

# 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 <u>Drawing 1.</u>



LEGEND

**GW Monitoring Wells** 

GW and Gas Monitoring Wells

GW Piezos Gas Monitorina

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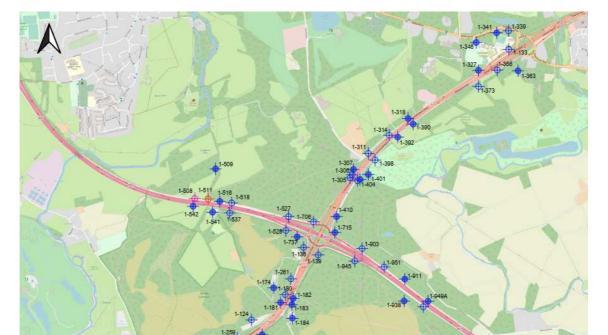


Figure 1-2 – Monitoring Network Location Plan

#### 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.

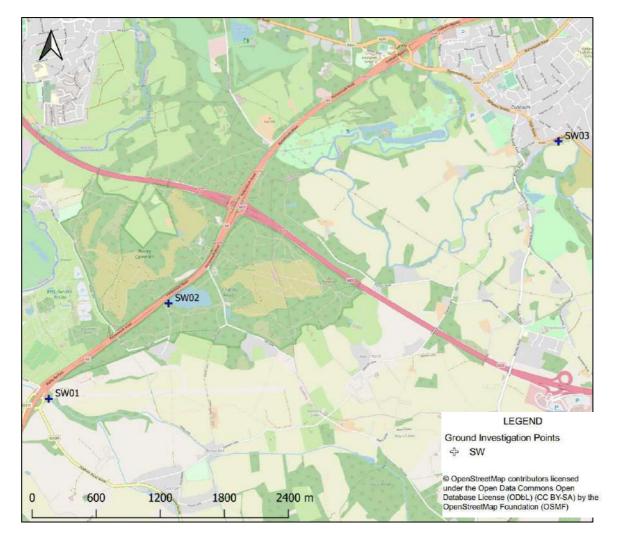
#### Methodology

- 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 noeffect 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 (CaCO3), 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 CaCO3 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<sub>3</sub>. 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

		Leachate			Groundwater			
Chemical Parameter	GAC (EQS-f /DWS/PN EC) (mg/l)	Max Conc. (mg/l)	No. of samples	No. of exceedanc es	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	

<sup>\*</sup>Site specific predicted no effect concentrations (PNEC) calculated using Environment Agency M-BAT

N/A is shown where determinand is not tested or where no value is available for specific GAC

<sup>+</sup>DWS derived generic assessment criteria



Table 2-2 Surface water exceedances

		Surface Water			
Chemical Parameter	GAC (EQS-f /DWS/PNE C) (mg/l)	Max Conc. (mg/l)		No. of exceedances	
Benzo(a)pyrene	0.0000017	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<sub>3</sub> molecule and ammonium only to the NH<sub>4</sub>+ 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 (Qhg) should be calculated for methane and carbon dioxide for every borehole for each visit and suggests the Qhg be presented alongside the gas monitoring results in a database. Qhg is calculated using the maximum gas concentration recorded (unless lower values can be justified) and the steady state flow rate using the below formula:
  - Qhg = Borehole flow rate (I/h) x 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<sub>hg</sub> 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 shortterm 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 <sub>4</sub> (% vol)	Maximum CO <sub>2</sub> (% vol)	Minimum O <sub>2</sub> (% vol)	Maximum H₂S (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

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



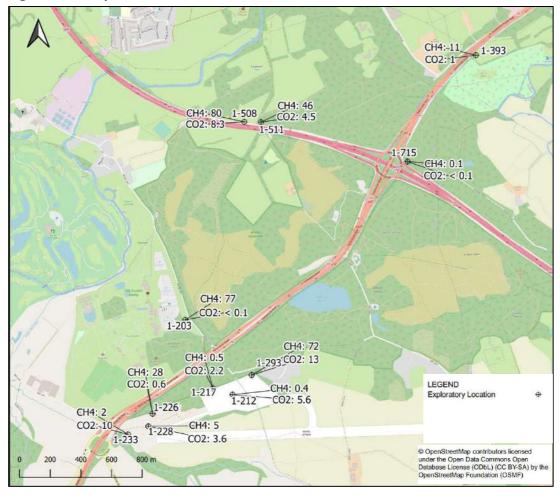


Figure 2-2 - Map of Maximum CO<sub>2</sub> and CH<sub>4</sub> Concentrations

2.4.10. The full set of calculated Q<sub>hg</sub> for each monitoring round at all locations are presented in Appendix E. A summary of maximum Q<sub>hg</sub>, 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 (I/hr)	Maximum concentration (% vol)			g / GSV [l/hr)	Implied Maximum Characteristic Situation	
		CH <sub>4</sub> %	CO <sub>2</sub> %	CH <sub>4</sub>	CO <sub>2</sub>	CH <sub>4</sub>	CO <sub>2</sub>
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	Maximum concentration (% vol)			g / GSV [/hr)	Implied Maximum Characteristic Situation	
	(l/hr)	CH <sub>4</sub> %	CO <sub>2</sub> %	CH <sub>4</sub>	CO <sub>2</sub>	CH₄	CO <sub>2</sub>
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*

<sup>\*</sup> 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.

#### **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<sub>hg</sub> 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

<sup>#</sup> Based on the maximum representative flow rate of site (discussed detail in section 0)

<sup>^</sup> Designed for groundwater monitoring but used for ground gas monitoring due to proximity to sources.

<sup>(</sup>S) - Shallow screen well of a dual installation location



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

4-1 Updated Conceptual Site 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)
Potential sources of		Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres		Moderate/Low Risk		Low Risk	Low Risk
contamination (including soil, water, vapors and ground gases) within the Scheme include:	ontamination (including bil, water, vapors and round gases) within the cheme include:  Localised benzo(a)pyrene ithin Made Ground to the buth of J10 off-slip cocalised PAH within  Human Health (within the Scheme)  • Construction workers and future site maintenance workers	Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater		Low Risk		Low Risk	Low Risk
Localised benzo(a)pyrene within Made Ground to the south of J10 off-slip     Localised PAH within Made Ground at the		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	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.	Moderate/Low Risk	Moderate/Low Risk
southern end of Stratford Brook Underbridge and Wisley Lane Realignment •Localised nickel within		Inhalation, ingestion and dermal contact with contaminants within surface water		Low Risk		Low Risk	Low Risk
Bagshot Formation to the south of J10 off-slip  •Localised lead to the north of J10 off-slip		Inhalation of vapors from contaminated soil and / or water		Low Risk		Low Risk	Low Risk
Localised asbestos south of Stratford Brook     Underbridge and Wisley     Lane Realignment		Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Moderate/Low Risk		Risk Assessment and Method Statements (RAMS) to be completed prior to construction and	Receptor not present on- site during construction	Low Risk
Potential VOC vapors at isolated locations across the Scheme. PID monitoring indicated <10 ppm	Human Health (within the	Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Low Risk		risk management with appropriate PPE. Implementation of a safe system of work if entry to a confined space is required		Low Risk
•Isolated marginally elevated concentrations of organic compounds (TPH, phenol and PAH), hexavalent chromium and	Scheme)  •Members of the public using public rights of way (non motorised users).	Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Moderate/Low Risk	Receptor not present on- site during construction	and unavoidable. Guidance issued by the HSE for working in confined spaces should be followed. Piling Risk Assessment		Moderate/Low Risk
lead within groundwater (<0.1 mg/l)  •Isolated marginally elevated concentrations of		Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk		(PRA) to consider the risk of ground gas.  See section 10.9 of the Environmental Statement		Low Risk
PAHs in surface water (<0.1 mg/l) PGround gas including solated carbon dioxide and		Inhalation of vapors from contaminated soil and / or water	Very Low Risk		for further details.		Low Risk
methane above Tier 1 levels	Human Health (within the study area)  •Local residents (including	Inhalation, ingestion and dermal contact with contaminants in windblown soil-derived dust/fibres	Moderate/Low Risk	Moderate/Low Risk		Low Risk	
	Elm Corner)	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><li>School children and staff (e.g. Feltonfleet School)</li><li>Workers and visitors at</li></ul>	contaminants within perched water and shallow groundwater					
	nearby commercial premises and recreational facilities  •Members of the public using public rights of way	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
	(non motorised users).	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	Leaching / vertical migration of contaminants in soils to underlying groundwater	Low Risk	Low Risk		Low Risk	Low Risk
	the Scheme) •Groundwater (superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer)	Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater	Low Risk	Low Risk		Low Risk	Low Risk
	<ul> <li>Surface water (Stratford Brook, River Mole, unnamed drains and ditches.</li> </ul>	Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	PRA and use of appropriate piling methods. Implementation of	Low Risk	Low Risk
	anones.	Migration of contamination via surface waters	Low Risk	Low Risk	measures in the EMP such as good management of stockpiles in accordance	Low Risk	Low Risk
		Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Low Risk	Low Risk	with Environment Agency PPG, implementation of pollution incident control e.g. plant drip trays and spill	Low Risk	Low Risk
	Controlled Waters (within the study area) •Groundwater (Superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer)	Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Low Risk	Low Risk	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
	•Surface water (River Wey, Bolder Mere, Pond Farm Pond, Manor Pond and	Lateral migration of contamination in groundwater	Low Risk	Low Risk		Low Risk	Low Risk
	unnamed drains, ditches and ponds.	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	Low Risk	Low Risk			
		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	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			
	Property (within the	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.				Low Risk	Low Risk
	Scheme)  •Piles and other foundations  •Historic remains/structures and listed buildings  •Underground services.	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	Chemical attack from aggressive chemical constituents in soil or groundwater	Low Risk	Moderate/Low Risk	See section 10.9 of Environmental Statement for further details.	Low Risk	Low Risk			
	area) •Residential, commercial and industrial properties •Historic remains/structures and listed buildings •Underground services.	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:	rces of on (including vapors and es) including:  und/infill material quality with the	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres		Moderate/Low Risk	RAMS to be completed prior to construction and risk management with appropriate PPE.	Low Risk	Low Risk			
•Made Ground/infill material of unknown quality associated with the construction of Feltonfleet		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Receptor not present on- site during baseline	Low Risk	Implementation of a safe system of work if entry to a confined space is required and unavoidable.  Guidance issued by the	Low Risk	Low Risk			
School, the railway, RHS Wisley and other existing infrastructure;		Migration and accumulation of ground gases followed by inhalation or ignition		Moderate/Low Risk	HSE for working in confined spaces should be followed.	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)
•material of unknown quality associated with the		causing asphyxiation and/or explosion	coonancy		PRA to consider the risk of ground gas.		
infilling/potential infilling of former water features and mineral extraction pits; • five recorded pollution incidents (minor severity		Inhalation, ingestion and dermal contact with contaminants within surface water		Low Risk	See section 10.9 of Environmental Statement for further details.	Low Risk	Low Risk
and occurred prior to 1998);  •wider area of the former Wisley Airfield and		Inhalation of vapors from contaminated soil and / or water		Low Risk		Low Risk	Low Risk
associated activities	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				Low Risk
use; •the railway; •five historical landfills; and •potentially contaminative land uses (current and		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Low Risk				Low Risk
historical), including vehicle service stations, electricity substation, sewage treatment, gas works, asphalt and coated macadam laying		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Moderate/Low Risk	Receptor not present on- site during Construction		Receptor not present on- site during Construction	Moderate/Low Risk
contractors, garden machinery services, vehicle dealers, wood and furniture polishers, picture frame		Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk				Low Risk
renovators, pest control service, small business park and stationery printers.		Inhalation of vapors from contaminated soil and / or water	Low Risk				Low Risk
		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	Low Risk	Low Risk
	Controlled Waters (within the Scheme) •Groundwater (superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer)	Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater followed by lateral migration	Low Risk	Low Risk	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
	•Surface water (Stratford Brook, River Mole, unnamed drains, ditches	Lateral migration of contamination in groundwater	Low Risk	Low Risk		Low Risk	Low Risk
	and ponds).	Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk		See section 10.9 of Environmental Statement  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	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	Low Risk	Low Risk
	• I hames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient Woodland.	Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	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
	Property (within the	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	Low Risk	Low Risk
	Scheme) •Piles and other foundations •Historic remains/ structure and listed buildings •Underground services.	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	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.	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)
Potential sources of contamination (including soil,		Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres		Moderate/Low Risk		Low Risk		Low Risk	
water, vapors and ground gases) within the Scheme	Human Health (within the Scheme)	Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Receptor not	Low Risk	(Impact predicted to be	Low Risk	(Impact predicted to be negligible given	Low Risk	(Impact predicted to be negligible given
include: •Localised	Construction workers and future site maintenance workers	Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	present on-site during baseline	Moderate/Low Risk	moderate adverse given sensitivity of receptor)	Moderate/Low Risk	reduced likelihood of pathway being realised)	Moderate/Low Risk	reduced likelihood of pathway being
benzo(a)pyrene within Made Ground to the south of J10		Inhalation, ingestion and dermal contact with contaminants within surface water		Low Risk	coop.co./	Low Risk		Low Risk	realised)
off-slip •Localised PAH		Inhalation of vapors from contaminated soil and / or water		Low Risk		Low Risk		Low Risk	
within Made Ground at the southern end of Stratford Brook		Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres  Moderate/Low Risk					Low Risk	Minor Beneficial	
Underbridge and Wisley Lane Realignment •Localised nickel	Human Health (within the Scheme)	Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Low Risk				Low Risk	Negligible	
within Bagshot Formation to the south of J10 off-slip	Members of the public using public rights of way (non motorised users).	Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Moderate/Low Risk	Receptor not prese	ent on-site during c	Moderate/Low Risk	Negligible		
•Localised lead to the north of J10 off- slip		Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk	1			Low Risk	Negligible	
•Localised asbestos south of Stratford		Inhalation of vapors from contaminated soil and / or water	Low Risk					Low Risk	Negligible
Brook Underbridge and Wisley Lane Realignment	Human Health (within the study area)	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
•Potential VOC vapors at isolated locations across the Scheme. PID	Local residents (including Elm Corner)     School children and staff (e.g.	Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
monitoring indicated <10 ppm •Isolated marginally	Feltonfleet School) •Workers and visitors at nearby commercial premises and recreational facilities	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
elevated concentrations of organic compounds	•Members of the public using public rights of way (non motorised users).	Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
(TPH, phenol and PAH), hexavalent		Inhalation of vapors from contaminated soil and / or water	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
chromium and lead within groundwater (<0.1 mg/l)	Controlled Waters (within the Scheme) •Groundwater (superficial Principal	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)
•Isolated marginally elevated concentrations of	elevated bedrock Secondary A aquifer) concentrations of PAHs in surface water (<0.1 mg/l) 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
water (<0.1 mg/l)		Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
including isolated carbon dioxide and		Migration of contamination via surface waters	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
methane above Tier 1 levels		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
	Controlled Waters (within the study area) •Groundwater (Superficial Principal and Secondary A aquifers and bedrock Secondary A aquifer)	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
	•Surface water (River Wey, Bolder Mere, Pond Farm Pond, Manor Pond	Lateral migration of contamination in groundwater	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
	and unnamed drains, ditches and ponds.	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,	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
	Ockham and Wisley LNR and Ancient Woodland.	Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
	Property (within the Scheme)	Chemical attack from aggressive chemical constituents in soil or groundwater	Low Risk	Moderate/Low Risk	Minor Adverse	Low Risk	Negligible	Low Risk	Negligible
	Piles and other foundations Historic remains/structures and listed buildings Underground services.	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)	Chemical attack from aggressive chemical constituents in soil or groundwater	Low Risk	Moderate/Low Risk	Minor Adverse	Low Risk	Negligible	Low Risk	Negligible
	Residential, commercial and industrial properties     Historic remains/structures and listed buildings     Underground services.	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)
water, vapors and ground gases) including:		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)
•Made Ground/infill material of unknown quality associated		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion		Moderate/Low Risk		Moderate/Low Risk	measures	Moderate/Low Risk	Tealiseu)
with the construction of		Inhalation, ingestion and dermal contact with contaminants within surface water		Low Risk		Low Risk		Low Risk	
Feltonfleet School, the railway, RHS Wisley and other		Inhalation of vapors from contaminated soil and / or water		Low Risk		Low Risk		Low Risk	
existing infrastructure; •material of		Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Low Risk				Low Risk	Negligible	
unknown quality associated with the infilling/potential	Human Health (within the Scheme)	Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Low Risk				Low Risk	Negligible	
infilling of former water features and mineral extraction pits;	Members of the public using public rights of way (non motorised users)	Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Moderate/Low Risk	Receptor not prese	nt on-site during o		Moderate/Low Risk	Negligible	
five recorded pollution incidents		Inhalation, ingestion and dermal contact with contaminants within surface water	Low Risk			Low Risk	Negligible		
(minor severity and occurred prior to 1998);		Inhalation of vapors from contaminated soil and / or water	Low Risk				Low Risk	Negligible	
•wider area of the former Wisley Airfield and		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
associated activities (historical GI identified some contamination); •farms and	Controlled Waters (within the Scheme) •Groundwater (superficial Principal and Secondary A aquifers and	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
agricultural land use;	bedrock Secondary A aquifer) •Surface water (Stratford Brook, River Mole, unnamed drains, ditches and	Lateral migration of contamination in groundwater	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
<ul><li>the railway;</li><li>five historical</li></ul>	ponds).	Migration of contaminants entrained in surface water run-off	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
landfills; and •potentially		Migration of contamination via surface waters	Low Risk	Low Risk	Negligible	Low Risk	Negligible	Low Risk	Negligible
contaminative land uses (current and historical), including vehicle service stations, electricity	Ecology •Thames Basin Heath SPA, Ockham Common and Wisley Common SSSI, Ockham and Wisley LNR and Ancient	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
substation, sewage treatment, gas	Woodland.	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		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
dealers, wood and furniture polishers, picture frame renovators, pest control service, small business park and stationery printers.	Piles and other foundations Historic remains/ structures and listed buildings Underground services.	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.



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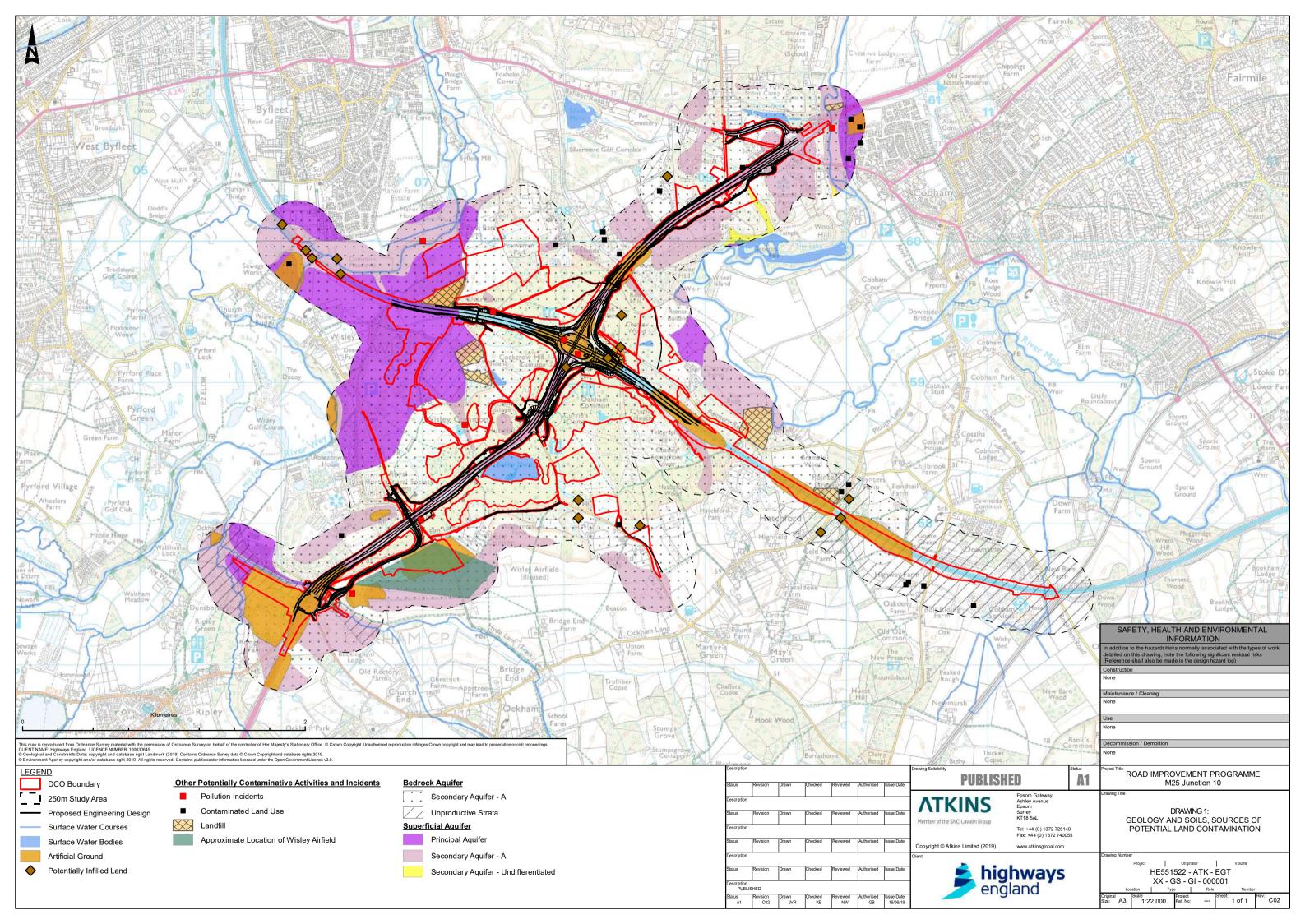


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## **Drawings**

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



# **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

Carried out for: Geoffrey Osborne Limited Fonteyn House 47-49 London Road Reigate Surrey, RH2 9PY

Investigation Supervisor: Atkins Limited Woodcote Grove Ashley Road Epsom Surrey, KT18 5BW

#### SOCOTEC UK

Glossop House, Hogwood Industrial Estate, Wokingham RG40 4QW Tel: +44 (0) 118 932 8888

email: geo.wokingham@socotec.com



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### Report No D9008-19A

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ISSUE No DATE	STATUS	PREPARED BY	CHECKED BY	APPROVED BY
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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:

 $\circ$  pH  $\pm$  0.1

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- Conductivity ± 3%
- Redox ± 10mv
- Dissolved Oxygen ± 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

ТҮРЕ	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.
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## APPENDIX A INSTRUMENTATION AND MONITORING

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



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 datalogge 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 datalogge 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 datalogge 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 datalogge 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

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AGS

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

Table

**A1** 



						T	1	
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	



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 datalogge 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 datalogge 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 Project No. Carried out for

AGS

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



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	

Carried out for

**Geoffrey Osborne Limited** 



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	

Carried out for



				Croundwater	
nstrument Reference	Instrument	Instrument Base,	Date Time	Groundwater depth,	Comments
notiument reference	Type	mbgl	dd/mm/yyyy hh:mm:ss	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

Project No.
Carried out for

AGS

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

**Geoffrey Osborne Limited** 



				Groundwater	
nstrument Reference	Instrument	Instrument Base,	Date Time	depth,	Comments
	Type	mbgl	dd/mm/yyyy hh:mm:ss	mbgl	Gommonico .
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 No.
Carried out for

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

ried out for Geoffrey Osborne Limited



			D . T	Groundwater	
nstrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	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	
1-174 (S) 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	10/00/2019 10:07:00	J.U <del>1</del>	

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

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

Project No. Carried out for **Geoffrey Osborne Limited** 



	Inatrumant	Instrument Dage	Doto Timo	Groundwater	
nstrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	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

Project No.
Carried out for

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

**Geoffrey Osborne Limited** 



	Instrument	Instrument Base,	Date Time	Groundwater	_
nstrument Reference	Туре	mbgl	dd/mm/yyyy hh:mm:ss	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 M25 J10 - A3 Wisley Interchange Improvements
Project No. D9008-19

**Geoffrey Osborne Limited** 

Carried out for

**A2** 



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 13:33:00	1.20	+
1-203 (S)	SP	7.50	04/02/2020 12:00:00	1.22	

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

Project Project No.

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Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
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 12:00:00	2.44	+
1-210 (1)	SP	12.50	25/02/2020 00:00:00	2.14	+
	SP	12.50	05/05/2020 00:00:00	2.14	
1-210 (1) 1-210 (1)	SP	12.50	20/05/2020 16:00:00	2.24	

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

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

**Geoffrey Osborne Limited** 



Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
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	

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

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rried out for Geoffrey Osborne Limited



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Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
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	
		18.50	27/01/2020 12:00:00	0.80	+
1-237 (2)	SPIE	10.50	21/01/2020 12.00.00	0.00	

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,	Comments
1-237 (2)	SPIE	18.50	25/02/2020 00:00:00	mbgl 0.77	
` '	_				<u> </u>
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	Ter 1
1-252A (1)	SPIE	15.00	24/02/2020 00:00:00	D	Flush cover stuck.  Check depth of installation inconsistent with subsequent readings. Hole
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	ļ
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
1-255 (1)	SPIE	14.60	14/01/2020 14:50:00	2.51	1
1-255 (1)	SPIE	14.60	27/01/2020 12:00:00	2.46	<u> </u>
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	<u> </u>
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) 1-257 (D)	SP	21.50	19/09/2019 10:30:00	1.54	+
1-257 (D)	SP	21.50	02/10/2019 00:00:00	1.63	+
1-257 (D) 1-257 (D)	SP SP	21.50	18/10/2019 00:00:00	0.98	
` '					
1-257 (D)	SP	21.50	15/11/2019 10:30:00	0.44	<u> </u>
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	

Project

AGS

Geoffrey Osborne Limited



nstrument 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 15:25:00	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 14:45:00	1.16	
1-257 (S)	SP	6.00	26/07/2019 08:46:00	1.10	
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 10:30:00	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	0.80	
1-257 (S)	SP	6.00	21/11/2019 10:30:00	0.44	
1-257 (S)	SP	6.00	27/11/2019 13:15:00	0.38	
1-257 (S)	SP	6.00	17/12/2019 11:25:00	0.30	
1-257 (S)	SP	6.00	14/01/2020 11:10:00	0.20	
1-257 (S)	SP	6.00	27/01/2020 12:00:00	0.15	
1-257 (S)	SP	6.00	03/02/2020 00:00:00	0.16	
1-257 (S)	SP	6.00	13/02/2020 00:00:00	0.12	
	SP			0.25	
1-257 (S)	SP	6.00	24/02/2020 14:40:00	0.12	
1-257 (S) 1-257 (S)	SP	6.00 6.00	27/04/2020 14:45:00	0.42	
1-257 (S)	SP	6.00	12/05/2020 15:20:00	0.53	
` '	SP	6.00	15/05/2020 00:00:00 28/05/2020 13:00:00	0.90	
1-257 (S)	SPIE	4.50	18/12/2019 11:55:00	1.50	
1-258 (1) 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 10:30:00	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 13:33:00	2.12	
1-259 (S)	SP	7.00	06/08/2019 15:52:00	2.12	
1-259 (S)	SP	7.00	08/08/2019 15:52:00	2.20	

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

Project No. Carried out for

Project

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

**Geoffrey Osborne Limited** 



				Groundwater	
nstrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	depth,	Comments
(0)	0.0		10/00/00/0	mbgl	
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) 1-293 (1)	SP SP	3.00 3.00	10/02/2020 00:00:00 25/02/2020 11:09:00	2.33	

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

ect No. D9008-19 ied out for Geoffrey Osborne Limited



Instrument Reference						
1-293 (1)   SP	Instrument Reference		·		depth,	Comments
1-293 (f)   SP	1-293 (1)	SP	3.00	05/05/2020 00:00:00	2.46	
1-293 (1)   SP   3.00   2805/2020 0000000   2.65     1-293 (1)   SPIE   11.00   1810/2020 1815/200   10.49     1-305 (1)   SPIE   11.00   1810/2020 1815/200   10.70     1-305 (1)   SPIE   11.00   1811/2019 13.12.00   10.55     1-305 (1)   SPIE   11.00   2711/2019 13.12.00   Dry     1-305 (1)   SPIE   11.00   2711/2019 11.25.00   Dry     1-305 (1)   SPIE   11.00   1811/2019 19.12.00   Dry     1-305 (1)   SPIE   11.00   1811/2019 09.20.00   Dry     1-305 (1)   SPIE   11.00   1811/2019 09.20.00   Dry     1-305 (1)   SPIE   11.00   1811/2019 09.20.00   Dry     1-305 (1)   SPIE   11.00   1801/2020 00.00.00   Dry     1-305 (1)   SPIE   11.00   2701/2020 12.00.00   Dry     1-305 (1)   SPIE   11.00   3902/2020 10.00.00   Dry     1-305 (1)   SPIE   11.00   2406/2020 10.50.00   Dry     1-305 (1)   SPIE   11.00   2406/2020 10.50.00   Dry     1-305 (1)   SPIE   11.00   1509/2020 000.00   Dry     1-305 (1)   SPIE   11.00   2406/2020 10.50.00   Dry     1-305 (1)   SPIE   11.00   2809/2020 10.00.00   Dry     1-305 (1)   SPIE   10.00   2406/2020 10.50.00   Dry     1-305 (1)   SPIE   10.00   2406/2020 10.50.00   Dry     1-305 (1)   SPIE   20.00   2710/2020 10.00.00   Dry     1-305 (1)   SPIE   20.00   2710/2020 10.00.00   0.54     1-306 (1)   SPIE   20.00   18/10/2019 13.10.00   2.00     1-306 (1)   SPIE   20.00   18/10/2019 13.10.00   2.00     1-306 (1)   SPIE   20.00   18/10/2019 03.700   17.04     1-306 (1)   S	1-293 (1)	SP	3.00	06/05/2020 00:00:00	2.46	
1-283 (1)   SPIE   11.00	1-293 (1)	SP	3.00	21/05/2020 00:00:00	2.57	
1-305 (1)   SPIE   11.00	1-293 (1)	SP	3.00	28/05/2020 00:00:00	2.65	
1-305 (1)   SPIE   11.00   15/11/2019 13:45:00   10.70   10.55   1-305 (1)   SPIE   11.00   27/11/2019 11:25:00   Dry   1-305 (1)   SPIE   11.00   18/12/2019 08:55:00   Dry   1-305 (1)   SPIE   11.00   18/12/2019 08:42:00   Dry   1-305 (1)   SPIE   11.00   18/12/2019 08:42:00   Dry   1-305 (1)   SPIE   11.00   18/12/2019 08:42:00   Dry   1-305 (1)   SPIE   11.00   27/11/2019 08:42:00   Dry   1-305 (1)   SPIE   11.00   27/11/2020 12:00:00   Dry   1-305 (1)   SPIE   11.00   27/11/2020 12:00:00   Dry   1-305 (1)   SPIE   11.00   27/11/2020 00:00:00   Dry   1-305 (1)   SPIE   11.00   24/02/2020 10:00:00   Dry   1-305 (1)   SPIE   11.00   24/02/2020 10:00:00   Dry   1-305 (1)   SPIE   11.00   24/02/2020 10:50:00   Dry   1-305 (1)   SPIE   11.00   29/05/2020 10:00:00   Dry   1-305 (1)   SPIE   20.00   27/10/2019 00:00:00   Dry   1-305 (1)   SPIE   20.00   27/10/2019 00:00:00   0.54   1-306 (1)   SPIE   20.00   15/11/2019 08:50:00   2.16   1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.00   1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.00   1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.00   1-306 (1)   SPIE   20.00   27/11/2019 13:20:00   2.30   1-306 (1)   SPIE   20.00   27/11/2019 13:20:00   2.30   1-306 (1)   SPIE   20.00   27/11/2019 08:50:00   2.16   1-306 (1)   SPIE   20.00   27/11/2019 08:50:00   17/10   1-306 (1)   SPIE   20.00   27/11/2019 08:30:00   17/10   1-306 (1)   SPIE   20.00   24/02/2020 00:00:00   17/10   1-306 (1)   SPIE   28.00	1-293 (1)	SP	3.00	09/06/2020 08:45:00	Dry	
1-305 (1)   SPIE   11.00   22/11/2019 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 08:42:00   Dry     1-305 (1)   SPIE   11.00   18/12/2019 08:42:00   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   3002/2020 12:00:00   Dry     1-305 (1)   SPIE   11.00   3002/2020 12:00:00   Dry     1-305 (1)   SPIE   11.00   24/02/2020 10:05:00   Dry     1-305 (1)   SPIE   11.00   24/02/2020 10:50:00   Dry     1-305 (1)   SPIE   11.00   24/04/2020 15:35:00   11.03     1-305 (1)   SPIE   11.00   24/04/2020 16:35:00   Dry     1-305 (1)   SPIE   11.00   24/04/2020 16:35:00   Dry     1-305 (1)   SPIE   11.00   29/05/2020 10:00:00   Dry     1-305 (1)   SPIE   11.00   29/05/2020 10:00:00   Dry     1-305 (1)   SPIE   20.00   20/10/2019 00:00:00   Dry     1-305 (1)   SPIE   20.00   20/10/2019 00:00:00   Dry     1-306 (1)   SPIE   20.00   20/10/2019 00:00:00   11.05     1-306 (1)   SPIE   20.00   18/10/2019 13:10:00   1.56     1-306 (1)   SPIE   20.00   21/11/2019 13:10:00   2.16     1-306 (1)   SPIE   20.00   21/11/2019 13:20:00   2.10     1-306 (1)   SPIE   20.00   21/11/2019 18:20:00   2.16     1-306 (1)   SPIE   20.00   21/11/2019 88:50:00   2.16     1-306 (1)   SPIE   20.00   27/11/2019 11:20:00   2.30     1-306 (1)   SPIE   20.00   27/11/2019 11:20:00   2.30     1-306 (1)   SPIE   20.00   300/2020 10:00:00   17.04     1-306 (1)   SPIE   20.00   300/2020 10:00:00   17.04     1-306 (1)   SPIE   20.00   300/2020 10:00:00   17.00     1-306 (1)   SPIE   20.00   24/04/2020 15:27:00   17.17     1-306 (1)   SPIE   28.00   24/04/2020 10:00:00   17.10     1-307 (D)   SPIE   28.	1-305 (1)	SPIE	11.00	18/10/2019 13:12:00	10.49	
1-305 (1)   SPIE   11.00   22/11/2019 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 08:42:00   Dry     1-305 (1)   SPIE   11.00   18/12/2019 08:42:00   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   3002/2020 12:00:00   Dry     1-305 (1)   SPIE   11.00   3002/2020 12:00:00   Dry     1-305 (1)   SPIE   11.00   24/02/2020 10:05:00   Dry     1-305 (1)   SPIE   11.00   24/02/2020 10:50:00   Dry     1-305 (1)   SPIE   11.00   24/04/2020 15:35:00   11.03     1-305 (1)   SPIE   11.00   24/04/2020 16:35:00   Dry     1-305 (1)   SPIE   11.00   24/04/2020 16:35:00   Dry     1-305 (1)   SPIE   11.00   29/05/2020 10:00:00   Dry     1-305 (1)   SPIE   11.00   29/05/2020 10:00:00   Dry     1-305 (1)   SPIE   20.00   20/10/2019 00:00:00   Dry     1-305 (1)   SPIE   20.00   20/10/2019 00:00:00   Dry     1-306 (1)   SPIE   20.00   20/10/2019 00:00:00   11.05     1-306 (1)   SPIE   20.00   18/10/2019 13:10:00   1.56     1-306 (1)   SPIE   20.00   21/11/2019 13:10:00   2.16     1-306 (1)   SPIE   20.00   21/11/2019 13:20:00   2.10     1-306 (1)   SPIE   20.00   21/11/2019 18:20:00   2.16     1-306 (1)   SPIE   20.00   21/11/2019 88:50:00   2.16     1-306 (1)   SPIE   20.00   27/11/2019 11:20:00   2.30     1-306 (1)   SPIE   20.00   27/11/2019 11:20:00   2.30     1-306 (1)   SPIE   20.00   300/2020 10:00:00   17.04     1-306 (1)   SPIE   20.00   300/2020 10:00:00   17.04     1-306 (1)   SPIE   20.00   300/2020 10:00:00   17.00     1-306 (1)   SPIE   20.00   24/04/2020 15:27:00   17.17     1-306 (1)   SPIE   28.00   24/04/2020 10:00:00   17.10     1-307 (D)   SPIE   28.		SPIE	11.00	15/11/2019 13:45:00	10.70	
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   18/12/2019 09/42:00   Dry     1-305 (1)   SPIE   11.00   27/01/2020 12:00:00   Dry     1-305 (1)   SPIE   11.00   27/01/2020 12:00:00   Dry     1-305 (1)   SPIE   11.00   24/02/2020 17/01:00   Dry     1-305 (1)   SPIE   11.00   29/05/2020 10/00:00   Dry     1-306 (1)   SPIE   20.00   02/10/2019 00/00:00   Dry     1-306 (1)   SPIE   20.00   02/10/2019 00/00:00   Dry     1-306 (1)   SPIE   20.00   18/10/2019 13/10:00   1.56     1-306 (1)   SPIE   20.00   27/11/2019 13/10:00   2.00     1-306 (1)   SPIE   20.00   27/11/2019 13/10:00   2.00     1-306 (1)   SPIE   20.00   27/11/2019 11/20:00   2.30     1-306 (1)   SPIE   20.00   18/12/2019 19/37:00   17.04     1-306 (1)   SPIE   20.00   18/12/2019 19/37:00   17.04     1-306 (1)   SPIE   20.00   27/11/2019 11/20:00   17.09     1-306 (1)   SPIE   20.00   27/11/2019 11/20:00   17.00     1-306 (1)   SPIE   20.00   24/04/2020 15/20:00   17.10     1-306 (1)   SPIE   20.00   24/04/2020 15/20:00   17.11     1-306 (1)   SPIE   20.00   24/04/2020 15/20:00   17.11     1-306 (1)   SPIE   20.00   24/04/2020 15/20:00     1-307 (D)   SPIE   28.00   24/04/2020 15/20:00     1-307 (D)   SPIE   28.00   24/0		SPIE	11.00	21/11/2019 08:55:00	10.55	
1-305 (1)   SPIE   11.00   18/12/2019 08/42/00   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   30/02/2020 12/00/00   Dry     1-305 (1)   SPIE   11.00   30/02/2020 10/00/00   Dry     1-305 (1)   SPIE   11.00   24/02/2020 10/15/00   Dry     1-305 (1)   SPIE   11.00   24/02/2020 10/15/00   Dry     1-305 (1)   SPIE   11.00   24/02/2020 10/15/00   Dry     1-305 (1)   SPIE   11.00   24/04/2020 15/35/00   10.94     1-305 (1)   SPIE   11.00   24/04/2020 15/35/00   Dry     1-305 (1)   SPIE   11.00   29/05/2020 10/00/00   Dry     1-305 (1)   SPIE   11.00   29/05/2020 10/00/00   Dry     1-306 (1)   SPIE   20.00   02/10/2019 00/00/00   Dry     1-306 (1)   SPIE   20.00   18/10/2019 13/10/00   0.54     1-306 (1)   SPIE   20.00   18/10/2019 13/10/00   2.00     1-306 (1)   SPIE   20.00   18/11/2019 13/40/00   2.00     1-306 (1)   SPIE   20.00   27/11/2019 11/20/00   2.30     1-306 (1)   SPIE   20.00   27/11/2019 08/50/00   2.16     1-306 (1)   SPIE   20.00   18/12/2019 08/37/00   17.04     1-306 (1)   SPIE   20.00   18/12/2019 08/37/00   17.04     1-306 (1)   SPIE   20.00   27/01/2020 12/00/00   17.00     1-306 (1)   SPIE   20.00   27/01/2020 12/00/00   17.00     1-306 (1)   SPIE   20.00   24/02/2020 10/00/00   17.00     1-306 (1)   SPIE   20.00   24/02/2020 10/00/00   17.00     1-306 (1)   SPIE   20.00   24/02/2020 10/00/00   17.10     1-307 (0)   SPIE   28.00   15/01/2020 00/00/00   17.10     1-307 (0)   SPIE   28.00   18/12/2019 00/31/00   12.44     1-307 (0)   SPIE   28.00   24/04/2020 15/01/00   12.08     1-307 (0)   SPIE   28.00   24/04/2020 15/01/00   12.08     1-307	` '	SPIE	11.00	27/11/2019 11:25:00	Dry	
1-305 (1)   SPIE   11.00   15/01/2020 02:00:00   10.82     1-305 (1)   SPIE   11.00   27/01/2020 12:00:00   Dry     1-305 (1)   SPIE   11.00   27/01/2020 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 12:00:00   Dry     1-305 (1)   SPIE   11.00   24/02/2020 10:15:00   10.94     1-305 (1)   SPIE   11.00   24/02/2020 10:15:00   10.94     1-305 (1)   SPIE   11.00   24/02/2020 15:35:00   11.03     1-305 (1)   SPIE   11.00   24/02/2020 15:35:00   11.03     1-305 (1)   SPIE   11.00   29/05/2020 00:00:00   Dry     1-306 (1)   SPIE   20.00   02/10/2019 00:00:00   11.05     1-306 (1)   SPIE   20.00   18/10/2019 13:10:00   15.66     1-306 (1)   SPIE   20.00   18/10/2019 13:10:00   15.66     1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.00     1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.00     1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.00     1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.30     1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.30     1-306 (1)   SPIE   20.00   27/11/2019 10:30:00   17/10     1-306 (1)   SPIE   20.00   27/11/2020 10:20:00   17/10     1-306 (1)   SPIE   20.00   27/11/2020 10:20:00   17/10     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17/10     1-307 (0)   SPIE   20.00   24/02/2020 11:00:00   17/10     1-307 (0)   SPIE   20.00   24/02/2020 11:00:00   17/10     1-307 (0)   SPIE   20.00   24/02/2020 11:00:00   11/20		SPIE	11.00	18/12/2019 09:42:00	-	
1-305 (1)   SPIE			11.00	15/01/2020 09:20:00	,	
1-305 (1)   SPIE	. ,					
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   24/02/2020 15:35:00   10.94     1-305 (1)   SPIE   11.00   24/02/2020 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   Dry     1-305 (1)   SPIE   20.00   02/10/2019 00:00:00   0.94     1-306 (1)   SPIE   20.00   02/10/2019 00:00:00   0.94     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   27/11/2019 13:40:00   2.00     1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.30     1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.30     1-306 (1)   SPIE   20.00   27/11/2019 08:50:00   2.16     1-306 (1)   SPIE   20.00   27/11/2019 08:50:00   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   27/01/2020 12:00:00   17.00     1-306 (1)   SPIE   20.00   27/01/2020 12:00:00   17.00     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.10     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.12     1-307 (D)   SPIE   28.00   15/05/2020 00:00:00   17.14     1-307 (D)   SPIE   28.00   15/05/2020 00:00:00   17.10     1-307 (D)   SPIE   28.00   15/05/2020 00:00:00   11.72     1-307 (D)   SPIE   28.00   27/11/2019 11:50:00   11.33     1-307 (D)   SPIE   28.00   27/11/2019 11:50:00   11.23     1-307 (D)   SPIE   28.00   18/02/2019 13:00:00   11.27     1-307 (D)   SPIE   28.00   18/02/2019 10:00:00   11.27     1-307 (D)   SPIE   28.00   15/05/2020 00:00:00   11.27     1-307 (D)   SPIE   28.00   15/05/2020 00:00:00   11.					-	
1-305 (1)   SPIE   11.00   24/02/2020 15:35:00   10.94     1-305 (1)   SPIE   11.00   24/02/2020 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 30:00:00   0.54     1-306 (1)   SPIE   20.00   18/10/2019 30:00:00   0.54     1-306 (1)   SPIE   20.00   18/10/2019 30:00:00   0.56     1-306 (1)   SPIE   20.00   21/11/2019 13:40:00   2.00     1-306 (1)   SPIE   20.00   27/11/2019 13:40:00   2.30     1-306 (1)   SPIE   20.00   27/11/2019 08:50:00   2.16     1-306 (1)   SPIE   20.00   27/11/2019 08:50:00   17.04     1-306 (1)   SPIE   20.00   27/10/2020 09:25:00   17.13     1-306 (1)   SPIE   20.00   27/01/2020 19:25:00   17.14     1-306 (1)   SPIE   20.00   27/01/2020 19:25:00   17.00     1-306 (1)   SPIE   20.00   27/01/2020 10:20:00   17.00     1-306 (1)   SPIE   20.00   23/02/2020 12:00:00   17.00     1-306 (1)   SPIE   20.00   23/02/2020 12:00:00   17.00     1-306 (1)   SPIE   20.00   23/02/2020 12:00:00   17.10     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.12     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.12     1-306 (1)   SPIE   20.00   24/02/2020 15:00:00   17.14     1-307 (D)   SPIE   28.00   18/10/2019 13:05:00   11.72     1-307 (D)   SPIE   28.00   27/11/2019 13:05:00   11.33     1-307 (D)   SPIE   28.00   27/11/2019 13:05:00   11.33     1-307 (D)   SPIE   28.00   27/11/2019 11:15:00   12.24     1-307 (D)   SPIE   28.00   27/11/2019 11:15:00   12.24     1-307 (D)   SPIE   28.00   24/02/2020 15:00:00					,	
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   Dry     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   18/10/2019 13:10:00   1.56     1-306 (1)   SPIE   20.00   21/11/2019 08:50:00   2.16     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   27/11/2019 11:20:00   2.30     1-306 (1)   SPIE   20.00   15/101/2020 99:25:00   17.04     1-306 (1)   SPIE   20.00   15/101/2020 99:25:00   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   17.00     1-306 (1)   SPIE   20.00   24/02/2020 12:00:00   17.10     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.10     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.10     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.11     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.11     1-306 (1)   SPIE   20.00   24/02/2020 15:27:00   17.17     1-306 (1)   SPIE   20.00   24/02/2020 00:00:00   17.14     1-306 (1)   SPIE   20.00   24/05/2020 00:00:00   17.14     1-306 (1)   SPIE   20.00   15/05/2020 00:00:00   17.14     1-306 (1)   SPIE   20.00   15/05/2020 00:00:00   17.14     1-307 (D)   SPIE   28.00   18/10/2019 13:05:00   11.72     1-307 (D)   SPIE   28.00   18/10/2019 03:35:00   11.49     1-307 (D)   SPIE   28.00   18/10/2019 03:30:00   12.42     1-307 (D)   SPIE   28.00   16/10/2020 09:30:00   12.44     1-307 (D)   SPIE   28.00   16/10/2020 09:00:00   12.01     1-307 (D)   SPIE   28.00   16/10/2020 00:00:00   12.01     1-307 (D)   SPIE   28.00   16/10/2020 00:00:00   12.01     1-307 (D)   SPIE   28.00   16/10/2020 00:00:00						
1-306 (1)   SPIE   11.00						
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1-306 (f)   SPIE   20.00						
1-306 (f) SPIE 20.00 15/11/2019 13:40:00 2.00 1:306 (f) SPIE 20.00 21/11/2019 08:50:00 2.16 1:306 (f) SPIE 20.00 27/11/2019 11:20:00 2.30 1:306 (f) SPIE 20.00 18/12/2019 08:50:00 17.04 1:306 (f) SPIE 20.00 18/12/2019 09:37:00 17.04 1:306 (f) SPIE 20.00 15/01/2020 09:25:00 17.13 1:306 (f) SPIE 20.00 27/01/2020 12:00:00 17.00 17.00 11:306 (f) SPIE 20.00 27/01/2020 12:00:00 17.00 17.00 11:306 (f) SPIE 20.00 30/20/2020 12:00:00 17.00 17.00 11:306 (f) SPIE 20.00 30/20/2020 12:00:00 17.00 17.00 11:306 (f) SPIE 20.00 11/02/2020 00:00:00 17.10 11:306 (f) SPIE 20.00 24/02/2020 11:00:00 17.12 11:306 (f) SPIE 20.00 24/02/2020 11:00:00 17.12 11:306 (f) SPIE 20.00 24/02/2020 11:00:00 17.12 11:306 (f) SPIE 20.00 24/02/2020 10:00:00 17.14 11:306 (f) SPIE 20.00 24/02/2020 00:00:00 17.14 11:306 (f) SPIE 20.00 15/05/2020 00:00:00 17.14 11:306 (f) SPIE 20.00 15/05/2020 00:00:00 17.10 17.17 11:307 (D) SPIE 28.00 18/10/2019 13:05:00 11.72 11:307 (D) SPIE 28.00 18/11/2019 13:05:00 11.72 11:307 (D) SPIE 28.00 18/11/2019 13:05:00 11.49 11:307 (D) SPIE 28.00 27/11/2019 11:15:00 12:30 11:307 (D) SPIE 28.00 27/11/2019 11:15:00 12:30 13:307 (D) SPIE 28.00 18/12/2019 09:31:00 12:42 11:307 (D) SPIE 28.00 18/10/2019 08:45:00 11:33 11:307 (D) SPIE 28.00 18/10/2019 08:45:00 11:39 11:307 (D) SPIE 28.00 18/10/2019 08:45:00 11:307 (D) SPIE 28.00 18/10/2019 08:00 12:24 11:307 (D) SPIE 28.00 18/10/2019 08:00 00:00 12:24 11:307 (D) SPIE 28.00 18/10/2019 08:00 00:00 11:27 11:307 (D) SPIE 28.00 18/10/2019 08:00 00:00 11:27 11:307 (D) SPIE 28.00 11/02/2020 00:00:00 11:27 11:307 (D) SPIE 28.00 11/02/2020 00:00:00 11:27 11:307 (D) SPIE 28.00 11/02/2020 00:00:00 11:27 11:307 (D) SPIE 28.00 00/206/2020 00:00:00 11:27 11:307 (D) SPIE 28.00 11/02/2020 00:00:00 11:26 11:307 (D) SPIE 28.00 11/02						
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   15/01/2020 09:25:00   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   23/02/2020 12:00:00   17.00     1-306 (1)   SPIE   20.00   30/02/2020 12:00:00   17.09     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.10     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.10     1-306 (1)   SPIE   20.00   24/02/2020 11:00:00   17.12     1-306 (1)   SPIE   20.00   24/02/2020 10:00:00   17.17     1-306 (1)   SPIE   20.00   24/02/2020 00:00:00   17.17     1-306 (1)   SPIE   20.00   24/02/2020 00:00:00   17.14     1-306 (1)   SPIE   20.00   15/05/2020 00:00:00   17.14     1-306 (1)   SPIE   20.00   15/05/2020 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 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   21/11/2019 08:31:00   12.42     1-307 (D)   SPIE   28.00   18/12/2019 09:31:00   12.24     1-307 (D)   SPIE   28.00   18/12/2019 09:30:00   12.24     1-307 (D)   SPIE   28.00   27/01/2020 00:00:00   12.08     1-307 (D)   SPIE   28.00   27/01/2020 00:00:00   12.08     1-307 (D)   SPIE   28.00   24/02/2020 10:00:00   12.08     1-307 (D)   SPIE   28.00   24/02/2020 10:00:00   12.08     1-307 (D)   SPIE   28.00   24/02/2020 10:00:00   12.08     1-307 (D)   SPIE   28.00   24/02/2020 00:00:00   12.21     1-307 (D)   SPIE   28.00   24/02/2020 00:00:00   12.21     1-307 (D)   SPIE   28.00   11/02/2020 00:00:00   12.21     1-307 (D)   SPIE   28.00   15/05/2020 00:00:00   12.21     1-307 (D)   SPIE   28.00   15/05/2020 00:00:00   12.21     1-307 (S)   SP   14.00   18/10/2019 13:5:00   12.14     1-307 (S)   SP   14.00   27/11/2019 11:15:00   13.13						
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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 13:35:00         11.49           1-307 (D)         SPIE         28.00         27/11/2019 11:15:00         12.30           1-307 (D)         SPIE         28.00         27/11/2019 11:15:00         12.42           1-307 (D)         SPIE         28.00         15/01/2020 09:30:00         12.24           1-307 (D)         SPIE         28.00		_				
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1-306 (1)   SPIE   20.00						
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   17.14     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   21/11/2019 08:45:00   11.33     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   24/02/2020 10:30:00   11.25     1-307 (D)   SPIE   28.00   24/02/2020 10:00:00   11.27     1-307 (D)   SPIE   28.00   05/05/2020 00:00:00   12.08     1-307 (D)   SPIE   28.00   05/05/2020 00:00:00   12.08     1-307 (D)   SPIE   28.00   05/05/2020 00:00:00   11.27     1-307 (D)   SPIE   28.00   05/05/2020 00:00:00   12.08     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   27/11/2019 11:15:00   13.13						
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   24/02/2020 10:30:00   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   12.08     1-307 (D)   SPIE   28.00   05/05/2020 00:00:00   11.27     1-307 (D)   SPIE   28.00   05/05/2020 00:00:00   11.27     1-307 (D)   SPIE   28.00   05/05/2020 00:00:00   11.27     1-307 (D)   SPIE   28.00   05/05/2020 00:00:00   12.01     1-307 (S)   SP   14.00   18/10/2019 13:07:00   11.14     1-307 (S)   SP   14.00   27/11/2019 11:15:00   13.13	1					
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   27/11/2019 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   24/02/2020 10:30:00   11.25     1-307 (D)   SPIE   28.00   25/05/2020 00:00:00   11.27     1-307 (D)   SPIE   28.00   15/05/2020 00:00:00   11.27     1-307 (D)   SPIE   28.00   15/05/2020 00:00:00   11.27     1-307 (D)   SPIE   28.00   15/05/2020 00:00:00   11.27     1-307 (S)   SP   14.00   18/10/2019 13:07:00   11.14     1-307 (S)   SP   14.00   27/11/2019 11:35:00   12.60     1-307 (S)   SP   14.00   27/11/2019 11:35:00   13.13						
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         27/01/2020 12:00:00         11.97           1-307 (D)         SPIE         28.00         24/02/2020 10:00:00         12.01           1-307 (D)         SPIE         28.00         11/02/2020 00:00:00         12.01           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						
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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       15/05/2020 00:00:00       12.08         1-307 (S)       SP       14.00       18/10/2019 13:07:00       11.14         1-307 (S)       SP       14.00       21/11/2019 01:35:00       12.60         1-307 (S)       SP       14	` ,					
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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						
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	1-307 (S)	SP	14.00	21/11/2019 08:45:00	12.60	
1-307 (S) SP 14.00 18/12/2019 09:27:00 10.47	1-307 (S)	SP	14.00	27/11/2019 11:15:00	13.13	
<u>.                                    </u>	1-307 (S)	SP	14.00	18/12/2019 09:27:00	10.47	

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

Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements D9008-19 Project Project No.

Carried out for **Geoffrey Osborne Limited** 



Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
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	<u> </u>
1-318 (1)	SP	14.00	11/02/2020 00:00:00	9.90	<u> </u>
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	Code Hot House
1-327 (S)	SP	11.00	29/01/2020 12:00:00	0.20	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	

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

Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements D9008-19 Project Project No.

**Geoffrey Osborne Limited** 

Carried out for



nstrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
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	0.00	Could not locate
1-346 (S)	SP	4.00	18/12/2019 15:47:00	2.75	Sound Hot locate
1-346 (S)	SP	4.00	29/01/2020 00:00:00	2.70	No access.
1-346 (S)	SP	4.00	17/02/2020 12:00:00	1.66	1.10 4.00000.
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 10:30:00	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	10.29	
1-363A (S)	SP	20.00	24/02/2020 00:00:00	10.22	
1-363A (S)	SP	20.00	05/05/2020 00:00:00	10.08	
	SP	20.00	20/05/2020 13:30:00	10.10	
1-363A (S) 1-363A (S)	SP SP	20.00	08/06/2020 13:30:00	10.02	

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

Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements D9008-19 Project Project No.

Carried out for **Geoffrey Osborne Limited** 



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Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
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.

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

AGS

Carried out for

Project Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements
Project No. D9008-19

**Geoffrey Osborne Limited** 



nstrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
1-398 (1)	SPIE	9.00	24/02/2020 13:10:00		No access.
1-398 (1)	SPIE	9.00	24/02/2020 16:10:00	Dry	140 000000.
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 12:40:00	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 (1)	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 12:00:00	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 10:30:00	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	
1-404 (2) 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	
	SPIE	25.20	27/11/2019 11:10:00	6.75	
1-405 (S)	SPIE	25.20	19/12/2019 13.25.00	18.00	
1-405 (S)	SPIE	25.20 25.20	15/01/2020 12:25:00	16.16	
1-405 (S) 1-405 (S)	SPIE	25.20	22/01/2020 12:25:00	16.20	
1-405 (S)	SPIE	25.20 25.20	04/02/2020 12:00:00	16.20	
. ,	SPIE	25.20 25.20	10/02/2020 12:00:00	16.27	
1-405 (S)	SPIE				
1-405 (S)		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	

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 M25 J10 - A3 Wisley Interct D9008-19

Carried out for Geoffrey Osborne Limited

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



nstrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth, mbgl	Comments
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	0.02	Could not access - cows in field
1-508 (D)	SPIE	17.20	15/11/2019 10:35:00	3.32	Could flot access cows in ficia
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 12:00:00	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	
	SPIE	17.20	28/04/2020 10:45:00	2.99	
1-508 (D)	SPIE	17.20	05/05/2020 00:00:00	2.99	
1-508 (D)	SPIE	17.20	13/05/2020 11:20:00	3.35	
1-508 (D) 1-508 (D)	SPIE	17.20	15/05/2020 00:00:00	3.38	
	SPIE			3.69	
1-508 (D)		17.20	01/06/2020 16:00:00		
1-508 (S)	SP SP	5.00 5.00	23/07/2019 16:04:00	3.02	
1-508 (S)	SP SP	5.00	24/07/2019 11:35:00	2.78	
1-508 (S)	SP SP		26/07/2019 11:09:00	3.68	
1-508 (S)		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	

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

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

Project No. Carried out for **Geoffrey Osborne Limited** 



nstrument 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	0.02	No access - cows in field
1-509 (D)	SPIE	18.00	15/11/2019 10:45:00	3.50	The decese Come in field
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 13:41:00	3.32	
1-509 (S)	SP	12.50	13/09/2019 00:00:00	3.32	
1-509 (S)	SP	12.50	19/09/2019 00:00:00	3.10	
	SP SP				<u> </u>
1-509 (S) 1-509 (S)	SP SP	12.50 12.50	02/10/2019 00:00:00 18/10/2019 00:00:00	4.81	

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 M25 J10 - A3 Wisley Interct D9008-19

Carried out for Geoffrey Osborne Limited

AGS

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



			D . T	Groundwater	
Instrument Reference	Instrument	Instrument Base,	Date Time dd/mm/yyyy hh:mm:ss	depth,	Comments
	Type	mbgl	du/IIIII/yyyy IIII.IIIII.55	mbgl	
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	

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

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

Project No. Carried out for **Geoffrey Osborne Limited** 



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	la sturias sat	In a trum and Dage	Data Tima	Groundwater	
Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	depth,	Comments
	туре	mbgi	dd/11111/yyyy 1111.111111.33	mbgl	
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	
		•			•

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

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

Project No. Carried out for **Geoffrey Osborne Limited** 



	Instrument	Instrument Base,	Date Time	Groundwater	
Instrument Reference	Type	mbgl	dd/mm/yyyy hh:mm:ss	depth,	Comments
	. , , , ,		aa	mbgl	
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 14:30:00	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	
	SPIE			2.58	
1-527 (S)		5.80	03/02/2020 12:00:00		
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

Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements D9008-19 Project Project No. **Geoffrey Osborne Limited** 

Carried out for



nstrument 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 12:00:00	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	
1-537 (S) 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	
` '	SP	20.00	23/07/2019 13:10:00	2.52	
1-541 (D)					
1-541 (D) 1-541 (D)	SP SP	20.00	24/07/2019 12:45:00	2.52 3.98	
` '	SP		26/07/2019 09:55:00 30/07/2019 10:08:00		
1-541 (D)	SP	20.00		2.98	
1-541 (D) 1-541 (D)	SP	20.00	06/08/2019 15:00:00 15/08/2019 14:14:00	3.01	
` '	SP				
1-541 (D)	SP	20.00	20/08/2019 12:50:00	3.04	
1-541 (D)		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) 1-541 (D)	SP SP	20.00	27/01/2020 12:00:00	2.22	
	cD.	20.00	03/02/2020 12:00:00	2.13	

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

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

Project No. Carried out for **Geoffrey Osborne Limited** 



nstrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Groundwater depth,	Comments
	туре	mbgi	du/IIIII/yyyy IIII.IIIII.55	mbgl	
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	
1-5-2 (D)					

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

Project Project No. **Geoffrey Osborne Limited** 

Carried out for

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



nstrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy 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	i i i i i i i i i i i i i i i i i i i
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	
1-705 (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	
1-7-13 (3)	5	13.00	13/03/2013 00:00:00	0.00	Ĭ

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

Project No.
Carried out for

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

ject No. D9008-19 ried out for Geoffrey Osborne Limited



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
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 13:43:00	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 14:00:00	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	7.00	No access.
1-903 (1)	SPIE	23.50	18/12/2019 14:04:00	5.10	No access.
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	4.94	<del> </del>
1-903 (1)	SPIE	23.50	10/02/2020 10:00:00	4.92	-
1-903 (1)	SPIE	23.50	24/02/2020 09:50:00	4.65	
1-903 (1)	SPIE	23.50	24/04/2020 09:30:00	4.63	
1-903 (1)	SPIE	23.50	15/05/2020 00:00:00	4.93	
1-903 (1)	SPIE	23.50	22/05/2020 10:00:00	4.94	
	SPIE	23.50	29/05/2020 10:00:00	5.04	
1-903 (1)	SP	25.00		11.00	
1-911 (1)	٥r	25.00	18/12/2019 13:24:00	11.00	<u> </u>

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

Project Ground Investigation for the Regional Investment Programme M25 J10 - A3 Wisley Interchange Improvements
Project No. D9008-19

**Geoffrey Osborne Limited** 



	1 (	Latinian and Dane	Data Time	Groundwater	
Instrument	Instrument	Instrument Base,	Date Time	depth,	Comments
Reference	Туре	mbgl	dd/mm/yyyy hh:mm:ss	mbgl	
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	
	SP			5.93	
1-938 (1)	SPIE	6.50 26.00	05/06/2020 00:00:00		
1-938 (2)			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 Project No. Carried out for

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



Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy 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	

AGS

**Geoffrey Osborne Limited** 

# Groundwater Monitoring -Datalogger Summary



# **Post-fieldwork Gas Monitoring Summary**



																				soco	TEC
Location	Date	Air Temp, oC	Baro Press, mbar	Diff Press (pk), pa	Diff Press (st), pa	Gas Flow Rate(pk), I/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			
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		1001	1	1	0.61	0.61														
1-212 (D)	24/04/2020 09:29:30					0.0.	0.01	1.3	<0.1												
1-212 (D)	24/04/2020 09:30:00								10	<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			
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							· · · ·	· · · ·			02.0	00.0			20.0		1	7.	,,	<u> </u>
1-212 (D)	28/05/2020 00:00:00	15	1025																		
1-212 (D)	28/05/2020 08:31:00	10	1020	25	4	10.5	10.5											1			
1-212 (D)	28/05/2020 08:33:00			20	7	10.0	10.0	0.1	0.1												
1-212 (D)	28/05/2020 08:35:00							0.1	0.1	0.1	0.1	2.8	2.5	2.8	0.6	21.2	21	<1	<1	<1	<1
. 212 (0)	_5,55,2525 55.55.00									0.1	0.1	2.0	2.0	2.0	0.0	21.2		<del>  `</del>			
1-217 (1)	24/04/2020 00:00:00	12	1005																		
1-217 (1)	24/04/2020 09:03:00	12	1003				<del> </del>			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						<del> </del>	1.5	<0.1	0.2	0.2	1.3	1.5	2.2	0.4	21	21	ζ0.1	ζ0.1	<b>V</b> 0.1	<0.1
	24/04/2020 09:05:00			.4	.4	-0.1	-0.1	1.5	<0.1									1			
1-217 (1)	15/05/2020 09:05:00	16	1010	<1	<1	<0.1	<0.1											1			
1-217 (1)		16	1012	.4	.4	-0.4	.0.4					-						1			-
1-217 (1)	15/05/2020 09:45:00			<1	<1	<0.1	<0.1	0													<del>                                     </del>
1-217 (1)	15/05/2020 09:46:30						-	0	0	0.5	0.5	0.0	0.0		0.4	04.0	04.0				
1-217 (1)	15/05/2020 09:48:00	4.5	1005							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			0.4												<u> </u>			
1-217 (1)	28/05/2020 10:35:00			<1	<1	<0.1	<0.1											<u> </u>			
1-217 (1)	28/05/2020 10:36:30							0.1	0.1				<u> </u>					<del>                                     </del>			
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
4.000 (1)	20/04/2020 20 20 20											-	-					1			<del> </del>
1-226 (1)	23/04/2020 00:00:00	24	1010															1			
1-226 (1)	23/04/2020 13:25:00			<1	<1	<0.1	<0.1					-						1			<del> </del>
1-226 (1)	23/04/2020 13:26:00							0.1	<0.1									<u> </u>			<del></del>
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															ļ			<u> </u>
1-226 (1)	11/05/2020 09:06:00			<1	<1	<0.1	<0.1											ļ			
1-226 (1)	11/05/2020 09:08:00							0	0									ļ			
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															ļ			
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														<del>                                     </del>
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															ļ			<b></b>
1-228 (1)	11/05/2020 09:34:00			<1	<1	<0.1	<0.1											ļ			<b></b>
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**



							_													soco	TEC
Location	Date	Air Temp, oC	Baro Press, mbar	Diff Press (pk), pa	Diff Press (st), pa	Gas Flow Rate(pk), I/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
4 000 (4)	00/05/0000 00:00:00	40	4044																		
1-293 (1)	06/05/2020 00:00:00	18	1014	4		0.4			<u> </u>			-					-				-
1-293 (1) 1-293 (1)	06/05/2020 14:14:00 06/05/2020 14:16:00			<1	<1	<0.1	<0.1	0.7	0.5	-	-	-					-	<del> </del>	-	-	<del>                                     </del>
1-293 (1)	06/05/2020 14:16:00							0.7	0.5	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							1.7	1.7	30.7	30.7	1.1	<b>V</b> 0.1	21	20.9	<b>V</b> 0.1	<0.1	ζ0.1	<0.1
1-293 (1)	28/05/2020 11:03:00	10	1023	<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			V0.1	VO.1			12	0.0	100	100	7.2	0.1	10.1	10.1	``	``	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
1-293 (1)	09/06/2020 08:43:00	10	1000	<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 = 5 5 (1)				,,,	,,	1011	1011	0.0	Ť	<del></del>	00.0	1.00		1	0.0			1	<u> </u>	1.	<u> </u>
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
																					<u> </u>
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	4000							-				<u> </u>					-		<del> </del>
1-508 (S)	13/05/2020 00:00:00	11	1006	<1	<1	<0.1	<0.1														
1-508 (S)	13/05/2020 09:06:00			<u> </u>	<u> </u>	<u> </u>	<u> </u>	0.1	0.1		+	-					<del>                                     </del>		-		<del>                                     </del>
1-508 (S)	13/05/2020 09:10:00							0.1	V.1	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							<del></del>	- V.E	0.0	0.0	0.0	1.5	10.1		<u> </u>	<u> </u>	<u> </u>	7,
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														<u> </u>
1-511 (S)	15/05/2020 12:49:30							0	0			ļ					ļ				
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			<u> </u>						05 -			<u> </u>		<del>                                     </del>
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
4 745 (0)	20/05/2020 02:22 02	40	4004																		<del></del>
1-715 (S)	22/05/2020 00:00:00	13	1004	-4	.4	-0.4	-0.4				-	<u> </u>					<u> </u>				<del> </del>
1-715 (S)	22/05/2020 09:33:00	ļ		<1	<1	<0.1	<0.1	ļ	ļ	ļ	ļ	ļ		ļ			ļ	ļ	ļ	ļ	

# **Post-fieldwork Gas Monitoring Summary**



																				soco	IEC
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									<u> </u>		-		-					<del>                                     </del>
1-903 (1)	22/05/2020 09:49:00			<1	<1	<0.1	<0.1														
1-903 (1)	22/05/2020 09:51:00						1	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																		<del>                                     </del>
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																		<del>                                     </del>
1-951 (1)	22/05/2020 09:07:00	13	1004	<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	``	- `'	NO.1	V0.1	0.1		0.1	0.1	1.,	1.0	V0.1	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	21.1	21.1				<del>  ``</del>
1-951 (1)	05/06/2020 09:19:00		300	<1	<1	<0.1	<0.1														<del>                                     </del>
1-951 (1)	05/06/2020 09:20:00			*1	*	30.1	40.1	0.3	0.2												<del>                                     </del>
1-951 (1)	05/06/2020 09:21:00							0.0		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

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.

