✓	✓				✓
EX/2057351	1-203	Groundwater		30/04/20													
EX/2057352	1-203	Groundwater		30/04/20													
EX/2057353	1-207	Groundwater		30/04/20													

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/303324

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX/2057350 , 7352, 7353	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
TPHFID-Si	EX2057350 TO EX2057353	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) on the aromatic fraction . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▮ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3324

TEST REPORT

Report No. EXR/303409 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 06-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 22-May-2020

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 14)
Analytical and Deviating Sample Overview (Pages 15 to 16)
Table of Additional Report Notes (Page 17)
Table of Method Descriptions (Page 18)
Table of Report Notes (Page 19)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim



Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 22-May-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303409

Consignment No W171471
Date Logged 06-May-2020
In-House Report Due 20-May-2020

Please note the results for any subcontracted analysis (identified with a 'A') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC/NH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR	Potassium as K (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Calcium as Ca (Dissolved) VAR	Total Sulphur as SO4 (Diss) VAR	Selenium as Se MS (Dissolved)	Mercury as Hg MS (Dissolved)	Arsenic as As MS (Dissolved)	Zinc as Zn MS (Dissolved)	Lead as Pb MS (Dissolved)	Copper as Cu MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Chromium as Cr MS (Dissolved)	Nickel as Ni MS (Dissolved)	GRO-HSA GCFID (AA)	Ammonia (Free) as N calc	Report A	Ammoniacal Nitrogen as NH4 Calc		
		Matrix Type	Sampled																										
EX/2057719	1-327	Unclassified																											
EX/2057720	1-346	Unclassified																											
EX/2057721	1-341	Unclassified																											
EX/2057722	1-318	Unclassified																											

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
A	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303409

Consignment No W171471
Date Logged 06-May-2020
In-House Report Due 20-May-2020

Please note the results for any subcontracted analysis (identified with a 'Λ') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICP/WT/VAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI		SFAS	SVOCSW	TPHFID-Si	VOCHSAW	WSLM13		WSLM20											
				Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR				Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA					Total Organic Carbon	Dissolved Organic Carbon		Biochemical Oxygen Demand		pH units								
EX/2057719	1-327	Unclassified		✓	✓	✓	✓	✓	✓	✓	✓		✓															
EX/2057720	1-346	Unclassified				✓	✓																					
EX/2057721	1-341	Unclassified																										
EX/2057722	1-318	Unclassified																										

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
Λ	Analysis Subcontracted - Note: due date may vary

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2057719-21	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
VOCHSAW	EX2057719 to EX2057722	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (2-Chlorotoluene, 4-Chlorotoluene, Chloromethane, Hexachlorobutadiene, iso-Propylbenzene, Propylbenzene, Naphthalene) . These circumstances should be taken into consideration when utilising the data.
VOCHSAW	EX2057719 to EX2057722	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene) . These circumstances should be taken into consideration when utilising the data.
SVOCSW	EX2057719 to EX2057722	Due to matrix interference, the Surrogate recovery for this Test is below the required QMS specification. All other Laboratory Process Controls meet the requirements of the QMS unless otherwise stated. These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	SVOCSW	As Received	Determination of Semi Volatile Organic Compounds (SVOC) by DCM extraction followed by GCMS detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	VOCHSAW	As Received	Determination of Volatile Organics Compounds by Headspace GCMS
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3409

TEST REPORT



Report No. EXR/303448 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 07-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 18-May-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 18-May-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

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[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303448

Consignment No W171502
Date Logged 07-May-2020
In-House Report Due 18-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ICPWATVAR	Potassium as K (Dissolved) VAR	➤													
	Sodium as Na (Dissolved) VAR	➤													
	Magnesium as Mg (Dissolved) VAR	➤													
	Calcium as Ca (Dissolved) VAR	➤													
	Total Sulphur as SO4 (Diss) VAR	➤													
ICPMSW	Selenium as Se MS (Dissolved)	➤													
	Mercury as Hg MS (Dissolved)	➤													
	Arsenic as As MS (Dissolved)	➤													
	Zinc as Zn MS (Dissolved)	➤													
	Lead as Pb MS (Dissolved)	➤													
	Copper as Cu MS (Dissolved)	➤													
	Cadmium as Cd MS (Dissolved)	➤													
	Chromium as Cr MS (Dissolved)	➤													
	Nickel as Ni MS (Dissolved)	➤													
GROHSA	GRO-HSA GCFID (AA)														
FNH3CALC	Ammonia (Free) as N calc														
CUSTSERV	Report A														
CALCNH4	Ammoniacal Nitrogen as NH4 Calc										➤				
MethodID	Sampled											05/05/20			
	Matrix Type												05/05/20		
ID Number	Description											1-390 Deep EW050520 20m	Groundwater		
												1-390 Shallow EW050520 5m	Groundwater		
												1-363A EW050520 15m	Groundwater		
												1-210 EW050520 6m	Groundwater		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary
	^

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303448

Consignment No W171502
Date Logged 07-May-2020
In-House Report Due 18-May-2020

Please note the results for any subcontracted analysis (identified with a 'A') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID	ICPWATVAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI		SFAS	TPHFID-SI	WSLM13		WSLM20	WSLM3
					Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR				Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA	Sulphide as S SFA	TPH by GC(Si)	Total Organic Carbon	Dissolved Organic Carbon	Biochemical Oxygen Demand	Temperature C°
EX/2057922	1-390 Deep EW050520 20m	Groundwater	05/05/20				✓			✓		✓					
EX/2057923	1-390 Shallow EW050520 5m	Groundwater	05/05/20				✓			✓		✓					
EX/2057924	1-363A EW050520 15m	Groundwater	05/05/20				✓			✓		✓					
EX/2057925	1-210 EW050520 6m	Groundwater	05/05/20				✓			✓		✓					

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
A	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/303448

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2057922-7925	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3448

TEST REPORT



1252

Report No. EXR/303549 (Ver. 2)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 2 samples described in this report were registered for analysis by SOCOTEC UK Limited on 12-May-2020. This report should be considered as part of a group of reports (Version 1 to Version 2), which as a whole supersedes any previous versions issued by the laboratory.

The analysis was completed by: 21-May-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
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Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 21-May-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303549

Consignment No W171583
Date Logged 12-May-2020
In-House Report Due 20-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC/NH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR		
		Matrix Type	Sampled								
EX/2058384	1-182 6.50	Groundwater	07/05/20							Total Sulphur as SO4 (Diss) VAR	✓
EX/2058385	1-715 6.00	Groundwater	07/05/20							Calcium as Ca (Dissolved) VAR	✓
										Magnesium as Mg (Dissolved) VAR	✓
										Sodium as Na (Dissolved) VAR	✓
										Potassium as K (Dissolved) VAR	✓
										Nickel as Ni MS (Dissolved)	✓
										Chromium as Cr MS (Dissolved)	✓
										Cadmium as Cd MS (Dissolved)	✓
										Copper as Cu MS (Dissolved)	✓
										Lead as Pb MS (Dissolved)	✓
										Zinc as Zn MS (Dissolved)	✓
										Arsenic as As MS (Dissolved)	✓
										Mercury as Hg MS (Dissolved)	✓
										Selenium as Se MS (Dissolved)	✓

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary
	^

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303549

Consignment No W171583
Date Logged 12-May-2020
In-House Report Due 20-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICPWTVAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI		SFAS	TPHFID-Si	WSLM13	WSLM20	WSLM3		
									Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA						pH units	Temperature C°
EX/2058384	1-182 6.50	Groundwater				✓	✓		✓	✓	✓	✓				✓	
EX/2058385	1-715 6.00	Groundwater				✓	✓		✓					E		E	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/303549

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2058382	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the raw data falls outside of the capability of the instrumentation. The non-accredited value is given but should be used for guidance only.
WSLM20	EX2058378, 8380-8381	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3549

TEST REPORT



1252

Report No. EXR/303662 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 14-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 28-May-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
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Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 28-May-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303662

Consignment No W171646
Date Logged 14-May-2020
In-House Report Due 21-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC/NH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR					
		Matrix Type	Sampled							Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2059068	1-410 7.00	Groundwater								✓	✓	✓	✓	✓
EX/2059069	1-226 7.00	Groundwater								✓	✓	✓	✓	✓
EX/2059070	1-166 6.00	Groundwater								✓	✓	✓	✓	✓

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303662

Consignment No W171646
Date Logged 14-May-2020
In-House Report Due 21-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID	ICPWT/VAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI		SFAS	TPHFID-Si	WSLM13		WSLM20	WSLM3
					Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR				Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA			Total Organic Carbon	Dissolved Organic Carbon		
EX/2059068	1-410 7.00	Groundwater	07/05/20		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/2059069	1-226 7.00	Groundwater	11/05/20				✓				✓					✓	
EX/2059070	1-166 6.00	Groundwater	11/05/20				✓				✓					✓	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/303662

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2059068-9070	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3662

TEST REPORT



1252

Report No. EXR/303712 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 6 samples described in this report were registered for analysis by SOCOTEC UK Limited on 15-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 29-May-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 14)
Analytical and Deviating Sample Overview (Pages 15 to 16)
Table of Additional Report Notes (Page 17)
Table of Method Descriptions (Page 18)
Table of Report Notes (Page 19)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 29-May-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

		Units :		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l												
		Method Codes :		BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA												
		Method Reporting Limits :		5	5	10	5	5	5	15	0.1	0.1	0.1	0.1	0.1	0.1	0.1												
		UKAS Accredited :		Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No												
LAB ID Number EX/	Client Sample Description	Sample Date		Benzene		Ethyl Benzene		m/p Xylenes		o Xylene		Toluene		Xylenes		Ammoniacal Nitrogen as NH4		Ammonia (Free) as N calc a		GRO >C5->C6 Aliphatic		GRO >C6->C7		GRO >C7->C8 Aliphatic		GRO >C8->C10		GRO >C8->C10 Aliphatic	
		13-May-20		< 5.0		< 5.0		< 10.0		< 5.0		< 5.0		< 15.0		4.50		0.01		< 0.100		< 0.100		< 0.100		< 0.100		< 0.100	
		13-May-20		< 5.0		< 5.0		< 10.0		< 5.0		< 5.0		< 15.0		0.26		<0.01		< 0.100		< 0.100		< 0.100		< 0.100		< 0.100	
		13-May-20		< 5.0		< 5.0		< 10.0		< 5.0		< 5.0		< 15.0		0.06		<0.01		< 0.100		< 0.100		< 0.100		< 0.100		< 0.100	
		13-May-20		< 5.0		< 5.0		< 10.0		< 5.0		< 5.0		< 15.0		0.14		<0.01		< 0.100		< 0.100		< 0.100		< 0.100		< 0.100	
		13-May-20		< 5.0		< 5.0		< 10.0		< 5.0		< 5.0		< 15.0		0.08		<0.01		< 0.100		< 0.100		< 0.100		< 0.100		< 0.100	
		13-May-20		< 5.0		< 5.0		< 10.0		< 5.0		< 5.0		< 15.0		0.01		<0.01		< 0.100		< 0.100		< 0.100		< 0.100		< 0.100	
				Client Name		Contact		SOCOTEC UK Wokingham		William Riggs		Sample Analysis		Date Printed		29-May-2020		Report Number		EXR/303712		Table Number		1					

D9008-19 M25 Jct 10



Bretby Business Park, Ashby Road
Burton-on-Trent, Staffordshire, DE15 0YZ
Tel +44 (0) 1283 554400
Fax +44 (0) 1283 554422

Units : Method Codes : Method Reporting Limits : UKAS Accredited :		Socotec UK Wokingham																Sample Analysis			
Client Sample Description		Socotec UK Wokingham																Sample Analysis			
LAB ID Number EX/		Socotec UK Wokingham																Sample Analysis			
Sample Date		Socotec UK Wokingham																Sample Analysis			
1-Methylnaphthalene		Socotec UK Wokingham																Sample Analysis			
2,4,5-Trichlorophenol		Socotec UK Wokingham																Sample Analysis			
2,4,6 - Trichlorophenol		Socotec UK Wokingham																Sample Analysis			
2,4-Dichlorophenol		Socotec UK Wokingham																Sample Analysis			
2,4-Dimethylphenol		Socotec UK Wokingham																Sample Analysis			
2,4-Dinitrophenol		Socotec UK Wokingham																Sample Analysis			
2,4-Dinitrotoluene		Socotec UK Wokingham																Sample Analysis			
2,6 Dinitrotoluene		Socotec UK Wokingham																Sample Analysis			
2-Chloronaphthalene		Socotec UK Wokingham																Sample Analysis			
2-Chlorophenol		Socotec UK Wokingham																Sample Analysis			
2-Methylnaphthalene		Socotec UK Wokingham																Sample Analysis			
2-Methylphenol		Socotec UK Wokingham																Sample Analysis			
2-Nitroaniline		Socotec UK Wokingham																Sample Analysis			
2-Nitrophenol		Socotec UK Wokingham																Sample Analysis			
3+4-Methylphenol		Socotec UK Wokingham																Sample Analysis			
3-Nitroaniline		Socotec UK Wokingham																Sample Analysis			

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303712

Consignment No W171775
Date Logged 15-May-2020
In-House Report Due 25-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ICPWATVAR	Potassium as K (Dissolved) VAR	✓												
	Sodium as Na (Dissolved) VAR	✓												
	Magnesium as Mg (Dissolved) VAR	✓												
	Calcium as Ca (Dissolved) VAR	✓												
	Total Sulphur as SO4 (Diss) VAR	✓												
ICPMSW	Selenium as Se MS (Dissolved)	✓												
	Mercury as Hg MS (Dissolved)	✓												
	Arsenic as As MS (Dissolved)	✓												
	Zinc as Zn MS (Dissolved)	✓												
	Lead as Pb MS (Dissolved)	✓												
	Copper as Cu MS (Dissolved)	✓												
	Cadmium as Cd MS (Dissolved)	✓												
	Chromium as Cr MS (Dissolved)	✓												
	Nickel as Ni MS (Dissolved)	✓												
GROHSA	GRO-HSA GCFID (AA)													
FNH3CALC	Ammonia (Free) as N calc													
CUSTSERV	Report A													
CALCNH4	Ammoniacal Nitrogen as NH4 Calc	✓												
MethodID	Sampled		13/05/20											
	Matrix Type		Groundwater											
Description		1-508 4.50	Groundwater											
		1-508 7.00	Groundwater											
		1-509 6.00	Groundwater											
		1-509 7.00	Groundwater											
		1-516 7.00	Groundwater											
		1-516 7.00	Groundwater											
ID Number		EX/2059353												
		EX/2059354												
		EX/2059355												
		EX/2059356												
		EX/2059357												
		EX/2059358												

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303712

Consignment No W171775
Date Logged 15-May-2020
In-House Report Due 25-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICP/WT/VAR		KONENS	PAHMSW	PHE/PLCVL	SF/API		SF/AS	SV/OC/SW	TPH/FID-Si	VOCHSAW	WSLM13		WSLM20	WSLM3	
									Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA					Total Organic Carbon	Dissolved Organic Carbon		Temperature C°	pH units
EX/2059353	1-508 4.50	Groundwater				✓	✓		✓	✓	✓		✓				✓		✓
EX/2059354	1-508 7.00	Groundwater				✓	✓										E		
EX/2059355	1-509 6.00	Groundwater				✓	✓										E		
EX/2059356	1-509 7.00	Groundwater				✓	✓										E		
EX/2059357	1-516 7.00	Groundwater				✓	✓										E		
EX/2059358	1-516 7.00	Groundwater				✓	✓										E		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
VOCHSAW	EX2059354	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Naphthalene) . These circumstances should be taken into consideration when utilising the data.
VOCHSAW	EX2059354	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (1,1-Dichloroethene, trans 1,2-Dichloroethene) . These circumstances should be taken into consideration when utilising the data.
WSLM20	EX2059354	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the raw data falls outside of the capability of the instrumentation. The non-accredited value is given but should be used for guidance only.
WSLM20	EX2059353, 9355, 9356, 9358	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
TPHFID-Si	EX2059353 TO EX2059358	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) on the aromatic fraction . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	SVOCSW	As Received	Determination of Semi Volatile Organic Compounds (SVOC) by DCM extraction followed by GCMS detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	VOCHSAW	As Received	Determination of Volatile Organics Compounds by Headspace GCMS
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▮ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3712

TEST REPORT



1252

Report No. EXR/303751 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 15-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 05-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 14)
Analytical and Deviating Sample Overview (Pages 15 to 16)
Table of Additional Report Notes (Page 17)
Table of Method Descriptions (Page 18)
Table of Report Notes (Page 19)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 05-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303751

Consignment No W171800
Date Logged 15-May-2020
In-House Report Due 04-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC/NH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR					
		Sampled	Matrix Type							Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2059505	1-181 7.00	Groundwater	12/05/20							✓	✓	✓	✓	✓
EX/2059506	1-212 2.00	Groundwater	12/05/20							✓	✓	✓	✓	✓
EX/2059507	1-212 7.00	Groundwater	12/05/20							✓	✓	✓	✓	✓
EX/2059508	1-217 6.00	Groundwater	12/05/20							✓	✓	✓	✓	✓
EX/2059509	1-257 4.50	Groundwater	12/05/20							✓	✓	✓	✓	✓

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303751

Consignment No W171800
Date Logged 15-May-2020
In-House Report Due 04-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICPWATVAR		KONENS	PAHMSW	PHEPLCVL	SFAPI		SFAS	SVOC	TPHFID-Si	VOCHSAW	WSLM13		WSLM20	WSLM3	
									Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA					Total Organic Carbon	Dissolved Organic Carbon			
																			pH units
																			Temperature C°
EX/2059505	1-181 7.00	Groundwater																	
EX/2059506	1-212 2.00	Groundwater																	
EX/2059507	1-212 7.00	Groundwater																	
EX/2059508	1-217 6.00	Groundwater																	
EX/2059509	1-257 4.50	Groundwater																	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary
	^

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPWATVAR	EX/2059508 EX/2059510	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted to improve the signal to noise ratio but in doing so, the detection limit for this test has been elevated.
WSLM20	EX2059506, 9507, 9509	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
VOCHSAW	EX2059506, EX2059508	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Naphthalene, 2,2-Dichloropropane) . These circumstances should be taken into consideration when utilising the data.
VOCHSAW	EX2059506, EX2059508	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Chloromethane) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	SVOCSW	As Received	Determination of Semi Volatile Organic Compounds (SVOC) by DCM extraction followed by GCMS detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	VOCHSAW	As Received	Determination of Volatile Organics Compounds by Headspace GCMS
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3751

TEST REPORT



1252

Report No. EXR/303829 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 19-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 01-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 01-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303829

Consignment No W171877
Date Logged 19-May-2020
In-House Report Due 27-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC/NH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR					
		Matrix Type	Sampled							Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2059950	1-259 6.30	Groundwater	14/05/20	✓				✓		✓	✓	✓	✓	✓
EX/2059951	1-541 5.00	Groundwater	14/05/20					✓						
EX/2059952	1-541 17.00	Groundwater	14/05/20					✓						
EX/2059953	1-737 7.50	Groundwater	14/05/20					✓						
					Report A									
					Ammoniacal Nitrogen as NH4 Calc			✓						
					Nickel as Ni MS (Dissolved)			✓						
					Chromium as Cr MS (Dissolved)			✓						
					Cadmium as Cd MS (Dissolved)			✓						
					Copper as Cu MS (Dissolved)			✓						
					Lead as Pb MS (Dissolved)			✓						
					Zinc as Zn MS (Dissolved)			✓						
					Arsenic as As MS (Dissolved)			✓						
					Mercury as Hg MS (Dissolved)			✓						
					Selenium as Se MS (Dissolved)			✓						

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W303829

Consignment No W171877
Date Logged 19-May-2020
In-House Report Due 27-May-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID	ICPWATVAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI		SFAS	TPHFID-SI	WSLM13		WSLM20	WSLM3
					Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR				Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA	Sulphide as S SFA	TPH by GC(Si)	Total Organic Carbon	Dissolved Organic Carbon	Biochemical Oxygen Demand	Temperature C°
EX/2059950	1-259 6.30	Groundwater	14/05/20							➤							
EX/2059951	1-541 5.00	Groundwater	14/05/20							➤							
EX/2059952	1-541 17.00	Groundwater	14/05/20							➤							
EX/2059953	1-737 7.50	Groundwater	14/05/20							➤							

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/303829

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2059950-9952	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
TPHFID-Si	EX2059950 to EX2059953	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) on the aliphatic fraction. These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_3829

TEST REPORT



Report No. EXR/304177 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 28-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 10-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

A handwritten signature in blue ink, appearing to read 'R. Batham'.

Operations Manager
Energy & Waste Services

Date of Issue: 10-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304177

Consignment No W172231
Date Logged 28-May-2020
In-House Report Due 05-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICP/WT/VAR		PAHMSW	PHE/PLC/VL	SF/API		SF/AS	TPH/FID-Si	WSLM13		WSLM20	WSLM3
				Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR			Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA			Total Organic Carbon	Dissolved Organic Carbon		
			Sampled			Chromium VI. as Cr (Kone)	Phenols by HPLC (Low Level)			Sulphide as S SFA	TPH by GC(Si)			Biochemical Oxygen Demand	pH units
EX/2061859	1-174 6.00	Groundwater		✓		✓		✓	✓	✓	✓	✓		✓	✓
EX/2061860	1-174 14.00	Groundwater	21/05/20	E		E								E	E
EX/2061861	1-235 7.00	Groundwater	21/05/20	E		E								E	E
EX/2061862	1-237 8.00	Groundwater	21/05/20	E		E								E	E
EX/2061863	1-237 18.00	Groundwater	21/05/20	E		E								E	E

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/304177

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2061863	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the raw data falls outside of the capability of the instrumentation. The non-accredited value is given but should be used for guidance only.
WSLM20	EX2061859, 1861, 1862	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
PAHMSW	EX2061859-63	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Indeno[1,2,3-cd]pyrene) . These circumstances should be taken into consideration when utilising the data.

Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▮ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4177

TEST REPORT



1252

Report No. EXR/304194 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 6 samples described in this report were registered for analysis by SOCOTEC UK Limited on 29-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 10-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
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Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 10-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304194

Consignment No W172237
Date Logged 29-May-2020
In-House Report Due 05-Jun-2020

Please note the results for any subcontracted analysis (identified with a 'A') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	Sampled	CALC_NH3	CUSTSERV	GROHSA	ICPMSW										ICPWATVAR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
								Nickel as Ni MS (Dissolved)	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR	Iron as Fe (Dissolved) VAR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
EX/2061908	1-191 8.00	Groundwater		18/05/20	✓	E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
A	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304194

Consignment No W172237
Date Logged 29-May-2020
In-House Report Due 05-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	ICPWATVAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI	SFAS	TPHFID-Si	WSLM13	WSLM20	WSLM3
			Matrix Type	Sampled								Boron as B (Dissolved) VAR	Temperature C°
EX/2061908	1-191 8.00	Groundwater		18/05/20	✓	E	E	E	E	✓	E	E	E
EX/2061909	1-203 7.00	Groundwater		18/05/20	✓	E	E	E	E	✓	E	E	E
EX/2061910	1-203 16.00	Groundwater		18/05/20	✓	E	E	E	E	✓	E	E	E
EX/2061911	1-207 6.00	Groundwater		18/05/20	✓	E	E	E	E	✓	E	E	E
EX/2061912	1-207 15.00	Groundwater		18/05/20	✓	E	E	E	E	✓	E	E	E
EX/2061913	1-257 19.00	Groundwater		18/05/20	✓	E	E	E	E	✓	E	E	E

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/304194

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2061908-1911, 1913	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
WSLM20	EX2061912	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the raw data falls outside of the capability of the instrumentation. The non-accredited value is given but should be used for guidance only.

Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4194

TEST REPORT



Report No. EXR/304197 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 29-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 10-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 10-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304197

Consignment No W172239
Date Logged 29-May-2020
In-House Report Due 05-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC_NH3	CALC_NH4	CUSTSERV	GROHSA	ICPMSW	ICPWATVAR					
		Matrix Type	Sampled							Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2061934	1-152 4.50	Groundwater	19/05/20	✓	E		E	✓		✓	✓	✓	✓	✓
EX/2061935	1-318 7.00	Groundwater	19/05/20	E	E		E							
EX/2061936	1-327 8.00	Groundwater	19/05/20	E	E		E							
EX/2061937	1-341 11.00	Groundwater	19/05/20	E	E		E							
EX/2061938	1-346 8.00	Groundwater	19/05/20	E	E		E							

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key					
A	The sample was received in an inappropriate container for this analysis				
B	The sample was received without the correct preservation for this analysis				
C	Headpace present in the sample container				
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis				
E	Sample processing did not commence within the appropriate holding time				
F	Sample processing did not commence within the appropriate handling time				
Requested Analysis Key					
	Analysis Required				
	Analysis dependant upon trigger result - Note: due date may be affected if triggered				
	No analysis scheduled				
	Analysis Subcontracted - Note: due date may vary				
	^				

Report Number : W/EXR/304197

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2061935-1938	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▮ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4197

TEST REPORT



1252

Report No. EXR/304202 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 29-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 10-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 14)
Analytical and Deviating Sample Overview (Pages 15 to 16)
Table of Additional Report Notes (Page 17)
Table of Method Descriptions (Page 18)
Table of Report Notes (Page 19)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 10-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304202

Consignment No W172238
Date Logged 29-May-2020
In-House Report Due 05-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC_NH3	CALC_NH4	CUSTSERV	GROHSA	ICPMSW	ICPWATVAR					
		Matrix Type	Sampled							Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2061970	1-210 7.00	Groundwater	20/05/20	✓	E			✓		✓	✓	✓	✓	✓
EX/2061971	1-363A 15.00	Groundwater	20/05/20	E	E									
EX/2061972	1-390 6.00	Groundwater	20/05/20	E	E									
EX/2061973	1-390 19:00	Groundwater	20/05/20	E	E									
EX/2061974	1-911 15.00	Groundwater	20/05/20	E	E									

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/304202

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
VOCHSAW	EX2061972	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Naphthalene, 1,1-Dichloroethene, trans 1,2-Dichloroethene) . These circumstances should be taken into consideration when utilising the data.
WSLM20	EX2061970-1972	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.

Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	SVOCSW	As Received	Determination of Semi Volatile Organic Compounds (SVOC) by DCM extraction followed by GCMS detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	VOCHSAW	As Received	Determination of Volatile Organics Compounds by Headspace GCMS
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4202

TEST REPORT



1252

Report No. EXR/304239 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 2 samples described in this report were registered for analysis by SOCOTEC UK Limited on 30-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 12-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 12-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304239

Consignment No W172234
Date Logged 30-May-2020
In-House Report Due 09-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICPMSW										ICPWATVAR							
				CALCNH4	CALC_NH3	CUSTSERV	GROHSA	Nickel as Ni MS (Dissolved)	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2062216	1-410 8.0	Groundwater		✓	E			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
EX/2062217	1-715 8.0	Groundwater		✓	E			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304239

Consignment No W172234
Date Logged 30-May-2020
In-House Report Due 09-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	ICPWATVAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI	SFAS	TPHFID-Si	WSLM13	WSLM20	WSLM3
			Matrix Type	Sampled									
EX/2062216	1-410 8.0	Groundwater	26/05/20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/2062217	1-715 8.0	Groundwater	26/05/20		E	E						E	E

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
PAHMSW	EX2062216, 17	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Benzo[b]fluoranthene) . These circumstances should be taken into consideration when utilising the data.
PAHMSW	EX2062216, 17	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Indeno[1,2,3-cd]pyrene) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham
Site : D9008-19 M25 Jct 10
Report Number : W30_4239

TEST REPORT



1252

Report No. EXR/304240 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 30-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 11-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
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Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 11-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304240

Consignment No W172235
Date Logged 30-May-2020
In-House Report Due 09-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	Sampled	Matrix Type	ICPMSW	GROHSA	CUSTSERV	ICPWATVAR	Iron as Fe (Dissolved) VAR	Potassium as K (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Calcium as Ca (Dissolved) VAR	Selenium as Se MS (Dissolved)	Mercury as Hg MS (Dissolved)	Arsenic as As MS (Dissolved)	Zinc as Zn MS (Dissolved)	Lead as Pb MS (Dissolved)	Copper as Cu MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Chromium as Cr MS (Dissolved)	Nickel as Ni MS (Dissolved)	GRO-HSA GCFID (AA)	
							Report A																	
							Ammoniacal Nitrogen as NH4 Calc	✓	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
							Ammoniacal Nitrogen as NH3(Kone) Calc	✓	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
																					</			

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key					
A	The sample was received in an inappropriate container for this analysis				
B	The sample was received without the correct preservation for this analysis				
C	Headpace present in the sample container				
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis				
E	Sample processing did not commence within the appropriate holding time				
F	Sample processing did not commence within the appropriate handling time				
Requested Analysis Key					
	Analysis Required				
	Analysis dependant upon trigger result - Note: due date may be affected if triggered				
	No analysis scheduled				
	Analysis Subcontracted - Note: due date may vary				
	^				

**SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview**

Customer	SOCOTEC UK Wokingham
Site	D9008-19 M25 Jct 10
Report No	W304240

Consignment No W172235
Date Logged 30-May-2020
In-House Report Due 09-Jun-2020

ID Number	Description	MethodID	Sampled	Matrix Type	ICP	WAT	VAR	MethodID	Sampled
EX/2062218	1-147 8.00			Groundwater	✓			27/05/20	
EX/2062219	1-166 7.00			Groundwater	✓			27/05/20	
EX/2062220	1-226 8.00			Groundwater	✓			27/05/20	
EX/2062221	1-231 8.00			Groundwater	✓			27/05/20	
EX/2062222	1-542 18.00			Groundwater	✓			27/05/20	

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

	Analysis Required	
	Analysis dependant upon trigger result - Note: due date may be affected if triggered	
	No analysis scheduled	
A	Analysis Subcontracted - Note: due date may vary	

EXR/304240 Ver. 1

Report Number : W/EXR/304240

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2062218, 2219, 2221, 2222	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
PAHMSW	EX2062218 TO EX2062222	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Benzo[b]fluoranthene) . These circumstances should be taken into consideration when utilising the data.
PAHMSW	EX2062218 TO EX2062222	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Indeno[1,2,3-cd]pyrene) . These circumstances should be taken into consideration when utilising the data.

Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▮ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4240

TEST REPORT



1252

Report No. EXR/304250 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 6 samples described in this report were registered for analysis by SOCOTEC UK Limited on 30-May-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 15-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 14)
Analytical and Deviating Sample Overview (Pages 15 to 16)
Table of Additional Report Notes (Page 17)
Table of Method Descriptions (Page 18)
Table of Report Notes (Page 19)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 15-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.


SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

LAB ID Number EX/		Client Sample Description	Sample Date	Units : Method Codes : Method Reporting Limits : UKAS Accredited :																			
				mg/l SVOCSW 0.05 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.02 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.005 No	mg/l SVOCSW 0.002 No	mg/l SVOCSW 0.002 No	mg/l SVOCSW 0.002 No	mg/l SVOCSW 0.002 No	mg/l SVOCSW 0.002 No	mg/l SVOCSW 0.002 No	
2062260	1-181 EW 280520 7.50	28-May-20 14:45	Benzo[k]fluoranthene																				
2062261	1-212 EW 280520 2.00	28-May-20 10:30	Benzo[g,h,i]perylene																				
2062262	1-212 EW 280520 8.00	28-May-20 11:00	Benzo[b]fluoranthene																				
2062263	1-217 EW 280520 7.00	28-May-20 12:00	Benzo[a]pyrene																				
2062264	1-257 EW 280520 5.00	28-May-20 13:00	Benzo[a]anthracene																				
2062265	1-257 EW 280520 14.00	28-May-20 13:45	Anthracene																				
			Acenaphthylene																				
			Acenaphthene																				
			4-Nitrophenol																				
			4-Nitroaniline																				
			4-Chlorophenyl-phenylether																				
			4-Chlorophenol																				
			4-Chloroaniline																				
			4-Chloro-3-methylphenol																				
			4-Bromophenyl-phenylether																				
			4,6-Dinitro-2-methylphenol																				
				SOCOTEC UK Wokingham William Riggs												Sample Analysis							
 Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422				Date Printed Report Number Table Number												15-Jun-2020 EXR/304250 1							

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304250

Consignment No W172310
Date Logged 30-May-2020
In-House Report Due 09-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC/NH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR					
		Matrix Type	Sampled							Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2062260	1-181 7.50	Groundwater	28/05/20	✓				✓		✓	✓	✓	✓	✓
EX/2062261	1-212 2.00	Groundwater	28/05/20											
EX/2062262	1-212 8.00	Groundwater	28/05/20											
EX/2062263	1-217 7.00	Groundwater	28/05/20											
EX/2062264	1-257 5.00	Groundwater	28/05/20											
EX/2062265	1-257 14.00	Groundwater	28/05/20											

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304250

Consignment No W172310
Date Logged 30-May-2020
In-House Report Due 09-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	ICPWATVAR		KONENS	PAHMSW	PHEHPLCVL	SFAPI		SFAS	SVOC	TPHFID-Si	VOCHSAW	WSLM13		WSLM20	WSLM3
			Matrix Type	Sampled				Cyanide (Total) as CN SFA	Cyanide (Free) as CN SFA					Dissolved Organic Carbon	Total Organic Carbon		
EX/2062260	1-181 7.50	Groundwater	28/05/20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/2062261	1-212 2.00	Groundwater	28/05/20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/2062262	1-212 8.00	Groundwater	28/05/20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/2062263	1-217 7.00	Groundwater	28/05/20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/2062264	1-257 5.00	Groundwater	28/05/20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/2062265	1-257 14.00	Groundwater	28/05/20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
Analysis Required	
Analysis dependant upon trigger result - Note: due date may be affected if triggered	
No analysis scheduled	
Analysis Subcontracted - Note: due date may vary	
^	

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2062261, 2264, 2265	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
VOCHSAW	EX2062261	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (1,3-Dichloropropane, Bromomethane, Chloromethane, trans 1,2-Dichloroethene) . These circumstances should be taken into consideration when utilising the data.
VOCHSAW	EX2062261	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (1,1,2-Trichloroethane, 1,2-Dichloroethane, Bromochloromethane, Dibromomethane, Propylbenzene) . These circumstances should be taken into consideration when utilising the data.
PAHMSW	EX2062260 TO EX2062265	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Benzo[b]fluoranthene) . These circumstances should be taken into consideration when utilising the data.
PAHMSW	EX2062260 TO EX2062265	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Indeno[1,2,3-cd]pyrene) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	SVOCSW	As Received	Determination of Semi Volatile Organic Compounds (SVOC) by DCM extraction followed by GCMS detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	VOCHSAW	As Received	Determination of Volatile Organics Compounds by Headspace GCMS
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4250

TEST REPORT



1252

Report No. EXR/304389 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 04-Jun-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 16-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 16-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304389

Consignment No W172402
Date Logged 04-Jun-2020
In-House Report Due 15-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALCINH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR					
		Matrix Type	Sampled							Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2062896	1-516 8.00	Groundwater						✓		✓	✓	✓	✓	✓
EX/2062897	1-516 21.00	Groundwater						✓		✓	✓	✓	✓	✓
EX/2062898	1-508 8.00	Groundwater						✓		✓	✓	✓	✓	✓

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/304389

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2062896-2898	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4389

TEST REPORT



1252

Report No. EXR/304392 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 05-Jun-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 17-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 17-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

[illegible]

LAB ID Number EX/		Client Sample Description	Sample Date	Units :		Method Codes : Method Reporting Limits : UKAS Accredited :																	
			GRO-HSA o	Arsenic as As (Dissolved)	Cadmium as Cd (Dissolved)	Chromium as Cr (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Mercury as Hg (Dissolved)	Nickel as Ni (Dissolved)	Selenium as Se (Dissolved)	Zinc as Zn (Dissolved)	Boron as B (Dissolved) a	Calcium as Ca (Dissolved) a	Iron as Fe (Dissolved) a	Magnesium as Mg (Dissolved) a	Potassium as K (Dissolved) a	Sodium as Na (Dissolved) a					
			< 0.100	<0.001	0.00057	0.001	0.003	<0.001	<0.00003	0.021	<0.001	0.054	0.02	8	0.02	6	2	6					
2062909		1-737 EW 020620 7.00	02-Jun-20 15:20	< 0.100	<0.001	<0.00002	0.003	0.003	<0.00003	0.025	<0.001	0.076 <th>0.02<th>10<th>1.06<th>4<th>5<th>18</th></th></th></th></th></th>	0.02 <th>10<th>1.06<th>4<th>5<th>18</th></th></th></th></th>	10 <th>1.06<th>4<th>5<th>18</th></th></th></th>	1.06 <th>4<th>5<th>18</th></th></th>	4 <th>5<th>18</th></th>	5 <th>18</th>	18					
2062910		1-509 EW 020620 8.00	02-Jun-20 14:30	< 0.100	<0.001	<0.00002	0.003	0.002	<0.00003	0.01	<0.001	0.039 <th>0.02<th>25<th>0.2<th>3<th>8<th>19</th></th></th></th></th></th>	0.02 <th>25<th>0.2<th>3<th>8<th>19</th></th></th></th></th>	25 <th>0.2<th>3<th>8<th>19</th></th></th></th>	0.2 <th>3<th>8<th>19</th></th></th>	3 <th>8<th>19</th></th>	8 <th>19</th>	19					
2062911		1-509 EW 020620 13.00	02-Jun-20 13:45	< 0.100	<0.001	<0.00002	<0.001	0.001	<0.00003	0.036 <th><0.001</th> <th>0.059<th>0.02</th><th>5<th>0.08<th>9<th>5<th>13</th></th></th></th></th></th>	<0.001	0.059 <th>0.02</th> <th>5<th>0.08<th>9<th>5<th>13</th></th></th></th></th>	0.02	5 <th>0.08<th>9<th>5<th>13</th></th></th></th>	0.08 <th>9<th>5<th>13</th></th></th>	9 <th>5<th>13</th></th>	5 <th>13</th>	13					
2062912		1-541 EW 020620 5.00	02-Jun-20 12:05	< 0.100	<0.001	0.00021	0.002	0.004	<0.00003	0.021 <th><0.001</th> <th>0.01<th><0.01<th>6<th>0.32<th>5<th>4<th>10</th></th></th></th></th></th></th>	<0.001	0.01 <th><0.01<th>6<th>0.32<th>5<th>4<th>10</th></th></th></th></th></th>	<0.01 <th>6<th>0.32<th>5<th>4<th>10</th></th></th></th></th>	6 <th>0.32<th>5<th>4<th>10</th></th></th></th>	0.32 <th>5<th>4<th>10</th></th></th>	5 <th>4<th>10</th></th>	4 <th>10</th>	10					
2062913		1-541 EW 020620 18.00	02-Jun-20 13:15	< 0.100	<0.001	<0.00002	<0.001	<0.001	<0.00003	0.021 <th><0.001</th> <th>0.01<th><0.01<th>6<th>0.32<th>5<th>4<th>10</th></th></th></th></th></th></th>	<0.001	0.01 <th><0.01<th>6<th>0.32<th>5<th>4<th>10</th></th></th></th></th></th>	<0.01 <th>6<th>0.32<th>5<th>4<th>10</th></th></th></th></th>	6 <th>0.32<th>5<th>4<th>10</th></th></th></th>	0.32 <th>5<th>4<th>10</th></th></th>	5 <th>4<th>10</th></th>	4 <th>10</th>	10					

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304392

Consignment No W172402
Date Logged 05-Jun-2020
In-House Report Due 15-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALCNH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR					
										Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Potassium as K (Dissolved) VAR
EX/2062909	1-737 7.00	Groundwater	Sampled	✓				✓		✓	✓	✓	✓	✓
EX/2062910	1-509 8.00							✓						
EX/2062911	1-509 13.00							✓						
EX/2062912	1-541 5.00							✓						
EX/2062913	1-541 18.00							✓						

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key					
A	The sample was received in an inappropriate container for this analysis				
B	The sample was received without the correct preservation for this analysis				
C	Headpace present in the sample container				
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis				
E	Sample processing did not commence within the appropriate holding time				
F	Sample processing did not commence within the appropriate handling time				
Requested Analysis Key					
	Analysis Required				
	Analysis dependant upon trigger result - Note: due date may be affected if triggered				
	No analysis scheduled				
	Analysis Subcontracted - Note: due date may vary				
	^				

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304392

Consignment No W172402
Date Logged 05-Jun-2020
In-House Report Due 15-Jun-2020

Please note the results for any subcontracted analysis (identified with a 'A') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICP/WT/VAR		KONENS	PAHMSW	PHE/PLC/VL	SFAPI	SFAS	TPHFID-Si	WSLM13	WSLM20	WSLM3
													pH units	
													Temperature C°	
EX/2062909	1-737 7.00	Groundwater				✓	✓		✓	✓	✓		✓	✓
EX/2062910	1-509 8.00	Groundwater				✓	✓						E	
EX/2062911	1-509 13.00	Groundwater				✓	✓						E	
EX/2062912	1-541 5.00	Groundwater				✓	✓						E	
EX/2062913	1-541 18.00	Groundwater				✓	✓						E	
				Boron as B (Dissolved) VAR		✓								
				Iron as Fe (Dissolved) VAR		✓								
				Chloride as Cl (Kone)		✓								
				Ammoniacal Nitrogen (Kone)		✓								
				Chromium VI. as Cr (Kone)		✓								
				PAH GC-MS (16)		✓								
				Phenols by HPLC (Low Level)					✓	✓	✓			
				Cyanide (Free) as CN SFA		✓			✓	✓	✓			
				Cyanide (Total) as CN SFA		✓			✓	✓	✓			
				Sulphide as S SFA		✓			✓	✓	✓			
				TPH by GC(Si)					✓	✓	✓			
				Total Organic Carbon					✓	✓	✓			
				Dissolved Organic Carbon										
				Biochemical Oxygen Demand					✓	✓	✓			
				Temperature C°										
				pH units										

Analysis Required

Analysis dependant upon trigger result - Note: due date may be affected if triggered

No analysis scheduled

Analysis Subcontracted – Note: due date may vary

A

Deviating Sample Key

A The sample was received in an inappropriate container for this analysis
B The sample was received without the correct preservation for this analysis
C Headspace present in the sample container
D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E Sample processing did not commence within the appropriate holding time
F Sample processing did not commence within the appropriate handling time

Requested Analysis Key

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.
Where individual results are flagged see report notes for status.

Page 8 of 11

EXR/304392 Ver. 1

Report Number : W/EXR/304392

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2062909-2913	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
PAHMSW	EX2062909-2913	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Indeno[1,2,3-cd]pyrene) . These circumstances should be taken into consideration when utilising the data.
TPHFID	EX2062909-2913	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) on the aliphatic fraction . These circumstances should be taken into consideration when utilising the data.

Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4392

TEST REPORT



Report No. EXR/304458 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 06-Jun-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 17-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

A handwritten signature in blue ink, appearing to read 'R. Batham'.

Operations Manager
Energy & Waste Services

Date of Issue: 17-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304458

Consignment No W172499
Date Logged 06-Jun-2020
In-House Report Due 16-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID		CALC/NH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW	ICPWATVAR					
										Potassium as K (Dissolved) VAR	Sodium as Na (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR	Calcium as Ca (Dissolved) VAR	Total Sulphur as SO4 (Diss) VAR
EX/2063232	1-191 6.00	Groundwater	Matrix Type	Sampled				✓		✓				
EX/2063233	1-203 7.00							✓		✓				
EX/2063234	1-203 18.50							✓		✓				
EX/2063235	1-207 6.00							✓		✓				
EX/2063236	1-207 15.00							✓		✓				

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304458

Consignment No W172499
Date Logged 06-Jun-2020
In-House Report Due 16-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	MethodID	ICP/WT/VAR		KONENS	PAHMSW	PHEHPLC/UV	SFAPI	SFAS	TPHFID-Si	WSLM13	WSLM20	WSLM3
													pH units	
													Temperature C°	
EX/2063232	1-191 6.00	Groundwater				✓	✓		✓	✓	✓		✓	✓
EX/2063233	1-203 7.00	Groundwater				✓	✓						E	
EX/2063234	1-203 18.50	Groundwater				✓	✓						E	
EX/2063235	1-207 6.00	Groundwater				✓	✓						E	
EX/2063236	1-207 15.00	Groundwater				✓	✓						E	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
PAHMSW	EX/2063232 - 36	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Indeno[1,2,3-cd]pyrene) . These circumstances should be taken into consideration when utilising the data.
PAHMSW	EX/2063236	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted to improve the signal to noise ratio but in doing so, the detection limit for this test has been elevated.
WSLM20	EX2063232, 3234	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
TPHFID	EX/2063232 - 36	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) on the aliphatic fraction . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCUV	As Received	Determination of Phenols by HPLC with UV Detection
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

TEST REPORT



1252

Report No. EXR/304459 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 06-Jun-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 17-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

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On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 17-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

		Units :		Method Codes :		Method Reporting Limits :		UKAS Accredited :	

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304459

Consignment No W172500
Date Logged 06-Jun-2020
In-House Report Due 16-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ICPWATVAR	Potassium as K (Dissolved) VAR	➤								
	Sodium as Na (Dissolved) VAR	➤								
	Magnesium as Mg (Dissolved) VAR	➤								
	Calcium as Ca (Dissolved) VAR	➤								
	Total Sulphur as SO4 (Diss) VAR	➤								
ICPMSW	Selenium as Se MS (Dissolved)	➤								
	Mercury as Hg MS (Dissolved)	➤								
	Arsenic as As MS (Dissolved)	➤								
	Zinc as Zn MS (Dissolved)	➤								
	Lead as Pb MS (Dissolved)	➤								
	Copper as Cu MS (Dissolved)	➤								
	Cadmium as Cd MS (Dissolved)	➤								
	Chromium as Cr MS (Dissolved)	➤								
	Nickel as Ni MS (Dissolved)	➤								
GROHSA	GRO-HSA GCFID (AA)									
FNH3CALC	Ammonia (Free) as N calc									
CUSTSERV	Report A									
CALCNH4	Ammoniacal Nitrogen as NH4 Calc		➤							
MethodID	Sampled			04/06/20		04/06/20		04/06/20		04/06/20
	Matrix Type									
Description										
ID Number										
EX/2063237			1-152 5.00	Groundwater						
EX/2063238			1-182 7.00	Groundwater						
EX/2063239			1-184 16.00	Groundwater						
EX/2063240			1-318 10.00	Groundwater						

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304459

Consignment No W172500
Date Logged 06-Jun-2020
In-House Report Due 16-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID	ICPWATVAR		KONENS	PAHMSW	PHEHPLCUV	SFAPI	SFAS	TPHFID-Si	WSLM13	WSLM20	WSLM3		
					Boron as B (Dissolved) VAR	Iron as Fe (Dissolved) VAR										pH units	Temperature C°
EX/2063237	1-152 5.00	Groundwater	04/06/20							➤							
EX/2063238	1-182 7.00	Groundwater	04/06/20							➤							
EX/2063239	1-184 16.00	Groundwater	04/06/20							➤							
EX/2063240	1-318 10.00	Groundwater	04/06/20							➤							

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/304459

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
PAHMSW	EX/2063237 - 40	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Indeno[1,2,3-cd]pyrene) . These circumstances should be taken into consideration when utilising the data.
WSLM20	EX2063238-3240	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
TPHFID	EX/2063237 - 40	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C16-C21) on the aliphatic fraction . These circumstances should be taken into consideration when utilising the data.

Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCUV	As Received	Determination of Phenols by HPLC with UV Detection
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4459

TEST REPORT



1252

Report No. EXR/304614 (Ver. 2)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 12-Jun-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 30-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

Operations Manager
Energy & Waste Services

Date of Issue: 30-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304614

Consignment No W172615
Date Logged 12-Jun-2020
In-House Report Due 22-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ICPWATVAR	Potassium as K (Dissolved) VAR		➤											
	Sodium as Na (Dissolved) VAR		➤											
	Magnesium as Mg (Dissolved) VAR		➤											
	Calcium as Ca (Dissolved) VAR		➤											
	Total Sulphur as SO4 (Diss) VAR		➤											
ICPMSW	Selenium as Se MS (Dissolved)		➤											
	Mercury as Hg MS (Dissolved)		➤											
	Arsenic as As MS (Dissolved)		➤											
	Zinc as Zn MS (Dissolved)		➤											
	Lead as Pb MS (Dissolved)		➤											
	Copper as Cu MS (Dissolved)		➤											
	Cadmium as Cd MS (Dissolved)		➤											
	Chromium as Cr MS (Dissolved)		➤											
	Nickel as Ni MS (Dissolved)		➤											
GROHSA	GRO-HSA GCFID (AA)													
FNH3CALC	Ammonia (Free) as N calc													
CUSTSERV	Report A													
CALCNH4	Ammoniacal Nitrogen as NH4 Calc		➤											
MethodID	Sampled			09/06/20										
	Matrix Type													
Description			Groundwater			EX/2063983	1-259	6.00						
			Groundwater			EX/2063984	1-542	18.00						
			Groundwater			EX/2063985	1-237	6.00						
			Groundwater			EX/2063986	1-237	18.00						
			Groundwater			EX/2063987	1-235	8.00						

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304614

Consignment No W172615
Date Logged 12-Jun-2020
In-House Report Due 22-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID	ICPWATVAR		KONENS	PAHMSW	PHEPLCVL	SFAPI	SFAS	TPHFID-SI	WSLM13	WSLM20	WSLM3
					Biochemical Oxygen Demand	pH units								Temperature C°	
EX/2063983	1-259 6.00	Groundwater	09/06/20												
EX/2063984	1-542 18.00	Groundwater	09/06/20											E	
EX/2063985	1-237 6.00	Groundwater	09/06/20					E						E	
EX/2063986	1-237 18.00	Groundwater	09/06/20					E						E	
EX/2063987	1-235 8.00	Groundwater	09/06/20					E						E	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A The sample was received in an inappropriate container for this analysis

B The sample was received without the correct preservation for this analysis

C Headspace present in the sample container

D The sampling date was not supplied so holding time may be compromised - applicable to all analysis

E Sample processing did not commence within the appropriate holding time

F Sample processing did not commence within the appropriate handling time

Requested Analysis Key

Analysis Required

Analysis dependant upon trigger result - Note: due date may be affected if triggered

No analysis scheduled

Analysis Subcontracted - Note: due date may vary

^

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2063983-3985, 3987	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
WSLM20	EX2063986	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the raw data falls outside of the capability of the instrumentation. The non-accredited value is given but should be used for guidance only.
PAHMSW	EX2063983 TO EX2063987	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Acenaphthene) . These circumstances should be taken into consideration when utilising the data.
PAHMSW	EX2063983 TO EX2063987	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Acenaphthylene) . These circumstances should be taken into consideration when utilising the data.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▯ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4614

TEST REPORT



Report No. EXR/304617 (Ver. 1)

SOCOTEC UK Wokingham
Socotec Wokingham
Glossop House
Hogwood Ln
Finchampstead
Hogwood Industrial Estate
Wokingham
RG40 4QW

Site: D9008-19 M25 Jct 10

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 12-Jun-2020. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 26-Jun-2020

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Analytical and Deviating Sample Overview (Pages 7 to 8)
Table of Additional Report Notes (Page 9)
Table of Method Descriptions (Page 10)
Table of Report Notes (Page 11)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim
Becky Batham

A handwritten signature in blue ink, appearing to read 'RBA'.

Operations Manager
Energy & Waste Services

Date of Issue: 26-Jun-2020

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.

SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

[illegible]

[illegible]

[illegible]

[illegible]

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304617

Consignment No W172587
Date Logged 12-Jun-2020
In-House Report Due 22-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ICPWATVAR	Potassium as K (Dissolved) VAR	✓														
	Sodium as Na (Dissolved) VAR	✓														
	Magnesium as Mg (Dissolved) VAR	✓														
	Calcium as Ca (Dissolved) VAR	✓														
	Total Sulphur as SO4 (Diss) VAR	✓														
ICPMSW	Selenium as Se MS (Dissolved)	✓														
	Mercury as Hg MS (Dissolved)	✓														
	Arsenic as As MS (Dissolved)	✓														
	Zinc as Zn MS (Dissolved)	✓														
	Lead as Pb MS (Dissolved)	✓														
	Copper as Cu MS (Dissolved)	✓														
	Cadmium as Cd MS (Dissolved)	✓														
	Chromium as Cr MS (Dissolved)	✓														
	Nickel as Ni MS (Dissolved)	✓														
GROHSA	GRO-HSA GCFID (AA)															
FNH3CALC	Ammonia (Free) as N calc															
CUSTSERV	Report A															
CALCNH4	Ammoniacal Nitrogen as NH4 Calc	✓	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF
MethodID	Sampled		08/06/20	08/06/20	08/06/20	08/06/20	08/06/20	08/06/20	08/06/20	08/06/20	08/06/20	08/06/20	08/06/20	08/06/20	08/06/20	08/06/20
	Matrix Type															
Description			1-390 (D) 20.00	1-390 (S) 06.00	1-363 A 15.00	1-210 08.00	1-911 20.00									
ID Number			EX/2063995	EX/2063996	EX/2063997	EX/2063998	EX/2063999									

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key					
A	The sample was received in an inappropriate container for this analysis				
B	The sample was received without the correct preservation for this analysis				
C	Headpace present in the sample container				
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis				
E	Sample processing did not commence within the appropriate holding time				
F	Sample processing did not commence within the appropriate handling time				
Requested Analysis Key					
	Analysis Required				
	Analysis dependant upon trigger result - Note: due date may be affected if triggered				
	No analysis scheduled				
	Analysis Subcontracted - Note: due date may vary				
	^				

Customer SOCOTEC UK Wokingham
Site D9008-19 M25 Jct 10
Report No W304617

Consignment No W172587
Date Logged 12-Jun-2020
In-House Report Due 22-Jun-2020

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Matrix Type	Sampled	MethodID		ICPWATVAR		KONENS	PAHMSW		PHEHPLCVL	SFAPI		SFAS	TPHFID-Si	WSLM13		WSLM20	WSLM3	
EX/2063995	1-390 (D) 20.00	Groundwater	08/06/20					✓		✓	EF	✓	✓	✓	✓	✓		✓		✓
EX/2063996	1-390 (S) 06.00	Groundwater	08/06/20					✓		✓	EF						E			
EX/2063997	1-363 A 15.00	Groundwater	08/06/20					✓		✓	EF						E			
EX/2063998	1-210 08.00	Groundwater	08/06/20					✓		✓	EF						E			
EX/2063999	1-911 20.00	Groundwater	08/06/20					✓		✓	EF						E			

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headpace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time
Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
^	Analysis Subcontracted - Note: due date may vary

Report Number : W/EXR/304617

Additional Report Notes

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM20	EX2063996-3998	Based on the sample history/appearance/smell, a dilution was applied prior to testing. Unfortunately the result is below our lower range for this sample volume, therefore the detection limit has been raised.
PAHMSW	EX2063995-3998	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Acenaphthene) . These circumstances should be taken into consideration when utilising the data.
PAHMSW	EX2063995-3998	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (Acenaphthylene) . These circumstances should be taken into consideration when utilising the data.

Where individual results are flagged see report notes for status.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH ₄ , calculated from Ammoniacal Nitrogen expressed as N
Water	FNH3CALC	As Received	Calculation of Free Ammonia from Ammonium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-dispersive IR detection
Water	WSLM20	As Received	Determination of Biological Oxygen Demand using 5 day incubation and dissolved oxygen probe
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm³@ 15°C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile

TR Denotes Tremolite

CR Denotes Crocidolite

AC Denotes Actinolite

AM Denotes Amosite

AN Denotes Anthophyllite

NAIIS No Asbestos Identified in Sample

NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined

N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

▮ Raised detection limit due to nature of the sample

* All accreditation has been removed by the laboratory for this result

‡ MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Wokingham

Site : D9008-19 M25 Jct 10

Report Number : W30_4617

Appendix B. Laboratory Certificates

Laboratory certificates available on request

Appendix C. Controlled Waters GQRA Screening

Metal

Back

Calculate

Clear Data

Input Data (mg/l)			RESULTS (Copper)		RESULTS (Zinc)		RESULTS (Manganese)		RESULTS (Nickel)		RESULTS (Lead)	
pH	DOC	Ca	Site-specific PNEC Dissolved Copper ($\mu\text{g l}^{-1}$)	BioF	Site-specific PNEC Dissolved Zinc ($\mu\text{g l}^{-1}$)	BioF	Site-specific PNEC Dissolved Manganese ($\mu\text{g l}^{-1}$)	BioF	Site-specific PNEC Dissolved Nickel ($\mu\text{g l}^{-1}$)	BioF	Site-specific PNEC Dissolved Nickel ($\mu\text{g l}^{-1}$)	BioF
7.3	12.5	54.5	54.56	0.02	46.58	0.23	489.16	0.25	24.22	0.17	14.80	

Soil-derived leachate EQS-f

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Dissolved Organic Carbon	mg/l	0.1	100		0	0.28	5.1472	27	
DissolvedOrganicCarbon	mg/l	0.1	2		0	2.1	3.95	5.8	
Conductivity uS/cm @ 25C	uS/cm	100	102		0	100	151.990196	2150	
ConductivityuS/cm@25C	uS/cm	100	2		0	100	107.5	115	
Total Dissolved Solids	mg/l	60	5		0	60	79.1	155	
Total dissolved solids	mg/l	5	3		0	60	118.333333	200	
Total Organic Carbon	mg/l	0.1	83		0	0.28	5.07746988	24	
TotalOrganicCarbon	mg/l	0.1	2		0	2.1	3.95	5.8	
Ammoniacal Nitrogen as N	mg/l	0.01	102	0.2	13	0.01	0.17098039	2.9	1-105A, 1-212, 1-217, 1-237, 1-239, 1-246, 1-408, 1-508, 1-748, 1-903
AmmoniacalNitrogenasN	mg/l	0.01	2	0.2	1	0.04	0.32	0.6	1-367
Chloride as Cl	mg/l	1	101	250	0	1	6.66336634	62	
ChlorideasCl	mg/l	1	2	250	0	1	1.5	2	
Cyanide (Free) as CN	mg/l	0.02	102	0.001	2	0.02	0.02	0.02	1-260, 1-537
Cyanide(Free)asCN	mg/l	0.02	2	0.001	0	0.02	0.02	0.02	
Cyanide (Total) as CN	mg/l	0.02	102		0	0.02	0.02892157	0.93	
Cyanide(Total)asCN	mg/l	0.02	2		0	0.02	0.02	0.02	
Fluoride as F	mg/l	0.1	1	1	0	0.1	0.1	0.1	
Phosphate as P	mg/l	0.01	102		0	0.01	0.02833333	0.68	
PhosphateasP	mg/l	0.01	2		0	0.01	0.135	0.26	
Sulphide (Free) as S	mg/l	0.05	102		0	0.01	0.0227451	0.22	
Sulphide(Free)asS	mg/l	0.02	2		0	0.02	0.02	0.02	
TotalSulphurasSO4(Dissolved)	mg/l	3	2		0	3	13	23	
pH units	pH Units		104		45	4.5	6.44807692	11.8	1-107, 1-136, 1-147, 1-149, 1-166, 1-169, 1-174, 1-182, 1-183, 1-184, 1-191, 1-207, 1-210, 1-239, 1-252, 1-255, 1-257, 1-265, 1-270, 1-291, 1-301, 1-306, 1-312, 1-327, 1-395, 1-401, 1-527, 1-529, 1-537, 1-541, 1-

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
									542, 1-555, 1-706, 1-726, 1-737, 1-741, 1-901, 1-903, 1-945, 1-950
Phosphorus as P (Dissolved)	mg/l	0.1	102		0	0.1	0.11176471	0.8	
Phosphorus as P (Dissolved)	mg/l	0.1	2		0	0.1	0.2	0.3	
Total Sulphur as SO ₄ (Dissolved)	mg/l	3	102	400	0	3	15.4117647	237	
Antimony as Sb (Dissolved)	mg/l	0.001	102		0	0.001	0.00131373	0.017	
Antimony as Sb (Dissolved)	mg/l	0.001	2		0	0.001	0.001	0.001	
Arsenic as As (Dissolved)	mg/l	0.001	102	0.05	0	0.001	0.00143137	0.011	
Arsenic as As (Dissolved)	mg/l	0.001	2	0.05	0	0.001	0.0015	0.002	
Barium as Ba (Dissolved)	mg/l	0.01	102		0	0.01	0.01480392	0.1	
Barium as Ba (Dissolved)	mg/l	0.01	2		0	0.01	0.015	0.02	
Beryllium as Be (Dissolved)	mg/l	0.01	102		0	0.01	0.01	0.01	
Beryllium as Be (Dissolved)	mg/l	0.01	2		0	0.01	0.01	0.01	
Boron as B (Dissolved)	mg/l	0.01	102	2	0	0.01	0.03166667	0.39	
Boron as B (Dissolved)	mg/l	0.01	2	2	0	0.01	0.01	0.01	
Cadmium as Cd (Dissolved)	mg/l	0.0001	102	0.00009	17	0.00002	0.00014333	0.0022	1-149, 1-191, 1-212, 1-257, 1-258, 1-265, 1-291, 1-395, 1-401, 1-405, 1-529, 1-555, 1-903, 1-949A
Cadmium as Cd (Dissolved)	mg/l	0.0001	2	0.00008	1	0.0001	0.0001	0.0001	1-314
Calcium as Ca (Dissolved)	mg/l	1	102		0	1	8.26470588	59	
Calcium as Ca (Dissolved)	mg/l	1	2		0	10	12	14	
Chromium as Cr (Dissolved)	mg/l	0.001	102		0	0.001	0.00162745	0.021	
Chromium as Cr (Dissolved)	mg/l	0.001	2		0	0.001	0.001	0.001	
Chromium (III)	mg/l	0.003	4	0.0047	0	0.003	0.003	0.003	
Chromium III as Cr	mg/l	0.003	88	0.0047	0	0.003	0.003	0.003	
Chromium III as Cr	mg/l	0.003	88	0.0047	0	0.003	0.003	0.003	
Chromium III as Cr	mg/l	0.003	2	0.0047	0	0.003	0.003	0.003	
Trivalent Chromium	mg/l	0.003	1	0.0047	0	0.004	0.004	0.004	
Chromium VI as Cr	mg/l	0.01	102	0.0034	3	0.003	0.00347059	0.021	1-239, 1-309, 1-382

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
ChromiumVlasCr	mg/l	0.003	2	0.0034	0	0.003	0.003	0.003	
Cobalt as Co (Dissolved)	mg/l	0.001	102	0.003	16	0.001	0.00268627	0.031	1-105A, 1-149, 1-191, 1-210, 1-212, 1-217, 1-255, 1-405, 1-529, 1-555, 1-706, 1-719, 1-741, 1-903
CobaltasCo(Dissolved)	mg/l	0.001	2	0.003	0	0.001	0.001	0.001	
Copper as Cu (Dissolved)	mg/l	0.001	102	0.001	37	0.001	0.00221569	0.024	1-107, 1-136, 1-166, 1-169, 1-170, 1-174, 1-180, 1-183, 1-212, 1-225, 1-239, 1-252, 1-257, 1-258, 1-260, 1-270, 1-291, 1-309, 1-312, 1-335, 1-346, 1-363A, 1-376, 1-382, 1-390, 1-392, 1-410, 1-537, 1-542, 1-706, 1-719, 1-950
CopperasCu(Dissolved)	mg/l	0.001	2	0.001	0	0.001	0.001	0.001	
Iron as Fe (Dissolved)	mg/l	0.01	102	1	1	0.01	0.20313725	1.73	1-312
IronasFe(Dissolved)	mg/l	0.01	2	1	0	0.29	0.325	0.36	
Lead as Pb (Dissolved)	mg/l	0.001	102	0.0012	15	0.001	0.00160784	0.015	1-136, 1-149, 1-257, 1-291, 1-309, 1-312, 1-346, 1-376, 1-382, 1-390, 1-529, 1-537, 1-706, 1-715, 1-949A
LeadasPb(Dissolved)	mg/l	0.001	2	0.0012	0	0.001	0.001	0.001	
Magnesium as Mg (Dissolved)	mg/l	1	102		0	1	1.39215686	12	
MagnesiumasMg(Dissolved)	mg/l	1	2		0	1	1.5	2	
Manganese as Mn (Dissolved)	mg/l	0.002	102	0.123	7	0.002	0.05507843	2.35	1-149, 1-217, 1-237, 1-246, 1-398, 1-903
ManganesesMn(Dissolved)	mg/l	0.002	2	0.123	1	0.005	0.1195	0.234	1-367
Mercury as Hg (Dissolved)	mg/l	0.0001	102	0.00007	1	0.00003	8.3333E-05	0.00013	1-147
MercuryasHg(Dissolved)	mg/l	0.0001	2	0.00007	0	0.0001	0.0001	0.0001	
Molybdenum as Mo (Dissolved)	mg/l	0.001	102		0	0.001	0.00145098	0.028	
MolybdenumasMo(Dissolved)	mg/l	0.001	2		0	0.001	0.0015	0.002	
Nickel as Ni (Dissolved)	mg/l	0.001	102	0.004	13	0.001	0.00266667	0.029	1-149, 1-191, 1-210, 1-239, 1-255, 1-306, 1-408, 1-410, 1-529, 1-555, 1-903
NickelasNi(Dissolved)	mg/l	0.001	2	0.004	0	0.001	0.0015	0.002	
Potassium as K (Dissolved)	mg/l	1	102		0	1	1.90196078	31	
PotassiumasK(Dissolved)	mg/l	1	2		0	1	1.5	2	
Selenium as Se (Dissolved)	mg/l	0.001	102		0	0.001	0.00102941	0.004	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Selenium as Se (Dissolved)	mg/l	0.001	2		0	0.001	0.001	0.001	
Sodium as Na (Dissolved)	mg/l	1	102		0	1	5.10784314	59	
Sodium as Na (Dissolved)	mg/l	1	2		0	2	2.5	3	
Tin as Sn (Dissolved)	mg/l	0.001	102	0.025	0	0.001	0.001	0.001	
Tin as Sn (Dissolved)	mg/l	0.001	2	0.025	0	0.001	0.001	0.001	
Vanadium as V (Dissolved)	mg/l	0.001	102	0.02	4	0.001	0.00287255	0.065	1-107, 1-169, 1-212, 1-252
Vanadium as V (Dissolved)	mg/l	0.001	2	0.02	0	0.001	0.001	0.001	
Zinc as Zn (Dissolved)	mg/l	0.002	102	0.0123	34	0.002	0.01228431	0.057	1-149, 1-181, 1-182, 1-183, 1-184, 1-191, 1-237, 1-246, 1-257, 1-258, 1-270, 1-291, 1-301, 1-306, 1-309, 1-346, 1-382, 1-401, 1-405, 1-408, 1-410, 1-529, 1-555, 1-715, 1-719, 1-741, 1-901, 1-903, 1-949A, 1-950
Zinc as Zn (Dissolved)	mg/l	0.002	2	0.0123	0	0.002	0.003	0.004	
Dimethylphenols	mg/l	0.05	104		0	0.0005	0.0011125	0.05	
Phenol Index	mg/l	0.05	2		0	0.05	0.05	0.05	
Total Phenols	mg/l	0.2	1		0	0.2	0.2	0.2	
Trimethylphenols	mg/l	0.05	104		0	0.0005	0.00155192	0.0503	
Phenol	mg/l	0.05	104	0.0077	17	0.0005	0.00516731	0.05	1-170, 1-181, 1-212, 1-239, 1-246, 1-252, 1-261, 1-335, 1-339B, 1-376, 1-390, 1-410, 1-508, 1-748, 1-948
Cresols	mg/l	0.0005	103		0	0.0005	0.00081553	0.0288	
Methylphenols	mg/l	0.05	1		0	0.05	0.05	0.05	