Date of Issue: 23-Mar-2020

		Units :	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	mg/l	mg/l	mg/l
		Method Codes :	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	CALCNH4	FNH3CALC	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
	Method	Reporting Limits :	5	5	10	5	5	15	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2047182	BH1-737 EW 7.00	09-Mar-20 15:00	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.13	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2047183	Bolder Mere Lake EW 0.30	09-Mar-20 19:00	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.04	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		Client N		Paul Long			5 Jct	10			Date Prin Report N Table Nu	nted lumber	ple Ana	2:	3-Mar-2020 XR/301247 1		

		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	Method I	Method Codes : Reporting Limits :	GROHSA 0.1	0.001	ICPMSW 0.00002	0.001	0.001	0.001	ICPMSW 0.00003	0.001	0.001	ICPMSW 0.002	0.01	ICPWATVAR 1	ICPWATVAR 0.01	ICPWATVAR 1	ICPWATVAR 1	ICPWATVAR 1
	metriou i	reporting Limits .	0.1	0.001	0.00002	0.001	0.001	0.001	0.00003	0.001	0.001	0.002	0.01	'	0.01	· ·		'
LAB ID Number EX/	Client Sample Description	Sample Date	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
2047182	BH1-737 EW 7.00	09-Mar-20 15:00	< 0.100	0.001	0.00144	0.003	0.001	<0.001	<0.00003	0.082	0.002	0.165	0.02	18	0.46	23	10	21
2047183	Bolder Mere Lake EW 0.30	09-Mar-20 19:00	< 0.100	<0.001	<0.00002	<0.001	0.002	0.003	<0.00003	0.006	<0.001	0.007	0.03	32	0.38	6	6	21
	<b>SOCOTEC</b>		Client N				Vokingha	ım					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ		Contact		Paul Long		19 M2	5 Jet	10			Date Pri	lumber			3-Mar-2020 XR/301247		
	Tel +44 (0) 1283 554400								. •			Table Nu	ımber			1		
	Fax +44 (0) 1283 554422											<u> </u>						

		Units :	mg/l	mg/l	mg/l	mg/l	μg/l	μg/l	μg/l	μg/l	μg/l	μg/l	μg/l	μg/l	μg/l	μg/l	μg/l	μg/l
		Method Codes :	ICPWATVAR	KONENS	KONENS	KONENS	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW
	Method	Reporting Limits :	3	0.01	1	0.003	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as CI w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2047182	BH1-737 EW 7.00	09-Mar-20 15:00	160	0.10	59	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2047183	Bolder Mere Lake EW 0.30	09-Mar-20 19:00	47	0.03	47	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	SOCOTEC (3)		Client N		SOCOT Paul Long		Vokingha	ım					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road  Burton-on-Trent, Staffordshire, DE15 0YZ  Tel +44 (0) 1283 554400		Contact		•		19 M2	5 Jct	10			Date Prin Report N Table Nu	lumber			3-Mar-2020 KR/301247 1		
	Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422				שט	7UUO-1	I 9 IVIZ	JUT	10			Table Nu	ımber			1		

		Units :	μg/l	μg/l	μg/l	μg/l	μg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		Method Codes:	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PHEHPLCVL	PHEHPLCVL	PHEHPLCVL	PHEHPLCVL	SFAPI	SFAPI	SFAS	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si
	Method	Reporting Limits :	0.01	0.01	0.01	0.01	0.16	0.0005	0.0005	0.0005	0.0005	0.02	0.02	0.02	0.01	0.01	0.01	0.01
LAB ID Number EX/	Client Sample Description	Sample Date	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35
2047182	BH1-737 EW 7.00	09-Mar-20 15:00	< 0.01	0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	0.02	<0.02	< 0.010	< 0.010	< 0.010	< 0.010
2047183	Bolder Mere Lake EW 0.30	09-Mar-20 19:00	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.46	< 0.010	< 0.010	< 0.010	< 0.010
	SOCOTEC (3)		Client N		SOCOT Paul Long		Vokingha	ım					Sam	ple Ana	alysis			
ı	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		Contact				19 M2	5 Jct	10			Date Prin Report N Table Nu	lumber			3-Mar-2020 (R/301247 1		

		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	pH units			
		Method Codes :	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	WSLM13	WSLM13	WSLM20	WSLM3			
	Method I	Reporting Limits :	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.2	0.2	1				
LAB ID Number EX/	Client Sample Description	Sample Date	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Dissolved Organic Carbon w	Total Organic Carbon w	Biochemical Oxygen Demand w	pH units w			
2047182	BH1-737 EW 7.00	09-Mar-20 15:00	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.014	2.9	2.3	<1.0	4			
2047183	Bolder Mere Lake EW 0.30	09-Mar-20 19:00	< 0.010	0.012	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	17	17	7.1	6.6			
	<b>SOCOTEC</b>		Client Name SOCOTEC UK Wokingham										Sam	ple Ana	ılysis		
E	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400		Contact	Date Printed 23-Mar-2								3-Mar-2020 KR/301247 1					
	Fax +44 (0) 1283 554422																

Report No

#### **SOCOTEC UK Ltd Environmental Chemistry** W301247 **Analytical and Deviating Sample Overview**

Customer **SOCOTEC UK Wokingham** Site D9008-19 M25 Jct 10

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.

Trease mote the rea	alts for ally subcontracted allaly	oio (identined men d' / io	intery to take i							,											
			MethodID	CALCNH4	CUSTSERV	FNH3CALC	GROHSA	ICPMSW									ICPWATVAR				
ID Number	Description	Matrix Type	Sampled	Ammoniacal Nitrogen as NH4 Calc	Report A	Ammonia (Free) as N calc	GRO-HSA GCFID (AA)	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
				<b>✓</b>				✓	✓	✓	✓	✓	✓	✓	✓	✓	<b>\</b>	✓	✓	✓	✓
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

- The sample was received in an inappropriate container for this analysis
  - The sample was received without the correct preservation for this analysis
  - Headspace present in the sample container
- The sampling date was not supplied so holding time may be compromised applicable to all analysis

EXR/301247 Ver. 1

- Sample processing did not commence within the appropriate holding time
- 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.

Report No

# **SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview**

W301247

Customer SOCOTEC UK Wokingham Site D9008-19 M25 Jct 10

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.

			MethodID	ICPWATVAR		KONENS			PAHMSW	PHEHPLCVL	SFAPI		SFAS	TPHFID-Si	WSLM13		WSLM20	WSLM3	
ID Number	Description	Matrix Type	Sampled	Iron as Fe (Dissolved) VAR	Boron as B (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
		•		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓		✓
X/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
- Headspace present in the sample container
- D The sampling date was not supplied so holding time may be compromised applicable to all analysis
- Sample processing did not commence within the appropriate holding time
- 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.

Report Number: W/EXR/301247

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	·
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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/cm<sup>3</sup>@ 15°C

## Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

## **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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
- $\P$  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

- **P** 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.

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## **Sample Descriptions**

 Client :
 SOCOTEC UK Wokingham

 Site :
 D9008-19 M25 Jct 10

Report Number: W30\_1247

Lab ID Number	Client ID	Description
EX/2047182	BH1-737 EW 7.00	Unclassified
EX/2047182 EX/2047183	BH1-737 EW 7.00 Bolder Mere Lake EW 0.30	Unclassified Unclassified
	1	I

Appendix A Page 1 of 1 28/04/2020EXR/301247 Ver. 1

## **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

vices

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.

Date of Issue: 26-Mar-2020

	Method	Units : Method Codes : Reporting Limits :	µg/l BTEXHSA 5	μg/l BTEXHSA 5	μg/l BTEXHSA 10	μg/l BTEXHSA 5	μg/l BTEXHSA 5	μg/I BTEXHSA 15	mg/l FNH3CALC 0.01	mg/l GROHSA 0.1	mg/I GROHSA 0.1	mg/l GROHSA 0.1	mg/l GROHSA 0.1	mg/l GROHSA 0.1	mg/l GROHSA 0.1	mg/l GROHSA 0.1	mg/I GROHSA 0.1	mg/l GROHSA 0.1
LAB ID Number EX/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	o Xylene	Toluene	Xylenes	Ammonia (Free) as N calc a	GRO >C5->C6	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic	GRO-HSA o
2048733 2048734	BH1-715 EW 100320 BH1-410 EW 100320	10-Mar-20 13:30 10-Mar-20 15:15	< 5.0 < 5.0	< 5.0 < 5.0	< 10.0 < 10.0	< 5.0 < 5.0	< 5.0 < 5.0	< 15.0 < 15.0	<0.01 <0.01	< 0.100 < 0.100	< 0.100 < 0.100	< 0.100 < 0.100	< 0.100 < 0.100	< 0.100 < 0.100	< 0.100 < 0.100	< 0.100 < 0.100	< 0.100 < 0.100	< 0.100 < 0.100
:	SOCOTEC (	Client Name SOCOTEC UK Wokingham  Contact William Riggs										Sample Analysis						
E	Bretby Business Park, Ashby Road  Burton-on-Trent, Staffordshire, DE15 0YZ  Tel +44 (0) 1283 554400  Fax +44 (0) 1283 554422			Date Printed 26-Mar									6-Mar-2020 (R/301599 1					

	Method	Units : Method Codes :	mg/l ICPMSW	mg/l ICPMSW	mg/l ICPMSW	mg/l ICPMSW	mg/l ICPMSW	mg/l ICPMSW	mg/l ICPMSW	mg/l ICPMSW	mg/l ICPMSW					mg/l ICPWATVAR		
LABID Number EX/	Method  Client Sample Description	Sample Date	0.001  Arsenic as As (Dissolved)	0.00002 Cadmium as Cd (Dissolved)	0.001  Chromium as Cr (Dissolved)	0.001 Copper as Cu (Dissolved)	0.001 Lead as Pb (Dissolved)	0.00003  Mercury as Hg (Dissolved)	0.001 Nickel as Ni (Dissolved)	0.001 Selenium as Se (Dissolved)	0.002 Zinc as Zn (Dissolved)	0.01  Boron as B (Dissolved) a	Calcium as Ca (Dissolved) a	0.01 Iron as Fe (Dissolved) a	1 Magnesium as Mg (Dissolved) a	Potassium as K (Dissolved) a	Sodium as Na (Dissolved) a	○ Total Sulphur as SO4 (Dissolved) a
2048733	BH1-715 EW 100320	10-Mar-20 13:30	0.001	0.00039	0.002	0.038	0.003	<0.00003	0.072	0.002	0.123	0.02	1	0.09	42	5	73	າ11
2048734	BH1-410 EW 100320	10-Mar-20 15:15	0.001	0.00117	0.001	0.006	<0.001	<0.00003	0.204	0.001	0.87	0.03	26	14.9	39	18	256	145
	SOCOTEC (3)	Client Name SOCOTEC UK Wokingham										Sample Analysis						
	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422												6-Mar-2020 XR/301599 1					

	Method	Units : Method Codes : I Reporting Limits :	mg/l KONENS 0.01	mg/l KONENS 1	mg/l KONENS 0.003	μg/l PAHMSW 0.01	μg/l PAHMSW 0.01	μg/I PAHMSW 0.01	μg/l PAHMSW 0.01	μg/l PAHMSW 0.01	μg/l PAHMSW 0.01	μg/l PAHMSW 0.01	μg/l PAHMSW 0.01	μg/l PAHMSW 0.01	μg/l PAHMSW 0.01	μg/I PAHMSW 0.01	μg/l PAHMSW 0.01	μg/I PAHMSW 0.01
LABID Number EX/	Client Sample Description	Sample Date	Ammoniacal Nitrogen as N	Chloride as Cl w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene
2048733	BH1-715 EW 100320	10-Mar-20 13:30	0.01	196	<0.003	< 0.01*	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	SOCOTEC (		Client Na		SOCOT	IEC UK V	Vokingha	m					Sam	ple Ana	alysis			
E	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422				•	9008-1	19 M2	5 Jct	10			Date Prin Report N Table Nu	lumber			6-Mar-2020 XR/301599 1		

	Method	Units : Method Codes : Reporting Limits :	μg/l PAHMSW 0.01	μg/l PAHMSW 0.01	μg/l PAHMSW 0.01	μg/l PAHMSW 0.16	mg/l PHEHPLCVL 0.0005	mg/l PHEHPLCVL 0.0005	mg/l PHEHPLCVL 0.0005	mg/l PHEHPLCVL 0.0005	mg/l SFAPI 0.02	mg/l SFAPI 0.02	mg/l SFAS 0.02	mg/l TPHFID-Si 0.01	mg/l TPHFID-Si 0.01	mg/l TPHFID-Si 0.01	mg/l TPHFID-Si 0.01	mg/l TPHFID-Si 0.01
LAB ID Number EX/	Client Sample Description	Sample Date	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
2048733	BH1-715 EW 100320	10-Mar-20 13:30	< 0.01	< 0.01	< 0.01	< 0.16*	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
!	SOCOTEC (		Client N		SOCO1		Vokingha	ım					Sam	ple Ana	alysis			
E	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		Comact		•		19 M2	5 Jct	10			Date Prin Report N Table Nu	lumber			6-Mar-2020 KR/301599 1		

	Method	Units : Method Codes : I Reporting Limits :	mg/l TPHFID-Si 0.01	mg/l WSLM13 0.2	mg/l WSLM13 0.2	mg/l WSLM20	pH units WSLM3								
LABID Number EX/	Client Sample Description	Sample Date	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Dissolved Organic Carbon w	Total Organic Carbon w	Biochemical Oxygen Demand w	pH units w		
2048733	BH1-715 EW 100320	10-Mar-20 13:30	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010 < 0.010	< 0.010	< 0.010	6.4 4.5	2.1 3.3	<1.0 2.6	4.1		
2048734					< 0.010			< 0.010							
	SOCOTEC (		Client N		SOCOT William R		Vokingha	m					Sample Ar	nalysis	
E	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422				D9	9008-1	19 M2	5 Jct	10			Date Print Report Nu Table Nur	ımber	26-Mar-2020 EXR/301599 1	

### **SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview**

Customer SOCOTEC UK Wokingham Site D9008-19 M25 Jct 10

Consignment No W169514 Date Logged 18-Mar-2020

Report No W301599

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.

			MethodID	CUSTSERV	FNH3CALC	GROHSA	ICPMSW									ICPWATVAR					
ID Number	Description	Matrix Type	Sampled	Report A	Ammonia (Free) as N calc	GRO-HSA GCFID (AA)	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
							<b>\</b>	✓	✓	✓	✓	✓	✓	✓	✓	<b>\</b>	<b>\</b>	✓	✓	✓	✓
EX/2048733	BH1-715	Unclassified	10/03/20																		
EX/2048734	BH1-410	Unclassified	10/03/20			С															

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

- The sample was received in an inappropriate container for this analysis
- The sample was received without the correct preservation for this analysis
- C Headspace present in the sample container
- The sampling date was not supplied so holding time may be compromised applicable to all analysis
- 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

Consignment No W169514
Date Logged 18-Mar-2020

Report No W301599

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.

			MethodID	ICPWATVAR	KONENS			PAHMSW	PHEHPLCVL	SFAPI		SFAS	TPHFID-Si	WSLM13		WSLM20	WSLM3	
ID Number	Description	Matrix Type	Sampled	Boron as B (Dissolved) VAR	Chloride as CI (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
		-		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓		1
EX/2048733	BH1-715	Unclassified	10/03/20							Е	Е	Е				Е		
EX/2048734	BH1-410	Unclassified	10/03/20									Е				Е		

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
- The sample was received without the correct preservation for this analysis
- C Headspace present in the sample container
- The sampling date was not supplied so holding time may be compromised applicable to all analysis
- 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/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.

Page 9 of 11

Report Number: W/EXR/301599

# **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		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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite
TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/301599 Ver. 1

#### **Sample Descriptions**

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

Report Number: W30\_1599

Lab ID Number	Client ID	Description
EX/2048733	BH1-715 EW 100320	Unclassified
EX/2048734	BH1-410 EW 100320	Unclassified Unclassified

Appendix A Page 1 of 1 26/03/2020EXR/301599 Ver. 1

#### 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

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.

Date of Issue: 07-May-2020

< 0.100 < 0.100

< 0.100 < 0.100

GRO >C8->C10 Aliphatic

l/gm	ICPWATVAR ICPWATVAR	-	Sodium as Na (Dissolved) a	62	255	22	33										_	_	_	_	_
		-	Potassium as K (Dissolved) a	9	22	80	2														
l/gm	ICPWATVAR	-	Magnesium as Mg (Dissolved) a	44	49	10	-										0000	07-May-2020	EXR/303118	1	
l/gm	ICPWATVAR   ICPWATVAR   ICPWATVAR	0.01	Iron as Fe (Dissolved) a	0.1	54.4	0.27	14								Vsis		3	01	EX		
l/gm	ICPWATVAR	-	Calcium as Ca (Dissolved) a	^	28	2	80								Sample Analysis						
l/gm	ICPWATVAR	0.01	Boron as B (Dissolved) a	0.02	0.03	0.01	0.01								Samr			ited	umber	mber	
l/bm	ICPMSW	0.002	Zinc as Zn (Dissolved)	0.106	966.0	0.197	0.008											Date Printed	Report Number	<b>Table Number</b>	
l/gm	ICPMSW	0.001	Selenium as Se (Dissolved)	0.001	<0.001	<0.001	<0.001														
l/bm	ICPMSW	0.001	Nickel as Ni (Dissolved)	0.067	0.251	0.151	0.005														
l/gm	ICPMSW	0.00003	Mercury as Hg (Dissolved)	<0.00003	<0.00003	<0.00003	<0.00003												7	2	
l/gm	ICPMSW	0.001	Lead as Pb (Dissolved)	0.003	<0.001	<0.001	<0.001								l E				M25 1c+ 10		
l/gm	ICPMSW	0.001	Copper as Cu (Dissolved)	0.038	<0.001	0.017	<0.001								SOCOTEC UK Wokingham	)			_		
l/gm	ICPMSW	0.001	Chromium as Cr (Dissolved)	0.002	<0.001	0.001	0.002								EC UK W	ŭ	c 65 6				
l/gm	ICPMSW	0.00002	Cadmium as Cd (Dissolved)	0.00051	0.00097	0.00154	<0.00002								SOCOT	William Bidde	A A IIII O		ב	ב	
l/gm	ICPMSW	0.001	Arsenic as As (Dissolved)	0.001	<0.001	<0.001	0.003								ame						
	GROHSA	0.1	GRO-HSA o	< 0.100	< 0.100	< 0.100	< 0.100								Client Name	4000	CONTACT				
Units:	Method Codes:	Method Reporting Limits:	Sample Date	22-Apr-20 11:20	22-Apr-20 12:40	22-Apr-20 14:30	22-Apr-20 15:15														
		Methoc	Client Sample Description	1-715 EW 220420 12.00	1-410 EW 220420 7.50	1-184 EW 220420 13.00	1-182 EW 220420 8.00								SOCOTEC			Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
			LAB ID Number EX/	2056225	2056226	2056227	2056228									•			ш		

		Units:		l/gm			l/grl		-	-	+	$\vdash$	+		увн		$\vdash$	l/grl
		Method Codes:	ICPW	KONENS	KONENS	KONENS		_	Š	Š	×	×	×	Š	_	Ņ	×.	PAHMSW
	Method	Method Reporting Limits:	က	0.01	-	0.003	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as Cl w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2056225	1-715 EW 220420 12.00	22-Apr-20 11:20	113	0.19	196	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01
2056226	1-410 EW 220420 7.50	22-Apr-20 12:40	146	0.23	512	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01
2056227	1-184 EW 220420 13.00	22-Apr-20 14:30	53	0.17	46	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01
2056228	1-182 EW 220420 8.00	22-Apr-20 15:15	43	0.18	42	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	> 0.01	< 0.01	> 0.01	< 0.01	< 0.01	< 0.01*	< 0.01
											ł				1	Ì		
	SOCOTEC		Client Name	ame	SOCOTE	EC UK W	SOCOTEC UK Wokingham	_					Samp	Sample Analysis	ysis			
			Contact		William Riggs	sbt												
	Bretby Business Park, Ashby Road											Date Printed	pa		1-70	07-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				Ċ	7 000	O MOE	7	•		Ľ.	Report Number	mber		EXF	EXR/303118		
	Tel +44 (0) 1283 554400				במ	-000	D9000-19 IMZ3 JCL 10	125.0	<b>&gt;</b>			Table Number	nper			-		
	Fax +44 (0) 1283 554422										<u> </u>							

0.032

TPH Ali Band >C21-C35

0.040 0.032

																			0		_	
																			07-May-2020	EXR/303118	1	
																	lysis		07	í í		
pH units	WSLM3			pH units w	4	5.3	4	9									Sample Analysis					
l/gm	WSLM20	-		Biochemical Oxygen Demand w	<1.0*	*0.9	<2.0*	3.4*									Samp		ted	umber	mber	
l/gm	WSLM13	0.2	!	Total Organic Carbon w	2.2	1.5	1.6	5.1											Date Printed	Report Number	Table Number	
l/gm	WSLM13	0.2		Dissolved Organic Carbon w	2.2	0.75	1.5	4.4														
l/gm	ТР	0.01		TPH Aro Band >C8-C40	0.014	0.014	0.020	0.042														
l/gm	TPHFID-Si	0.01		TPH Aro Band >C8-C10	< 0.010	< 0.010	< 0.010	< 0.010												7	2	
l/gm	TPHFID-Si	0.01		TPH Aro Band >C21-C35	< 0.010	< 0.010	< 0.010	0.020									٤			101	S MIZS JCT 10	
l/gm	TPHFID-Si	0.01		TPH Aro Band >C16-C21	< 0.010	< 0.010	< 0.010	0.015									/okingham					
l/gm	TPHFID-Si	0.01		TPH Aro Band >C12-C16	< 0.010	< 0.010	< 0.010	< 0.010									SOCOTEC UK W	ggs		7 000	7-80080	
l/gm	-Si	0.01		TPH Aro Band >C10-C12	< 0.010	< 0.010	< 0.010	< 0.010									SOCOT	William Riggs			ב	
l/gm	TPHFID-Si	0.01		TPH Ali Band >C8-C40	0.076	0.055	0.054	0.063									ame					
	TP	0.01		TPH Ali Band >C8-C10	< 0.010	< 0.010	< 0.010	< 0.010									Client Name	Contact				
Units:	Method Codes:	Reporting Limits:		Sample Date	22-Apr-20 11:20	22-Apr-20 12:40	22-Apr-20 14:30	22-Apr-20 15:15														
		Method		Client Sample Description	1-715 EW 220420 12.00	1-410 EW 220420 7.50	1-184 EW 220420 13.00	1-182 EW 220420 8.00									SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
				LAB ID Number EX/	2056225	2056226	2056227	2056228									Ŋ		Bré	Bul	<u> </u>	ű.

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham

Sample Analysis

D9008-19 M25 Jct 10 Customer

W303118 Report No

Date Logged 25-Apr-2020

Consignment No W171176

In-House Report Due 04-May-2020

		Sodium as Na (Dissolved) VAR	^				
		Magnesium as Mg (Dissolved) VAR	>				
		Calcium as Ca (Dissolved) VAR	>				
	ICPWATVAR	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)	>				
gdays		Cadmium as Cd MS (Dissolved)	>				
orking		Chromium as Cr MS (Dissolved)	>				
ve wo	ICPMSW	Nickel as Ni MS (Dissolved)	>				
onal fi	GROHSA	GRO-HSA GCFID (AA)		Ш	В	Е	ш
dditic	FNH3CALC	Ammonia (Free) as N calc					
an a	CUSTSERV	Report A					
up to	CALCNH4	Ammoniacal Nitrogen as NH4 Calc	>				
likely to take	MethodID	Sampled		22/04/20	22/04/20	22/04/20	22/04/20
sis (identified with a '^') is		Matrix Type		Unclassified	Unclassified	Unclassified	Unclassified
Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.		Description		1-715 12.00	1-410 7.50	1-184 13.00	1-182 8.00
Please note the res		ID Number		EX/2056225	EX/2056226	EX/2056227	EX/2056228

Potassium as K (Dissolved) VAR

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

Analysis Required

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

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.

EXR/303118 Ver. 2

# Sample Analysis

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10

Consignment No W171176

Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry** 

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. W303118 Report No

	pH units	>				
WSLM3	Temperature C°					
WSLM20	Biochemical Oxygen Demand	>	ш	ш	Ш	Ш
	Dissolved Organic Carbon					
WSLM13	Total Organic Carbon	>				
TPHFID-Si	TPH by GC(Si)	>				
SFAS	Sulphide as S SFA	^				
	Cyanide (Total) as CN SFA	^				
SFAPI	Cyanide (Free) as CN SFA	^				
PHEHPLCVL	Phenois by HPLC (Low Level)					
PAHMSW	PAH GC-MS (16)	^				
	Chromium VI. as Cr (Kone)	>				
	Ammoniacal Nitrogen (Kone)	>				
KONENS	Chloride as CI (Kone)	^				
	Boron as B (Dissolved) VAR	^				
CPWATVAR	Iron as Fe (Dissolved) VAR	1				
MethodID	Sampled		22/04/20	22/04/20	22/04/20	22/04/20
	Matrix Type		Unclassified	Unclassified	Unclassified	Unclassified
	Description		1-715 12.00	1-410 7.50	1-184 13.00	1-182 8.00
	ID Number		EX/2056225	EX/2056226	EX/2056227	EX/2056228

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Analysis Required

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

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.

EXR/303118 Ver. 2

Report Number: W/EXR/303118

### **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.

Report Number: W/EXR/303118

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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	

### **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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/303118 Ver. 2

#### **Sample Descriptions**

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

Report Number: W30\_3118

1.715   PM 20040   22.0	Lab ID Number	Client ID	Description
EX/2056226 1-410 EW 220420 7.50 Unclassified			
EX2096229 1-10 EVY 201429 1-10 Unclassified EX2096229 1-10 EVY 201429 1-10 Unclassified EX2096229 1-10 EVY 201429 1-10 Unclassified	EX/2056225	1-715 EW 220420 12.00	Unclassified
EV/2006/2278 1-162 EW/ 2014/20 8.00 Unclassified  LY2006/2278 1-162 EW/ 2014/20 8.00 Unclassified  EV/2006/278 1-162 EW/ 2014/20 8.00 Unclassified	EX/2056226	1-410 EW 220420 7.50	Unclassified
EV2055228 1-182 EW 220420 8.00 Unclasselfited	EX/2056227	1-184 EW 220420 13.00	Unclassified
	EX/2056228	1-182 EW 220420 8.00	Unclassified
			I.

Appendix A Page 1 of 1 07/05/2020EXR/303118 Ver. 2

#### 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.

		Units : Method Codes :	BTE	μg/l BTEXHSA	BTE	µg/l BTEXHSA	µg/l BTEXHSA	μg/l BTEXHSA	mg/l CALCNH4	mg/l FNH3CALC	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA (	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA (	mg/l GROHSA
	Metho	od Reporting Limits:	2	2	10	5	2	15	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2056252	1-147 EW 230420 8.00	23-Apr-20 09:30	< 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	< 0.100	< 0.100	< 0.100
2056253	1-231 EW 230420 5.00	23-Apr-20 11:20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	90.0	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2056254	1-166 EW 230420 6.00	23-Apr-20 12:45	< 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	< 0.100	< 0.100	< 0.100
2056255	1-226 EW 230420 6.00	23-Apr-20 14:00	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.10	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
- •	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	٤					Samp	Sample Analysis	ysis			
			Contact		William Riggs	ggs												
	Bretby Business Park, Ashby Road											Date Printed	pe		<b>1-</b> 20	07-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				ב	7000210		M25 1c+ 10	_			Report Number	mber		EXF	EXR/303123		
	Tel +44 (0) 1283 554400				د			200	2			Table Number	per			1		
	Fax +44 (0) 1283 554422																	

l/gm	ICPWATVAR	-	Sodium as Na (Dissolved) a	124	14	28	49														
l/gm	ICPWATVAR	-	Potassium as K (Dissolved) a	9	20	9	3		_												_
l/gm	ICPWATVAR	1	Magnesium as Mg (Dissolved) a	13	7	10	16											07-May-2020	EXR/303123	-	
	ICPWATVAR		Iron as Fe (Dissolved) a	5.94	0.03	7.24	0.03									llysis		07	í í		
l/gm	ICPWATVAR	1	Calcium as Ca (Dissolved) a	37	35	44	43									Sample Analysis					
l/gm	ICPWATVAR	0.01	Boron as B (Dissolved) a	0.04	0.01	0.01	0.03									Sam		ted	umber	mber	
l/gm	ICPMSW	0.002	Zinc as Zn (Dissolved)	0.134	900.0	0.014	0.046											Date Printed	Report Number	Table Number	
l/gm	ICPMSW	0.001	Selenium as Se (Dissolved)	<0.001	<0.001	<0.001	0.002														
l/gm	ICPMSW	0.001	Nickel as Ni (Dissolved)	0.02	0.028	0.028	0.064														
l/gm	ICPMSW	0.00003	Mercury as Hg (Dissolved)	<0.00003	<0.00003	<0.00003	<0.00003												_	2	
l/bm	ICPMSW	0.001	Lead as Pb (Dissolved)	0.002	<0.001	<0.001	<0.001									Æ			10		
l/gm	ICPMSW	0.001	Copper as Cu (Dissolved)	0.004	<0.001	<0.001	0.003									okingham				_	
l/gm	ICPMSW	0.001	Chromium as Cr (Dissolved)	0.002	<0.001	<0.001	<0.001									SOCOTEC UK Wok	s66		7 000	2000eu	
l/bm	ICPMSW	0.00002	Cadmium as Cd (Dissolved)	0.00018	<0.00002	0.0001	0.00044									SOCOT	William Riggs		2	ĩ	
l/gm	ICPMSW	0.001	Arsenic as As (Dissolved)	<0.001	<0.001	<0.001	<0.001									ame					
	GROHSA	0.1	GRO-HSA o	< 0.100	< 0.100	< 0.100	< 0.100									Client Name	Contact				_
Units:	Method Codes:	Method Reporting Limits:	Sample Date	23-Apr-20 09:30	23-Apr-20 11:20	23-Apr-20 12:45	23-Apr-20 14:00														
		Meth	Client Sample Description	1-147 EW 230420 8.00	1-231 EW 230420 5.00	1-166 EW 230420 6.00	1-226 EW 230420 6.00									SOCOTEC (		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax+44 (0) 1283 554422
			LAB ID Number EX/	2056252	2056253	2056254	2056255									<b>(3)</b>		Ē	ā		_

PAHMSW 0.01	Fluorene	< 0.01	< 0.01	< 0.01	< 0.01														
PAHMSW 0.01	Fluoranthene	< 0.01	< 0.01	< 0.01	< 0.01														
hg/l PAHMSW 0.01	Dibenzo(a,h)anthracene	< 0.01	< 0.01	< 0.01	< 0.01											07-May-2020	EXR/303123	1	
pg/ PAHMSW 0.01	Chrysene	< 0.01	< 0.01	< 0.01	< 0.01									llysis		0.	M		
pg/l PAHMSW 0.01	Benzo-a-Pyrene	< 0.01	< 0.01	< 0.01	< 0.01									Sample Analysis					
payll PAHMSW 0.01	Benzo(k)fluoranthene	< 0.01	< 0.01	< 0.01	< 0.01									Sam		ted	umber	mber	
PAHMSW 0.01	Benzo(ghi)perylene	< 0.01	< 0.01	< 0.01	< 0.01											Date Printed	Report Number	Table Number	
PAHMSW 0.01	Benzo(b)fluoranthene	< 0.01	< 0.01	< 0.01	< 0.01														
PAHMSW 0.01	Benzo(a)anthracene	< 0.01	< 0.01	< 0.01	< 0.01														
hg/l PAHMSW 0.01	Anthracene	< 0.01	< 0.01	< 0.01	< 0.01												<b>C</b>	2	
hg/l PAHMSW 0.01	Acenaphthylene	< 0.01	< 0.01	< 0.01	< 0.01									٤			100	N 23 JCT 110	
PAHMSW 0.01	Acenaphthene	< 0.01	< 0.01	< 0.01	< 0.01									okinghar					
KONENS 0.003	Chromium VI as Cr	<0.003	<0.003	<0.003	<0.003									SOCOTEC UK Wokingham	ggs		7 000	D3008-13	
mg/l KONENS	Chloride as Cl w	272	35	83	28									SOCOT	William Riggs		2	ž	
KONENS 0.01	Ammoniacal Nitrogen as N	0.2	0.05	0.11	0.08									ame					
mg/l ICPWATVAR 3	Total Sulphur as SO4 (Dissolved) a	102	88	86	128									Client Name	Contact				
Units : Method Codes : Method Reporting Limits :	Sample Date	23-Apr-20 09:30	23-Apr-20 11:20	23-Apr-20 12:45	23-Apr-20 14:00														
Metho	Client Sample Description	1-147 EW 230420 8.00	1-231 EW 230420 5.00	1-166 EW 230420 6.00	1-226 EW 230420 6.00									SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax+44 (0) 1283 554422
	LAB ID Number EX/	2056252	2056253	2056254	2056255									S		B	B	_	ш.

TPH Ali Band >C21-C35

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham

Customer

Sample Analysis

D9008-19 M25 Jct 10 W303123 Report No

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

Date Logged 25-Apr-2020

Consignment No W171203

In-House Report Due 05-May-2020

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) ICPMSW ш ш GROHS **GRO-HSA GCFID (AA)** Ammonia (Free) as N calc Report A Ammoniacal Nitrogen as NH4 Calc CALCN 23/04/20 23/04/20 23/04/20 23/04/20 Sampled MethodID Matrix Type Unclassified Unclassified Unclassified Unclassified Description 1-147 8.00 -166 6.00 -231 5.00 1-226 6.00 ID Number EX/2056252 EX/2056254 EX/2056255 EX/2056253

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate handling time Sample processing did not commence within the appropriate holding time

iccredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

owever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Requested Analysis Key Analysis Required

No analysis scheduled

Analysis dependant upon trigger result - Note: due date may be affected if triggered Analysis Subcontracted - Note: due date may vary EXR/303123 Ver. 2

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

Consignment No W171203

**SOCOTEC UK Wokingham** 

Sample Analysis

D9008-19 M25 Jct 10

W303123

Report No

Customer

Date Logged 25-Apr-2020

In-House Report Due 05-May-2020

WSLM:

	WSLM20	Biochemical Oxygen Demand	1			
		Dissolved Organic Carbon				
	WSLM13	Total Organic Carbon	>			
	TPHFID-Si	TPH by GC(Si)	>			
	SFAS	Sulphide as S SFA	>			
		Cyanide (Total) as CN SFA	>			
	SFAPI	Cyanide (Free) as CN SFA	1			
days.	PHEHPLCVL	Phenois by HPLC (Low Level)				
rking	PAHMSW	PAH GC-MS (16)	>			
ve wc		Chromium VI. as Cr (Kone)	^			
nal fi		Ammoniacal Nitrogen (Kone)	>			
dditic	KONENS	Chloride as CI (Kone)	>			
an a		Boron as B (Dissolved) VAR	^			
up tc	ICPWATVAR	Iron as Fe (Dissolved) VAR	>			
likely to take	MethodID	Sampled		23/04/20	23/04/20	23/04/20
'sis (identified with a '^') is		Matrix Type		Unclassified	Unclassified	Unclassified
Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.		Description		1-147 8.00	1-231 5.00	1-166 6.00
Please note the res		ID Number		EX/2056252	EX/2056253	EX/2056254

23/04/20

Unclassified

1-226 6.00

EX/2056255

pH units Temperature C°

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within 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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303123 Ver. 2

Report Number: W/EXR/303123

### **Additional Report Notes**

Method	Sample ID	The following information should be taken into consideration when using the
Code	•	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.

Report Number: W/EXR/303123

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/303123 Ver. 2

#### **Sample Descriptions**

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

Report Number: W30\_3123

EX/2056252 EX/2056253 EX/2056254 EX/2056255	Client ID 1-147 EW 230420 8.00 1-231 EW 230420 5.00	Description Unclassified
EX/2056253	1-231 EW 230420 5.00	Unclassified
EX/2056253 EX/2056254 EX/2056255	1-231 EW 230420 5.00	
EX/2056254 EX/2056255		Unclassified
EX/2056255	1-166 EW 230420 6.00	Unclassified
EX/2030233	1-226 EW 230420 6.00	Unclassified
	1-220 EVV 230420 0.00	Unicassineu

Appendix A Page 1 of 1 07/05/2020EXR/303123 Ver. 2

#### 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.

		Units:	l/grl	l/grl	l/gµ	l/grl		l/gц	l/gm	l/gm	$\vdash$	l/gm	l/gm	l/gm	/bu	l/gm		l/gm
		Method Codes:	3TEXHSA	BTEXHSA	BTEXHSA				CALCNH4 F		SA	-	GROHSA	GROHSA	GROHSA	GROHSA	SA	GROHSA
	Method F	Method Reporting Limits:	5	2	10		2	15	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2056496	1-217 EW 270420 6.00	27-Apr-20 10:00	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	5.01	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2056497	1-212 EW 270420 2.00	27-Apr-20 10:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	5.79	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2056/198	1-212 EW 270420 6 00	27-Apr-20 11-45	\ \ \ \	\ \ \ \	7 10 0	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0 4 7	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0.00	V 0 0 7	0100	0 100	0 100	0100	V 0 100	V 0 100	0 100	0 100
	SOCOTEC		Client Name	ате	SOCOTEC William Bidgs	EC UK W	SOCOTEC UK Wokingham	E					Samp	Sample Analysis	lysis			
											ľ							
	Bretby Business Park, Ashby Road											Date Printed	ted		50-	20-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				2	000		7 10	•		<u></u>	Report Number	ımber		E	EXR/303168		
	Tel +44 (0) 1283 554400				במ	D3008-13		N 23 JCC 10	>			Table Number	nber			1		
	Fax +44 (0) 1283 554422																	

20-May-2020 EXR/303168

Report Number

Date Printed

**Table Number** 

Sample Analysis

mg/l ICPMSW 0.002

ICPMSW 0.001

mg/l ICPMSW 0.001

ICPMSW 0.00003

mg/l ICPMSW 0.001

 mg/l
 mg/l
 mg/l

 ICPMSW
 ICPMSW
 ICPMSW

 0.00002
 0.001
 0.001

mg/l ICPMSW 0.001

Units: mg/l
Method Codes: GROHSA
Method Reporting Limits: 0.1

4

က

15 12

8.31 15.1

99 40 10

0.05 0.05 0.06

<0.002 0.005 0.022

<0.001 <0.001 <0.001

0.003 0.029 0.028

<0.00003 <0.00003 <0.00003

<0.001

<0.001 <0.001 0.002

<0.001 0.002 <0.001

<0.00002 0.00006 0.00021

0.001

0.003 <0.001

< 0.100 < 0.100

> 27-Apr-20 10:45 27-Apr-20 11:45

27-Apr-20 10:00

1-217 EW 270420 6.00 1-212 EW 270420 2.00 1-212 EW 270420 6.00

2056497 2056496

2056498

< 0.100

<0.001 <0.001

0.1

က

Sodium as Na (Dissolved) a

Potassium as K (Dissolved) a

Magnesium as Mg (Dissolved) a

Iron as Fe (Dissolved) a

Calcium as Ca (Dissolved) a

Boron as B (Dissolved) a

Zinc as Zn (Dissolved)

Selenium as Se (Dissolved)

Nickel as Ni (Dissolved)

Mercury as Hg (Dissolved)

Lead as Pb (Dissolved)

Copper as Cu (Dissolved)

Chromium as Cr (Dissolved)

Cadmium as Cd (Dissolved)

Arsenic as As (Dissolved)

GRO-HSA o

Sample Date

Client Sample Description

LAB ID Number EX/

l/grl	AHMSW	0.01	Fluorene	< 0.04	< 0.04	< 0.01													
	W		Fluoranthene	> 0.04	> 0.04	< 0.01													
	SW		Dibenzo(a,h)anthracene	> 0.04	> 0.04	< 0.01										20-May-2020	EXR/303168	1	
	W		Chrysene	< 0.04	< 0.04	< 0.01								ysis		20-N	EXR		
	3W		Benzo-a-Pyrene	< 0.04	< 0.04	< 0.01								Sample Analysis					
	3W	0.01	Benzo(k)fluoranthene	> 0.04	> 0.04	< 0.01								Samp		ted	nmper	nber	
	3W	0.01	Benzo(ghi)perylene	> 0.04	< 0.04	< 0.01										Date Printed	Report Number	Table Number	
	3W		Benzo(b)fluoranthene	> 0.04	> 0.04	< 0.01											<u> </u>	1	
	W.		Benzo(a)anthracene	> 0.04	> 0.04	< 0.01													
	3W		Anthracene	> 0.04	> 0.04	< 0.01											9	2	
-	SW.		Acenaphthylene	> 0.04	> 0.04	< 0.01								٤			, 10	MZS JCT 10	
l/grl	PAHMSW	0.01	Acenaphthene	< 0.04	< 0.04	< 0.01								'okinghaı					
mg/l	KONENS	0.003	Chromium VI as Cr	<0.003	<0.003	<0.003								SOCOTEC UK Wokingham	SBB		000	D3008-13	
l/gm	KONENS	-	Chloride as Cl w	7	8	12								SOCOT	William Riggs		2	בֿ	
l/gm	KONENS	0.01	Ammoniacal Nitrogen as N	3.9	4.5	0.17								ame					
l/gm	SPWATVAR	က	Total Sulphur as SO4 (Dissolved) a	14	36	30								Client Name	Contact				
Units:	Method Codes:	Method Reporting Limits:	Sample Date	27-Apr-20 10:00	27-Apr-20 10:45	27-Apr-20 11:45													
		Method F	Client Sample Description	1-217 EW 270420 6.00	1-212 EW 270420 2.00	1-212 EW 270420 6.00								SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
			LAB ID Number EX/	2056496	2056497	2056498										ш	ш		

		Units:	l/gu	l/gu	l/gu	l/grl	l/grl	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	-		l/gm	l/gm
		Method Codes:	PAHMSW	PAHMSW	PAHMSW			PHEHPLCVL PHEHPLCVL PHEHPLCVL PHEHPLCVL	HEHPLCVL I	PHEHPLCVL F	PHEHPLCVL	SFAPI	SFAPI		TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si
	Method	Method Reporting Limits:	0.01	0.01	0.01		0.16	0.0005	0.0005	0.0005	0.0005	0.02	0.02				0.01	0.01
LAB ID Number EX/	Client Sample Description	Sample Date	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35
2056496	1-217 EW 270420 6.00	27-Apr-20 10:00	< 0.04	< 0.04	< 0.04	> 0.04	< 0.64	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.37	< 0.010	< 0.010	< 0.010	0.214
2056497	1-212 EW 270420 2.00	27-Apr-20 10:45	< 0.04	> 0.04	< 0.04	> 0.04	< 0.64	<0.0005	0.0008	<0.0005	<0.0005	<0.02	<0.02	6.0	< 0.010	0.012	0.016	0.257
2056498	1-212 EW 270420 6.00	27-Apr-20 11:45	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	< 0.010	0.103
		i					2											5
	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	u					Samp	Sample Analysis	lysis			
	5		Contact		William Ridds	SDD												
											† 		-					
	Bretby Business Park, Ashby Koad											Date Printed	ted		-07	ZU-IVIAY-ZUZU		
	Burton-on-Trent, Staffordshire, DE15 0YZ				ב	Danna-19 IV		25 Ict 10	_		<u> 1</u>	Report Number	ımber		EX	EXR/303168		
	Tel +44 (0) 1283 554400				2				2			<b>Table Number</b>	nber			_		
	Fax +44 (0) 1283 554422										<u> </u>							

																	20-May-2020	EXR/303168	1	
															lysis		20-	EXF		
pH units	WSLM3		pH units w	6.4	6.3	5.2									Sample Analysis					
mg/l	WSLM20	-	Biochemical Oxygen Demand w	<28.5	<28.5	<2.9									Samp		nted	umber	mber	
l/gm	WSLM13	7:0	Total Organic Carbon w	23	20	2.5											Date Printed	Report Number	Table Number	
l/gm		7.0	Dissolved Organic Carbon w	17	38	2.5														
mg/l		5	TPH Aro Band >C8-C40	0.034	0.026	< 0.010														
	TPHFID-Si	5	TPH Aro Band >C8-C10	< 0.010	< 0.010	< 0.010												<b>7</b>	2	
l/gm	TPHFID-Si	0.0	TPH Aro Band >C21-C35	0.021	0.013	< 0.010									٤			10,4	2000	
l/gm		0.0	TPH Aro Band >C16-C21	< 0.010	< 0.010	< 0.010									Wokingham				NI K	
l/gm	TPHFID-Si	0.0	TPH Aro Band >C12-C16	< 0.010	< 0.010	< 0.010										iggs		7 000	J9006-19 MZ3 JCL 10	
mg/l	TPHFID-Si	0.0	TPH Aro Band >C10-C12	< 0.010	< 0.010	< 0.010									SOCOTEC UK	William Riggs		2	בֿ	
l/gm	TPHFID-Si	0.0	TPH Ali Band >C8-C40	0.222	0.291	0.106									ame					
	TPHFID-Si		TPH Ali Band >C8-C10	< 0.010	< 0.010	< 0.010									Client Name	Contact				
Units:	Mothod Boograins Limits	reporting Emilies .	Sample Date	27-Apr-20 10:00	27-Apr-20 10:45	27-Apr-20 11:45														
	1 Postsom		Client Sample Description	1-217 EW 270420 6.00	1-212 EW 270420 2.00	1-212 EW 270420 6.00									SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
			LAB ID Number EX/	2056496	2056497	2056498									J.		_			

EXR/303168 Ver. 2

# Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

Consignment No W171232

**SOCOTEC UK Wokingham** D9008-19 M25 Jct 10

Customer

Sample Analysis

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. W303168 Report No

	Potassium as K (Dissolved) VAR	^			
	Sodium as Na (Dissolved) VAR	1			
	Magnesium as Mg (Dissolved) VAR	^			
	Calcium as Ca (Dissolved) VAR	^			
ICPWATVAR	Total Sulphur as SO4 (Diss) VAR	^			
	Selenium as Se MS (Dissolved)	^			
	Mercury as Hg MS (Dissolved)	^			
	Arsenic as As MS (Dissolved)	1			
	Zinc as Zn MS (Dissolved)	1			
	Lead as Pb MS (Dissolved)	1			
	Copper as Cu MS (Dissolved)	^			
	Cadmium as Cd MS (Dissolved)	1			
	Chromium as Cr MS (Dissolved)	1			
ICPMSW	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	×			
dID	led		27/04/20	)4/20	)4/20
MethodID	Sampled		27/(	27/(	27/(
	•				
	φ				
	гіх Туре				
	Matri		sified	sified	sified
	2		<b>Jnclassified</b>	Jnclassifie	Unclassifie
			Ō	Ō	n
	tion				
	Description				
	Ď				
			1-217	1-212	1-212
			<del>-</del>	4	1
	nber		9(	1	98
	ID Number		EX/2056496	EX/2056497	EX/2056498
	⊒		EX/2(	EX/2(	EX/2(
		•		•	

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

Sample processing did not commence within the appropriate handling time Requested Analysis Key

No analysis scheduled Analysis Required

Analysis dependant upon trigger result - Note: due date may be affected if triggered 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.

# EXR/303168 Ver. 2

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10 W303168

Report No

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

Date Logged 28-Apr-2020

Consignment No W171232

In-House Report Due 06-May-2020

	pH units	>			
WSLM3	Temperature C°				
WSLM20	Biochemical Oxygen Demand	>			
	Dissolved Organic Carbon				
WSLM13	Total Organic Carbon	>			
TPHFID-Si	TPH by GC(Si)	>			
SFAS	Sulphide as S SFA	>			
	Cyanide (Total) as CN SFA	1			
SFAPI	Cyanide (Free) as CN SFA	>			
PHEHPLCVL	PhenoIs by HPLC (Low Level)				
PAHMSW	PAH GC-MS (16)	>			
	Chromium VI. as Cr (Kone)	^			
	Ammoniacal Nitrogen (Kone)	>			
KONENS	Chloride as CI (Kone)	>			
	Boron as B (Dissolved) VAR	>			
ICPWATVAR	Iron as Fe (Dissolved) VAR	1			
MethodID	Sampled		27/04/20	27/04/20	27/04/20
	Matrix Type		Unclassified	Unclassified	Unclassified
	Description		1-217	1-212	1-212
	ID Number		EX/2056496	EX/2056497	EX/2056498

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time Headspace present in the sample container

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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

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.

Report Number: W/EXR/303168

## **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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	

## **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/cm<sup>3</sup>@ 15°C

## Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/303168 Ver. 2

## **Sample Descriptions**

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

Report Number: W30\_3168

Lab ID Number	Client ID	Description
EX/2056496	1-217 EW 270420 6.00	Unclassified
EX/2056497	1-217 EW 270420 6.00 1-212 EW 270420 2.00	Unclassified
EX/2056498	1-212 EW 270420 2.00 1-212 EW 270420 6.00	Unclassified
L/\(\frac{7}{2000400}\)	1-212 EVV 270420 0.00	Officialisti

Appendix A Page 1 of 1 20/05/2020EXR/303168 Ver. 2

## 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.

	NE	Units :	р ВТЕ	µg/l BTEXHSA	hgµ BTEXHSA	hg/l BTEXHSA	µg/l BTEXHSA	1 1SA	1H3	_ <del>1</del>	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA
	Method Repo	orting Limits:	2	2	10	2	2	12	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LAB ID Number EX/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	o Xylene	Toluene	Xylenes	Ammoniacal Nitrogen as NH3	Ammoniacal Nitrogen as NH4	GRO >C5->C6	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2057038	1-516 EW 290420 6.00	29-Apr-20 11:15	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.77	0.77	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057039	1-516 EW 280420 7.00	28-Apr-20 15:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.05	0.05	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057040	1-541 EW 290420 7.00	29-Apr-20 13:30	< 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	< 0.100	< 0.100	< 0.100
2057041	1-541 EW 290420 5.00	29-Apr-20 12:45	< 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	< 0.100	< 0.100	< 0.100
••	SOCOTEC		Client Name	lame	SOCOTEC William Riggs	EC UK M	SOCOTEC UK Wokingham William Riggs	ε					Samp	Sample Analysis	lysis			
4	Brathy Business Dark Ashhy Dood	_				0.00					T	Date Dring	100		80	08- lun-2020		
_ Ш	breuby business Fair, Asilby Road Burton-on-Trent, Staffordshire, DE15 0YZ							•	(			Report Number	umber		EX C	Uo-Juin-2020 EXR/303258		
	Tel +44 (0) 1283 554400 F ex +44 (n) 1983 554402				<u> </u>	D9008-19		M25 Jct 10	10			Table Number	mber			-		
_	T dA +4+ (v) 1200 00-1722													_				

mg/l ICPWATVAR (Dissolved) a 52.1 1.1 1.1 2.2 1.2 2.1 2.2 1.2 2.1 2.2 1.2 2.2 1.2 2.2 1.2 2.2 1.2 2.2 1.2 2.2 1.2 2.2 2	7-17	
Potassium as K (Dissolved) a 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ρω	
Magnesium as Mg (Dissolved) a	9 9	08-Jun-2020 EXR/303258
D.01   ILOWARTVARR   0.01   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00	80.0	1 1-1 1
Calcium as Ca (Dissolved) a 18 Ca (Dissolved) a 5 Ca Calcium as Ca (Dissolved) Ca	- 10	Sample Analysis
Mg/I   CDWATVAR   O.01   O.01   O.02   O.03   O.04   O.0	0.02	Samp
Zinc as Zn (Dissolved)  Zinc as Zn (Dissolved)	0.053	Sal Date Printed Report Number Table Number
MSM	0.001	
Nickel as Ni (Dissolved)  0.006  0.026  0.019	8000	
Mercury as Hg (Dissolved)  Mercury as Hg (Dissolved)  No.0000.0  N	000003 000003	10
Tead as Pb (Dissolved)  LO0.00  Tead as Pb (Dissolved)	0.001	ingham M25 Jct 10
Cobbet as Cn (Dissolved)  Cobbet as Cn (Dissolved)  Co.001  Co.002	0.002	<u> </u>
Chrominm as CL (Dissolved) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	0.002	SOCOTEC UK Wo
Mg/l   ICPM/S/W   0.000000   0.000000   0.000003   0.000003   0.000000   0.000000   0.000000   0.000000   0.000000   0.0000000   0.000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.0000000   0.00000000	98000000	SOCOTEC William Riggs
MSM 100.00 Arsenic as As (Dissolved) 0.000 0.000 0.0001	0.001	ame
GROHSA 0.100 × 0.100 × 0.100	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Contact
Units: Method Codes: Method Reporting Limits:  tion appropriate ap	29-Apr-20 12:45	
Method I  Client Sample Description 1-516 EW 290420 6.00 1-516 EW 280420 7.00 1-541 EW 290420 7.00	1-541 EW 290420 5.00	SOCOTEC  Breiby Business Park, Asrby Road Burton-on-Trent, Staffordshire, DE15 0VZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422
2057039 C057040		

		Units:	ma/l	ma/l	ma/l	ma/l	_	_	-	_	-		l/bn	l/dn	-		l/an	l/DI
		Method Codes:	ICP	KONENS	KONENS	+	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW
	Method	Reporting Limits:	3	0.01	-	0.003	-	-	-	-	-		0.01	0.01	-		0.01	0.01
		6	,	5		5					-						5	5
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as CI w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2057038	1-516 EW 290420 6.00	29-Apr-20 11:15	48	9.0	86	<0.003	> 0.04	> 0.04	> 0.04	> 0.04	> 0.04	> 0.04	> 0.04	> 0.04	> 0.04	> 0.04	> 0.04	> 0.04
2057039	1-516 EW 280420 7.00	28-Apr-20 15:45	15	0.04	41	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2057040	1-541 EW 290420 7.00	29-Apr-20 13:30	41	<0.01	24	<0.003	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2057041	1-541 EW 290420 5.00	29-Apr-20 12:45	72	<0.01	32	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
			Client Name	ame		SOCOTEC UK Wokin	Okinaham						ame &	Sample Analysis	Nais V			
	5		Contact		William Riggs	sbt							•		,			
<u>ā</u>	Bretby Business Park, Ashby Road											Date Printed	pe		-80	08-Jun-2020		
ű	Burton-on-Trent, Staffordshire, DE15 0YZ					70000		M25 10+ 10	•			Report Number	ımber		EX	EXR/303258		
. 4	Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554402				ב			200	2			Table Number	nber			-		
	AX 144 (U) 1200 0021 (U)																	

Fax +44 (0) 1283 554422

Page 5 of 19

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	EXR/303258	EX		Number	Report Number			10	M25 . Let 10	_	D9008-19	Č				Burton-on-Trent, Staffordshire, DE15 0YZ	
	08-Jun-2020	08		nted	Date Printed											Bretby Business Park, Ashby Road	
											Riggs	William Riggs	#	Contact			
		alysis	Sample Analysis	Sam					am	SOCOTEC UK Wokingham	TEC UK \	soco	Name	Client Name		SOCOTEC	
			0.02	<0.02	<0.02	<0.0005	<0.0005	<0.0005	<0.0005	< 0.16	< 0.01	< 0.01	0.01	< 0.01	29-Apr-20 12:45	1 1-541 EW 290420 5.00	2057041
			<0.02	<0.02	<0.02	<0.0005	<0.0005	<0.0005	<0.0005	< 0.18	< 0.01	< 0.01	0.03	< 0.01	29-Apr-20 13:30	1-541 EW 290420 7.00	2057040
			<0.02	<0.02	<0.02	<0.0005	<0.0005	<0.0005	<0.0005	< 0.17	< 0.01	< 0.01	0.02	< 0.01	28-Apr-20 15:45	9 1-516 EW 280420 7.00	2057039
< 0.005 < 0.005	< 0.005	< 0.005	1.02	<0.02	<0.02	<0.0005	0.0007	<0.0005	0.0007	> 0.66	< 0.04	90.0	> 0.04	< 0.04	29-Apr-20 11:15	3 1-516 EW 290420 6.00	2057038
										16)				1			
nlorobenzene	alorobenzene	chlorobenzene	hide as S	(Total) as CN	(Free) as CN	hylphenols	Phenol	hylphenols	resols	Sum of USEPA	yrene	nanthrene	hthalene	,2,3-cd)pyrene	nple Date	Client Sample Description	Number EX/
	1,2-Dichlo	1,2,4-Trichl	Sulphi	Cyanide (T	Cyanide (F	Trimethy	Phe	Dimethy	Cre	tal PAH (Sur	Pyr	Phenar	Napht	Indeno(1,2,	Sampl		LAB ID Nu
										To							
0.005 0.005	0.005	0.005	0.02	0.02	0.02	0.0005	0.0005	0.0005	0.0005	0.16	0.01	0.01	0.01	0.01	Reporting Limits:	Method	
× ×	>	SVOCSW	SFAS	SFAPI		늅	古	늅	늅	P/	ΡĄ	Ą	Ρ/	Ρ/	Method Codes:		
l/bm l/bm	l/bm	/bw	l/bm	l/bm	l/bm	l/bm	l/bm	l/bm							Units:		

		Units:	l/gm	l/gm	l/gm	l/gm	-	l/bu		l/bu		l/gm	l/gm	l/gm	H	mg/l	l/gm	mg/l
	CotteM	Method Reporting Limits	SVOCSW	_	_	_	SVOCSW S		SVOCSW		SVOCSW SV	_	_	_	SVOCSW	_		SVOCSW
				20.0	20.0		20.0	0.00	0000	0000		20.0	2007	0000	2000	20.0	20.0	2000
LAB ID Number EX/	Client Sample Description	Sample Date	1-Methylnaphthalene	2,4,5-Trichlorophenol	2,4,6 - Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6 Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3+4-Methylphenol	3-Nitroaniline
2057038	1-516 EW 290420 6.00	29-Apr-20 11:15	< 0.002	< 0.020	< 0.020	< 0.020	< 0.020	< 0.010	< 0.005	< 0.005	< 0.002 <	0.020	< 0.002	< 0.005	< 0.005	< 0.020	< 0.020	< 0.005
2057039	1-516 EW 280420 7.00	28-Apr-20 15:45																
2057040	1-541 EW 290420 7.00	29-Apr-20 13:30																
2057041	1-541 EW 290420 5.00	29-Apr-20 12:45																
	SOCOTEC		Client Name	ame	SOCOTE	SOCOTEC UK Wokin	okingham	-					Samp	Sample Analysis	ysis			
			Contact		William Riggs	sbi												
	Bretby Business Park, Ashby Road										Ď	Date Printed	p€		-80	08-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				Č	700 41	D MOE	7	_		Ä.	Report Number	mber		EXF	EXR/303258		
	Tel +44 (0) 1283 554400				2	1000	D3000-13 IMES JCL 10	- 150	>		<u>Ľ</u>	Table Number	per			_		
	Fax +44 (0) 1283 554422																	

		Units:	ma/l	ma/l	ma/l		ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l
		Method Codes:	Ś	SVOCSW				SVOCSW	×.	<b>×</b>	>	SVOCSW		>	>	Α.	>	SVOCSW
	Method	Method Reporting Limits:		0.005	0.005	0.005	0.02					-	0.002					0.002
		.																
LAB ID Number EX/	Client Sample Description	Sample Date	4,6-Dinitro-2-methylphenol	4-Bromophenyl-phenylether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenol	4-Chlorophenyl-phenylether	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene
2057038	1-516 EW 290420 6.00	29-Apr-20 11:15	< 0.050	< 0.005	< 0.005	< 0.005	< 0.020	< 0.005	< 0.005	< 0.050	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
2057039	1-516 EW 280420 7.00	28-Apr-20 15:45																
2057040	1-541 EW 290420 7.00	29-Apr-20 13:30																
2057041	1-541 EW 290420 5.00	29-Apr-20 12:45																
											l					T		
V)	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	E					Samp	Sample Analysis	lysis			
			Contact		William Riggs	sbt												
Ø	Bretby Business Park, Ashby Road										1	Date Printed	eq		-80	08-Jun-2020		
<u> </u>	Burton-on-Trent, Staffordshire, DE15 0YZ				2	7000		7 +0	•		<u></u>	Report Number	mber		EXI	EXR/303258		
	Tel +44 (0) 1283 554400				במ	D3000-13		MZD JCT 10	2		<u> </u>	Table Number	nper			-		
	Fax +44 (0) 1283 554422																	

1 (0) 1503 334400	и (o) 1283 554422		

		Units:	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l
		Method Codes:	SVOCSW	>	_			~	V	>	>	>		^	SVOCSW	_	~	SVOCSW
	Method	Method Reporting Limits:	0.1		0.002	0.005	0.005						0.002			0.005		0.002
									+					+				
LAB ID Number EX/	Client Sample Description	Sample Date	Benzoic Acid	Benzyl alcohol	Biphenyl	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzylphthalate	Chrysene	Coronene	Dibenzo[a,h]anthracene	Dibenzofuran	Diethylphthalate	Dimethylphthalate	Di-n-butylphthalate	Di-n-octylphthalate
2057038	1-516 EW 290420 6.00	29-Apr-20 11:15	< 0.100	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.050	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002
2057039	1-516 EW 280420 7.00	28-Apr-20 15:45																
2057040	1-541 EW 290420 7.00	29-Apr-20 13:30																
2057041	1-541 EW 290420 5.00	29-Apr-20 12:45																
	SOCOTEC		Client Name	ame	SOCOTI	EC UK W	SOCOTEC UK Wokingham	ڃ					Samp	Sample Analysis	ysis			
			Contact		William Riggs	SDI												
	Brethy Business Park Ashby Road											Date Drinted			90	08- Iun-2020		
	בומנול הפיווס וומים ביים מוני למומים											Date Filli	מַם			0202-1100		
	Burton-on-Trent, Staffordshire, DE15 0YZ				60	D9008-19		M25 .1ct 10	0			Report Number	ımper		EX	EXR/303258		
	Tel +44 (0) 1283 554400				)	· )	_		<u> </u>			Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

< 0.020

Phenol

	M	Units: Wethod Codes:	SVOCSW	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si T	mg/l TPHFID-Si T	mg/l TPHFID-Si T	mg/l TPHFID-Si T	mg/l TPHFID-Si T	mg/l TPHFID-Si T	mg/l TPHFID-Si Vo	μg/l ug/l VOCHSAW VOCHSAW		μg/l VOCHSAW
	DOLLAN	r Nepoliting Ellints .		0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
LAB ID Number EX/	Client Sample Description	Sample Date	Pyrene	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane
2057038	1-516 EW 290420 6.00	29-Apr-20 11:15	< 0.002	< 0.010	< 0.010	0.015	< 0.010	< 0.010	0.026	< 0.010	0.065	< 0.010*	< 0.010	< 0.010	0.069	< 1.0	< 1.0	< 1.0
2057039	1-516 EW 280420 7.00	28-Apr-20 15:45		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.010	< 0.010	< 0.010	< 0.010*	< 0.010	< 0.010	< 0.010			
2057040	1-541 EW 290420 7.00	29-Apr-20 13:30		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010*	< 0.010	< 0.010	< 0.010			
2057041	1-541 EW 290420 5.00	29-Apr-20 12:45		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010*	< 0.010	< 0.010	< 0.010			
			3											- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1				
<i></i>	SOCOTEC			alle	0000	SUCULEC UN WOKI	октовнати	=					Samp	Sample Analysis	ysis			
			Contact		William Riggs	dgs												
<u>а</u>	Bretby Business Park, Ashby Road											Date Printed	pa		7-80	08-Jun-2020		
м —	Burton-on-Trent, Staffordshire, DE15 0YZ					01,9000		MOE Ict 10			ш.	Report Number	mber		EXR	EXR/303258		
•	Tel +44 (0) 1283 554400				2	-000		1000	2		_	<b>Table Number</b>	nber			1		
_	Fax +44 (0) 1283 554422																	

3/1	10AW	_	1 3 Dioblaronrenana	< 1.0																		
JH C	20	-	1,3-Dichloropropane	V						$\downarrow$												
//Br/ //Bn	VOCHOAV	-	1,3-Dichlorobenzene	< 1.0																		
l/gu	VOCHOAW	1	1,3,5-Trimethylbenzene	< 1.0															08-Jun-2020	EXR/303258	1	
/br	VOCHUAVV	-	1,2-Dichloropropane	< 1.0													lysis		80	Ä		
l/gu	VOCHOAV	1	1,2-Dichloroethane	< 1.0													Sample Analysis					
l/gu	VOCESAW	2	1,2-Dichlorobenzene	< 5.0													Samp		ted	umber	mber	
l/gu	VOCHOAW	1	1,2-Dibromoethane	< 1.0															Date Printed	Report Number	<b>Table Number</b>	
l/gu	VOCHSAW	2	1,2-Dibromo-3-chloropropane	< 5.0																		
l/gu	VOCHUAVV	-	1,2,4-Trimethylbenzene	< 1.0																		
/bn /bn	VOCHOAW	2	1,2,4-Trichlorobenzene	< 5.0																<b>7</b>	2	
l/gu	VOCHOAW	-	1,2,3-Trichloropropane	< 1.0													E			10	NIZO OCE IO	
l/gn	VOCHOAW	-	1,2,3-Trichlorobenzene	< 1.0													SOCOTEC UK Wokingham					
l/gu	VOCHOAVV	-	1,1-Dichloropropene	< 1.0													EC UK M	sßß			D3000-13	
l/gu	VOCHOAW	1	1,1-Dichloroethene	< 1.0													SOCOT	William Riggs			ב	
lgu lgu lgu lgu lgu lgu lgu lgu	VOCHOAW	-	1,1-Dichloroethane	< 1.0													ame					
l/gu	VOCHOAW	-	1,1,2-Trichloroethane	< 1.0													Client Name	Contact				
		Method Reporting Limits:	Sample Date	29-Apr-20 11:15	28-Apr-20 15:45	29-Apr-20 13:30	29-Apr-20 12:45															
	:	Method Re	Client Sample Description	1-516 EW 290420 6.00	1-516 EW 280420 7.00	1-541 EW 290420 7.00	1-541 EW 290420 5.00										SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
			LAB ID Number EX/	2057038	2057039	2057040	2057041										Ń		Bre	Bur	ž	F

cis 1,3-Dichloropropene

		Units:		l/gn	l/grl	l/gn	l/grl	l/gn	l/gn	l/gµ	l/gn	l/grl	//ôr   //ôr	l/gu	/brl	l/gµ	l/gu	l/grl
		Method Codes:		VOCHSAW	VOCHSAW	VOCHSAW	VOCHSAW \	VOCHSAW \	VOCHSAW \	/OCHSAW \	/OCHSAW \	/OCHSAW \	OCHSAW VC	OCHSAW V	OCHSAW V	OCHSAW V	OCHSAW \	/OCHSAW
	Method R	Method Reporting Limits:		-	-	-	-	2	-	-	2	-	-	-	-	-	-	-
LAB ID Number EX/	Client Sample Description	Sample Date	Cis-1,2-dichloroethene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	m and p-Xylene	Naphthalene	n-Butylbenzene	o-Xylene	p-Isopropyltoluene	Propylbenzene	sec-Butylbenzene	Styrene	tert-Butylbenzene
2057038	1-516 EW 290420 6.00	29-Apr-20 11:15	< 1.0	< 1.0	< 1.0	< 1.0	> 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 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																
2057040	1-541 EW 290420 7.00	29-Apr-20 13:30																
2057041	1-541 EW 290420 5.00	29-Apr-20 12:45																
			$\downarrow$	Ī							†					Ì		
	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wokingham	okinghar	٤					Sampl	Sample Analysis	ysis			
			Contact		William Riggs	sbbi												
	Bretby Business Park, Ashby Road											Date Printed	eq		-80	08-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				2	7		7 7 0	9			Report Number	mber		EXF	EXR/303258		
	Tel +44 (0) 1283 554400				ػ	D3008-13		MZS JCT 10	2		<u> </u>	Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

# Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham

Sample Analysis

D9008-19 M25 Jct 10

W303258

Report No

Customer

Consignment No W171319

In-House Report Due 04-Jun-2020 Date Logged 01-May-2020

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

	Potassium as K (Dissolved) VAR	>				
	Sodium as Na (Dissolved) VAR	^				
	Magnesium as Mg (Dissolved) VAR	^				
	Calcium as Ca (Dissolved) VAR	1				
ICPWATVAR	Total Sulphur as SO4 (Diss) VAR	1				
	Selenium as Se MS (Dissolved)	^				
	Mercury as Hg MS (Dissolved)	^				
	Arsenic as As MS (Dissolved)	1				
	Zinc as Zn MS (Dissolved)	^				
	Lead as Pb MS (Dissolved)	/				
	Copper as Cu MS (Dissolved)	1				
	Cadmium as Cd MS (Dissolved)	1				
	Chromium as Cr MS (Dissolved)	1				
ICPMSW	Nickel as Ni MS (Dissolved)	/				
GROHSA	GRO-HSA GCFID (AA)					
CUSTSERV	Report A					
CALCNH4	Ammoniacal Nitrogen as NH4 Calc	>				
CALC_NH3	Ammoniacal Nitrogen as NH3(Kone) Calc	1				
MethodID	Sampled		29/04/20	28/04/20	29/04/20	29/04/20
	Matrix Type		Unclassified	Unclassified	Unclassified	Unclassified
	Description		1-516 6.00	1-516 7.00	1-541 7.00	1-541 5.00
	ID Number		EX/2057038	EX/2057039	EX/2057040	EX/2057041

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

Analysis dependant upon trigger result - Note: due date may be affected if triggered Analysis Required

Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303258 Ver. 4

Page 15 of 19

# Sample Analysis

# Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10 W303258

Report No

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

Date Logged 01-May-2020

Consignment No W171319

In-House Report Due 04-Jun-2020

WSLM3	pH units	>				
WSLM20	Biochemical Oxygen Demand	>		В		
	Dissolved Organic Carbon					
WSLM13	Total Organic Carbon	1				
VOCHSAW	VOC HSA-GCMS	1	Э			
TPHFID-Si	TPH by GC(Si)	1				
svocsw	svoc					
SFAS	Sulphide as S SFA	>				
	Cyanide (Total) as CN SFA	>				
SFAPI	Cyanide (Free) as CN SFA	>				
PHEHPLCVL	Phenois by HPLC (Low Level)					
PAHMSW	PAH GC-MS (16)	>				
	Chromium VI. as Cr (Kone)	>				
	Ammoniacal Nitrogen (Kone)	>				
KONENS	Chloride as CI (Kone)	>				
	Boron as B (Dissolved) VAR	>				
ICPWATVAR	Iron as Fe (Dissolved) VAR	>				
MethodID	Sampled		29/04/20	28/04/20	29/04/20	29/04/20
	Matrix Type		Unclassified	Unclassified	Unclassified	Unclassified
	Description	-	1-516 6.00	1-516 7.00	1-541 7.00	1-541 5.00
	ID Number		EX/2057038	EX/2057039	EX/2057040	EX/2057041

Devi	Deviating Sample Key
⋖	The sample was received in an inappropriate container for
ω	The sample was received without the correct preservation

The sampling date was not supplied so holding time may be compromised - applicable to all analysis r this analysis for this analysis Headspace present in the sample container ООШЬ

Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Analysis Required

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

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.

EXR/303258 Ver. 4

Report Number: W/EXR/303258

## **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.

Report Number: W/EXR/303258

## **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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

## **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/cm<sup>3</sup>@ 15°C

## Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 19 of 19 EXR/303258 Ver. 4

## **Sample Descriptions**

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

Report Number: W30\_3258

Lab ID Number	Client ID	Description
		Unclassified
EX/2057038	1-516 EW 290420 6.00	Unclassified
EX/2057039	1-516 EW 280420 7.00	Unclassified
EX/2057040	1-541 EW 290420 7.00	Unclassified
EX/2057041	1-541 EW 290420 5.00	Unclassified

Appendix A Page 1 of 1 08/06/2020EXR/303258 Ver. 4

## 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.

	Method I	Units: Method Codes: Method Reporting Limits:	µg/l BTEXHSA 5	µg/l BTEXHSA E	Hg/l BTEXHSA B	µg/l BTEXHSA B	Hg/l BTEXHSA B' 5	Hg/l BTEXHSA C	mg/l CALCNH4 FN 0.01	mg/l FNH3CALC (0.01	mg/l GROHSA (0.1	mg/l GROHSA (0.1	mg/l GROHSA C	mg/l GROHSA 0	mg/l GROHSA 0	mg/l GROHSA 0.1	mg/l GROHSA (0.1	mg/l GROHSA 0.1
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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2057044	1-508 EW 280420 7.00	28-Apr-20 10:45	< 5.0	< 5.0	< 10.0	< 5.0	27	< 15.0	2.96	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057045	1-259 EW 280420 5.00	28-Apr-20 12:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	1.67	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057046	1-508 EW 280420 4.00	28-Apr-20 13:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	4.24	0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057047	1-509 EW 280420 6.00	28-Apr-20 14:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.05	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057048	1-737 EW 290420 6.00	29-Apr-20 14:20	< 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	< 0.100	< 0.100	< 0.100
	SOCOTEC		Client Name	me	SOCOTE	SOCOTEC UK Woking	kingham					-	Sampl	Sample Analysis	ysis		-	
			Contact		William Riggs	3s												
	Bretby Business Park, Ashby Road											Date Printed	pe		05-	05-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				2	76046		7	•		<u> </u>	Report Number	mber		EXF	EXR/303260		
	Tel +44 (0) 1283 554400				בֿ ב	D3000-19 IN		75 JCL 10	<b>-</b>		• -	Table Number	nber			1		
	Fax +44 (0) 1283 554422																	

mg/l		-	Sodium as Na (Dissolved) a	61	42	36	20	13							-					
mg/l	Z AM LOL	-	Potassium as K (Dissolved) a	7	3	9	9	9									-			
mg/l		-	Magnesium as Mg (Dissolved) a	16	က	7	4	17									05-Jun-2020	EXR/303260	-	
mg/l		0.01	Iron as Fe (Dissolved) a	59.8	0.27	0.55	8.0	0.09							alysis		ö	Θ		
mg/l	באי ואיירטו	-	Calcium as Ca (Dissolved) a	46	7	125	11	13							Sample Analysis					
I/gm	באין איירטן	0.01	Boron as B (Dissolved) a	0.02	0.03	0.04	0.02	0.02							Sam		nted	lumber	101	
mg/l	VOINION	0.002	Zinc as Zn (Dissolved)	<0.002	0.038	0.004	0.134	0.114									Date Printed	Report Number	Toble Mineber	
mg/l	CHIMOW	0.001	Selenium as Se (Dissolved)	<0.001	<0.001	<0.001	<0.001	<0.001												
mg/l	CHINION	0.001	Nickel as Ni (Dissolved)	0.003	0.008	0.009	0.028	0.049												
mg/l	NO INION	0.00003	Mercury as Hg (Dissolved)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003										•	<u> </u>	
mg/l	NOW N	0.001	Lead as Pb (Dissolved)	<0.001	<0.001	<0.001	0.002	0.001							E				MZ5 JCt 10	
mg/l	NO INCO	0.001	Copper as Cu (Dissolved)	<0.001	<0.001	<0.001	0.004	0.005							Vokingham					
mg/l	VOINION	0.001	Chromium as Cr (Dissolved)	<0.001	0.005	<0.001	0.003	0.002							SOCOTEC UK Wokii	iggs		000	<b>D3008-13</b>	
mg/l	ICTIMISWV	0.00002	Cadmium as Cd (Dissolved)	9000000	0.00008	0.00008	0.00008	0.0016							Socol	William Riggs		Ž	ĩ	
mg/l	VOLINIOVA	0.001	Arsenic as As (Dissolved)	<0.001	0.002	0.002	0.002	<0.001							ame					
mg/l	_	0.1	GRO-HSA o	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100							Client Name	Contact				
Units:	Metilod codes.	Method Reporting Limits:	Sample Date	28-Apr-20 10:45	28-Apr-20 12:30	28-Apr-20 13:30	28-Apr-20 14:45	29-Apr-20 14:20												
		Method	Client Sample Description	1-508 EW 280420 7.00	1-259 EW 280420 5.00	1-508 EW 280420 4.00	1-509 EW 280420 6.00	1-737 EW 290420 6.00							SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	000 x 700 x 20 1-1-	
			LAB ID Number EX/	2057044	2057045	2057046	2057047	2057048							Š		Bret	Burt	F	

 µg/l
 µg/l
 µg/l
 µg/l
 µg/l

 PAHMSW
 PAHMSW
 PAHMSW
 PAHMSW

 0.01
 0.01
 0.01
 0.01

pg/l PAHMSW 0.01

 µg/l
 µg/l
 µg/l
 µg/l

 РАНМSW
 РАНМSW
 РАНМSW
 РАНМSW

 0.01
 0.01
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 mg/l
 mg/l
 µg/l

 KONENS
 KONENS
 PAHMSW

 1
 0.003
 0.01

Mg/l KONENS 0.01

ICPWATVAR 3

Units: Method Codes: Method Reporting Limits:

mg/l

< 0.04 < 0.01 < 0.02 < 0.01 < 0.01

Fluorene

< 0.020

< 0.020

< 0.020

1,4-Dichlorobenzene

1,3-Dichlorobenzene

1,2-Dichlorobenzene

Method Reporting Limits: SVOCSW  Client Sample Description  Client Sample Description	000	2 0.02 0.02	0.02 0.02	0.02 0.02	0.01 0.01	0.005	0.005 0.005	0.002	0.02 0.02	0.002 0.002	0.005 0.005	0.005 0.005	0.02 0.02	0.02 0.02	0.005
Client Sample Description address and all and a service of the EW 280420 7 00 398, Aprel 1944			0.02	0.02	0.00							200			0.00
Client Sample Description admes and a separate of the EW 2804207 700 2844420 4645															
1-508 EW 280420 7 00	5-Trichlorophenol	2,4,6 - Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6 Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3+4-Methylphenol	3-Nitroaniline
1-300 EW 200420 7.00															
2057045 1-259 EW 280420 5.00 <b>28-Apr-2012:30</b>															
2057046 1-508 EW 280420 4.00 28-Apr-20 13:30 < 0.008	0.008 < 0.080	080 < 0.080	< 0.080	< 0.080	< 0.040	< 0.020 >	< 0.020	< 0.008	< 0.080	< 0.008	< 0.020	< 0.020	< 0.080	< 0.080	< 0.020
2057047 1-509 EW 280420 6.00 28-Apr-2014:45															
2057048 1-737 EW 290420 6.00 29-Apr-20 14:20															
SOCOTEC	Client Name	0008	SOCOTEC UK Wokingham	/okingham						Samp	Sample Analysis	ysis y			
Conta	Contact	William Riggs	Riggs												
Bretby Business Park, Ashby Road								ני	Date Printed	pe		-50	05-Jun-2020		
Burton-on-Trent, Staffordshire, DE15 0YZ			01-80000		7 5			Ľ	Report Number	mper		EXF	EXR/303260		
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	A	. sanoo codes .	2000	2000	+	20000	+	+	0,000,00	+	+	+	+	+	+	+	+	00000
	Method Rep	oorting Limits :	90.0	0.005	0.005	0.005	0.02	0.005	0.005	0.05	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
					1			1		+	+	+		+	1			
LAB ID Number EX/	Client Sample Description	Sample Date	4,6-Dinitro-2-methylphenol	4-Bromophenyl-phenylether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenol	4-Chlorophenyl-phenylether	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene
2057044	1-508 EW 280420 7.00	28-Apr-20 10:45																
2057045	1-259 EW 280420 5.00	28-Apr-20 12:30																
2057046	1-508 EW 280420 4.00	28-Apr-20 13:30	< 0.200	< 0.020	< 0.020	< 0.020	< 0.080	< 0.020	< 0.020	< 0.200	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	> 0.008	< 0.008	< 0.008
2057047	1-509 EW 280420 6.00	28-Apr-20 14:45																
2057048	1-737 EW 290420 6.00	29-Apr-20 14:20																
	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wokin	okingham	ے					Samp	Sample Analysis	ysis			
			Contact		William Riggs	sbt												
	Bretby Business Park, Ashby Road										۵	Date Printed	ρέ		90 	05-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ					7		7 70	•		<u>~</u>	Report Number	mber		EXF	EXR/303260		
	Tel +44 (0) 1283 554400				מ	D3008-13		OL 10C CZIM	>		<u> </u>	Table Number	per			-		
	Fax +44 (0) 1283 554422																	
											1		1					

		Units:	ma/l		_		ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/I	ma/l	ma/l	ma/l	ma/l	ma/l
		Method Codes:	SVOCSW	SVOCSW	SVOCSW	SVOCSW	SVOCSW	>	Λ.	N.	>	<b>N</b>	N.	N <sub>S</sub>	>	×.	>	SVOCSW
	Method F	Reporting Limits:	0.1		-	_	_	-		$\vdash$							-	0.002
				000	1	8	200			2000	1000		1000					1
LAB ID Number EX/	Client Sample Description	Sample Date	Benzoic Acid	Benzyl alcohol	Biphenyl	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzylphthalate	Chrysene	Coronene	Dibenzo[a,h]anthracene	Dibenzofuran	Diethylphthalate	Dimethylphthalate	Di-n-butylphthalate	Di-n-octylphthalate
2057044	1-508 EW 280420 7.00	28-Apr-20 10:45																
2057045	1-259 EW 280420 5.00	28-Apr-20 12:30																
2057046	1-508 EW 280420 4.00	28-Apr-20 13:30	< 0.400	< 0.020	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008	< 0.200	< 0.008	< 0.020	< 0.020 >	< 0.020	< 0.020	< 0.008
2057047	1-509 EW 280420 6.00	28-Apr-20 14:45																
2057048	1-737 EW 290420 6.00	29-Apr-20 14:20																
	SOCOTEC		Client Name	ıme	SOCOTE	C UK W	SOCOTEC UK Wokingham						Sampl	Sample Analysis	/sis			
			Contact		William Riggs	SE												
	Bretby Business Park. Ashby Road										٦	Date Printed	حِ		05J	05-Jun-2020		
	Burton-on-Trent Staffordshire DE15 0YZ										ο   Ω	Benort Number	nher		EXR/	EXR/303260		
					<u>6</u> 0	<b>308-1</b> 9	D9008-19 M25 Jct 10	Jct 1	0		≤   H	יבאסור ואמ			LAN	7002500		
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	Fax +44 (0) 1283 554422																	

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	M	Method Codes:	SVOCSW	SVOCSW	>	>	SVOCSWS	>	>	>	>	>	>	×	>	>	>	SVOCSW
	Method Repo	orting Limits :	0.002	-			-			+	-	╁	+			╁	+	0.02
		. 5111112			0.002	500.0		000.0	200.0		000.0	0.002	000.0	0000	000.0	0.0	0.007	0.02
LAB ID Number EX/	Client Sample Description	Sample Date	Diphenyl Ether	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno[1,2,3-cd]pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitroso-di-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol
2057044	1-508 EW 280420 7.00	28-Apr-20 10:45																
2057045	1-259 EW 280420 5.00	28-Apr-20 12:30																
2057046	1-508 EW 280420 4.00	28-Apr-20 13:30	< 0.008	< 0.008	< 0.008	< 0.020	< 0.020	< 0.020	< 0.020	< 0.008	< 0.020	< 0.008	< 0.020	< 0.020	< 0.020	< 0.200	< 0.008	< 0.080
2057047	1-509 EW 280420 6.00	28-Apr-20 14:45																
2057048	1-737 EW 290420 6.00	29-Apr-20 14:20																
	SOCOTEC		Client Name	ame	SOCOTE	C UK W	SOCOTEC UK Wokingham						Samp	Sample Analysis	ysis			
	3		Contact		William Riggs	gs									1			
	Bretby Business Park, Ashby Road											Date Printed	Pŧ		05-	05-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ						_	•			ין נצ	Report Number	mber		EXE	EXR/303260		
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	EXR/303260	Ш		lumber	Report Number			10	M25 Ict 1	_	D9008-10	č				Burton-on-Trent, Staffordshire, DE15 0YZ	
	05-Jun-2020	0		nted	Date Printed											Bretby Business Park, Ashby Road	
			,								liggs	William Riggs	_	Contact			
		alysis	Sample Analysis	Sam					m	Nokingham	SOCOTEC UK Wol	soco	lame	Client Name		SOCOTEC	
		< 0.010	< 0.010	< 0.010	< 0.010*	< 0.010	< 0.010	0.024	< 0.010	< 0.010	0.021	< 0.010	< 0.010		29-Apr-20 14:20	1-737 EW 290420 6.00	2057048
		0.011	< 0.010	< 0.010	< 0.010*	0.010	< 0.010	0.013	< 0.010	< 0.010	0.010	< 0.010	< 0.010		28-Apr-20 14:45	1-509 EW 280420 6.00	2057047
< 1.0 < 1.0	> 1.0	0.022	< 0.010	< 0.010	< 0.010*	0.019	< 0.010	0.022	< 0.010	< 0.010	0.018	< 0.010	< 0.010	< 0.008	28-Apr-20 13:30	1-508 EW 280420 4.00	2057046
		< 0.010	< 0.010	< 0.010	< 0.010*	< 0.010	< 0.010	0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010		28-Apr-20 12:30	1-259 EW 280420 5.00	2057045
		< 0.010	< 0.010	< 0.010	< 0.010*	< 0.010	< 0.010	0.014	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010		28-Apr-20 10:45	1-508 EW 280420 7.00	2057044
rachloroethane	rachloroethane	Band >C8-C40	Band >C8-C10	Band >C21-C35	Band >C16-C21	Band >C12-C16	Band >C10-C12	3and >C8-C40	3and >C8-C10	and >C21-C35	and >C16-C21	and >C12-C16	and >C10-C12	yrene	ple Date	Client Sample Description	Number EX/
	1,1,1,2-Tetra	TPH Aro Ba	TPH Ali Ba	TPH Ali Ba	TPH Ali Bar	TPH Ali Bar	TPH Ali Bar	TPH Ali Bar	Руі	Samp		LAB ID Nu					
-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	Method Reporting Limits:	Methc	
ug/l μg/l	µg/l VOCHSAW	mg/l TPHFID-Si	mg/l SVOCSW	Units : Method Codes :													
	,	Н				,			Н	,		,		L			

		· sțiul l	1/511	1/511	1/511	1/611	1/21	//	//	1/511	//	1/211	1/21	1/511	Vi I	//211	//	1/511
		Method Codes:	VOCHSAW	VOCHSAW VOCHSAW VOCHSAW VOCHSAW VOCHSAW	VOCHSAW \	/OCHSAW V	OCHSAW V	OCHSAW V	VOCHSAW VOCHSAW	CHSAW VO	VOCHSAW VC	VOCHSAW VOC	HSAW VO	VOCHSAW VOCHSAW VOCHSAW VOCHSAW	CHSAW VO	CHSAW VC	CHSAW V	VOCHSAW
	Method	Reporting Limits:				-		-	2	-	22	-	22			-	-	-
			-		-	-	-	-	)	-	•	-	<b>D</b>	-	-	-	-	-
LAB ID Number EX/	Client Sample Description	Sample Date	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane
2057044	1-508 EW 280420 7.00	28-Apr-20 10:45																
2057045	1-259 EW 280420 5.00	28-Apr-20 12:30																
2057046	1-508 EW 280420 4.00	28-Apr-20 13:30	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0 <	5.0	< 1.0 <	< 1.0	< 1.0	< 1.0	< 1.0
2057047	1-509 EW 280420 6.00	28-Apr-20 14:45																
2057048	1-737 EW 290420 6.00	29-Apr-20 14:20																
													+					
	SOCOTEC		Client Name	ame	SOCOTI	SOCOTEC UK Wokingham	okingham	_				(J)	sample	Sample Analysis	sis			
			Contact		William Riggs	sbt												
В.	Bretby Business Park, Ashby Road										О	Date Printed			າך- <u>9</u> 0	05-Jun-2020		
ш	Burton-on-Trent, Staffordshire, DE15 0YZ				6	70000		7			R	Report Number	ber		EXR/:	EXR/303260		
	Tel +44 (0) 1283 554400				במ		_	NI 23 301 10	>		<u> </u>	Table Number	Je.			_		
	Fax +44 (0) 1283 554422																	

									 	 _	 _	 	 	 	 	 			_				_
l/grl	VOCHSAW	-	cis 1,3-Dichloropropene			< 1.0																	
l/gn	VOCHSAW	-	Chloromethane			< 1.0*																	
l/gn	VOCHSAW	-	Chloroform			< 1.0													05-Jun-2020	09000070	EXK/303260	-	
l/bn l/bn l/bn	VOCHSAW	_	Chloroethane			< 1.0											lysis		05	3 2	Ĕ		
//bn //bn //bn //bn //bn //bd	VOCHSAW	_	Chlorobenzene			< 1.0											Sample Analysis						
l/gu	VOCHSAW	-	Carbon Tetrachloride			< 1.0											Sam		het	lico.	umper	ımber	
l/gu	VOCHSAW	_	Bromomethane			< 1.0													Date Printed	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Report Number	Table Number	
l/gn	VOCHSAW	_	Bromoform			< 1.0																	
l/gn	VOCHSAW	-	Bromodichloromethane			< 1.0																	
l/gn	VOCHSAW	_	Bromochloromethane			< 1.0															10	2	
l/gµ	VOCHSAW	-	Bromobenzene			< 1.0											E				M25 Jet 10		
l/grl	VOCHSAW	-	Benzene			< 1.0											Vokingham						
l/gu	VOCHSAW	-	4-Chlorotoluene			< 1.0											SOCOTEC UK Wok	SDO			D9008-19		
//br/ //bn //bn //bn	VOCHSAW	-	2,2-Dichloropropane			< 1.0*											SOCOI	William Riggs				í	
l/gn	VOCHSAW	-	2- Chlorotoluene			< 1.0											ame						
l/gu	VOCHSAW	-	1,4-Dichlorobenzene			< 1.0											Client Name	Contact					
Units:	Method Codes:	eporting Limits :	Sample Date	28-Apr-20 10:45	28-Apr-20 12:30	28-Apr-20 13:30	28-Apr-20 14:45	29-Apr-20 14:20															
	;	Method h	Description	7420 7.00	0420 5.00	)420 4.00	)420 6.00	00.90									2		Road	700	re, DE15 0YZ		
			Client Sample Description	1-508 EW 280420 7.00	1-259 EW 280420 5.00	1-508 EW 280420 4.00	1-509 EW 280420 6.00	1-737 EW 290420 6.00									SOCOTEC		Bretby Business Park, Ashby Road	Too T	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
			LAB ID Number EX/	2057044	2057045	2057046	2057047	2057048									Š		Brett		Bur	Te	Fa,

		· stiul	//011	//	//	1/011	//	//211	//	1/0/1	1/011	//	1/011	//	l l	1/01	1/011	/טוו
		Method Codes:	VOCHSAW VOCHSAW VOCHSAW VOCHSAW VOCHSAW	OCHSAW	VOCHSAW V	OCHSAW VC	CHSAW VC	CHSAW VC	VOCHSAW VOCHSAW VOCHSAW	CHSAW V	OCHSAW V	OCHSAW VO	CHSAW VC	VOCHSAW VOCHSAW	HSAW VOC	VOCHSAW VO	VOCHSAW VC	VOCHSAW
	Method F	Method Reporting Limits:	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	-
LAB ID Number EX/	Client Sample Description	Sample Date	Cis-1,2-dichloroethene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	m and p-Xylene	Naphthalene	n-Butylbenzene	o-Xylene	p-Isopropyltoluene	Propylbenzene	sec-Butylbenzene	Styrene	tert-Butylbenzene
2057044	1-508 EW 280420 7.00	28-Apr-20 10:45																
2057045	1-259 EW 280420 5.00	28-Apr-20 12:30																
2057046	1-508 EW 280420 4.00	28-Apr-20 13:30	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 1.0	< 1.0	> 1.0	> 0.1 >	1.0	< 1.0	< 1.0
2057047	1-509 EW 280420 6.00	28-Apr-20 14:45																
2057048	1-737 EW 290420 6.00	29-Apr-20 14:20																
	SOCOTEC		Client Name	ne	SOCOTE	SOCOTEC UK Wokingham	kingham						Sampl	Sample Analysis	<u>sis</u>			
			Contact		William Riggs	gs												
	Bretby Business Park, Ashby Road											Date Printed	р		05-Jur	05-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				2	100 40		10	<b>C</b>		ш.	Report Number	nber		EXR/303260	03260		
	Tel +44 (0) 1283 554400				N N	D3000-13	_	ווובט טכווו	<b>.</b>		_	<b>Table Number</b>	oer			-		
	Fax +44 (0) 1283 554422																	

LAB ID Number EX/

# Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10

Date Logged 01-May-2020

Consignment No W171320

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. W303260 Report No

	Potassium as K (Dissolved) VAR	>					
	Sodium as Na (Dissolved) VAR	>					
	Magnesium as Mg (Dissolved) VAR	>					
	Calcium as Ca (Dissolved) VAR	>					
ICPWATVAR	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)	>					
ICPMSW	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		28/04/20	28/04/20	28/04/20	28/04/20	29/04/20
	Matrix Type		Unclassified	Unclassified	Unclassified	Unclassified	Unclassified
	Description		1-508 7.00	1-259 5.00	1-508 4.00	1-509 6.00	1-737 6.00
	ID Number		EX/2057044	EX/2057045	EX/2057046	EX/2057047	EX/2057048

Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

Analysis Required

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

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.

EXR/303260 Ver. 4

# Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10

Date Logged 01-May-2020

Consignment No W171320

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. W303260 Report No

	pH units	>					
WSLM3	Temperature C°						
WSLM20	Biochemical Oxygen Demand	>	Ш	ш	Ш	В	
	Dissolved Organic Carbon						
WSLM13	Total Organic Carbon	>					
VOCHSAW	VOC HSA-GCMS	>			Ε		
TPHFID-Si	TPH by GC(Si)	>					
svocsw	svoc						
SFAS	Sulphide as S SFA	>					
	Cyanide (Total) as CN SFA	>					
SFAPI	Cyanide (Free) as CN SFA	>					
PHEHPLCVL	Phenols by HPLC (Low Level)						
PAHMSW	PAH GC-MS (16)	>					
	Chromium VI. as Cr (Kone)	>					
	Ammoniacal Nitrogen (Kone)	>					
KONENS	Chloride as CI (Kone)	>					
	Boron as B (Dissolved) VAR	>					
ICPWATVAR	Iron as Fe (Dissolved) VAR	>					
MethodID	Sampled		28/04/20	28/04/20	28/04/20	28/04/20	29/04/20
	Matrix Type		Unclassified	Unclassified	Unclassified	Unclassified	Unclassified
	Description		1-508 7.00	1-259 5.00	1-508 4.00	1-509 6.00	1-737 6.00
	ID Number		EX/2057044	EX/2057045	EX/2057046	EX/2057047	EX/2057048

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Analysis dependant upon trigger result - Note: due date may be affected if triggered Analysis Required

Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303260 Ver. 4

Report Number: W/EXR/303260

### **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	TO	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.

Report Number: W/EXR/303260

### **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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

### **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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 19 of 19 EXR/303260 Ver. 4

#### **Sample Descriptions**

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

Report Number: W30\_3260

Lab ID Number	Client ID	Description
EX/2057044	1-508 EW 280420 7.00	Unclassified Unclassified
EX/2057045	1-259 EW 280420 5.00	Unclassified
EX/2057046	1-508 EW 280420 4.00	Unclassified
EX/2057047	1-509 EW 280420 6.00	Unclassified
EX/2057048	1-737 EW 290420 6.00	Unclassified Unclassified

Appendix A Page 1 of 1 05/06/2020EXR/303260 Ver. 4

#### 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

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.

Date of Issue: 13-May-2020

	Method	Units: Method Codes: Method Reporting Limits:	µg/l BTEXHSA 5	µg/l BTEXHSA 5	Hg/l BTEXHSA 10	µg/l BTEXHSA 5	hg/l BTEXHSA E	pg/l BTEXHSA (	mg/l CALCNH4 F 0.01	mg/l FNH3CALC (	mg/l GROHSA (	mg/l GROHSA 0	mg/l GROHSA 0.1	mg/l GROHSA 0.1	mg/l GROHSA 0.1	mg/l GROHSA 0.1	mg/l GROHSA 0.1	mg/l GROHSA 0.1
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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2057049	1-181 EW	27-Apr-20 13:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.07	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057050	1-257(D) EW	27-Apr-20 14:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	60.0	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057051	1-257(S) EW	27-Apr-20 15:25	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.12	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
"	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Woki	okingham	ڍ	-	-		-	Samp	Sample Analysis	lysis		=	
			Contact		William Riggs	sbc												
80	Bretby Business Park, Ashby Road											Date Printed	ted		13-	13-May-2020		
m	Burton-on-Trent, Staffordshire, DE15 0YZ					7		7			<u>, —</u>	Report Number	ımber		EXI	EXR/303261		
	Tel +44 (0) 1283 554400				50	D3008-13		M25 Jct 10	2		<u> </u>	Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

mg/l ICPWATVAR	Sodium as Na (Dissolved) a	82	27	23														
mg/l ICPWATVAR	Potassium as K (Dissolved) a	13	2	2														
mg/l ICPWATVAR 1	Magnesium as Mg (Dissolved) a	23	က	2											13-May-2020	13-191ay-2020 EYD/202261	(K/303261	1
mg/l ICPWATVAR I	Iron as Fe (Dissolved) a	24.7	3.12	0.09									llysis	ı	100	? 6	J	
mg/l mg/l ICPWATVAR ICPWATVAR 0.01 1	Calcium as Ca (Dissolved) a	24	15	6									Sample Analysis					
mg/l ICPWATVAR 0.01	Boron as B (Dissolved) a	0.07	0.02	0.01									Sam		Pot	lleu I.mhor	Iumper	ımper
mg/l ICPMSW 0.002	Zinc as Zn (Dissolved)	0.02	0.005	0.024											Data Brintod	חמוב רווו	Report Number	Table Number
mg/l ICPMSW 0.001	Selenium as Se (Dissolved)	<0.001	<0.001	<0.001														
mg/l ICPMSW 0.001	Nickel as Ni (Dissolved)	0.028	0.001	0.015														
mg/l ICPMSW 0.00003	Mercury as Hg (Dissolved)	<0.00003	<0.00003	0.00005													10	2
mg/l ICPMSW 0.001	Lead as Pb (Dissolved)	<0.001	<0.001	<0.001									٤				M25 .1ct 10	5
mg/l ICPMSW 0.001	Copper as Cu (Dissolved)	0.002	<0.001	<0.001									/okingham					
mg/l ICPMSW 0.001	Chromium as Cr (Dissolved)	0.004	0.001	<0.001									SOCOTEC UK Woki	SDO			D9008-19	
mg/l ICPMSW 0.00002	Cadmium as Cd (Dissolved)	0.0001	0.00006	0.00008									SOCOT	William Ridds				3
mg/l ICPMSW 0.001	Arsenic as As (Dissolved)	0.001	<0.001	<0.001									ame					
mg/l GROHSA 0.1	GRO-HSA o	< 0.100	< 0.100	< 0.100									Client Name	Contact				
Units: Method Reporting Limits:	Sample Date	27-Apr-20 13:45	27-Apr-20 14:45	27-Apr-20 15:25														
Method R	Client Sample Description	1-181 EW	1-257(D) EW	1-257(S) EW									SOCOTEC	3	Brethy Rusiness Park Ashby Road	iletty blaineas i ain, nainy i waa	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400
	LAB ID Number EX/	2057049	2057050	2057051									(1		ã	1 0	ם	

		. 0	// ba	// ba			_	_		_	_	_	-	_	_	_		1/0
	Me	thod Codes :	ICPWATVAR	KONENS	KONENS	KONENS	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW
	Method Repo	Method Reporting Limits:	3	0.01		_	-	+	-	-	-	-	+	-	_	+	+	0.01
	DODAY POLICE	. 5111113 511113	0	- 0.0		000.0	0.0	0.00	0.0	0.0	5	0.00	0.00	0.00	0.00	0.0	- 0.0	0.0
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as Cl w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2057049	1-181 EW	27-Apr-20 13:45	73	90.0	222	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2057050	1-257(D) EW	27-Apr-20 14:45	35	0.07	20	<0.003	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
2057051	1-257(S) EW	27-Apr-20 15:25	54	0.09	18	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
				Ţ							1					t		T
	SOCOTEC		Client Name	ame	SOCOT	EC UK M	SOCOTEC UK Wokingham	٤					Samp	Sample Analysis	ysis			
			Contact		William Riggs	SBB												
	Bretby Business Park, Ashby Road											Date Printed	pe		13-1	13-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ					4 000		1	<u> </u>			Report Number	ımber		EXF	EXR/303261		
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	Fax +44 (0) 1283 554422																	

				_			l/6	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm					l/gm
				-			PAHMSW P	HEHPLCVL F	S	HEHPLCVL F	HEHPLCVL	SFAPI	SFAPI				TPHFID-Si	TPHFID-8
j	Method R	Method Reporting Limits:	0.01	0.01	0.01	0.01	91	0.0005	0.0005	0.0005	0.0005	0.02	0.02	0.02	0.01	0.01		0.01
LAB ID Number EX/	Client Sample Description	Sample Date	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35
2057049	1-181 EW	27-Apr-20 13:45	< 0.01	0.03	< 0.01	< 0.01	< 0.18	<0.0005	<0.0005	0.0005	<0.0005	<0.02	<0.02	1.25	< 0.010	< 0.010	< 0.010	< 0.010
2057050	1-257(D) EW	27-Apr-20 14:45	< 0.02	90.0	< 0.02	< 0.02	< 0.36	0.0011	<0.0005	0.0007	<0.0005	<0.02	<0.02	0.54	< 0.010	< 0.010	0.029	< 0.010
								- L	0 Q	. L	0 0		1 0		0 0			
			Client		SOCOL	SOCOTEC UK Wokingham	okinghan						Same	Sample Analysis	llveis			
	5		Contact		William Riggs	)gs	1						•		,			
Ш	Bretby Business Park, Ashby Road											Date Printed	ted		13	13-May-2020		
ш	Burton-on-Trent, Staffordshire, DE15 0YZ				60	D9008-19		M25 Jct 10	0		<u> </u>	Report Number	umber		EX	EXR/303261		
	Fax +44 (0) 1283 554422										l	able Nu	Jagu			-		

Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

Sample Analysis

In-House Report Due 12-May-2020

Date Logged 01-May-2020 Consignment No W171321

#### SOCOTEC UK Wokingham D9008-19 M25 Jct 10 W303261 1-257(S) I-257(D) 1-181 ID Number Report No EX/2057049 Customer EX/2057050 EX/2057051

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) Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days Cadmium as Cd MS (Dissolved) Chromium as Cr MS (Dissolved) Nickel as Ni MS (Dissolved) ICPMSW GROHS **GRO-HSA GCFID (AA)** Ammonia (Free) as N calc Report A Ammoniacal Nitrogen as NH4 Calc 27/04/20 27/04/20 27/04/20 Sampled MethodID Matrix Type Unclassified Unclassified Unclassified Description

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)

# Deviating Sample Key

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

iccredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

owever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

EXR/303261 Ver. 2

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 Wokingham Customer

W303261 Report No

D9008-19 M25 Jct 10

Consignment No W171321

Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry** 

Date Logged 01-May-2020

In-House Report Due 12-May-2020

	WSLM13	Total C
	TPHFID-Si	TPI
	SFAS	Sulph
		Cyanide (
	SFAPI	Cyanide
days.	PHEHPLCVL	Phenols by
vorking days	PAHMSW	PAH
e wor		Chromiur
al TIVE		Ammoniac
iltion	KONENS	Chloric
n add		Boron as
o to a	ICPWATVAR	Iron as Fe
ıke ul		
to ta	Thodi	
likely	Me	
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subcc		
any:		
es tor		
result		
the		
note		
ase		

	pH units	>			
WSLM3	Temperature C°				
WSLM20	Biochemical Oxygen Demand	>	ш	ш	В
	Dissolved Organic Carbon				
WSLM13	Total Organic Carbon	>			
TPHFID-Si	TPH by GC(Si)	^			
SFAS	Sulphide as S SFA	1			
	Cyanide (Total) as CN SFA	1			
SFAPI	Cyanide (Free) as CN SFA	>			
PHEHPLCVL	Phenois by HPLC (Low Level)				
PAHMSW	PAH GC-MS (16)	>			
	Chromium VI. as Cr (Kone)	>			
	Ammoniacal Nitrogen (Kone)	>			
KONENS	Chloride as CI (Kone)	>			
	Boron as B (Dissolved) VAR	1			
ICPWATVAR	Iron as Fe (Dissolved) VAR	>			
MethodID	Sampled		27/04/20	27/04/20	27/04/20
	Matrix Type		Unclassified	Unclassified	Unclassified
	Description		1-181	1-257(D)	1-257(S)
	ID Number		EX/2057049	EX/2057050	EX/2057051

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

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

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.

EXR/303261 Ver. 2

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	TO	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.

Report Number: W/EXR/303261

### **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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	

### **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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/303261 Ver. 2

#### **Sample Descriptions**

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

Report Number: W30\_3261

Lab ID Number	Client ID	Description
	4.404 FW	Linglacoified
EX/2057049	1-181 EW 1-257(D) EW 1-257(S) EW	Unclassified Unclassified Unclassified
EX/2057050 EX/2057051	1-257(D) EW	Unclassified
EX/205/051	1-257(S) EW	Unclassified

Appendix A Page 1 of 1 13/05/2020EXR/303261 Ver. 2

#### 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.

	Metho	Units:  Method Codes:  Method Reporting Limits:	BT	hg/l BTEXHSA 5	SA	SA	SA	S S	7	- ALC	- SA	AS	mg/l GROHSA 0.1	- SA	_ SA	SA	mg/l GROHSA 0.1	mg/l GROHSA 0.1
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	02	9	02	ON.	ON	ON N	ON	02	ON N
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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2057350	1-191 EW 300420 5.00	30-Apr-20 14:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.12	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057351	1-203 EW 300420 6.50	30-Apr-20 10:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	80.0	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057352	1-203 EW 300420 7.00	30-Apr-20 12:45	< 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	< 0.100	< 0.100	< 0.100
2057353	1-207 EW 300420 5.00	30-Apr-20 09:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.22	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
$\dashv$											1							
S	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wok	/okingham	٤					Samp	Sample Analysis	lysis			
		_	Contact		William Riggs	sbb												
Bř	Bretby Business Park, Ashby Road											Date Printed	ted		27-1	27-May-2020		
Bu	Burton-on-Trent, Staffordshire, DE15 0YZ					7 000		7 10	_			Report Number	ımber		EXF	EXR/303324		
F	Tel +44 (0) 1283 554400				במ	D3000-13			2		<u> </u>	Table Number	nber			-		
ш	Fax +44 (0) 1283 554422																	

		· stiuli	/bm	l/bm	l/om	l/bm	l/bw	l/bm	l/pm	$\vdash$	l/pm	ma/l	/pm	l/bm	l/pm	l/bm	l/bm	ma/l
		Method Codes:	Ö	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	>	ICPMSW	ICPMSW	×	:PWATVAR	ICPWATVAR ICPWATVAR		VAR	ICPWATVAR ICPWATVAR	PWATVAR
	Method	Reporting Limits:		0.001	0.00002	0.001	0.001	0.001		-			0.01	-			-	-
		UKAS Accredited :		Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date		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)	Žinc 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
2057350	1-191 EW 300420 5.00	30-Apr-20 14:45	< 0.100	0.001	0.00116	0.002	0.003	0.002	<0.00003	0.137	0.001	0.24	60.0	43	60.0	59	18	38
2057351	1-203 EW 300420 6.50	30-Apr-20 10:30	< 0.100	<0.001	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.042	<0.001	0.013	<0.01	8	5.17	8	9	17
2057352	1-203 EW 300420 7.00	30-Apr-20 12:45	< 0.100	<0.001	0.00149	0.015	0.018	0.005	<0.00003	0.045	<0.001	0.08	0.07	32	-	21	24	65
2057353	1-207 EW 300420 5.00	30-Apr-20 09:30	< 0.100	0.001	0.00018	0.004	0.001	0.001	<0.00003	0.061	<0.001	0.175	0.03	23	49.7	15	16	84
	SOCOTEC		Client Name	ame	SOCOTI	SOCOTEC UK Wokin	okingham	L					Samp	Sample Analysis	ysis			
			Contact		William Riggs	ids												
	Bretby Business Park, Ashby Road											Date Printed	pa		27-1	27-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ							•	(			Report Number	mber		EXF	EXR/303324		
	Tel +44 (0) 1283 554400				2	09008-19		M25 Jct 10	2		<u></u>	Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

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Fluorene

Fluoranthene

		Units:	l/grl				l/gu	l/gm	l/gm		l/gm	l/gm	l/gm					l/gm
		Method Codes:	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW F	SVL	PHEHPLCVL P	SVL	PHEHPLCVL	SFAPI	SFAPI	SFAS	TPHFID-Si	TPHFID-Si 1	TPHFID-Si 7	TPHFID-Si
	Met	thod Reporting Limits:	0.01	_		_					0.0005	0.02	0.02					0.01
		UKAS Accredited		Yes	Yes	Yes	CN CN	QN CN	cN	CN CN	Q Q	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			3	3	3	3	2	2	2	2	2	3	3	3	3	3	2	3
LAB ID Number EX/	Client Sample Description	Sample Date	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35
2057350	1-191 EW 300420 5.00	30-Apr-20 14:45	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	0.029	0.078
2057351	1-203 EW 300420 6.50	30-Apr-20 10:30	< 0.01	0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.14	< 0.010	< 0.010	0.032	0.075
2057352	1-203 EW 300420 7.00	30-Apr-20 12:45	< 0.01	0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	9000.0	<0.0005	<0.02	<0.02	0.1	< 0.010	< 0.010	0.023	0.063
2057353	1-207 EW 300420 5.00	30-Apr-20 09:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.49	< 0.010	< 0.010	0.023	0.059
	SOCOTEC		Client Name	ıme	SOCOTI	EC UK W	SOCOTEC UK Wokingham	r					Samp	Sample Analysis	lysis			
			Contact		William Riggs	)gs												
	Bretby Business Park, Ashby Road										_	Date Printed	Þ		27-1	27-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ					200	_	7 70	_		<u> </u>	Report Number	mber		EXF	EXR/303324		
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	Fax +44 (0) 1283 554422										1							

		Units:	_	_	mg/l	l/gm		l/gm	mg/l	_	l/gm	l/gm	mg/l	pH units		
		Method Codes:	片	르	TPHFID-Si	TPHFID-Si	-Si	TPHFID-Si 1		ij	-+	-	WSLM20	WSLM3		
	Method	Reporting Limits:		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.2	7.0	- :	:		
	1	UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	S N	Yes	Yes	Yes		
LAB ID Number EX/	Client Sample Description	Sample Date	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Dissolved Organic Carbon w	Total Organic Carbon w	Biochemical Oxygen Demand w	pH units w		
2057350	1-191 EW 300420 5.00	30-Apr-20 14:45	< 0.010	0.140	< 0.010	< 0.010	0.024*	< 0.010	< 0.010	0.042	5.3	5.2	<3.6	4.2		
2057351	1-203 EW 300420 6.50	30-Apr-20 10:30	< 0.010	0.138	< 0.010	< 0.010	0.024*	< 0.010	< 0.010	0.043	06.0	0.91	13.3	3.2		
2057352	1-203 EW 300420 7.00	30-Apr-20 12:45	< 0.010	0.113	< 0.010	< 0.010	0.016*	0.011	< 0.010	0.035	12	12	<5.7	4		
2057353	1-207 EW 300420 5.00	30-Apr-20 09:30	< 0.010	0.107	< 0.010	< 0.010	0.017*	< 0.010	< 0.010	0.030	4.6	4.6	<2.0	3.7		
											Ī					
<b>V</b> )	SOCOTEC		Client Name	ame	SOCOTEC U		K Wokingham	_					Samp	Sample Analysis	lysis	
			Contact		William Riggs	dgs										
ă	Bretby Business Park, Ashby Road											<b>Date Printed</b>	pa		27-May-2020	
<u></u>	Burton-on-Trent, Staffordshire, DE15 0YZ					4 000	ACM O	7	_			Report Number	mber		EXR/303324	
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-	Fax +44 (0) 1283 554422															

# Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham

Sample Analysis

D9008-19 M25 Jct 10 W303324

Report No

Customer

Consignment No W171387

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.

Date Logged 02-May-2020

	Potassium as K (Dissolved) VAR	>				
	Sodium as Na (Dissolved) VAR					
	Magnesium as Mg (Dissolved) VAR					
	Calcium as Ca (Dissolved) VAR					
ICPWATVAR	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)	^				
ICPMSW	Nickel as Ni MS (Dissolved)	^				
GROHSA	GRO-HSA GCFID (AA)		出	出	出	ч
FNH3CALC	Ammonia (Free) as N calc					
CUSTSERV	Report A					
CALCNH4	Ammoniacal Nitrogen as NH4 Calc	>				
MethodID	Sampled		30/04/20	30/04/20	30/04/20	30/04/20
	Matrix Type	Test Method Accredited to ISO17025	Groundwater	Groundwater	Groundwater	Groundwater
Descripti						1-207
ID Number				EX/2057351	EX/2057352	EX/2057353

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within 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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303324 Ver. 2

# Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10

Date Logged 02-May-2020

Consignment No W171387

		ws
_		ТРН
-2020		SF
13-May		SF
rt Due	days	PHEH
Repor	rking	PAH
In-House F	dditional five wo	кої
	to take up to an a	ICPW
	identified with a '^') is likely	;
W303324	ults for any subcontracted analysis (i	
Report No	Please note the res	

	pH units	>				
VSLM3	Temperature C°					
/SLM20	Biochemical Oxygen Demand	1				
	Dissolved Organic Carbon					
VSLM13	Total Organic Carbon	>				
PHFID-Si	TPH by GC(Si)	>				
SFAS	Sulphide as S SFA	>				
	Cyanide (Total) as CN SFA	>				
SFAPI	Cyanide (Free) as CN SFA	>				
HEHPLCVL	Phenols by HPLC (Low Level)					
AHMSW	PAH GC-MS (16)	1				
	Chromium VI. as Cr (Kone)	^				
	Ammoniacal Nitrogen (Kone)	>				
ONENS	Chloride as CI (Kone)	>				
	Boron as B (Dissolved) VAR	^				
:PWATVAR	Iron as Fe (Dissolved) VAR	>				
MethodID	Sampled		30/04/20	30/04/20	30/04/20	30/04/20
	Matrix Type	Test Method Accredited to ISO17025	Groundwater	Groundwater	Groundwater	Groundwater
	Description	Test Methoc	1-191	1-203	1-203	1-207
	ID Number		EX/2057350	EX/2057351	EX/2057352	EX/2057353

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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/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.			
EX2057350 TPHFID-Si 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.			

Page 9 of 11

Report Number: W/EXR/303324

### **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/303324 Ver. 2

## **Sample Descriptions**

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

Report Number: W30\_3324

Lab ID Number	Client ID	Description
Lab ID Number		
EX/2057350	1-191 EW 300420 5.00	Groundwater
EX/2057351	1-203 EW 300420 6.50	Groundwater
EX/2057352	1-203 EW 300420 7.00	Groundwater
EX/2057351 EX/2057352 EX/2057353	1-207 EW 300420 5.00	Groundwater
LN2031333	1-207 LW 300420 3.00	Grandwater

Appendix A Page 1 of 1 27/05/2020EXR/303324 Ver. 2

## 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

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.

Date of Issue: 22-May-2020

	Q.	Units:	hg/l PTEYHSA	hg/l	hg/l PTEYHSA	hg/l	hg/l	l/gu	mg/l	mg/l	l/gm	l/gm	l/gm	l/gm	/bm		l/gm	mg/l
	Method Repo	Method Reporting Limits :	5	5	10	5	5		0.01		10.1	מאטרוטאט	10 10	1000	+	0.1	+	0.1
		. 5	0	>	2	>		2	5		-	-	-	-		-	-	-
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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2057719	1-327 EW 040520 7.00	04-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	< 0.100	< 0.100	< 0.100
2057720	1-346 EW 040520 9.00	04-May-20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.39	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057721	1-341 EW 040520 8.30	04-May-20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.05	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057722	1-318 EW 040520 8.00	04-May-20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	90.0	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
	SOCOTEC		Client Name Contact	ame	SOCOTEC William Riggs	SOCOTEC UK Wokin	/okingham	E					Samp	Sample Analysis	lysis			
	Bretby Business Park, Ashby Road											Date Printed	ted		22-	22-May-2020		
<u></u>	Burton-on-Trent, Staffordshire, DE15 0YZ					D9008-19		425 .Ict 10	<u>c</u>			Report Number	umber		EXI	EXR/303409		
	Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422				í		•		2			Table Number	mber			-		
																		1

	VAR		П												T	Τ						
l/gm	RICPWATVAR	-	-	Sodium as Na (Dissolved) a	92	14	11	92									_					
	ICPWATVAR			Potassium as K (Dissolved) a	8	16	8	11														
	ICPWATVAR		-	Magnesium as Mg (Dissolved) a	4	4	2	22											22-May-2020	EXR/303409	_	
	ICPWATVAR			Iron as Fe (Dissolved) a	0.24	0.01	0.02	0.02									llysis		22	Ω		
	ICPWATVAR		-	Calcium as Ca (Dissolved) a	10	22	11	66									Sample Analysis					
l/gm	ICPWATVAR	0.01		Boron as B (Dissolved) a	0.27	0.17	0.02	0.01									Sam		nted	lumber	ımber	
l/gm	ICPMSW	0.002		Zinc as Zn (Dissolved)	0.003	0.023	0.065	0.174											Date Printed	Report Number	Table Number	
l/gm	ICPMSW	0.001		Selenium as Se (Dissolved)	<0.001	<0.001	<0.001	<0.001														
mg/l	ICPMSW	0.001		Nickel as Ni (Dissolved)	0.002	0.026	0.023	0.098														
l/gm	ICPMSW	0.00003		Mercury as Hg (Dissolved)	<0.00003	<0.00003	<0.00003	<0.00003												(	2	
l/gm	ICPMSW	0.001		Lead as Pb (Dissolved)	<0.001	<0.001	<0.001	0.001									     E			-	MZS JCt 10	
mg/l	ICPMSW	0.001		Copper as Cu (Dissolved)	<0.001	<0.001	<0.001	0.002									/okingham					
l/gm	ICPMSW	0.001		Chromium as Cr (Dissolved)	<0.001	<0.001	<0.001	0.001									SOCOTEC UK Wokin	sbb			D3008-13	
l/gm	ICPMSW	0.00002	1	Cadmium as Cd (Dissolved)	<0.00002	<0.00002	0.00016	0.00132									SOCOT	William Riggs			2	
l/gm	ICPMSW	0.001		Arsenic as As (Dissolved)	<0.001	<0.001	<0.001	<0.001									ame					
l/gm	GROHSA	0.1	5	GRO-HSA o	< 0.100	< 0.100	< 0.100	< 0.100									Client Name	Contact				
Units:	hod Codes:	ing Limits:		Sample Date	04-May-20	04-May-20	04-May-20	04-May-20														
:	Meth	Method Reporting Limits:		Client Sample Description	1-327 EW 040520 7.00	1-346 EW 040520 9.00	1-341 EW 040520 8.30	1-318 EW 040520 8.00									SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
				LAB ID Number EX/	2057719	2057720	2057721	2057722											Ф	<u>п</u>		

		Units:	ma/l	ma/l	ma/l	l/bm		l/on	l/au	l/ua/l	l/on	l/u	l/on	l/dn				l/un/
	Methoc	1 Codes:	PWATVAR	KONENS	S	S	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW
	Method Reporting Limits:	g Limits :	3					0.01	0.01	0.01	0.01	0.01	0.01	0.01				0.01
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as Cl w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2057719	1-327 EW 040520 7.00	04-May-20	105	0.2	20	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2057720	1-346 EW 040520 9.00	04-May-20	79	0.3	9	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2057721	1-341 EW 040520 8.30	04-May-20	31	0.02	30	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2057722	1-318 EW 040520 8.00	04-May-20	66	0.05	315	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
	SOCOTEC		Client Name		SOCOTEC William Riggs	SOCOTEC UK Wokin	okingham						Samp	Sample Analysis		300		
ш	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ				Ğ	D9008-19		M25 Ict 10	2		. '	Date Printed Report Number	umber		EX SZ	ZZ-May-Z0Z0 EXR/303409		
	Tel +44 (0) 1283 554400 Fax +44 (0) 1283 55422				3	-			2		·	Table Number	mber			-		

>			2	2	2	2								Τ						
svocsw 0.005	1,4-Dic	hlorobenzene	< 0.005	< 0.005	< 0.005	< 0.005								_						
mg/l SVOCSW 0.005	1,3-Dic	nlorobenzene	< 0.005	< 0.005	< 0.005	< 0.005														
svocsw 0.005	1,2-Dic	hlorobenzene	< 0.005	< 0.005	< 0.005	< 0.005											22-May-2020	EXR/303409	-	
mg/l SVOCSW 0.005	1,2,4-Tri	chlorobenzene	< 0.005	< 0.005	< 0.005	< 0.005								lveis			22	Ê		
mg/l SFAS 0.02	Sul	ohide as S	0.22	<0.02	<0.02	<0.02								Sample Apalysis						
mg/l SFAPI 0.02	Cyanide	(Total) as CN	<0.02	<0.02	0.07	<0.02								Sami	5		ıted	umber	mber	
mg/l SFAPI 0.02	Cyanid	e (Free) as CN	<0.02	<0.02	<0.02	<0.02											Date Printed	Report Number	Table Number	
mg/l         mg/l         mg/l           PHEHPLCVL         PHEHPLCVL           0.0005         0.0005	Trime	thylphenols	<0.0005	<0.0005	<0.0005	<0.0005												_		
mg/l PHEHPLCVL 0.0005	ı	Phenol	<0.0005	<0.0005	<0.0005	<0.0005														
	Dime	thylphenols	5000.0>	<0.0005	<0.0005	5000.0>												<b>7</b>	2	
mg/l PHEHPLCVL 0.0005		Cresols	<0.0005	<0.0005	<0.0005	<0.0005								   	į			10	וובט טכנ ווט	
hg/l PAHMSW 0.16	Total PAH (	Sum of USEPA 16)	< 0.17	< 0.17	< 0.16	< 0.18								okingham	) )					
pg/l PAHMSW 0.01		Pyrene	< 0.01	< 0.01	< 0.01	0.02								SOCOTEC LIK Woki		ggs		7 000	D3000-13	
pg/l PAHMSW 0.01	Phe	nanthrene	< 0.01	0.01	< 0.01	< 0.01								SOCOT		William Kiggs		ב	ב	
μg/l PAHMSW 0.01	Na	ohthalene	0.02	0.01	< 0.01	< 0.01								ame						
μg/l PAHMSW 0.01		,2,3-cd)pyrene	< 0.01	< 0.01	< 0.01	< 0.01								Client Name		Contact				
Units: hod Codes: ting Limits:	Sai	nple Date	04-May-20	04-May-20	04-May-20	04-May-20														
Units :  Method Codes :  Method Reporting Limits :		Client Sample Description	1-327 EW 040520 7.00	1-346 EW 040520 9.00	1-341 EW 040520 8.30	1-318 EW 040520 8.00								CHOOS	SOCOLEC PORTION		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
	LAB ID	Number EX/	2057719	2057720	2057721	2057722											ш	ш		

SW SVOCSW 2 0.002	Benzo[k]fluoranthene	0.002	00.002	> 0.002	00.002								_					
1 mg/l SW SVOCSW 2 0.002	Benzo[g,h,i]perylene	02 < 0.002	02 < 0.002	02 < 0.002	02 < 0.002										020	601	-	
wg/l sW SVOCSW 0.002	Benzo[b]fluoranthene	2 < 0.002	2 < 0.002	2 < 0.002	2 < 0.002										22-May-2020	EXR/303409		
w svocsw 0.002	Benzo[a]pyrene	2 < 0.002	2 < 0.002	2 < 0.002	2 < 0.002								nalysis	•				
w svocsw 0.002	Benzo[a]anthracene	2 < 0.002	2 < 0.002	2 < 0.002	2 < 0.002								Sample Analysis					
mg/l N SVOCSW 0.002	Anthracene	< 0.002	2 < 0.002	< 0.002	< 0.002								Sar		rinted	Report Number	Table Number	
v svocsw 0.002	Acenaphthylene	< 0.002	< 0.002	< 0.002	< 0.002										Date Printed	Report	Table	
v svocsw 0.002	Acenaphthene	< 0.002	< 0.002	< 0.002	< 0.002													
mg/l v SVOCSW 0.05	4-Nitrophenol	< 0.050	< 0.050	< 0.050	< 0.050													
mg/l / SVOCSW 0.005	4-Nitroaniline	< 0.005	< 0.005	< 0.005	< 0.005											•	2	
mg/l SVOCSW 0.005	4-Chlorophenyl-phenylether	< 0.005	< 0.005	< 0.005	< 0.005								am			101	MZS JCt 10	
svocsw 0.02	4-Chlorophenol	< 0.020	< 0.020	< 0.020	< 0.020								Nokingh				_	
svocsw 0.005	4-Chloroaniline	< 0.005	< 0.005	< 0.005	< 0.005								SOCOTEC UK Wokingham	Siggs			<b>D9008-18</b>	
svocsw 0.005	4-Chloro-3-methylphenol	< 0.005	< 0.005	< 0.005	< 0.005								.ooos	William Riggs		Č	בֿ	
svocsw 0.005	4-Bromophenyl-phenylether	< 0.005	< 0.005	< 0.005	< 0.005								lame					
mg/l SVOCSW 0.05	4,6-Dinitro-2-methylphenol	< 0.050	< 0.050	< 0.050	< 0.050								Client Name	Contact				
Units: thod Codes: rting Limits:	Sample Date	04-May-20	04-May-20	04-May-20	04-May-20													
Units : Method Codes : Method Reporting Limits :	Client Sample Description	1-327 EW 040520 7.00	1-346 EW 040520 9.00	1-341 EW 040520 8.30	1-318 EW 040520 8.00								SOCOTEC	5	Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	
	LAB ID Number EX/	2057719	2057720	2057721	2057722											_		

			l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm
	. Method Reporting Limits		_				_	_	_	_	_	_	_	_	_		_	0000
	A Burneday poursus		-	2000	0.002	200	0000	0000	0000	200	0.002	000	0.002	200.0	0000	0000	000.0	0.002
LAB ID Number EX/	Client Sample Description	Sample Date	Benzoic Acid	Benzyl alcohol	Biphenyl	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzylphthalate	Chrysene	Coronene	Dibenzo[a,h]anthracene	Dibenzofuran	Diethylphthalate	Dimethylphthalate	Di-n-butylphthalate	Di-n-octylphthalate
2057719	1-327 EW 040520 7.00	04-May-20	< 0.100	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.050	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002
2057720	1-346 EW 040520 9.00	04-May-20	< 0.100	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.050	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002
2057721	1-341 EW 040520 8.30	04-May-20	< 0.100	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.050	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002
2057722	1-318 EW 040520 8.00	04-May-20	< 0.100	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.050	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002
	SOCOTEC		Client Name	ne	SOCOT	EC UK W	SOCOTEC UK Wokingham	E					Samp	Sample Analysis	lysis			
			Contact		William Riggs	söö												
	Bretby Business Park, Ashby Road	<u> </u>										Date Printed	ted		22-	22-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ					(						Report Number	ımher		EX	EXR/303409		
	Tel +44 (0) 1283 554400				<b>6</b> 0	D9008-19	_	M25 Jct 10	9			Table Number	wher		i	1		
	E sv +44 (i) 1283 554402											מאום ואמ	5			-		
	FAX +4+ (U) 1200 004+22	_														_		

	Contact	William Riggs
by Business Park, Ashby Road		
on-on-Trent, Staffordshire, DE15 0YZ		
+44 (0) 1283 554400		080
× +44 (0) 1283 554422		

		· Ilnite ·	/bw	l/pm	l/bm		l/bm	l/bu	l/bm	l/bm	l/bm	l/bm	//u	_	ma/l	l/bm	l/bm	/Jun
	2	Method Codes :	SVOCSW	SVOCSW	>	SVOCSW	SVOCSW	>	NS NS	SVOCSW	>	<b>X</b>	>	SVOCSW	SVOCSW	>	SVOCSW	SVOCSW
	Method Rep	Method Reporting Limits:	0.002	0.002			-	Н				Н		_				0.02
LAB ID Number EX/	Client Sample Description	Sample Date		Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno[1,2,3-cd]pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitroso-di-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol
2057719	1-327 EW 040520 7.00	04-May-20	< 0.002	< 0.002	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.050	< 0.002	< 0.020
2057720	1-346 EW 040520 9.00	04-May-20	< 0.002	< 0.002	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.050	< 0.002	< 0.020
2057721	1-341 EW 040520 8.30	04-May-20	< 0.002	< 0.002	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.050	< 0.002	< 0.020
2057722	1-318 EW 040520 8.00	04-May-20	< 0.002	< 0.002	< 0.002	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	< 0.050	< 0.002	< 0.020
Ŋ	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Woki	okingham		_	-		-	Samp	Sample Analysis	ysis		-	
			Contact		William Riggs	sߣ												
a a	Brethy Business Park Ashby Road										ĺ	Data Brintad	-		22-1	22-May-2020		
	Button-on-Trant Staffordehira DE15 0V7										<u>- 1 <del>-</del></u>	Date Fillited	abor		- 77 - 27	EY D/202400		
	Tel +44 (0) 1283 554400				60	D9008-19		M25 Jct 10	<u> </u>		-   •	Table Mumber	Po de		Ž	100000		
- 11	Fax +44 (0) 1283 554422											ממופ ואמו	5			-		
											_		_					

	Method Repo	Method Reporting Limits:	Codes: SVOČSW Limits: 0.002	TPHFID-Si 0.01	TPHFID-Si 0.01	TPHFID-Si 0.01	TPHFID-Si 0.01	TPHFID-Si 0.01	TPHFID-Si 0.01	TPHFID-Si 0.01	TPHFID-Si 0.01	TPHFID-Si 0.01	TPHFID-Si 0.01	TPHFID-Si 0.01	TPHFID-Si V	VOCHSAW VOCHSAW	VOCHSAW 1	VOCHSAW 1
LAB ID Number EX/	Client Sample Description	Sample Date	Pyrene	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane
2057719	1-327 EW 040520 7.00	04-May-20	< 0.002	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.014	< 1.0	< 1.0	< 1.0
2057720	1-346 EW 040520 9.00	04-May-20	< 0.002	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 1.0	< 1.0	< 1.0
2057721	1-341 EW 040520 8.30	04-May-20	< 0.002	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.052	< 0.010	0.061	< 1.0	< 1.0	< 1.0
2057722	1-318 EW 040520 8.00	04-May-20	< 0.002	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.013	< 1.0	< 1.0	< 1.0
47	SOCOTEC		Client Name	ame	SOCOTI	SOCOTEC UK Wokingham	okinghar	٦.					Samp	Sample Analysis	lysis			
			Contact		William Riggs	sbt												
	Bretby Business Park, Ashby Road											Date Printed	ted		22-	22-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ								(			Report Number	umber		EX	EXR/303409		
	Tel +44 (0) 1283 554400				20	D9008-19		M25 Jct 10	10			Table Number	mber			-		
	Fax +44 (0) 1283 554422												2					

Method R	Meth	Units:  Method Codes:	VOCHSAW VOCHSAW	ug/l CHSAW 1	VOCHSAW VOCHSAW	hg/l OCHSAW V	ug/l VOCHSAW V/	μg/l VOCHSAW V	ug/l VOCHSAW V 5	ug/l µg/l VOCHSAW VOCHSAW 1 5	µg/l VOCHSAW \	μg/l VOCHSAW \	ug/l VOCHSAW \	ug/l         ug/l         µg/l           VOCHSAW         VOCHSAW         VOCHSAW           5         1         1	hg/ /OCHSAW \	ug/l VOCHSAW 1	ug/l VOCHSAW 1	hg/l VOCHSAW
1,1,2-Trichloroethane  Sample Date  Cient Sample Date				1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane
1-327 EW 040520 7.00 04-May-20 < 1.0		< 1.0		< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 5.0*	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1-346 EW 040520 9.00 04-May-20 < 1.0	< 1.0		٧	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 5.0*	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1-341 EW 040520 8.30 04-May-20 < 1.0 <	< 1.0		٧	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 5.0*	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1-318 EW 040520 8.00 04-May-20 < 1.0 < 1.0	< 1.0		^	0.	< 1.0	< 1.0	< 1.0*	< 1.0	< 5.0*	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
				+														
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SOCOTEC Cilent Name	Client Name	Client Name	ne		SOCOLE	C UK W	SOCOLEC UK Wokingnam	<b>-</b>					Samp	sample Analysis	ysis			
Contact	Contact	Contact		-	William Riggs	зs												
Bretby Business Park, Ashby Road												Date Printed	pe		22-	22-May-2020		
Burton-on-Trent, Staffordshire, DE15 0YZ						D0008-10		M25 Ic+ 10	<u></u>			Report Number	ımber		EXI	EXR/303409		
Tel +44 (0) 1283 554400					2	-		5	2			Table Number	nber			-		
Fax +44 (0) 1283 554422													1					

< 1.0 < 1.0 < 1.0 < 1.0

< 1.0\* × 1.0\* < 1.0\* × 1.0\*

cis 1,3-Dichloropropene

Chloromethane

	Metho	od Codes :	VOCHSAW VOCHSAW VOCHSAW VOCHSAW	VOCHSAW N	VOCHSAW	VOCHSAW \		VOCHSAW VOCHSAW		VOCHSAW \	VOCHSAW \	VOCHSAW \	VOCHSAW \	VOCHUAW	VOCHSAW	VOCHSAW V	VOCHSAW	VOCHSAW
	Method Reporting Limits:	ing Limits:		-	-	-		2		-	2						-	-
LAB ID Number EX/	Client Sample Description	Sample Date	Cis-1,2-dichloroethene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	m and p-Xylene	Naphthalene	n-Butylbenzene	o-Xylene	p-Isopropyltoluene	Propylbenzene	sec-Butylbenzene	Styrene	tert-Butylbenzene
2057719	1-327 EW 040520 7.00	04-May-20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0*	* 1.0*	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	> 1.0
2057720	1-346 EW 040520 9.00	04-May-20	< 1.0	< 1.0	< 1.0	< 1.0	> 1.0	< 5.0*	* 1.0*	> 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	< 1.0
2057721	1-341 EW 040520 8.30	04-May-20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0*	< 1.0*	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	< 1.0
2057722	1-318 EW 040520 8.00	04-May-20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0*	< 1.0*	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	< 1.0
															<u> </u>			
• •	SOCOLEC		Contact		William Riggs	William Riggs	0 1 2 1 3	<b>=</b>					0a=1	Sample Analysis	S S S S S S S S S S S S S S S S S S S			
ш	Bretby Business Park, Ashby Road											Date Printed	ted		22-	22-May-2020		
-	Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400				D3	D9008-19		M25 Jct 10	0			Report Number Table Number	umber		X X	EXR/303409		
	Fax +44 (U) 1283 554422																	

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham D9008-19 M25 Jct 10 Customer

Sample Analysis

W303409

Report No

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

Date Logged 06-May-2020

In-House Report Due 20-May-2020

Consignment No W171471

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) ICPMSV **GRO-HSA GCFID (AA)** Ammonia (Free) as N calc Report A Ammoniacal Nitrogen as NH4 Calc CALCN 04/05/20 04/05/20 04/05/20 Sampled MethodID **Matrix Type** Unclassified Unclassified Unclassified Unclassified Description I-346 I-341 1-318 1-327 ID Number EX/2057719 EX/2057720 EX/2057721 EX/2057722

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303409 Ver. 1

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham

Sample Analysis

D9008-19 M25 Jct 10

W303409

Report No

Customer

Date Logged 06-May-2020

Consignment No W171471

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.

	pH units	>				
WSLM3	Temperature C°					
WSLM20	Biochemical Oxygen Demand	>				
	Dissolved Organic Carbon					
WSLM13	Total Organic Carbon	>				
VOCHSAW	VOC HSA-GCMS	>				
TPHFID-Si	TPH by GC(Si)	>				
svocsw	svoc					
SFAS	Sulphide as S SFA	>				
	Cyanide (Total) as CN SFA	>				
SFAPI	Cyanide (Free) as CN SFA	>				
PHEHPLCVL	Phenois by HPLC (Low Level)					
PAHMSW	PAH GC-MS (16)	>				
	Chromium VI. as Cr (Kone)	>				
	Ammoniacal Nitrogen (Kone)	>				
KONENS	Chloride as CI (Kone)	>				
	Boron as B (Dissolved) VAR	>				
ICPWATVAR	Iron as Fe (Dissolved) VAR	>				
MethodID	Sampled		04/05/20	04/05/20	04/05/20	04/05/20
	Matrix Type		Unclassified	Unclassified	Unclassified	Unclassified
	Description		1-327	1-346	1-341	1-318
	ID Number		EX/2057719	EX/2057720	EX/2057721	EX/2057722

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

f sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within 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.