Soil-derived leachate DWS

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Dissolved Organic Carbon	mg/l	0.1	100		0	0.28	5.1472	27	
Dissolved Organic Carbon	mg/l	0.1	2		0	2.1	3.95	5.8	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Conductivity uS/cm @ 25C	uS/cm	100	102		0	100	151.990196	2150	
ConductivityuS/cm@25C	uS/cm	100	2		0	100	107.5	115	
Total Dissolved Solids	mg/l	60	5		0	60	79.1	155	
Total dissolved solids	mg/l	5	3		0	60	118.333333	200	
Total Organic Carbon	mg/l	0.1	83		0	0.28	5.07746988	24	
TotalOrganicCarbon	mg/l	0.1	2		0	2.1	3.95	5.8	
Ammoniacal Nitrogen as N	mg/l	0.01	102	0.39	9	0.01	0.17098039	2.9	1-212, 1-217, 1-237, 1-246, 1-508, 1-903
AmmoniacalNitrogenasN	mg/l	0.01	2	0.39	1	0.04	0.32	0.6	1-367
Chloride as Cl	mg/l	1	101	250	0	1	6.66336634	62	
ChlorideasCl	mg/l	1	2	250	0	1	1.5	2	
Cyanide (Free) as CN	mg/l	0.02	102		0	0.02	0.02	0.02	
Cyanide(Free)asCN	mg/l	0.02	2		0	0.02	0.02	0.02	
Cyanide (Total) as CN	mg/l	0.02	102	0.05	1	0.02	0.02892157	0.93	1-537
Cyanide(Total)asCN	mg/l	0.02	2	0.05	0	0.02	0.02	0.02	
Fluoride as F	mg/l	0.1	1	1.5	0	0.1	0.1	0.1	
Phosphate as P	mg/l	0.01	102		0	0.01	0.02833333	0.68	
PhosphateasP	mg/l	0.01	2		0	0.01	0.135	0.26	
Sulphide (Free) as S	mg/l	0.05	102		0	0.01	0.0227451	0.22	
Sulphide(Free)asS	mg/l	0.02	2		0	0.02	0.02	0.02	
TotalSulphurasSO4(Dissolved)	mg/l	3	2		0	3	13	23	
pH units	pH Units		104		67	4.5	6.44807692	11.8	1-107, 1-136, 1-147, 1-149, 1-169, 1-174, 1-175, 1-181, 1-182, 1-183, 1-184, 1-191, 1-207, 1-210, 1-217, 1-237, 1-239, 1-246, 1-252, 1-255, 1-257, 1-261, 1-265, 1-270, 1-291, 1-301, 1-306, 1-312, 1-318, 1-327, 1-339, 1-339B, 1-382, 1-392, 1-395, 1-401, 1-405, 1-408, 1-508, 1-527, 1-529, 1-537, 1-541, 1-542, 1-555, 1-706, 1-726, 1-737, 1-741, 1-748, 1-901, 1-903, 1-945, 1-949A, 1-950
Phosphorus as P (Dissolved)	mg/l	0.1	102		0	0.1	0.11176471	0.8	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Phosphorus as P (Dissolved)	mg/l	0.1	2		0	0.1	0.2	0.3	
Total Sulphur as SO ₄ (Dissolved)	mg/l	3	102	250	0	3	15.4117647	237	
Antimony as Sb (Dissolved)	mg/l	0.001	102	0.005	2	0.001	0.00131373	0.017	1-212, 1-309
Antimony as Sb (Dissolved)	mg/l	0.001	2	0.005	0	0.001	0.001	0.001	
Arsenic as As (Dissolved)	mg/l	0.001	102	0.01	1	0.001	0.00143137	0.011	1-212
Arsenic as As (Dissolved)	mg/l	0.001	2	0.01	0	0.001	0.0015	0.002	
Barium as Ba (Dissolved)	mg/l	0.01	102	1.3	0	0.01	0.01480392	0.1	
Barium as Ba (Dissolved)	mg/l	0.01	2	1.3	0	0.01	0.015	0.02	
Beryllium as Be (Dissolved)	mg/l	0.01	102	0.012	0	0.01	0.01	0.01	
Beryllium as Be (Dissolved)	mg/l	0.01	2	0.012	0	0.01	0.01	0.01	
Boron as B (Dissolved)	mg/l	0.01	102	1	0	0.01	0.03166667	0.39	
Boron as B (Dissolved)	mg/l	0.01	2	1	0	0.01	0.01	0.01	
Cadmium as Cd (Dissolved)	mg/l	0.0001	102	0.005	0	0.00002	0.00014333	0.0022	
Cadmium as Cd (Dissolved)	mg/l	0.0001	2	0.005	0	0.0001	0.0001	0.0001	
Calcium as Ca (Dissolved)	mg/l	1	102		0	1	8.26470588	59	
Calcium as Ca (Dissolved)	mg/l	1	2		0	10	12	14	
Chromium as Cr (Dissolved)	mg/l	0.001	102	0.05	0	0.001	0.00162745	0.021	
Chromium as Cr (Dissolved)	mg/l	0.001	2	0.05	0	0.001	0.001	0.001	
Chromium (III)	mg/l	0.003	4		0	0.003	0.003	0.003	
Chromium III as Cr	mg/l	0.003	88		0	0.003	0.003	0.003	
Chromium III as Cr	mg/l	0.003	88		0	0.003	0.003	0.003	
Chromium III as Cr	mg/l	0.003	2		0	0.003	0.003	0.003	
Trivalent Chromium	mg/l	0.003	1		0	0.004	0.004	0.004	
Chromium VI as Cr	mg/l	0.01	102		0	0.003	0.00347059	0.021	
Chromium VI as Cr	mg/l	0.003	2		0	0.003	0.003	0.003	
Cobalt as Co (Dissolved)	mg/l	0.001	102		0	0.001	0.00268627	0.031	
Cobalt as Co (Dissolved)	mg/l	0.001	2		0	0.001	0.001	0.001	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Copper as Cu (Dissolved)	mg/l	0.001	102	2	0	0.001	0.00221569	0.024	
CopperasCu(Dissolved)	mg/l	0.001	2	2	0	0.001	0.001	0.001	
Iron as Fe (Dissolved)	mg/l	0.01	102	0.2	36	0.01	0.20313725	1.73	1-105A, 1-136, 1-169, 1-170, 1-174, 1-183, 1-184, 1-207, 1-217, 1-246, 1-252, 1-258, 1-260, 1-291, 1-309, 1-312, 1-328, 1-335, 1-363A, 1-376, 1-390, 1-392, 1-398, 1-410, 1-508, 1-527, 1-706, 1-715, 1-748, 1-903
IronasFe(Dissolved)	mg/l	0.01	2	0.2	2	0.29	0.325	0.36	1-314, 1-367
Lead as Pb (Dissolved)	mg/l	0.001	102	0.01	2	0.001	0.00160784	0.015	1-149, 1-309
LeadasPb(Dissolved)	mg/l	0.001	2	0.01	0	0.001	0.001	0.001	
Magnesium as Mg (Dissolved)	mg/l	1	102		0	1	1.39215686	12	
MagnesiumasMg(Dissolved)	mg/l	1	2		0	1	1.5	2	
Manganese as Mn (Dissolved)	mg/l	0.002	102	0.05	12	0.002	0.05507843	2.35	1-105A, 1-149, 1-217, 1-237, 1-246, 1-306, 1-398, 1-401, 1-408, 1-903
ManganesesasMn(Dissolved)	mg/l	0.002	2	0.05	1	0.005	0.1195	0.234	1-367
Mercury as Hg (Dissolved)	mg/l	0.0001	102	0.001	0	0.00003	8.3333E-05	0.00013	
MercuryasHg(Dissolved)	mg/l	0.0001	2	0.001	0	0.0001	0.0001	0.0001	
Molybdenum as Mo (Dissolved)	mg/l	0.001	102	0.07	0	0.001	0.00145098	0.028	
MolybdenumasMo(Dissolved)	mg/l	0.001	2	0.07	0	0.001	0.0015	0.002	
Nickel as Ni (Dissolved)	mg/l	0.001	102	0.02	1	0.001	0.00266667	0.029	1-149
NickelasNi(Dissolved)	mg/l	0.001	2	0.02	0	0.001	0.0015	0.002	
Potassium as K (Dissolved)	mg/l	1	102		0	1	1.90196078	31	
PotassiumasK(Dissolved)	mg/l	1	2		0	1	1.5	2	
Selenium as Se (Dissolved)	mg/l	0.001	102	0.01	0	0.001	0.00102941	0.004	
SeleniumasSe(Dissolved)	mg/l	0.001	2	0.01	0	0.001	0.001	0.001	
Sodium as Na (Dissolved)	mg/l	1	102	200	0	1	5.10784314	59	
SodiumasNa(Dissolved)	mg/l	1	2	200	0	2	2.5	3	
Tin as Sn (Dissolved)	mg/l	0.001	102		0	0.001	0.001	0.001	
TinasSn(Dissolved)	mg/l	0.001	2		0	0.001	0.001	0.001	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Vanadium as V (Dissolved)	mg/l	0.001	102		0	0.001	0.00287255	0.065	
VanadiumasV(Dissolved)	mg/l	0.001	2		0	0.001	0.001	0.001	
Zinc as Zn (Dissolved)	mg/l	0.002	102	3	0	0.002	0.01228431	0.057	
ZincasZn(Dissolved)	mg/l	0.002	2	3	0	0.002	0.003	0.004	
Dimethylphenols	mg/l	0.05	104		0	0.0005	0.0011125	0.05	
Phenol Index	mg/l	0.05	2		0	0.05	0.05	0.05	
Total Phenols	mg/l	0.2	1		0	0.2	0.2	0.2	
Trimethylphenols	mg/l	0.05	104		0	0.0005	0.00155192	0.0503	
Phenol	mg/l	0.05	104	0.05	0	0.0005	0.00516731	0.05	
Cresols	mg/l	0.0005	103		0	0.0005	0.00081553	0.0288	
Methylphenols	mg/l	0.05	1		0	0.05	0.05	0.05	

Project Overview		Project Details		Project Status		Project History		Project Summary		Project Notes		Project Comments		Project Actions		Project Results		Project Metrics		Project Analysis		Project Conclusions		Project Recommendations		Project Next Steps		Project Follow-up		Project Review		Project Evaluation		Project Feedback		Project Improvement		Project Optimization		Project Innovation		Project Creativity		Project Collaboration		Project Communication		Project Coordination		Project Organization		Project Management		Project Leadership		Project Teamwork		Project Productivity		Project Efficiency		Project Effectiveness		Project Impact		Project Influence		Project Legacy		Project Future		Project Vision		Project Mission		Project Values		Project Principles		Project Ethics		Project Integrity		Project Honesty		Project Trust		Project Respect		Project Responsibility		Project Accountability		Project Transparency		Project Openness		Project Inclusivity		Project Diversity		Project Equality		Project Justice		Project Fairness		Project Equity		Project Sustainability		Project Resilience		Project Adaptability		Project Flexibility		Project Agility		Project Scalability		Project Growth		Project Development		Project Progress		Project Completion		Project Success		Project Achievement		Project Fulfillment		Project Satisfaction		Project Happiness		Project Well-being		Project Quality of Life		Project Life Satisfaction		Project Life Purpose		Project Life Meaning		Project Life Joy		Project Life Love		Project Life Hope		Project Life Faith		Project Life Spirituality		Project Life Religion		Project Life Culture		Project Life Tradition		Project Life Heritage		Project Life Identity		Project Life Belonging		Project Life Connection		Project Life Community		Project Life Society		Project Life Nation		Project Life World		Project Life Universe		Project Life Cosmos		Project Life Galaxy		Project Life Planet		Project Life Earth		Project Life Ocean		Project Life Land		Project Life Air		Project Life Fire		Project Life Energy		Project Life Matter		Project Life Force		Project Life Power		Project Life Strength		Project Life Courage		Project Life Bravery		Project Life Confidence		Project Life Self-esteem		Project Life Self-worth		Project Life Self-respect		Project Life Self-love		Project Life Self-care		Project Life Self-improvement		Project Life Self-actualization		Project Life Self-fulfillment		Project Life Self-achievement		Project Life Self-satisfaction		Project Life Self-happiness		Project Life Self-well-being		Project Life Self-quality of life		Project Life Self-life satisfaction		Project Life Self-life purpose		Project Life Self-life meaning		Project Life Self-life joy		Project Life Self-life love		Project Life Self-life hope		Project Life Self-life faith		Project Life Self-life spirituality		Project Life Self-life religion		Project Life Self-life culture		Project Life Self-life tradition		Project Life Self-life heritage		Project Life Self-life identity		Project Life Self-life belonging		Project Life Self-life connection		Project Life Self-life community		Project Life Self-life society		Project Life Self-life nation		Project Life Self-life world		Project Life Self-life universe		Project Life Self-life galaxy		Project Life Self-life planet		Project Life Self-life earth		Project Life Self-life ocean		Project Life Self-life land		Project Life Self-life air		Project Life Self-life fire		Project Life Self-life energy		Project Life Self-life matter		Project Life Self-life force		Project Life Self-life power		Project Life Self-life strength		Project Life Self-life courage		Project Life Self-life bravery		Project Life Self-life confidence		Project Life Self-life self-esteem		Project Life Self-life self-worth		Project Life Self-life self-respect		Project Life Self-life self-love		Project Life Self-life self-care		Project Life Self-life self-improvement		Project Life Self-life self-actualization		Project Life Self-life self-fulfillment		Project Life Self-life self-achievement		Project Life Self-life self-satisfaction		Project Life Self-life self-happiness		Project Life Self-life self-well-being		Project Life Self-life self-quality of life		Project Life Self-life self-life satisfaction		Project Life Self-life self-life purpose		Project Life Self-life self-life meaning		Project Life Self-life self-life joy		Project Life Self-life self-life love		Project Life Self-life self-life hope		Project Life Self-life self-life faith		Project Life Self-life self-life spirituality		Project Life Self-life self-life religion		Project Life Self-life self-life culture		Project Life Self-life self-life tradition		Project Life Self-life self-life heritage		Project Life Self-life self-life identity		Project Life Self-life self-life belonging		Project Life Self-life self-life connection		Project Life Self-life self-life community		Project Life Self-life self-life society		Project Life Self-life self-life nation		Project Life Self-life self-life world		Project Life Self-life self-life universe		Project Life Self-life self-life galaxy		Project Life Self-life self-life planet		Project Life Self-life self-life earth		Project Life Self-life self-life ocean		Project Life Self-life self-life land		Project Life Self-life self-life air		Project Life Self-life self-life fire		Project Life Self-life self-life energy		Project Life Self-life self-life matter		Project Life Self-life self-life force		Project Life Self-life self-life power		Project Life Self-life self-life strength		Project Life Self-life self-life courage		Project Life Self-life self-life bravery		Project Life Self-life self-life confidence		Project Life Self-life self-life self-esteem		Project Life Self-life self-life self-worth		Project Life Self-life self-life self-respect		Project Life Self-life self-life self-love		Project Life Self-life self-life self-care		Project Life Self-life self-life self-improvement		Project Life Self-life self-life self-actualization		Project Life Self-life 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self-life belonging		Project Life Self-life self-life self-life connection		Project Life Self-life self-life self-life community		Project Life Self-life self-life self-life society		Project Life Self-life self-life self-life nation		Project Life Self-life self-life self-life world		Project Life Self-life self-life self-life universe		Project Life Self-life self-life self-life galaxy		Project Life Self-life self-life self-life planet		Project Life Self-life self-life self-life earth		Project Life Self-life self-life self-life ocean		Project Life Self-life self-life self-life land		Project Life Self-life self-life self-life air		Project Life Self-life self-life self-life fire		Project Life Self-life self-life self-life energy		Project Life Self-life self-life self-life matter		Project Life Self-life self-life self-life force		Project Life Self-life self-life self-life power		Project Life Self-life self-life self-life strength		Project Life Self-life self-life self-life courage		Project 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purpose		Project Life Self-life self-life self-life self-life meaning		Project Life Self-life self-life self-life self-life joy		Project Life Self-life self-life self-life self-life love		Project Life Self-life self-life self-life self-life hope		Project Life Self-life self-life self-life self-life faith		Project Life Self-life self-life self-life self-life spirituality		Project Life Self-life self-life self-life self-life religion		Project Life Self-life self-life self-life self-life culture		Project Life Self-life self-life self-life self-life tradition		Project Life Self-life self-life self-life self-life heritage		Project Life Self-life self-life self-life self	
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[illegible]

EQS-f groundwater screening summary sheet

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Dissolved Organic Carbon	mg/l	0.1	117		0	0.29	10.9040	360	
Biochemical Oxygen Demand	mg/l	28.5	117		0	1	9.4650	193.3	
Total Organic Carbon	mg/l	0.2	117		0	0.2	11.1997	360	
Ammoniacal Nitrogen as NH3	mg/l	0.01	27	0.25	4	0.01	0.1467	0.77	1-516, 1-147, 1-542, 1-346
Ammoniacal Nitrogen as N	mg/l	0.01	117	0.2	22	0.01	0.4138	4.5	1-410, 1-212, 1-217, 1-516, 1-259, 1-508, 1-390, 1-147, 1-542, 1-181, 1-207, 1-346
Ammoniacal Nitrogen as NH4	mg/l	0.01	111	0.26	22	0.01	0.5546	5.79	1-410, 1-212, 1-217, 1-516, 1-259, 1-508, 1-390, 1-147, 1-542, 1-181, 1-207, 1-346
Chloride as Cl	mg/l	1	117	250	18	6	133.2991	909	1-410, 1-147, 1-390, 1-181, 1-318, 1-911, 1-152
Cyanide (Free) as CN	mg/l	0.2	117	0.001	0	0.02	0.0215	0.2	
Cyanide (Total) as CN	mg/l	0.02	117		0	0.02	0.1553	15.8	
Sulphide (Free) as S	mg/l	0.05	117		0	0.02	0.3368	8.89	
pH	pH Units		5		3	4.4	5.5200	6.1	1-147, 1-226, 1-542
pH units	pH units		112		76	3	5.0786	7.3	1-184, 1-410, 1-715, 1-147, 1-166, 1-226, 1-231, 1-212, 1-516, 1-541, 1-259, 1-509, 1-737, 1-181, 1-191, 1-203, 1-207, 1-363A, 1-390, 1-174, 1-235, 1-257, 1-182, 1-318, 1-542, 1-911, 1-341, 1-327
Total Sulphur as SO4 (Dissolved)	mg/l	30	112	400	1	3	84.5357	516	1-152
Ammonia (Free) as N	mg/l	0.1	90		0	0.01	0.0100	0.01	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Arsenic as As (Dissolved)	mg/l	0.001	117	0.05	0	0.001	0.0013	0.005	
Boron as B (Dissolved)	mg/l	0.1	117	2	0	0.01	0.0476	0.45	
Cadmium as Cd (Dissolved)	mg/l	0.0001	117	0.00009	55	0.00002	0.0007	0.02361	1-184, 1-410, 1-715, 1-147, 1-166, 1-226, 1-212, 1-541, 1-737, 1-181, 1-191, 1-203, 1-207, 1-390, 1-174, 1-318, 1-235, 1-363A, 1-911, 1-341
Calcium as Ca (Dissolved)	mg/l	1	117		0	1	32.8547	147	
Chromium as Cr (Dissolved)	mg/l	0.001	117		0	0.001	0.0021	0.015	
Chromium VI as Cr	mg/l	0.01	117	0.0034	2	0.003	0.00309402	0.009	1-203, 1-210
Copper as Cu (Dissolved)	mg/l	0.001	117	0.001	47	0.001	0.00326496	0.038	1-184, 1-715, 1-147, 1-226, 1-212, 1-516, 1-541, 1-509, 1-737, 1-181, 1-191, 1-203, 1-210, 1-390, 1-174, 1-166, 1-410, 1-318, 1-363A, 1-911, 1-207
Iron as Fe (Dissolved)	mg/l	0.01	112	1	45	0.01	7.62607143	75.9	1-182, 1-410, 1-147, 1-166, 1-212, 1-217, 1-508, 1-181, 1-257, 1-203, 1-207, 1-390, 1-184, 1-237, 1-509, 1-516, 1-542, 1-152, 1-259, 1-911
Lead as Pb (Dissolved)	mg/l	0.001	117	0.0012	18	0.001	0.00140171	0.021	1-715, 1-147, 1-509, 1-191, 1-203, 1-516, 1-390, 1-911, 1-207
Magnesium as Mg (Dissolved)	mg/l	1	117		0	1	15.2478632	67	
Mercury as Hg (Dissolved)	mg/l	0.0001	117	0.00007	0	0.00003	3.0171E-05	0.00005	
Nickel as Ni (Dissolved)	mg/l	0.001	117	0.004	103	0.001	0.05402564	0.696	1-182, 1-184, 1-410, 1-715, 1-147, 1-166, 1-226, 1-231, 1-212, 1-516, 1-541, 1-259, 1-508, 1-509, 1-737, 1-181, 1-257, 1-191, 1-203, 1-207, 1-210, 1-363A, 1-390, 1-174, 1-235, 1-237, 1-542, 1-152, 1-318, 1-911, 1-341, 1-346
Potassium as K (Dissolved)	mg/l	10	117		0	1	11.0342	38	
Selenium as Se (Dissolved)	mg/l	0.001	117		0	0.001	0.00111111	0.004	
Sodium as Na (Dissolved)	mg/l	10	117		0	6	64.5128205	347	
Zinc as Zn (Dissolved)	mg/l	0.002	117	0.0123	87	0.002	0.13336752	2.809	1-184, 1-410, 1-715, 1-147, 1-166, 1-226, 1-212, 1-516, 1-541, 1-259, 1-509, 1-737, 1-181, 1-257, 1-191, 1-203, 1-207, 1-210, 1-363A, 1-390, 1-174, 1-

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
									235, 1-152, 1-318, 1-542, 1-911, 1-341, 1-346, 1-182
2,4,6-Trichlorophenol	mg/l	0.1	11		0	0.02	0.03818182	0.1	
2,4-Dichlorophenol	mg/l	0.1	11	0.0042	0	0.02	0.03818182	0.1	
2-Chlorophenol	mg/l	0.1	11	0.05	0	0.02	0.03818182	0.1	
4-Chloro-3-methylphenol	mg/l	0.025	11	0.04	0	0.005	0.00954545	0.025	
4-Chlorophenol	mg/l	0.1	11	0.05	0	0.02	0.0382	0.1	
2,4,5-Trichlorophenol	mg/l	0.1	11		0	0.02	0.0382	0.1	
2,4-Dimethylphenol	mg/l	0.1	11		0	0.02	0.0382	0.1	
2,4-Dinitrophenol	mg/l	0.05	11		0	0.01	0.0191	0.05	
2-Methylphenol	mg/l	0.025	11		0	0.005	0.0095	0.025	
2-Nitrophenol	mg/l	0.1	11		0	0.02	0.0382	0.1	
3- & 4-Methylphenol	mg/l	0.1	11		0	0.02	0.0382	0.1	
4,6-Dinitro-2-methylphenol	mg/l	0.25	11		0	0.05	0.0955	0.25	
4-Nitrophenol	mg/l	0.25	11		0	0.05	0.0955	0.25	
Dimethylphenols	mg/l	0.05	117		0	0.0005	0.0044	0.05	
Total Phenols	mg/l	0.2	9		0	0.2	0.2000	0.2	
Trimethylphenols	mg/l	0.05	117		0	0.0005	0.0044	0.05	
Pentachlorophenol	mg/l	0.25	11	0.0004	0	0.05	0.0955	0.25	
Phenol	mg/l	0.1	128	0.0077	0	0.0005	0.0073	0.1	
Cresols	mg/l	0.0005	108		0	0.0005	0.0008	0.0235	
Methylphenols	mg/l	0.05	9		0	0.05	0.0500	0.05	
Benzene	mg/l	0.005	128	0.01	0	0.001	0.0047	0.005	
Ethyl Benzene	mg/l	0.005	128	0.02	0	0.001	0.0047	0.005	
m and p-Xylene	mg/l	0.01	128		0	0.001	0.0092	0.01	
o-Xylene	mg/l	0.005	128		0	0.001	0.0047	0.005	
Xylenes	mg/l	0.015	117	0.03	0	0.015	0.0150	0.015	
Toluene	mg/l	0.005	128	0.074	0	0.001	0.0049	0.027	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Aliphatics >C10 - C12	mg/l	0.01	117	0.01	2	0.01	0.0102	0.035	1-207, 1-911
Aliphatics >C12 - C16	mg/l	0.01	117	0.01	4	0.01	0.0102	0.03	1-212, 1-237, 1-318, 1-390
Aliphatics >C16 - C21	mg/l	0.01	117	0.01	35	0.01	0.0138	0.032	1-182, 1-184, 1-410, 1-715, 1-212, 1-516, 1-508, 1-737, 1-257, 1-191, 1-203, 1-207, 1-174, 1-235, 1-237, 1-152, 1-318, 1-327, 1-341, 1-346, 1-210, 1-363A, 1-390, 1-911
Aliphatics >C21 - C35	mg/l	0.01	117	0.01	50	0.01	0.0308	0.299	1-182, 1-184, 1-410, 1-715, 1-212, 1-217, 1-191, 1-203, 1-207, 1-363A, 1-390, 1-174, 1-235, 1-237, 1-509, 1-516, 1-181, 1-508, 1-541, 1-737, 1-911, 1-257, 1-152, 1-318, 1-327, 1-341, 1-346, 1-210
Aliphatics >C8 - C10	mg/l	0.01	117	0.01	1	0.01	0.0105	0.066	1-207
Aromatics >C10 - C12	mg/l	0.01	117	0.01	0	0.01	0.0100	0.01	
Aromatics >C12 - C16	mg/l	0.01	117	0.01	5	0.01	0.0111	0.065	1-516, 1-508, 1-257, 1-237, 1-207
Aromatics >C16 - C21	mg/l	0.01	117	0.01	27	0.01	0.0120	0.038	1-182, 1-191, 1-203, 1-207, 1-174, 1-184, 1-235, 1-237, 1-257, 1-152, 1-318, 1-327, 1-341, 1-346, 1-210, 1-390, 1-911
Aromatics >C21 - C35	mg/l	0.01	117	0.01	36	0.01	0.0134	0.076	1-182, 1-212, 1-217, 1-203, 1-363A, 1-390, 1-174, 1-184, 1-237, 1-166, 1-226, 1-410, 1-508, 1-516, 1-257, 1-231, 1-509, 1-541, 1-207, 1-911, 1-341, 1-210, 1-715
Aromatics >C8 - C10	mg/l	0.01	117	0.01	0	0.01	0.0100	0.01	
Aliphatics >C8 - C40	mg/l	0.01	117		0	0.01	0.0483	0.416	
Aromatics >C8 - C40	mg/l	0.01	117		0	0.01	0.0238	0.135	
GRO	mg/l	0.1	117		0	0.1	0.1036	0.524	
GRO C5-C6	mg/l	0.1	117		0	0.1	0.1014	0.262	
GRO C5-C6 Aliphatic	mg/l	0.1	117		0	0.1	0.1014	0.262	
GRO C6-C7	mg/l	0.1	117		0	0.1	0.1000	0.1	
GRO C6-C7 Aliphatic	mg/l	0.1	117		0	0.1	0.1000	0.1	
GRO C7-C8	mg/l	0.1	117		0	0.1	0.1000	0.1	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
GRO C7-C8 Aliphatic	mg/l	0.1	117		0	0.1	0.1000	0.1	
GRO C8-C10	mg/l	0.1	117		0	0.1	0.1003	0.13	
GRO C8-C10 Aliphatic	mg/l	0.1	117		0	0.1	0.1000	0.1	
Acenaphthene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
Acenaphthylene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
Anthracene	mg/l	0.01	128	0.0001	0	0.00001	0.0003	0.01	
Benzo(a)anthracene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
Benzo(a)pyrene	mg/l	0.01	128	1.7E-07	1	0.00001	0.0003	0.01	1-235
Benzo(b)fluoranthene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
Benzo(g,h,i)perylene	mg/l	0.01	11		0	0.002	0.0038	0.01	
Benzo(ghi)perylene	mg/l	0.00004	117		0	0.00001	0.0000	0.00004	
Benzo(k)fluoranthene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
Chrysene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
Coronene	mg/l	0.25	11		0	0.05	0.0955	0.25	
Dibenzo(a,h)anthracene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
Fluoranthene	mg/l	0.01	128	6.3E-06	3	0.00001	0.0003	0.01	1-363A, 1-390, 1-318
Fluorene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
Indeno(1,2,3-cd)pyrene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
Naphthalene	mg/l	0.01	139	0.002	0	0.00001	0.0007	0.01	
Total PAHs (USEPA 16)	mg/l	0.00069	117		0	0.00016	0.0002	0.00069	
PAH Sum of 4 - calculated	mg/l	0.032	0		0	0.00004	0.0013	0.032	
Phenanthrene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
Pyrene	mg/l	0.01	128		0	0.00001	0.0003	0.01	
1,1,1-Trichloroethane	mg/l	0.001	11	0.1	0	0.001	0.0010	0.001	
1,1,2-Trichloroethane	mg/l	0.001	11	0.4	0	0.001	0.0010	0.001	
1,2-Dibromo-3-chloropropane	mg/l	0.005	11		0	0.005	0.0050	0.005	
1,2-Dibromoethane	mg/l	0.001	11		0	0.001	0.0010	0.001	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
1,2-Dichlorobenzene	mg/l	0.025	22	0.02	0	0.005	0.0073	0.025	
1,2-Dichloroethane	mg/l	0.001	11	0.01	0	0.001	0.0011	0.002	
1,2-Dichloropropane	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,3-Dichlorobenzene	mg/l	0.025	22		0	0.001	0.0053	0.025	
cis 1,3-Dichloropropene	mg/l	0.001	11		0	0.001	0.0010	0.001	
trans 1,3-Dichloropropene	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,4-Dichlorobenzene	mg/l	0.025	22	0.02	0	0.001	0.0053	0.025	
Bromodichloromethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
Bromoform	mg/l	0.001	11		0	0.001	0.0010	0.001	
Chlorobenzene	mg/l	0.001	11		0	0.001	0.0010	0.001	
Chloroform	mg/l	0.001	11	0.0025	1	0.001	0.0033	0.026	1-341
Dibromochloromethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
Hexachlorobutadiene	mg/l	0.025	22	0.0006	0	0.005	0.0073	0.025	
1,1,1,2-Tetrachloroethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,1,2,2-Tetrachloroethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,1-Dichloroethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,1-Dichloroethene	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,1-Dichloropropene	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,2,3-Trichloropropane	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,2,4-Trimethylbenzene	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,3,5-Trimethylbenzene	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,3-Dichloropropane	mg/l	0.001	11		0	0.001	0.0010	0.001	
2- Chlorotoluene	mg/l	0.001	11		0	0.001	0.0010	0.001	
2,2-Dichloropropane	mg/l	0.001	11		0	0.001	0.0010	0.001	
2-Chloronaphthalene	mg/l	0.01	11		0	0.002	0.0038	0.01	
4-Chlorotoluene	mg/l	0.001	11		0	0.001	0.0010	0.001	
Biphenyl	mg/l	0.01	11		0	0.002	0.0038	0.01	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Bromobenzene	mg/l	0.001	11		0	0.001	0.0010	0.001	
Bromochloromethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
Bromomethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
Chloroethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
Chloromethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
cis 1,2-Dichloroethene	mg/l	0.001	11		0	0.001	0.0010	0.001	
Dibromomethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
Dichlorodifluoromethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
Hexachloroethane	mg/l	0.025	11		0	0.005	0.0095	0.025	
iso-Propylbenzene	mg/l	0.001	11		0	0.001	0.0010	0.001	
n-Butylbenzene	mg/l	0.001	11		0	0.001	0.0010	0.001	
p-Isopropyltoluene	mg/l	0.001	11		0	0.001	0.0010	0.001	
Propylbenzene	mg/l	0.001	11		0	0.001	0.0010	0.001	
sec-Butylbenzene	mg/l	0.001	11		0	0.001	0.0010	0.001	
tert-Butylbenzene	mg/l	0.001	11		0	0.001	0.0010	0.001	
trans 1,2-Dichloroethene	mg/l	0.001	11		0	0.001	0.0010	0.001	
Trichlorofluoromethane	mg/l	0.001	11		0	0.001	0.0010	0.001	
Styrene	mg/l	0.001	11	0.05	0	0.001	0.0010	0.001	
Tetrachloroethene	mg/l	0.001	11	0.01	0	0.001	0.0015	0.006	
Carbon Tetrachloride	mg/l	0.001	11	0.012	0	0.001	0.0010	0.001	
Trichloroethene	mg/l	0.001	11	0.01	0	0.001	0.0010	0.001	
Vinyl Chloride	mg/l	0.001	11		0	0.001	0.0010	0.001	
Butylbenzylphthalate	mg/l	0.025	11	0.0075	0	0.005	0.0095	0.025	
bis(2-Ethylhexyl)phthalate	mg/l	0.025	11	0.0013	0	0.005	0.0095	0.025	
Di-n-octylphthalate	mg/l	0.01	11	0.0013	0	0.002	0.0038	0.01	
Di-n-butylphthalate	mg/l	0.025	11	0.008	0	0.005	0.0095	0.025	
Diethylphthalate	mg/l	0.025	11	0.2	0	0.005	0.0095	0.025	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Dimethylphthalate	mg/l	0.025	11	0.8	0	0.005	0.0095	0.025	
Hexachlorobenzene	mg/l	0.025	11	0.00005	0	0.005	0.0095	0.025	
1-Methylnaphthalene	mg/l	0.01	11		0	0.002	0.0038	0.01	
2,4-Dinitrotoluene	mg/l	0.025	11		0	0.005	0.0095	0.025	
2,6-Dinitrotoluene	mg/l	0.025	11		0	0.005	0.0095	0.025	
2-Methylnaphthalene	mg/l	0.01	11		0	0.002	0.0038	0.01	
2-Nitroaniline	mg/l	0.025	11		0	0.005	0.0095	0.025	
3-Nitroaniline	mg/l	0.025	11		0	0.005	0.0095	0.025	
4-Chloroaniline	mg/l	0.025	11		0	0.005	0.0095	0.025	
4-Chlorophenyl-phenylether	mg/l	0.025	11		0	0.005	0.0095	0.025	
4-Nitroaniline	mg/l	0.025	11		0	0.005	0.0095	0.025	
Benzoic Acid	mg/l	0.5	11		0	0.1	0.1909	0.5	
Benzyl alcohol	mg/l	0.025	11		0	0.005	0.0095	0.025	
bis(2-Chloroethoxy)methane	mg/l	0.025	11		0	0.005	0.0095	0.025	
bis(2-Chloroethyl)ether	mg/l	0.025	11		0	0.005	0.0095	0.025	
bis(2-Chloroisopropyl)ether	mg/l	0.025	11		0	0.005	0.0095	0.025	
Dibenzofuran	mg/l	0.025	11		0	0.005	0.0095	0.025	
Diphenyl ether	mg/l	0.01	11		0	0.002	0.0038	0.01	
Hexachlorocyclopentadiene	mg/l	0.025	11		0	0.005	0.0095	0.025	
Isophorone	mg/l	0.025	11		0	0.005	0.0095	0.025	
Nitrobenzene	mg/l	0.025	11		0	0.005	0.0095	0.025	
N-Nitroso-di-n-propylamine	mg/l	0.025	11		0	0.005	0.0103	0.025	
N-Nitrosodiphenylamine	mg/l	0.025	11		0	0.005	0.0095	0.025	
1,2,3-Trichlorobenzene	mg/l	0.001	11		0	0.001	0.0010	0.001	
1,2,4-Trichlorobenzene	mg/l	0.025	22		0	0.005	0.0073	0.025	
4-Bromophenyl-phenylether	mg/l	0.025	11	0.00014	0	0.005	0.0095	0.025	
Sum Dichlorobenzenes - calculated	mg/l	0.06	0	0.02	0	0.007	0.0155	0.06	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Sum Trichlorobenzenes - calculated	mg/l	0.02	0	0.0004	0	0.005	0.0070	0.02	
Sum Trihalomethanes - calculated	mg/l	0.004	0		0	0.004	0.0065	0.029	
Sum of TCE and PCE - calculated	mg/l	0.002	0		0	0.002	0.0025	0.007	

DWS groundwater screening summary sheet

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Dissolved Organic Carbon	mg/l	0.1	117		0	0.29	10.90401709	360	
Biochemical Oxygen Demand	mg/l	28.5	117		0	1	9.464957265	193.3	
Total Organic Carbon	mg/l	0.2	117		0	0.2	11.19965812	360	
Ammoniacal Nitrogen as NH3	mg/l	0.01	27	0.47	1	0.01	0.146666667	0.77	1-516
Ammoniacal Nitrogen as N	mg/l	0.01	117	0.39	15	0.01	0.413760684	4.5	1-212, 1-217, 1-516, 1-259, 1-508, 1-410, 1-207
Ammoniacal Nitrogen as NH4	mg/l	0.01	111	0.5	15	0.01	0.554594595	5.79	1-212, 1-217, 1-516, 1-259, 1-508, 1-410, 1-207
Chloride as Cl	mg/l	1	117	250	18	6	133.2991453	909	1-410, 1-147, 1-390, 1-181, 1-318, 1-911, 1-152
Cyanide (Free) as CN	mg/l	0.2	117		0	0.02	0.021538462	0.2	
Cyanide (Total) as CN	mg/l	0.02	117	0.05	2	0.02	0.155299145	15.8	1-207, 1-341
Sulphide (Free) as S	mg/l	0.05	117		0	0.02	0.336752137	8.89	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
pH	pH Units		5		5	4.4	5.52	6.1	1-147, 1-166, 1-226, 1-231, 1-542
pH units	pH units		112		97	3	5.078571429	7.3	1-182, 1-184, 1-410, 1-715, 1-147, 1-166, 1-226, 1-231, 1-212, 1-217, 1-516, 1-541, 1-259, 1-508, 1-509, 1-737, 1-181, 1-257, 1-191, 1-203, 1-207, 1-363A, 1-390, 1-174, 1-235, 1-237, 1-152, 1-318, 1-542, 1-210, 1-911, 1-327, 1-341, 1-346
Total Sulphur as SO4 (Dissolved)	mg/l	30	112	250	5	3	84.53571429	516	1-210, 1-152
Ammonia (Free) as N	mg/l	0.1	90		0	0.01	0.01	0.01	
Arsenic as As (Dissolved)	mg/l	0.001	117	0.01	0	0.001	0.001290598	0.005	
Boron as B (Dissolved)	mg/l	0.1	117	1	0	0.01	0.047606838	0.45	
Cadmium as Cd (Dissolved)	mg/l	0.0001	117	0.005	2	0.00002	0.00070812	0.02361	1-911
Calcium as Ca (Dissolved)	mg/l	1	117		0	1	32.85470085	147	
Chromium as Cr (Dissolved)	mg/l	0.001	117	0.05	0	0.001	0.002076923	0.015	
Chromium VI as Cr	mg/l	0.01	117		0	0.003	0.003094017	0.009	
Copper as Cu (Dissolved)	mg/l	0.001	117	2	0	0.001	0.003264957	0.038	
Iron as Fe (Dissolved)	mg/l	0.01	112	0.2	61	0.01	7.626071429	75.9	1-182, 1-184, 1-410, 1-147, 1-166, 1-212, 1-217, 1-259, 1-508, 1-509, 1-181, 1-257, 1-203, 1-207, 1-390, 1-174, 1-237, 1-516, 1-542, 1-541, 1-152, 1-911, 1-327
Lead as Pb (Dissolved)	mg/l	0.001	117	0.01	1	0.001	0.001401709	0.021	1-516
Magnesium as Mg (Dissolved)	mg/l	1	117		0	1	15.24786325	67	
Mercury as Hg (Dissolved)	mg/l	0.0001	117	0.001	0	0.00003	3.01709E-05	0.00005	
Nickel as Ni (Dissolved)	mg/l	0.001	117	0.02	75	0.001	0.054025641	0.696	1-184, 1-410, 1-715, 1-166, 1-226, 1-231, 1-212, 1-516, 1-541, 1-509, 1-737, 1-181, 1-191, 1-203, 1-207, 1-210, 1-390, 1-174, 1-235, 1-152, 1-318, 1-363A, 1-911, 1-341, 1-346