EXR/303409 Ver. 1

Report Number: W/EXR/303409

## **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.

Report Number: W/EXR/303409

## **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 NH4, 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

## **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/cm<sup>3</sup>@ 15°C

## Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 19 of 19 EXR/303409 Ver. 1

## **Sample Descriptions**

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

Report Number: W30\_3409

Lab D Number  Cinet ID  EX2057719  1-327 EV M4503 70 0  Uncleasified  EX2057720  1-346 EW M4503 0.0 Uncleasified  EX2057732  1-316 EW M4503 0.0 Uncleasified  EX2057734  1-316 EW M4503 0.0 Uncleasified  EX2057735  EX2057734  EX2057735  EX2057735  EX2057736  EX2057737  EX2057736  EX2057737  EX2057737  EX2057737  EX2057737  EX2057737  EX2057737  EX2057737  EX2057737  EX2057737  EX20577  EX	Lat IB Named and	OU ID	Description
EXX/36779 1-327 EW 196230 700 Uncleasified EXX/367730 1-346 EW 196230 9.00 Uncleasified EXX/367722 1-318 EW 196230 8.00 Uncleasified Uncleasified Uncleasified Uncleasified EXX/367722 1-318 EW 196230 8.00 Uncleasified Uncleasified Uncleasified EXX/367722 1-318 EW 196230 8.00 Uncleasified EXX/36772		Client ID	
EXX257720 1-348 EW 040520 9.00 Uncleasified EXX257721 1-341 EW 040520 9.00 Uncleasified EXX25772 1-318 EW 040520 9.00 Uncleasified Uncleasified EXX25772 1-318 EW 040520 9.00 Uncleasified Uncleasified EXX25772 1-318 EW 040520 9.00 Uncleasified Uncleasified Uncleasified Uncleasified Uncleasified EXX25772 1-318 EW 040520 9.00 Uncleasified Uncle	EX/2057719	1-327 EW 040520 7.00	Unclassified
EX.2057722 1-341 EW 040520 8.00 Unclassified  EX.2057722 1-318 EW 040520 8.00 Unclassified	EX/2057720	1-346 EW 040520 9.00	Unclassified
EX2057722 1-3:9 EW Mets2c 1:00 Unclassified	EV/2057721	1 241 EW 040520 9 20	Linglassified
EX. 2001/72  1.318 EV PURSON 800  Unclassed at 1.318 EV PURSON 800  EX. 2001 EV PURSON 800  Unclassed at 1.318 EV PURSON 800  EX. 2001	EX/203/121	1-341 EVV 040320 0.30	Ultidasilieu
	EX/2057722	1-318 EW 040520 8.00	Unclassified
			<u>                                     </u>

Appendix A Page 1 of 1 22/05/2020EXR/303409 Ver. 1

## 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

inna

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.

Date of Issue: 18-May-2020

		Units:	l/gu	hg/l	l/gu	l/gu	l/gu	l/gu		l/gm			l/gm		/gm	_		l/gm
	Method	Method Renorting Limits	DIEATISM 5	5.5	10		7 L		0.01		10	O 1		ASTONO 10	+	48FOA9	ASELONS 10	10 J
		IIVAS Approdited .		200	2 /	2	200	2 /	10.0	0.0		- 2		- ( <del>-</del>	- 0	- Z		
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	ON ON	ON ON	No	No	ON No	00	No	ON 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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2057922	1-390 Deep EW050520 EW 20.00	05-May-20 13:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.39	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057923	1-390 Shallow EW050520 EW 5.00	05-May-20 12:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.18	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2057924	1-363A EW050520 EW 15.00	05-May-20 10:40	< 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	< 0.100	< 0.100	< 0.100
2057925	1-210 EW050520 EW 6.00	05-May-20 09:10	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.13	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	E					Samp	Sample Analysis	ysis			
	5		Contact		William Riggs	sbb												
	Bretby Business Park, Ashby Road											Date Printed	pe		18-	18-May-2020		
	Burton-on-Trent Staffordshire. DE15 0YZ											Report Number	ımhar		FXF	EXR/303448		
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	Tel +44 (0) 1283 554400							, 	ļ			l able Number	nber			-		
	Fax +44 (0) 1283 554422																	

196 338 4 153

Sodium as Na (Dissolved) a

		Units:	l/gm	l/gm	l/gm	l/gm		_	_	_	_	_	_	_	_	_	_	l/grl
	:	Method Codes:	ICPWATVAR	조	Š	KONENS	>	PAHMSW	>	×	NS.	Š	Ν	×	Š	NS.	Ν	PAHMSW
	Metho	d Reporting Limits:	က		-	0.003		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as Cl w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2057922	1-390 Deep EW050520 EW 20.00	O5-May-20 13:30	86	0.3	445	<0.003	0.01	0.01	0.02	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.02	0.02
2057923	1-390 Shallow EW050520 EW 5.00	0 05-May-20 12:45	73	0.14	784	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2057924	1-363A EW050520 EW 15.00	05-May-20 10:40	83	<0.01	21	<0.003	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.02	< 0.01
2057925	1-210 EW050520 EW 6.00	05-May-20 09:10	305	0.10	70	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wokingham	/okingha≀	٤					Samp	Sample Analysis	lysis			
			Contact		William Riggs	iggs												
	Bretby Business Park, Ashby Road										1	Date Printed	pa		18-	18-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				ב	70000		MOE Ict 10	2		_	Report Number	mber		EXI	EXR/303448		
	Tel +44 (0) 1283 554400				č	-000	_	200	2		• -	Table Number	Jber			-		
	Fax +44 (0) 1283 554422																	

-		_			_	_	_	_	_	 	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	_	_	_
$\perp$	<u>_</u>	0.01	Yes	TPH Ali Band >C21-C35	0.015	0.025	0.045	< 0.010																						
l/gm	TPHFID-Si	0.01	Yes	TPH Ali Band >C16-C21	< 0.010	< 0.010	< 0.010	< 0.010																						
	<u>.</u>	0.01	Yes	TPH Ali Band >C12-C16	< 0.010	< 0.010	< 0.010	< 0.010																		10 May 2020	-iviay-zuzu	EXR/303448	-	
/bm	TPHFID-Si	0.01	Yes	TPH Ali Band >C10-C12	< 0.010	< 0.010	< 0.010	< 0.010																lysis		10	O   i	Ä		
l/gm	SFAS	0.02	Yes	Sulphide as S	0.21	<0.02	<0.02	0.11																Sample Analysis						
l/gm	SFAPI	0.02	Yes	Cyanide (Total) as CN	<0.02	<0.02	<0.02	<0.02																Samp		100	red .	umber	mber	
l/gm	SFAPI	0.02	Yes	Cyanide (Free) as CN	<0.02	<0.02	<0.02	<0.02																		0.40	Date Printed	Report Number	Table Number	
l/gm	PHEHPLCVL	0.0005	No	Trimethylphenols	<0.0005	<0.0005	<0.0005	<0.0005																				·		
l/gm	PHEHPLCVL	0.0005	No	Phenol	<0.0005	<0.0005	<0.0005	<0.0005																						
l/gm	PHEHPLCVL	0.0005	No	Dimethylphenols	<0.0005	<0.0005	<0.0005	<0.0005																				10	>	
l/gm	PHEHPLCVL	0.0005	No	Cresols	<0.0005	<0.0005	<0.0005	<0.0005																E				M25 Ict 10	,	
l/gu	PAHMSW	0.16	No	Total PAH (Sum of USEPA 16)	< 0.29	< 0.16	< 0.21	< 0.16																SOCOTEC UK Wokingham						
l/gц	PAHMSW	0.01	Yes	Pyrene	0.03	< 0.01	0.02	< 0.01																EC UK V	idds			D9008-19	)	
I/Brl	PAHMSW	0.01	Yes	Phenanthrene	90.0	< 0.01	0.01	< 0.01																SOCOT	William Ridds			2	í	
I/Brl	PAHMSW	0.01	Yes	Naphthalene	0.03	0.01	0.01	0.01																ame						
	PAHMSW	0.01	Yes	Indeno(1,2,3-cd)pyrene	< 0.01	< 0.01	< 0.01	< 0.01																Client Name	Contact					
Units:	Method Codes:	Method Reporting Limits:	UKAS Accredited:	Sample Date	05-May-20 13:30	05-May-20 12:45	05-May-20 10:40	05-May-20 09:10																						
		Method R	5	Client Sample Description	1-390 Deep EW050520 EW 20.00	1-390 Shallow EW050520 EW 5.00	1-363A EW050520 EW 15.00	1-210 EW050520 EW 6.00																SOCOTEC		bood value on and and an and	DIELDY DUSITIESS FAIR, ASTEDY FOAD	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
				LAB ID Number EX/	2057922	2057923	2057924	2057925																						

															-				
															alysis		18-May-2020	EXR/303448	7
pH units WSLM3		Yes	pH units w	5.8	4.6	5.4	6.5								Sample Analysis				
mg/l WSLM20	_	Yes	Biochemical Oxygen Demand w	<3.6	<2.0	<2.0	<9.5								Sam		nted	lumber	
mg/l WSLM13	0.2	Yes	Total Organic Carbon w	3.4	4.6	1.1	8.1										Date Printed	Report Number	
	0.2	No	Dissolved Organic Carbon w	3.2	4.2	0.99	7.0												
mg/l TPHFID-Si	0.01	Yes	TPH Aro Band >C8-C40	0.028	0.035	0.059	0.017												
-Si	0.01	Yes	TPH Aro Band >C8-C10	< 0.010	< 0.010	< 0.010	< 0.010											(	
mg/l TPHFID-Si	0.01	Yes	TPH Aro Band >C21-C35	0.013	0.014	0.037	< 0.010								٤				<u>ו</u>
TPHFID-Si	0.01	Yes	TPH Aro Band >C16-C21	< 0.010	0.010	< 0.010	< 0.010								Wokingham				
ίΩ	0.01	Yes	TPH Aro Band >C12-C16	< 0.010	< 0.010	< 0.010	< 0.010									ggs			
: <u>S</u>	0.01	Yes	TPH Aro Band >C10-C12	< 0.010	< 0.010	< 0.010	< 0.010								SOCOTEC UK	William Riggs			5
iS-C	0.01	Yes	TPH Ali Band >C8-C40	0.032	0.048	0.064	0.019								me				
mg/l TPHFID-Si	0.01	Yes	TPH Ali Band >C8-C10	< 0.010	< 0.010	< 0.010	< 0.010								Client Name	Contact			
Units : Method Codes :	Reporting Limits:	UKAS Accredited:	Sample Date	05-May-20 13:30	05-May-20 12:45	05-May-20 10:40	05-May-20 09:10												
	Method R	Ď	Client Sample Description	1-390 Deep EW050520 EW 20.00	1-390 Shallow EW050520 EW 5.00	1-363A EW050520 EW 15.00	1-210 EW050520 EW 6.00								SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	
			LAB ID Number EX/	2057922	2057923		2057925								01		Δ	ш	

# **Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10

W303448

Report No

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

Consignment No W171502 Date Logged 07-May-2020

In-House Report Due 18-May-2020

	Potassium as K (Dissolved) VAR	^				
	Sodium as Na (Dissolved) VAR	^				
	Magnesium as Mg (Dissolved) VAR	^				
	Calcium as Ca (Dissolved) VAR	^				
ICPWATVAR	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)	1				
	Copper as Cu MS (Dissolved)	^				
	Cadmium as Cd MS (Dissolved)	>				
	Chromium as Cr MS (Dissolved)	>				
ICPMSW	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	1				
MethodID	Sampled		05/05/20	05/05/20	05/05/20	05/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-390 Deep EW050520 20m   Groundwater	1-390 Shallow EW050520 5m   Groundwater	1-363A EW050520 15m	1-210 EW050520 6m
	ID Number		EX/2057922	EX/2057923	EX/2057924	EX/2057925

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

# **Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham

Sample Analysis

D9008-19 M25 Jct 10

W303448

Report No

Customer

Date Logged 07-May-2020

Consignment No W171502

In-House Report Due 18-May-2020

		pH units	>				
	WSLM3	Temperature C°					
	WSLM20	Biochemical Oxygen Demand	^				
		Dissolved Organic Carbon					
	WSLM13	Total Organic Carbon	>				
	TPHFID-Si	TPH by GC(Si)	>				
2	SFAS	Sulphide as S SFA	>				
į,		Cyanide (Total) as CN SFA	>				
2	SFAPI	Cyanide (Free) as CN SFA	>				
	PHEHPLCVL	Phenols by HPLC (Low Level)					
2 2 2	PAHMSW	PAH GC-MS (16)	>				
nal five working days	o w	Chromium VI. as Cr (Kone)	>				
, i		Ammoniacal Nitrogen (Kone)	>				
(i+i-C	KONENS	Chloride as CI (Kone)	>				
, נ	all at	Boron as B (Dissolved) VAR	>				
2	ICPWATVAR	Iron as Fe (Dissolved) VAR	>				
04c+ 0+ M04i	MethodID	Sampled		05/05/20	05/02/50	02/02/20	05/05/20
oi ('A' c dtim boiliteopi) sis		Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater
in the second se	suns for any subcontracted analy	Description		1-390 Deep EW050520 20m	1-390 Shallow EW050520 5m   Grour	1-363A EW050520 15m	1-210 EW050520 6m
Diago noto the rec	בובמאם ווסום נוום ופי	ID Number		EX/2057922	EX/2057923	EX/2057924	EX/2057925

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

Analysis Required

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

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.

EXR/303448 Ver. 1

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.

Report Number: W/EXR/303448

## **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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	

## **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/cm<sup>3</sup>@ 15°C

## Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/303448 Ver. 1

## **Sample Descriptions**

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

Report Number: W30\_3448

EXXDST202 1-930 Exem EVV050520 EVV 5.00 Grundweler EXXDST203 1-930 Selection EVV050520 EVV 5.00 Grundweler EXXDST204 1-9364 EVV05050 EVV 6.00 Grundweler EXXDST205 1-2:10 EVV05050 EVV 6.00 Grundweler EXXDST205 1-2:10 EVV05050 EVV 6.00 Grundweler EXXDST205 1-2:10 EVV05050 EVV 6.00 Grundweler EXXDST205 EVV 6	Lab ID Number	Client ID	Description
EXX55792 1-308 Swife X WIGGSQ EW 5.00 Grandeler EXX55792 1-308 C WIGGSQ EW 5.00 G WIGGSQ EW 5.			
EXC2057994 1-900 EV/001000 EV 1 5 10 Groundwater  EXC2057995 1-210 EW056550 EW 6.00 Groundwater  Coundwater  Coundwater  Coundwater	EX/205/922	1-390 Deep EW050520 EW 20.00	Croundwater
EV205/920 1-Strip EV956920 EVY 6:00 Oronneller  EV205/920 1-Strip EV956920 EVY 6:00 Oronneller  File EV956920 EVY 6:00 Or	EX/205/923	1-390 Shallow EVV050520 EVV 5.00	Groundwater
EV/2107925 1-210 EV/50520 EV € 00 Geourinament  Geouriname	EX/205/924	1-363A EW050520 EW 15.00	Groundwater
	EX/2057925	1-210 EW050520 EW 6.00	Groundwater
		<u> </u>	
		l	

Appendix A Page 1 of 1 18/05/2020EXR/303448 Ver. 1

## **TEST REPORT**



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)
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

Tests marked 'A' 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.

Date of Issue: 21-May-2020

21-May-2020 EXR/303549

Report Number

Date Printed

Table Number

D9008-19 M25 Jct 10

**SOCOTEC UK Wokingham** 

Client Name

William Riggs

Contact

Burton-on-Trent, Staffordshire, DE15 0YZ

Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422

Bretby Business Park, Ashby Road

SOCOTEC

Sample Analysis

 Units:
 µg/l
 <

< 0.100 < 0.100

< 0.100 < 0.100

< 0.100 < 0.100

< 0.100 < 0.100

< 0.100 < 0.100

< 0.100 < 0.100

< 0.100 < 0.100

<0.01 <0.01

<0.01 <0.01

< 15.0 < 15.0

< 5.0 < 5.0

< 5.0 < 5.0

< 10.0 < 10.0

< 5.0 < 5.0

< 5.0 < 5.0

1-182 EW 070520 6.50 1-715 EW 070520 6.00

2058385 2058384

07-May-20 12:30 07-May-20 09:20

< 0.100 < 0.100

GRO >C8->C10 Aliphatic

GRO >C8->C10

GRO >C7->C8 Aliphatic

GRO > C7-> C8

GRO >C6->C7 Aliphatic

GRO >C6->C7

GRO >C5->C6 Aliphatic

GRO >C5->C6

Ammonia (Free) as N calc a

Ammoniacal Nitrogen as NH4

Xylenes

Toluene

o Xylene

m/p Xylenes

Ethyl Benzene

Benzene

Sample Date

Client Sample Description

LAB ID Number EX/

	AR ICPWATVAR		Yes	Sodium as Na (Dissolved) a	32	75														
	ICPWATVAR		Yes	Potassium as K (Dissolved) a	7	2														
	ICPWATVAR		Yes	Magnesium as Mg (Dissolved) a	2	40											21-May-2020	EXR/303549	-	
	CP		Yes	Iron as Fe (Dissolved) a	0.02	0.16									alysis		2/	Û		
l/gm	ICPWATVAF	-	Yes	Calcium as Ca (Dissolved) a	6	₹									Sample Analysis					
l/gm	ICPWATVAR ICPWATVAR	0.01	Yes	Boron as B (Dissolved) a	0.02	0.02									Sam		nted	Jumper	umber	
l/gm	ICPMSW	0.002	Yes	Zinc as Zn (Dissolved)	0.014	0.097											Date Printed	Report Number	Table Number	
Н	$\simeq$			Selenium as Se (Dissolved)	<0.001	0.001														
l/gm	ICPMSW	0.001	Yes	Nickel as Ni (Dissolved)	0.005	0.064														
l/gm	ICPMSW	0.00003	Yes	Mercury as Hg (Dissolved)	<0.00003	<0.00003												•	10	
l/gm	ICPMSW	0.001	Yes	Lead as Pb (Dissolved)	<0.001	0.003									Ę				M25 Jct 10	
l/gm	ICPMSW	0.001	Yes	Copper as Cu (Dissolved)	<0.001	0.035									SOCOTEC UK Wokingham			_		
l/gm	ICPMSW	0.001	Yes	Chromium as Cr (Dissolved)	<0.001	0.002									EC UK V	iggs			D9008-19	
l/gm	ICPMSW	0.00002	Yes	Cadmium as Cd (Dissolved)	0.00004	0.00049									SOCOT	William Riggs		2	ĭ	
l/gm	ICPMSW	0.001	Yes	Arsenic as As (Dissolved)	<0.001	0.001									ame					
	GROHSA	0.1	Yes	GRO-HSA o	< 0.100	< 0.100									Client Name	Contact			_	
Units:	Method Codes:	eporting Limits:	UKAS Accredited :	Sample Date	07-May-20 09:20	07-May-20 12:30														
		Method R	<b>5</b>	Client Sample Description	1-182 EW 070520 6.50	1-715 EW 070520 6.00									SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	
				LAB ID Number EX/	2058384	2058385									S		В	Bu	_	

		Units:			mg/l			-1	_						_	_		l/grl
		Method Codes:	<u>당</u>	Ā	KONENS	S	PAHMSW	ΝS	Ņ	PAHMSW F	>	ΝS	PAHMSW	×	ΝS	ΝS	×	PAHMSW
	Method I	Reporting Limits:		0.01	_	~	0.01	0.01		0.01	0.01		0.01	0.01	0.01	0.01	0.01	0.01
	ם	UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as Cl w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2058384	1-182 EW 070520 6.50	07-May-20 09:20	52	<0.01	46	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2058385	1-715 EW 070520 6.00	07-May-20 12:30	113	<0.01	185	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
0)	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	£					Samp	Sample Analysis	lysis			
		_	Contact		William Riggs	ggs												
m m	Bretby Business Park, Ashby Road	_									_	Date Printed	pa		21-1	21-May-2020		
Δ	Burton-on-Trent, Staffordshire, DE15 0YZ	_			2	4 000		7 7 7	C		<u></u>	Report Number	ımber		EXF	EXR/303549		
-	Tel +44 (0) 1283 554400	_			2	D3000-13		ווובט טכו וו	2			Table Number	nber			-		
-	Fax +44 (0) 1283 554422																	

mg/l TPHFID-Si	0.01	Yes	TPH Ali Band >C21-C35	< 0.010	0.013															
-	+	<b>&gt;</b>																		
mg/l TPHFID-Si	-	Yes	TPH Ali Band >C16-C21	< 0.010	< 0.010															
mg/l TPHFID-Si	0.01	Yes	TPH Ali Band >C12-C16	< 0.010	< 0.010												21-May-2020	EXR/303549	-	Ì
mg/l	0.01	Yes	TPH Ali Band >C10-C12	< 0.010	< 0.010										lysis		21.	EX		Ī
mg/l SFAS	0.02	Yes	Sulphide as S	7.0	<0.02										Sample Analysis					Ī
mg/l SFAPI	0.02	Yes	Cyanide (Total) as CN	<0.02	<0.02										Samp		ted	umber	mber	
mg/l SFAPI	0.02	Yes	Cyanide (Free) as CN	<0.02	<0.02												Date Printed	Report Number	Table Number	Ī
mg/l PHEHPLCVL	0.0005	No	Trimethylphenols	<0.0005	<0.0005															
mg/l PHEHPLCVL	0.0005	No	Phenol	<0.0005	<0.0005															
mg/l PHEHPLCVL		No	Dimethylphenols	<0.0005	<0.0005													(	10	
mg/l PHEHPLCVL	0.0005	No	Cresols	<0.0005	<0.0005										E			10	MZS JCt 10	
hg/l PAHMSW	0.16	No	Total PAH (Sum of USEPA 16)	< 0.16	< 0.16										Vokingham					
hg/l PAHMSW	0.01	Yes	Pyrene	< 0.01	< 0.01										SOCOTEC UK Wok	sbbj		000	<b>J9008-19</b>	
hg/l PAHMSW			Phenanthrene	< 0.01	< 0.01										SOCOT	William Riggs		2	ػ	
hg/l PAHMSW	0.01	Yes	Naphthalene	0.01	< 0.01										ame					
hg/l PAHMSW	0.01	Yes	Indeno(1,2,3-cd)pyrene	< 0.01	< 0.01										Client Name	Contact				
Units:	Method Reporting Limits:	UKAS Accredited:	Sample Date	07-May-20 09:20	07-May-20 12:30															
	Method R	Ď	Client Sample Description	1-182 EW 070520 6.50	1-715 EW 070520 6.00										SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Eax +44 (0) 1283 554422
			LAB ID Number EX/	2058384	2058385										S		- B	ng Br		ш

																alysis		21-May-2020	EXR/303549	-	
pH units		Yes	3	pH units w	4.8	4										Sample Analysis					
l/gm	_	- X	Bio	chemical Oxygen Demand w	2.0	<1.0										Sam		nted	lumber	ımber	
l/gm	_	Ves Yes	2	Total Organic Carbon w	1.4	2.4												Date Printed	Report Number	Table Number	
l/gm	WSLM13	No No	<u> </u>	issolved Organic Carbon w	1.5	2.5															
	TPHFID-Si	Ves	3	TPH Aro Band >C8-C40	0.022	0.035															
l/gm	TPHFID-Si	Ves	3	TPH Aro Band >C8-C10	< 0.010	< 0.010													7	2	
l/gm	TPHFID-Si	Ves	3	TPH Aro Band >C21-C35	< 0.010	0.021										Ε			10	12 C	
l/gm	TPHFID-Si	Ves		TPH Aro Band >C16-C21	< 0.010	< 0.010										Wokingham				THE INICE ACT TO	
mg/l	TPHFID-Si	Ves	3	TPH Aro Band >C12-C16	< 0.010	< 0.010											dgs		7 000	D-9006G	
l/gm	TPHFID-Si	Ves		TPH Aro Band >C10-C12	< 0.010	< 0.010										SOCOTEC UK	William Riggs		2	ב	
l/gm	TPHFID-Si	Ves		TPH Ali Band >C8-C40	0.010	0.020										ame					
l/gm	TPHFID-Si	Ves		TPH Ali Band >C8-C10	< 0.010	< 0.010										Client Name	Contact				
Units:	Method Codes:	Reporting Limits:		Sample Date	07-May-20 09:20	07-May-20 12:30															
	17000		,	Client Sample Description	1-182 EW 070520 6.50	1-715 EW 070520 6.00				_						SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
				LAB ID Number EX/	2058384	2058385										V)		a	α		

# EXR/303549 Ver. 2

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham

Sample Analysis

D9008-19 M25 Jct 10

W303549

Report No

Customer

Date Logged 12-May-2020

Consignment No W171583

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.

	Potassium as K (Dissolved) VAR	>		
	Sodium as Na (Dissolved) VAR	>		
	Magnesium as Mg (Dissolved) VAR	>		
	Calcium as Ca (Dissolved) VAR	^		
ICPWATVAR	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)	1		
	Lead as Pb MS (Dissolved)	1		
	Copper as Cu MS (Dissolved)	^		
	Cadmium as Cd MS (Dissolved)	>		
	Chromium as Cr MS (Dissolved)	>		
ICPMSW	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	1		
MethodID	Sampled		07/02/20	02/02/20
	Matrix Type		Groundwater	Groundwater
	Description		1-182 6.50	1-715 6.00
	ID Number		EX/2058384	EX/2058385

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Headspace present in the sample container Deviating Sample Key

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Analysis Required

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

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.

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

**SOCOTEC UK Wokingham** D9008-19 M25 Jct 10 Customer

Sample Analysis

Date Logged 12-May-2020

Consignment No W171583

		WSLWIIS	
		TPHFID-Si	
020		SFAS	
ay-20			C
20-M		SFAPI	С
Due	days.	PHEHPLCVL	Phe
In-House Report Due 20-May-2020	ive working days.	PAHMSW	
use R	e wo		CI
n-Ho			Am
_	ditior	KONENS	
	an ad		Во
	up to	ICPWATVAR	Iro
03549	or any subcontracted analysis (identified with a '^') is likely to take up to an additional f	MethodID	
Report No W30	Please note the results fo		

	pH units	>		
WSLM3	Temperature C°			
WSLM20	Biochemical Oxygen Demand	>	Ш	ш
	Dissolved Organic Carbon			
WSLM13	Total Organic Carbon	>		
TPHFID-Si	TPH by GC(Si)	>		
SFAS	Sulphide as S SFA	>		
	Cyanide (Total) as CN SFA	>		
SFAPI	Cyanide (Free) as CN SFA	>		
PHEHPLCVL	Phenols by HPLC (Low Level)			
PAHMSW	PAH GC-MS (16)	>		
	Chromium VI. as Cr (Kone)	>		
	Ammoniacal Nitrogen (Kone)	>		
KONENS	Chloride as CI (Kone)	>		
	Boron as B (Dissolved) VAR	>		
ICPWATVAR	Iron as Fe (Dissolved) VAR	>		
MethodID	Sampled		07/05/20	07/05/20
	Matrix Type		Groundwater	Groundwater
	Description		1-182 6.50	1-715 6.00
	ID Number		EX/2058384	EX/2058385

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time Headspace present in the sample container

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Analysis dependant upon trigger result - Note: due date may be affected if triggered F Sample processing did not commence within the appropriate handling time Requested Analysis Key Analysis Required

Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303549 Ver. 2

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.

Report Number: W/EXR/303549

# **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 NH4, 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/cm<sup>3</sup>@ 15°C

### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/303549 Ver. 2

### **Sample Descriptions**

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

Report Number: W30\_3549

Lab ID Number	Client ID	Description
EX/2058384	1-182 EW 070520 06.50	Groundwater
EX/2058384 EX/2058385	1-182 EW 070520 06.50 1-715 EW 070520 06.00	Groundwater
EX/2008380	1-715 EW 070520 06.00	Groundwater

Appendix A Page 1 of 1 22/05/2020EXR/303549 Ver. 2

### TEST REPORT



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)
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

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.

Date of Issue: 28-May-2020

28-May-2020 EXR/303662

Report Number

Date Printed

**Table Number** 

D9008-19 M25 Jct 10

Sample Analysis

mg/l GROHSA 0.1 No

mg/l GROHSA 0.1

mg/l mg/l GROHSA GROHSA 0.1 0.1

mg/l mg/l GROHSA GROHSA 0.1 0.1 No No

 µg/l
 mg/l
 mg/l
 mg/l
 mg/l

 BTEXHSA
 CALCNH4
 FNH3CALC
 GROHSA
 GROHSA

 15
 0.01
 0.01
 0.1
 0.1

 Yes
 Yes
 No
 No
 No

 µg/l
 µg/l
 µg/l

 BTEXHSA
 BTEXHSA
 BTEXHSA

 10
 5
 5

 Yes
 Yes

 Units:
 μg/l
 μg/l

 Method Codes:
 BTEXHSA
 BTEXHSA

 Method Reporting Limits:
 5
 5

 UKAS Accredited:
 Yes
 Yes

GRO >C8->C10 Aliphatic

GRO >C8->C10

GRO >C7->C8 Aliphatic

GRO > C7 -> C8

GRO >C6->C7 Aliphatic

GRO >C6->C7

GRO >C5->C6 Aliphatic

GRO >C5->C6

Ammonia (Free) as N calc a

Ammoniacal Nitrogen as NH4

**Xylenes** 

Toluene

o Xylene

m/p Xylenes

Ethyl Benzene

Benzene

Sample Date

Client Sample Description

LAB ID Number EX/

< 0.100 < 0.100

> < 0.100 < 0.100

< 0.100 < 0.100

< 0.100 < 0.100

< 0.100 < 0.100

< 0.100 < 0.100

> < 0.100 < 0.100

0.17 0.19

< 0.100 < 0.100 < 0.100

< 0.100

<0.01 <0.01 <0.01

0.90

< 15.0 < 15.0 < 15.0

< 5.0 < 5.0 < 5.0

< 5.0

< 10.0 < 10.0 < 10.0

< 5.0 < 5.0 < 5.0

< 5.0

07-May-20 13:30 11-May-20 11:30 11-May-20 11:30

1-410 EW 070520 7.00 1-226 EW 110520 7.00

2059068 2059069 2059070

1-166 EW 110520 6.00

< 5.0 < 5.0

< 5.0 < 5.0

< 0.100

< 0.100

< 0.100

< 0.100

< 0.100

< 0.100

3	
U	
TEC	

SOCO

**SOCOTEC UK Wokingham** 

Client Name

William Riggs

Contact

Bretby Business Park, Ashby Road

Tel +44 (0) 1283 554400

Burton-on-Trent, Staffordshire, DE15 0YZ

Fax +44 (0) 1283 554422

		Units:		mg/l	l/gm		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	7 17 W	Mathod Benefiting Limits:	GROHSA	ICPMSW	ICPMSW	ICPMSW 0.004	_	+	+	+	+		ICPWATVAR ICPWATVAR	SPWATVAR IC	ICPWATVAR ICPWATVAR	CPWATVAR IC	ICPWATVAR IC	ICPWATVAR
	Memodi	reporting Limits .		0.00	0.00002		0.001	0.00	0.0000	0.001	100.0	0.002	10.0	- ;	0.0	- ;	- ;	- ;
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	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
2059068	1-410 EW 070520 7.00	07-May-20 13:30	< 0.100	<0.001	0.00097	<0.001	0.002	<0.001	<0.00003	0.189	<0.001	0.756	0.03	22	26.6	41	19	247
2059069	1-226 EW 110520 7.00	11-May-20 11:30	< 0.100	<0.001	0.0004	<0.001	0.003	<0.001	<0.00003	0.061	0.002	0.045	0.03	43	90.0	16	4	20
2059070	1-166 EW 110520 6.00	11-May-20 11:30	< 0.100	<0.001	0.00014	<0.001	0.002	<0.001	<0.00003	0.035	<0.001	0.02	0.02	42	0.15	11	2	32
	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	μ					Samp	Sample Analysis	ysis			
			Contact		William Riggs	sbb												
ш	Bretby Business Park, Ashby Road										_	Date Printed	ed		28-1	28-May-2020		
ш	Burton-on-Trent, Staffordshire, DE15 0YZ				2	4		7 70	_		<u></u>	Report Number	mber		EXF	EXR/303662		
	Tel +44 (0) 1283 554400				ב	0300e-13			2			Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

		: Onits	l/bm	ma/l	ma/l		_	_	_		_	_	_	l/a/l	nay	_		l/bn
		Method Codes:	<u> </u>	KONENS	KONENS	KONENS	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	NS.	PAHMSW	PAHMSW	PAHMSW
	Method	Reporting Limits:			-		-	_	-	_	-	-	_			-	_	0.01
		UKAS Accredited :		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date		Ammoniacal Nitrogen as N	Chloride as Cl w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2059068	1-410 EW 070520 7.00	07-May-20 13:30	149	0.7	465	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2059069	1-226 EW 110520 7.00	11-May-20 11:30	136	0.13	29	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2059070	1-166 EW 110520 6.00	11-May-20 11:30	122	0.15	47	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
											ľ							
V)	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wokin	/okingham	٤					Samp	Sample Analysis	ysis			
			Contact		William Riggs	sbb												
ă	Bretby Business Park, Ashby Road											Date Printed	pe		-82	28-May-2020		
М	Burton-on-Trent, Staffordshire, DE15 0YZ					000		7 10	_			Report Number	ımber		EX	EXR/303662		
	Tel +44 (0) 1283 554400				במ	D3008-13	S INIZ	10 10 CZ N	2			Table Number	nber			-		
	Fax +44 (0) 1283 554422										1							

		Units :		_	$\rightarrow$		l/grl		mg/l		mg/l	mg/l	mg/l		-		mg/l	mg/l
	TO 45 M	Method Deporting Limits	PAHMSW 0.01	PAHMSW 0.01	PAHMSW	PAHMSW	_	PHEHPLCVL P	PHEHPLCVL PI	PHEHPLCVL F	PHEHPLCVL	SFAPI	SFAPI	SFAS	I PHFID-Si	IPHFID-Si		IPHFID-Si
		IIKAS Approditod .		0.0	0.0	20.0	2.5	0.000	0.000	0.000	0.000	V.02	V.02	20.02	0.0	0.0	0.0	0.5
	-	UKAS Accredited:	Yes	Yes	Yes	Yes	NO	No	ON ON	NO	NO	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35
2059068	1-410 EW 070520 7.00	07-May-20 13:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	< 0.010	0.042
2059069	1-226 EW 110520 7.00	11-May-20 11:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	< 0.010	< 0.010
2059070	1-166 EW 110520 6.00	11-May-20 11:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	< 0.010	< 0.010
	SOCOTEC		Client Name	lame	SOCOT	SOCOTEC UK Woki	/okingham	E					Samp	Sample Analysis	ysis			
			Contact	ţ	William Riggs	sbb												
	Bretby Business Park, Ashby Road											Date Printed	eq		28-	28-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				2	4 000		1 to 1	C			Report Number	mber		EXI	EXR/303662		
	Tel +44 (0) 1283 554400				במ	D3000-13		NZ3 JCT 10	2		-	Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

																		28-May-2020	EXR/303662	-	
																ysis		-88-	EXI		
pH units	WSLM3	20/	Yes	pH units w	5.2	9	6.2									Sample Analysis					
l/gm	WSLM20	- >	Yes	Biochemical Oxygen Demand w	<2.9	<3.6	<2.9									Samp		ted	umber	mber	
l/gm	WSLM13	2.0	Yes	Total Organic Carbon w	0.97	3.2	5.4											Date Printed	Report Number	Table Number	
l/gm	WSLM13	0.Z	02	Dissolved Organic Carbon w	1.2	3.4	5.5														
l/gm	TPHFID-Si	10.0	Yes	TPH Aro Band >C8-C40	0.067	0.045	0.045														
mg/l	TPHFID-Si	V.01	Yes	TPH Aro Band >C8-C10	< 0.010	< 0.010	< 0.010												<b>C 7</b>	2	
	TPHFID-Si	V.01	Yes	TPH Aro Band >C21-C35	0.040	0.028	0.029									٤			101	19 MZ3 JCT 10	
l/gm	TPHFID-Si	V.01	Yes	TPH Aro Band >C16-C21	< 0.010	< 0.010	< 0.010									Wokingham				N IN	
mg/l	্ত	V.01	Yes	TPH Aro Band >C12-C16	< 0.010	< 0.010	< 0.010										iggs			1-00060	
l/gm	TPHFID-Si	V.01	Yes	TPH Aro Band >C10-C12	< 0.010	< 0.010	< 0.010									SOCOTEC UK	William Riggs		2	ב	
mg/l	TPHFID-Si	V.01	Yes	TPH Ali Band >C8-C40	090.0	0.010	0.012									ame					
l/gm	TPHFID-Si		Yes	TPH Ali Band >C8-C10	< 0.010	< 0.010	< 0.010									Client Name	Contact				
Units:	Method Codes:	eporting Limits:	UKAS Accredited:	Sample Date	07-May-20 13:30	11-May-20 11:30	11-May-20 11:30														
	0 7 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		Ö	Client Sample Description	1-410 EW 070520 7.00	1-226 EW 110520 7.00	1-166 EW 110520 6.00									SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
				LAB ID Number EX/	2059068	2059069	2059070									••		_			

# **Analytical and Deviating Sample Overview** SOCOTEC UK Ltd Environmental Chemistry

**SOCOTEC UK Wokingham** Customer

Sample Analysis

D9008-19 M25 Jct 10

W303662 Report No

Date Logged 14-May-2020

Consignment No W171646

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.

		L			
	Sodium as Na (Dissolved) VAR	^			
	Magnesium as Mg (Dissolved) VAR	^			
	Calcium as Ca (Dissolved) VAR	>			
ICPWATVAR	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)	>			
ICPMSW	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		07/05/20	11/05/20	11/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater
	Description		1-410 7.00	1-226 7.00	1-166 6.00
	ID Number		EX/2059068	EX/2059069	EX/2059070

Potassium as K (Dissolved) VAR

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within 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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303662 Ver. 1

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham Customer

Sample Analysis

W303662

Report No

D9008-19 M25 Jct 10

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

Consignment No W171646 Date Logged 14-May-2020

In-House Report Due 21-May-2020

	pH units	^			
WSLM3	Temperature C°				
WSLM20	Biochemical Oxygen Demand	>	Ш	ш	ш
	Dissolved Organic Carbon				
WSLM13	Total Organic Carbon	1			
TPHFID-Si	TPH by GC(Si)	>			
SFAS	Sulphide as S SFA	>			
	Cyanide (Total) as CN SFA	/			
SFAPI	Cyanide (Free) as CN SFA	1			
PHEHPLCVL	Phenols by HPLC (Low Level)				
PAHMSW	PAH GC-MS (16)	^			
	Chromium VI. as Cr (Kone)	1			
	Ammoniacal Nitrogen (Kone)	1			
KONENS	Chloride as CI (Kone)	1			
	Boron as B (Dissolved) VAR	1			
ICPWATVAR	Iron as Fe (Dissolved) VAR	1			
MethodID	Sampled		07/05/20	11/05/20	11/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater
	Description		1-410 7.00	1-226 7.00	1-166 6.00
	ID Number		EX/2059068	EX/2059069	EX/2059070

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303662 Ver. 1

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.

Report Number: W/EXR/303662

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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	

## **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/cm<sup>3</sup>@ 15°C

### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/303662 Ver. 1

### **Sample Descriptions**

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

Report Number: W30\_3662

Lab ID Number	Client ID	Description
EX/2059068	1-410 EW 070520 7.00	Groundwater
EX/2059069	1-226 EW 110520 7.00	Groundwater Groundwater
EX/2059070	1-166 EW 110520 6.00	Groundwater
		I .

Appendix A Page 1 of 1 28/05/2020EXR/303662 Ver. 1

### **TEST REPORT**



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

vices

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.

Date of Issue: 29-May-2020

_ S				20	00	00	00	00	00											
GF		No	GRO >C8->C10 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100											
mg/l GROHSA	0.1	No	GRO >C8->C10	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100											
mg/l GROHSA	0.1	No	GRO >C7->C8 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100								29-May-2020	EXR/303712	1	
mg/l GROHSA	0.1	No	GRO >C7->C8	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100						lysis		29	EX	Ì	
mg/l GROHSA	0.1	No	GRO >C6->C7 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100						Sample Analysis				Ì	
mg/l GROHSA	0.1	No	GRO >C6->C7	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100						Samp		ted	umber	mber	
mg/l GROHSA	0.1	No	GRO >C5->C6 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100								Date Printed	Report Number	<b>Table Number</b>	
mg/l GROHSA	0.1	No	GRO >C5->C6	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100											
mg/l FNH3CALC		No	Ammonia (Free) as N calc a	0.01	<0.01	<0.01	<0.01	<0.01	<0.01											
mg/l CALCNH4	0.01	Yes	Ammoniacal Nitrogen as NH4	4.50	0.26	90.0	0.14	0.08	0.01									<b>7</b>	2	
µg/l BTEXHSA	15	Yes	Xylenes	< 15.0	< 15.0	< 15.0	< 15.0	< 15.0	< 15.0						E			10 10 10	ווובט טכו וו	
µg/l BTEXHSA	9	Yes	Toluene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0						SOCOTEC UK Wokingham					
μg/l BTEXHSA	2	Yes	o Xylene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0						EC UK V	iggs		01000	-000	
µg/l BTEXHSA	10	Yes	m/p Xylenes	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0						socor	William Riggs		ב	נ	
µg/l BTEXHSA		Yes	Ethyl Benzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0						ame					
µg/l BTEXHSA	9	Yes	Benzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0						Client Name	Contact				
Units:	ng Limits:	UKAS Accredited:	Sample Date	13-May-20	13-May-20	13-May-20	13-May-20	13-May-20	13-May-20											
Metho	Method Reporting Limits:	UKAS A	Client Sample Description	1-508 EW 130520 4.50	1-508 EW 130520 7.00	1-509 EW 130520 6.00	1-509 EW 130520 7.00	1-516 EW 130520S 7.00	1-516 EW 130520D 7.00						SOCOTEC (		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
			LAB ID Number EX/	2059353	2059354	2059355	2059356	2059357	2059358						VI		ш	ш		

		Units:		l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm			l/gm	l/gm			l/gm
	:	Method Codes:	9	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	>	VAR	ICPWATVAR	ICPWATVAR	TVAR	TVAR	ICPWATVAR
	Method h	Reporting Limits		0.001	0.00002	0.001	0.001	0.001	0.00003	0.001	0.001	0.002	0.01	-	0.01	_	_	-
		UKAS Accredited	: Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	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
2059353	1-508 EW 130520 4.50	) 13-May-20	< 0.100	0.002	0.00003	<0.001	0.001	<0.001	<0.00003	0.011	<0.001	0.004	0.05	138	0.53	7	7	39
2059354	1-508 EW 130520 7.00	) 13-May-20	> 0.100	<0.001	0.00003	<0.001	<0.001	<0.001	<0.00003	0.008	<0.001	0.003	0.01	15	0.2	5	5	26
2059355	1-509 EW 130520 6.00	) 13-May-20	0 < 0.100	0.001	0.00005	0.003	0.004	0.002	<0.00003	0.03	<0.001	0.113	0.02	10	1.06	4	9	19
2059356	1-509 EW 130520 7.00	) 13-May-20	0 < 0.100	<0.001	<0.00002	<0.001	0.003	<0.001	<0.00003	0.012	<0.001	0.045	0.05	77	0.04	9	24	53
2059357	1-516 EW 130520S 7.00	0 13-May-20	0 < 0.100	0.002	0.00003	0.002	0.003	0.004	<0.00003	0.007	<0.001	0.019	0.02	21	23.7	12	12	17
2059358	1-516 EW 130520D 7.00	13-May-20	< 0.100	<0.001	<0.00002	<0.001	0.002	0.002	<0.00003	0.025	<0.001	0.03	<0.01	5	0.1	4	2	1
	SOCOTEC		Client Name	lame	SOCOTI	SOCOTEC UK Woki	/okingham	E					Samp	Sample Analysis	lysis			
	5		Contact		William Riggs	SDC							1					
	Bretby Business Park, Ashby Road											Date Printed	ted		29-	29-Mav-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ	2					_	•	•		1	Report Number	umber		EX	EXR/303712		
	Tel +44 (0) 1283 554400				2	D9008-19		MZ5 JCt 10	10		1	Table Number	mber			-		
	Fax +44 (0) 1283 554422										1							

< 0.01 < 0.01

< 0.01

0.01

Fluorene

< 0.01

< 0.01

29-May-2020 EXR/303712

Report Number

**Date Printed** 

**Table Number** 

D9008-19 M25 Jct 10

Sample Analysis

1	
	Ü

# SOCOTE

SOCOTEC UK Wokingham

Client Name

William Riggs

Contact

 mg/l
 mg/l
 mg/l
 mg/l

 SVOCSW
 SVOCSW
 SVOCSW

 0.005
 0.005
 0.005

 No
 No
 No

SFAS 0.02 Yes

SFAPI 0.02 Yes

SFAPI 0.02 Yes

 µg/l
 <th

Method Codes : Method Reporting Limits : UKAS Accredited :

< 0.010

< 0.010

< 0.010

< 0.010

0.03 1.91 0.12

<0.02 <0.02 <0.02 <0.02 <0.02 <0.02

<0.02 <0.02 <0.02 <0.02 <0.02 <0.02

<0.0005 <0.0005 <0.0005 <0.0005 <0.0005

<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005

<0.0005 <0.0005

<0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005

< 0.59 < 0.18

< 0.01

< 0.01

0.02

< 0.01

13-May-20 13-May-20 13-May-20 13-May-20 13-May-20 13-May-20

< 0.01 < 0.01 < 0.01 < 0.01 < 0.01

0.01

0.02

< 0.01

1-508 EW 130520 7.00 1-509 EW 130520 6.00 1-509 EW 130520 7.00

1-508 EW 130520 4.50

2059353 2059354 2059355

<0.0005

< 0.16 < 0.16

<0.0005

<0.0005 <0.0005

< 0.17 < 0.17

< 0.01

< 0.01 < 0.01

< 0.01 < 0.01

1-516 EW 130520S 7.00 1-516 EW 130520D 7.00

2059356

2059357 2059358

0.02

< 0.01

< 0.01 < 0.01 0.02

< 0.01 < 0.01 <0.02

<0.0005

0.02 0.32

1,4-Dichlorobenzene

1,3-Dichlorobenzene

1,2-Dichlorobenzene

1,2,4-Trichlorobenzene

Sulphide as S

Cyanide (Total) as CN

Cyanide (Free) as CN

Trimethylphenols

Phenol

Dimethylphenols

Cresols

Total PAH (Sum of USEPA 16)

Pyrene

Phenanthrene

Naphthalene

Indeno(1,2,3-cd)pyrene

Sample Date

Client Sample Description

LAB ID Number EX/

Bretby Business Park, Ashby Road

															_					
svocsw	No.	3-Nitroaniline		< 0.010																
svocsw	20.0 No	3+4-Methylphenol		< 0.040																
svocsw	70.0 No	2-Nitrophenol		< 0.040													29-May-2020	EXR/303712	1	
svocsw	No.	2-Nitroaniline		< 0.010											lysis		29	ũ		
sVOCSW	ON.	2-Methylphenol		< 0.010											Sample Analysis					
svocsw	NO NO	2-Methylnaphthalene		< 0.004											Sam		nted	lumber	ımber	
svocsw	No.02	2-Chlorophenol		< 0.040													Date Printed	Report Number	Table Number	
svocsw	NO.0	2-Chloronaphthalene		< 0.004																
svocsw	So.o	2,6 Dinitrotoluene		< 0.010																
svocsw	COO.O	2,4-Dinitrotoluene		< 0.010														2	2	
svocsw	- N	2,4-Dinitrophenol		< 0.020											E			10	VI 25 JCT 10	
svocsw	No.UZ	2,4-Dimethylphenol		< 0.040											Vokingha			_		
SVOCSW	ZO.0	2,4-Dichlorophenol		< 0.040											SOCOTEC UK Wokingham	Riggs			D3000-13	
svocsw	No.0	2,4,6 - Trichlorophenol		< 0.040											.ooos	William Riggs		2	2	
svocsw	No.UZ	2,4,5-Trichlorophenol		< 0.040											lame					
SVOCSW				< 0.004											Client Name	Contact				
Units:	Accredited:	Sample Date	13-May-20	13-May-20	13-May-20	13-May-20	13-May-20	13-May-20												
Units:  Method Codes:  Mathod Bonaring Limits	UKAS A	Client Sample Description	1-508 EW 130520 4.50	1-508 EW 130520 7.00	1-509 EW 130520 6.00	1-509 EW 130520 7.00	1-516 EW 130520S 7.00	1-516 EW 130520D 7.00							SOCOTEC	3	Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
		LAB ID Number EX/	2059353	2059354	2059355	2059356	2059357	2059358									Bretb	Burto	Tel	Fax

mg/l	SVOCSW	No No	⊇ Di-n-octylphthalate		< 0.004															
l/gm	SVOCSW	No.	වි Di-n-butylphthalate		< 0.010															
l/gm	SVOCSW	No No	2 Dimethylphthalate		< 0.010													29-May-2020	EXR/303712	1
l/gm	SVOCSW	No.	2 Diethylphthalate		< 0.010											lysis	,	29	í í	
mg/l	SVOCSW	No ON	2 Dibenzofuran		< 0.010											Sample Analysis				
l/gm	SVOCSW	No.00	Ö Dibenzo[a,h]anthracene		< 0.004											Sam		nted	umber	mber
l/gm	SVOCSW	S. S	° Coronene		< 0.100											1		Date Printed	Report Number	Table Number
l/gm	SVOCSW	No.0	2 Chrysene		< 0.004															
l/gm	SVOCSW	No No	S Butylbenzylphthalate		< 0.010															
l/gm	SVOCSW	No No	≥ bis(2-Ethylhexyl)phthalate		< 0.010														<b>5</b>	2
l/gm	SVOCSW	No No	© bis(2-Chloroisopropyl)ether		< 0.010											<b>.</b> E			- t	MZS JCL IU
l/gm	SVOCSW	No No	obis(2-Chloroethyl)ether		< 0.010											SOCOTEC UK Wokingham				
l/gm	SVOCSW	No No	≥ bis(2-Chloroethoxy)methane		< 0.010											EC UK M	sbb		7 000	D3000-13
l/gm	SVOCSW	No No	S Biphenyl		< 0.004											SOCOT	William Riggs		2	בֿ
l/gm	SVOCSW	S CN	S Benzyl alcohol		< 0.010											ame				
l/gm	SVOCSW	- oN	S Benzoic Acid		< 0.200											Client Name	Contact		_	
Units:	od Codes :	ccredited :	OKAS Accredited	13-May-20	13-May-20	13-May-20	13-May-20	13-May-20	13-May-20							_ <del></del>				
	: Mothod Bonorting Limits	UKAS A	UKAS A Client Sample Description	1-508 EW 130520 4.50	1-508 EW 130520 7.00	1-509 EW 130520 6.00	1-509 EW 130520 7.00	1-516 EW 130520S 7.00	1-516 EW 130520D 7.00							SOCOTEC	5	Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400
			LAB ID Number EX/	2059353	2059354	2059355	2059356	2059357	2059358									<u>а</u>	<u>a</u>	

		Units:	_	l/gm	l/gm	$\vdash$	H	H	-	l/gm	l/gm	H	l/gm	l/gm	$\vdash$	-	l/gm	l/gm
	Method Codes:	thod Codes:	S	SVOCSW	SVOCSW	>	>	>	>	>	>	>	>	>	>	≥	>	SVOCSW
	Method Repor	rting Limits:	Ů	0.002	0.002	0.005	0.005	0.005	0.005	0.002	0.005	0.002	0.005	0.005	0.005	0.05	0.002	0.02
	UKAS	UKAS Accredited:	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
LAB ID Number EX/	Client Sample Description	Sample Date	Diphenyl Ether	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno[1,2,3-cd]pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitroso-di-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol
2059353	1-508 EW 130520 4.50	13-May-20																
2059354	1-508 EW 130520 7.00	13-May-20	< 0.004	< 0.004	< 0.004	< 0.010	< 0.010	< 0.010	< 0.010	> 0.004	< 0.010	< 0.004	< 0.010	< 0.010	< 0.010	< 0.100	< 0.004	< 0.040
2059355	1-509 EW 130520 6.00	13-May-20																
2059356	1-509 EW 130520 7.00	13-May-20																
2059357	1-516 EW 130520S 7.00	13-May-20																
2059358	1-516 EW 130520D 7.00	13-May-20																
	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wokingham	kingham	_					Samp	Sample Analysis	ysis			
			Contact		William Riggs	dgs												
	Bretby Business Park, Ashby Road										<u>-</u>	Date Printed	ρέ		29-N	29-May-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				ב	16		7	•		_	Report Number	mber		EXF	EXR/303712		
	Tel +44 (0) 1283 554400				במ	D3000-13		וובט טכן ווס	2		<u> </u>	<b>Table Number</b>	ıber			-		
	Fax +44 (0) 1283 554422										<u> </u>							

< 1.0

1,1,2,2-Tetrachloroethane

	: Units	Units:	l/gu	l/bn	l/6n  /6d  /6d  /6n  /6d	l/grl	l/gn	l/grl	l/gn	l/gu	l/gu	l/grl	l/gn		убп	l/gn	l/gu //gu	l/grl
	Metho	od Codes:	VOCHSAW	VOCHSAW	VOCHSAW \	/OCHSAW V(	OCHSAW VC	VOCHSAW VC	OCHSAW V	VOCHSAW VOCHSAW	OCHSAW V	VOCHSAW VC	OCHSAW V	VOCHSAW VC	VOCHSAW VC	VOCHSAW V	OCHSAW V	OCHSAW
	Method Reportii	ng Limits:	_	_	_	_	_	_	2	_	2	_	2	_	_	_	_	_
	UKAS A	UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane
2059353	1-508 EW 130520 4.50	13-May-20																
2059354	1-508 EW 130520 7.00	13-May-20	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2059355	1-509 EW 130520 6.00	13-May-20																
2059356	1-509 EW 130520 7.00	13-May-20																
2059357	1-516 EW 130520S 7.00	13-May-20																
2059358	1-516 EW 130520D 7.00	13-May-20																
41	SOCOTEC (		Client Name	ame	SOCOTE	SOCOTEC UK Wokingham	kingham	_					Sampl	Sample Analysis	/sis			
			Contact		William Riggs	sbi												
ш	Bretby Business Park, Ashby Road										]	Date Printed	p€		29-IV	29-May-2020		
ш	Burton-on-Trent, Staffordshire, DE15 0YZ				ב ב	76 96	_	101	•		<u>.</u>	Report Number	mber		EXR	EXR/303712		
	Tel +44 (0) 1283 554400				2	D3000-13	_	N 23 JCT 10	<b>&gt;</b>			Table Number	per			_		
	Fax +44 (0) 1283 554422																	

Where individual results are flagged see report notes for status.

Units: Method Codes: Method Reporting Limits:
: Yes
1,4-Dichlorobenzene
13-May-20
13-May-20 < 1.0
13-May-20
13-May-20
13-May-20
13-May-20
Client Name Contact

29-May-2020 EXR/303712

Report Number

Date Printed

**Table Number** 

D9008-19 M25 Jct 10

Sample Analysis

**SOCOTEC UK Wokingham** 

William Riggs

 Units:
 ug/l
 ug/l
 µg/l
 <

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

< 5.0\*

< 1.0

< 1.0

< 5.0

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

1-516 EW 130520D 7.00 1-516 EW 130520S 7.00

2059358

2059357

13-May-20 13-May-20 13-May-20 13-May-20 13-May-20 13-May-20

1-508 EW 130520 4.50 1-508 EW 130520 7.00 1-509 EW 130520 6.00 1-509 EW 130520 7.00

2059353 2059354 2059355 2059356

tert-Butylbenzene

Styrene

sec-Butylbenzene

Propylbenzene

p-Isopropyltoluene

o-Xylene

n-Butylbenzene

Naphthalene

m and p-Xylene

Isopropylbenzene

Hexachlorobutadiene

Ethylbenzene

Dichlorodifluoromethane

Dibromomethane

Dibromochloromethane

Cis-1,2-dichloroethene

Sample Date

Client Sample Description

LAB ID Number EX/

Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422

																=				
																lysis	<b>.</b>	29-May-2020	EXR/303712	-
pH units			Yes	pH units w	6.9	6.5	3.6	7	5.4	3.9						Sample Analysis	•	inted	Number	umber
l/gm			Yes	Biochemical Oxygen Demand w	<2.9	40.7*	<2.9	<2.9	4.2	<2.0								Date Printed	Report Number	Table Number
l/gm	WSLM13	0.2	Yes	Total Organic Carbon w	28	5.9	1.5	10	1.8	0.43						_				
l/gm	WSLM13	0.2	No	Dissolved Organic Carbon w	27	5.1	1.6	10	2.1	0.53										
l/gµ	VOCHSAW	1	Yes	Vinyl Chloride		< 1.0													10	<u> </u>
l/grl	VOCHSAW	1	Yes	Trichlorofluoromethane		< 1.0										E			ر ا	; ;
l/bn	VOCHSAW	1	Yes	Trichloroethene		< 1.0										K Wokingham			-19 M25 Jct 10	
l/gu	VOCHSAW	1	No	trans 1,3-Dichloropropene		< 1.0										EC UK W	sds		D9008-1	· >
l/gn	VOCHSAW	1	Yes	Trans 1,2 Dichloroethene		< 1.0*										SOCOTEC UI	William Riggs		6	)
l/gµ	AW VO		Yes	Toluene		4.0										ıme				
l/gu	VOCHSAW	1	Yes	Tetrachloroethene		0.9										Client Name	Contact			
Units:	od Codes:	ng Limits:	ccredited:	Sample Date	13-May-20	13-May-20	13-May-20	13-May-20	13-May-20	13-May-20								•		
	Meth	Method Reporti	UKAS Accredited :	Client Sample Description	1-508 EW 130520 4.50	1-508 EW 130520 7.00	1-509 EW 130520 6.00	1-509 EW 130520 7.00	1-516 EW 130520S 7.00	1-516 EW 130520D 7.00						SOCOTEC	3	Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422
				LAB ID Number EX/	2059353	2059354	2059355	2059356	2059357	2059358							1	Bre	Bur	∓ Fa

SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham D9008-19 M25 Jct 10

Customer

Sample Analysis

W303712

Report No

## Headspace present in the sample container Analytical and Deviating Sample Overview Zinc as Zn MS (Dissolved) In-House Report Due 25-May-2020 Deviating Sample Key Lead as Pb MS (Dissolved) Consignment No W171775 Date Logged 15-May-2020 Copper as Cu MS (Dissolved) Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days Cadmium as Cd MS (Dissolved) Chromium as Cr MS (Dissolved) Nickel as Ni MS (Dissolved) ICPMSW GROHS **GRO-HSA GCFID (AA)** owever any delay could result in samples becoming deviant whilst being processed in the Ammonia (Free) as N calc sampling dates are missing or matrices unclassified then results will not be ISO 17025 ote: We will endeavour to prioritise samples to complete analysis within holding time; Report A Ammoniacal Nitrogen as NH4 Calc 3/05/20 13/05/20 3/05/20 13/02/20 Sampled MethodID

Groundwater Groundwater Groundwater Groundwater

Groundwater

-509 6.00 -516 7.00

1-509 7.00 1-516 7.00

EX/2059358

EX/2059357

-5084.50-508 7.00

EX/2059353 EX/2059355 EX/2059356

EX/2059354

Groundwater

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)

Matrix Type

Description

ID Number

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis

iccredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

aboratory.

Sample processing did not commence within the appropriate handling time Sample processing did not commence within the appropriate holding time

Requested Analysis Key Analysis Required

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

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.