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Potassium as K (Dissolved)	mg/l	10	117		0	1	11.03418803	38	
Selenium as Se (Dissolved)	mg/l	0.001	117	0.01	0	0.001	0.0011111111	0.004	
Sodium as Na (Dissolved)	mg/l	10	117	200	11	6	64.51282051	347	1-410, 1-516, 1-390, 1-181, 1-152
Zinc as Zn (Dissolved)	mg/l	0.002	117	3	0	0.002	0.133367521	2.809	
2,4,6-Trichlorophenol	mg/l	0.1	11	0.2	0	0.02	0.038181818	0.1	
2,4-Dichlorophenol	mg/l	0.1	11		0	0.02	0.038181818	0.1	
2-Chlorophenol	mg/l	0.1	11	0.3	0	0.02	0.038181818	0.1	
4-Chloro-3-methylphenol	mg/l	0.025	11		0	0.005	0.009545455	0.025	
4-Chlorophenol	mg/l	0.1	11		0	0.02	0.038181818	0.1	
2,4,5-Trichlorophenol	mg/l	0.1	11		0	0.02	0.038181818	0.1	
2,4-Dimethylphenol	mg/l	0.1	11		0	0.02	0.038181818	0.1	
2,4-Dinitrophenol	mg/l	0.05	11		0	0.01	0.019090909	0.05	
2-Methylphenol	mg/l	0.025	11		0	0.005	0.009545455	0.025	
2-Nitrophenol	mg/l	0.1	11		0	0.02	0.038181818	0.1	
3- & 4-Methylphenol	mg/l	0.1	11		0	0.02	0.038181818	0.1	
4,6-Dinitro-2-methylphenol	mg/l	0.25	11		0	0.05	0.095454545	0.25	
4-Nitrophenol	mg/l	0.25	11		0	0.05	0.095454545	0.25	
Dimethylphenols	mg/l	0.05	117		0	0.0005	0.004416239	0.05	
Total Phenols	mg/l	0.2	9		0	0.2	0.2	0.2	
Trimethylphenols	mg/l	0.05	117		0	0.0005	0.00435812	0.05	
Pentachlorophenol	mg/l	0.25	11	0.009	0	0.05	0.095454545	0.25	
Phenol	mg/l	0.1	128	0.05	0	0.0005	0.007282812	0.1	
Cresols	mg/l	0.0005	108		0	0.0005	0.000768519	0.0235	
Methylphenols	mg/l	0.05	9		0	0.05	0.05	0.05	
Benzene	mg/l	0.005	128	0.001	0	0.001	0.00465625	0.005	
Ethyl Benzene	mg/l	0.005	128	0.3	0	0.001	0.00465625	0.005	
m and p-Xylene	mg/l	0.01	128		0	0.001	0.009226563	0.01	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
o-Xylene	mg/l	0.005	128		0	0.001	0.00465625	0.005	
Xylenes	mg/l	0.015	117	0.5	0	0.015	0.015	0.015	
Toluene	mg/l	0.005	128	0.7	0	0.001	0.004851563	0.027	
Aliphatics >C10 - C12	mg/l	0.01	117	0.3	0	0.01	0.010247863	0.035	
Aliphatics >C12 - C16	mg/l	0.01	117	0.3	0	0.01	0.010222222	0.03	
Aliphatics >C16 - C21	mg/l	0.01	117		0	0.01	0.013760684	0.032	
Aliphatics >C21 - C35	mg/l	0.01	117		0	0.01	0.030846154	0.299	
Aliphatics >C8 - C10	mg/l	0.01	117	0.3	0	0.01	0.010478632	0.066	
Aromatics >C10 - C12	mg/l	0.01	117	0.09	0	0.01	0.01	0.01	
Aromatics >C12 - C16	mg/l	0.01	117	0.09	0	0.01	0.011068376	0.065	
Aromatics >C16 - C21	mg/l	0.01	117	0.09	0	0.01	0.012	0.038	
Aromatics >C21 - C35	mg/l	0.01	117	0.09	0	0.01	0.013367521	0.076	
Aromatics >C8 - C10	mg/l	0.01	117	0.3	0	0.01	0.01	0.01	
Aliphatics >C8 - C40	mg/l	0.01	117		0	0.01	0.048307692	0.416	
Aromatics >C8 - C40	mg/l	0.01	117		0	0.01	0.023794872	0.135	
GRO	mg/l	0.1	117		0	0.1	0.103623932	0.524	
GRO C5-C6	mg/l	0.1	117		0	0.1	0.101384615	0.262	
GRO C5-C6 Aliphatic	mg/l	0.1	117		0	0.1	0.101384615	0.262	
GRO C6-C7	mg/l	0.1	117		0	0.1	0.1	0.1	
GRO C6-C7 Aliphatic	mg/l	0.1	117		0	0.1	0.1	0.1	
GRO C7-C8	mg/l	0.1	117		0	0.1	0.1	0.1	
GRO C7-C8 Aliphatic	mg/l	0.1	117		0	0.1	0.1	0.1	
GRO C8-C10	mg/l	0.1	117		0	0.1	0.10025641	0.13	
GRO C8-C10 Aliphatic	mg/l	0.1	117		0	0.1	0.1	0.1	
Acenaphthene	mg/l	0.01	128		0	0.00001	0.000344609	0.01	
Acenaphthylene	mg/l	0.01	128		0	0.00001	0.000339141	0.01	
Anthracene	mg/l	0.01	128		0	0.00001	0.000339219	0.01	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Benzo(a)anthracene	mg/l	0.01	128		0	0.00001	0.000339141	0.01	
Benzo(a)pyrene	mg/l	0.01	128	0.00001	0	0.00001	0.000339141	0.01	
Benzo(b)fluoranthene	mg/l	0.01	128		0	0.00001	0.000339141	0.01	
Benzo(g,h,i)perylene	mg/l	0.01	11		0	0.002	0.003818182	0.01	
Benzo(ghi)perylene	mg/l	0.00004	117		0	0.00001	1.20513E-05	0.00004	
Benzo(k)fluoranthene	mg/l	0.01	128		0	0.00001	0.000339141	0.01	
Chrysene	mg/l	0.01	128		0	0.00001	0.000339297	0.01	
Coronene	mg/l	0.25	11		0	0.05	0.095454545	0.25	
Dibenzo(a,h)anthracene	mg/l	0.01	128		0	0.00001	0.000339141	0.01	
Fluoranthene	mg/l	0.01	128		0	0.00001	0.000339375	0.01	
Fluorene	mg/l	0.01	128		0	0.00001	0.000339375	0.01	
Indeno(1,2,3-cd)pyrene	mg/l	0.01	128		0	0.00001	0.000339141	0.01	
Naphthalene	mg/l	0.01	139		0	0.00001	0.000715755	0.01	
Total PAHs (USEPA 16)	mg/l	0.00069	117		0	0.00016	0.000210769	0.00069	
PAH Sum of 4 - calculated	mg/l	0.032	0	0.0001	0	0.00004	0.001251698	0.032	
Phenanthrene	mg/l	0.01	128		0	0.00001	0.00034	0.01	
Pyrene	mg/l	0.01	128		0	0.00001	0.000339453	0.01	
1,1,1-Trichloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,1,2-Trichloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,2-Dibromo-3-chloropropane	mg/l	0.005	11	0.001	0	0.005	0.005	0.005	
1,2-Dibromoethane	mg/l	0.001	11	0.0004	0	0.001	0.001	0.001	
1,2-Dichlorobenzene	mg/l	0.025	22	1	0	0.005	0.007272727	0.025	
1,2-Dichloroethane	mg/l	0.001	11	0.003	0	0.001	0.001090909	0.002	
1,2-Dichloropropane	mg/l	0.001	11	0.04	0	0.001	0.001	0.001	
1,3-Dichlorobenzene	mg/l	0.025	22		0	0.001	0.005272727	0.025	
cis 1,3-Dichloropropene	mg/l	0.001	11	0.02	0	0.001	0.001	0.001	
trans 1,3-Dichloropropene	mg/l	0.001	11	0.02	0	0.001	0.001	0.001	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
1,4-Dichlorobenzene	mg/l	0.025	22	0.3	0	0.001	0.005272727	0.025	
Bromodichloromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Bromoform	mg/l	0.001	11		0	0.001	0.001	0.001	
Chlorobenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
Chloroform	mg/l	0.001	11		0	0.001	0.003272727	0.026	
Dibromochloromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Hexachlorobutadiene	mg/l	0.025	22	0.0006	0	0.005	0.007272727	0.025	
1,1,1,2-Tetrachloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,1,2,2-Tetrachloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,1-Dichloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,1-Dichloroethene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,1-Dichloropropene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,2,3-Trichloropropane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,2,4-Trimethylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,3,5-Trimethylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,3-Dichloropropane	mg/l	0.001	11		0	0.001	0.001	0.001	
2- Chlorotoluene	mg/l	0.001	11		0	0.001	0.001	0.001	
2,2-Dichloropropane	mg/l	0.001	11		0	0.001	0.001	0.001	
2-Chloronaphthalene	mg/l	0.01	11		0	0.002	0.003818182	0.01	
4-Chlorotoluene	mg/l	0.001	11		0	0.001	0.001	0.001	
Biphenyl	mg/l	0.01	11		0	0.002	0.003818182	0.01	
Bromobenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
Bromochloromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Bromomethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Chloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Chloromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
cis 1,2-Dichloroethene	mg/l	0.001	11		0	0.001	0.001	0.001	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
Dibromomethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Dichlorodifluoromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Hexachloroethane	mg/l	0.025	11		0	0.005	0.009545455	0.025	
iso-Propylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
n-Butylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
p-Isopropyltoluene	mg/l	0.001	11		0	0.001	0.001	0.001	
Propylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
sec-Butylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
tert-Butylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
trans 1,2-Dichloroethene	mg/l	0.001	11		0	0.001	0.001	0.001	
Trichlorofluoromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Styrene	mg/l	0.001	11	0.02	0	0.001	0.001	0.001	
Tetrachloroethene	mg/l	0.001	11		0	0.001	0.001454545	0.006	
Carbon Tetrachloride	mg/l	0.001	11	0.003	0	0.001	0.001	0.001	
Trichloroethene	mg/l	0.001	11		0	0.001	0.001	0.001	
Vinyl Chloride	mg/l	0.001	11	0.0005	0	0.001	0.001	0.001	
Butylbenzylphthalate	mg/l	0.025	11		0	0.005	0.009545455	0.025	
bis(2-Ethylhexyl)phthalate	mg/l	0.025	11	0.008	0	0.005	0.009545455	0.025	
Di-n-octylphthalate	mg/l	0.01	11	0.008	0	0.002	0.003818182	0.01	
Di-n-butylphthalate	mg/l	0.025	11	0.35	0	0.005	0.009545455	0.025	
Diethylphthalate	mg/l	0.025	11		0	0.005	0.009545455	0.025	
Dimethylphthalate	mg/l	0.025	11		0	0.005	0.009545455	0.025	
Hexachlorobenzene	mg/l	0.025	11	0.00005	0	0.005	0.009545455	0.025	
1-Methylnaphthalene	mg/l	0.01	11		0	0.002	0.003818182	0.01	
2,4-Dinitrotoluene	mg/l	0.025	11		0	0.005	0.009545455	0.025	
2,6-Dinitrotoluene	mg/l	0.025	11		0	0.005	0.009545455	0.025	
2-Methylnaphthalene	mg/l	0.01	11		0	0.002	0.003818182	0.01	

Determinand	Unit	Unit Detection Limit (mg/kg)	Number of Samples Analysed	Generic Assessment Criteria (mg/kg)	No of Exceedances	Minimum (mg/kg)	Mean (mg/kg)	Maximum (mg/kg)	Locations of Exceedances
2-Nitroaniline	mg/l	0.025	11		0	0.005	0.009545455	0.025	
3-Nitroaniline	mg/l	0.025	11		0	0.005	0.009545455	0.025	
4-Chloroaniline	mg/l	0.025	11		0	0.005	0.009545455	0.025	
4-Chlorophenyl-phenylether	mg/l	0.025	11		0	0.005	0.009545455	0.025	
4-Nitroaniline	mg/l	0.025	11		0	0.005	0.009545455	0.025	
Benzoic Acid	mg/l	0.5	11		0	0.1	0.190909091	0.5	
Benzyl alcohol	mg/l	0.025	11		0	0.005	0.009545455	0.025	
bis(2-Chloroethoxy)methane	mg/l	0.025	11		0	0.005	0.009545455	0.025	
bis(2-Chloroethyl)ether	mg/l	0.025	11		0	0.005	0.009545455	0.025	
bis(2-Chloroisopropyl)ether	mg/l	0.025	11		0	0.005	0.009545455	0.025	
Dibenzofuran	mg/l	0.025	11		0	0.005	0.009545455	0.025	
Diphenyl ether	mg/l	0.01	11		0	0.002	0.003818182	0.01	
Hexachlorocyclopentadiene	mg/l	0.025	11		0	0.005	0.009545455	0.025	
Isophorone	mg/l	0.025	11		0	0.005	0.009545455	0.025	
Nitrobenzene	mg/l	0.025	11		0	0.005	0.009545455	0.025	
N-Nitroso-di-n-propylamine	mg/l	0.025	11		0	0.005	0.010272727	0.025	
N-Nitrosodiphenylamine	mg/l	0.025	11		0	0.005	0.009545455	0.025	
1,2,3-Trichlorobenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,2,4-Trichlorobenzene	mg/l	0.025	22		0	0.005	0.007272727	0.025	
4-Bromophenyl-phenylether	mg/l	0.025	11		0	0.005	0.009545455	0.025	
Sum Dichlorobenzenes - calculated	mg/l	0.06	0	1.3	0	0.007	0.0155	0.06	
Sum Trichlorobenzenes - calculated	mg/l	0.02	0	0.02	0	0.005	0.007	0.02	
Sum Trihalomethanes - calculated	mg/l	0.004	0	0.1	0	0.004	0.0065	0.029	
Sum of TCE and PCE - calculated	mg/l	0.002	0		0	0.002	0.0025	0.007	

PNEC groundwater summary sheet

Determinand	Unit	Maximum LOD	Number of Samples	GAC	Number of Exceedances	Minimum	Mean	Maximum	Locations of Exceedances
Dissolved Organic Carbon	mg/l	0.1	117		0	0.29	10.9040171	360	
Biochemical Oxygen Demand	mg/l	28.5	117		0	1	9.46495726	193.3	
Total Organic Carbon	mg/l	0.2	117		0	0.2	11.1996581	360	
Ammoniacal Nitrogen as NH3	mg/l	0.01	27		0	0.01	0.14666667	0.77	
Ammoniacal Nitrogen as N	mg/l	0.01	117		0	0.01	0.41376068	4.5	
Ammoniacal Nitrogen as NH4	mg/l	0.01	111		0	0.01	0.55459459	5.79	
Chloride as Cl	mg/l	1	117		0	6	133.299145	909	
Cyanide (Free) as CN	mg/l	0.2	117		0	0.02	0.02153846	0.2	
Cyanide (Total) as CN	mg/l	0.02	117		0	0.02	0.15529915	15.8	
Sulphide (Free) as S	mg/l	0.05	117		0	0.02	0.33675214	8.89	
pH	pH Units		5		0	4.4	5.52	6.1	
pH units	pH units		112		0	3	5.07857143	7.3	
Total Sulphur as SO4 (Dissolved)	mg/l	30	112		0	3	84.5357143	516	
Ammonia (Free) as N	mg/l	0.1	90		0	0.01	0.01	0.01	
Arsenic as As (Dissolved)	mg/l	0.001	117		0	0.001	0.0012906	0.005	
Boron as B (Dissolved)	mg/l	0.1	117		0	0.01	0.04760684	0.45	
Cadmium as Cd (Dissolved)	mg/l	0.0001	117		0	0.00002	0.00070812	0.02361	
Calcium as Ca (Dissolved)	mg/l	1	117		0	1	32.8547009	147	
Chromium as Cr (Dissolved)	mg/l	0.001	117		0	0.001	0.00207692	0.015	
Chromium VI as Cr	mg/l	0.01	117		0	0.003	0.00309402	0.009	
Copper as Cu (Dissolved)	mg/l	0.001	117	0.05456	0	0.001	0.00326496	0.038	
Iron as Fe (Dissolved)	mg/l	0.01	112		0	0.01	7.62607143	75.9	
Lead as Pb (Dissolved)	mg/l	0.001	117	0.0148	1	0.001	0.00140171	0.021	1-516
Magnesium as Mg (Dissolved)	mg/l	1	117		0	1	15.2478632	67	

Determinand	Unit	Maximum LOD	Number of Samples	GAC	Number of Exceedances	Minimum	Mean	Maximum	Locations of Exceedances
Mercury as Hg (Dissolved)	mg/l	0.0001	117		0	0.00003	3.0171E-05	0.00005	
Nickel as Ni (Dissolved)	mg/l	0.001	117	0.02422	66	0.001	0.05402564	0.696	1-184, 1-410, 1-715, 1-166, 1-226, 1-231, 1-212, 1-516, 1-541, 1-509, 1-737, 1-181, 1-191, 1-203, 1-207, 1-210, 1-390, 1-174, 1-152, 1-318, 1-911, 1-346
Potassium as K (Dissolved)	mg/l	10	117		0	1	11.034188	38	
Selenium as Se (Dissolved)	mg/l	0.001	117		0	0.001	0.00111111	0.004	
Sodium as Na (Dissolved)	mg/l	10	117		0	6	64.5128205	347	
Zinc as Zn (Dissolved)	mg/l	0.002	117	0.04658	49	0.002	0.13336752	2.809	1-184, 1-410, 1-715, 1-147, 1-541, 1-509, 1-737, 1-191, 1-203, 1-207, 1-390, 1-174, 1-318, 1-911, 1-152, 1-341
2,4,6-Trichlorophenol	mg/l	0.1	11		0	0.02	0.03818182	0.1	
2,4-Dichlorophenol	mg/l	0.1	11		0	0.02	0.03818182	0.1	
2-Chlorophenol	mg/l	0.1	11		0	0.02	0.03818182	0.1	
4-Chloro-3-methylphenol	mg/l	0.025	11		0	0.005	0.00954545	0.025	
4-Chlorophenol	mg/l	0.1	11		0	0.02	0.03818182	0.1	
2,4,5-Trichlorophenol	mg/l	0.1	11		0	0.02	0.03818182	0.1	
2,4-Dimethylphenol	mg/l	0.1	11		0	0.02	0.03818182	0.1	
2,4-Dinitrophenol	mg/l	0.05	11		0	0.01	0.01909091	0.05	
2-Methylphenol	mg/l	0.025	11		0	0.005	0.00954545	0.025	
2-Nitrophenol	mg/l	0.1	11		0	0.02	0.03818182	0.1	
3- & 4-Methylphenol	mg/l	0.1	11		0	0.02	0.03818182	0.1	
4,6-Dinitro-2-methylphenol	mg/l	0.25	11		0	0.05	0.09545455	0.25	
4-Nitrophenol	mg/l	0.25	11		0	0.05	0.09545455	0.25	
Dimethylphenols	mg/l	0.05	117		0	0.0005	0.00441624	0.05	
Total Phenols	mg/l	0.2	9		0	0.2	0.2	0.2	
Trimethylphenols	mg/l	0.05	117		0	0.0005	0.00435812	0.05	
Pentachlorophenol	mg/l	0.25	11		0	0.05	0.09545455	0.25	
Phenol	mg/l	0.1	128		0	0.0005	0.00728281	0.1	

Determinand	Unit	Maximum LOD	Number of Samples	GAC	Number of Exceedances	Minimum	Mean	Maximum	Locations of Exceedances
Cresols	mg/l	0.0005	108		0	0.0005	0.00076852	0.0235	
Methylphenols	mg/l	0.05	9		0	0.05	0.05	0.05	
Benzene	mg/l	0.005	128		0	0.001	0.00465625	0.005	
Ethyl Benzene	mg/l	0.005	128		0	0.001	0.00465625	0.005	
m and p-Xylene	mg/l	0.01	128		0	0.001	0.00922656	0.01	
o-Xylene	mg/l	0.005	128		0	0.001	0.00465625	0.005	
Xylenes	mg/l	0.015	117		0	0.015	0.015	0.015	
Toluene	mg/l	0.005	128		0	0.001	0.00485156	0.027	
Aliphatics >C10 - C12	mg/l	0.01	117		0	0.01	0.01024786	0.035	
Aliphatics >C12 - C16	mg/l	0.01	117		0	0.01	0.01022222	0.03	
Aliphatics >C16 - C21	mg/l	0.01	117		0	0.01	0.01376068	0.032	
Aliphatics >C21 - C35	mg/l	0.01	117		0	0.01	0.03084615	0.299	
Aliphatics >C8 - C10	mg/l	0.01	117		0	0.01	0.01047863	0.066	
Aromatics >C10 - C12	mg/l	0.01	117		0	0.01	0.01	0.01	
Aromatics >C12 - C16	mg/l	0.01	117		0	0.01	0.01106838	0.065	
Aromatics >C16 - C21	mg/l	0.01	117		0	0.01	0.012	0.038	
Aromatics >C21 - C35	mg/l	0.01	117		0	0.01	0.01336752	0.076	
Aromatics >C8 - C10	mg/l	0.01	117		0	0.01	0.01	0.01	
Aliphatics >C8 - C40	mg/l	0.01	117		0	0.01	0.04830769	0.416	
Aromatics >C8 - C40	mg/l	0.01	117		0	0.01	0.02379487	0.135	
GRO	mg/l	0.1	117		0	0.1	0.10362393	0.524	
GRO C5-C6	mg/l	0.1	117		0	0.1	0.10138462	0.262	
GRO C5-C6 Aliphatic	mg/l	0.1	117		0	0.1	0.10138462	0.262	
GRO C6-C7	mg/l	0.1	117		0	0.1	0.1	0.1	
GRO C6-C7 Aliphatic	mg/l	0.1	117		0	0.1	0.1	0.1	
GRO C7-C8	mg/l	0.1	117		0	0.1	0.1	0.1	

Determinand	Unit	Maximum LOD	Number of Samples	GAC	Number of Exceedances	Minimum	Mean	Maximum	Locations of Exceedances
GRO C7-C8 Aliphatic	mg/l	0.1	117		0	0.1	0.1	0.1	
GRO C8-C10	mg/l	0.1	117		0	0.1	0.10025641	0.13	
GRO C8-C10 Aliphatic	mg/l	0.1	117		0	0.1	0.1	0.1	
Acenaphthene	mg/l	0.01	128		0	0.00001	0.00034461	0.01	
Acenaphthylene	mg/l	0.01	128		0	0.00001	0.00033914	0.01	
Anthracene	mg/l	0.01	128		0	0.00001	0.00033922	0.01	
Benzo(a)anthracene	mg/l	0.01	128		0	0.00001	0.00033914	0.01	
Benzo(a)pyrene	mg/l	0.01	128		0	0.00001	0.00033914	0.01	
Benzo(b)fluoranthene	mg/l	0.01	128		0	0.00001	0.00033914	0.01	
Benzo(g,h,i)perylene	mg/l	0.01	11		0	0.002	0.00381818	0.01	
Benzo(ghi)perylene	mg/l	0.00004	117		0	0.00001	1.2051E-05	0.00004	
Benzo(k)fluoranthene	mg/l	0.01	128		0	0.00001	0.00033914	0.01	
Chrysene	mg/l	0.01	128		0	0.00001	0.0003393	0.01	
Coronene	mg/l	0.25	11		0	0.05	0.09545455	0.25	
Dibenzo(a,h)anthracene	mg/l	0.01	128		0	0.00001	0.00033914	0.01	
Fluoranthene	mg/l	0.01	128		0	0.00001	0.00033938	0.01	
Fluorene	mg/l	0.01	128		0	0.00001	0.00033938	0.01	
Indeno(1,2,3-cd)pyrene	mg/l	0.01	128		0	0.00001	0.00033914	0.01	
Naphthalene	mg/l	0.01	139		0	0.00001	0.00071576	0.01	
Total PAHs (USEPA 16)	mg/l	0.00069	117		0	0.00016	0.00021077	0.00069	
PAH Sum of 4 - calculated	mg/l	0.032	0		0	0.00004	0.0012517	0.032	
Phenanthrene	mg/l	0.01	128		0	0.00001	0.00034	0.01	
Pyrene	mg/l	0.01	128		0	0.00001	0.00033945	0.01	
1,1,1-Trichloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,1,2-Trichloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,2-Dibromo-3-chloropropane	mg/l	0.005	11		0	0.005	0.005	0.005	

Determinand	Unit	Maximum LOD	Number of Samples	GAC	Number of Exceedances	Minimum	Mean	Maximum	Locations of Exceedances
1,2-Dibromoethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,2-Dichlorobenzene	mg/l	0.025	22		0	0.005	0.00727273	0.025	
1,2-Dichloroethane	mg/l	0.001	11		0	0.001	0.00109091	0.002	
1,2-Dichloropropane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,3-Dichlorobenzene	mg/l	0.025	22		0	0.001	0.00527273	0.025	
cis 1,3-Dichloropropene	mg/l	0.001	11		0	0.001	0.001	0.001	
trans 1,3-Dichloropropene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,4-Dichlorobenzene	mg/l	0.025	22		0	0.001	0.00527273	0.025	
Bromodichloromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Bromoform	mg/l	0.001	11		0	0.001	0.001	0.001	
Chlorobenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
Chloroform	mg/l	0.001	11		0	0.001	0.00327273	0.026	
Dibromochloromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Hexachlorobutadiene	mg/l	0.025	22		0	0.005	0.00727273	0.025	
1,1,1,2-Tetrachloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,1,2,2-Tetrachloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,1-Dichloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,1-Dichloroethene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,1-Dichloropropene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,2,3-Trichloropropane	mg/l	0.001	11		0	0.001	0.001	0.001	
1,2,4-Trimethylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,3,5-Trimethylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,3-Dichloropropane	mg/l	0.001	11		0	0.001	0.001	0.001	
2-Chlorotoluene	mg/l	0.001	11		0	0.001	0.001	0.001	
2,2-Dichloropropane	mg/l	0.001	11		0	0.001	0.001	0.001	
2-Chloronaphthalene	mg/l	0.01	11		0	0.002	0.00381818	0.01	

Determinand	Unit	Maximum LOD	Number of Samples	GAC	Number of Exceedances	Minimum	Mean	Maximum	Locations of Exceedances
4-Chlorotoluene	mg/l	0.001	11		0	0.001	0.001	0.001	
Biphenyl	mg/l	0.01	11		0	0.002	0.00381818	0.01	
Bromobenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
Bromochloromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Bromomethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Chloroethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Chloromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
cis 1,2-Dichloroethene	mg/l	0.001	11		0	0.001	0.001	0.001	
Dibromomethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Dichlorodifluoromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Hexachloroethane	mg/l	0.025	11		0	0.005	0.00954545	0.025	
iso-Propylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
n-Butylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
p-Isopropyltoluene	mg/l	0.001	11		0	0.001	0.001	0.001	
Propylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
sec-Butylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
tert-Butylbenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
trans 1,2-Dichloroethene	mg/l	0.001	11		0	0.001	0.001	0.001	
Trichlorofluoromethane	mg/l	0.001	11		0	0.001	0.001	0.001	
Styrene	mg/l	0.001	11		0	0.001	0.001	0.001	
Tetrachloroethene	mg/l	0.001	11		0	0.001	0.00145455	0.006	
Carbon Tetrachloride	mg/l	0.001	11		0	0.001	0.001	0.001	
Trichloroethene	mg/l	0.001	11		0	0.001	0.001	0.001	
Vinyl Chloride	mg/l	0.001	11		0	0.001	0.001	0.001	
Butylbenzylphthalate	mg/l	0.025	11		0	0.005	0.00954545	0.025	
bis(2-Ethylhexyl)phthalate	mg/l	0.025	11		0	0.005	0.00954545	0.025	