EXR/303712 Ver. 1

**SOCOTEC UK Wokingham** Customer

Sample Analysis

D9008-19 M25 Jct 10

Report No

Date Logged 15-May-2020

Consignment No W171775

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. W303712

	pH units	>						
WSLM3	Temperature C°							
WSLM20	Biochemical Oxygen Demand	>	ш	Ε	Ε	Ε	Ε	Ε
	Dissolved Organic Carbon							
WSLM13	Total Organic Carbon	>						
VOCHSAW	VOC HSA-GCMS	>						
TPHFID-Si	TPH by GC(Si)	>						
svocsw	svoc							
SFAS	Sulphide as S SFA	>						
	Cyanide (Total) as CN SFA	>						
SFAPI	Cyanide (Free) as CN SFA	>						
PHEHPLCVL	Phenois by HPLC (Low Level)							
PAHMSW	PAH GC-MS (16)	>						
	Chromium VI. as Cr (Kone)	>						
	Ammoniacal Nitrogen (Kone)	>						
KONENS	Chloride as CI (Kone)	>						
	Boron as B (Dissolved) VAR	>						
CPWATVAR	Iron as Fe (Dissolved) VAR	>						
MethodID	Sampled		13/05/20	13/05/20	13/05/20	13/05/20	13/05/20	13/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-508 4.50	1-508 7.00	1-509 6.00	1-509 7.00	1-516 7.00	1-516 7.00
	ID Number		EX/2059353	EX/2059354	EX/2059355		EX/2059357	EX/2059358

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

 Sample processing did not commence within the appropriate handling time
 Requested Analysis Key Sample processing did not commence within the appropriate holding time

Analysis Required

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

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.

EXR/303712 Ver. 1

## **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 NH4, 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

### **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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 19 of 19 EXR/303712 Ver. 1

#### **Sample Descriptions**

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

Report Number: W30\_3712

EX2009083 1-408 EV 1900000 100 Grundwider EX2009084 1-408 EV 1900000 100 Grundwider EX2009086 1-409 EV 1900000 100 Grundwider EX2009086 1-409 EV 1900000 100 Grundwider EX2009086 1-509 EV 1900000 100 Grundwider EX2009086 1-509 EV 19000000 100 Grundwider EX2009086 1-509 EV 19000000 7.00 Grundwider EX2009086 1-509 EV 19000000 7.00 Grundwider EX2009086 1-509 EV 190000000 7.00 Grundwider EX2009086 1-500 EV 1900000000 7.00 Grundwider EX2009086 1-500 EV 190000000 7.00 Grundwider EX20090000000 7.00 Grundwider EX2009086 1-500 EV 190000000 7.0	Lab ID Number	Client ID	Description
EX/2059354     1-508 EW 13052020 7.00     Groundwater       EX/2059355     1-509 EW 13052020 6.00     Groundwater       EX/2059356     1-509 EW 13052020 7.00     Groundwater       EX/2059357     1-516 EW 13052020 8 7.00     Groundwater			
EX/2059355     1-509 EW 13052020 6.00     Groundwater       EX/2059356     1-509 EW 13052020 7.00     Groundwater       EX/2059357     1-516 EW 13052020 S 7.00     Groundwater	EX/2059353	1-508 EW 13052020 4.50	Groundwater
EX/2059355     1-509 EW 13052020 6.00     Groundwater       EX/2059356     1-509 EW 13052020 7.00     Groundwater       EX/2059357     1-516 EW 13052020 S 7.00     Groundwater	EX/2059354	1-508 EW 13052020 7.00	Groundwater
EX/2059356         1-509 EW 13052020 7.00         Groundwater           EX/2059357         1-516 EW 13052020 S 7.00         Groundwater	EX/2059355	1-509 EW 13052020 6.00	Groundwater
EX/2059357 1-516 EW 13052020S 7.00 Groundwater		1-509 EW 13052020 7.00	Groundwater
EX20000389 1.516 EW 19052000 7.00 Groundwater	EY/2050357	1 516 EW 13052020 7.00	Groundwater
EXCORDS 1-518 EW 1000,000.00 / 100	EX/2039337	1-510 EW 130520205 7.00	Croundwater
	EA/2059356	1-516 EW 13052020D 7.00	Groundwater
		1	
		1	
		1	

Appendix A Page 1 of 1 29/05/2020EXR/303712 Ver. 1

#### **TEST REPORT**



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.

		Units:	l/bri					_	l/bm	l/bm	$\vdash$	-	$\vdash$	-	/bw	l/bm	-	l/bm
		Method Codes:	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	CALCNH4 F	'LC	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA
	Metho	Method Reporting Limits:	2				_	_			-				0.1			0.1
		UKAS Accredited:		Yes	Yes	Yes	Yes	Yes	Yes	No	No	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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2059505	1-181 EW 120520 7.00	12-May-20 14:00	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.19	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2059506	1-212 EW 120520 2.00	12-May-20 12:45	< 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	< 0.100	< 0.100	< 0.100
2059507	1-212 EW 120520 7.00	12-May-20 13:33	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.07	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2059508	1-217 EW 120520 6.00	12-May-20 14:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	4.89	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2059509	1-257 EW 120520 4.50	12-May-20 15:20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.10	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
													,					
<u>~)</u>	SOCOTEC		Client Name	ame	2000	IC UK	SOCOTEC UK Wokingham	E					Samp	sample Analysis	lysis			
			Contact		William Riggs	ßs												
ā	Bretby Business Park, Ashby Road											Date Printed	ted		05	05-Jun-2020		
ă	Burton-on-Trent, Staffordshire, DE15 0YZ					000	JCIN O	7 10			1	Report Number	ımber		EX	EXR/303751		
	Tel +44 (0) 1283 554400				2	-000	S INIZ	Danno-Ia IMZ3 JCt IN	2		I	Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

		Units:	$\perp$	l/gm	ш	l/gm	l/gm	l/gm	H	H	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm
		Method Codes:	9	ICPMSW		ICPMSW	ICPMSW	ICPMSW		>	+	_	CPWATVAR II	ICPWATVAR ICPWATVAR ICPWATVAR	CPWATVAR	TVAR	ICPWATVAR IC	ICPWATVAR
	Meth	od Reporting Limits:		0.001	0.00002	0.001	0.001	0.001	0.00003	0.001		0.002	0.01	-	0.01		-	-
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	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
2059505	1-181 EW 120520 7.00	12-May-20 14:00	< 0.100	0.003	0.00019	0.005	<0.001	<0.001	<0.00003	0.075	0.003	0.024	90.0	30	27.2	26	17	211
2059506	1-212 EW 120520 2.00	12-May-20 12:45	< 0.100	0.004	0.0001	0.002	<0.001	<0.001	<0.00003	0.046	0.002	0.005	90.0	31	2.67	41	က	26
2059507	1-212 EW 120520 7.00	12-May-20 13:33	< 0.100	<0.001	0.00023	<0.001	<0.001	<0.001	<0.00003	0.028	<0.001	0.023	90.0	10	<0.01	4	က	6
2059508	1-217 EW 120520 6.00	12-May-20 14:45	< 0.100	0.001	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.002	<0.001	0.003	<0.1	92	20.8	14	<10	<10
	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	٤					Samp	Sample Analysis	lysis			
			Contact	1	William Riggs	sbb												
_ "	Bretby Business Park, Ashby Road											Date Printed	bed		05.	05-Jun-2020		
	Tel +44 (0) 1283 554400				<b>6</b> 0	D9008-19		M25 Jct 10	0		1-	Table Number	nber		5	1		
-	av 141 (0) 1500 0011																	•

		Units:	l/gm	l/gm	-		_	_	_	_	_		_		_	_	l/grl	l/grl
	:	Method Codes:	ICPWATVAR	조	SNE	KONENS	≥	×	>	×	Š	Š	>	×	×	NS.	PAHMSW	PAHMSW
	Method	Reporting Limits:	۳ ;			0.003	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as CI w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2059505	1-181 EW 120520 7.00	12-May-20 14:00	111	0.15	497	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2059506	1-212 EW 120520 2.00	12-May-20 12:45	26	3.5	9	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2059507	1-212 EW 120520 7.00	12-May-20 13:33	34	90'0	12	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2059508	1-217 EW 120520 6.00	12-May-20 14:45	<30	3.8	6	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2059509	1-257 EW 120520 4.50	12-May-20 15:20	29	0.08	22	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	٤					Samp	Sample Analysis	lysis			
			Contact		William Riggs	)ds												
	Bretby Business Park, Ashby Road											Date Printed	pe		-90	05-Jun-2020		
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	Fax +44 (0) 1283 554422																	

		Units:	l/gu	l/gu	l/gu	l/grl	l/grl	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	/bu	mg/l	mg/l	l/gm
	Poct to Market	Method Penarting Limits	_	_	PAHMSW 0.01		PAHMSW 0.16	PHEHPLCVL P	O DODS	HEHPLCVL F	PHEHPLCVL 0 0005	SFAPI	SFAPI		_	_	_	SVOCSW
		IIKAS Accredited		-0.0 -0.0 -0.0 -0.0 -0.0 -0.0 -0.0 -0.0	- 0.0 V V	-0.0 Apx	2.5		000.0	000.0 V	2000.0	Ves	V.02	V.02	20.0	S0.0	00.0 ON	O.00.
		ONAS Accredited :		S	S D	n D	0	0	0	0	2	S D L	S D	S D	2	02	ON	ON.
LAB ID Number EX/	Client Sample Description	Sample Date	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene
2059505	1-181 EW 120520 7.00	12-May-20 14:00	< 0.01	0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.55				
2059506	1-212 EW 120520 2.00	12-May-20 12:45	< 0.01	0.02	< 0.01	< 0.01	< 0.17	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.07	< 0.010	< 0.010	< 0.010	< 0.010
2059507	1-212 EW 120520 7.00	12-May-20 13:33	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02				
2059508	1-217 EW 120520 6.00	12-May-20 14:45	< 0.01	0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.07	< 0.010	< 0.010	< 0.010	< 0.010
2059509	1-257 EW 120520 4.50	12-May-20 15:20	< 0.01	0.02	< 0.01	< 0.01	< 0.17	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.14				
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	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wokingham	/okingha	٤					Samp	Sample Analysis	lysis			
			Contact		William Riggs	SBB												
	Bretby Business Park, Ashby Road											Date Printed	pet		02-	05-Jun-2020		
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		Units:																mg/l
		Method Codes:	SVOCSW	SVOCSW				>	>	>	>		SVOCSW 8	>	SVOCSW	SVOCSW 8	>	SVOCSW
	Method	Method Reporting Limits:				0.02						0.02						0.005
		<b>UKAS Accredited:</b>	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
				:	2						:		:					
LAB ID Number EX/	Client Sample Description	Sample Date	1-Methylnaphthalene	2,4,5-Trichlorophenol	2,4,6 - Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6 Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3+4-Methylphenol	3-Nitroaniline
2059505	1-181 EW 120520 7.00	12-May-20 14:00																
2059506	1-212 EW 120520 2.00	12-May-20 12:45	< 0.004	< 0.040	< 0.040	< 0.040	< 0.040	< 0.020	< 0.010	< 0.010	< 0.004	< 0.040	< 0.004	< 0.010	< 0.010	< 0.040	< 0.040	< 0.010
2059507	1-212 EW 120520 7.00	12-May-20 13:33																
2059508	1-217 EW 120520 6.00	12-May-20 14:45	< 0.004	< 0.040	< 0.040	< 0.040	< 0.040	< 0.020	< 0.010	< 0.010	< 0.004	< 0.040	< 0.004	< 0.010	< 0.010	< 0.040	< 0.040	< 0.010
2059509	1-257 EW 120520 4.50	12-May-20 15:20																
<b>V</b>	SOCOTEC		Client Name	lame	SOCOTI	EC UK W	SOCOTEC UK Wokingham	ڃ					Samp	Sample Analysis	ysis			
			Contact		William Riggs	SDD												
60	Bretby Business Park, Ashby Road										_	Date Printed	P4		05-	05-Jun-2020		
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		Method Codes:	Ś	>	SVOCSW	>	SVOCSW	>	>	>	>	>	>	>	>	>	>	SVOCSW
	Method	Reporting Limits:			0.005													0.002
		IKAS Accredited .		ON ON	ON ON		N CN		ON ON	20.5	No.	No.	No.	NO.	No.	No.	No.	NO.
		UKAS Accredited:	02	ON	02	ON	02	00	ON	ON	9	ON	02	ON N	92	0	02	000
LAB ID Number EX/	Client Sample Description	Sample Date	4,6-Dinitro-2-methylphenol	4-Bromophenyl-phenylether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenol	4-Chlorophenyl-phenylether	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene
2059505	1-181 EW 120520 7.00	12-May-20 14:00																
2059506	1-212 EW 120520 2.00	12-May-20 12:45	< 0.100	< 0.010	< 0.010	< 0.010	< 0.040	< 0.010	< 0.010	< 0.100	< 0.004	< 0.004	> 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
2059507	1-212 EW 120520 7.00	12-May-20 13:33																
2059508	1-217 EW 120520 6.00	12-May-20 14:45	< 0.100	< 0.010	< 0.010	< 0.010	< 0.040	< 0.010	< 0.010	< 0.100	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
2059509	1-257 EW 120520 4.50	12-May-20 15:20																
	SOCOTEC		Client Name	ame	SOCOTI	SOCOTEC UK Wokingham	okinghan	u					Samp	Sample Analysis	Vsis			
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			COIIIACI		William	- And							}					
ш	Bretby Business Park, Ashby Road											Date Printed	eq		02-	05-Jun-2020		
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	Fax +44 (0) 1283 554422																	

< 0.004

Di-n-octylphthalate

< 0.004

		Units:	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm
		Method Codes:	Ś	SVOCSW	SVOCSW	>	≯	>	>	>	>	>	>	>	>	>	SVOCSW	SVOCSW
	Method	Reporting Limits:	0.002	0.002	0.002	0.005	0.005	0.005	0.005	0.002	0.005	0.002	0.005	0.005	0.005	0.05	0.002	0.02
		UKAS Accredited:		No	No	No	9	No	No	No	N <sub>o</sub>	No	N <sub>o</sub>	8	N S	9 N	No	No
LAB ID Number EX/	Client Sample Description	Sample Date	Diphenyl Ether	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno[1,2,3-cd]pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitroso-di-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol
2059505	1-181 EW 120520 7.00	12-May-20 14:00																
2059506	1-212 EW 120520 2.00	12-May-20 12:45	< 0.004	< 0.004	< 0.004	< 0.010	< 0.010	< 0.010	< 0.010	< 0.004	< 0.010	< 0.004	< 0.010	< 0.010	< 0.010	< 0.100	< 0.004	< 0.040
2059507	1-212 EW 120520 7.00	12-May-20 13:33																
2059508	1-217 EW 120520 6.00	12-May-20 14:45	< 0.004	< 0.004	< 0.004	< 0.010	< 0.010	< 0.010	< 0.010	> 0.004	< 0.010	< 0.004	< 0.010	0.018	< 0.010	< 0.100	< 0.004	< 0.040
2059509	1-257 EW 120520 4.50	12-May-20 15:20																
S	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	r					Samp	Sample Analysis	ysis			
			Contact		William Riggs	dgs												
Bre	Bretby Business Park, Ashby Road										_	Date Printed	pa		-90	05-Jun-2020		
Bu	Burton-on-Trent, Staffordshire, DE15 0YZ				2	4 000		101			_	Report Number	mber		EXF	EXR/303751		
<u> </u>	Tel +44 (0) 1283 554400				בֿ	D3000-13 IN		72 351 10	>		•	<b>Table Number</b>	pher			1		
щ	Fax +44 (0) 1283 554422																	

Sample Analysis d 05-Jun-2 hber ExR/303	Samp Date Printed Report Number Table Number	SOCOTEC UK Wokingham William Riggs  D9008-19 M25 Jct 10	Client Name Contact	SOCOTEC  Bretty Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422
-unc-90	Date Printed			Bretby Business Park, Ashby Road
		Iliam Riggs		
ple Analysis	Samp	OCOTEC UK Wokingham		SOCOTEC

		Units:		1/Brd 1/	l/grl	l/gu	l/grl				l/grl	l/gu					l/grl
	Method	Method Reporting Limits	VOCHSAW VOCHSAW VOCHSAW	SAW VOCHSAW	VOCHSAM 1	VOCHSAW \	VOCHSAW VO	Α	VOCHSAW VC	ΑM	VOCHSAW VO	ΑW	VOCHSAW V	VOCHSAW VOC	VOCHSAW VC	VOCHSAW V	VOCHSAW
		UKAS Accredited :	Yes Yes	. Yes	Yes	Yes	Yes	Yes	Yes	2 8	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	1,1-Dichloroethane 1,1,2-Trichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane
2059505	1-181 EW 120520 7.00	12-May-20 14:00															
2059506	1-212 EW 120520 2.00	12-May-20 12:45	< 1.0 < 1.0	0.0 < 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2059507	1-212 EW 120520 7.00	12-May-20 13:33															
2059508	1-217 EW 120520 6.00	12-May-20 14:45	< 1.0 < 1.0	.0 < 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2059509	1-257 EW 120520 4.50	12-May-20 15:20															
(V)	SOCOTEC		Client Name	soco	SOCOTEC UK Wokingham	okinghan	_					Sampl	Sample Analysis	ysis			
			Contact	William Riggs	Riggs												
ď	Bretby Business Park, Ashby Road										Date Printed	ρķ		05-Ju	05-Jun-2020		
ñ	Burton-on-Trent, Staffordshire, DE15 0YZ			Č	7		7 70	•		ď	Report Number	mber		EXR/3	EXR/303751		
	Tel +44 (0) 1283 554400			ă	D3006-13 IN		75 JCt 10	<b>-</b>		_	Table Number	lber			-		
	Fax +44 (0) 1283 554422																

	Method R	Ď	Client Sample Description	2059505 1-181 EW 120520 7.00	2059506 1-212 EW 120520 2.00	2059507 1-212 EW 120520 7.00	2059508 1-217 EW 120520 6.00	2059509 1-257 EW 120520 4.50								SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
	Method Reporting Limits:	UKAS Accredited:	Sample Date	12-May-20 14:00	12-May-20 12:45	12-May-20 13:33	12-May-20 14:45	12-May-20 15:20													
l/bn	VOCHSAW 1	Yes Yes	2- Chlorotoluene 1,4-Dichlorobenzene		< 1.0 < 1.0		< 1.0 < 1.0									Client Name	Contact				
l/gu  /gu  /gu	SAW VOCHSAW	No	2,2-Dichloropropane		> 1.0*		> 1.0*									SOCOTECU	William Riggs		Č	בֿ	
l/gu	/ VOCHSAW \	Yes	4-Chlorotoluene		< 1.0		< 1.0										Riggs		77 0000	D3008-13	
l/grl	OCHSAW V <sub>1</sub>	Yes	Benzene		< 1.0		< 1.0									K Wokingham				8-19 MZ5 JCt 10	
l/gµ	OCHSAW VC	Yes	Bromobenzene		< 1.0		< 1.0												10.40		
l/gu	JCHSAW VC	Yes	Bromochloromethane		< 1.0		< 1.0									_			•	<b>&gt;</b>	
	VOCHSAW VOC	Yes	Bromodichloromethane		< 1.0		< 1.0									_					
n //ɓn	VOCHSAW VOCH	Yes	Bromoform		< 1.0		< 1.0 <											Dat	Rep	Tab	
l/ɓn  /ɓn	HSAW VOCHS	No Yes	Carbon Tetrachloride  Bromomethane		1.0 < 1.0		1.0 < 1.0									S		Date Printed	Report Number	Table Number	
//bn //	SAW VOCHSAW	s Yes	Chlorobenzene		0 < 1.0		0 < 1.0									Sample Analysis			_		
	VOCHSAW	Yes	Chloroethane		< 1.0		< 1.0									nalysis			ш		
l/bn	VOCHSAW 1	Yes	Chloroform		< 1.0		< 1.0									-		05-Jun-2020	EXR/303751	1	
l/bn	VOCHSAW VO	Yes	Chloromethane		< 1.0*		< 1.0*									_					

< 1.0

cis 1,3-Dichloropropene

< 1.0

		Units:		l/gu	l/gu	l/bn	l/grl	l/ɓn	l/gu	l/grl	l/ɓn	l/grl	l/6rl	l/gu	/в́п	l/gu	l/gu	l/grl
	:	Method Codes:		CHSAW V	OCHSAW VC	OCHSAW VC	CHSAW VO	CHSAW VC	CHSAW VO	CHSAW VC	CHSAW VC	CHSAW VC	OCHSAW V	OCHSAW \	/OCHSAW \	OCHSAW V	OCHSAW V	OCHSAW
	Method	Reporting Limits:		-	-	-	-	2		-	2	-	-	-	-	-	-	-
		UKAS Accredited:	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	2	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Cis-1,2-dichloroethene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	m and p-Xylene	Naphthalene	n-Butylbenzene	o-Xylene	p-Isopropyltoluene	Propylbenzene	sec-Butylbenzene	Styrene	tert-Butylbenzene
2059505	1-181 EW 120520 7.00	12-May-20 14:00																
2059506	1-212 EW 120520 2.00	12-May-20 12:45	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2059507	1-212 EW 120520 7.00	12-May-20 13:33																
2059508	1-217 EW 120520 6.00	12-May-20 14:45	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2059509	1-257 EW 120520 4.50	12-May-20 15:20																
				$\dagger$							1					+	=	1
	SOCOTEC		Client Name		SOCOTE	SOCOTEC UK Wokingham	kingham						Samp	Sample Analysis	ysis			
			Contact		William Riggs	st												
•	Bretby Business Park, Ashby Road										Ω	Date Printed	þ.		05-	05-Jun-2020		
-	Burton-on-Trent, Staffordshire, DE15 0YZ					700 40		104 40	_		8	Report Number	mber		EXF	EXR/303751		
	Tel +44 (0) 1283 554400				באכו	D3000-13		ווובט טכן ווס			Ĕ	Table Number	per			-		
	Fax +44 (0) 1283 554422																	

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10

W303751

In-House Report Due 04-Jun-2020 Date Logged 15-May-2020

Consignment No W171800

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days. Report No

	Potassium as K (Dissolved) VAR	>					
	Sodium as Na (Dissolved) VAR	^					
	Magnesium as Mg (Dissolved) VAR	1					
	Calcium as Ca (Dissolved) VAR	1					
ICPWATVAR	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)	>					
ICPMSW	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		12/05/20	12/05/20	12/05/20	12/05/20	12/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-181 7.00	1-212 2.00	1-212 7.00	1-217 6.00	1-257 4.50
	ID Number		EX/2059505	EX/2059506	EX/2059507	EX/2059508	EX/2059509

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303751 Ver. 1

SOCOTEC UK Wokingham

Customer

Sample Analysis

D9008-19 M25 Jct 10

Date Logged 15-May-2020

In-House Report Due 04-Jun-2020

Consignment No W171800

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days. W303751 Report No

	pH units	>					
WSLM3	Temperature C°						
WSLM20	Biochemical Oxygen Demand	>	ш	В	Е	Ε	В
	Dissolved Organic Carbon						
WSLM13	Total Organic Carbon	>					
VOCHSAW	VOC HSA-GCMS	>		Ε		Е	
TPHFID-Si	TPH by GC(Si)	>					
svocsw	svoc						
SFAS	Sulphide as S SFA	>					
	Cyanide (Total) as CN SFA	>					
SFAPI	Cyanide (Free) as CN SFA	^					
PHEHPLCVL	Phenols by HPLC (Low Level)						
PAHMSW	PAH GC-MS (16)	>					
	Chromium VI. as Cr (Kone)	>					
	Ammoniacal Nitrogen (Kone)	>					
KONENS	Chloride as CI (Kone)	>					
	Boron as B (Dissolved) VAR	^					
ICPWATVAR	Iron as Fe (Dissolved) VAR	>					
MethodID	Sampled		12/05/20	12/02/20	12/02/20	12/05/20	12/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-181 7.00	1-212 2.00	1-212 7.00	1-217 6.00	1-257 4.50
	ID Number		EX/2059505	EX/2059506	EX/2059507	EX/2059508	EX/2059509

The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sample was received without the correct preservation for this analysis Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within 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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303751 Ver. 1

## **Additional Report Notes**

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
ICPWATVAR		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		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	Method Description
		Basis	·
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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

### **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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 19 of 19 EXR/303751 Ver. 1

#### **Sample Descriptions**

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

Report Number: W30\_3751

Lab ID Number	Client ID	Description
		Groundwater
EX/2059505	1-181 EW 12052020 7.00	Groundwater
EX/2059506	1-212 EW 12052020 2.00	Groundwater
EX/2059507	1-212 EW 12052020 7.00	Groundwater
EX/2059508	1-217 EW 12052020 6.00	Groundwater
EX/2059509	1-257 EW 12052020 4.50	Groundwater
	<u> </u>	

Appendix A Page 1 of 1 05/06/2020EXR/303751 Ver. 1

#### **TEST REPORT**



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.

GRO >C8->C10 Aliphatic

l/gm	ICPWATVAR	1	Yes	Sodium as Na (Dissolved) a	35	13	10	15													
l/gm	ICPWATVAR	1	Yes	Potassium as K (Dissolved) a	3	2	4	7										_		_	
l/gm	ICPWATVAR ICPWATVAR ICPWATVAR ICPWATVAR ICPWATVAR	1	Yes	Magnesium as Mg (Dissolved) a	3	7	5	18										01-Jun-2020	EXR/303829	-	
l/gm	ICPWATVAR	0.01	Yes	Iron as Fe (Dissolved) a	0.25	90.0	0.21	90.0								lysis		10	Ë		
l/gm	ICPWATVAR	1	Yes	Calcium as Ca (Dissolved) a	7	3	9	13								Sample Analysis					
l/gm	ICPWATVAR	0.01	Yes	Boron as B (Dissolved) a	0.03	0.02	<0.01	0.02								Sam		nted	lumber	ımber	
l/gm	ICPMSW	0.002	Yes	Zinc as Zn (Dissolved)	0.038	0.052	0.007	0.132										Date Printed	Report Number	Table Number	
l/gm	ICPMSW	0.001	Yes	Selenium as Se (Dissolved)	<0.001	<0.001	<0.001	0.001													
l/gm	ICPMSW	0.001	Yes	Nickel as Ni (Dissolved)	0.008	0.032	0.023	0.058													
l/gm	ICPMSW	0.00003	Yes	Mercury as Hg (Dissolved)	<0.00003	<0.00003	<0.00003	<0.00003											•	10	
l/gm	ICPMSW	0.001	Yes	Lead as Pb (Dissolved)	<0.001	<0.001	<0.001	0.001								ш ш			101	MZ5 JCt 10	
l/gm	ICPMSW	0.001	Yes	Copper as Cu (Dissolved)	<0.001	0.002	<0.001	0.004								SOCOTEC UK Wokingham					
l/gm	ICPMSW	0.001	Yes	Chromium as Cr (Dissolved)	0.005	0.002	<0.001	0.002								EC UK V	iggs		000	79008-19	
l/gm	ICPMSW	0.00002	Yes	Cadmium as Cd (Dissolved)	<0.00002	0.00012	<0.00002	0.00154								SOCOT	William Riggs		2	ĩ	
l/gm	ICPMSW	0.001	Yes	Arsenic as As (Dissolved)	0.002	<0.001	<0.001	0.001								ame					
l/gm	ß			GRO-HSA o	< 0.100	< 0.100	< 0.100	< 0.100								Client Name	Contact				
: Onits	Method Codes:	Reporting Limits:	UKAS Accredited :	Sample Date	14-May-20 14:00	14-May-20 11:45	14-May-20 13:00	14-May-20 10:00													
		Method F	٥.	Client Sample Description	1-259 EW 140520 6.30	1-541 EW 140520 5.00	1-541 EW 140520 17.00	1-737 EW 140520 7.50								SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
				LAB ID Number EX/	2059950	2059951	2059952	2059953								<b>31</b>		ш	ш		

< 0.01 < 0.01 < 0.01

< 0.01

Fluorene

01-Jun-2020 EXR/303829

Report Number

**Date Printed** 

**Table Number** 

Sample Analysis

SOCOTEC UK Wokingham

William Riggs

 mg/l
 mg/l
 mg/l
 mg/l

 TPHFID-Si
 TPHFID-Si
 TPHFID-Si

 0.01
 0.01
 0.01

 Yes
 Yes
 Yes

SFAS 0.02 Yes

SFAPI 0.02 Yes

SFAPI 0.02 Yes

 Units:
 µg/l
 <

< 0.010 < 0.010 < 0.010

< 0.010 < 0.010 < 0.010

< 0.010\* < 0.010\*

<0.02 0.04

< 0.010

< 0.010\* < 0.010\*

< 0.010

< 0.010 < 0.010 < 0.010 < 0.010

<0.02 <0.02

<0.02 <0.02 <0.02 <0.02

<0.02 <0.02 <0.02 <0.02

<0.0005 <0.0005 <0.0005 <0.0005

<0.0005

<0.0005

< 0.19

< 0.01 < 0.01

< 0.01 < 0.01 < 0.01 < 0.01

0.04 0.01 0.01

< 0.01 < 0.01 < 0.01 < 0.01

14-May-20 14:00 14-May-20 11:45 14-May-20 13:00 14-May-20 10:00

> 1-541 EW 140520 5.00 1-541 EW 140520 17.00

1-259 EW 140520 6.30

2059950 2059951 2059952 1-737 EW 140520 7.50

2059953

<0.0005 <0.0005 <0.0005

<0.0005 <0.0005 <0.0005

<0.0005 <0.0005

<0.0005 <0.0005

< 0.16 < 0.16

> < 0.01 < 0.01

< 0.16

< 0.01

TPH Ali Band >C21-C35

TPH Ali Band >C16-C21

TPH Ali Band >C12-C16

TPH Ali Band >C10-C12

Sulphide as S

Cyanide (Total) as CN

Cyanide (Free) as CN

Trimethylphenols

Phenol

Dimethylphenols

Cresols

Total PAH (Sum of USEPA 16)

Pyrene

Phenanthrene

Naphthalene

Indeno(1,2,3-cd)pyrene

Sample Date

Client Sample Description

LAB ID Number EX/

Where individual results are flagged see report notes for status.

		Units:	ma/l	ma/l	l/bm	ma/l	ma/l			l/bm	l/bm	ma/l	ma/l	pH units		
		Method Codes:	TPHFID-Si	TPHFID-Si	į	iŞ-	ij	ij	ij	iŞ-	13	13	WSLM20	WSLM3		
		Method Reporting Limits:		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.2	0.2	_			
		UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes		
LAB ID Number EX/	Client Sample Description	Sample Date	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Dissolved Organic Carbon w	Total Organic Carbon w	Biochemical Oxygen Demand w	pH units w		
2059950	1-259 EW 140520 6.30	.30 14-May-20 14:00	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	11	12	<2.9	5.6		
2059951	1-541 EW 140520 5.00	1.00 14-May-2011:45	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.019	< 0.010	0.020	1.5	1.3	<2.0	4		
2059952	1-541 EW 140520 17.00	7.00 14-May-2013:00	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.52	0.40	<3.6	3.7		
2059953	1-737 EW 140520 7.50	.50 14-May-20 10:00	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	2.0	1.8	<1.0	4.1		
Š	SOCOTEC (		Client Name	me	SOCOTI	SOCOTEC UK Wol	okingham	_					Samp	Sample Analysis	ysis	
			Contact		William Riggs	sbb										
Bret	Bretby Business Park, Ashby Road										٥	Date Printed	p		01-Jun-2020	
Burt	Burton-on-Trent, Staffordshire, DE15 0YZ	OYZ			2	7 000	_	7 40	Ç		ď	Report Number	nber		EXR/303829	
<u>Tel</u>	Tel +44 (0) 1283 554400				במ	D3008-13		INZS JCT TU	<b>5</b>		ř	Table Number	ber		1	
Fa	Fax +44 (0) 1283 554422															

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10

Date Logged 19-May-2020

Consignment No W171877

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. W303829 Report No

	Potassium as K (Dissolved) VAR	>				
	Sodium as Na (Dissolved) VAR	>				
	Magnesium as Mg (Dissolved) VAR	>				
	Calcium as Ca (Dissolved) VAR	>				
ICPWATVAR	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)	>				
ICPMSW	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		14/05/20	14/05/20	14/05/20	14/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-259 6.30	1-541 5.00	1-541 17.00	1-737 7.50
	ID Number		EX/2059950	EX/2059951	EX/2059952	EX/2059953

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

Analysis dependant upon trigger result - Note: due date may be affected if triggered Analysis Required

Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303829 Ver. 1

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10

Date Logged 19-May-2020

Consignment No W171877

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. W303829 Report No

	pH units	>				
NSLM3	Temperature C°					
WSLM20	Biochemical Oxygen Demand	>	Ε	Ε	Ε	Е
	Dissolved Organic Carbon					
WSLM13	Total Organic Carbon	>				
PHFID-Si	TPH by GC(Si)	>				
SFAS	Sulphide as S SFA	1				
	Cyanide (Total) as CN SFA	^				
SFAPI	Cyanide (Free) as CN SFA	^				
PHEHPLCVL	Phenols by HPLC (Low Level)					
PAHMSW	PAH GC-MS (16)	>				
	Chromium VI. as Cr (Kone)	>				
	Ammoniacal Nitrogen (Kone)	>				
CONENS	Chloride as CI (Kone)	^				
	Boron as B (Dissolved) VAR	^				
CPWATVAR	Iron as Fe (Dissolved) VAR	^				
MethodID	Sampled		14/05/20	14/05/20	14/05/20	14/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-259 6.30	1-541 5.00	1-541 17.00	1-737 7.50
	ID Number		EX/2059950	EX/2059951		EX/2059953

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

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is sampling dates are missing or matrices unclassified then results will not be ISO 17025

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aboratory.

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Analysis dependant upon trigger result - Note: due date may be affected if triggered Analysis Required

Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/303829 Ver. 1

## **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.		

Page 9 of 11

## **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 NH4, 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	·
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	
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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/303829 Ver. 1

#### **Sample Descriptions**

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

Report Number: W30\_3829

E-V0000000 1-266-FW 1-9000000 0-30 E-V0000000 1-266-FW 1-9000000 0-30 E-V0000000 1-266-FW 1-900000 0-30 E-V00000000 1-266-FW 1-900000 0-30 E-V00000000 1-266-FW 1-900000 0-30 E-V000000000 1-266-FW 1-900000 0-30 E-V00000000 1-266-FW 1-900000 0-30 E-V00000000 1-266-FW 1-900000 0-30 E-V00000000 1-266-FW 1-900000 0-30 E-V000000000 1-266-FW 1-9000000 0-30 E-V00000000 1-266-FW 1-9000000000000000000000000000000000000	Lab ID Number	Client ID	Description
FX/2059951 1-541 FW 14052020 5 00 Groundwater			
EX.0009053 1.54 EV 1405200 7.50 Grundwater  EX.0009053 1.737 EV 1405200 7.50 Grundwater	EX/2059950	1-259 EW 14052020 6.30	Groundwater
EXCRISES 1-1-1/27 EW 14/05/2007 300 Groundwater  EXCRISES 1-1-1/27 EW 14/05/200 Groundwater  EXCRISES 1-1-1/27 EW 14/05/200 Groundwater	EX/2059951	1-541 EW 14052020 5.00	Groundwater
EX20059953 1.737 EW 14053020 7.50 Groundweller	EX/2059952	1-541 EW 14052020 17.00	Groundwater
	EX/2059953	1-737 EW 14052020 7.50	Groundwater

Appendix A Page 1 of 1 01/06/2020EXR/303829 Ver. 1

#### **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 Operations Manager Energy & Waste Services

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.

Date of Issue: 10-Jun-2020

		· Inits ·	/011	/טוו	/טוו	l/011	/un		l/bm	l/bu	l/bm	l/bm	l/bm	l/bu	lom	l/bm	l/bm	ma/l
		Method Codes:	: BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	CALCNH4 F	C	Ϋ́	SA	GROHSA	GROHSA	GROHSA	SA	SA	GROHSA
	Method	Reporting Limits:		2	10	2	2					-	0.1	0.1	0.1			0.1
		UKAS Accredited:			Yes		Yes	Yes	Yes	No	2	No	N <sub>o</sub>	No	No.	N <sub>o</sub>	2	N <sub>S</sub>
LAB ID Number EX/	Client Sample Description	Sample Date			m/p Xylenes		Toluene	Xylenes	Ammoniacal Nitrogen as NH4	Ammonia (Free) as N calc a	GRO >C5->C6	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2061859	1-174 EW 210520 6.00	21-May-20 14:15	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.05	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2061860	1-174 EW 210520 14.00	21-May-20 15:15	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.10	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2061861	1-235 EW 210520 7.00	21-May-20 10:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.78	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2061862	1-237 EW 210520 8.00	21-May-20 12:45	< 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	< 0.100	< 0.100	< 0.100
2061863	1-237 EW 210520 18.00	21-May-20 18:00	< 5.0	< 5.0	< 10.0	< 5.0	10	< 15.0	0.03	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
• • • • • • • • • • • • • • • • • • • •	SOCOTEC		Client Name	ame	SOCOT	EC UK V	SOCOTEC UK Wokingham	٦					Samp	Sample Analysis	lysis			
			Contact		William Ridds	idds												
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	Burton-on-Trent, Staffordshire, DE15 0YZ				2	D9008-19		M25 Ict 10	_		<u>  </u>	Report Number	ımper		EX	EXR/304177		
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	Fax +44 (0) 1283 554422																	

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		Method Codes:	Ü	ICPMSW	>	ICPMSW	NSW	ICPMSW	+	+	ICPMSW	>	PWATVAR IC	ICPWATVAR ICPWATVAR	PWATVAR IC	ICPWATVAR ICPWATVAR ICPWATVAR	PWATVAR	PWATVAR
	LottoM	Method Benorting Limits		0.001	+	000	+	+	20000	1000	+		0.01	1	0.01	7	-	1
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L				Arse	Cadm	Chror	Сор	Lea	Merc	Nic	Seler	Zir	Bore	Calci	Iron	Magnes	Potass	Sodiu
AB ID Number EX/	Client Sample Description	Sample Date	GRO-HSA o	enic as As (Dissolved)	nium as Cd (Dissolved)	nium as Cr (Dissolved)	per as Cu (Dissolved)	ad as Pb (Dissolved)	cury as Hg (Dissolved)	kel as Ni (Dissolved)	nium as Se (Dissolved)	nc as Zn (Dissolved)	on as B (Dissolved) a	um as Ca (Dissolved) a	n as Fe (Dissolved) a	sium as Mg (Dissolved) a	sium as K (Dissolved) a	um as Na (Dissolved) a
2061859	1-174 EW 210520 6.00	21-May-20 14:15	< 0.100	0.003	0.00033	0.003	0.001	<0.001	<0.00003	0.115	0.002	0.102	0.03	7	0.61	15	10	56
2061860	1-174 EW 210520 14.00	21-May-20 15:15	< 0.100	<0.001	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.016	<0.001	0.017	<0.01	12	38.6	11	10	51
2061861	1-235 EW 210520 7.00	21-May-20 10:45	< 0.100	<0.001	0.00005	<0.001	<0.001	<0.001	<0.00003	0.023	<0.001	0.033	0.01	31	<0.01	7	28	16
2061862	1-237 EW 210520 8.00	21-May-20 12:45	< 0.100	<0.001	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.001	<0.001	<0.002	0.02	75	0.13	1	4	14
2061863	1-237 EW 210520 18.00	21-May-20 18:00	< 0.100	<0.001	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.002	<0.001	<0.002	0.11	78	0.63	28	6	29
			]															
	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	٦					Sampl	Sample Analysis	ysis			
			Contact		William Riggs	SDD												
	Bretby Business Park, Ashby Road											Date Printed	þ.		10-7	10-Jun-2020		
	Burton-on-Trent. Staffordshire. DE15 0YZ										<u> </u>	Report Number	mher		FXR	EXR/304177		
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	Fax +44 (0) 1283 554422											apie ivali	<u> </u>			-		
_	12r - (v) - t- (v) - t- (v)												_			_		_

< 0.01 < 0.01

0.48 0.60

Fluorene

TPH Ali Band >C21-C35

																	lysis		10-Jun-2020	EXR/304177	-	
pH units	WSLM3		Yes	pH units w	3.6	5.8	5.8	7.1	7.3								Sample Analysis					
ma/l	WSLM20	_	Yes	Biochemical Oxygen Demand w	<2.0	5.5	<2.9	<3.6	105.5*								Samp		ted	umber	mber	
ma/l	WSLM13	0.2	Yes	Total Organic Carbon w	1.7	1.9	0.43	0.55	99										Date Printed	Report Number	<b>Table Number</b>	
ma/l	WSLM13	0.2	No	Dissolved Organic Carbon w	1.6	2.0	0.52	0.67	58													
ma/l	TPHFID-Si	0.01	Yes	TPH Aro Band >C8-C40	0.025	0.028	0.017	< 0.010	0.040													
ma/l	TPHFID-Si	0.01	Yes	TPH Aro Band >C8-C10	0.016	0.014	< 0.010	< 0.010	0.026											<b>C</b>	2	
	TPHFID-Si		Yes	TPH Aro Band >C21-C35	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010								٤			10	2000	
ma/l	TPHFID-Si	0.01	Yes	TPH Aro Band >C16-C21	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010								Wokingham			CMO	OL 13C CZINI GI	
ma/l	T		Yes	TPH Aro Band >C12-C16	< 0.010	< 0.010	< 0.010	< 0.010	0.010									iggs		7 000		
ma/l	TPHFID-Si	0.01	Yes	TPH Aro Band >C10-C12	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010								SOCOTEC UK	William Riggs		ב	ב	
ma/l	ίŞ		Yes	TPH Ali Band >C8-C40	0.010	< 0.010	< 0.010	0.014	0.010								ame					
ma/l	TPHFID-Si	0.01	Yes	TPH Ali Band >C8-C10	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010								Client Name	Contact				
Units:	Method Codes:	Reporting Limits:	UKAS Accredited:	Sample Date	21-May-20 14:15	21-May-20 15:15	21-May-20 10:45	21-May-20 12:45	21-May-20 18:00													
		Method F	יב	Client Sample Description	1-174 EW 210520 6.00	1-174 EW 210520 14.00	1-235 EW 210520 7.00	1-237 EW 210520 8.00	1-237 EW 210520 18.00								SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
				LAB ID Number EX/	2061859	2061860	2061861	2061862	2061863								S		Bret	Burt	Те	Fa

SOCOTEC UK Wokingham

Customer

Sample Analysis

D9008-19 M25 Jct 10

Date Logged 28-May-2020

Consignment No W172231

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. W304177 Report No

	Potassium as K (Dissolved) VAR	>					
	Sodium as Na (Dissolved) VAR	>					
	Magnesium as Mg (Dissolved) VAR	>					
	Calcium as Ca (Dissolved) VAR	>					
CPWATVAR	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)	>					
CPMSW	Nickel as Ni MS (Dissolved)	>					
GROHSA	GRO-HSA GCFID (AA)						
NH3CALC	Ammonia (Free) as N calc						
CUSTSERV	Report A						
CALCNH4	Ammoniacal Nitrogen as NH4 Calc	^					
MethodID	Sampled		21/05/20	21/05/20	21/05/20	21/05/20	21/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-174 6.00	1-174 14.00	1-235 7.00	1-237 8.00	1-237 18.00
	ID Number		EX/2061859	EX/2061860	EX/2061861	EX/2061862	EX/2061863

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within 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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/304177 Ver. 1

Page 7 of 11

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10

Date Logged 28-May-2020

Consignment No W172231

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. W304177 Report No

	pH units	>	ш	ш	ш	Ш	ш
WSLM3	Temperature C°		ш	ш	Ш	В	ш
WSLM20	Biochemical Oxygen Demand	>	ш	ш	Ш	В	Ш
	Dissolved Organic Carbon						
WSLM13	Total Organic Carbon	1					
TPHFID-Si	TPH by GC(Si)	1					
SFAS	Sulphide as S SFA	^					
	Cyanide (Total) as CN SFA	^					
SFAPI	Cyanide (Free) as CN SFA	^					
PHEHPLCVL	Phenois by HPLC (Low Level)						
PAHMSW	PAH GC-MS (16)	^					
	Chromium VI. as Cr (Kone)	^	ш	ш	Ε	Е	Е
	Ammoniacal Nitrogen (Kone)	^	ш	ш	Ш	Е	Е
KONENS	Chloride as CI (Kone)	^	ш	ш	Ш	Е	Е
	Boron as B (Dissolved) VAR	^					
ICPWATVAR	Iron as Fe (Dissolved) VAR	^					
MethodID	Sampled		21/05/20	21/05/20	21/05/20	21/05/20	21/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-174 6.00	1-174 14.00	1-235 7.00	1-237 8.00	1-237 18.00
	ID Number		EX/2061859	EX/2061860	EX/2061861	EX/2061862	EX/2061863

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

 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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/304177 Ver. 1

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.

Page 9 of 11

Report Number: W/EXR/304177

## **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 NH4, 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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/304177 Ver. 1

#### **Sample Descriptions**

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

Report Number: W30\_4177

EX/2061859 EX/2061860 EX/2061861 EX/2061862 EX/2061863	Client ID 1-174 EW 210520 6.00 1-174 EW 210520 14.00	Description Groundwater
EX/2061860 EX/2061861 EX/2061862	1-174 EW 210520 14.00	Groundwater
EX/2061861 EX/2061862	1-174 EW 210520 14.00	
EX/2061862		Groundwater
EX/2061862 EX/2061863	1-235 EW 210520 7.00	Groundwater
EX/2061863	1-237 EW 210520 8.00	Groundwater
	1-237 EW 210520 18.00	Groundwater
		<u> </u>

Appendix A Page 1 of 1 10/06/2020EXR/304177 Ver. 1

#### **TEST REPORT**



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)
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.

		Units:	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	l/bu	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l
		Method Codes:	2	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	>	ICPWATVAR IG	CPWATVAR	ICPWATVAR ICPWATVAR	PWATVAR ICF	ICPWATVAR ICPWATVAR	WATVAR IC	ICPWATVAR
	Meth	nod Reporting Limits:	0.001	0.00002	0.001	0.001	0.001	0.00003	0.001	0.001		0.01	-	0.01	-	-	-	က
		UKAS Accredited :		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date		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	Total Sulphur as SO4 (Dissolved) a
2061908	1-191 EW 180520 8.00	18-May-20	0.001	0.00119	0.002	0.002	0.001	<0.00003	0.13	<0.001	0.23	0.08	41	90.0	28	18	37	197
2061909	1-203 EW 180520 7.00	18-May-20	<0.001	0.00014	0.003	<0.001	<0.001	<0.00003	0.067	<0.001	0.116	0.03	22	11.7	14	15	61	148
2061910	1-203 EW 180520 16.00	18-May-20	<0.001	0.00004	0.002	<0.001	<0.001	<0.00003	0.052	<0.001	0.074	0.02	16	4.78	11	11	48	98
2061911	1-207 EW 180520 6.00	18-May-20	<0.001	0.0011	0.011	0.015	0.002	<0.00003	0.046	<0.001	0.068	0.07	37	0.28	24	22	62	66
2061912	1-207 EW 180520 15.00	18-May-20 12:30	0.002	<0.00002	0.002	<0.001	0.001	<0.00003	0.014	<0.001	0.981	0.45	42	75.9	18	11	106	8
2061913	1-257 EW 180520 19.00	18-May-20 12:30	<0.001	0.00003	0.002	<0.001	<0.001	<0.00003	0.002	<0.001	0.002	0.01	14	3.07	3	2	28	41
	SOCOTEC		Client Name	ame	SOCOT	EC UK M	SOCOTEC UK Wokingham	٤					Samp	Sample Analysis	ysis			
			Contact		William Riggs	ggs												
-	Bretby Business Park, Ashby Road											Date Printed	ted		10-7	10-Jun-2020		
_	Burton-on-Trent, Staffordshire, DE15 0YZ				2	7 000	_	MOE LOL 40	2			Report Number	ımber		EXR/	EXR/304194		
	Tel +44 (0) 1283 554400				ב״	79000-13	_	ייין	2			<b>Table Number</b>	nber			-		
	Fax +44 (0) 1283 554422										ı							

< 0.01

< 0.01 < 0.01

< 0.01 0.03

< 0.01 < 0.01 < 0.01

< 0.01 < 0.01 < 0.01 < 0.01

Indeno(1,2,3-cd)pyrene

Fluorene

		Units:		_	l/bn		l/bm	l/bm	l/bm	ma/l	l/bu	l/bu	ma/I	l/bm		_		l/bm
		Method Codes:	PAHMSW	PAHMSW	PAHMSW	PAHMSW	J	CVL	CVL	PHEHPLCVL	SFAPI	SFAPI		į	TPHFID-Si T	ίζ	TPHFID-Si	TPHFID-Si
	Method	1 Reporting Limits:		-	0.01			_	0.0005	0.0005	0.02	0.02				-		0.01
		UKAS Accredited :		Yes	Yes	No	No	% %	No	%	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
2061908	1-191 EW 180520 8.00	18-May-20	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.02	< 0.010	< 0.010	0.029	0.073	< 0.010
2061909	1-203 EW 180520 7.00	18-May-20	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.4	< 0.010	< 0.010	0.028	0.082	< 0.010
2061910	1-203 EW 180520 16.00	18-May-20	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.21	< 0.010	< 0.010	0.030	0.076	< 0.010
2061911	1-207 EW 180520 6.00	18-May-20	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	0.010	0.031	0.070	< 0.010
2061912	1-207 EW 180520 15.00	18-May-20 12:30	0.12	0.03	< 0.01	< 0.31	<0.0005	<0.0005	<0.0005	<0.0005	<0.2	15.8	3.78	0.035	< 0.010	0.027	0.092	990.0
2061913	1-257 EW 180520 19.00	18-May-20 12:30	0.04	< 0.01	< 0.01	< 0.19	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.38	< 0.010	< 0.010	0.031	0.092	< 0.010
	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Woki	okingham	٤					Samp	Sample Analysis	ysis			
			Contact		William Riggs	dgs												
	Bretby Business Park, Ashby Road											Date Printed	pa		10-	10-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ					000		7 7 7	•			Report Number	mber		EXR	EXR/304194		
	Tel +44 (0) 1283 554400				ב	D3000-13		VI 23 JCT 10	2			Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

Where individual results are flagged see report notes for status.

		Units:			l/gm	mg/l	mg/l	l/gm	l/gm	-		l/gm	pH units		
		Method Codes:	르	르	TPHFID-Si	TPHFID-Si				13	13	WSLM20	WSLM3		
	Method	Reporting Limits:		0.01	0.01	0.01	0.01	0.01	0.01	0.2	0.2	-			
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes		
LAB ID Number EX/	Client Sample Description	Sample Date		TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Dissolved Organic Carbon w	Total Organic Carbon w	Biochemical Oxygen Demand w	pH units w		
2061908	1-191 EW 180520 8.00	18-May-20	0.138	< 0.010	< 0.010	0.016	< 0.010	< 0.010	0.028	5.2	5.2	<2.0	4.2		
2061909	1-203 EW 180520 7.00	18-May-20	0.145	< 0.010	< 0.010	0.016	< 0.010	< 0.010	0.026	3.9	3.8	<2.0	3.1		
2061910	1-203 EW 180520 16.00	18-May-20	0.143	< 0.010	< 0.010	0.022	< 0.010	< 0.010	0.038	2.9	2.8	<2.0	3.1		
2061911	1-207 EW 180520 6.00	18-May-20	0.141	< 0.010	< 0.010	0.022	0.011	< 0.010	0.050	10	6.6	<2.0	3.8		
2061912	1-207 EW 180520 15.00	18-May-20 12:30	0.255	< 0.010	< 0.010	0.024	0.027	< 0.010	0.067	360	360	193.3*	5.4		
2061913	1-257 EW 180520 19.00	18-May-20 12:30	0.162	< 0.010	< 0.010	0.020	< 0.010	< 0.010	0.033	6.2	8.2	<2.0	6.5		
S	SOCOTEC		Client Name	lame	SOCOT	SOCOTEC UK Wo	/okingham	E					Samp	Sample Analysis	
			Contact		William Riggs	dgs									
Bre	Bretby Business Park, Ashby Road											Date Printed	ted	10-Jun-2020	
B	Burton-on-Trent, Staffordshire, DE15 0YZ				2	7 000		7 40	<u> </u>			Report Number	ımber	EXR/304194	
_	Tel +44 (0) 1283 554400				נ	21-0006A			2		_	Table Number	nber	1	
ш	Fax +44 (0) 1283 554422														

**SOCOTEC UK Wokingham** Customer

Sample Analysis

D9008-19 M25 Jct 10

Date Logged 29-May-2020

Consignment No W172237

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. W304194 Report No

	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	^						
CPWATVAR	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)	>						
CPMSW	Nickel as Ni MS (Dissolved)	>						
GROHSA	GRO-HSA GCFID (AA)		ш	ш	ш	В	В	ш
CUSTSERV	Report A							
CALC_NH3	Ammoniacal Nitrogen as NH3(Kone) Calc	>	В	ш	Ш	Ш	Ш	ш
QIpo	0		0				0	0
MethodID	Sampled		18/05/20	18/05/20	18/05/20	18/05/20	18/05/20	18/05/20
Meth	Matrix Type Sample		Groundwater 18/05/2	Groundwater 18/05/20	Groundwater 18/05/20	Groundwater 18/05/20	Groundwater 18/05/2	Groundwater 18/05/2
Meth					) Groundwater 1	1		_

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/304194 Ver. 1

**SOCOTEC UK Wokingham** Customer

Sample Analysis

D9008-19 M25 Jct 10

In-House Report Due 05-Jun-2020 Date Logged 29-May-2020

Consignment No W172237

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days. W304194 Report No

	pH units	>	ш	ш	ш	Ш	Ш	ш
WSLM3	Temperature C°		ш	ш	ш	В	В	ш
VSLM20	Biochemical Oxygen Demand	>	ш	ш	ш	В	В	ш
	Dissolved Organic Carbon		Ε	Ε	Ε	Е	Ε	Е
VSLM13	Total Organic Carbon	>	Ε	Ε	Ε	Е	Ε	Е
PHFID-Si	TPH by GC(Si)	>	Е	В	Е	Е	Е	Е
SFAS	Sulphide as S SFA	^	Ш	Ш	Ш	Е	Е	Е
	Cyanide (Total) as CN SFA	^	Ш	Ш	Ш	Е	Е	Е
SFAPI	Cyanide (Free) as CN SFA	^	3	3	3	Ε	Ξ	Е
HEHPLCVL	Phenols by HPLC (Low Level)							
PAHMSW	PAH GC-MS (16)	^	3	3	3	Ε	Ξ	Е
	Chromium VI. as Cr (Kone)	^	3	3	3	Ξ	Ξ	В
	Ammoniacal Nitrogen (Kone)	>	3	3	3	Ε	Ε	Ш
CONENS	Chloride as CI (Kone)	>	ш	ш	ш	ш	ш	ш
CPWATVAR	Boron as B (Dissolved) VAR	>						
MethodID	Sampled		18/05/20	18/05/20	18/05/20	18/05/20	18/05/20	18/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-191 8.00	1-203 7.00	1-203 16.00	1-207 6.00	1-207 15.00	1-257 19.00
	ID Number		EX/2061908	EX/2061909	EX/2061910	EX/2061911	EX/2061912	EX/2061913

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

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

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.

EXR/304194 Ver. 1

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.

Report Number: W/EXR/304194

## **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	·
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

### **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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite
TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/304194 Ver. 1

#### **Sample Descriptions**

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

Report Number: W30\_4194

Lab ID Number	Client ID	Description
EX/2061908	1-191 EW 180520 8.00	Groundwater
EX/2061909	1-203 EW 180520 7.00	Groundwater
EX/2061910	1-203 EW 180520 16.00	Groundwater
EX/2061911	1-207 EW 180520 6.00	Groundwater
EX/2061912	1-207 EW 180520 15.00	Groundwater
EX/2061913	1-257 EW 180520 19.00	Groundwater

Appendix A Page 1 of 1 10/06/2020EXR/304194 Ver. 1

#### 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.

	:	Units:	l/grl	l/gn	l/gr	-	l/g/	_		mg/l	mg/l	mg/l	mg/l	mg/l		mg/l		mg/l
	Machael Bonardine Limite	d Codes :	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA C	CALC NH3	CALCNH4	GROHSA 0.1	GROHSA 0.1	GROHSA	GROHSA 0.1	GROHSA	GROHSA 0.1	SA	GROHSA
	Sunioday pomawi	g Lilling	2	0 - 5	0 2	0>	0 /	2 - 2	0.0	0.01								
	UKAS Accredited :	credited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	ON No	ON No	ON	ON ON	9	No	ON No	ON No
LAB ID Number EX/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	o Xylene	Toluene	Xylenes	Ammoniacal Nitrogen as NH3	Ammoniacal Nitrogen as NH4	GRO >C5->C6	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2061934	1-152 EW 190520 4.50	19-May-20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.11	0.12	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2061935	1-318 EW 190520 7.00	19-May-20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.05	0.05	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2061936	1-327 EW 190520 8.00	19-May-20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.24	0.26	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2061937	1-341 EW 190520 11.00	19-May-20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.02	0.03	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2061938	1-346 EW 190520 8.00	19-May-20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.36	0.39	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
	SOCOTEC		Client Name	in e	SOCOTEC William Ridgs	SOCOTEC UK Wokingham	okinghan						Samp	Sample Analysis	lysis			
	Bretby Business Park, Ashby Road											Date Printed	ted		10-	10-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				0	חסחפת		M25 Ic+ 10	_			Report Number	umber		EX	EXR/304197		
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10-Jun-2020 EXR/304197

Report Number

Date Printed

**Table Number** 

Sample Analysis

D9008-19 M25 Jct 10 SOCOTEC UK Wokingham William Riggs Client Name Contact Burton-on-Trent, Staffordshire, DE15 0YZ Bretby Business Park, Ashby Road SOCOTEC Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422

 mg/l
 mg/l
 mg/l
 mg/l
 mg/l
 mg/l
 mg/l

 ICPWATVAR ICPWATVAR

mg/l ICPMSW 0.002 Yes

mg/l ICPMSW 0.001

mg/l ICPMSW 0.001

mg/l ICPMSW 0.00003

mg/l ICPMSW 0.001

mg/l ICPMSW 0.001

mg/l ICPMSW 0.001

mg/l ICPMSW 0.00002

mg/l mg/l GROHSA ICPMSW 0.1 0.001 Yes Yes

Units:

Method Codes:

Method Reporting Limits:

UKAS Accredited:

Yes

267 95 29 12 7

19 12

147 107 10 10 19

0.05 0.02

0.068

<0.001

0.112

<0.00003 <0.00003

<0.001 <0.001

<0.001

0.004

0.00008 0.00085

0.001

< 0.100 < 0.100

19-May-20 19-May-20 19-May-20 19-May-20 19-May-20

1-152 EW 190520 4.50 1-318 EW 190520 7.00 1-327 EW 190520 8.00

2061934 2061935 2061936

<0.001 <0.001 <0.001

<0.001 <0.001

<0.001 <0.001

<0.00002

< 0.100 < 0.100

0.164 0.003 0.059

<0.001 <0.001 <0.001 <0.001

0.102 0.002 0.023

<0.00003

<0.00003 <0.00003

<0.001 <0.001

<0.001

0.00015 0.00005

<0.001 <0.001

1-341 EW 190520 11.00

2061937

2061938

1-346 EW 190520 8.00

< 0.100

<0.001

<0.001

<0.001

19 54

ω  $\infty$ 

4 2 4

0.04 0.03 42.3

> 0.25 0.02 0.16

<0.01

0.01

0.04

0.019

15

Sodium as Na (Dissolved) a

Potassium as K (Dissolved) a

Magnesium as Mg (Dissolved) a

Iron as Fe (Dissolved) a

Calcium as Ca (Dissolved) a

Boron as B (Dissolved) a

Zinc as Zn (Dissolved)

Selenium as Se (Dissolved)

Nickel as Ni (Dissolved)

Mercury as Hg (Dissolved)

Lead as Pb (Dissolved)

Copper as Cu (Dissolved)

Chromium as Cr (Dissolved)

Cadmium as Cd (Dissolved)

Arsenic as As (Dissolved)

GRO-HSA o

Sample Date

Client Sample Description

LAB ID Number EX/

	:	Units:	l/gm		l/gm	l/gm	l/gh	l/grl		-	-	l/gn	l/gri	-		_		l/grl
	Method Reporting Limits	ing Limits	ICPWA I VAR	KONENS 0 01	KONENS.	KONENS 0 003	PAHMSW 1	PAHMSW 0.01	PAHMSW 1	PAHMSW 0	PAHMSW 0 01	PAHMSW 0.01	PAHMSW 0.01	PAHMSW 0.01	PAHMSW 001	PAHMSW 0 01	PAHMSW 0 01	PAHMSW 0.01
	DKAS A	UKAS Accredited :	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
LAB ID Number EX/	UKAS A Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as CI w		8 Acenaphthene	S Acenaphthylene Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Senzo(ghi)perylene	Senzo(k)fluoranthene	Senzo-a-Pyrene →	S⊕ Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	S) Fluorene
2061934	1-152 EW 190520 4.50	19-May-20	516	60.0	449	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2061935	1-318 EW 190520 7.00	19-May-20	109	0.04	317	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2061936	1-327 EW 190520 8.00	19-May-20	92	0.2	49	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2061937	1-341 EW 190520 11.00	19-May-20	30	0.02	59	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2061938	1-346 EW 190520 8.00	19-May-20	71	0.3	9	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	SOCOTEC		Client Name	ıme	SOCOT	SOCOTEC UK Woki	okingham						Samp	Sample Analysis	lysis			
			Contact		William Riggs	ggs												
	Bretby Business Park, Ashby Road											Date Printed	ted		10-	10-Jun-2020		
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	Fax +44 (0) 1283 554422																	

		ر		l/gu	l/gu	l/grl	l/gµ			l/bm		l/gm		l/gm	l/gm	/bm	l/gm	l/gm	l/gm
	•	Method Codes:		_	_	_	PAHMSW	>	7	PHEHPLCVL	ద	PHEHPLCVL		SFAPI	SFAS	TPHFID-Si	TPHFID-Si	_	TPHFID-{
	M	ethod Reporting Li.	imits:	0.01	0.01	0.01	0.01	0.16	0.0005	0.0005	0.0005	0.0005	0.02	0.02	0.02	0.01	0.01	0.01	0.01
		UKAS Accredited :	dited:	Yes	Yes	Yes	Yes	<sub>S</sub>	S <sub>O</sub>	No	S S	No.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description		Sample Date	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35
2061934	1-152 EW 190520 4.50		19-May-20	< 0.01	0.13	0.02	< 0.01	< 0.29	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.23	< 0.010	< 0.010	0.029	0.095
2061935	1-318 EW 190520 7.00		19-May-20	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	0.011	0.032	0.084
2061936	1-327 EW 190520 8.00		19-May-20	< 0.01	0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.18	< 0.010	0.010	0.031	0.087
2061937	1-341 EW 190520 11.00		19-May-20	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	0.030	0.084
2061938	1-346 EW 190520 8.00		19-May-20	< 0.01	< 0.01	0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	0.024	0.070
	SOCOTEC			Client Name		SOCOTE	SOCOTEC UK Wokin	Okingham						Sam	Sample Analysis	NSIS IN THE PROPERTY OF THE PR			
		5		Contact		William Riggs	здs									1			
_	Bretby Business Park, Ashby Road	oad	<u> </u>										Date Printed	nted		7	10-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400	DE15 0YZ				<b>6</b> 0	008-1	9 M2	D9008-19 M25 Jct 10	10			Report Number Table Number	Number Imber		Ш	EXR/304197		

Fax +44 (0) 1283 554422

10-Jun-2020 EXR/304197

Report Number

Date Printed

**Table Number** 

D9008-19 M25 Jct 10

Sample Analysis

pH units WSLM3

mg/l WSLM20

 mg/l
 <th

Units:

Method Codes:

Method Reporting Limits:

UKAS Accredited:

4.3 6.1 5.9 6.2

<2.9 <2.9

1.5 3.3

1.6 3.3 1.2

17

16

0.039 0.030 0.032

< 0.010 < 0.010 < 0.010 < 0.010 < 0.010

< 0.010 < 0.010 < 0.010

0.019 0.018 0.018 0.020 0.016

< 0.010 < 0.010 < 0.010

< 0.010 < 0.010 < 0.010 < 0.010 < 0.010

< 0.010 < 0.010 < 0.010 < 0.010 < 0.010

19-May-20 19-May-20 19-May-20 19-May-20 19-May-20

1-152 EW 190520 4.50 1-318 EW 190520 7.00 1-327 EW 190520 8.00

2061934

2061935

<2.0

1.3

0.040

<2.0

2.1

2.1

0.026

< 0.010 0.012

< 0.010

0.160 0.154

0.163 0.160

< 0.010

0.123

1-341 EW 190520 11.00

2061936

2061937

2061938

1-346 EW 190520 8.00

9

pH units w

Biochemical Oxygen Demand w

Total Organic Carbon w

Dissolved Organic Carbon w

TPH Aro Band >C8-C40

TPH Aro Band >C8-C10

TPH Aro Band >C21-C35

TPH Aro Band >C16-C21

TPH Aro Band >C12-C16

TPH Aro Band >C10-C12

TPH Ali Band >C8-C40

TPH Ali Band >C8-C10

Sample Date

Client Sample Description

LAB ID Number EX/

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

EC
Ë

SOCOTEC UK Wokingham

Client Name

William Riggs

Contact

SOCO

**SOCOTEC UK Wokingham** Customer

Sample Analysis

D9008-19 M25 Jct 10 W304197 Report No

Date Logged 29-May-2020

Consignment No W172239

In-House Report Due 05-Jun-2020

		Sodium as Na (Dissolved) VAR	>					
		Magnesium as Mg (Dissolved) VAR	/					
		Calcium as Ca (Dissolved) VAR	>					
	ICPWATVAR	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)	>					
gdays		Cadmium as Cd MS (Dissolved)	>					
orking		Chromium as Cr MS (Dissolved)	>					
ive w	ICPMSW	Nickel as Ni MS (Dissolved)	>					
onal fi	GROHSA	GRO-HSA GCFID (AA)		Ξ	3	Ξ	Ξ	Ш
dditio	CUSTSERV	Report A						
o an a	CALCNH4	Ammoniacal Nitrogen as NH4 Calc	>	ш	ш	ш	В	Ш
e up t	CALC_NH3	Ammoniacal Nitrogen as NH3(Kone) Calc	>	Ш	Ш	Ш	E	Ш
likely to take	MethodID	Sampled		19/05/20	19/05/20	19/02/20	19/02/20	19/05/20
ysis (identified with a '^') is likely to take up to an additional five working days.		Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Please note the results for any subcontracted analysis		Description		1-152 4.50	1-318 7.00	1-327 8.00	1-341 11.00	1-346 8.00
Please note the res		ID Number		EX/2061934	EX/2061935	EX/2061936	EX/2061937	EX/2061938

Potassium as K (Dissolved) VAR

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/304197 Ver. 1

**SOCOTEC UK Wokingham** Customer

Sample Analysis

D9008-19 M25 Jct 10

Date Logged 29-May-2020

In-House Report Due 05-Jun-2020

Consignment No W172239

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days. W304197 Report No

WSLM3	pH units	>	ш	ш	ш	Ш	ш
WSLM20	Biochemical Oxygen Demand	>	Ε	Ε	Ε	Ε	В
	Dissolved Organic Carbon		Ш	Ш	Ш	Ε	ш
WSLM13	Total Organic Carbon	>	Ш	Ш	Ш	Е	ш
TPHFID-Si	TPH by GC(Si)	>	Ε	Ε	Ε	Ε	Е
SFAS	Sulphide as S SFA	^	Ш	Ш	Ш	Е	Е
	Cyanide (Total) as CN SFA	^	Ш	Ш	Ш	Е	Е
SFAPI	Cyanide (Free) as CN SFA	^	Ш	Ш	Ш	Е	Е
PHEHPLCVL	Phenols by HPLC (Low Level)						
PAHMSW	PAH GC-MS (16)	^	3	3	3	Э	Е
	Chromium VI. as Cr (Kone)	^	3	3	3	Э	Е
	Ammoniacal Nitrogen (Kone)	^	Ш	Ш	Ш	Е	Е
KONENS	Chloride as CI (Kone)	^	3	3	3	3	Е
	Boron as B (Dissolved) VAR	^					
CPWATVAR	Iron as Fe (Dissolved) VAR	>					
MethodID	Sampled		19/05/20	19/05/20	19/05/20	19/05/20	19/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-152 4.50	1-318 7.00	1-327 8.00	1-341 11.00	1-346 8.00
	ID Number			EX/2061935	EX/2061936	EX/2061937	

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate handling time
 Requested Analysis Key Sample processing did not commence within the appropriate holding time Headspace present in the sample container

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

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

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.

EXR/304197 Ver. 1

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	II intertunately the recult is helew our lower range for this sample volume, therefore		

Report Number: W/EXR/304197

## **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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

### **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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/304197 Ver. 1

## **Sample Descriptions**

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

Report Number: W30\_4197

Lab ID Number	Client ID	Description
		Groundwater
EX/2061934	1-152 EW 190520 4.50	Groundwater Groundwater
EX/2061935	1-318 EW 190520 7.00	Groundwater
EX/2061936	1-327 EW 190520 8.00	Groundwater
EX/2061937	1-341 EW 190520 11.00	Groundwater
EX/2061938	1-346 EW 190520 8.00	Groundwater
	1	

Appendix A Page 1 of 1 10/06/2020EXR/304197 Ver. 1

## TEST REPORT



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

wiene

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.

Date of Issue: 10-Jun-2020

mg/l GROHSA	0.1	No	GRO >C8->C10 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100				
		_										
mg/l GROHSA	0.1	No	GRO >C8->C10	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100		7		
mg/l GROHSA	0.1	No	GRO >C7->C8 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100		10-Jun-2020	EXR/304202	-
mg/l GROHSA	0.1	No	GRO >C7->C8	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	ılysis	1		
mg/l GROHSA	0.1	No	GRO >C6->C7 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	Sample Analysis			
mg/l GROHSA	0.1	No	GRO >C6->C7	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	Sam	ited	umber	mber
mg/l GROHSA	0.1	No	GRO >C5->C6 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100		Date Printed	Report Number	Table Number
mg/l GROHSA	0.1	No	GRO >C5->C6	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100				
Ş	0.01	Yes	Ammoniacal Nitrogen as NH4	0.15	0.03	0.15	0.24	0.03				
mg/l CALC_NH3	0.01	Yes	Ammoniacal Nitrogen as NH3	0.15	0.02	0.15	0.23	0.02			10	)
BTE			Xylenes	< 15.0	< 15.0	< 15.0	< 15.0	< 15.0	E		M25 Jct 10	
µg/l BTEXHSA	2	Yes	Toluene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	/okingha			•
µg/I BTEXHSA	2	Yes	o Xylene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	SOCOTEC UK Wokingham		D9008-19	
µg/l BTEXHSA	10	Yes	m/p Xylenes	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	SOCOTEC William Ridgs		D	
µg/l BTEXHSA	2	Yes	Ethyl Benzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	аше			
µg/l BTEXHSA			Benzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	Client Name			
Units : thod Codes :	rting Limits:	Accredited:	Sample Date	20-May-20	20-May-20	20-May-20	20-May-20	20-May-20				
Met	Method Repor	UKAS Accredited :	Client Sample Description	1-210 EW 200520 7.00	1-363A EW 200520 15.00	1-390 EW 200520 6.00	1-390 EW 200520 19.00	1-911 EW 200520 15.00	SOCOTEC	Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400 Es> +44 (0) 1283 554400
			LAB ID Number EX/	2061970	2061971	2061972	2061973	2061974		ğ	B	,- 0

		Units:	mg/l	l/gm	H	l/gm	l/bu	l/gm	$\mathbf{H}$	$\vdash$	l/bm	l/gm	1/6m 1/6m 1/6m 1/6m 1/6m	l/bu	l/gm	l/bu	l/bu	l/gm
	Meti	hod Codes:	GROHSA	ICPMSW		ICPMSW	ICPMSW	ICPMSW	_	ICPMSW	$\dashv$		ICPWATVAR	CPWATVAR	CPWATVAR	CPWATVAR	CPWATVAR	CPWAIVAR
	Method Reporting Limits:	ting Limits:	0.1	0.001	0.00002	0.001	0.001	0.001	33	0.001	0.001	0.002	0.01	-	-	-	_	က
	UKAS,	Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	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	Magnesium as Mg (Dissolved) a	Potassium as K (Dissolved) a	Sodium as Na (Dissolved) a	Total Sulphur as SO4 (Dissolved) a
2061970	1-210 EW 200520 7.00	20-May-20	< 0.100	<0.001	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.04	<0.001	0.015	0.02	41	18	11	146	292
2061971	1-363A EW 200520 15.00	20-May-20	< 0.100	<0.001	0.00015	<0.001	0.002	<0.001	<0.00003	0.015	<0.001	0.037	0.02	16	8	22	13	77
2061972	1-390 EW 200520 6.00	20-May-20	< 0.100	<0.001	0.00366	0.007	0.018	0.003	<0.00003	0.122	<0.001	0.082	0.05	103	22	34	347	7.1
2061973	1-390 EW 200520 19.00	20-May-20	< 0.100	0.001	0.00031	0.002	0.009	0.002	<0.00003	0.076	<0.001	0.186	0.1	80	30	21	181	66
2061974	1-911 EW 200520 15.00	20-May-20	< 0.100	0.005	0.01951	<0.001	0.008	0.002	<0.00003	0.657	0.004	2.809	<0.01	39	29	38	144	<3
	SOCOTEC		Client Name	ame	SOCOTEC	SOCOTEC UK Wokin	okingham	Æ					Samp	Sample Analysis	lysis			
			Contact		N III AI	ggs												
	Bretby Business Park, Ashby Road											Date Printed	ited		-01	10-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				60	D9008-19		<b>125 Jct 10</b>	10		12	Report Number	umber		Ä	EXR/304202		
	lel +44 (U) 1283 554400 Fax +44 (0) 1283 554422										ı	I able Number	шрег			-		

< 0.01 < 0.01 < 0.01 < 0.01

< 0.01

Indeno(1,2,3-cd)pyrene

_		D	+	+	2				I/ßIII	I/BIII	mg/ı	1.611	+	mg/l	mg/I	+	l/gm
	Method Codes:	PAHMSW	NS.	>	>	7	7	7	PHEHPLCVL	SFAPI	SFAPI	SFAS	>	SVOCSW	SVOCSW	>	SVOCSW
	Method Reporting Limits:		0.01	0.01	0.16	0.0005	0.0005	0.0005	0.0005	0.02	0.02	0.02	0.005	0.005	0.005	0.005	0.002
	UKAS Accredited :	Yes	Yes	Yes	2	No No	No No	No	2	Yes	Yes	Yes	No	2	9	No No	8
Client Sample Description	Sample Date	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene
2061970 1-210 EW 200520 7.00	:0 7.00 20-May-20	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.13					
2061971 1-363A EW 200520 15.00	.0 15.00 20-May-20	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.02					
2061972 1-390 EW 200520 6.00	.0 6.00 20-May-20	0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.002
2061973 1-390 EW 200520 19.00	0 19.00 20-May-20	0.04	0.01	< 0.01	< 0.19	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.67					
2061974 1-911 EW 200520 15.00	0 15.00 20-May-20	0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.38					
SOCOTEC		Client Name	ıme	SOCOTE	EC UK W	SOCOTEC UK Wokingham	r					Samp	Sample Analysis	lysis			
		Contact		William Riggs	lgs												
Bretby Business Park, Ashby Road	aq										Date Printed	ted		10.	10-Jun-2020		
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Fax +44 (0) 1283 554422	_									'							

l/gm	SVOCSW	0.05	S C	2	4,6-Dinitro-2-methylphenol			< 0.050								
l/gm			ON CN	2	3-Nitroaniline			< 0.005								
l/gm	SVOCSW	0.02	ZS:S	2	3+4-Methylphenol			< 0.020						10-Jun-2020	EXR/304202	1
l/gm	SVOCSW	0.02	Z S	2	2-Nitrophenol			< 0.020				llysis	ı	7	Û	
	လ	0.005	S CN	2	2-Nitroaniline			< 0.005				Sample Analysis	ı			
l/gm	SVOCSW	0.005	S CN	2	2-Methylphenol			< 0.005				Sam		nted	Number	umber
l/gm	SVOCSW	0.002	SO.S	2	2-Methylnaphthalene			< 0.002						Date Printed	Report Number	Table Number
$\vdash$	Ś	0.02	ZS:S	2	2-Chlorophenol			< 0.020								
Н	လ	0.002	ZOS.	2	2-Chloronaphthalene			< 0.002								
	လ	_	S CN	2	2,6 Dinitrotoluene			< 0.005							<b>7</b>	2
l/gm	SVOCSW	0.005	ON CN	2	2,4-Dinitrotoluene			< 0.005				E E			701	MZS JCT 10
$\perp$	Ś		- CN	2	2,4-Dinitrophenol			< 0.010				Vokingha				
l/gm	_	_	Z CN	2	2,4-Dimethylphenol			< 0.020				SOCOTEC UK Wokingham	iggs		2000	D3008-13
l/gm	SVOCSW	0.02	ZS:S	2	2,4-Dichlorophenol			< 0.020				SOCOI	William Riggs		2	ĩ
	SVOCSW	0.02	ZS:S	2	2,4,6 - Trichlorophenol			< 0.020				lame				
l/gm	ίΩ l	0.02			2,4,5-Trichlorophenol			< 0.020				Client Name	Contact			
Units:	thod Codes:	rting Limits :	Accredited :	. Danied .	Sample Date	20-May-20	20-May-20	20-May-20	20-May-20	20-May-20						
Units :	Mei	Method Repor	UKAS		Client Sample Description	1-210 EW 200520 7.00	1-363A EW 200520 15.00	1-390 EW 200520 6.00	1-390 EW 200520 19.00	1-911 EW 200520 15.00		SOCOTEC	<b>5</b>	Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400
					LAB ID Number EX/	2061970	2061971	2061972	2061973	2061974				Ø	m	

< 0.100

Benzoic Acid

10-Jun-2020 EXR/304202

Report Number

Date Printed

**Table Number** 

D9008-19 M25 Jct 10

Sample Analysis

SOCOTEC	8
Bretby Business Park, Ashby Road	/ Road

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Units:

Method Codes: S

Method Reporting Limits:

UKAS Accredited:

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< 0.005

< 0.005

< 0.005

< 0.005

< 0.002

< 0.050

< 0.002

< 0.005

< 0.005

< 0.005

< 0.005

< 0.005

< 0.002

< 0.005

20-May-20

20-May-20 20-May-20

1-390 EW 200520 19.00

2061973 2061972

2061974

1-911 EW 200520 15.00

1-390 EW 200520 6.00

20-May-20 20-May-20

1-363A EW 200520 15.00

1-210 EW 200520 7.00

2061970

2061971

Diphenyl Ether

Di-n-octylphthalate

Di-n-butylphthalate

Dimethylphthalate

Diethylphthalate

Dibenzofuran

Dibenzo[a,h]anthracene

Coronene

Chrysene

Butylbenzylphthalate

bis(2-Ethylhexyl)phthalate

bis(2-Chloroisopropyl)ether

bis(2-Chloroethyl)ether

bis(2-Chloroethoxy)methane

Biphenyl

Benzyl alcohol

Sample Date

Client Sample Description

LAB ID Number EX/

							Т	T	_	_	Т	- 1	-		1	1	1	_	_	т —						
svocsw 0.002 No	Pyrene			< 0.002																						
svocsw 0.02 No	Phenol			< 0.020																						
svocsw 0.002 No	Phenanthrene			< 0.002																			10-Jun-2020	EXR/304202	1	
svocsw 0.05	Pentachlorophenol			< 0.050																	lysis		10	Ä		
svocsw 0.005 No	n-Nitrosodiphenylamine			< 0.005																	Sample Analysis					
svocsw 0.005 No	N-Nitroso-di-n-propylamine			< 0.005																(	Samp		ited	umber	mber	
svocsw 0.005 No	Nitrobenzene			< 0.005																			Date Printed	Report Number	Table Number	
svocsw 0.002 No	Naphthalene			< 0.002																						
svocsw 0.005 No	Isophorone			< 0.005																						
svocsw 0.002 No	Indeno[1,2,3-cd]pyrene			< 0.002																				•	10	
svocsw 0.005 No	Hexachloroethane			< 0.005																	Ē			10	MZ5 JCt 10	
svocsw 0.005 No	Hexachlorocyclopentadiene			< 0.005																	Vokingha					
svocsw 0.005 No	Hexachlorobutadiene			< 0.005																	SOCOTEC UK Wokingham	iggs			<b>D3008-19</b>	
svocsw 0.005 No	Hexachlorobenzene			< 0.005																	socol	William Riggs			ĭ	
svocsw 0.002 No	Fluorene			< 0.002																	ame					
svocsw 0.002 No				< 0.002																	Client Name	Contact				
Units: thod Codes: rting Limits: Accredited:	Sample Date	20-May-20	20-May-20	20-May-20	20-May-20	20-Мау-20																				
Units:  Method Codes:  Method Reporting Limits:  UKAS Accredited:	Client Sample Description	1-210 EW 200520 7.00	1-363A EW 200520 15.00	1-390 EW 200520 6.00	1-390 EW 200520 19.00	1-911 EW 200520 15.00															SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
	LAB ID Number EX/	2061970	2061971	2061972	2061973	2061974															(S)		ğ	Bu	_	ш

	Units :	Units:	mg/l	l/gm	l/gm	l/bw	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	l/gu l/gu	l/bn	l/gu	l/gu
_		od Codes :	וביםודודון			IPHFID-SI		I PHFID-SI			_		I PHFID-SI		VOCHSAW	VOCHSAW	OCHSAW V	/OCHSAW
	Method Reporting	ig Limits .		10.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	-	-	-	-
	UKAS Ac	credited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	o N	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane
2061970	1-210 EW 200520 7.00	20-May-20	< 0.010	< 0.010	0.024	0.067	< 0.010	0.120	< 0.010	< 0.010	0.016	0.013	< 0.010	0.035				
2061971	1-363A EW 200520 15.00	20-May-20	< 0.010	< 0.010	0.019	0.299	< 0.010	0.416	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.021				
2061972	1-390 EW 200520 6.00	20-May-20	< 0.010	< 0.010	0.015	0.047	< 0.010	0.086	< 0.010	< 0.010	0.012	0.013	< 0.010	0.029	< 1.0	< 1.0	< 1.0	< 1.0
2061973	1-390 EW 200520 19.00	20-May-20	< 0.010	0.030	0.021	0.050	< 0.010	0.117	< 0.010	< 0.010	0.017	0.020	< 0.010	0.046				
2061974	1-911 EW 200520 15.00	20-May-20	0.014	< 0.010	0.024	0.073	< 0.010	0.144	< 0.010	< 0.010	0.014	0.013	< 0.010	0.032				
(V)	SOCOTEC		Client Name	ame	SOCOI	EC UK M	SOCOTEC UK Wokingham	Ε					Samp	Sample Analysis	lysis			
			Contact		William Riggs	iggs												
Ŗ	Bretby Business Park, Ashby Road											Date Printed	ted		-01	10-Jun-2020		
Bu	Burton-on-Trent, Staffordshire, DE15 0YZ					7 000		7	<b>C</b>			Report Number	umber		EXI	EXR/304202		
_	Tel +44 (0) 1283 554400				ć	-000	S INIZ	D3000-13 IMZ3 JCL 10	2		•	<b>Table Number</b>	mber			-		
ш	Fax +44 (0) 1283 554422																	

1,4-Dichlorobenzene

	:	Units:	// ng/ //	l/grd	l/gu	l/grl	l/gu	l/gn	l/gri	l/gn	l/gri	l/gri	l/gn	l/gri	/bd/	l/gn	hg/l	l/gn
	Method Reporting Limits:	thod Codes :	VOCHSAW 1	VOCHSAW	VOCHSAW 1	OCHSAW V	OCHSAW V	OCHSAW V	OCHSAW V	VOCHSAW VOCHSAW VOCHSAW 1	OCHSAW V	OCHSAW V	OCHSAW v	VOCHSAW VOCHSAW VOCHSAW VOCHSAW	OCHSAW V	OCHSAW V	OCHSAW V	VOCHSAW
	UKAS	Accredited :	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date		Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	m and p-Xylene	Naphthalene	n-Butylbenzene	o-Xylene	p-lsopropyltoluene	Propylbenzene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene
2061970	1-210 EW 200520 7.00	20-May-20																
2061971	1-363A EW 200520 15.00	20-May-20																
2061972	1-390 EW 200520 6.00	20-May-20	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0*	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2061973	1-390 EW 200520 19.00	20-May-20																
2061974	1-911 EW 200520 15.00	20-May-20																
				T									$\dagger$			T		
	SOCOTEC		Client Name	ıme	SOCOTE	SOCOTEC UK Wokingham	okinghan	_					Samp	Sample Analysis	ysis			
			Contact		William Riggs	gs												
	Bretby Business Park, Ashby Road										_	Date Printed	þé		10-,	10-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				6	D9008-19		M25 Ict 10	C		<u></u>	Report Number	mber		EXF	EXR/304202		
	Tel +44 (0) 1283 554400						_		•		<u> </u>	Table Number	pher			-		
	Fax +44 (0) 1283 554422												$\exists$					

# Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

Sample Analysis

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10 W304202

Report No

Date Logged 29-May-2020

Consignment No W172238

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.

	Potassium as K (Dissolved) VAR	>					
	Sodium as Na (Dissolved) VAR	^					
	Magnesium as Mg (Dissolved) VAR	^					
	Calcium as Ca (Dissolved) VAR	^					
ICPWATVAR	Total Sulphur as SO4 (Diss) VAR	1					
	Selenium as Se MS (Dissolved)	^					
	Mercury as Hg MS (Dissolved)	1					
	Arsenic as As MS (Dissolved)	1					
	Zinc as Zn MS (Dissolved)	^					
	Lead as Pb MS (Dissolved)	^					
	Copper as Cu MS (Dissolved)	^					
	Cadmium as Cd MS (Dissolved)	1					
	Chromium as Cr MS (Dissolved)	A					
ICPMSW	Nickel as Ni MS (Dissolved)	A					
GROHSA	GRO-HSA GCFID (AA)						
CUSTSERV	Report A						
CALCNH4	Ammoniacal Nitrogen as NH4 Calc	1	Ε	ш	3	Ш	Ш
CALCNH4	Ammoniacal Nitrogen as NH4 Calc  Ammoniacal Nitrogen as NH3(Kone) Calc	<i>&gt; &gt;</i>				ЕЕ	
			ш				
CALC_NH3	Ammoniacal Nitrogen as NH3(Kone) Calc		ш	ш	<b>E</b>	<b>E</b>	Ш
CALC_NH3	Ammoniacal Nitrogen as NH3(Kone) Calc		Groundwater 20/05/20 <b>E</b>	20/05/20 <b>E</b>	20/05/20 <b>E</b>	20/05/20 <b>E</b>	20/05/20 <b>E</b>

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

Analysis Required

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

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.

EXR/304202 Ver. 1

## Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10 W304202 Report No

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

In-House Report Due 05-Jun-2020

Consignment No W172238

Date Logged 29-May-2020

WSLM3	pH units	>	ш	ш	ш	Ш	Ш
WSLM20	Biochemical Oxygen Demand	>	ш	ш	ш	Е	Е
	Dissolved Organic Carbon		Ε	ш	Ε	Ε	Ε
WSLM13	Total Organic Carbon	>	В	ш	Ш	Ε	Ε
VOCHSAW	VOC HSA-GCMS	>					
TPHFID-Si	TPH by GC(Si)	>	Ш	ш	Ш	Ε	Е
svocsw	svoc						
SFAS	Sulphide as S SFA	>	Ε	ш	Ε	Ε	Ε
	Cyanide (Total) as CN SFA	>	В	ш	Ш	Ε	Ε
SFAPI	Cyanide (Free) as CN SFA	^	Ш	Е	Ш	Е	Е
PHEHPLCVL	Phenois by HPLC (Low Level)						
PAHMSW	PAH GC-MS (16)	>	В	ш	Ш	Ε	Ε
	Chromium VI. as Cr (Kone)	^	Ш	Е	Ш	Е	Е
	Ammoniacal Nitrogen (Kone)	^	3	Ш	3	3	3
KONENS	Chloride as CI (Kone)	^	3	Ш	3	Ξ	Ξ
ICPWATVAR	Boron as B (Dissolved) VAR	^					
MethodID	Sampled		20/05/20	20/05/20	20/05/20	20/05/20	20/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-210 7.00	1-363A 15.00	1-390 6.00	1-390 19:00	1-911 15.00
	ID Number		EX/2061970	EX/2061971	EX/2061972	EX/2061973	EX/2061974

Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

Analysis Required

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

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.

EXR/304202 Ver. 1

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.

Page 17 of 19

Report Number: W/EXR/304202

## **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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

## **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/cm<sup>3</sup>@ 15°C

## Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 19 of 19 EXR/304202 Ver. 1

## **Sample Descriptions**

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

Report Number: W30\_4202

Lab ID Number	Client ID	Description
EX/2061970	1-210 EW 200520 7.00	Groundwater
EX/2061971	1-363A EW 200520 15.00	Groundwater
EX/2061972	1-390 EW 200520 6.00	Groundwater
EX/2061973	1-390 EW 200520 19.00	Groundwater
EX/2061974	1-911 EW 200520 15.00	Groundwater
LX/2001974	1-311 LW 200320 13:00	Groundwater

Appendix A Page 1 of 1 10/06/2020EXR/304202 Ver. 1

## TEST REPORT



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 Ope

Operations Manager Energy & Waste Services

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.

Date of Issue: 12-Jun-2020

		Units:	l/grl	l/gu	l/grl	l/grl	l/grl	l/grl		l/gm	Н	Н	mg/l	H	$\vdash$	mg/l	Н	l/gm
		Method Codes:	BTEXHSA	BTEXHSA	BTEXHSA		BTEXHSA		FT3		SA	SA	_	ISA	SA	GROHSA	SA	GROHSA
	Meth	hod Reporting Limits:	2	2	10	2	2	15	0.01	0.01	0.1	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	No
LAB ID Number EX/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	o Xylene	Toluene	Xylenes	Ammoniacal Nitrogen as NH3	Ammoniacal Nitrogen as NH4	GRO >C5->C6	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2062216	1-410 EW 260520 8.00	26-May-20 12:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.15	0.15	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2062217	1-715 FW 260520 8 00	26-Mav-20 12:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.05	0.05	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2062217	1-715 EW 260520 8.00	26-May-20 12:30	> 5.0	> 0.0	< 10.0	> 0.6 >	< 5.0	< 15.0	90.0	0.05	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
U	SOCOTEC		Client Name	ame	SOCOTE	SOCOTEC UK Wokingham	kingham						Samp	Sample Analysis	Vsis			
_	<b>)</b>						)						-					
			Contact		William Riggs	)ds					7							
ă	Bretby Business Park, Ashby Road											Date Printed	þe		12-	12-Jun-2020		
B	Burton-on-Trent, Staffordshire, DE15 0YZ					7 000		7 1 (	(			Report Number	mber		EX	EXR/304239		
_	Tel +44 (0) 1283 554400				ב	<b>D3008-13</b>		MZS JCT 10	<b>&gt;</b>		<u>, -</u>	Table Number	per			1		
	Eax +44 (0) 1283 554422																	
_	TdA +44 (v) 1200 001122												-			_		-

12-Jun-2020 EXR/304239

Report Number

Date Printed

**Table Number** 

Sample Analysis

mg/l mg/l

 mg/l
 mg/l
 mg/l
 mg/l
 mg/l

 ICPMSW
 ICPWATVAR
 ICPWATVAR
 ICPWATVAR

 0.002
 0.01
 1
 0.01

 Yes
 Yes
 Yes
 Yes

mg/l ICPMSW 0.001 Yes

mg/l ICPMSW 0.001

mg/l ICPMSW 0.00003 Yes

mg/l ICPMSW 0.001 Yes

mg/l ICPMSW 0.001 Yes

mg/l ICPMSW 0.001 Yes

mg/l ICPMSW 0.00002 Yes

mg/l ICPMSW 0.001 Yes

mg/l GROHSA 0.1 Yes

Method Codes:
Method Reporting Limits:
UKAS Accredited:

Yes

Sodium as Na (Dissolved) a

Potassium as K (Dissolved) a

Magnesium as Mg (Dissolved) a

Iron as Fe (Dissolved) a

Calcium as Ca (Dissolved) a

Boron as B (Dissolved) a

Zinc as Zn (Dissolved)

Selenium as Se (Dissolved)

Nickel as Ni (Dissolved)

Mercury as Hg (Dissolved)

Lead as Pb (Dissolved)

Copper as Cu (Dissolved)

Chromium as Cr (Dissolved)

Cadmium as Cd (Dissolved)

Arsenic as As (Dissolved)

GRO-HSA o

Sample Date

Client Sample Description

LAB ID Number EX/

253 80

18

32 42

16

9

0.16

0.02 0.04

0.104 0.514

0.062 0.116

<0.001 0.001

<0.00003 <0.00003

<0.001 0.002

0.002 0.036

<0.001 0.003

0.00149 0.00048

<0.001 0.001

< 0.100 < 0.100

26-May-20 12:45 26-May-20 12:30

1-410 EW 260520 8.00 1-715 EW 260520 8.00

2062216 2062217

SOCOTEC (3)

**SOCOTEC UK Wokingham** 

Client Name

12-Jun-2020 EXR/304239

Report Number

Date Printed

**Table Number** 

D9008-19 M25 Jct 10

SOCOTEC UK Wokingham

William Riggs

Sample Analysis

рд/I рд/I рд/I ранмSW 0.01 0.01 Yes Yes

μg/l PAHMSW 0.01 Yes

рд/ РАНМSW РАНМSW 1 0.01 0.01 Yes Yes

pg/l PAHMSW 0.01 Yes

pg/l PAHMSW 0.01 Yes

 µg/l
 µg/l
 µg/l

 РАНМSW
 РАНМSW
 0.01

 0.01
 0.01
 0.01

 Yes
 Yes
 Yes

pg/l PAHMSW 0.01 Yes

pg/l PAHMSW 0.01 Yes

mg/l KONENS 0.003

mg/l KONENS

mg/l KONENS 0.01

Units: mg/l
Method Codes: ICPWATVAR
Method Reporting Limits: 3
UKAS Accredited: Yes

< 0.01 < 0.01

< 0.01 < 0.01

< 0.01 < 0.01

< 0.01 < 0.01

< 0.01 < 0.01

< 0.01\* < 0.01\*

< 0.01 < 0.01

< 0.01 < 0.01

< 0.01 < 0.01

<0.003 <0.003

0.12 0.04

26-May-20 12:45 26-May-20 12:30

1-410 EW 260520 8.00 1-715 EW 260520 8.00

2062216 2062217

178 387

115 150

< 0.01 < 0.01

< 0.01 < 0.01

< 0.01 < 0.01

Fluorene

Fluoranthene

Dibenzo(a,h)anthracene

Chrysene

Benzo-a-Pyrene

Benzo(k)fluoranthene

Benzo(ghi)perylene

Benzo(b)fluoranthene

Benzo(a)anthracene

Anthracene

Acenaphthylene

Acenaphthene

Chromium VI as Cr

Chloride as CI w

Ammoniacal Nitrogen as N

Total Sulphur as SO4 (Dissolved) a

Sample Date

Client Sample Description

LAB ID Number EX/

Fax +44 (0) 1283 554422

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SOC

l/bm	TPHFID-Si	0.01	Yes	TPH Ali Band >C21-C35	< 0.010	< 0.010																
	TPHFID-Si T		Yes	TPH Ali Band >C16-C21	< 0.010	< 0.010																
l/bm	TPHFID-Si	0.01	Yes	TPH Ali Band >C12-C16	< 0.010	< 0.010												12-Jun-2020	יייייייייייייייייייייייייייייייייייייי	EXK/304239	-	
	TPHFID-Si		Yes	TPH Ali Band >C10-C12	< 0.010	< 0.010										lysis		12.	! 2	7		
		0.02	Yes	Sulphide as S	<0.02	<0.02										Sample Analysis						
l/bm	SFAPI	0.02	Yes	Cyanide (Total) as CN	<0.02	<0.02										Samp		tod	ופת	nmper	mber	
l/bm	SFAPI	0.02	Yes	Cyanide (Free) as CN	<0.02	<0.02												Date Printed	חשופ ו ווויי	Report Number	Table Number	
l/bm	품	0.0005	No	Trimethylphenols	<0.0005	<0.0005																
l/bm	PHEHPLCVL	0.0005	No	Phenol	<0.0005	<0.0005																
l/bm	PHEHPLCVL	0.0005	No	Dimethylphenols	<0.0005	<0.0005														10	<u> </u>	
l/bm	PHEHPLCVL	0.0005	No	Cresols	<0.0005	<0.0005										æ				M25 Jet 10	, ) )	
l/brl	PAHMSW	0.16	No	Total PAH (Sum of USEPA 16)	< 0.16*	< 0.16*										okingham'						
l/bri	PAHMSW	0.01	Yes	Pyrene	< 0.01	< 0.01										SOCOTEC UK Woki	Sbb			D9008-19	)	
l/brl	PAHMSW	0.01	Yes	Phenanthrene	< 0.01	< 0.01										SOCOT	William Riggs				í	
ľbn	PAHMSW	0.01	Yes	Naphthalene	< 0.01	< 0.01										ame						
l/bri	PAHMSW		Yes	Indeno(1,2,3-cd)pyrene	< 0.01*	< 0.01*										Client Name	Contact					
Units:	Method Codes:	d Reporting Limits:	UKAS Accredited:	Sample Date	26-May-20 12:45	26-May-20 12:30																
		Methor		Client Sample Description	1-410 EW 260520 8.00	1-715 EW 260520 8.00										SOCOTEC	3	Brethy Business Park Ashby Road	100 PLAC 22 - 10 - 11-2 PLACE	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
				LAB ID Number EX/	2062216	2062217										S			i å	na	<u> </u>	ű.

# Sample Analysis

## Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10

W304239

Report No

Date Logged 30-May-2020

Consignment No W172234

In-House Report Due 09-Jun-2020

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) Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days Cadmium as Cd MS (Dissolved) Chromium as Cr MS (Dissolved) Nickel as Ni MS (Dissolved) ICPMSW GROHS **GRO-HSA GCFID (AA)** Report A **Ammoniacal Nitrogen as NH4 Calc** CALC\_N Ammoniacal Nitrogen as NH3(Kone) Calc Sampled MethodID Matrix Type Description ID Number

ш

ш

26/05/20 26/05/20

Groundwater Groundwater

1-410 8.0 1-7158.0

EX/2062216

EX/2062217

Potassium as K (Dissolved) VAR Sodium as Na (Dissolved) VAR

Magnesium as Mg (Dissolved) VAR Calcium as Ca (Dissolved) VAR

Devi	Deviating Sample Key
A	The sample was received in an inappropriate container for this an
В	The sample was received without the correct preservation for this

analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time Headspace present in the sample container

iccredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

owever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Sample processing did not commence within the appropriate handling time Requested Analysis Key

No analysis scheduled Analysis Required

Analysis dependant upon trigger result - Note: due date may be affected if triggered 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.

EXR/304239 Ver. 1

# Sample Analysis

## Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10 W304239

Report No

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

Date Logged 30-May-2020

Consignment No W172234

In-House Report Due 09-Jun-2020

WSLM3	pH units	>		
WSLM20	Biochemical Oxygen Demand	1	Ш	щ
	Dissolved Organic Carbon			
WSLM13	Total Organic Carbon	^		
TPHFID-Si	TPH by GC(Si)	^		
SFAS	Sulphide as S SFA	>		
	Cyanide (Total) as CN SFA	>		
SFAPI	Cyanide (Free) as CN SFA	>		
PHEHPLCVL	Phenois by HPLC (Low Level)			
PAHMSW	PAH GC-MS (16)	^		
	Chromium VI. as Cr (Kone)	>	ш	ц
	Ammoniacal Nitrogen (Kone)	>	ш	ц
KONENS	Chloride as Cl (Kone)	>	Ш	ц
	Boron as B (Dissolved) VAR	>		
ICPWATVAR	Iron as Fe (Dissolved) VAR	>		
MethodID	Sampled		26/05/20	26/05/20
	Matrix Type		Groundwater	Groundwater
	Description		1-410 8.0	1-71580
	ID Number		/2062216	/2062217

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Deviating Sample Key

Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Analysis Required

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

EXR/304239 Ver. 1

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

Report Number: W/EXR/304239

## **Additional Report Notes**

Method	Sample ID	The following information should be taken into consideration when using the
Code	Sample ID	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.

Report Number: W/EXR/304239

## **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 NH4, 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

## **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/cm<sup>3</sup>@ 15°C

## Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/304239 Ver. 1

## **Sample Descriptions**

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

Report Number: W30\_4239

Lab ID Number	Client ID	Description
EX/2062216	1-410 EW 260520 8.00	Groundwater
EX/2062217	1-715 EW 260520 8.00	Groundwater

Appendix A Page 1 of 1 12/06/2020EXR/304239 Ver. 1

## TEST REPORT



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)
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: 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.

		Units:	l/gr	l/gu		l/gr	l/gu	l/gu	mg/l		-	l/gm			lgm griodo	_	_	mg/l
	Method R	Method Reporting Limits	5.55	DIEATISA 5	10		5.5	15		0.01	טאטרטאט 1 0	_	0.1	0.1	10 T	10 10	0 1	0.1
		UKAS Accredited :		Yes	Yes	Yes	Yes	Yes	Yes	Yes	- S	- S	- C	- S	- S	- S	- C	. S
		Acciented .		SD	60	8	ß	SD.	0	65	2	2	2	2	2	2	2	20
LAB ID Number EX/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	o Xylene	Toluene	Xylenes	Ammoniacal Nitrogen as NH3	Ammoniacal Nitrogen as NH4	GRO >C5->C6	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2062218	1-147 EW 270520 8.00	27-May-20 11:00	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.36	0.39	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2062219	1-166 EW 270520 7.00	27-May-20 14:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.04	0.04	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2062220	1-226 EW 270520 8.00	27-May-20 12:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.08	60.0	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2062221	1-231 EW 270520 8.00	27-May-20 13:45	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.08	60.0	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2062222	1-542 EW 270520 18.00	27-May-20 15:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.36	0.39	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
<u> </u>							+		+	+	+	+	+					
											-							
<u>V)</u>	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	٤					Samp	Sample Analysis	ysis			
			Contact		William Riggs	ggs												
ď	Bretby Business Park, Ashby Road										_	Date Printed	pe		1-,1	11-Jun-2020		
м́ 	Burton-on-Trent, Staffordshire, DE15 0YZ				2	7 000		7 70	C			Report Number	mber		EXF	EXR/304240		
	Tel +44 (0) 1283 554400				במ	D9008-19		MZS JCT TU	<b>&gt;</b>		<u></u>	Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

	UKAS Accredited :	Client Sample Description Client Sample Description	2062218 1-147 EW 270520 8.00 27-May-20 11:00 <	2062219 1-166 EW 270520 7.00 27-May-20 14:45	2062220 1-226 EW 270520 8.00 27-May-20 12:30	2062221 1-231 EW 270520 8.00 27-May-20 13:45 <	2062222 1-542 EW 270520 18.00 27-May-20 15:30 <							SOCOTEC		•	Bretby Business Park, Ashby Road
GROHSA 0.1	Yes	GRO-HSA o	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100							Client Name	Contact		
ICPMSW 0.001	Yes	Arsenic as As (Dissolved)	0.001	<0.001	<0.001	<0.001	<0.001							ıme			
ICPMSW 0.00002	Yes	Cadmium as Cd (Dissolved)	0.00007	0.00015	0.00041	<0.00002	<0.00002							SOCOTI	William Riggs		
>	Yes	Chromium as Cr (Dissolved)	0.002	<0.001	<0.001	<0.001	<0.001							EC UK W	sßt		
ICPMSW 0.001	Yes	Copper as Cu (Dissolved)	0.001	0.002	0.002	<0.001	<0.001							SOCOTEC UK Wokingham			
ICPMSW 0.001	Yes	Lead as Pb (Dissolved)	<0.001	<0.001	<0.001	<0.001	<0.001							٦			
1CPMSW 0.00003	Yes	Mercury as Hg (Dissolved)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003										
ICPMSW 0.001	Yes	Nickel as Ni (Dissolved)	0.015	0.04	0.065	0.032	0.005										
ICPMSW 0.001	Yes	Selenium as Se (Dissolved)	<0.001	<0.001	0.002	<0.001	<0.001										
<b>X</b>	Yes	Zinc as Zn (Dissolved)	0.106	0.025	0.045	900.0	0.009										Date Printed
ΛAR	Yes	Boron as B (Dissolved) a	0.04	0.02	0.03	0.01	0.03							Samp			ted
ICPWATVAR 1	Yes	Calcium as Ca (Dissolved) a	17	44	45	40	3							Sample Analysis			
ICPWATVAR 0.01	Yes	Iron as Fe (Dissolved) a	9.93	0.01	0.03	<0.01	18.8							 lysis			11
/AR	Yes	Magnesium as Mg (Dissolved) a	9	12	17	7	4										11-Jun-2020
VAR	Yes	Potassium as K (Dissolved) a	5	9	3	20	80										
ICPWATVAR 1	Yes	Sodium as Na (Dissolved) a	9/	33	49	15	12										

		Units:	ma/l	l/bm	l/bm		_	_	_	$\vdash$	l/pri	l/bn	_	_	-	_	_	l/bn
		Method Codes :	¥	KONENS	S	PAHMSW	PAHMSW F	PAHMSW	PAHMSW F	PAHMSW	PAHMSW	>	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW
	Method	Method Reporting Limits:		-	1	_	-	-	-	-	+-	+	+	-	-	_	_	0.01
		UKAS Accredited :		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
				2	3	2	2	3	2	2	2	3	2	2	2	3	3	2
LAB ID Number EX/	Client Sample Description	Sample Date	Ammoniacal Nitrogen as N	Chloride as CI w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene
2062218	1-147 EW 270520 8.00	27-May-20 11:00	0.3	134	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	* 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*
2062219	1-166 EW 270520 7.00	27-May-20 14:45	0.03	44	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*
2062220	1-226 EW 270520 8.00	27-May-20 12:30	0.07	27	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*
2062221	1-231 EW 270520 8.00	27-May-20 13:45	0.07	34	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*
2062222	1-542 EW 270520 18.00	27-May-20 15:30	0.3	27	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*
	SOCOTEC		Client Name	ame	SOCOTEC William Riggs	SOCOTEC UK Wokin	okingham	٤	-	-			Samp	Sample Analysis	lysis			
	Brethy Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (i) 1283 554400				D3	D9008-19		M25 Jct 10	0			Date Printed Report Number Table Number	red Imber nber		11. EXI	11-Jun-2020 EXR/304240		
	Fax +44 (0) 1283 554422																	

	Z G	Units:  Method Codes:	PAHMSW	pg/l PAHMSW	hg/l PAHMSW	PAHMSW F	mg/l PHEHPLCVL F	PHEHPLCVL P	mg/l PHEHPLCVL PI	mg/l PHEHPLCVL	SFAPI	mg/l SFAPI	SFAS TI	mg/l TPHFID-Si T	mg/l TPHFID-Si 7	mg/l TPHFID-Si T	mg/l TPHFID-Si T	mg/l TPHFID-Si
	Method Net UKA	UKAS Accredited:		Yes	Yes	S &	o.oo	o.noo.	oN o	o.vo	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Client Sample Description		Sample Date	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
1-147 EW 270520 8.00	00.8 0	27-May-20 11:00	0.02	0.01	< 0.01	< 0.17*	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.02	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1-166 EW 270520 7.00	00.7 0	27-May-20 14:45	< 0.01	< 0.01	< 0.01	< 0.16*	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1-226 EW 270520 8.00	00.8 0	27-May-20 12:30	< 0.01	< 0.01	< 0.01	< 0.16*	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1-231 EW 270520 8.00	00.80	27-May-20 13:45	< 0.01	< 0.01	< 0.01	< 0.16*	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	<0.02	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
1-542 EW 270520 18.00	18.00	27-May-20 15:30	0.02	< 0.01	< 0.01	< 0.17*	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.11	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
SOCOTEC			Client Name	ame	SOCOTI	EC UK W	SOCOTEC UK Wokingham	       F	-			_	Sampl	Sample Analysis	Vsis			
	K		Contact		William Riggs	SDC	ı						•		•			
Bretby Business Park, Ashby Road	Ď											Date Printed	۲		Ę	11-Jun-2020		
Burton-on-Trent, Staffordshire, DE15 0YZ	E15 0YZ							•			1 12	Report Number	nber		EXB	EXR/304240		
Tel +44 (0) 1283 554400					23	D9008-19		M25 Jct 10	0		<u> </u>	Table Number	ber			-		
Fax +44 (0) 1283 554422																		

															-					
															S		11-Jun-2020	EXR/304240	-	
															Sample Analysis					
pH units WSLM3		Yes	pH units w	4.4	9	5.9	1.9	5.2							Sam		nted	lumber	ımber	
mg/l WSLM20	1	Yes	Biochemical Oxygen Demand w	<2.0	<2.0	<1.0	<2.9	<2.9									Date Printed	Report Number	Table Number	
mg/l WSLM13	0.2	Yes	Total Organic Carbon w	5.2	5.3	2.8	09.0	1.1												
×	0.2	No	Dissolved Organic Carbon w	5.3	5.3	2.8	89.0	1.3												
ഥ	0.01	Yes	TPH Aro Band >C8-C40	0.012	0.010	< 0.010	0.016	0.010										7	2	
ഥ	0.01	Yes	TPH Aro Band >C8-C10	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010							ш			101	S IMIZES JET 10	
mg/l TPHFID-Si	0.01	Yes	TPH Aro Band >C21-C35	< 0.010	< 0.010	< 0.010	0.011	< 0.010							/okingham			CMO	NIZ.	
mg/l TPHFID-Si	0.01	Yes	TPH Aro Band >C16-C21	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010							socoтес ик w	iggs		ל פסססס	-000	
旦	0.01	Yes	TPH Aro Band >C12-C16	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010							SOCOT	William Riggs		ב	ב	
mg/l TPHFID-Si	0.01	Yes	TPH Aro Band >C10-C12	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010							ame					
mg/l TPHFID-Si	0.01	Yes	TPH Ali Band >C8-C40	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010							Client Name	Contact				
Units: Method Codes:	Reporting Limits:	UKAS Accredited:	Sample Date	27-May-20 11:00	27-May-20 14:45	27-May-20 12:30	27-May-20 13:45	27-May-20 15:30							-					
	Method		Client Sample Description	1-147 EW 270520 8.00	1-166 EW 270520 7.00	1-226 EW 270520 8.00	1-231 EW 270520 8.00	1-542 EW 270520 18.00							SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
			LAB ID Number EX/	2062218	2062219	2062220	2062221	2062222									ш			

# Sample Analysis

### Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham D9008-19 M25 Jct 10 W304240 Customer

Report No

Date Logged 30-May-2020

Consignment No W172235

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.

	Iron as Fe (Dissolved) VAR	^					
	Potassium as K (Dissolved) VAR	^					
	Sodium as Na (Dissolved) VAR	^					
	Magnesium as Mg (Dissolved) VAR	1					
ICPWATVAR	Calcium as Ca (Dissolved) VAR	1					
	Selenium as Se MS (Dissolved)	1					
	Mercury as Hg MS (Dissolved)	^					
	Arsenic as As MS (Dissolved)	>					
	Zinc as Zn MS (Dissolved)	1					
	Lead as Pb MS (Dissolved)	1					
	Copper as Cu MS (Dissolved)	1					
	Cadmium as Cd MS (Dissolved)	^					
	Chromium as Cr MS (Dissolved)	1					
ICPMSW	Nickel as Ni MS (Dissolved)	^					
GROHSA	GRO-HSA GCFID (AA)		ш	Ш	Ш	Ε	Е
CUSTSERV	Report A						
CALCNH4	Ammoniacal Nitrogen as NH4 Calc	1	ш	Ε	Ε	Ε	Е
CALC_NH3	Ammoniacal Nitrogen as NH3(Kone) Calc	^	ш	В	Е	Ε	Е
MethodID	Sampled		27/05/20	27/05/20	27/05/20	27/05/20	27/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-147 8.00	1-166 7.00	1-226 8.00	1-231 8.00	1-542 18.00
	ID Number		EX/2062218	EX/2062219	EX/2062220	EX/2062221	EX/2062222

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Deviating Sample Key ote: We will endeavour to prioritise samples to complete analysis within holding time;

The sampling date was not supplied so holding time may be compromised - applicable to all analysis

Headspace present in the sample container

F Sample processing did not commence within the appropriate handling time Requested Analysis Key

Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to lowever any delay could result in samples becoming deviant whilst being processed in the is sampling dates are missing or matrices unclassified then results will not be ISO 17025 einstate accreditation. aboratory.

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

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.

EXR/304240 Ver. 1

# Sample Analysis

SOCOTEC UK Wokingham D9008-19 M25 Jct 10 Customer

Date Logged 30-May-2020

Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry** 

Consignment No W172235

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. W304240 Report No

WSLM3	pH units	>					
WSLM20	Biochemical Oxygen Demand	^	ш	ш	Ш	Ш	ш
	Dissolved Organic Carbon						
WSLM13	Total Organic Carbon	^					
TPHFID-Si	TPH by GC(Si)	1					
SFAS	Sulphide as S SFA	1					
	Cyanide (Total) as CN SFA	1					
SFAPI	Cyanide (Free) as CN SFA	>					
PHEHPLCVL	Phenols by HPLC (Low Level)						
PAHMSW	PAH GC-MS (16)	1					
	Chromium VI. as Cr (Kone)	1					
	Ammoniacal Nitrogen (Kone)	1					
KONENS	Chloride as CI (Kone)	1					
ICPWATVAR	Boron as B (Dissolved) VAR	1					
MethodID	Sampled		27/05/20	27/05/20	27/05/20	27/05/20	27/05/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-147 8.00	1-166 7.00	1-226 8.00	1-231 8.00	1-542 18.00
	ID Number		EX/2062218		EX/2062220	EX/2062221	EX/2062222

The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sample was received without the correct preservation for this analysis Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within 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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/304240 Ver. 1

Page 8 of 11

Report Number: W/EXR/304240

### **Additional Report Notes**

Method	Sample ID	The following information should be taken into consideration when using the
Code		data contained within this report
		Based on the sample history/appearance/smell, a dilution was applied prior to testing.
WSLM20	2219, 2221,	Unfortunately the result is below our lower range for this sample volume, therefore the
	2222	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	TO	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.

Page 9 of 11

Report Number: W/EXR/304240

### **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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

### **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/cm<sup>3</sup>@ 15°C

### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/304240 Ver. 1

### **Sample Descriptions**

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

Report Number: W30\_4240

Lab ID Number	Client ID	Description
EX/2062218	1-147 EW 270520 8.00	Groundwater
EX/2062219	1-166 EW 270520 7.00	Groundwater
EX/2062220	1-226 EW 270520 8.00	Groundwater
EX/2062221	1-231 EW 270520 8.00	Groundwater
EX/2062222	1-542 EW 270520 18.00	Groundwater
	<u> </u>	
	<u> </u>	

Appendix A Page 1 of 1 11/06/2020EXR/304240 Ver. 1

### **TEST REPORT**



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

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.

Date of Issue: 15-Jun-2020

< 0.100

< 0.100

GRO >C8->C10 Aliphatic

221 33 ω

Sodium as Na (Dissolved) a

29 28

		Units:	l/bm	l/bm	l/bm	_	_	l/bri	l/brl	_	l/brl	l/bn	-	l/brl	/bn	l/bn	l/bri	l/brl
		Method Codes:	ICPWATVAR	交	KONENS	KONENS	>	PAHMSW	Ν	>	PAHMSW	ΝS	>	PAHMSW	PAHMSW	PAHMSW	NS.	PAHMSW
	Method	Reporting Limits:	3		1	_	_	0.01		_	0.01			0.01	0.01	0.01		0.01
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as CI w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2062260	1-181 EW 280520 7.50	28-May-20 14:45	110	0.3	523	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2062261	1-212 EW 280520 2.00	28-May-20 10:30	30	4.0	9	<0.003	> 0.04	< 0.04	> 0.04	> 0.04	< 0.04*	> 0.04	> 0.04	< 0.04	< 0.04	> 0.04	> 0.04	< 0.04
2062262	1-212 EW 280520 8.00	28-May-20 11:00	30	0.10	11	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2062263	1-217 EW 280520 7.00	28-May-20 12:00	8	3.8	9	<0.003	> 0.04	< 0.04	> 0.04	> 0.04	< 0.04*	> 0.04	< 0.04	> 0.04	> 0.04	< 0.04	> 0.04	< 0.04
2062264	1-257 EW 280520 5.00	28-May-20 13:00	44	0.15	22	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2062265	1-257 EW 280520 14.00	28-May-20 13:45	51	0.10	24	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	SOCOTEC (S)		Client Name	зте	SOCOTEC William Riggs	SOCOTEC UK Wokingham	okingha					Date Printed	Samp	Sample Analysis		15-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400				60	D9008-19	_	M25 Jct 10	01			Report Number Table Number	umber		E	EXR/304250		
	Fax +44 (0) 1283 554422																	

Fax +44 (0) 1283 554422

< 0.025

< 0.025

1,4-Dichlorobenzene

1,3-Dichlorobenzene

		· Inits ·	/bm	l/pm	l/bu	l/bm	l/bu	ma/l	ma/l	l/bm	l/bu	l/bu	_	l/bu	l/bu	l/bu	l/bm	l/bu
		Method Codes :	SVOCSW	SVOCSW	>	>	WS.		>	>	>	>	SVOCSW	SVOCSW	>	_	SVOCSW	VOCSW
	LodtoN	Donorting I imite			+				+	+	+	+		+	_			000
		Method Nepoliting Emilies .		V.02	V.02		0.0Z	- O.O.	00.0 0N	00.0 0N	0.00Z	70.0 No	NO.0		_	0.0Z		0.00 0N
		UNAS Accredited :		ON	ON	ON		ON	ON	000	02	ON	000	02	02	00	ON	00
LAB ID Number EX/	Client Sample Description	Sample Date	1-Methylnaphthalene	2,4,5-Trichlorophenol	2,4,6 - Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6 Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3+4-Methylphenol	3-Nitroaniline
2062260	1-181 EW 280520 7.50	28-May-20 14:45																
2062261	1-212 EW 280520 2.00	28-May-20 10:30	< 0.010	< 0.100	< 0.100	< 0.100	< 0.100	< 0.050	< 0.025	< 0.025	< 0.010	< 0.100	< 0.010	< 0.025	< 0.025	< 0.100	< 0.100	< 0.025
2062262	1-212 EW 280520 8.00	28-May-20 11:00																
2062263	1-217 EW 280520 7.00	28-May-20 12:00																
2062264	1-257 EW 280520 5.00	28-May-20 13:00																
2062265	1-257 EW 280520 14.00	28-May-20 13:45																
	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wokin	/okingham	E					Sampl	Sample Analysis	ysis			
	•		Contact		William Riggs	sbb												
	Bretby Business Park, Ashby Road											Date Printed	Į,		15-7	15-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ							•	(		1   62	Report Number	nber		EXR	EXR/304250		
	Tel +44 (0) 1283 554400				2	D9008-19	9 MZ:	M25 Jct 10	)		<u> </u>	Table Number	ber			-		
	Fax +44 (0) 1283 554422																	

l/gm	SVOCSW	0.002	No	Benzo[k]fluoranthene		< 0.010							
$\blacksquare$	>			Benzo[g,h,i]perylene		< 0.010							
l/gm	SVOCSW	0.002	No	Benzo[b]fluoranthene		< 0.010					15-Jun-2020	EXR/304250	-
l/gm	SVOCSW	0.002	No	Benzo[a]pyrene		< 0.010						EX	
l/gm	SVOCSW	0.002	No	Benzo[a]anthracene		< 0.010					Sample Analysis		
l/gm	SVOCSW	0.002	No	Anthracene		< 0.010					Samp	lumber	ımber
l/gm	SVOCSW	0.002	No	Acenaphthylene		< 0.010					Date Printed	Report Number	Table Number
	က်		Ш	Acenaphthene		< 0.010							
l/gm	SVOCSW	0.05	No	4-Nitrophenol		< 0.250							
l/gm	SVOCSW	0.005	No	4-Nitroaniline		< 0.025						10	2
	Ś			4-Chlorophenyl-phenylether		< 0.025						M25 Ict 10	5
l/gm	SVOCSW	0.02	No	4-Chlorophenol		< 0.100					Vokingham		
-	SVOCSW	_	-	4-Chloroaniline		< 0.025					SOCOTEC UK Woki	D9008-19	
	SVOCSW		_	4-Chloro-3-methylphenol		< 0.025					SOCOTEC William Riggs	ב	í
	SVOCSW		_	4-Bromophenyl-phenylether		< 0.025					аше		
	SVOCSW			4,6-Dinitro-2-methylphenol		< 0.250					Client Name		
Units:	Method Codes:	Reporting Limits:	UKAS Accredited:	Sample Date	28-May-20 14:45	28-May-20 10:30	28-May-20 11:00	28-May-20 12:00	28-May-20 13:00	28-May-20 13:45			
		Method !	ח	Client Sample Description	1-181 EW 280520 7.50	1-212 EW 280520 2.00	1-212 EW 280520 8.00	1-217 EW 280520 7.00	1-257 EW 280520 5.00	1-257 EW 280520 14.00	SOCOTEC (Salariness Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400
				LAB ID Number EX/	2062260	2062261	2062262	2062263	2062264	2062265		Bu	-

< 0.010

Di-n-octylphthalate

		Units:					-	$\perp$	$\vdash$		-				Н		-	mg/l
		Method Codes:	SVOCSW	>	SVOCSW	SVOCSW	SVOCSW	SVOCSW	>	>	SVOCSW	SVOCSW	SVOCSW	SVOCSW	>	≥	SVOCSW	SVOCSW
	Method	Reporting Limits:		2			_	0.005	0.005	2	-	-	_	0.005	0.005		_	0.02
		UKAS Accredited:	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
LAB ID Number EX/	Client Sample Description	Sample Date	Diphenyl Ether	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno[1,2,3-cd]pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitroso-di-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol
2062260	1-181 EW 280520 7.50	28-May-20 14:45																
2062261	1-212 EW 280520 2.00	28-May-20 10:30	< 0.010	< 0.010	< 0.010	< 0.025	< 0.025	< 0.025	< 0.025	< 0.010	< 0.025	< 0.010	< 0.025	< 0.025	< 0.025	< 0.250	< 0.010	< 0.100
2062262	1-212 EW 280520 8.00	28-May-20 11:00																
2062263	1-217 EW 280520 7.00	28-May-20 12:00																
2062264	1-257 EW 280520 5.00	28-May-20 13:00																
2062265	1-257 EW 280520 14.00	28-May-20 13:45																
	SOCOTEC		Client Name	ате	SOCOTEC William Riggs	EC UK W	SOCOTEC UK Wokingham	٤	-	_		-	Samp	Sample Analysis	ysis			
	Bretby Business Park, Ashby Road											Date Printed	pa		15-	15-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				<b>D</b>	D9008-19		M25 Jct 10	0		<u>  •    </u>	Report Number	mber		EXE	EXR/304250		
	lel +44 (0) 1283 554400 Fax +44 (0) 1283 55422								)		-	l able Number	nper					

		: Onits :	l/gm	mg/l	mg/l	l/gm	l/gm	l/gm	l/gm	l/grl	l/bn	l/grl						
		Method Codes:		TPHFID-Si	TPHFID-Si	TPHFID-Si									PHFID-Si V	OCHSAW V	OCHSAW V	OCHSAW
	Method	Method Reporting Limits:	0.002	0.01	0.01		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	_	_	_
		<b>UKAS Accredited:</b>	Š	Yes	Yes	Yes	Yes	Yes	Yes	<sub>S</sub>								
LAB		5		ТРН А	ТРН А	ТРН А	ТРН А	TPH A	TPH A	ТРН А	ТРН А	1,1,1,2-	1,1,1-	1,1,2,2-				
ID Number EX/	Client Sample Description	Sample Date	Pyrene	li Band >C10-C12	li Band >C12-C16	li Band >C16-C21	li Band >C21-C35	Ali Band >C8-C10	Ali Band >C8-C40	ro Band >C10-C12	ro Band >C12-C16	ro Band >C16-C21	ro Band >C21-C35	ro Band >C8-C10	ro Band >C8-C40	Tetrachloroethane	Trichloroethane	Tetrachloroethane
2062260	1-181 EW 280520 7.50	28-May-20 14:45		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
2062261	1-212 EW 280520 2.00	28-May-20 10:30	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.012	< 1.0	< 1.0	< 1.0
2062262	1-212 EW 280520 8.00	28-May-20 11:00		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
2062263	1-217 EW 280520 7.00	28-May-20 12:00		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.011			
2062264	1-257 EW 280520 5.00	28-May-20 13:00		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.013			
2062265	1-257 EW 280520 14.00	28-May-20 13:45		< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010			
<b>0</b>	SOCOTEC 🔇		Client Name	ame	SOCOT	SOCOTEC UK Wokin	okingham	Æ					Samp	Sample Analysis	ysis			
			Contact		William Riggs	dgs												
ш	Bretby Business Park, Ashby Road										_	Date Printed	pə		15-	15-Jun-2020		
ш	Burton-on-Trent, Staffordshire, DE15 0YZ				2	4 000		1	9		_	Report Number	mber		EXF	EXR/304250		
	Tel +44 (0) 1283 554400				2	D3000-13		וובט טכן וי	2			<b>Table Number</b>	nber			_		
	Fax +44 (0) 1283 554422																	

15-Jun-2020 EXR/304250

Report Number

**Date Printed** 

**Table Number** 

D9008-19 M25 Jct 10

Sample Analysis

U	
SOCOTEC	
SOC	

SOCOTEC UK Wokingham

Client Name

William Riggs

Contact

 Units:
 µg/l
 <

× 1.0\*

< 1.0

< 1.0

< 1.0

< 1.0\*

< 5.0

< 1.0

< 5.0

< 1.0

< 5.0

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0

< 1.0\*

1-212 EW 280520 2.00

1-212 EW 280520 8.00

2062262 2062263

1-181 EW 280520 7.50

2062260

2062261

1-217 EW 280520 7.00 1-257 EW 280520 5.00 1-257 EW 280520 14.00

> 2062264 2062265

28-May-20 14:45 28-May-20 10:30 28-May-20 11:00 28-May-20 12:00 28-May-20 13:00 28-May-20 13:45

1,3-Dichloropropane

1,3-Dichlorobenzene

1,3,5-Trimethylbenzene

1,2-Dichloropropane

1,2-Dichloroethane

1,2-Dichlorobenzene

1,2-Dibromoethane

1,2-Dibromo-3-chloropropane

1,2,4-Trimethylbenzene

1,2,4-Trichlorobenzene

1,2,3-Trichloropropane

1,2,3-Trichlorobenzene

1,1-Dichloropropene

1,1-Dichloroethene

1,1-Dichloroethane

1,1,2-Trichloroethane

Sample Date

Client Sample Description

LAB ID Number EX/

Tel +44 (0) 1283 554400

Bretby Business Park, Ashby Road

Fax +44 (0) 1283 554422

cis 1,3-Dichloropropene

		Units:	ug/l	ug/l	ug/l ug/l hg/l ug/l hg/l ug/l ug/l og/l	ug/l	hg/l	ug/l	ug/l	hg/l	ug/l	hg/l	l/gu	ug/l hg/l ug/l hg/l hg/l hg/l hg/l hg/l yOCHSaW YOCHSAW YOCHSAW YOCHSAW YOCHSAW YOCHSAW	hg/l	hgu l/gu l/gu l/gd	ug/l	hg/l
	Method	Reporting Limits :	-	-	-	-	-	2	-	-	5	-	-	-	-	-	-	_
	)	UKAS Accredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No ON	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date		Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	m and p-Xylene	Naphthalene	n-Butylbenzene	o-Xylene	p-Isopropyltoluene	Propylbenzene	sec-Butylbenzene	Styrene	tert-Butylbenzene
2062260	1-181 EW 280520 7.50	28-May-20 14:45																
2062261	1-212 EW 280520 2.00	28-May-20 10:30	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0*	< 1.0	< 1.0	< 1.0
2062262	1-212 EW 280520 8.00	28-May-20 11:00																
2062263	1-217 EW 280520 7.00	28-May-20 12:00																
2062264	1-257 EW 280520 5.00	28-May-20 13:00																
2062265	1-257 EW 280520 14.00	28-May-20 13:45																
S	SOCOTEC		Client Name	ame	SOCOTE	C UK Wc	SOCOTEC UK Wokingham	_					Sampl	Sample Analysis	ysis			
			Contact		William Riggs	şk												
Bre	Bretby Business Park, Ashby Road											Date Printed	þ		15-J	15-Jun-2020		
Bul	Burton-on-Trent, Staffordshire, DE15 0YZ					7	_		•		<u> </u>	Report Number	mber		EXR	EXR/304250		
ŕ	Tel +44 (0) 1283 554400				7	D9008-19	_	MZ5 JCt 10	<b>-</b>		1-	Table Number	ber			-		
LL.	Fax +44 (0) 1283 554422																	

15-Jun-2020 EXR/304250

Report Number

**Date Printed** 

**Table Number** 

D9008-19 M25 Jct 10

SOCOTEC UK Wokingham

Client Name

William Riggs

Contact

Sample Analysis

6.1

6.0

23 6.4

21

6.5 5.8

<5.7

3.6

2.8

2.9 35 2.2

< 1.0

< 1.0

< 1.0

× 1.0\*

< 1.0

< 1.0

28-May-20 10:30

28-May-20 11:00 28-May-20 12:00 28-May-20 13:00

28-May-20 14:45

1-181 EW 280520 7.50 1-212 EW 280520 2.00

2062260 2062261 2062262 2062263 28-May-20 13:45

1-257 EW 280520 14.00

1-217 EW 280520 7.00 1-257 EW 280520 5.00

> 2062264 2062265

1-212 EW 280520 8.00

<1.0

2.4 37

pH units w

Biochemical Oxygen Demand w

Total Organic Carbon w

Dissolved Organic Carbon w

Vinyl Chloride

Trichlorofluoromethane

Trichloroethene

trans 1,3-Dichloropropene

Trans 1,2 Dichloroethene

Toluene

Tetrachloroethene

Sample Date

Client Sample Description

LAB ID Number EX/

6.3

<2.9

9.0

7.2

3.2

9

<5.7

 Units:
 ug/l
 µg/l
 ug/l
 µg/l
 <

3	
E	
_	

SOCO

Burton-on-Trent, Staffordshire, DE15 0YZ Bretby Business Park, Ashby Road

Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422

## Sample Analysis

### Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

Consignment No W172310

SOCOTEC UK Wokingham D9008-19 M25 Jct 10 W304250 Customer

Report No

Date Logged 30-May-2020

In-House Report Due 09-Jun-2020 be results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

	Potassium as K (Dissolved) VAR	^						
	Sodium as Na (Dissolved) VAR	>						
	Magnesium as Mg (Dissolved) VAR	>						
	Calcium as Ca (Dissolved) VAR	>						
ICPWATVAR	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)	>						
ICPMSW	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	>						
ДIР	pel		02/50	28/05/20	02/50	28/05/20	28/05/20	28/05/20
MethodID	Sampled		28/(	28/(	28/(	28/(	28/(	28/(
	90							
	іх Туре		je.	je.	je.	er.	er.	er.
	Matri		dwate	dwate	dwate	dwate	dwate	dwate
			Sroun	Sroun	Groundwater	<b>eroun</b>	Groundwater	Groundwater
	<u> </u>					)	)	J
	otion							
	Description							
	ă		7.50	2.00	8.00	7.00	5.00	1-257 14.00
			1-181 7.50	1-212 2.00	1-212 8.00	1-217 7.00	1-257 5.00	-257
			_	_	_	-	7	_
	mber		09	61	62	63	64	65
	ID Number		EX/2062260	:X/2062261	EX/2062262	EX/2062263	EX/2062264	EX/2062265
	=		EX/2	EX/2	EX/2	EX/2	EX/2	EX/2
							_	

# Deviating Sample Key lowever any delay could result in samples becoming deviant whilst being processed in the ote: We will endeavour to prioritise samples to complete analysis within holding time;

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

aboratory.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/304250 Ver. 1

# Sample Analysis

### Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

**SOCOTEC UK Wokingham** D9008-19 M25 Jct 10 Customer

W304250

Report No

Date Logged 30-May-2020

Consignment No W172310

In-House Report Due 09-Jun-2020

WSLM3

		•							
	WSLM20	Biochemical Oxygen Demand	1						
		Dissolved Organic Carbon							
	WSLM13	Total Organic Carbon	>						
	VOCHSAW	VOC HSA-GCMS	>						
	TPHFID-Si	TPH by GC(Si)	>						
	svocsw	svoc							
	SFAS	Sulphide as S SFA	^						
		Cyanide (Total) as CN SFA	^						
	SFAPI	Cyanide (Free) as CN SFA	1						
days.	PHEHPLCVL	Phenois by HPLC (Low Level)							
rking	PAHMSW	PAH GC-MS (16)	1						
ve wc		Chromium VI. as Cr (Kone)	1						
nal fiv		Ammoniacal Nitrogen (Kone)	>						
dditio	KONENS	Chloride as CI (Kone)	>						
an a		Boron as B (Dissolved) VAR	^						
up to	ICPWATVAR	Iron as Fe (Dissolved) VAR	1						
take	dlb	peled		28/05/20	28/05/20	28/05/20	28/05/20	28/05/20	28/05/20
ely to	MethodID	Sampled		28/(	28/(	28/(	28/(	28/(	28/(
) is lik									
h a '^		90							
d wit		Matrix Type		F	je.	je.	er.	er.	эr
ntifie		Matri		dwate	dwate	dwate	dwate	dwate	dwate
s (ide				Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
nalys		l		۲			)	)	J
ted a									
ntrac		Description							
subcc		escri							
r any		Δ		7.50	2.00	8.00	7.00	5.00	14.00
Its for				1-181 7.50	1-212 2.00	1-212 8.00	1-217 7.00	1-257 5.00	1-257 14.00
Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.				<u> </u>	Ì	<u>`</u>	`	`	`
te th		ID Number		90	91	:62	:63	94	:65
se no		D N <sub>u</sub>		EX/2062260	EX/2062261	EX/2062262	EX/2062263	EX/2062264	EX/2062265
Plea				EX.	EX/	EX/	EX/	EX/	EX/
,					_	_			_

pH units Temperature C°

### The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Headspace present in the sample container

 Sample processing did not commence within the appropriate handling time
 Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Analysis Required

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

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.