Determinand	Unit	Maximum LOD	Number of Samples	GAC	Number of Exceedances	Minimum	Mean	Maximum	Locations of Exceedances
Di-n-octylphthalate	mg/l	0.01	11		0	0.002	0.00381818	0.01	
Di-n-butylphthalate	mg/l	0.025	11		0	0.005	0.00954545	0.025	
Diethylphthalate	mg/l	0.025	11		0	0.005	0.00954545	0.025	
Dimethylphthalate	mg/l	0.025	11		0	0.005	0.00954545	0.025	
Hexachlorobenzene	mg/l	0.025	11		0	0.005	0.00954545	0.025	
1-Methylnaphthalene	mg/l	0.01	11		0	0.002	0.00381818	0.01	
2,4-Dinitrotoluene	mg/l	0.025	11		0	0.005	0.00954545	0.025	
2,6-Dinitrotoluene	mg/l	0.025	11		0	0.005	0.00954545	0.025	
2-Methylnaphthalene	mg/l	0.01	11		0	0.002	0.00381818	0.01	
2-Nitroaniline	mg/l	0.025	11		0	0.005	0.00954545	0.025	
3-Nitroaniline	mg/l	0.025	11		0	0.005	0.00954545	0.025	
4-Chloroaniline	mg/l	0.025	11		0	0.005	0.00954545	0.025	
4-Chlorophenyl-phenylether	mg/l	0.025	11		0	0.005	0.00954545	0.025	
4-Nitroaniline	mg/l	0.025	11		0	0.005	0.00954545	0.025	
Benzoic Acid	mg/l	0.5	11		0	0.1	0.19090909	0.5	
Benzyl alcohol	mg/l	0.025	11		0	0.005	0.00954545	0.025	
bis(2-Chloroethoxy)methane	mg/l	0.025	11		0	0.005	0.00954545	0.025	
bis(2-Chloroethyl)ether	mg/l	0.025	11		0	0.005	0.00954545	0.025	
bis(2-Chloroisopropyl)ether	mg/l	0.025	11		0	0.005	0.00954545	0.025	
Dibenzofuran	mg/l	0.025	11		0	0.005	0.00954545	0.025	
Diphenyl ether	mg/l	0.01	11		0	0.002	0.00381818	0.01	
Hexachlorocyclopentadiene	mg/l	0.025	11		0	0.005	0.00954545	0.025	
Isophorone	mg/l	0.025	11		0	0.005	0.00954545	0.025	
Nitrobenzene	mg/l	0.025	11		0	0.005	0.00954545	0.025	
N-Nitroso-di-n-propylamine	mg/l	0.025	11		0	0.005	0.01027273	0.025	
N-Nitrosodiphenylamine	mg/l	0.025	11		0	0.005	0.00954545	0.025	

Determinand	Unit	Maximum LOD	Number of Samples	GAC	Number of Exceedances	Minimum	Mean	Maximum	Locations of Exceedances
1,2,3-Trichlorobenzene	mg/l	0.001	11		0	0.001	0.001	0.001	
1,2,4-Trichlorobenzene	mg/l	0.025	22		0	0.005	0.00727273	0.025	
4-Bromophenyl-phenylether	mg/l	0.025	11		0	0.005	0.00954545	0.025	
Sum Dichlorobenzenes - calculated	mg/l	0.06	0		0	0.007	0.0155	0.06	
Sum Trichlorobenzenes - calculated	mg/l	0.02	0		0	0.005	0.007	0.02	
Sum Trihalomethanes - calculated	mg/l	0.004	0		0	0.004	0.0065	0.029	
Sum of TCE and PCE - calculated	mg/l	0.002	0		0	0.002	0.0025	0.007	

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Surface water EQS-f

Determinand	Unit	Unit Detection Limit (mg/kg)	Generic Assessment Criteria (mg/kg)	Number of Samples Analysed	No of Exceedances	Minimum (mg/kg)	No of Exceedances	Locations of Exceedances
Aliphatics >C8-C40	mg/l	0.01	No WSV	7	0.012	0.012	0	
Ammoniacal Nitrogen as N	mg/l	0.01	0.2	7	0.02	0.2	0	
Ammoniacal Nitrogen as NH3	mg/l	0.005	No WSV	7	0.04	0.17	0	
Ammoniacal Nitrogen as NH4	mg/l	0.005	0.26	7	0.03	0.26	0	
Aromatics >C21-C35	mg/l	0.02	No WSV	7	0.01	0.02	0	
Aromatics >C8-C40	mg/l	0.01	No WSV	7	0.014	0.031	0	
Arsenic as As (Dissolved)	mg/l	0.001	0.05	7	0.001	0.001	0	
Benzo(a)anthracene	mg/l	0.00001	Screen BaP only	7	0.00001	0.00002	0	
Benzo(a)pyrene	mg/l	0.00001	0.00000017	7	0.00001	0.00002	3	SW01, 1; SW02, 1; SW03, 1
Benzo(b)fluoranthene	mg/l	0.00001	Screen BaP only	7	0.00001	0.00003	0	
Benzo(g,h,i)perylene	mg/l	0.00001	Screen BaP only	7	0.00001	0.00002	0	
Benzo(k)fluoranthene	mg/l	0.00001	Screen BaP only	7	0.00001	0.00001	0	
Biochemical Oxygen Demand	mg/l	1	No WSV	7	1.7	7.1	0	
Boron as B (Dissolved)	mg/l	0.01	No WSV	7	0.03	0.05	0	
Cadmium as Cd (Dissolved)	mg/l	0.00002	0.00008	7	0.00005	0.00008	0	
Calcium as Ca (Dissolved)	mg/l	1	No WSV	7	32	94	0	
Chloride as Cl	mg/l	1	250	7	19	80	0	
Chrysene	mg/l	0.00001	Screen BaP only	7	0.00001	0.00002	0	
Copper as Cu (Dissolved)	mg/l	0.001	0.05456	7	0.002	0.005	5	
Dissolved Organic Carbon	mg/l	0.1	No WSV	7	10	17	0	
Fluoranthene	mg/l	0.00001	0.0000063	7	0.00001	0.00004	5	SW01, 1; SW01, 2; SW02, 1; SW03, 1; SW03, 2
Iron as Fe (Dissolved)	mg/l	0.01	No WSV	7	0.08	0.38	0	

Determinand	Unit	Unit Detection Limit (mg/kg)	Generic Assessment Criteria (mg/kg)	Number of Samples Analysed	No of Exceedances	Minimum (mg/kg)	No of Exceedances	Locations of Exceedances
Lead as Pb (Dissolved)	mg/l	0.001	0.0148	7	0.003	0.003	1	
Magnesium as Mg (Dissolved)	mg/l	1	No WSV	7	4	18	0	
Nickel as Ni (Dissolved)	mg/l	0.001	0.02422	7	0.003	0.006	5	
pH units	pH units	0	No WSV	7	6.6	7.6	0	
Phenanthrene	mg/l	0.00001	Screen BaP only	7	0.00001	0.00001	0	
Phenol	mg/l	0.0005	0.0077	7	0.0005	0.0005	0	
Potassium as K (Dissolved)	mg/l	1	No WSV	7	5	10	0	
Pyrene	mg/l	0.00001	N/A	7	0.00001	0.00003	0	
Sodium as Na (Dissolved)	mg/l	1	No WSV	7	14	41	0	
Sulphide (Free) as S	mg/l	0.035	No WSV	7	0.02	0.48	0	
Total Organic Carbon	mg/l	0.1	No WSV	7	11	17	0	
Total Sulphur as SO4 (Dissolved)	mg/l	3	No WSV	7	25	105	0	
Zinc as Zn (Dissolved)	mg/l	0.002	0.0129	7	0.004	0.012	0	

Surface Water DWS

Determinand	Unit	Unit Detection Limit (mg/kg)	Generic Assessment Criteria (mg/kg)	Number of Samples Analysed	No of Exceedances	Minimum (mg/kg)	No of Exceedances	Locations of Exceedances
Aliphatics >C8-C40	mg/l	0.01	No WSV	7	0.012	0.012	0	
Ammoniacal Nitrogen as N	mg/l	0.01	0.2	7	0.02	0.2	0	
Ammoniacal Nitrogen as NH3	mg/l	0.005	No WSV	7	0.04	0.17	0	
Ammoniacal Nitrogen as NH4	mg/l	0.005	0.26	7	0.03	0.26	0	
Aromatics >C21-C35	mg/l	0.02	No WSV	7	0.01	0.02	0	
Aromatics >C8-C40	mg/l	0.01	No WSV	7	0.014	0.031	0	
Arsenic as As (Dissolved)	mg/l	0.001	0.05	7	0.001	0.001	0	

Determinand	Unit	Unit Detection Limit (mg/kg)	Generic Assessment Criteria (mg/kg)	Number of Samples Analysed	No of Exceedances	Minimum (mg/kg)	No of Exceedances	Locations of Exceedances
Aliphatics >C8-C40	mg/l	0.01	No WSV	7	0.012	0.012	0	
Ammoniacal Nitrogen as N	mg/l	0.01	0.39	7	0.02	0.2	0	
Ammoniacal Nitrogen as NH3	mg/l	0.005	No WSV	7	0.04	0.17	0	
Ammoniacal Nitrogen as NH4	mg/l	0.005	0.5	7	0.03	0.26	0	
Aromatics >C21-C35	mg/l	0.02	No WSV	7	0.01	0.02	0	
Aromatics >C8-C40	mg/l	0.01	No WSV	7	0.014	0.031	0	
Arsenic as As (Dissolved)	mg/l	0.001	0.01	7	0.001	0.001	0	
Benzo(a)anthracene	mg/l	0.00001	See BaP	7	0.00001	0.00002	0	
Benzo(a)pyrene	mg/l	0.00001	0.00001	7	0.00001	0.00002	1	SW02, 1
Benzo(b)fluoranthene	mg/l	0.00001	See PAH Sum of 4	7	0.00001	0.00003	0	
Benzo(g,h,i)perylene	mg/l	0.00001	See PAH Sum of 4	7	0.00001	0.00002	0	
Benzo(k)fluoranthene	mg/l	0.00001	See PAH Sum of 4	7	0.00001	0.00001	0	
Biochemical Oxygen Demand	mg/l	1	No WSV	7	1.7	7.1	0	
Boron as B (Dissolved)	mg/l	0.01	No WSV	7	0.03	0.05	0	
Cadmium as Cd (Dissolved)	mg/l	0.00002	0.005	7	0.00005	0.00008	0	
Calcium as Ca (Dissolved)	mg/l	1	No WSV	7	32	94	0	
Chloride as Cl	mg/l	1	250	7	19	80	0	
Chrysene	mg/l	0.00001	See BaP	7	0.00001	0.00002	0	
Copper as Cu (Dissolved)	mg/l	0.001	2	7	0.002	0.005	0	
Dissolved Organic Carbon	mg/l	0.1	No WSV	7	10	17	0	
Fluoranthene	mg/l	0.00001	See BaP	7	0.00001	0.00004	0	
Iron as Fe (Dissolved)	mg/l	0.01	No WSV	7	0.08	0.38	0	
Lead as Pb (Dissolved)	mg/l	0.001	0.01	7	0.003	0.003	0	
Magnesium as Mg (Dissolved)	mg/l	1	No WSV	7	4	18	0	
Nickel as Ni (Dissolved)	mg/l	0.001	0.02	7	0.003	0.006	0	
pH units	pH units	0	No WSV	7	6.6	7.6	0	

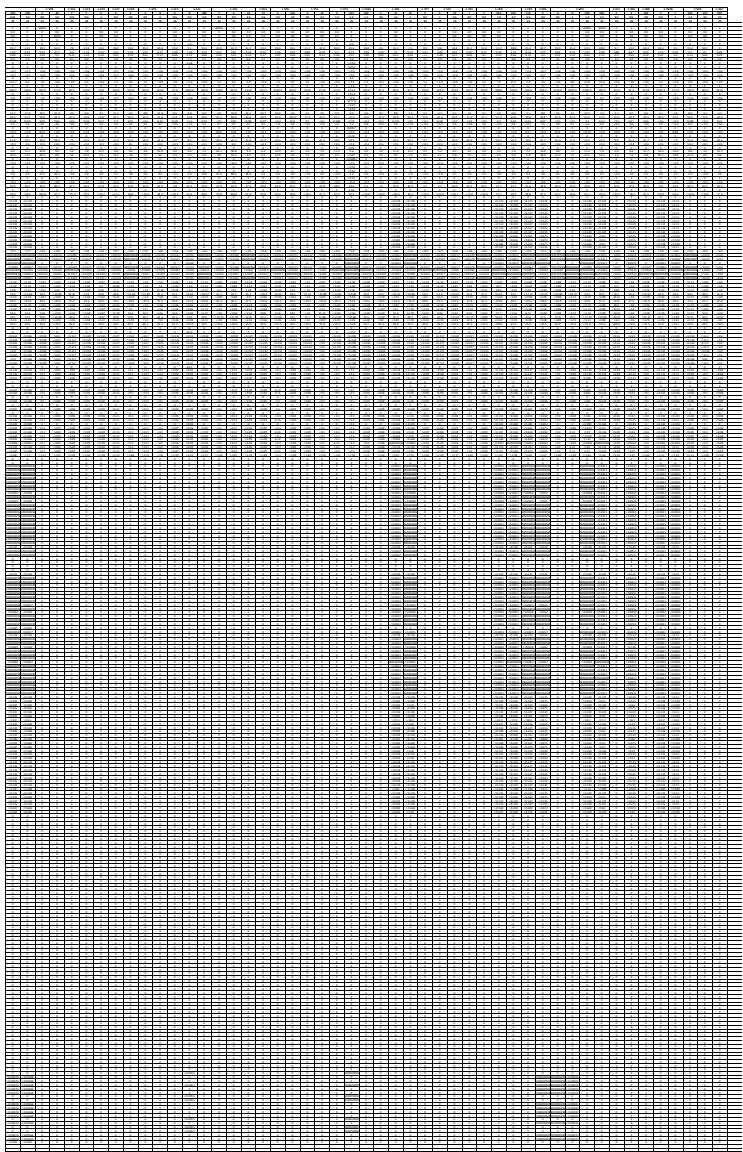
Determinand	Unit	Unit Detection Limit (mg/kg)	Generic Assessment Criteria (mg/kg)	Number of Samples Analysed	No of Exceedances	Minimum (mg/kg)	No of Exceedances	Locations of Exceedances
Phenanthrene	mg/l	0.00001	See BaP	7	0.00001	0.00001	0	
Phenol	mg/l	0.0005	0.05	7	0.0005	0.0005	0	

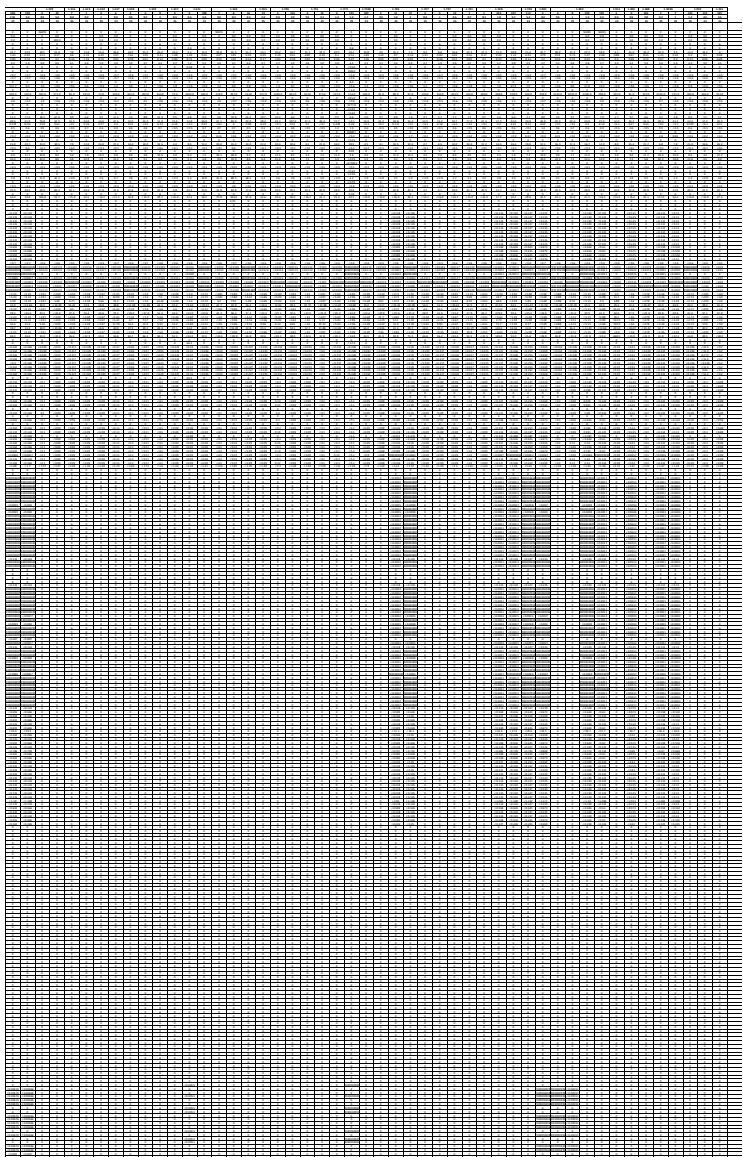
			Location ID	1-410	1-715	1-737	SW01		SW02		SW03		
			Sample ref	1	201119	201119	1	281119	1	281119	1	281119	
			Sample top	8	14	7.8	0	0	0	0	0	0	
			Sample type	EW	EW	EW	EW	EW	EW	EW	EW	EW	
Contaminant group	Fresh EQS	Unit	Contaminant										
02 General Inorganics	0.001	mg/l	Cyanide (Free) as CN	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	
	0.2	mg/l	Ammoniacal Nitrogen as N	0.09	0.01	0.06	0.02	0.03	0.2	0.14	0.05	0.14	
	0.25	mg/l	Ammoniacal Nitrogen as NH3	0	0.01	0.07	0	0.04	0	0.17	0	0.17	
	0.26	mg/l	Ammoniacal Nitrogen as NH4	0.12	0	0	0.03	0	0.26	0	0.06	0	
	250.0	mg/l	Chloride as Cl	475.0	239.0	66.0	39.0	29.0	80.0	71.0	26.0	19.0	
	400.0	mg/l	Total Sulphur as SO4 (Dissolved)	139.0	115.0	191.0	105.0	66.0	58.0	54.0	36.0	25.0	
	6.0-9.0	pH Units	pH units	5.3	4.1	3.9	7.5	7.6	6.7	7.1	7.5	7.4	
03 Metals/Metaloids	0.001	mg/l	Copper as Cu (Dissolved)	0.001	0.047	0.002	0.003	0.005	< 0.001	< 0.001	0.005	0.004	
	0.0012	mg/l	Lead as Pb (Dissolved)	< 0.001	0.003	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	
	0.0034	mg/l	Chromium VI as Cr	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	
	0.004	mg/l	Nickel as Ni (Dissolved)	0.172	0.084	0.099	0.006	0.005	0.005	0.003	0.003	0.003	
	0.0123	mg/l	Zinc as Zn (Dissolved)	0.698	0.14	0.176	0.008	0.005	0.004	0.012	0.005	0.004	
	0.05	mg/l	Arsenic as As (Dissolved)	< 0.001	0.002	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	
	1.0	mg/l	Iron as Fe (Dissolved)	14.9	0.25	1.98	< 0.01	0.14	0.15	0.08	0.08	0.22	
	2.0	mg/l	Boron as B (Dissolved)	0.04	0.03	0.03	0.05	0.04	0.05	0.04	0.04	0.03	
	7e-05	mg/l	Mercury as Hg (Dissolved)	< 3e-05	< 3e-05	< 3e-05	< 3e-05	< 3e-05	< 3e-05	< 3e-05	< 3e-05	< 3e-05	
	8e-05	mg/l	Cadmium as Cd (Dissolved)	0.00063	0.00054	0.00151	8e-05	< 2e-05	< 2e-05	< 2e-05	5e-05	< 2e-05	
	0.0004	mg/l	Pentachlorophenol	< 0.1	< 0.05	< 0.05	0	0	0	0	0	0	
04 Phenols	0.0042	mg/l	2,4-Dichlorophenol	< 0.04	< 0.02	< 0.02	0	0	0	0	0	0	
	0.0077	mg/l	Phenol	< 0.05	< 0.02	< 0.02	< 0.0005	0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
	0.04	mg/l	4-Chloro-3-methylphenol	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	
	0.05	mg/l	2-Chlorophenol	< 0.04	< 0.02	< 0.02	0	0	0	0	0	0	
			4-Chlorophenol	< 0.04	< 0.02	< 0.02	0	0	0	0	0	0	
05 BTEX & MTBE	0.01	mg/l	Benzene	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
	0.02	mg/l	Ethyl Benzene	< 0.001	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
	0.03	mg/l	Xylenes	0	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	
	0.07400000000000001	mg/l	Toluene	< 0.001	< 0.001	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
06 Petroleum Hydrocarbons	0.01	mg/l	Aliphatics >C10 - C12	0.001	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aliphatics >C12 - C16	0.002	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aliphatics >C16 - C21	0.006	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aliphatics >C21 - C35	0.171	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aliphatics >C8 - C10	0.0	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aromatics >C10 - C12	0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aromatics >C12 - C16	0.006	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aromatics >C16 - C21	0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aromatics >C21 - C35	0.04	< 0.01	< 0.01	0.02	< 0.01	0.01	0.015	0.01	< 0.01	
			Aromatics >C8 - C10	0.002	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Anthracene	< 1e-05	< 0.002	< 0.002	< 1e-05	< 1e-05	< 1e-05	< 1e-05	< 1e-05	< 1e-05	
07 PAHs	0.0001	mg/l	Naphthalene	< 0.004	< 0.005	1e-05	< 1e-05	< 1e-05	< 1e-05	< 1e-05	< 1e-05	< 1e-05	
	0.002	mg/l	Benzo(a)pyrene	< 0.004	< 0.002	< 1e-05	1e-05	< 1e-05	2e-05	< 1e-05	1e-05	< 1e-05	
	1.7e-07	mg/l	Fluoranthene	< 1e-05	< 0.002	< 1e-05	1e-05	4e-05	2e-05	< 1e-05	1e-05	2e-05	
	6.3e-06	mg/l	Hexachlorobutadiene	< 0.005	< 0.005	< 0.005	0	0	0	0	0	0	
08 VOCs	0.0025	mg/l	Chloroform	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.01	mg/l	1,2-Dichloroethane	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
			Tetrachloroethene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
			Trichloroethene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.012	mg/l	Carbon Tetrachloride	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.02	mg/l	1,2-Dichlorobenzene	< 0.005	< 0.005	< 0.005	0	0	0	0	0	0	
			1,4-Dichlorobenzene	< 0.001	< 0.005	< 0.001	0	0	0	0	0	0	
			Sum Dichlorobenzenes - calculated	nan	nan	nan	0	0	0	0	0	0	
	0.05	mg/l	Styrene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.1	mg/l	1,1,1-Trichloroethane	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.4	mg/l	1,1,2-Trichloroethane	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
09 SVOCs	0.0004	mg/l	Sum Trichlorobenzenes - calculated	nan	nan	nan	0	0	0	0	0	0	
	0.0013	mg/l	Di-n-octylphthalate	< 0.004	< 0.002	< 0.002	0	0	0	0	0	0	
			bis(2-Ethylhexyl)phthalate	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	
	0.0075	mg/l	Butylbenzylphthalate	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	
	0.008	mg/l	Di-n-butylphthalate	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	
	0.2	mg/l	Diethylphthalate	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	
	0.8	mg/l	Dimethylphthalate	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	
11 Polyhalogenated Compounds	5e-05	mg/l	Hexachlorobenzene	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	
	0.00014	mg/l	4-Bromophenyl-phenylether	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	