EXR/304250 Ver. 1

Report Number: W/EXR/304250

### **Additional Report Notes**

Method	Sample ID	The following information should be taken into consideration when using the
Code	Campic ID	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.
L		

Report Number: W/EXR/304250

### **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 NH4, 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

### **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/cm<sup>3</sup>@ 15°C

### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 19 of 19 EXR/304250 Ver. 1

### **Sample Descriptions**

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

Report Number: W30\_4250

EX308229 1-18 EW 26050 50 Growthouse EX308281 1-21 EW 26050 2.00 Growthouse EX308281 1-21 EW 26050 2.00 Growthouse EX308282 1-21 EW 26050 2.00 Growthouse EX308282 1-21 EW 26050 2.00 Growthouse EX308283 1-27 EW 26050 2.00 Growthouse EX308286 1-27 EW 26050 2.00 Growthouse EX308286 1-287 EW 26050 14.00 Growthouse Growthouse EX308286 1-287 EW 26050 14.00 Growthouse Growthouse EX308286 1-287 EW 26050 14.00 G	Lab ID Number	Client ID	Description
EX/2062261     1-212 EW 280520 2.00     Groundwater       EX/2062262     1-212 EW 280520 8.00     Groundwater       EX/2062263     1-217 EW 280520 7.00     Groundwater       EX/2062264     1-257 EW 280520 5.00     Groundwater			
EX/2062262     1-212 EW 280520 8.00     Groundwater       EX/2062263     1-217 EW 280520 7.00     Groundwater       EX/2062264     1-257 EW 280520 5.00     Groundwater	EX/2062260	1-181 EW 280520 7.50	Groundwater
EX/2062263 1-217 EW 280520 7.00 Groundwater  EX/2062264 1-257 EW 280520 5.00 Groundwater	EX/2062261	1-212 EW 280520 2.00	Groundwater
EX/2062263 1-217 EW 280520 7.00 Groundwater  EX/2062264 1-257 EW 280520 5.00 Groundwater	EX/2062262	1-212 EW 280520 8.00	Groundwater
EX/2062264 1-257 EW 280520 5.00 Groundwater	EX/2062263	1-217 EW 280520 7.00	Groundwater
EX20862285 1257 EW 280520 14 00 Groundwater	EX/2062264	1-257 EW 280520 5.00	Groundwater
	EX/2062265	1-257 EW 280520 14.00	Groundwater
		1	

Appendix A Page 1 of 1 15/06/2020EXR/304250 Ver. 1

### **TEST REPORT**



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

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.

Date of Issue: 16-Jun-2020

		Units:	µg/l BTEXHSA	µg/l BTEXHSA	hg/l BTEXHSA	hg/l BTEXHSA	hg/l BTEXHSA	µg/l BTEXHSA	CALCNH4 F	mg/l FNH3CALC	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA
	Method	1 Reporting Limits:	2	2	10	2	2			0.01			0.1					0.1
		UKAS Accredited:		Yes	Yes	Yes	Yes	Yes	Yes	No	No	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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2062896	1-516 EW 010620 8.00	01-Jun-20 12:30	< 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	< 0.100	< 0.100	< 0.100
2062897	1-516 EW 010620 21.00	01-Jun-20 13:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.03	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
2062898	1-508 EW 010620 8.00	01-Jun-20 15:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.21	<0.01	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
. 0)	SOCOTEC	-	Client Name	ame	SOCOTEC William Ridgs	SOCOTEC UK Wokin	/okingham	E	-			-	Samp	Sample Analysis	lysis		-	
						0.00					†							
<u>α</u> ά	Bretby Business Park, Ashby Road										1	Date Printed	ted		16.	16-Jun-2020		
n '	Surron-on-Frent, Starrordshire, DE15 072 Tel +44 (0) 1283 554400				D3	D9008-19		M25 Jct 10	10		1 -	Table Number	nber		Ĭ	EAR/304389		
-	Fax +44 (0) 1283 554422																	

16-Jun-2020 EXR/304389

Report Number

Date Printed

Table Number

D9008-19 M25 Jct 10

SOCOTEC UK Wokingham

Client Name

William Riggs

Contact

Sample Analysis

 mg/l
 <th

 mg/l
 mg/l
 mg/l
 mg/l

 GROHSA
 ICPMSW
 ICPMSW
 ICPMSW

 0.1
 0.001
 0.00002
 0.001
 0.001

 Yes
 Yes
 Yes
 Yes
 Yes

Units:

Method Codes:

Method Reporting Limits:

UKAS Accredited:

19 7 17

Ξ 4 2

12 4 2

19

0.03 <0.01 <0.01

0.08 5.8

0.01

12 2

0.006 0.021 0.02

> 0.013 0.024

> <0.001 <0.001

> <0.00003 <0.00003

> <0.001 <0.001

> > <0.001

<0.001 <0.001 0.001

> <0.001 <0.001

<0.001

0.005

<0.00003

0.021

0.003 0.001

<0.00002 <0.00002 <0.00002

<0.001

< 0.100 < 0.100 < 0.100

01-Jun-20 12:30 01-Jun-20 13:30 01-Jun-20 15:30

1-516 EW 010620 21.00

1-508 EW 010620 8.00

1-516 EW 010620 8.00

2062896 2062897 2062898

Sodium as Na (Dissolved) a

Potassium as K (Dissolved) a

Magnesium as Mg (Dissolved) a

Iron as Fe (Dissolved) a

Calcium as Ca (Dissolved) a

Boron as B (Dissolved) a

Zinc as Zn (Dissolved)

Selenium as Se (Dissolved)

Nickel as Ni (Dissolved)

Mercury as Hg (Dissolved)

Lead as Pb (Dissolved)

Copper as Cu (Dissolved)

Chromium as Cr (Dissolved)

Cadmium as Cd (Dissolved)

Arsenic as As (Dissolved)

GRO-HSA o

Sample Date

Client Sample Description

LAB ID Number EX/

Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400

Fax +44 (0) 1283 554422

		Huits	l/bm	l/bm	l/bm	_		//	_		_	_	_	_		_	_	//
		Method Codes:	ICPWATVAR	KONENS	KONENS	S	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW
	Method	d Reporting Limits:	က	0.01	_		0.01	0.01	_		_	-	_					0.01
		UKAS Accredited :	>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as Cl w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2062896	1-516 EW 010620 8.00	01-Jun-20 12:30	44	90.0	108	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2062897	1-516 EW 010620 21.00	01-Jun-20 13:30	15	0.02	43	<0.003	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2062898	1-508 EW 010620 8.00	01-Jun-20 15:30	35	0.16	33	<0.003	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wokingham	okingha	٤					Samp	Sample Analysis	lysis			
			Contact		William Riggs	dgs												
	Bretby Business Park, Ashby Road											Date Printed	pa		16	16-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				2	04 0000		1	9			Report Number	ımber		EX	EXR/304389		
	Tel +44 (0) 1283 554400				ב	-000			2		<u>.                                     </u>	Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

0.011

TPH Ali Band >C21-C35

																alysis		16-Jun-2020	EXR/304389	-	
pH units	WSLM3		Yes	pH units w	3.3	3.8	9									Sample Analysis					
mg/l	WSLM20	1	Yes	Biochemical Oxygen Demand w	<2.9	<2.0	<9.5									Sam		ited	umber	mber	
mg/l	WSLM13	0.2	Yes	Total Organic Carbon w	1.3	0.48	1.3											Date Printed	Report Number	Table Number	
l/gm	WSLM13	0.2	No	Dissolved Organic Carbon w	1.5	0.75	1.5														
mg/l	TPHFID-Si	0.01	Yes	TPH Aro Band >C8-C40	< 0.010	0.019	0.012														
	-Si	0.01	Yes	TPH Aro Band >C8-C10	< 0.010	< 0.010	< 0.010												(	2	
l/gm	TPHFID-Si	0.01	Yes	TPH Aro Band >C21-C35	< 0.010	0.014	< 0.010									æ				9 MZ5 JCt 10	
	-Si	0.01	Yes	TPH Aro Band >C16-C21	< 0.010	< 0.010	< 0.010									Wokingham				S MZ	
	نې	0.01	Yes	TPH Aro Band >C12-C16	< 0.010	< 0.010	< 0.010									_	ggs		-	D9008-1	
	į.	0.01	Yes	TPH Aro Band >C10-C12	< 0.010	< 0.010	< 0.010									SOCOTEC UK	William Riggs			ב	
	<u>-</u> S	0.01	Yes	TPH Ali Band >C8-C40	0.012	0.010	0.019									me		•			
	ίζ	0.01	Yes	TPH Ali Band >C8-C10	< 0.010	< 0.010	< 0.010									Client Name	Contact				
	Method Codes:	Reporting Limits:	UKAS Accredited:	Sample Date	01-Jun-20 12:30	01-Jun-20 13:30	01-Jun-20 15:30														
		Method	<u>َ</u> د	Client Sample Description	1-516 EW 010620 8.00	1-516 EW 010620 21.00	1-508 EW 010620 8.00									SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
				LAB ID Number EX/	2062896	2062897	2062898												_		

# Sample Analysis

### Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10

W304389

Report No

Date Logged 04-Jun-2020

Consignment No W172402

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.

	Potassium as K (Dissolved) VAR	>			
	Sodium as Na (Dissolved) VAR	>			
	Magnesium as Mg (Dissolved) VAR	>			
	Calcium as Ca (Dissolved) VAR	>			
ICPWATVAR	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)	>			
ICPMSW	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		01/06/20	01/06/20	01/06/20
	Matrix Type		Groundwater	Groundwater	Groundwater
Description			1-516 8.00	1-516 21.00	1-508 8.00
ID Number			EX/2062896	EX/2062897	EX/2062898

### The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Headspace present in the sample container

Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Analysis dependant upon trigger result - Note: due date may be affected if triggered Analysis Required

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. Analysis Subcontracted - Note: due date may vary No analysis scheduled

EXR/304389 Ver. 1

# Sample Analysis

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10 W304389 Report No

Consignment No W172402

Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry** 

In-House Report Due 15-Jun-2020

Date Logged 04-Jun-2020

			pH units	>			
		WSLM3	Temperature C°				
		WSLM20	Biochemical Oxygen Demand	^	ш	ш	ш
			Dissolved Organic Carbon				
		WSLM13	Total Organic Carbon	/			
		TPHFID-Si	TPH by GC(Si)	/			
2		SFAS	Sulphide as S SFA	^			
07-III			Cyanide (Total) as CN SFA	^			
5		SFAPI	Cyanide (Free) as CN SFA	^			
Usus report Due 13-Juli-2020	days.	PHEHPLCVL	Phenols by HPLC (Low Level)				
C pol	rking	PAHMSW	PAH GC-MS (16)	^			
מממו	/e wo		Chromium VI. as Cr (Kone)	>			
-	nal fiv		Ammoniacal Nitrogen (Kone)	^			
	dditio	KONENS	Chloride as CI (Kone)	^			
	an a		Boron as B (Dissolved) VAR  Iron as Fe (Dissolved) VAR  —				
	up to	ICPWATVAR	Iron as Fe (Dissolved) VAR	^			
	likely to take	MethodID	Sampled		01/06/20	01/06/20	01/06/20
	sis (identified with a '^') is		Matrix Type		Groundwater	Groundwater	Groundwater
000t00A	Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.		Description		1-516 8.00	1-516 21.00	1-508 8.00
Nepolt No	Please note the res		ID Number		EX/2062896	EX/2062897	EX/2062898

## Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

Analysis Required

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

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.

EXR/304389 Ver. 1

### **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	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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	

### **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/cm<sup>3</sup>@ 15°C

### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/304389 Ver. 1

### **Sample Descriptions**

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

Report Number: W30\_4389

Lab ID Number	Client ID	Description
EX/2062896	1-516 EW 01062020 8.00	
EX/2062897	1-516 EW 01062020 8.00 1-516 EW 01062020 21.00	Groundwater Groundwater
EX/2002897	1-516 EW 01062020 21.00	Goundwater
EX/2062898	1-508 EW 01062020 8.00	Groundwater
	1	
	1	

Appendix A Page 1 of 1 03/07/2020EXR/304389 Ver. 1

### **TEST REPORT**



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)
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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

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.

Date of Issue: 17-Jun-2020

•	Contact	William Riggs
susiness Park, Ashby Road		
on-Trent, Staffordshire, DE15 0YZ		
4 (0) 1283 554400		סמם
4 (0) 1283 554422		

Zinc as Zn (Dissolved)         45000000000000000000000000000000000000
-----------------------------------------------------------------------

		: Onits:	mg/l	l/gm				_	_		_	l/grl	+	l/gr	иgи	$\dashv$	l/gH	hg/I
		Method Codes:	ICPWATVAR	KONENS	KONENS	တ	>	>	Š	SW.	Š	PAHMSW	Š	PAHMSW	PAHMSW	Š	PAHMSW	PAHMSW
	Method F	Reporting Limits:	3	0.01	-	0.003	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as CI w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2062909	1-737 EW 020620 7.00	02-Jun-20 15:20	42	0.02	15	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2062910	10 1-509 EW 020620 8.00	02-Jun-20 14:30	75	0.07	24	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2062911	1-509 EW 020620 13.00	02-Jun-20 13:45	28	0.15	17	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2062912	1-541 EW 020620 5.00	02-Jun-20 12:05	92	<0.01	33	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2062913	13 1-541 EW 020620 18.00	02-Jun-20 13:15	42	0.04	25	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	SOCOTEC		Client Name	E E	SOCOTE	SOCOTEC UK Woking	Okingham						Samp	Sample Analysis	lysis			
	•		Contact		William Riggs	sßt												
	Bretby Business Park, Ashby Road	_										Date Printed	ted		17	17-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ				2	7 000		, 101	Ç			Report Number	rmber		EX	EXR/304392		
	Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422				ב	N 61-00060		<b>2</b> 5 JCt 10	2		<u>ı                                      </u>	Table Number	mber			-		

17-Jun-2020 EXR/304392

Report Number

**Date Printed** 

Table Number

D9008-19 M25 Jct 10

Sample Analysis

 mg/l
 mg/l
 mg/l
 mg/l

 TPHFID-Si
 TPHFID-Si
 TPHFID-Si

 0.01
 0.01
 0.01

 Yes
 Yes
 Yes

SFAS 0.02 Yes

SFAPI 0.02 Yes

SFAPI 0.02 Yes

 Units:
 µg/l
 <

< 0.010

0.012 0.013

0.014 0.011

< 0.010\* < 0.010\* < 0.010\* < 0.010\* < 0.010\*

< 0.010 < 0.010 < 0.010 < 0.010 < 0.010

< 0.010 < 0.010 < 0.010 < 0.010 < 0.010

<0.02

<0.02

<0.02

<0.0005

<0.0005 <0.0005 <0.0005 <0.0005 <0.0005

<0.0005

<0.0005 <0.0005

<0.02 <0.02

<0.02 <0.02

<0.02 <0.02 <0.02

<0.0005 <0.0005 <0.0005

<0.0005 <0.0005 <0.0005

< 0.16\* < 0.16\*

< 0.01 < 0.01

> < 0.01 < 0.01 < 0.01

< 0.01

< 0.01 0.01

< 0.01\* < 0.01\*

02-Jun-20 15:20 02-Jun-20 14:30 02-Jun-20 13:45

1-737 EW 020620 7.00 1-509 EW 020620 8.00 <0.0005

< 0.01 < 0.01

< 0.01

< 0.01\* < 0.01\*

1-509 EW 020620 13.00 1-541 EW 020620 5.00 1-541 EW 020620 18.00

2062912

2062913

2062910 2062911

2062909

0.01 0.02

<0.0005 <0.0005

< 0.16\*

< 0.17\*

< 0.01

< 0.01

< 0.01\*

02-Jun-20 13:15 02-Jun-20 12:05

0.04 0.05

<0.02

<0.02

<0.02

<0.0005

<0.0005

TPH Ali Band >C21-C35

TPH Ali Band >C16-C21

TPH Ali Band >C12-C16

TPH Ali Band >C10-C12

Sulphide as S

Cyanide (Total) as CN

Cyanide (Free) as CN

Trimethylphenols

Phenol

Dimethylphenols

Cresols

Total PAH (Sum of USEPA 16)

Pyrene

Phenanthrene

Naphthalene

Indeno(1,2,3-cd)pyrene

Sample Date

Client Sample Description

LAB ID Number EX/

7	
u	
EC	

**SOCOTEC UK Wokingham** 

Client Name

William Riggs

Contact

Bretby Business Park, Ashby Road

Tel +44 (0) 1283 554400

Fax +44 (0) 1283 554422

Burton-on-Trent, Staffordshire, DE15 0YZ

																			17-Jun-2020	EYD/204302	VK/504592	-	_
8 8																	Sample Analysis		1		ũ		
pH units WSLM3		Yes	pH units w	4.8	3.7	9.9	4	3.7									ple Ar						
mg/l WSLM20	1	Yes	Biochemical Oxygen Demand w	<2.9	<2.9	<2.9	<9.5	<2.0									Sam		nted	limbor	Jaguin	nmper	
mg/l WSLM13	0.2	Yes	Total Organic Carbon w	2.0	1.5	4.7	1.7	0.50											Date Printed	Donort Mumbor	Teport	l able Number	
mg/l WSLM13		οN	Dissolved Organic Carbon w	2.3	1.6	4.8	1.9	0.74															
mg/l TPHFID-Si	-	Yes	TPH Aro Band >C8-C40	0.011	0.010	0.015	< 0.010	0.098															
mg/l TPHFID-Si	+	Yes	TPH Aro Band >C8-C10	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010													10	)	
mg/l TPHFID-Si	$\vdash$	Yes	TPH Aro Band >C21-C35	< 0.010	< 0.010	0.012	< 0.010	0.076									mr				9 M25 Jct 10		
mg/l TPHFID-Si	-	Yes	TPH Aro Band >C16-C21	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010									Nokingham				19 M2		
mg/l TPHFID-Si	-	Yes	TPH Aro Band >C12-C16	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010									SOCOTEC UK N	iggs			D9008-1		
mg/l TPHFID-Si	0.01	Yes	TPH Aro Band >C10-C12	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010									soco	William Riggs			Ö		
mg/l TPHFID-Si	+	Yes	TPH Ali Band >C8-C40	0.023	0.014	0.020	0.024	< 0.010									lame						
mg/l TPHFID-Si		Yes	TPH Ali Band >C8-C10	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010									Client Name	Contact					
Units:	Method Reporting Limits:	UKAS Accredited:	Sample Date	02-Jun-20 15:20	02-Jun-20 14:30	02-Jun-20 13:45	02-Jun-20 12:05	02-Jun-20 13:15															
	Method R	בּר <u>ו</u>	Client Sample Description	1-737 EW 020620 7.00	1-509 EW 020620 8.00	1-509 EW 020620 13.00	1-541 EW 020620 5.00	1-541 EW 020620 18.00									SOCOTEC		Bretby Business Park, Ashby Road	Burton on Trant Staffordshire DE15 0V7	ton-on- rient, standasme, de la utz	lel +44 (U) 1283 554400	Fax +44 (0) 1283 554422
			LAB ID Number EX/	2062909	2062910	2062911	2062912	2062913									Š		Bret	1	ing I	9	Fa

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10 W304392 Report No

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

Consignment No W172402 Date Logged 05-Jun-2020

In-House Report Due 15-Jun-2020

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) ICPMSW GROHS **GRO-HSA GCFID (AA)** Ammonia (Free) as N calc Report A Ammoniacal Nitrogen as NH4 Calc 02/06/20 02/06/20 02/06/20 02/06/20 02/06/20 Sampled MethodID Matrix Type Groundwater Groundwater Groundwater Groundwater Description 1-509 13.00 -737 7.00 1-541 5.00 -509 8.00 ID Number EX/2062912 EX/2062913 EX/2062909 EX/2062911 EX/2062910

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate handling time Sample processing did not commence within the appropriate holding time

iccredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

owever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Groundwater

1-541 18.00

Analysis Required

No analysis scheduled

Requested Analysis Key

Analysis dependant upon trigger result - Note: due date may be affected if triggered 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.

EXR/304392 Ver. 1

### Sample Analysis

### Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10 W304392

Report No

Date Logged 05-Jun-2020

Consignment No W172402

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.

	pH units	>					
WSLM3	Temperature C°						
WSLM20	Biochemical Oxygen Demand	>	Ш	ш	ш	ш	ш
	Dissolved Organic Carbon						
WSLM13	Total Organic Carbon	>					
TPHFID-Si	TPH by GC(Si)	^					
SFAS	Sulphide as S SFA	^					
	Cyanide (Total) as CN SFA	>					
SFAPI	Cyanide (Free) as CN SFA	^					
PHEHPLCVL	Phenols by HPLC (Low Level)						
PAHMSW	PAH GC-MS (16)	^					
	Chromium VI. as Cr (Kone)	^					
	Ammoniacal Nitrogen (Kone)	^					
KONENS	Chloride as CI (Kone)	^					
	Boron as B (Dissolved) VAR	>					
ICPWATVAR	Iron as Fe (Dissolved) VAR	^					
MethodID	Sampled		02/06/20	02/06/20	02/06/20	02/06/20	02/06/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-737 7.00	1-509 8.00	1-509 13.00	1-541 5.00	1-541 18.00
	ID Number		EX/2062909	EX/2062910	EX/2062911	EX/2062912	EX/2062913

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time Headspace present in the sample container

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Analysis dependant upon trigger result - Note: due date may be affected if triggered Sample processing did not commence within the appropriate handling time Requested Analysis Key Analysis Required

Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/304392 Ver. 1

### **Additional Report Notes**

Method	Sample ID	The following information should be taken into consideration when using the
Code	Sample ID	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.

### **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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	

### **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/cm<sup>3</sup>@ 15°C

### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/304392 Ver. 1

### **Sample Descriptions**

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

Report Number: W30\_4392

Lab ID Number	Client ID	Description
EX/2062909	1-737 EW 02062020 7.00	Groundwater
EX/2062910	1-509 EW 02062020 8.00	Groundwater
EX/2062911	1-509 EW 02062020 13.00	Groundwater
EX/2062912	1-541 EW 02062020 5.00	Groundwater
EX/2062913	1-541 EW 02062020 18.00	Groundwater

Appendix A Page 1 of 1 17/06/2020EXR/304392 Ver. 1

### 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

Operations Manager Energy & Waste Services

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.

Date of Issue: 17-Jun-2020

		Units:		l/bn				l/bri	l/bm	l/bm	l/bm	l/bm	l/bm	l/bm	/bw	l/bm	l/bm	l/bm
		Method Codes:	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA	BTEXHSA		C	SA	ΑS	GROHSA	ξ	GROHSA	GROHSA	SA	GROHSA
	Metho	Method Reporting Limits:		2			_						0.1	-	0.1	0.1		0.1
		UKAS Accredited:		Yes	Yes	Yes	Yes	Yes	Yes	No	9	%	N <sub>o</sub>		8	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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2063232	1-191 EW 030620 6.00	03-Jun-20 11:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.05	<0.01	< 0.100	< 0.100	< 0.100*	< 0.100*	< 0.100	< 0.100	< 0.100	< 0.100
2063233	1-203 EW 030620 7.00	03-Jun-20 11:40	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.21	<0.01	< 0.100	< 0.100	< 0.100*	< 0.100*	< 0.100	< 0.100	< 0.100	< 0.100
2063234	1-203 EW 030620 18.50	03-Jun-20 14:13	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.18	<0.01	< 0.100	< 0.100	< 0.100*	< 0.100*	< 0.100	< 0.100	< 0.100	< 0.100
2063235	1-207 EW 030620 6.00	03-Jun-20 13:30	< 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	< 0.100	< 0.100	< 0.100
2063236	1-207 EW 030620 15.00	03-Jun-20 15:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.77	<0.01	< 0.100	< 0.100	< 0.100*	< 0.100*	< 0.100	< 0.100	< 0.100	< 0.100
	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wokin	/okingham	٤					Samp	Sample Analysis	lysis			
			Contact		William Riggs	3gs												
	Bretby Business Park, Ashby Road											Date Printed	pe		-11-	17-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ					1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1CM O	125 Ict 10	5			Report Number	ımber		EXI	EXR/304458		
	Tel +44 (0) 1283 554400				ב		3 INI C	200	2		•	Table Number	nber			_		
	Fax +44 (0) 1283 554422																	

	~	ı		_								-	1		1	1						
l/gm	ICPWATVAR	Yes	Sodium as Na (Dissolved) a	40	69	99	22	43														
mg/l	ICPWATVAR ICPWATVAR	Yes	Potassium as K (Dissolved) a	19	15	12	18	80														
l/gm	CPWATVAR 1	Yes	Magnesium as Mg (Dissolved) a	31	14	12	29	19											17-Jun-2020	EXR/304458	-	
l/gm	CPWATVAR I	Yes	Iron as Fe (Dissolved) a	0.09	13.3	11.2	27.4	39.4									lysis		17.	EX		
l/gm	CPWATVAR 1	Yes	Calcium as Ca (Dissolved) a	44	20	17	43	51									Sample Analysis					
l/gm	CPWATVAR ICPWATVAR ICPWATVAR	Yes	Boron as B (Dissolved) a	0.1	0.03	0.02	0.07	0.29									Samp		ted	umber	mber	
	ICPMSW	Yes	Zinc as Zn (Dissolved)	0.238	0.157	0.089	0.055	0.172											Date Printed	Report Number	Table Number	
l/gm	ICPMSW 0 001	Yes	Selenium as Se (Dissolved)	0.001	<0.001	<0.001	<0.001	<0.001														
l/gm	ICPMSW	Yes	Nickel as Ni (Dissolved)	0.136	90.0	0.052	0.053	0.003														
l/gm	ICPMSW	Yes	Mercury as Hg (Dissolved)	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003												<b>C</b>	2	
l/gm	ICPMSW 0.001	Yes	Lead as Pb (Dissolved)	0.002	<0.001	<0.001	0.001	<0.001									٤			10	MZS JCt 10	
l/gm	ICPMSW	Yes	Copper as Cu (Dissolved)	0.003	<0.001	<0.001	<0.001	<0.001									/okingham					
l/gm	ICPMSW 0 001	Yes	Chromium as Cr (Dissolved)	0.003	0.003	0.002	0.011	<0.001									SOCOTEC UK Woki	iggs		0000	<b>D9008-19</b>	
l/gm	ICPMSW	Yes	Cadmium as Cd (Dissolved)	0.00138	0.00014	<0.00002	0.00055	<0.00002									SOCOT	William Riggs		2	ວິ	
l/gm	ICPMSW 0.001	Yes	Arsenic as As (Dissolved)	0.001	<0.001	<0.001	0.002	0.004									ame					
	GROHSA 0.1		GRO-HSA o	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100									Client Name	Contact				
Units:	Method Reporting Limits	UKAS Accredited:	Sample Date	03-Jun-20 11:30	03-Jun-20 11:40	03-Jun-20 14:13	03-Jun-20 13:30	03-Jun-20 15:30														
	a bodtom		Client Sample Description	1-191 EW 030620 6.00	1-203 EW 030620 7.00	1-203 EW 030620 18.50	1-207 EW 030620 6.00	1-207 EW 030620 15.00									SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
			LAB ID Number EX/	2063232	2063233	2063234	2063235	2063236									Ň		Brei	Bur	Te	Fa

	PAHMSW PAHMSW	-		Fluorene Fluoranthene	< 0.01 < 0.01	< 0.01 < 0.01	< 0.01 < 0.01	< 0.01 < 0.01	< 0.04 < 0.04				
_	Ь	-	Yes	Dibenzo(a,h)anthracene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04				17-Jun-2020
_	/ PAHMSW	_	Yes	Chrysene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04	alysis			
-	V PAHMSW	-	Yes	Benzo-a-Pyrene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04	Sample Analysis			
_	РА	_	Yes	Benzo(k)fluoranthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04	San			Date Printed
-	Ь	-	Yes	Benzo(ghi)perylene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04			- 1	Date Printed
_	W PAHMSW	_	Yes	Benzo(b)fluoranthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04				
-	PΑ	-	Yes	Benzo(a)anthracene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04				
-	₽A	$\vdash$	Yes	Anthracene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04				
_	W PAHMSW	-	Yes	Acenaphthylene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04	ham			
_	P/	_		Acenaphthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.04	Woking			
-		0.003	Yes	Chromium VI as Cr	<0.003	<0.003	<0.003	<0.003	<0.003	SOCOTEC UK Wokingham		2662	
Н	S KONENS		Yes	Chloride as CI w	66	180	161	235	73	SOCOTEC			
l/gm	AR KONENS		Yes	Ammoniacal Nitrogen as N	0.04	0.16	0.14	0.11	9.0	Client Name		ונו	<u> </u>
l/gm : \$	ICPW			Total Sulphur as SO4 (Dissolved) a	227	150	106	98	103	Client N	֡	000	
Units:	Method Codes	od Reporting Limits	UKAS Accredited :	Sample Date	03-Jun-20 11:30	03-Jun-20 11:40	03-Jun-20 14:13	03-Jun-20 13:30	03-Jun-20 15:30				
		Meth		Client Sample Description	1-191 EW 030620 6.00	1-203 EW 030620 7.00	1-203 EW 030620 18.50	1-207 EW 030620 6.00	1-207 EW 030620 15.00	SOCOTEC			Bretby Business Park, Ashby Road
				LAB ID Number EX/	2063232	2063233	2063234	2063235	2063236	V)			ā

17-Jun-2020 EXR/304458

Report Number

Date Printed

**Table Number** 

D9008-19 M25 Jct 10

Sample Analysis

 mg/l
 mg/l
 mg/l

 TPHFID-Si
 TPHFID-Si
 TPHFID-Si

 0.01
 0.01
 0.01

 Yes
 Yes
 Yes

SFAS 0.02 Yes

SFAPI 0.02 Yes

SFAPI 0.02 Yes

 mg/l
 mg/l
 mg/l
 mg/l
 mg/l

 PHEHPLCUV PHEH

 µg/l
 µg/l
 µg/l

 РАНМSW
 РАНМSW

 0.01
 0.01
 0.16

 Yes
 Yes
 No

BAHMSW PAHMSW 7001

Method Reporting Limits : UKAS Accredited :

< 0.010\*

< 0.010 < 0.010

0.33

8.89

<0.02

<0.02

<0.05

<0.05

<0.05

< 0.16\*

< 0.01 < 0.04

0.04

< 0.01 0.01

03-Jun-20 14:13

03-Jun-20 13:30 03-Jun-20 15:30

< 0.64\*

< 0.16\*

<0.05

< 0.010\*

< 0.010\* < 0.010\*

< 0.010 < 0.010 < 0.010 < 0.010

0.22 0.24

<0.02 <0.02 <0.02

> <0.02 <0.02

<0.05 <0.05

<0.05 <0.05

< 0.010

< 0.010\*

< 0.010 < 0.010

< 0.010

<0.02

<0.02

<0.02 <0.02

<0.05 <0.05 <0.05

<0.2 <0.2 <0.2 <0.2 <0.2

<0.05 <0.05

<0.05 <0.05

<0.05 <0.05 <0.05 <0.05 <0.05

< 0.16\*

< 0.01 < 0.01 < 0.01 < 0.01 < 0.04

< 0.01

< 0.01

< 0.01\* < 0.01\* < 0.01\* < 0.01\* < 0.04\*

03-Jun-20 11:30 03-Jun-20 11:40

> 1-203 EW 030620 7.00 1-203 EW 030620 18.50 1-207 EW 030620 6.00 1-207 EW 030620 15.00

2063233 2063234 2063235 2063236

2063232

1-191 EW 030620 6.00

< 0.01 < 0.01 < 0.01

< 0.16\*

TPH Ali Band >C16-C21

TPH Ali Band >C12-C16

TPH Ali Band >C10-C12

Sulphide as S

Cyanide (Total) as CN

Cyanide (Free) as CN

Trimethylphenols

**Total Phenois** 

Phenol

**Methyl Phenols** 

Dimethylphenols

Total PAH (Sum of USEPA 16)

Pyrene

Phenanthrene

Naphthalene

Indeno(1,2,3-cd)pyrene

Sample Date

Client Sample Description

LAB ID Number EX/

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

SOCOTEC UK Wokingham

Client Name

William Riggs

Contact

**Bretby Busin** 

														Fax +44 (0) 1283 554422	
-		umper	Table Number			2				í				Tel +44 (0) 1283 554400	
EXR/304458		Number	Report Number			10	9 M25 Ict 10	19 M2	טססס",	ב				Burton-on-Trent, Staffordshire, DE15 0YZ	
17-Jun-2020		nted	Date Printed											Bretby Business Park, Ashby Road	
									Riggs	William Riggs		Contact			
alysis	Sample Analysis	Sam					Ē	Wokingham	SOCOTEC UK V	socol	lame	Client Name		SOCOTEC	- •
9.9	85.9	9.3	4.6	0.079	< 0.010	0.031	0.011	0.028	< 0.010	0.027	< 0.010	< 0.010	03-Jun-20 15:30	1-207 EW 030620 15.00	2063236
4.4	67.2	11	12	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.017	< 0.010	0.010	03-Jun-20 13:30	1-207 EW 030620 6.00	2063235
3.1	<2.0	3.3	3.5	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	03-Jun-20 14:13	1-203 EW 030620 18.50	2063234
3.1	3.2	4.2	4.4	0.016	< 0.010	0.012	< 0.010	< 0.010	< 0.010	0.019	< 0.010	0.011	03-Jun-20 11:40	1-203 EW 030620 7.00	2063233
4.2	<2.0	5.7	5.8	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.014	< 0.010	< 0.010	03-Jun-20 11:30	1-191 EW 030620 6.00	2063232
	d w		w												
pH units w	Biochemical Oxygen Demand w	Total Organic Carbon w	Dissolved Organic Carbon w	TPH Aro Band >C8-C40	TPH Aro Band >C8-C10	TPH Aro Band >C21-C35	TPH Aro Band >C16-C21	TPH Aro Band >C12-C16	TPH Aro Band >C10-C12	TPH Ali Band >C8-C40	TPH Ali Band >C8-C10	TPH Ali Band >C21-C35	Sample Date	Client Sample Description	LAB ID Number EX/
Yes	Yes	0.2 Yes	0.2 No	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	Method Reporting Limits: UKAS Accredited:	Methoc	
pH units WSLM3	mg/l WSLM20	mg/l WSLM13	mg/l WSLM13	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si	mg/l TPHFID-Si	: Units : Method Codes :		
ŀ	ŀ	H	L									н			

# Sample Analysis

### Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10 W304458

Report No

Date Logged 06-Jun-2020

Consignment No W172499

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.

	Potassium as K (Dissolved) VAR	>					
	Sodium as Na (Dissolved) VAR	>					
	Magnesium as Mg (Dissolved) VAR	>					
	Calcium as Ca (Dissolved) VAR	^					
ICPWATVAR	Total Sulphur as SO4 (Diss) VAR	>					
	Selenium as Se MS (Dissolved)	1					
	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)	1					
	Cadmium as Cd MS (Dissolved)	>					
	Chromium as Cr MS (Dissolved)	>					
ICPMSW	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		03/06/20	03/06/20	03/06/20	03/06/20	03/06/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-191 6.00	1-203 7.00	1-203 18.50	1-207 6.00	1-207 15.00
	ID Number		EX/2063232	EX/2063233	EX/2063234	EX/2063235	EX/2063236

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Deviating Sample Key lowever any delay could result in samples becoming deviant whilst being processed in the ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time accredited. Please contact us as soon as possible to provide missing information in order to is sampling dates are missing or matrices unclassified then results will not be ISO 17025

einstate accreditation.

aboratory.

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

EXR/304458 Ver. 1

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

### Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10 W304458

Report No

Date Logged 06-Jun-2020

Consignment No W172499

In-House Report Due 16-Jun-2020

WSLM3

	WSLIVIS	remperature C						
	WSLM20	Biochemical Oxygen Demand	>	ш	Э	В	ш	ш
		Dissolved Organic Carbon						
	WSLM13	Total Organic Carbon	1					
	TPHFID-Si	TPH by GC(Si)	1					
	SFAS	Sulphide as S SFA	1					
		Cyanide (Total) as CN SFA	1					
	SFAPI	Cyanide (Free) as CN SFA	>					
uays.	PHEHPLCUV	Phenois - HPLC						
гкпв	PAHMSW	PAH GC-MS (16)	>					
ow e		Chromium VI. as Cr (Kone)	>					
Please note the results for any subcontracted analysis (identified with a $^{\circ}$ ) is likely to take up to an additional five working days.		Ammoniacal Nitrogen (Kone)	>					
ancio	KONENS	Chloride as CI (Kone)	>					
an ac		Boron as B (Dissolved) VAR	>					
nb to	ICPWATVAR	Iron as Fe (Dissolved) VAR	>					
rake	₽	pe		6/20	6/20	6/20	6/20	03/06/20
aly to	MethodID	Sampled		03/06/20	03/06/20	03/06/20	03/06/20	03/0
IS IIK	-	0						
d n		(h)						
WICI		Matrix Type						
ımed		latrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
(Ideri		2		puno.	puno	puno	ound,	puno.
alysis			-	Ö	Ö	Ö	Ğ	Ö
מן מווי								
וומכונ		ion						
ווחממ		Description						
ns sn		Des		00	00	3.50	00	5.00
2				1-191 6.00	1-203 7.00	1-203 18.50	1-207 6.00	1-207 15.00
Sanits			-	7	1-2	1-2	1-2	1-2
ווים		Ser						
anone Inore		ID Number		3232	3233	3234	3235	3236
ease		9		EX/2063232	EX/2063233	EX/2063234	EX/2063235	EX/2063236
Σ			<u> </u>	Ш	Ш	Ш	Щ	Щ

pH units

Temperature C°

ipie Key	The sample was received in an inappropriate container for this analysis	he sample was received without the correct preservation for this analysis
Deviating Sample Key	e sample w	e sample w
Deviatin	A The	B The

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time Headspace present in the sample container ООШЬ

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

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.

EXR/304458 Ver. 1

### **Additional Report Notes**

Sample ID	The following information should be taken into consideration when using the
Sample ID	data contained within this report
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.
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.
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.
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.
	- 36  EX/2063236  EX2063232, 3234  EX/2063232

### **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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/cm<sup>3</sup>@ 15°C

### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/304458 Ver. 1

### **Sample Descriptions**

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

Report Number: W30\_4458

Lab ID Number	Client ID	Description
	1-191 EW 030620 6.00	Groundwater
EX/2063232	1-191 EVV 030020 0.00	Groundwater
EX/2063233	1-203 EW 030620 7.00	Groundwater
EX/2063234	1-203 EW 030620 18.50	Groundwater
EX/2063235	1-207 EW 030620 6.00	Groundwater
EX/2063236	1-207 EW 030620 15.00	Groundwater

Appendix A Page 1 of 1 17/06/2020EXR/304458 Ver. 1

### TEST REPORT



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:

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

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.

Date of Issue: 17-Jun-2020

		Units:	l/gu				l/gu	l/gu	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm	/bm	l/gm	l/gm	l/gm
		Method Codes:	BTEXHSA	1SA	ISA	HSA	BTEXHSA	BTEXHSA	H T	FNH3CALC	GROHSA	GROHSA	GROHSA	GROHSA	GROHSA	SA	GROHSA	GROHSA
	M	ethod Reporting Limits:			10	2	2	15	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		UKAS Accredited :		Yes	Yes	Yes	Yes	Yes	Yes	No	No	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	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
2063237	1-152 EW 040620 5.00	04-Jun-20 13:20	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.12	<0.01	< 0.100	< 0.100	< 0.100*	< 0.100*	< 0.100	< 0.100	< 0.100	< 0.100
2063238	1-182 EW 040620 7.00	04-Jun-20 12:15	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.04	<0.01	< 0.100	< 0.100	< 0.100*	< 0.100*	< 0.100	< 0.100	< 0.100	< 0.100
2063239	1-184 EW 040620 16.00	04-Jun-20 11:00	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	0.03	<0.01	< 0.100	< 0.100	< 0.100*	< 0.100*	< 0.100	< 0.100	< 0.100	< 0.100
2063240	1-318 EW 040620 10.00	04-Jun-20 14:30	< 5.0	< 5.0	< 10.0	< 5.0	< 5.0	< 15.0	90.0	<0.01	< 0.100	< 0.100	< 0.100*	< 0.100*	< 0.100	< 0.100	< 0.100	< 0.100
*	SOCOTEC		Client Name	me	SOCOT	ic UK №	SOCOTEC UK Wokingham	E					Samk	Sample Analysis	lysis			
			Contact		William Riggs	sbt												
	Bretby Business Park, Ashby Road											Date Printed	ted		17-	17-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ					7 000		10	_		1	Report Number	umber		EXI	EXR/304459		
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	Fax +44 (0) 1283 554422																	

17-Jun-2020 EXR/304459

Report Number

Date Printed

**Table Number** 

D9008-19 M25 Jct 10

SOCOTEC UK Wokingham

Client Name

William Riggs

Contact

Sample Analysis

 mg/l
 <th

mg/l mg/l lCPMSW ICPMSW 0.001 0.001 Yes Yes

mg/l ICPMSW 0.00003

 mg/l
 mg/l
 mg/l

 ICPMSW
 ICPMSW

 0.00002
 0.001
 0.001

 Yes
 Yes
 Yes

ng/l 1CPMSW 0.001 0.

Method Codes: GROHSA
Method Reporting Limits: 0.1
UKAS Accredited: Yes

146 3 7 8

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27 7

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78

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0.022

<0.001 <0.001

0.04

<0.00003

<0.001 <0.001 0.001 0.001

<0.001 <0.001 0.005 0.002

0.002

<0.001 0.001 <0.001 <0.001

< 0.100 < 0.100

04-Jun-20 13:20

04-Jun-20 12:15 04-Jun-20 11:00

1-182 EW 040620 7.00 1-184 EW 040620 16.00

1-152 EW 040620 5.00

2063237

0.001

<0.00002 <0.00002

0.002

0.00138 0.00099

< 0.100

< 0.100

04-Jun-20 14:30

1-318 EW 040620 10.00

2063239 2063238

2063240

<0.001

7 ∞

96.6

ω

0.01 0.01

0.012

0.011 0.137 0.104

<0.00003 <0.00003 <0.00003

12

20

0.08 9.0

0.01

0.164

0.207

<0.001 <0.001

10

12 112

Sodium as Na (Dissolved) a

Potassium as K (Dissolved) a

Magnesium as Mg (Dissolved) a

Iron as Fe (Dissolved) a

Calcium as Ca (Dissolved) a

Boron as B (Dissolved) a

Zinc as Zn (Dissolved)

Selenium as Se (Dissolved)

Nickel as Ni (Dissolved)

Mercury as Hg (Dissolved)

Lead as Pb (Dissolved)

Copper as Cu (Dissolved)

Chromium as Cr (Dissolved)

Cadmium as Cd (Dissolved)

Arsenic as As (Dissolved)

GRO-HSA o

Sample Date

Client Sample Description

LAB ID Number EX/

Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422

		: Onits	l/gm	l/gm	l/gm	l/gm	l/grl	l/bh	l/brl	l/brl	l/grl	l/brl	l/grl	l/grl	/brl	l/bh		l/gµ
	:	Method Codes:	ICPWATVAR	KONENS	KONENS	_	_	_	-	_	_	_	_	_			>	PAHMSW
	Method	Reporting Limits:		0.01	1	0.003	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as Cl w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2063237	1-152 EW 040620 5.00	04-Jun-20 13:20	281	60.0	227	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2063238	1-182 EW 040620 7.00	04-Jun-20 12:15	99	0.03	46	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2063239	1-184 EW 040620 16.00	04-Jun-20 11:00	22	0.02	7.1	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2063240	1-318 EW 040620 10.00	04-Jun-20 14:30	66	0.05	337	<0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	SOCOTEC		Client Name	ame	SOCOT	EC UK M	SOCOTEC UK Wokingham	٤					Samp	Sample Analysis	lysis			
			Contact		William Riggs	ggs												
ш	Bretby Business Park, Ashby Road											Date Printed	pe		17-	17-Jun-2020		
ш	Burton-on-Trent, Staffordshire, DE15 0YZ						_	7 10	_		<u> </u>	Report Number	mber		EXF	EXR/304459		
	Tel +44 (0) 1283 554400				ິ	D3000-13	_	אובט טכנ ווע	2		<u> </u>	Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

		Units		l/on			l/on	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/	ma/l	ma/l	ma/l
		Method Codes:	PAHMSW	PAHMSW	>	PAHMSW	PAHMSW F	ΣÜ	PHEHPLCUV PHEHPLCUV	HEHPLCUV F	5	뿞	SFAPI	SFAPI		į	TPHFID-Si	TPHFID-Si
	Method	Method Reporting Limits:		0.01					0.05	0.05	0.2	0.05	0.02	0.02				0.01
		UKAS Accredited:	Ш	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Dimethylphenols	Methyl Phenois	Phenol	Total Phenols	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21
2063237	1-152 EW 040620 5.00	04-Jun-20 13:20	< 0.01*	0.11	0.01	< 0.01	< 0.27*	<0.05	<0.05	<0.05	<0.2	<0.05	<0.02	<0.02	0.15	< 0.010	< 0.010	< 0.010*
2063238	1-182 EW 040620 7.00	04-Jun-20 12:15	< 0.01*	0.02	< 0.01	< 0.01	< 0.17*	<0.05	<0.05	<0.05	<0.2	<0.05	<0.02	<0.02	0.71	< 0.010	< 0.010	< 0.010*
2063239	1-184 EW 040620 16.00	04-Jun-20 11:00	< 0.01*	0.01	< 0.01	< 0.01	< 0.16*	<0.05	<0.05	<0.05	<0.2	<0.05	<0.02	<0.02	<0.02	< 0.010	< 0.010	< 0.010*
2063240	1-318 EW 040620 10.00	04-Jun-20 14:30	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.16*	<0.05	<0.05	<0.05	<0.2	<0.05	<0.02	<0.02	<0.02	< 0.010	< 0.010	< 0.010*
	SOCOTEC		Client Name	ame	SOCOT	EC UK M	SOCOTEC UK Wokingham	٤					Samp	Sample Analysis	ysis			
			Contact		William Riggs	sbb												
	Bretby Business Park, Ashby Road											Date Printed	had		17-	17-Jun-2020		
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	Fax +44 (0) 1283 554422																	

# Sample Analysis

### Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

D9008-19 M25 Jct 10 W304459

Report No

In-House Report Due 16-Jun-2020 Date Logged 06-Jun-2020

Consignment No W172500

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

	Potassium as K (Dissolved) VAR	>				
	Sodium as Na (Dissolved) VAR	>				
	Magnesium as Mg (Dissolved) VAR	>				
	Calcium as Ca (Dissolved) VAR	>				
ICPWATVAR	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)	>				
ICPMSW	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		Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-152 5.00	1-182 7.00	1-184 16.00	1-318 10.00
	ID Number		EX/2063237	EX/2063238	EX/2063239	EX/2063240

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/304459 Ver. 1

# Sample Analysis

# Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

**SOCOTEC UK Wokingham** Customer

D9008-19 M25 Jct 10

W304459

Report No

Date Logged 06-Jun-2020

Consignment No W172500

In-House Report Due 16-Jun-2020

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	pH units	>				
WSLM3	Temperature C°					
WSLM20	Biochemical Oxygen Demand	>				
	Dissolved Organic Carbon					
WSLM13	Total Organic Carbon	1				
TPHFID-Si	TPH by GC(Si)	>				
SFAS	Sulphide as S SFA	>				
	Cyanide (Total) as CN SFA	1				
SFAPI	Cyanide (Free) as CN SFA	1				
PHEHPLCUV	Phenols - HPLC					
PAHMSW	PAH GC-MS (16)	1				
	Chromium VI. as Cr (Kone)	1				
	Ammoniacal Nitrogen (Kone)	1				
KONENS	Chloride as CI (Kone)	^				
	Boron as B (Dissolved) VAR	>				
ICPWATVAR	Iron as Fe (Dissolved) VAR	>				
MethodID	Sampled		04/06/20	04/06/20	04/06/20	04/06/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-152 5.00	1-182 7.00	1-184 16.00	1-318 10.00
	ID Number		EX/2063237	EX/2063238	EX/2063239	EX/2063240

The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sample was received without the correct preservation for this analysis Headspace present in the sample container

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

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 Analysis Subcontracted - Note: due date may vary No analysis scheduled

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.

EXR/304459 Ver. 1

### **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.

Page 9 of 11

## **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/304459 Ver. 1

#### **Sample Descriptions**

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

Report Number: W30\_4459

Lab ID Number	Client ID	Description
	1-152 EW 040620 5.00	Groundwater
EX/2063237	1-152 EVV 040620 5.00	Groundwater
EX/2063238 EX/2063239	1-182 EW 040620 7.00 1-184 EW 040620 16.00	Groundwater
EX/2063239 EX/2063240	1-184 EW 040620 16.00	Groundwater
EX/2063240	1-318 EW 040620 10.00	Groundwater

Appendix A Page 1 of 1 17/06/2020EXR/304459 Ver. 1

#### **TEST REPORT**



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

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.

Date of Issue: 30-Jun-2020

< 0.100

< 0.100

< 0.100 < 0.100

< 0.100

GRO >C8->C10 Aliphatic

		Units:		l/gm	H	l/gm	l/gm	$\vdash$	l/gm	l/gm	$\vdash$	l/gm	l/gm	l/gm	l/gm	l/gm  /gm  /gm	l/gm	l/gm
		Method Codes:	Ö	ICPMSW 9.004		ICPMSW	ICPMSW 9 9 9 4	ICPMSW		-	ICPMSW		SPWATVAR IC	ICPWATVAR IC	PWATVAR IC	PWATVAR IC	PWATVAR IC	PWATVAR
	Method	d Reporting Limits:		0.001	0.00002	0.001	0.001	0.001	0.00003		0.001	0.002	0.01	1	0.01	1	1	1
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	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
2063983	1-259 EW 090620 6.00	09-Jun-20 15:30	< 0.100	0.003	0.00004	0.005	<0.001	<0.001	<0.00003	0.008	<0.001	0.039	0.03	2	1.26	2	3	40
2063984	1-542 EW 090620 18.00	09-Jun-20 14:30	< 0.100	<0.001	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.004	<0.001	0.015	0.02	3	0.21	3	2	10
2063985	1-237 EW 090620 6.00	09-Jun-20 13:30	< 0.100	<0.001	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.002	<0.001	<0.002	0.02	92	0.02	11	4	15
2063986	1-237 EW 090620 18.00	09-Jun-20 12:45	< 0.100	<0.001	<0.00002	<0.001	<0.001	<0.001	<0.00003	0.002	<0.001	<0.002	0.1	61	1.35	25	10	27
2063987	1-235 EW 090620 8.00	09-Jun-20 11:15	< 0.100	<0.001	0.0000	<0.001	<0.001	<0.001	<0.00003	0.024	<0.001	0.033	0.02	34	<0.01	10	29	19
	SOCOTEC		Client Name	ame	SOCOTI	SOCOTEC UK Wokin	/okingham	٤					Samp	Sample Analysis	ysis			
			Contact		William Riggs	3gs												
	Bretby Business Park, Ashby Road											Date Printed	pe		30-	30-Jun-2020		
	Burton-on-Trent, Staffordshire, DE15 0YZ					4 000	JCIM O	7 70	_			Report Number	ımber		EXR	EXR/304614		
	Tel +44 (0) 1283 554400				ב	D3000-13 N	3 INI C.	וובט טכנ וו	2		-	Table Number	nber			7		
	Fax +44 (0) 1283 554422																	

< 0.010 < 0.010 < 0.010 < 0.010

< 0.010

TPH Ali Band >C21-C35

F			$\parallel$																				
stian Ha	WSLM3		Yes	pH units w	5.5	3.7	6.9	7.1	5.7									Sample Analysis		30-Jun-2020	EXR/304614	-	
l/bm	WSLM20	-	Yes	Biochemical Oxygen Demand w	<2.9	<5.7	<5.7	70.1*	<2.9									Samp		ted	umber	mber	
l/bm	WSLM13	0.2	Yes	Total Organic Carbon w	12	0.68	0.85	38	1.1											Date Printed	Report Number	Table Number	
l/pm	>		No	Dissolved Organic Carbon w	12	0.76	0.98	41	1.1														
	TPHFID-Si		Yes	TPH Aro Band >C8-C40	< 0.010	0.021	0.017	0.012	0.011														
	TPHFID-Si		Yes	TPH Aro Band >C8-C10	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010												(	10	
	TPHFID-Si		Yes	TPH Aro Band >C21-C35	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010									E E			4 (	D CC	
//u	TPHFID-Si		Yes	TPH Aro Band >C16-C21	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010									SOCOTEC UK Wokingham			-19 M25 Jct 10	19 MZ	
	TPHFID-Si	0.01	Yes	TPH Aro Band >C12-C16	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010									FEC UK V	Riggs		0000	_8006C	
	Ħ		Yes	TPH Aro Band >C10-C12	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010									soco	William Riggs		Ž	ä	
l/bm	TPHFID-Si		Yes	TPH Ali Band >C8-C40	0.011	< 0.010	< 0.010	< 0.010	0.010									ame	_				
l/bm	且	_		TPH Ali Band >C8-C10	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010									Client Name	Contact				
- Ilnite	Method Codes:	Reporting Limits:	UKAS Accredited :	Sample Date	09-Jun-20 15:30	09-Jun-20 14:30	09-Jun-20 13:30	09-Jun-20 12:45	09-Jun-20 11:15														
		Method		Client Sample Description	1-259 EW 090620 6.00	1-542 EW 090620 18.00	1-237 EW 090620 6.00	1-237 EW 090620 18.00	1-235 EW 090620 8.00									SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
				LAB ID Number EX/	2063983	2063984	2063985	2063986	2063987														

# EXR/304614 Ver. 2

# Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10 W304614 Report No

Date Logged 12-Jun-2020

Consignment No W172615

In-House Report Due 22-Jun-2020

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) Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days Cadmium as Cd MS (Dissolved) Chromium as Cr MS (Dissolved) Nickel as Ni MS (Dissolved) ICPMSW GROHS **GRO-HSA GCFID (AA)** Ammonia (Free) as N calc Report A Ammoniacal Nitrogen as NH4 Calc 09/06/20 09/06/20 09/06/20 09/06/20 Sampled MethodID Matrix Type Groundwater Groundwater Groundwater Groundwater Description 1-237 18.00 1-542 18.00 -237 6.00 -259 6.00 ID Number EX/2063986 EX/2063987 EX/2063983 EX/2063985 EX/2063984

09/06/20

Groundwater

1-2358.00

Potassium as K (Dissolved) VAR Sodium as Na (Dissolved) VAR

Magnesium as Mg (Dissolved) VAR Calcium as Ca (Dissolved) VAR

Dev	Deviating Sample Rey
⋖	The sample was received in an inappropriate container for this a
В	The sample was received without the correct preservation for th

iis analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Headspace present in the sample container ООШП

Sample processing did not commence within the appropriate handling time Sample processing did not commence within the appropriate holding time

iccredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

owever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Requested Analysis Key Analysis Required

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

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 7 of 11

# EXR/304614 Ver. 2

# Analytical and Deviating Sample Overview **SOCOTEC UK Ltd Environmental Chemistry**

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

Sample Analysis

W304614

Date Logged 12-Jun-2020

Consignment No W172615

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.

	pH units	>					
WSLM3	Temperature C°						
WSLM20	Biochemical Oxygen Demand	>	ш	ш	Ш	Е	Е
	Dissolved Organic Carbon						
WSLM13	Total Organic Carbon	>					
TPHFID-Si	TPH by GC(Si)	>					
SFAS	Sulphide as S SFA	>					
	Cyanide (Total) as CN SFA	>					
SFAPI	Cyanide (Free) as CN SFA	>					
PHEHPLCVL	Phenols by HPLC (Low Level)						
PAHMSW	PAH GC-MS (16)	>			Ε	Ε	Е
	Chromium VI. as Cr (Kone)	>					
	Ammoniacal Nitrogen (Kone)	>					
KONENS	Chloride as CI (Kone)	>					
	Boron as B (Dissolved) VAR	>					
ICPWATVAR	Iron as Fe (Dissolved) VAR	>					
MethodID	Sampled		09/06/20	09/06/20	09/06/20	09/06/20	09/06/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Description		1-259 6.00	1-542 18.00	1-237 6.00	1-237 18.00	1-235 8.00
	ID Number		EX/2063983	EX/2063984	EX/2063985	EX/2063986	EX/2063987

# The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sampling date was not supplied so holding time may be compromised - applicable to all analysis The sample was received without the correct preservation for this analysis Headspace present in the sample container

 Sample processing did not commence within the appropriate handling time
 Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Analysis Required

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

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.

### **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	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, 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	

### **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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

Page 11 of 11 EXR/304614 Ver. 2

#### **Sample Descriptions**

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

Report Number: W30\_4614

Lab ID Number	
EX/2063984 1-542 EW 090620 18.00 Groundwater  EX/2063985 1-237 EW 090620 6.00 Groundwater	
EX/2063985 1-237 EW 090620 6.00 Groundwater	
EX/2063986 1-237(D) EW 090620 18.00 Groundwater EX/2063987 1-235 EW 090620 8.00 Groundwater EX/2063987 1-235 EW 090620 8.00 Groundwater	
EX/2063986 1-237(D) EW 090620 8.00 Groundwater  EX/2063987 1-235 EW 090620 8.00 Groundwater	
EX/2063987 1-235 EW 090e20 8.00 Groundwater	

Appendix A Page 1 of 1 30/06/2020EXR/304614 Ver. 2

#### 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 Operations Manager Energy & Waste Services

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.

Date of Issue: 26-Jun-2020

		П					T	Т	Т	Π		Т	Т	T	Т	Τ	T						
0.1 0.0 0.1	GRO >C8->C10 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100												-					
0.1 No	GRO >C8->C10	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100																	
O.1 No	GRO >C7->C8 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100														26-Jun-2020	EXR/304617	-	
ON No	GRO >C7->C8	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100												lysis		26	E		
0.1 No	GRO >C6->C7 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100												Sample Analysis					
No No	GRO >C6->C7	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100												Samp		ited	umber	mber	
0.1 No	GRO >C5->C6 Aliphatic	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100														Date Printed	Report Number	Table Number	
O.1 No	GRO >C5->C6	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100																	
0.01 No	Ammonia (Free) as N calc a	<0.01	<0.01	<0.01	<0.01	<0.01																	
0.01 Yes	Ammoniacal Nitrogen as NH4	60.0	0.26	0.03	90.0	0.03															(	10	
15 Yes	Xylenes	< 15.0	< 15.0	< 15.0	< 15.0	< 15.0												E			-	MZS JCt 10	
5 Yes	Toluene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0												SOCOTEC UK Wokingham					
5 Yes	o Xylene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0												EC UK W	sbb			<b>D3008-19</b>	
10 Yes	m/p Xylenes	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0												SOCOT	William Riggs		2	2	
5 Yes	Ethyl Benzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0												ame					
SIEXHSA 5 Yes	Benzene	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0												Client Name	Contact				
Method Reporting Limits : UKAS Accredited :	Sample Date	08-Jun-20 14:45	08-Jun-20 12:40	08-Jun-20 12:30	08-Jun-20 11:30	08-Jun-20 09:45																	
Method Re UK	Client Sample Description	1-390 (D) EW 08062020 20.00	1-390 (S) EW 08062020 06.00	1-363 A EW 08062020 15.00	1-210 EW 08062020 08.00	1-911 EW 08062020 20.00												SOCOTEC		Bretby Business Park, Ashby Road	Burton-on-Trent, Staffordshire, DE15 0YZ	Tel +44 (0) 1283 554400	Fax +44 (0) 1283 554422
	LAB ID Number EX/	2063995	2063996	2063997	2063998	2063999												Ň		Bret	Burt	Te	Fa

26-Jun-2020 EXR/304617

Report Number

Date Printed

**Table Number** 

D9008-19 M25 Jct 10

Sample Analysis

EC		

SOCO

SOCOTEC UK Wokingham

Client Name

William Riggs

Contact

 mg/l
 ng/l
 <th

mg/l mg/l ICPMSW ICPMSW 0.001

mg/l ICPMSW 0.00003

mg/l ICPMSW 0.001

 mg/l
 mg/l
 mg/l

 ICPMSW
 ICPMSW
 0.000

 0.00002
 0.001
 0.001

 Yes
 Yes
 Yes

mg/l ICPMSW 0.001

Units: mg/l
Method Codes: GROHSA
Method Reporting Limits: 0.1
UKAS Accredited: Yes

346 4 125 130

12

36

61.1

<0.01

231

25 38 25

40 99 က 19 65

1.97

90 112 16 42 15

0.09

0.243 0.504

<0.001 <0.001 <0.001 <0.001 0.003

0.118 0.099 0.022

<0.00003 <0.00003

0.003

0.012

0.004

0.00217

0.001

< 0.100 < 0.100 < 0.100

08-Jun-20 14:45 08-Jun-20 12:40 08-Jun-20 12:30 08-Jun-20 11:30 08-Jun-20 09:45

1-390 (S) EW 08062020 06.00 1-390 (D) EW 08062020 20.00

2063995 2063996 2063997 2063998 2063999

1-363 A EW 08062020 15.00

1-210 EW 08062020 08.00 1-911 EW 08062020 20.00

<0.001

<0.001

0.005 <0.001 <0.001 <0.001

0.00092

<0.001 <0.001

0.0001

0.002

12.9

0.18

0.02 0.02

0.046

0.028 2.588

0.075

<0.001 <0.001

<0.001

0.00004

<0.001

< 0.100

0.02361

0.003

< 0.100

<0.00003 <0.00003 0.696

<0.00003

0.003

0.005

0.01 0.01

Sodium as Na (Dissolved) a

Potassium as K (Dissolved) a

Magnesium as Mg (Dissolved) a

Iron as Fe (Dissolved) a

Calcium as Ca (Dissolved) a

Boron as B (Dissolved) a

Zinc as Zn (Dissolved)

Selenium as Se (Dissolved)

Nickel as Ni (Dissolved)

Mercury as Hg (Dissolved)

Lead as Pb (Dissolved)

Copper as Cu (Dissolved)

Chromium as Cr (Dissolved)

Cadmium as Cd (Dissolved)

Arsenic as As (Dissolved)

GRO-HSA o

Sample Date

Client Sample Description

LAB ID Number EX/

Burton-on-Trent, Staffordshire, DE15 0YZ Bretby Business Park, Ashby Road

Tel +44 (0) 1283 554400

Fax +44 (0) 1283 554422

		· Juite	l/bm	l/bm	l/bu	l/bm		_	_	//	//	_	_	_	Joil	//	_	1/011
		Method Codes:	ICP	KONENS	KONENS	KONENS	PAHMSW	PAHMSW	PAHMSW	PAHMSW	NS.	PAHMSW	PAHMSW	PAHMSW	PAHMSW	SW	PAHMSW	PAHMSW
	Method	Method Reporting Limits:		0.01	1	0.003		_	-	-	1	-	+	_	+-	+	+	0.01
		UKAS Accredited:		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as CI w	Chromium VI as Cr	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene
2063995	1-390 (D) EW 08062020 20.00	08-Jun-20 14:45	98	0.07	564	0.003	< 0.01*	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2063996	1-390 (S) EW 08062020 06.00	08-Jun-20 12:40	9/	0.2	606	<0.003	< 0.01*	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2063997	1-363 A EW 08062020 15.00	08-Jun-20 12:30	85	0.02	21	<0.003	< 0.01*	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2063998	1-210 EW 08062020 08.00	08-Jun-20 11:30	303	0.05	81	<0.003	< 0.01*	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2063999	1-911 EW 08062020 20.00	08-Jun-20 09:45	4	0.02	581	<0.003	< 0.01*	< 0.01*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	SOCOTEC		Client Name	ame	SOCOT	EC UK W	SOCOTEC UK Wokingham	٤					Samp	Sample Analysis	ysis			
			Contact		William Riggs	Sbb												
	Bretby Business Park, Ashby Road											Date Printed	þed		26-	26-Jun-2020		
	Burton-on-Trent. Staffordshire. DE15 0YZ				i							Report Nimber	mher		FXF	EXR/304617		
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	Fax +44 (0) 1283 554422																	

		: Onits :			l/gn		l/grl	l/gm	l/gm	l/gm	l/gm	l/gm	l/gm				l/gm	l/gm
		Method Codes:	Ā	PAHMSW	PAHMSW	Ņ	≥	1	PHEHPLCVL	HEHPLCVL F	PHEHPLCVL	SFAPI	SFAPI		iS-	iS-C	ij	TPHFID-Si
	Method	Method Reporting Limits:	0.01	0.01	0.01	0.01	0.16	0.0005	0.0005	0.0005	0.0005	0.02	0.02	0.02	0.01	0.01	0.01	0.01
		UKAS Accredited:	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35
2063995	1-390 (D) EW 08062020 20.00	08-Jun-20 14:45	< 0.01	0.03	< 0.01	< 0.01	< 0.18*	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.15	< 0.010	< 0.010	< 0.010	0.011
2063996	1-390 (S) EW 08062020 06.00	08-Jun-20 12:40	< 0.01	0.01	0.01	< 0.01	< 0.16*	<0.0005	<0.0005	0.0011	<0.0005	<0.02	<0.02	0.04	< 0.010	< 0.010	< 0.010	< 0.010
2063997	1-363 A EW 08062020 15.00	08-Jun-20 12:30	< 0.01	0.01	< 0.01	< 0.01	< 0.16*	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.02	< 0.010	< 0.010	< 0.010	< 0.010
2063998	1-210 EW 08062020 08.00	08-Jun-20 11:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16*	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.04	< 0.010	< 0.010	< 0.010	< 0.010
2063999	1-911 EW 08062020 20.00	08-Jun-20 09:45	< 0.01	0.01	< 0.01	< 0.01	< 0.16*	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	<0.02	0.03	< 0.010	< 0.010	< 0.010	0.033
	SOCOTEC		Client Name	ame	SOCOT	SOCOTEC UK Wokingham	'okinghaı	٤					Samp	Sample Analysis	lysis			
			Contact		William Riggs	s66												
<u>m</u>	Bretby Business Park, Ashby Road											Date Printed	pa		- 56-	26-Jun-2020		
ш	Burton-on-Trent, Staffordshire, DE15 0YZ					7		10	_		<u> </u>	Report Number	mber		EXI	EXR/304617		
	Tel +44 (0) 1283 554400				ב	D3000-13	_	MZ3 JC1 10	2		<u> </u>	Table Number	nber			-		
	Fax +44 (0) 1283 554422																	

		Units:		_		l/gm	-+	$\rightarrow$	_	_	l/gm	l/gm	l/gm	pH units			
	1 FC (40 M	Mothod Donorting Limits :	IPHFID-SI	I PHFID-SI	IPHFID-SI		IPHFID-Si	I PHFID-SI	PHFID-SI	IPHFID-SI	+	-	WSLM20	WSLM3			
	Method	reporting Limits .		0.01	0.0	0.0	0.0	0.0	0.01	0.01	7.0	7.0	- 2				
		UKAS Accredited:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Yes	Yes	Yes			
LAB ID Number EX/	Client Sample Description	Sample Date	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Dissolved Organic Carbon w	Total Organic Carbon w	Biochemical Oxygen Demand w	pH units w			
2063995	1-390 (D) EW 08062020 20.00	08-Jun-20 14:45	< 0.010	0.014	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.016	2.7	2.8	2.1	3.4			
2063996	1-390 (S) EW 08062020 06.00	08-Jun-20 12:40	< 0.010	0.014	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.011	4.9	4.0	<2.0	5.2			
2063997	1-363 A EW 08062020 15.00	08-Jun-20 12:30	< 0.010	0.012	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	1.0	0.82	<2.9	4.9			
2063998	1-210 EW 08062020 08.00	08-Jun-20 11:30	< 0.010	0.012	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	3.7	3.6	<2.0	6.1			
2063999	1-911 EW 08062020 20.00	08-Jun-20 09:45	< 0.010	0.043	< 0.010	< 0.010	< 0.010	0.012	< 0.010	0.014	0.52	0.38	7.9	3			
3*	SOCOTEC		Client Name	ame	SOCOTEC U		K Wokingham	u					Samp	Sample Analysis	ysis		
			Contact		William Riggs	dgs											
	Bretby Business Park, Ashby Road											Date Printed	per		26-Jun-2020	-2020	
	Burton-on-Trent, Staffordshire, DE15 0YZ					7 9000	ACM O	1 +0	c			Report Number	ımber		EXR/304617	4617	
	Tel +44 (0) 1283 554400				בֿ	-000	S IVIE	יו של כצווו פו-	<b>5</b>		<u>-</u>	Table Number	nber			-	
	Fax +44 (0) 1283 554422																

EXR/304617 Ver. 1

# **Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10

W304617

Date Logged 12-Jun-2020

Consignment No W172587

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. Report No

	Potassium as K (Dissolved) VAR	>					
	Sodium as Na (Dissolved) VAR	>					
	Magnesium as Mg (Dissolved) VAR	>					
	Calcium as Ca (Dissolved) VAR	>					
ICPWATVAR	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)	>					
ICPMSW	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
MethodID	Sampled		08/06/20	08/06/20	08/06/20	08/06/20	08/06/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	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

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis Deviating Sample Key

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Headspace present in the sample container

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

is ampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

F Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

Analysis Required

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

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.