Contaminant group	Drinking Water Standard	Unit	Contaminant	CAN	USA	AUS	UK	EU	WHO	EC	OECD	WHO	
02 General Inorganics	0.05	mg/l	Cyanide (Total) as CN	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	
	0.39	mg/l	Ammoniacal Nitrogen as N	0.09	0.01	0.06	0.02	0.03	0.2	0.14	0.05	0.14	
	0.47	mg/l	Ammoniacal Nitrogen as NH3	0	0.01	0.07	0	0.04	0	0.17	0	0.17	
	0.5	mg/l	Ammoniacal Nitrogen as NH4	0.12	0	0	0.03	0	0.26	0	0.06	0	
	250.0	mg/l	Chloride as Cl	475.0	239.0	66.0	39.0	29.0	80.0	71.0	26.0	19.0	
			Total Sulphur as SO4 (Dissolved)	139.0	115.0	191.0	105.0	66.0	58.0	54.0	36.0	25.0	
03 Metals/Metaloids	6.5-9.5	pH Units	pH units	5.3	4.1	3.9	7.5	7.6	6.7	7.1	7.5	7.4	
	0.001	mg/l	Mercury as Hg (Dissolved)	< 3e-05	< 3e-05	< 3e-05	< 3e-05	< 3e-05	< 3e-05	< 3e-05	< 3e-05	< 3e-05	
	0.005	mg/l	Cadmium as Cd (Dissolved)	0.00063	0.00054	0.00151	8e-05	< 2e-05	< 2e-05	< 2e-05	5e-05	< 2e-05	
	0.01	mg/l	Arsenic as As (Dissolved)	< 0.001	0.002	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	
			Lead as Pb (Dissolved)	< 0.001	0.003	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	
			Selenium as Se (Dissolved)	< 0.001	0.002	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	
	0.02	mg/l	Nickel as Ni (Dissolved)	0.172	0.084	0.099	0.006	0.005	0.005	0.005	0.003	0.003	
	0.05	mg/l	Chromium as Cr (Dissolved)	< 0.001	0.002	0.003	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	
	0.2	mg/l	Iron as Fe (Dissolved)	14.9	0.25	1.98	< 0.01	0.14	0.15	0.08	0.08	0.22	
	1.0	mg/l	Boron as B (Dissolved)	0.04	0.03	0.03	0.05	0.04	0.05	0.04	0.04	0.03	
	2.0	mg/l	Copper as Cu (Dissolved)	0.001	0.047	0.002	0.003	0.005	< 0.001	< 0.001	0.005	0.004	
	200.0	mg/l	Sodium as Na (Dissolved)	284.0	92.0	32.0	24.0	17.0	41.0	37.0	18.0	14.0	
3.0	mg/l	Zinc as Zn (Dissolved)	0.698	0.14	0.176	0.008	0.005	0.004	0.012	0.005	0.004		
04 Phenols	0.009000000000000000 1	mg/l	Pentachlorophenol	< 0.1	< 0.05	< 0.05	0	0	0	0	0	0	
	0.05	mg/l	Phenol	< 0.05	< 0.02	< 0.02	< 0.0005	0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
	0.2	mg/l	2,4,6-Trichlorophenol	< 0.04	< 0.02	< 0.02	0	0	0	0	0	0	
	0.3	mg/l	2-Chlorophenol	< 0.04	< 0.02	< 0.02	0	0	0	0	0	0	
05 BTEX & MTBE	0.001	mg/l	Benzene	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
	0.3	mg/l	Ethyl Benzene	< 0.001	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
	0.5	mg/l	Xylenes	0	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	
	0.7	mg/l	Toluene	< 0.001	< 0.001	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
06 Petroleum Hydrocarbons	0.09	mg/l	Aromatics >C10 - C12	0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aromatics >C12 - C16	0.006	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aromatics >C16 - C21	0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aromatics >C21 - C35	0.04	< 0.01	< 0.01	0.02	< 0.01	0.01	0.015	0.01	< 0.01	
	0.3	mg/l	Aliphatics >C10 - C12	0.001	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aliphatics >C12 - C16	0.002	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatics >C8 - C10			0.0	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
07 PAHs	0.0001	mg/l	PAH Sum of 4 - calculated	nan	nan	nan	nan	0	nan	0	nan	0	
	1e-05	mg/l	Benzo(a)pyrene	< 0.004	< 0.002	< 1e-05	1e-05	< 1e-05	2e-05	< 1e-05	1e-05	< 1e-05	
	0.0004	mg/l	1,2-Dibromoethane	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.0005	mg/l	Vinyl Chloride	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.0006	mg/l	Hexachlorobutadiene	< 0.005	< 0.005	< 0.005	0	0	0	0	0	0	
	0.001	mg/l	1,2-Dibromo-3-chloropropane	< 0.005	< 0.005	< 0.005	0	0	0	0	0	0	
08 VOCs	0.003	mg/l	1,2-Dichloroethane	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
			Carbon Tetrachloride	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	0
	0.02	mg/l	Styrene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
			cis 1,3-Dichloropropene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	0
			trans 1,3-Dichloropropene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	0
	0.04	mg/l	1,2-Dichloropropane	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.1	mg/l	Sum Trihalomethanes - calculated	nan	nan	nan	0	0	0	0	0	0	
	0.3	mg/l	1,4-Dichlorobenzene	< 0.001	< 0.005	< 0.001	0	0	0	0	0	0	
	1.0	mg/l	1,2-Dichlorobenzene	< 0.005	< 0.005	< 0.005	0	0	0	0	0	0	
	1.3	mg/l	Sum Dichlorobenzenes - calculated	nan	nan	nan	0	0	0	0	0	0	
09 SVOCs	0.008	mg/l	Di-n-octylphthalate	< 0.004	< 0.002	< 0.002	0	0	0	0	0	0	
			bis(2-Ethylhexyl)phthalate	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	
	0.02	mg/l	Sum Trichlorobenzenes - calculated	nan	nan	nan	0	0	0	0	0	0	
	0.35	mg/l	Di-n-butylphthalate	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	
	5e-05	mg/l	Hexachlorobenzene	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	

Appendix D. Human Health GQRA Screening

Category	Item	Value
Category 1	Item 1.1	100
	Item 1.2	200
Category 2	Item 2.1	300
	Item 2.2	400
Category 3	Item 3.1	500
	Item 3.2	600
Category 4	Item 4.1	700
	Item 4.2	800
Category 5	Item 5.1	900
	Item 5.2	1000
Category 6	Item 6.1	1100
	Item 6.2	1200
Category 7	Item 7.1	1300
	Item 7.2	1400
Category 8	Item 8.1	1500
	Item 8.2	1600
Category 9	Item 9.1	1700
	Item 9.2	1800
Category 10	Item 10.1	1900
	Item 10.2	2000
Category 11	Item 11.1	2100
	Item 11.2	2200
Category 12	Item 12.1	2300
	Item 12.2	2400
Category 13	Item 13.1	2500
	Item 13.2	2600
Category 14	Item 14.1	2700
	Item 14.2	2800
Category 15	Item 15.1	2900
	Item 15.2	3000
Category 16	Item 16.1	3100
	Item 16.2	3200
Category 17	Item 17.1	3300
	Item 17.2	3400
Category 18	Item 18.1	3500
	Item 18.2	3600
Category 19	Item 19.1	3700
	Item 19.2	3800
Category 20	Item 20.1	3900
	Item 20.2	4000
Category 21	Item 21.1	4100
	Item 21.2	4200
Category 22	Item 22.1	4300
	Item 22.2	4400
Category 23	Item 23.1	4500
	Item 23.2	4600
Category 24	Item 24.1	4700
	Item 24.2	4800
Category 25	Item 25.1	4900
	Item 25.2	5000
Category 26	Item 26.1	5100
	Item 26.2	5200
Category 27	Item 27.1	5300
	Item 27.2	5400
Category 28	Item 28.1	5500
	Item 28.2	5600
Category 29	Item 29.1	5700
	Item 29.2	5800
Category 30	Item 30.1	5900
	Item 30.2	6000
Category 31	Item 31.1	6100
	Item 31.2	6200
Category 32	Item 32.1	6300
	Item 32.2	6400
Category 33	Item 33.1	6500
	Item 33.2	6600
Category 34	Item 34.1	6700
	Item 34.2	6800
Category 35	Item 35.1	6900
	Item 35.2	7000
Category 36	Item 36.1	7100
	Item 36.2	7200
Category 37	Item 37.1	7300
	Item 37.2	7400
Category 38	Item 38.1	7500
	Item 38.2	7600
Category 39	Item 39.1	7700
	Item 39.2	7800
Category 40	Item 40.1	7900
	Item 40.2	8000
Category 41	Item 41.1	8100
	Item 41.2	8200
Category 42	Item 42.1	8300
	Item 42.2	8400
Category 43	Item 43.1	8500
	Item 43.2	8600
Category 44	Item 44.1	8700
	Item 44.2	8800
Category 45	Item 45.1	8900
	Item 45.2	9000
Category 46	Item 46.1	9100
	Item 46.2	9200
Category 47	Item 47.1	9300
	Item 47.2	9400
Category 48	Item 48.1	9500
	Item 48.2	9600
Category 49	Item 49.1	9700
	Item 49.2	9800
Category 50	Item 50.1	9900
	Item 50.2	10000





Appendix E. Ground Gas Results

	BH ID	Flow		Concentration CH4		Concentration CO2		Qhg CH4	Qhg CO2	Stratum Screened	Flooded response zone	Barometric pressure
		Peak L/H	Steady L/H	Peak %	Steady %	Peak %	Steady %	(peak)	(peak)			
Round 1	1-228	< 0.1	< 0.1	5	4.3	3.6	3.6	0.005	0.004	RTD	Partially	Rising
25/02/2020 -	1-212 (S)	< 0.1	< 0.1	0.4	< 0.1	5.6	< 0.1	0.000	0.006	MG	Partially	
06/05/2020	1-293	< 0.1	< 0.1	1.7	1.7	1.1	< 0.1	0.002	0.001	MG	Partially	
	1-217	< 0.1	< 0.1	0.2	0.2	2.2	0.4	0.000	0.002	MG / RTD / Bagshot	Partially	
	1-226	< 0.1	< 0.1	28	28	< 0.1	< 0.1	0.028	0.000	Bagshot	Yes	
	1-511 (S)	< 0.1	< 0.1	< 0.1	< 0.1	4.2	4.2	0.000	0.004	RTD	Partially	
Round 2	1-228	< 0.1	< 0.1	0.2	0.2	2.9	2.9	0.000	0.003	RTD	Partially	Rising
11/05/2020 -	1-293	< 0.1	< 0.1	12	5.6	7.2	3.7	0.012	0.007	MG	Partially	
28/05/2020	1-392 (S)	1.45	1.45	2	1.5	1.1	1.1	0.029	0.016	Bagshot	Partially	
	1-508 (S)	< 0.1	< 0.1	1.1	0.2	8.3	7.8	0.001	0.008	MG / RTD	Partially	
	1-511 (S)	0.1	0.1	0.2	0.2	4.5	3.8	0.000	0.005	RTD	Partially	
	1-217	< 0.1	< 0.1	0.5	0.5	0.7	0.1	0.001	0.001	MG / RTD / Bagshot	Partially	
	1-233	< 0.1	< 0.1	2	2	2.7	2.3	0.002	0.003	MG / RTD	Yes	
	1-226	< 0.1	< 0.1	0.2	0.1	< 0.1	< 0.1	0.000	0.000	Bagshot	Yes	
	1-715 (S)	< 0.1	< 0.1	0.1	0.1	< 0.1	< 0.1	0.000	0.000	Bagshot	Partially	
Round 3	1-203 (S)	< 0.1	< 0.1	77	77	< 0.1	< 0.1	0.077	0.000	RTD / Bagshot	Partially	Rising
27/05/2020 -	1-228	< 0.1	< 0.1	2.5	1.9	3	2.8	0.003	0.003	RTD	Partially	
08/06/2020	1-293	< 0.1	< 0.1	72	33.5	13	5.8	0.072	0.013	MG	Partially	
	1-392 (S)	< 0.1	< 0.1	11	10	< 0.1	< 0.1	0.011	0.000	Bagshot	Partially	
	1-508 (S)	< 0.1	< 0.1	80	76	< 0.1	< 0.1	0.080	0.000	MG / RTD	Partially	
	1-217	< 0.1	< 0.1	0.2	0.2	0.2	0.1	0.000	0.000	MG / RTD / Bagshot	Partially	
	1-233	< 0.1	< 0.1	0.2	0.1	10	9.4	0.000	0.000	MG / RTD	Yes	
	1-226	< 0.1	< 0.1	0.2	0.2	< 0.1	< 0.1	0.000	0.000	Bagshot	Yes	
	1-511 (S)	< 0.1	< 0.1	46	45.5	< 0.1	< 0.1	0.046	0.000	RTD	Partially	

* If a gas borehole flow is not detected, it is assumed that the flow is at the detection limit of the equipment used

Appendix F. Updated Conceptual Site Model

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation		
			Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk		Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk
Potential sources of contamination (including soil, water, vapors and ground gases) within the Scheme include: •historical pollution from vehicles using the current M25, A3, A245 and local access roads; •Made Ground/infill material of unknown quality associated with the construction of the M25, A3, A245 Byfleet Road, local access roads, Former Wisley Airfield, San Domenico site and other existing infrastructure; •material of unknown quality associated with the infilling/potential infilling of former water features and mineral extraction pits; •three historical landfills (understood to be inert fill); •three recorded pollution incidents (minor severity and occurred prior to 1999); •part of former Wisley Airfield and associated activities (historical GI identified some contamination); and •farms and agricultural land use.	Human Health (within the Scheme) •Construction workers and future site maintenance workers	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Receptor not present on-site during baseline			Medium	Low likelihood	Moderate/Low Risk	Implementation of measures in the Environmental Management Plan (EMP) such as good management of stockpiles in accordance with Environment Agency Pollution Prevention Guidelines (PPG), implementation of pollution incident control e.g. plant drip trays and spill kits. Implementation of dust management systems. Risk Assessment and Method Statements (RAMS) to be completed prior to construction and risk management with appropriate PPE. Implementation of a safe system of work if entry to a confined space is required and unavoidable. Guidance issued by the HSE for working in confined spaces should be followed. Piling Risk Assessment (PRA) to consider the risk of ground gas. Ground gas mitigation measures to be included within the design of below ground chambers and ducts. See section 10.9 of the Environmental Statement for further details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater				Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion				Severe	Unlikely	Moderate/Low Risk		Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk
		Inhalation, ingestion and dermal contact with contaminants within surface water				Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Inhalation of vapors from contaminated soil and / or water				Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	Human Health (within the Scheme) •Members of the public using public rights of way (non motorised users).	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Medium	Low likelihood	Moderate/Low Risk	Receptor not present on-site during construction				Receptor not present on-site during construction			Medium	Unlikely	Low Risk
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Unlikely	Low Risk								Medium	Unlikely	Low Risk
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	Moderate/Low Risk								Severe	Unlikely	Moderate/Low Risk
		Inhalation, ingestion and dermal contact with contaminants within surface water	Medium	Unlikely	Low Risk								Medium	Unlikely	Low Risk
		Inhalation of vapors from contaminated soil and / or water	Medium	Unlikely	Low Risk								Medium	Unlikely	Low Risk
	Human Health (within the study area) •Local residents (including Elm Corner) •School children and staff (e.g. Feltonfleet School) •Workers and visitors at nearby commercial premises and recreational facilities •Members of the public using public rights of way (non motorised users).	Inhalation, ingestion and dermal contact with contaminants in windblown soil-derived dust/fibres	Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk		Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk
		Inhalation, ingestion and dermal contact with contaminants within surface water	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Inhalation of vapors from contaminated soil and / or water	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	Controlled Waters (within the Scheme) •Groundwater (superficial Principal and Secondary A aquifers and bedrock)	Leaching / vertical migration of contaminants in soils to underlying groundwater	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	PRA and use of appropriate piling methods. Implementation of measures in the EMP such as good management of stockpiles in accordance with	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Migration of contaminants entrained in surface water run-off	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation		
			Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk		Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk
	Secondary A aquifer) •Surface water (Stratford Brook, River Mole, unnamed drains and ditches.	Migration of contamination via surface waters	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	Environment Agency PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 of Environmental Statement for further details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	Controlled Waters (within the study area) •Groundwater (Superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (River Wey, Bolder Mere, Pond Farm Pond, Manor Pond and unnamed drains, ditches and ponds.	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Lateral migration of contamination in groundwater	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Migration of contaminants entrained in surface water run-off	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Migration of contamination via surface waters	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	Ecology •Thames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient Woodland.	Leaching / vertical migration of contaminants followed by lateral migration of contamination in groundwater connected to bog/ surface water	Medium	unlikely	Low Risk	Medium	Unlikely	Low Risk	Implementation of measures in the EMP such as good management of stockpiles in accordance with EA PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 of Environmental Statement for further details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Migration of contaminants entrained in surface water run-off	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	Property (within the Scheme) •Piles and other foundations •Historic remains/structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Medium	Unlikely	Low Risk	Medium	Low likelihood	Moderate/Low Risk	Implementation of measures in the EMP. PRA to consider the risk of ground gas. See section 10.9 of Environmental Statement for further details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Migration of ground gases or vapors along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk		Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk
		Chemical attack from aggressive chemical constituents in soil or groundwater	Medium	Unlikely	Low Risk	Medium	Low likelihood	Moderate/Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Migration of ground gases or vapors along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk		Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation			
			Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk		Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk	
Potential sources of contamination (including soil, water, vapors and ground gases) within the study area include: •Made Ground/infill material of unknown quality associated with the construction of Feltonfleet School, the railway, RHS Wisley and other existing infrastructure; •material of unknown quality associated with the infilling/potential infilling of former water features and mineral extraction pits; • five recorded pollution incidents (minor severity and occurred prior to 1998); •wider area of the former Wisley Airfield and associated activities (historical GI identified some contamination); •farms and agricultural land use; •the railway; •five historical landfills; and •potentially contaminative land uses (current and historical), including vehicle service stations, electricity substation, sewage treatment, gas works, asphalt and coated macadam laying	Human Health (within the Scheme) •Construction workers and future site maintenance workers.	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Receptor not present on-site during baseline			Medium	Low likelihood	Moderate/Low Risk	RAMS to be completed prior to construction and risk management with appropriate PPE. Implementation of a safe system of work if entry to a confined space is required and unavoidable. Guidance issued by the HSE for working in confined spaces should be followed. PRA to consider the risk of ground gas. Ground gas mitigation measures to be included within the design of below ground chambers and ducts. See section 10.9 of the Environmental Statement for further details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater				Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion				Severe	Unlikely	Moderate/Low Risk		Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk	
		Inhalation, ingestion and dermal contact with contaminants within surface water				Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	
		Inhalation of vapors from contaminated soil and / or water				Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	
	Human Health (within the Scheme) •Members of the public using public rights of way (non motorised users)	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Medium	Unlikely	Low Risk	Receptor not present on-site during construction				Receptor not present on-site during construction			Medium	Unlikely	Low Risk	
		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Unlikely	Low Risk								Medium	Unlikely	Low Risk	
		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	Moderate/Low Risk								Severe	Unlikely	Moderate/Low Risk	
		Inhalation, ingestion and dermal contact with contaminants within surface water	Medium	Unlikely	Low Risk								Medium	Unlikely	Low Risk	
		Inhalation of vapors from contaminated soil and / or water	Medium	Unlikely	Low Risk								Medium	Unlikely	Low Risk	
	Controlled Waters (within the Scheme) •Groundwater (superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer) •Surface water (Stratford Brook, River Mole, unnamed drains, ditches and ponds).	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	PRA and use of appropriate piling methods. Implementation of measures in the EMP such as good management of stockpiles in accordance with Environment Agency PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 of Environmental Statement for further details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	
		Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	
		Lateral migration of contamination in groundwater	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	
		Migration of contaminants entrained in surface water run-off	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	
		Migration of contamination via surface waters	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	
	Ecology •Thames Basin Heath SPA, Ockham Common and Wisley	Leaching / vertical migration of contaminants followed by lateral migration of contamination in groundwater connected to bog/ surface water	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	Implementation of measures in the EMP such as good management of stockpiles in	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	

Source	Receptor	Pathway	Baseline			Construction without mitigation			Mitigation measures	Construction with mitigation			Operation		
			Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk		Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk
contractors, garden machinery services, vehicle dealers, wood and furniture polishers, picture frame renovators, pest control service, small business park and stationery printers.	Common SSSI, Ockham and Wisley LNR and Ancient Woodland.	Migration of contaminants entrained in surface water run-off	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	accordance with EA PPG, implementation of pollution incident control e.g. plant drip trays and spill kits. Control of run off and implementation of dust management systems. See section 10.9 of Environmental Statement for further details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	Property (within the Scheme) •Piles and other foundations •Historic remains/ structures and listed buildings •Underground services.	Chemical attack from aggressive chemical constituents in soil or groundwater	Medium	Low likelihood	Moderate/Low Risk	Medium	Low likelihood	Moderate/Low Risk	Design to be in line with the geotechnical parameters presented per stratum in Section 5.11 and summarised in Table 5-62 of the main GIR. Implementation of measures in the EMP. PRA to consider the risk of ground gas. Ground gas mitigation measures to be included within the design of below ground chambers and ducts. See section 10.9 of Environmental Statement for further details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		Migration of ground gases or vapors along preferential pathways including permeable ground, services trenches and service entry points and accumulation in enclosed spaces such as services ducts or access points	Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk		Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk

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