# **Analytical and Deviating Sample Overview SOCOTEC UK Ltd Environmental Chemistry**

SOCOTEC UK Wokingham Customer

Sample Analysis

D9008-19 M25 Jct 10

Consignment No W172587 Date Logged 12-Jun-2020

In-House Report Due 22-Jun-2020 W304617 Report No

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	^	ш	ш	ш	ш	Ш
	Dissolved Organic Carbon						
WSLM13	Total Organic Carbon	1					
TPHFID-Si	TPH by GC(Si)	^					
SFAS	Sulphide as S SFA	>					
	Cyanide (Total) as CN SFA	>					
SFAPI	Cyanide (Free) as CN SFA	>					
PHEHPLCVL	Phenols by HPLC (Low Level)						
PAHMSW	PAH GC-MS (16)	>	出	ᇤ	出	出	出
	Chromium VI. as Cr (Kone)	A					
	Ammoniacal Nitrogen (Kone)	1					
KONENS	Chloride as CI (Kone)	1					
	Boron as B (Dissolved) VAR	1					
ICPWATVAR	Iron as Fe (Dissolved) VAR	1					
MethodID	Sampled		08/06/20	08/06/20	08/06/20	08/06/20	08/06/20
	Matrix Type		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	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

# Deviating Sample Key

The sample was received without the correct preservation for this analysis The sample was received in an inappropriate container for this analysis

The sampling date was not supplied so holding time may be compromised - applicable to all analysis Sample processing did not commence within the appropriate handling time Requested Analysis Key Sample processing did not commence within the appropriate holding time

accredited. Please contact us as soon as possible to provide missing information in order to

einstate accreditation.

sampling dates are missing or matrices unclassified then results will not be ISO 17025

lowever any delay could result in samples becoming deviant whilst being processed in the

aboratory.

ote: We will endeavour to prioritise samples to complete analysis within holding time;

Headspace present in the sample container

Analysis Required

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

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.

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### **Additional Report Notes**

Method	Sample ID	The following information should be taken into consideration when using the
Code	Sample ID	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.

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## **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 NH4, 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
Water	PHEHPLCVL	As Received	extraction GCMS quantitation
Water	SFAPI	As Received	Determination of Phenols by HPLC Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with
vvalei	SFAS	As Received	colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in
vvalei	111111111111111111111111111111111111111	As ineceived	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/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### **Asbestos Analysis**

CH Denotes Chrysotile
CR Denotes Crocidolite
AM Denotes Amosite

TR Denotes Tremolite
AC Denotes Actinolite
AN Denotes Anthophylite

**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

- **Þ** 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.

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#### **Sample Descriptions**

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

Report Number: W30\_4617

EX203996 1-398 (9 W 9802020 50 to Grandwater EX205996 1-398 (9 W 9802020 15 to Grandwater EX205996 1-398 (9 W 9802020 15 to Grandwater EX205996 1-398 (9 W 9802020 15 to Grandwater EX205996 1-391 (9 W 9802020 20 to Grandwater EX205996 1-391 (9 W 9	Lab ID Number	Client ID	Description
EX.2053988 1-396 (3) EW 0802020 6:00 Groundweller EX.2063989 1-210 EW 0802020 0:00 Groundweller EX.2063999 1-911 EW 0802020 2:00 Groundweller EX.2063999 1-911 EW 0802020 2:00 Groundweller		1 300 (D) EW 08063030 30 00	
EX./20193697 1-365 A EM VIOREZOZO 16.00 Groundwater EX./20193699 1-301 EM VIOREZOZO 20.00 Groundwater EX./20193699 1-301 EM DISSIGNATION OF CONTROL OF CON	EX/2003993	1-390 (D) EW 00002020 20.00	Groundwater
EX2003099 1 - 20 EW 9800200 08 to Groundwater  EX2003099 1 - 991 EW 9800200 20 to Groundwater	EX/2063996	1-390 (S) EW 08062020 06.00	Groundwater
EX70059898 1-2-10 EW 09002020 20.00 Groundwater  EX7005999 1-9-11 EW 09002020 20.00 Groundwater	EX/2063997	1-363 A EW 08062020 15.00	Groundwater
EX72083999 1-911 EW 9892020 20.00 Groundwater	EX/2063998	1-210 EW 08062020 08.00	Groundwater
	EX/2063999	1-911 EW 08062020 20.00	Groundwater

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### **Appendix B. Laboratory Certificates**

Laboratory certificates available on request



# Appendix C. Controlled Waters GQRA Screening

#### Metal

Back

Calculate

**Clear Data** 

ln	put Data (mg	/I)	RESULTS	(Copper)	RESULTS	S (Zinc)	RESULTS (Ma	anganese)	RESULTS (N	lickel)	RESULT	S (Lead)
рН	DOC	Ca	Site-specific PNEC Dissolved Copper (µg l <sup>-1</sup> )	BioF	Site-specific PNEC Dissolved Zinc (µg l <sup>-1</sup> )		Site-specific PNEC Dissolved Manganese (µg l <sup>1</sup>		Site-specific PNEC Dissolved Nickel (µg l <sup>-1</sup> )	BioF	Site-specific PNEC Dissolved Nickel (µg l <sup>-1</sup> )	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	
PhosphorusasP(Dissolved)	mg/l	0.1	2		0	0.1	0.2	0.3	
Total Sulphur as SO4 (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	
AntimonyasSb(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	
ArsenicasAs(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	
BariumasBa(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	
BerylliumasBe(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	
BoronasB(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
CadmiumasCd(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	
CalciumasCa(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	
ChromiumasCr(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	
ChromiumIllasCr	mg/l	0.003	2	0.0047	0	0.003	0.003	0.003	
Trivialent 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
ManganeseasMn(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
SeleniumasSe(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	
SodiumasNa(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	
TinasSn(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
VanadiumasV(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
ZincasZn(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	
DissolvedOrganicCarbon	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
PhosphorusasP(Dissolved)	mg/l	0.1	2		0	0.1	0.2	0.3	
Total Sulphur as SO4 (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
AntimonyasSb(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
ArsenicasAs(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	
BariumasBa(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	
BerylliumasBe(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	
BoronasB(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	
CadmiumasCd(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	
CalciumasCa(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	
ChromiumasCr(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	
ChromiumIIIasCr	mg/l	0.003	2		0	0.003	0.003	0.003	
Trivialent 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	
ChromiumVlasCr	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	
CobaltasCo(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
ManganeseasMn(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	

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## 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	
рН	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
pН	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	0.001111111	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	
рН	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

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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	0.0000001 7	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 Assessm ent Criteria (mg/kg)	Number of Samples Analysed	No of Exceedances	Minimu m (mg/kg)	No of Exceedan ces	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 Assessm ent Criteria (mg/kg)	Number of Samples Analysed	No of Exceedances	Minimu m (mg/kg)	No of Exceedan ces	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 Assessm ent Criteria (mg/kg)	Number of Samples Analysed	No of Exceedances	Minimu m (mg/kg)	No of Exceedan ces	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 Assessm ent Criteria (mg/kg)	Number of Samples Analysed	No of Exceedances	Minimu m (mg/kg)	No of Exceedan ces	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	SVA	V01	SIA	/02	SIA	/03	
			Sample ref	1-410	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										
	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	
02 General Inorganics	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	
	0.001 0.0012	mg/l	Copper as Cu (Dissolved)	0.001 < 0.001	0.047	< 0.002	0.003 < 0.001	0.005 < 0.001	< 0.001	< 0.001	0.005	< 0.004	
	0.0012	mg/l	Lead as Pb (Dissolved) Chromium VI as Cr	< 0.001	< 0.003	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	
•	0.004	mg/l mg/l	Nickel as Ni (Dissolved)	0.172	0.084	0.003	0.006	0.005	0.005	0.005	0.003	0.003	
•	0.0123	mg/l	Zinc as Zn (Dissolved)	0.172	0.14	0.033	0.008	0.005	0.003	0.012	0.005	0.003	
03 Metals/Metaloids	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	
ŀ	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	
ľ	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	
ļ	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	
ľ	0.0042	mg/l	2,4-Dichlorophenol	< 0.04	< 0.02	< 0.02	0	0	0	0	0	0	
04 Phenols	0.0077	mg/l	Phenol	< 0.05	< 0.02	< 0.02	< 0.0005	0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
0411101013	0.04	mg/l	4-Chloro-3-methylphenol	< 0.01	< 0.005	< 0.005	0	0	0	0	0	0	
ļ	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	
	0.01	mg/l	Benzene	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
05 BTEX & MTBE	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 0.074000000000000001	mg/l	Xylenes	0	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015	
	0.0740000000000000001	mg/l	Toluene Aliphatics >C10 - C12	< 0.001	< 0.001	< 0.001	< 0.005	< 0.005 < 0.01	< 0.005	< 0.005 < 0.01	< 0.005 < 0.01	< 0.005 < 0.01	
			Aliphatics >C12 - C12	0.001	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
			Aliphatics >C16 - C21	0.002	< 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	
06 Petroleum Hydrocarbons	0.01	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	
			Aromatics >C8 - C10	0.002	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
	0.0001	mg/l	Anthracene	< 1e-05	< 0.002	< 0.002	< 1e-05	< 1e-05	< 1e-05	< 1e-05	< 1e-05	< 1e-05	
07 PAHs	0.002	mg/l	Naphthalene	< 0.004	< 0.005	1e-05	< 1e-05	< 1e-05	< 1e-05	< 1e-05	< 1e-05	< 1e-05	
	1.7e-07	mg/l	Benzo(a)pyrene	< 0.004	< 0.002	< 1e-05	1e-05	< 1e-05	2e-05	< 1e-05	1e-05	< 1e-05	
	6.3e-06	mg/l	Fluoranthene	< 1e-05	< 0.002	< 1e-05	1e-05	4e-05	2e-05	< 1e-05	1e-05	2e-05	
ļ	0.0006	mg/l	Hexachlorobutadiene Chloroform	< 0.005	< 0.005	< 0.005 < 0.001	0	0	0	0	0	0	
	0.0025	mg/l	1,2-Dichloroethane	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
ļ	0.01	mg/l	Tetrachloroethene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.51	5/1	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	
08 VOCs		, , , , , , , , , , , , , , , , , , ,	1,2-Dichlorobenzene	< 0.005	< 0.005	< 0.005	0	0	0	0	0	0	
ļ	0.02	mg/l	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	
l			Styrene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.05	mg/l					0	0	0	0	0	0	
	0.1	mg/l	1,1,1-Trichloroethane	< 0.001	< 0.001	< 0.001							
	0.1 0.4	mg/l mg/l	1,1,2-Trichloroethane	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.1	mg/l	1,1,2-Trichloroethane Sum Trichlorobenzenes - calculated	< 0.001 nan	< 0.001 nan	< 0.001 nan	0	0	0	0	0	0	
	0.1 0.4	mg/l mg/l mg/l	1,1,2-Trichloroethane Sum Trichlorobenzenes - calculated Di-n-octylphthalate	< 0.001 nan < 0.004	< 0.001 nan < 0.002	< 0.001 nan < 0.002	0 0	0	0	0	0	0	
	0.1 0.4 0.0004 0.0013	mg/l mg/l mg/l mg/l	1,1,2-Trichloroethane Sum Trichlorobenzenes - calculated Di-n-octylphthalate bis(2-Ethylhexyl)phthalate	< 0.001 nan < 0.004 < 0.01	<0.001 nan <0.002 <0.005	< 0.001 nan < 0.002 < 0.005	0 0 0	0 0	0 0	0 0	0 0	0 0	
09 SVOCs	0.1 0.4 0.0004 0.0013 0.0075	mg/l mg/l mg/l mg/l mg/l	1,1,2-Trichloroethane Sum Trichlorobenzenes - calculated Di-n-octylphthalate bis(2-Ethylhexyl)phthalate Butylbenzylphthalate	< 0.001 nan < 0.004 < 0.01 < 0.01	<0.001 nan <0.002 <0.005 <0.005	< 0.001 nan < 0.002 < 0.005 < 0.005	0 0 0 0	0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0	
09 SVOCs	0.1 0.4 0.0004 0.0013 0.0075 0.008	mg/l mg/l mg/l mg/l mg/l mg/l	1,1,2-Trichloroethane Sum Trichlorobenzenes - calculated Di-n-octylphthalate bis(2-Ethylhexyl)phthalate Butylbenzylphthalate Di-n-butylphthalate	< 0.001 nan < 0.004 < 0.01 < 0.01 < 0.01	<0.001 nan <0.002 <0.005 <0.005 <0.005	< 0.001 nan < 0.002 < 0.005 < 0.005	0 0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0 0	0 0 0 0	0 0 0 0 0	
09 SVOCs	0.1 0.4 0.0004 0.0013 0.0075 0.008 0.2	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	1,1,2-Trichloroethane Sum Trichlorobenzenes - calculated Di-n-octylphthalate bis(2-Ethylhexyl)phthalate Butylbenzylphthalate Di-n-butylphthalate Diethylphthalate	< 0.001 nan < 0.004 < 0.01 < 0.01 < 0.01	<0.001 nan <0.002 <0.005 <0.005 <0.005 <0.005	< 0.001 nan < 0.002 < 0.005 < 0.005 < 0.005	0 0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	
09 SVOCs	0.1 0.4 0.0004 0.0013 0.0075 0.008 0.2 0.8	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	1,1,2-Trichloroethane Sum Trichlorobenzenes - calculated Di-n-octylphthalate bis[2-Ethylnexyl]phthalate Butylbenzylphthalate Di-n-butylphthalate Diethylphthalate Diethylphthalate	<0.001 nan <0.004 <0.01 <0.01 <0.01 <0.01 <0.01	<0.001 nan <0.002 <0.005 <0.005 <0.005 <0.005 <0.005	<0.001 nan <0.002 <0.005 <0.005 <0.005 <0.005	0 0 0 0 0 0 0	0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	
09 SVOCs 1.1 Polyhalogenated Compounds	0.1 0.4 0.0004 0.0013 0.0075 0.008 0.2	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	1,1,2-Trichloroethane Sum Trichlorobenzenes - calculated Di-n-octylphthalate bis(2-Ethylhexyl)phthalate Butylbenzylphthalate Di-n-butylphthalate Diethylphthalate	< 0.001 nan < 0.004 < 0.01 < 0.01 < 0.01	<0.001 nan <0.002 <0.005 <0.005 <0.005 <0.005	< 0.001 nan < 0.002 < 0.005 < 0.005 < 0.005	0 0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	

			Location ID	1-410	1-715	1-737	SV	/01	SW	/02	SV	/03	
			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	Drinking Water	Unit	Contaminant										
	Standard												
	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	
02 General Inorganics	0.5	mg/l	Ammoniacal Nitrogen as NH4	0.12 475.0	0	0	0.03		0.26 80.0	0	0.06	0	
	250.0	mg/l	Chloride as Cl Total Sulphur as SO4 (Dissolved)	139.0	239.0 115.0	66.0 191.0	39.0 105.0	29.0	58.0	71.0 54.0	26.0	19.0	
	6.5-9.5	pH Units	pH units	5.3	4.1	3.9	7.5	66.0 7.6	6.7	7.1	36.0 7.5	25.0 7.4	
	0.001	mg/I	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	
	0.003	mg/ i	Arsenic as As (Dissolved)	< 0.001	0.00034	0.00131	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	
	0.01	mg/l	Lead as Pb (Dissolved)	< 0.001	0.003	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	
	0.02	8/ .	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	
03 Metals/Metaloids	0.05	mg/l	Chromium as Cr (Dissolved)	< 0.001	0.002	0.003	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.003	
	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	
	0.00900000000000000												
	1	mg/I	Pentachlorophenol	< 0.1	< 0.05	< 0.05	0	0	0	0	0	0	
04 Phenols	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	
	0.001	mg/l	Benzene	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
05 BTEX & MTBE	0.3	mg/l	Ethyl Benzene	< 0.001	< 0.005	< 0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
03 3 1 LX Q 111 1 2 L	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	
			Aromatics >C10 - C12	0.003	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
	0.09	mg/l	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	
06 Petroleum Hydrocarbons			Aromatics >C21 - C35 Aliphatics >C10 - C12	0.04	< 0.01	< 0.01 < 0.01	0.02 < 0.01	< 0.01	0.01	0.015 < 0.01	< 0.01	< 0.01 < 0.01	
			Aliphatics >C10 - C12	0.001	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
	0.3	mg/l	Aliphatics >C12 - C16	0.002	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 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	
	0.0001	mg/l	PAH Sum of 4 - calculated	nan	nan	nan	nan	0.01	nan	0.01	nan	0.01	
07 PAHs	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	< 0.004	< 0.002	< 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	
			1,2-Dichloroethane	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
	0.003	mg/I	Carbon Tetrachloride	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
08 VOCs			Styrene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
U8 VUCS	0.02	mg/I	cis 1,3-Dichloropropene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
			trans 1,3-Dichloropropene	< 0.001	< 0.001	< 0.001	0	0	0	0	0	0	
			trans 1,5 Dicinoropropene		. 0 004	< 0.001	0	0	0	0	0	0	
	0.04	mg/l	1,2-Dichloropropane	< 0.001	< 0.001								
	0.1	mg/l	1,2-Dichloropropane Sum Trihalomethanes - calculated	nan	nan	nan	0	0	0	0	0	0	
	0.1	mg/l mg/l	1,2-Dichloropropane Sum Trihalomethanes - calculated 1,4-Dichlorobenzene	nan < 0.001	nan < 0.005	nan < 0.001	0	0	0	0	0	0	
	0.1 0.3 1.0	mg/l mg/l mg/l	1,2-Dichloropropane Sum Trihalomethanes - calculated 1,4-Dichlorobenzene 1,2-Dichlorobenzene	nan < 0.001 < 0.005	nan < 0.005 < 0.005	nan < 0.001 < 0.005	0	0	0	0	0	0	
	0.1	mg/l mg/l	1,2-Dichloropropane Sum Trihalomethanes - calculated 1,4-Dichlorobenzene 1,2-Dichlorobenzene Sum Dichlorobenzenes - calculated	nan < 0.001 < 0.005 nan	nan < 0.005 < 0.005 nan	nan < 0.001 < 0.005 nan	0 0	0 0	0 0	0 0	0 0	0 0 0	
	0.1 0.3 1.0 1.3	mg/l mg/l mg/l mg/l	1,2-Dichloropropane Sum Trihalomethanes - calculated 1,4-Dichlorobenzene 1,2-Dichlorobenzene Sum Dichlorobenzenes - calculated Di-n-octylphthalate	nan < 0.001 < 0.005 nan < 0.004	nan < 0.005 < 0.005 nan < 0.002	nan < 0.001 < 0.005 nan < 0.002	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0	0 0 0	
	0.1 0.3 1.0 1.3	mg/l mg/l mg/l mg/l mg/l	1,2-Dichloropropane Sum Trihalomethanes - calculated 1,4-Dichlorobenzene 1,2-Dichlorobenzenes - calculated Di-n-octylphthalate bis(2-Ethylhexyl)phthalate	nan < 0.001 < 0.005 nan < 0.004 < 0.01	nan < 0.005 < 0.005 nan < 0.002 < 0.005	nan < 0.001 < 0.005 nan < 0.002 < 0.005	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	
09 SVOCs	0.1 0.3 1.0 1.3 0.008	mg/l mg/l mg/l mg/l mg/l mg/l mg/l	1,2-Dichloropropane Sum Trihalomethanes - calculated 1,4-Dichlorobenzene 1,2-Dichlorobenzene Sum Dichlorobenzenes - calculated Di-n-octylphthalate bis(2-Ethylhexyl)phthalate Sum Trichlorobenzenes - calculated	nan < 0.001 < 0.005 nan < 0.004 < 0.01	nan < 0.005 < 0.005 nan < 0.002 < 0.005 nan	nan < 0.001 < 0.005 nan < 0.002 < 0.005 nan	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	
09 SVOCs	0.1 0.3 1.0 1.3 0.008	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	1,2-Dichloropropane Sum Trihalomethanes - calculated 1,4-Dichlorobenzene 1,2-Dichlorobenzene Sum Dichlorobenzenes - calculated Di-n-octylphthalate bis(2-Ethylhexyl)phthalate Sum Trichlorobenzenes - calculated Di-n-butylphthalate	nan < 0.001 < 0.005 nan < 0.004 < 0.01 nan < 0.01	nan < 0.005 < 0.005 nan < 0.002 < 0.005 nan < 0.005	nan <0.001 <0.005 nan <0.002 <0.005 nan <0.005	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	
09 SVOCs	0.1 0.3 1.0 1.3 0.008	mg/l mg/l mg/l mg/l mg/l mg/l mg/l	1,2-Dichloropropane Sum Trihalomethanes - calculated 1,4-Dichlorobenzene 1,2-Dichlorobenzene Sum Dichlorobenzenes - calculated Di-n-octylphthalate bis(2-Ethylhexyl)phthalate Sum Trichlorobenzenes - calculated	nan < 0.001 < 0.005 nan < 0.004 < 0.01	nan < 0.005 < 0.005 nan < 0.002 < 0.005 nan	nan < 0.001 < 0.005 nan < 0.002 < 0.005 nan	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	



# Appendix D. Human Health GQRA Screening

Init I/A I/A	Maximum LOD 0.0002	Number of Samples 21 106	Number of Samples above LOD 21	GAC	LOD above GAC 0	Number of Exceedances 0	Minimum 0.0002	Median 0.0042	Mean 0.01115377	Maximum 0.26	Location of Maximum Value 1-150 2.50 2.50 2020-01-31	Locations of Exceedance with Detail
	0.0002	106					0.0002	0.0042	0.01115377	0.26	1.150 2 50 2 50 2020.01.31	
I/A	0.0002		106		0	0	0.0002	0.0042	0.01115377	0.26	1,150 2 50 2 50 2020-01-31	
6												
		67	68		0	0	0	0	4.10597015	72.2	1-105A 0.50 2019-07-24 1-107 0.50 2019-07-23	
6		1	1		0	0	55.8	55.8	55.8	55.8		
6	0.2	7	7		0	0	0.6	2.7	2.97142857	6.6	1-150 1.20 2.70 2020-01-31	
	0.1	105	105		0	0	2.8	14.2	15 7628571	65	1-150 2 50 2 50 2020-01-31	
H Units		106	106		0	0	3.6	5.55	5.98584906	11.2		
6 M/M	0.04	106	106		0	0	0.1	0.685	1.88575472	44		
										25.5		
ng/kg	0.7	106	63		0	0	0.5	0.8	9.75849057	268.3	1-150 2.50 2.50 2020-01-31	
ng/kg	1.4	106	0	34	0	0	0.5	0.6	0.60471698	1.4	1-150 2.50 2.50 2020-01-31	
tal/kg	0.04	5	4		0	0	0.04	0.48	1.062	2.61	1-237 0.60 0.90 2019-11-19	
ng/kg	10	3	3		0	0	99	268	322.666667	601	1-150 1.20 2.70 2020-01-31	
ng/kg	1.4	106	0		0	0	0.5	0.6	0.60471698	1.4	1-150 2.50 2.50 2020-01-31	
			2									
		3	3					02		114		
ng/kg	1	3	1		0		1	1		3		
ng/kg		106	106		0							
ng/kg		3	3		0					1161		
ng/kg	0.7	106	17		0	0	0.5	0.6	1.85377358	61.4	1-150 1.80 1.80 2020-01-31	
ng/kg	50	3	3		0	0	1577	1940	1982.33333	2430	1-508 2.10 2.10 2019-07-18	
ng/kg	0.01	3	1	3090	0	0	0.01	0.01	0.01666667	0.03	1-508 2.10 2.10 2019-07-18	
ng/kg	0.01	3	2	168	0	0	0.01	0.04	0.08	0.19	1-508 2.10 2.10 2019-07-18	
ng/kg	0.3	106	106	168	0	0	0.5	6.65	8.23679245	57.6	1-107 3.40 2019-07-25	
ng/kg	0.5	106	103	5770	0	0	0.1	21.3	41.409434	770	1-257 21.30 2019-07-03	
ng/kg	0.1	105	70	61	0	0	0.1	0.18	0.27226667	2.95	1-542 0.50 2019-07-04	
ng/kg	0.001	3	2	882	0	0	0.0007	0.001	0.00276667	0.0066	1-150 1.20 2.70 2020-01-31	
ng/kg	0.22	106	17	882	0	0	0.1	0.2	0.94839623	66.48	1-257 21.30 2019-07-03	
ng/kg	0.01	3	1	83500	0	0	0.01	0.01	0.01	0.01	1-150 1.20 2.70 2020-01-31	
ng/kg	0.5	106	106	83500	0	0	1.9	17	21.6679245	382.2	1-257 21.30 2019-07-03	
			7									
			2									
-			1									
		106	92		0	1	0.01				1-508 2.10 2.10 2019-07-18	1-257 21.30 2019-07-03
ng/kg	0.5	106	69	-	0	0	0.5	0.6	0.68962264	2.3	1-184 1.50 2019-07-23	
ng/kg	0.001	3	0		0	0	0.0003	0.0003	0.00053333	0.001	1-508 2.10 2.10 2019-07-18	
ng/kg	0.6	106	1		0	0	0.1	0.5	0.59396226	10.99	1-184 0.50 2019-07-19	
ng/kg	0.01	3	1	2550	0	0	0.01	0.01	0.02	0.04	1-508 2.10 2.10 2019-07-18	
ng/kg	0.6	106	6	2550	0	0	0.5	0.5	0.53018868	2	1-542 0.50 2019-07-04	
ng/kg	0.6	106	106	1550	0	0	1.7	25.3	26.0169811	77.6	1-542 2.50 2019-07-09	
ng/kg	0.02	3	2	201000	0	0	0.02	0.12	0.1	0.16		
ng/kg	17.1	106	76	201000	0	0	15.9	22.25	90.1330189	5790		
• •	5.43		0	8740 47800	0		0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
ng/kg	5.43	26	0		0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
ng/kg	5.43	26	0		0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
ng/kg					0							
ng/kg ng/kg	5.43	26 26	0		0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25 1-225 0.50 2019-11-25	
ng/kg	5.43	26	0		0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
ng/kg	5.43	26	0		0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
ng/kg ng/kg	27.2	26 26	0		0	0	0.527	0.591	1.62388462	27.2	1-225 0.50 2019-11-25	
ng/kg ng/kg	27.2	26	0		0	0	0.527	0.591	1.62388462	27.2	1-225 0.50 2019-11-25	
ng/kg	1.4	106	2		0	0	0.5	0.6	0.60471698	1.4	1-150 2.50 2.50 2020-01-31	
ng/kg	5.43	26	0	685	0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
ng/kg	0.619	105	0	139	0	0	0.0011	0.0114	0.0161619	0.619	1-950 4.50 2019-08-13	
ng/kg	0.619	105	1	21400	0	0	0.0021	0.0114	0.01647429	0.619	1-950 4.50 2019-08-13	
ng/kg	0.0294	30	0	70800	0	0	0.0011	0.0012	0.00439333	0.0294	1-150 1.20 2.70 2020-01-31	
ng/kg	0.619	105	1	69900	0	0	0.0053	0.0114	0.01738476	0.619	1-950 4.50 2019-08-13	_
ng/kg	0.619	105	1	9560	0	0	0.0021	0.0114	0.0165181	0.619	1-950 4.50 2019-08-13	
ng/kg ng/kg	1.24	105	0	9100	0	0	0.0042	0.0228	0.03300952	1.24	1-950 4.50 2019-08-13 1-950 4.50 2019-08-13	
	12.4	104	0		0	0	0.2	0.233	0.38083654	12.4	1-950 4.50 2019-08-13	
ng/kg												
ng/kg	12.4	104	0		0	0	0.2	0.233	0.38083654	12.4	1-950 4.50 2019-08-13	
			0		0	0	0.2	0.233 0.233 0.2335	0.38083654 0.38083654 0.38344231	12.4	1-950 4.50 2019-08-13 1-950 4.50 2019-08-13 1-950 4.50 2019-08-13	
	MMM	MM         0.04           MM         0.02           MM         0.02           MM         0.02           MM         0.02           MM         0.02           ghq         1.4           dolog         0.04           ghq         1.0           ghq         1.1           ghq         1.2           ghq         2.0           ghq         0.01           ghq         0.01           ghq         0.01           ghq         0.01           ghq         0.02           ghq         0.01           ghq         0.02           ghq         0.02           ghq         0.01           ghq         0.02           ghq         0.02           ghq         0.02           ghq         0.03           ghq         0.02           ghq         0.03           ghq         0.02           ghq         0.03           ghq         0.00           ghq         0.00           ghq         0.00           ghq         0.00 <tr< td=""><td>  Hubits</td><td>  Hubbs</td><td>  Hubbs</td><td>                                     </td><td>                                     </td><td>                                     </td><td>                                     </td><td>                                     </td><td>                                     </td><td>  Manual</td></tr<>	Hubits	Hubbs	Hubbs							Manual

Public Open Space (Parks) Scr	eeiiiig se	illillial y 311		Mumber of		LOD							
Determinand	Unit	Maximum LOD	Number of Samples	Samples above LOD	GAC	above GAC	Number of Exceedances	Minimum	Median	Mean	Maximum	Location of Maximum Value	Locations of Exceedances with Detail
GRO C5-C6 Aliphatic	mg/kg	0.571	104	2		0	0	0.2	0.233	0.24582692	0.772	1-950 4.50 2019-08-13	
GRO > C5-10 GRO C7-C8 Aliphatic	mg/kg mg/kg	0.571	104	2		0	0	0.2	0.2335	0.38413462	12.4	1-950 4.50 2019-08-13 1-950 4.50 2019-08-13	
Aliphatics >C8-C40	mg/kg	29.4	106	59		0	0	20.9	27.75	47.9	493	1-225 0.50 2019-11-25	
Aromatics >C8-C40	mg/kg	29.8	106	73		0	0	20	33.05	100.432075	3450	1-252 0.55 2019-08-20	
GRO C6-C7 Aliphatic	mg/kg	0.571	104	0		0	0	0.2	0.233	0.23957692	0.571	1-150 2.50 2.50 2020-01-31	
EPH >C10 - C40	mg/kg	12.4	5	4		0	0	12.4	97.3	186.8	586	1-237 0.60 0.90 2019-11-19	
Decane	mg/kg	0.186	1	1		0	0	0.186	0.186	0.186	0.186	1-169 3.40 2019-09-23	
Aliphatics >C10-C12	mg/kg	11.43	106	5	17700	0	0	4	4.66	4.7745283	11.43	1-150 2.50 2.50 2020-01-31	
Aliphatics >C12-C16	mg/kg	11.43	106	16	23800	0	0	4	4.745	5.50198113	18.7	1-748 1.80 2019-09-19	
Aliphatics >C16-C21	mg/kg	11.43	106	38	864000	0	0	4	4.955	6.72433962	48	1-748 1.80 2019-09-19	
Aliphatics >C21-C35	mg/kg	12.86	106	70	864000	0	0	9.17	14.45	31.7188679	412	1-225 0.50 2019-11-25	
Aliphatics >C8-C10	mg/kg	11.43	106	10	9720	0	0	4	4.715	5.16264151	12	1-231 0.50 0.50 2019-11-26	
Aromatics >C10-C12	mg/kg	11.43	106	6	8260	0	0	4	4.73	5.91933962	96.6	1-216 0.20 0.20 2019-11-25	
Aromatics >C12-C16	mg/kg	11.43	106	22	10600	0	0	4	4.855	8.76009434	167	1-252 0.55 2019-08-20	
Aromatics >C16-C21	mg/kg	11.43	106	55	7870	0	0	4	5.79	19.0854717	870	1-252 0.55 2019-08-20	
Aromatics >C21-C35	mg/kg	13.05	106	75	7870	0	0	8.76	18.1	59.1391509	2110	1-252 0.55 2019-08-20	
Aromatics >C8-C10	mg/kg	11.43	106	12	5140	0	0	4	4.73	5.24132075	11.43	1-150 2.50 2.50 2020-01-31	
Acenaphthene	mg/kg	5.43	106	6	28600	0	0	0.08	0.1	0.38159434	18.2	1-252 0.55 2019-08-20	
Acenaphthylene	mg/kg	5.43	106	5	28600	0	0	0.08	0.1	0.19532075	5.43	1-225 0.50 2019-11-25	
Anthracene Phenanthrene	mg/kg mg/kg	5.43 5.43	106	10	150000	0	0	0.08	0.1	0.71156604 2.12565094	45.6 170	1-252 0.55 2019-08-20 1-252 0.55 2019-08-20	
Benzo(a)anthracene	mg/kg mg/kg	10.9	105	14	. 50000	0	0	0.08	0.1	1.14322857	66.1	1-252 0.55 2019-08-20	
Benzo(a) anthracene	mg/kg	0.09	1	0		0	0	0.09	0.09	0.09	0.09	1-105A 1.40 2019-07-26	
Benzo(a)pyrene	mg/kg	10.9	106	15	21.4	0	1	0.08	0.1	1.03533019	57.7	1-252 0.55 2019-08-20	1-252 0.55 2019-08-20
Benzo(b)fluoranthene Benzo(b) fluoranthene	mg/kg mg/kg	10.9	105	16	-	0	0	0.08	0.1	1.22209524	70.3	1-252 0.55 2019-08-20 1-105A 1.40 2019-07-26	
Benzo(g,h,i)perylene	mg/kg	27.2	106	12		0	0	0.08	0.1	0.8869434	29.1	1-252 0.55 2019-08-20	
Benzo(k)fluoranthene	mg/kg	10.9	105	10		0	0	0.08	0.1	0.56291429	22.8	1-252 0.55 2019-08-20	
Benzo(k) fluoranthene	mg/kg	0.09	1	0		0	0	0.09	0.09	0.09	0.09	1-105A 1.40 2019-07-26	
Chrysene	mg/kg mg/kg	5.43 16.3	106	15		0	0	0.08	0.1	0.94148113	58.5 16.3	1-252 0.55 2019-08-20	
Dibenzo(a,h)anthracene	mg/kg	27.2	106	6		0	0	0.08	0.5555	0.58359434	27.2	1-225 0.50 2019-11-25	
Fluoranthene	mg/kg	10.9	106	18	20200	0	0	0.08	0.1	2.41703774	171	1-252 0.55 2019-08-20	
Fluorene	mg/kg	10.9	106	7	19600	0	0	0.08	0.1	0.57016981	28.8	1-252 0.55 2019-08-20	
Indeno(1,2,3-cd)pyrene	mg/kg	27.2	106	14		0	0	0.08	0.1	1.00409434	38.1	1-252 0.55 2019-08-20	
Naphthalene Total PAHs (USEPA 16)	mg/kg mg/kg	0.6 112.7	106	6	623	0	0	0.0053	0.09	0.14368962	4.53 923	1-252 0.55 2019-08-20 1-252 0.55 2019-08-20	
Total PAHs (USEPA16)	mg/kg	1.46	1	0		0	0	1.46	1.46	1.46	1.46	1-105A 1.40 2019-07-26	
Pyrene	mg/kg	10.9	106	17	15100	0	0	0.08	0.1	1.9415	131	1-252 0.55 2019-08-20	
1,1,1,2-Tetrachloroethane	mg/kg	0.0013	26	0	3490	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,1,1-Trichloroethane	mg/kg	0.0013	26	0	34900	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,1,2,2-Tetrachloroethane	mg/kg	0.0013	26	O.	4640	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,1,2-Trichloroethane	mg/kg	0.0013	26	1	766	0	0	0.0011	0.0012	0.00191923	0.0203	1-749 5.30 5.30 2019-11-22	
1,1-Dichloroethane	mg/kg	0.0013	26	0	11200	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,1-Dichloroethene	mg/kg	0.0013	26	0	1950	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,2,4-Trimethylbenzene	mg/kg	0.0013	26	1	225	0	0	0.0011	0.0012	0.00233846	0.0311	1-169 0.95 2019-08-22	
1,2-Dichloroethane	mg/kg	0.0013	26	0	37.9	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,2-Dichloropropane	mg/kg	0.0013	26	O.	79.6	0	0	0.0011	0.0012			1-150 1.80 1.80 2020-01-31	
2-Chloronaphthalene Biphenyl	mg/kg mg/kg	5.43	26 26	1	659 14900	0	0	0.105	0.118	0.32438462		1-225 0.50 2019-11-25 1-225 0.50 2019-11-25	
Bromobenzene	mg/kg	0.0013	26	0	986	0	0	0.0011	0.0012	0.00118846		1-150 1.80 1.80 2020-01-31	
Bromodichloromethane	mg/kg	0.0013	26	О	33.9	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Bromoform	mg/kg	0.0013	26	O	2910	o	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Carbon Tetrachloride	mg/kg	0.0013	26	0	915	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Chlorobenzene	mg/kg	0.0013	26	0	13200	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Chloroethane	mg/kg	0.0027	26	0	82400	0	0	0.0021	0.0024	0.00240385	0.0027	1-508 3.40 3.40 2019-07-18	
Chloroform	mg/kg	0.0013	26	0	2090	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Chloromethane	mg/kg	0.004	26	0	73.8	0	0	0.0032	0.0035	0.00359231	0.004	1-150 1.80 1.80 2020-01-31	
cis 1,2-Dichloroethene	mg/kg	0.0067	26	0	389	0	0	0.0053	0.0059	0.00598462	0.0067	1-508 3.40 3.40 2019-07-18	
		0.0013			231	l .				0.00118846	0.0013		
Dibromochloromethane	mg/kg		26	0		٥	0	0.0011	0.0012			1-150 1.80 1.80 2020-01-31	
Dichloromethane (Methylene Chloride)	mg/kg	0.007	5	0	1430	0	0	0.006	0.006	0.0064	0.007	1-508 2.55 2.55 2019-07-18	
Hexachloroethane	mg/kg	5.43	26	0	115	0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,1-Dichloropropene					_	0	0	0.0032	0.0035	0.00359231	0.004	1-150 1.80 1.80 2020-01-31	·
1,1-Dichloropropene 1,2,3-Trichlorobenzene	mg/kg	0.004	26	0		U		0.0002				1 100 1.00 1.00 2020 01 01	
		0.004	26	0		0	0	0.0001	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,2,3-Trichlorobenzene 1,2,3-Trichloropropane	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,2,3-Trichlorobenzene						0							
1,2,3-Trichloropenzene 1,2,3-Trichloropropane	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	

Public Open Space (Parks) Scr		Maximum	Number of	Number of		LOD	Number of						Locations of Exceedance
Determinand	Unit	LOD	Samples	Samples above LOD	GAC	above GAC	Exceedances	Minimum	Median	Mean	Maximum	Location of Maximum Value	with Detail
1,2-Dichlorobenzene	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Benzene, 1,3,5-trichloro-	mg/kg	0.00116	5	0		0	0	0.001	0.00114	0.001118	0.00116	1-237 0.30 2019-11-19	
Benzene, 1,2,3-trichloro-	mg/kg	0.00116	5	0		0		0.001	0.00114	0.001118		1-237 0.30 2019-11-19	
1,3,5-Trimethylbenzene	mg/kg	0.0013	26	1		0	0	0.0011	0.0012	0.00167308	0.0138	1-169 0.95 2019-08-22	
1,3-Dichlorobenzene	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,3-Dichloropropane	mg/kg	0.0013	26	0		0		0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
1,4-Dichlorobenzene	mg/kg	0.0013	26	0		0		0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
2,2-Dichloropropane	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
2-Chlorotoluene	mg/kg	0.0013	26	0		0		0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
4-Chlorotoluene	mg/kg	0.0013	26	0		0		0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Bromochloromethane	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Bromomethane	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
cis 1,3-Dichloropropene	mg/kg	0.0013	26	0		0		0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Dibromomethane		0.0013	26			0	0	0.0011	0.0012	0.00118846	0.0012	1-150 1.80 1.80 2020-01-31	
Distributioniestate	mg/kg	0.0013	20					0.0011	0.0012	0.00118846	0.0013	1-150 1.60 1.60 2020-01-31	
Dichlorodifluoromethane	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Hexachlorobutadiene	mg/kg	0.0027	26	0		0		0.0021	0.0024	0.00240385	0.0027	1-508 3.40 3.40 2019-07-18	
n-Butylbenzene	maika	0.0013	26			0		0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
	mg/kg			0			0						
Benzene, pentachloro- p-isopropyltoluene	mg/kg mg/kg	0.00116	5 26	0		0	0	0.001	0.00114	0.001118	0.00116	1-237 0.30 2019-11-19	
				2									
sec-Butylbenzene	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013		
tert-Butylbenzene	mg/kg	0.0013	26	1		0	0	0.0011	0.0012	0.00127692	0.0035		
Benzene, 1,2,3,4-tetrachloro-	mg/kg	0.00116	5	0		0	0	0.001	0.00114	0.001118	0.00116		
trans 1,3-Dichloropropene	mg/kg	0.0013	26	0		0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Trichlorofluoromethane	mg/kg	0.0013	26	0		0		0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
iso-Propylbenzene	mg/kg	0.0013	26	0	27500	0		0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Propylbenzene	mg/kg	0.0013	26	0	27500	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Styrene	mg/kg	0.0013	26	0	5640	0		0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Tetrachloroethene	mg/kg	0.138	26	0	3060	0	0	0.0032	0.00355	0.00876923	0.138	1-945 0.50 0.50 2019-07-30	
				_									
trans 1,2-Dichloroethene	mg/kg	0.0013	26	0	918	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Trichloroethene	mg/kg	0.0013	26	0	11	0		0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
Vinyl Chloride	mg/kg	0.0013	26	0	3.68	0	0	0.0011	0.0012	0.00118846	0.0013	1-150 1.80 1.80 2020-01-31	
2,4-Dinitrotoluene	mg/kg	10.9	26		973	0	0	0.211	0.2365	0.65030769	10.9	1-225 0.50 2019-11-25	
2,6-Dinitrotoluene	mg/kg	27.2	26	0	489	0		0.527	0.2363	1.62388462	27.2	1-225 0.50 2019-11-25	
bis(2-Ethylhexyl)phthalate	mg/kg	10.9	26	0	16600	0	0	0.211	0.2365	0.65030769	10.9	1-225 0.50 2019-11-25	
Butylbenzylphthalate	mg/kg	10.9	26	0	257000	0	0	0.211	0.2365	0.65030769	10.9	1-225 0.50 2019-11-25	
Diethylphthalate	mg/kg	5.43	26	0	85800	0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
Di-n-butylphthalate	mg/kg	5.43	26	0	2620	0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
Di-n-octylphthalate	mg/kg	10.9	26	0	20000	0	0	0.211	0.2365	0.65030769	10.9	1-225 0.50 2019-11-25	
1-Methylnaphthalene	mg/kg	5.43	26	1		0		0.105	0.12	0.36534615	5.43		
2,4-Dinitrophenol 2-Methylnaphthalene	mg/kg mg/kg	27.2 5.43	26 26	0		0	0	0.527	0.591	1.62388462 0.39534615	27.2 5.43	1-225 0.50 2019-11-25	
2-Nitroaniline	mg/kg	27.2	26	0		0	0	0.103	0.591	1.62388462	27.2	1-225 0.50 2019-11-25	
3-Nitroaniline	mg/kg	788	26	0		0		15.3	17.15	47.0692308	788		
4,6-Dinitro-2-methylphenol	mg/kg	10.9	26	0		0	0	0.211	0.2365	0.65030769	10.9		
4-Bromophenyl-phenylether	mg/kg	5.43	26	0	L	0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
4-Chloroaniline	mg/kg	27.2	26	0		0	0	0.527	0.591	1.62388462	27.2	1-225 0.50 2019-11-25	
4-Chlorophenyl-phenylether	mg/kg	5.43	26	0		0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
4-Nitroaniline	mg/kg	32.6	26	0	-	0	0	0.633	0.7095	1.94711538	32.6	1-225 0.50 2019-11-25	
Benzoic Acid	mg/kg	27.2	26 26	0		0	0	0.527	0.591	1.62388462	27.2	1-225 0.50 2019-11-25	
Benzyl alcohol bis(2-Chloroethoxy)methane	mg/kg mg/kg	27.2 5.43	26 26	0		0		0.527	0.591	1.62388462 0.32438462	5.43		
bis(2-Chloroethyl)ether	mg/kg	5.43	26	0		0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
bis(2-Chloroisopropyl)ether	mg/kg	27.2	26	0		0	0	0.527	0.591	1.62388462	27.2	1-225 0.50 2019-11-25	
Dibenzofuran	mg/kg	5.43	26	1		0	0	0.105	0.12	0.38803846	5.43	1-225 0.50 2019-11-25	
Dimethylphthalate	mg/kg	5.43	26	0		0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
Diphenyl ether	mg/kg	5.43	26	0	_	0			0.118	0.32438462	5.43		
Hexachlorobenzene	mg/kg	5.43	30	0		0	0	0.002	0.1165	0.28143	5.43	1-225 0.50 2019-11-25	
Hexachlorocyclopentadiene Isophorone	mg/kg mg/kg	5.43	26 26	0		0	0	0.105	0.118	0.32438462	5.43		
Nitrobenzene	mg/kg mg/kg	27.2	26	0		0	0	0.105	0.118	1.62388462	27.2	1-225 0.50 2019-11-25	
N-Nitroso-di-n-propylamine	mg/kg	48.9	26	0		0		0.949	1.0635	2.92053846	48.9		
N-Nitrosodiphenylamine	mg/kg	5.43	26	0		0	0	0.105	0.118	0.32438462	5.43	1-225 0.50 2019-11-25	
p,p-DDD	mg/kg	0.00581	5	0	212	0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
2,6-Dichlorobenzonitrile	mg/kg	0.00116	5	0		0	0	0.001	0.00114	0.001118	0.00116	1-237 0.30 2019-11-19	
Aldrin	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
alpha-HCH	mg/kg	0.00233	5	0		0			0.00228	0.002236	0.00233		
ametryn	mg/kg	0.00233	5	0	-	0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
	mg/kg	0.00233	5	0	<u> </u>				0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Atrazine	ma/ka	0,00581	5	0									
	mg/kg mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
Atrazine Azinphos-ethyl	mg/kg mg/kg mg/kg		5 5	0			0					1-237 0.30 2019-11-19	

Public Open Space (Parks) Sci	reening St	anninary Si	ieet										
Determinand	Unit	Maximum	Number of	Number of Samples	GAC	LOD above	Number of	Minimum	Median	Mean	Maximum	Location of Maximum Value	Locations of Exceedances
Chlordane - alpha	mg/kg	0.00233	Samples	above LOD 0		GAC 0	Exceedances 0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	with Detail
Trans Chlordane	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Clorfenvinfos	mg/kg	0.00233	5	0		0	0	0.002	0.00342	0.002250	0.00233	1-237 0.30 2019-11-19	
Chlorthalonil	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Chlorpyrifos	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Chlorpyriphos-methyl	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Cyanazine	mg/kg	0.02	1	0		0	0	0.02	0.02	0.02	0.02	1-227 0.40 2019-11-25	
o,p'-DDD	mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
o.p'-DDE	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
p.p'-dde	mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
o,p'-DDT	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349	1-237 0.30 2019-11-19	
p.p'-DDT	mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
delta-HCH	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
diazinon	mg/kg	0.00116	5	0		0	0	0.001	0.00114	0.001118	0.00116	1-237 0.30 2019-11-19	
dichlorvos	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Dieldrin	mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
Dimethoate	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349	1-237 0.30 2019-11-19	
endosulfan I	mg/kg	0.00116	5	0		0	0	0.001	0.00114	0.001118	0.00116	1-237 0.30 2019-11-19	
Endosulfan II	mg/kg	0.0116	5	0		0	0	0.01	0.0114	0.01118	0.0116	1-237 0.30 2019-11-19	
Endosulphan Sulphate	mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
Endrin	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349	1-237 0.30 2019-11-19	
endrin ketone	mg/kg	0.0349	5	0		0	0	0.03	0.0342	0.03354	0.0349	1-237 0.30 2019-11-19	
Ethion	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349	1-237 0.30 2019-11-19	
etrimphos	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Fenitrothion	mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
fenthion	mg/kg	0.0116	5	0		0	0	0.01	0.0114	0.01118	0.0116	1-237 0.30 2019-11-19	
gamma HCH	mg/kg	0.00116	5	0		0	0	0.001	0.00114	0.001118	0.00116	1-237 0.30 2019-11-19	
Heptachlor	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349	1-237 0.30 2019-11-19	
Heptachlor epoxide	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
isodrin	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Malathion	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
methacriphos	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Methoxychlor	mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
Mevinphos	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
parathion	mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
Parathion-methyl	mg/kg	0.0116	5	0		0	0	0.01	0.0114	0.01118	0.0116	1-237 0.30 2019-11-19	
Pendimethalin	mg/kg	0.0116	5	0		0	0	0.01	0.0114	0.01118	0.0116	1-237 0.30 2019-11-19	
Phorate	mg/kg	0.1	1	0		0	0	0.1	0.1	0.1	0.1	1-227 0.40 2019-11-25	
phosalone	mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
phosfamidon	mg/kg	0.00581	5	0		0	0	0.005	0.00571	0.005592	0.00581	1-237 0.30 2019-11-19	
Pirimiphos-ethyl	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Pirimiphos-methyl	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
prometryn	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Propazine	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Propetamphos	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Propyzamide	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Simazine	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349	1-237 0.30 2019-11-19	
Tecnazene	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349	1-237 0.30 2019-11-19	
terbutylazine	mg/kg	0.0116	5	0		0	0	0.01	0.0114	0.01118	0.0116		
terbutryn	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
trans-Permethrin	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349	1-237 0.30 2019-11-19	
cis-Permethrin	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349	1-237 0.30 2019-11-19	
Triadimefon	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233	1-237 0.30 2019-11-19	
Triallate	mg/kg	0.00233	5	0		0	0	0.002	0.00228	0.002236	0.00233		
Triazophos	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349		
trietazine	mg/kg	0.00349	5	0		0	0	0.003	0.00342	0.003354	0.00349		
Trifluralin	mg/kg	0.0116	5	0		0	0	0.01	0.0114	0.01118	0.0116		
PCB101	mg/kg	0.00734	5	0		0	0	0.0055	0.00617	0.006172	0.00734	1-150 1.20 2.70 2020-01-31	
PCB105	mg/kg	0.00673	7	0		0	0	0.00565	0.0061	0.00619143	0.00673	1-901 0.20 2019-08-14	
PCB114	mg/kg	0.00673	7	0		0	0	0.00565	0.0061	0.00619143	0.00673	1-901 0.20 2019-08-14	
PCB118	mg/kg	0.00734	11	0		0	0	0.0055	0.00617	0.00623182	0.00734	1-150 1.20 2.70 2020-01-31	
PCB123		0.00673	-	0		0	0	0.00565	0.0061	0.00619143	0.00673	1-901 0 20 2019-08-14	
PCB123 PCB126	mg/kg	0.00673	7	0			0	0.00565	0.0061	0.00619143	0.00673		
	mg/kg		,			0							
PCB138	mg/kg	0.00734	5	0		0	0	0.0055	0.00617	0.006172	0.00734	1-150 1.20 2.70 2020-01-31	
PCB153	mg/kg	0.00734	5	0		0	0	0.0055	0.00617	0.006172	0.00734	1-150 1.20 2.70 2020-01-31	
PCB156		0.00673	-				0	0.00565	0.0061	0.00619143	0.00673	1-901 0.20 2019-08-14	
PCB157	mg/kg mg/kg	0.00673	7	0		0	0	0.00565	0.0061	0.00619143	0.00673	1-901 0.20 2019-08-14	
PCB167	mg/kg mg/kg	0.00673	7	0		0	0	0.00565	0.0061	0.00619143	0.00673	1-901 0.20 2019-08-14	
PCB169	mg/kg	0.00673	,	0		0	0	0.00565	0.0061	0.00619143	0.00673	1-901 0.20 2019-08-14	
			,										
PCB180	mg/kg	0.00734	5	0		0	0	0.0055	0.00617	0.006172	0.00734	1-150 1.20 2.70 2020-01-31	
PCB189	mg/kg	0.00673	7	0		0	0	0.00565	0.0061	0.00619143	0.00673	1-901 0.20 2019-08-14	
PCB28	mg/kg	0.00734	5	0		0	0	0.0055	0.00617	0.006172	0.00734	1-150 1.20 2.70 2020-01-31	
PCB52	mg/kg	0.00734	5	0		0	0	0.0055	0.00617	0.006172	0.00734	1-150 1.20 2.70 2020-01-31	
PCB77	mg/kg	0.00673	7	0		0	0	0.00565	0.0061	0.00619143	0.00673	1-901 0.20 2019-08-14	
PCB81	mg/kg	0.00673	7	0		0	0	0.00565	0.0061	0.00619143	0.00673	1-901 0.20 2019-08-14	
Non Detected	mg/kg	0.007	4	0		0	0	0.006	0.0065	0.0065	0.007	1-508 2.55 2.55 2019-07-18	
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Determinand	Unit	Maximum LOD	Number of Samples	Number of Samples above LOD	GAC	LOD above GAC	Number of Exceedances	Minimum	Median	Mean	Maximum	Location of Maximum Value	Locations of Exceedances with Detail
Asbestos ID	%		13	13		(							
F.O.C. Fraction of non-crushable material %	N/A %	0.0002	65 44	65 44		0		0.0004	0.005	0.00683385	0.0425		
Fraction of sample above 4 mm % LOI % @ 450 Deg C	%	0.2	44	44		0		0.5	0	6.54545455	100		
Moisture 105 DegC	%	0.1	65	65		(	0	2.9		13.5061539	23.4	1-181 27.80 2019-06-26	
pH Units (AR) Soil Organic Matter	pH Units % M/M	0.04	65 65	65 65		0		3.7 0.07	5.9 0.76	6.25076923 1.14507692	9.6 7.33		
Total Organic Carbon Exchange.Ammonium AR	% M/M mg/kg	0.02	65 65	65 38		(	0	0.04	0.44	0.66401539 4.67246154		1-293 0.40 2019-11-27	
Cyanide (Free) as CN	mg/kg mg/kg	0.7	65	30	34	(	) 0	0.5	0.6	0.57461539	0.7		
Acid Neutralisation Capacity Chloride	Mol/kg mg/kg	0.04	2	2		(	0 0	0.28	0.3 68.5	0.3 68.5	0.32		
Cyanide (Total) as CN	mg/kg	0.7	65	0		(	0	0.5	0.6	0.57461539	0.7	1-181 27.80 2019-06-26	
Dissolved Organic Carbon Fluoride	mg/kg mg/kg	1	2	2		0	0 0	27	28.5 1	28.5 1	30		
SO4 (acid sol) Sulphate as SO4	mg/kg mg/kg	20 30	65	65		(	0	55 30	236 154	836.2 154	16400 278		
Sulphide	mg/kg	0.7	65	9		(		0.5	0.6	0.67384615	2.1	1-367 4.00 2019-09-12	
Total Dissolved Solids Antimony	mg/kg mg/kg	692 0.01	2	0		0		606 0.01	649 0.01	649 0.01	692 0.01		
Arsenic Arsenic (MS)	mg/kg	0.01	2 65	65		0	0	0.01	0.01 7.8	0.01 8.91538462	0.01 47.6	1-152 0.40 1.50 2020-02-07 1-509 5.30 2019-06-27	
Arsenic (MS) Barium	mg/kg mg/kg	0.3	65	63	79.1 2680	(	0 0	0.1	7.8	8.91538462 44.06	47.6 197	1-212 1.30 2019-09-10	
Beryllium Cadmium	mg/kg mg/kg	0.1	65 2	40	2.19	(		0.1	0.15	0.27199539 0.00075	1.06 0.0013		
Cadmium (MS)	mg/kg	0.21	65	12	219	(	0	0.1	0.2	0.41455385	9.48	1-380 0.20 2019-08-19	
Chromium Chromium (MS)	mg/kg mg/kg	0.01	65	65	00000			0.01	0.01	0.01 18.68	0.01 51.5		
Chromium VI as Cr	mg/kg	0.1	65	1	26.1	(	0	0.1	0.1	0.1		1-124 1.00 2019-07-15	
Copper (MS)	mg/kg mg/kg	0.01	2 65	65	16400 16400	(		0.01 3.8	0.01 9.9	0.01 15.0669231	0.01 167.2	1-380 0.20 2019-08-19	
Lead Molybdenum	mg/kg mg/kg	0.5	65	63	625	0	1	0.01	10.5	31.7118462	688.5		1-382 0.25 2019-08-07
Nickel	mg/kg	0.01	2	1	347	(	0	0.01	0.04	0.04	0.07	1-152 0.40 1.50 2020-02-07	
Nickel (MS) Boron	mg/kg mg/kg	2.2 0.5	65 65	57 34	347	(	0 0	0.5	5.4 0.5	10.4147692 0.64830769	1.74		
Mercury	mg/kg	0.0003	2	0				0.0003	0.0003	0.0003	0.0003	1-152 0.40 1.50 2020-02-07	
Mercury (MS) Selenium	mg/kg mg/kg	0.51 0.01	65 2	1 0	1370	0		0.1	0.5	0.48261539 0.01	0.58		
Selenium (MS) Vanadium (MS)	mg/kg	0.51	65 65	4	1370 818	0	0	0.5 2.3	0.5 25.7	0.52784615 26.7553846	1.6 86.2		
Zinc	mg/kg mg/kg	0.02	2	2	93700		0	0.04	0.175	0.175	0.31	1-152 0.40 1.50 2020-02-07	
Zinc (MS) 2,4-Dimethylphenol	mg/kg mg/kg	17.6	65 13	51	93700 5010	0		14.4 0.107	28.1 0.115	49.4603077 0.145	595.2 0.5		
2-Methylphenol	mg/kg	0.5	13	0	25100	C	0	0.107	0.115	0.145	0.5	1-180 0.20 2019-06-13	
2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	mg/kg mg/kg	0.5	13	0		(		0.107		0.145 0.145	0.5	1-180 0.20 2019-06-13 1-180 0.20 2019-06-13	
2,4-Dichlorophenol	mg/kg	0.5	13	0		(	0	0.107	0.115	0.145	0.5	1-180 0.20 2019-06-13	
2-Chlorophenol 2-Nitrophenol	mg/kg mg/kg	0.5	13	0			0 0	0.107 0.107	0.115 0.115	0.145 0.145	0.5		
3- & 4-Methylphenol 4-Chloro-3-methylphenol	mg/kg mg/kg	0.5	13	0	_			0.107	0.115	0.145	0.5		
4-Chlorophenol	mg/kg	2.5	13	0		(		0.534	0.575	0.72476923	2.5	1-180 0.20 2019-06-13	
4-Nitrophenol Pentachlorophenol	mg/kg mg/kg	2.5	13	0		0	0 0	0.534 0.534	0.575	0.72476923	2.5 2.5		
Phenol Index	mg/kg	0.7	65	1		(		0.05	0.6	0.56553846	0.9	1-260 0.50 2019-07-11	
Phenol Benzene	mg/kg mg/kg	0.5	13 62	0	685 140	0		0.107	0.115	0.145	0.5		
Ethyl Benzene MTBE	mg/kg	0.013 0.0242	62 15	0	24300 73600	0		0.002	0.01115	0.00955161	0.013 0.0242		
Toluene	mg/kg mg/kg	0.013	62	0	55300	(	0 0	0.005	0.01115	0.01027097	0.013	1-307 2.30 2019-10-08	
o-Xylene m and p-Xylene	mg/kg mg/kg	0.013	62 62	0	37800 37400	(		0.002	0.01115	0.00955161	0.013		
Xylenes	mg/kg	0.0392	62	0	37400	(	0	0.03	0.0344	0.03443387	0.0392	1-181 27.80 2019-06-26	
GRO C5-C6 GRO C6-C7	mg/kg mg/kg	0.261	61 61	0		(	0 0	0.2	0.229	0.22903279	0.261		
GRO C7-C8 GRO C8-C10	mg/kg	0.261 0.261	61 61	0		(	0	0.2	0.229	0.22847541	0.261	1-181 27.80 2019-06-26 1-181 27.80 2019-06-26	
TPH by GCFID (AR)	mg/kg mg/kg	10.7	2	1				10.7	27.7	27.7	44.7	1-152 0.40 1.50 2020-02-07	
GRO C5-C6 Aliphatic GRO >C5-10	mg/kg mg/kg	0.261	61	0		(		0.2	0.229	0.22903279	0.261	1-181 27.80 2019-06-26 1-181 27.80 2019-06-26	
GRO C7-C8 Aliphatic	mg/kg	0.261	61	0		(	0	0.2	0.229	0.22847541		1-181 27.80 2019-06-26	
Aliphatics >C8-C40 Aromatics >C8-C40	mg/kg mg/kg	25.9 26.1	65 65	31 42			0 0	20 20	25.1 30.4	39.9815385 64.0193846	375 903		
GRO C6-C7 Aliphatic EPH >C10 - C40	mg/kg	0.261	61	0		(	0	0.2	0.229 23.95	0.22903279	0.261		
Aliphatics >C10-C12	mg/kg mg/kg	10.7 5.22	65	2	18500		0 0	10.7	4.59	4.59461539		1-181 27.80 2019-06-26	
Aliphatics >C12-C16 Aliphatics >C16-C21	mg/kg mg/kg	5.22 5.22	65 65	9		(	0 0	4	4.62 4.79	5.022 5.46156923		1-180 0.20 2019-06-13 1-398 0.20 2019-09-17	
Aliphatics >C21-C35	mg/kg	11.36	65	36	445000	(		8.76	13.7	23.2113846		1-398 0.20 2019-09-17	
Aliphatics >C8-C10 Aromatics >C10-C12	mg/kg mg/kg	5.22 5.22	65 65	5	18000 7420	0		4	4.59 4.63	4.662 6.07092308		1-911 0.50 2019-11-21 1-911 0.50 2019-11-21	
Aromatics >C12-C16 Aromatics >C16-C21	mg/kg mg/kg	5.22 5.19	65 65	10		(		4	4.68 5.12	7.21615385		1-911 0.50 2019-11-21 1-911 0.50 2019-11-21	
Aromatics >C21-C35	mg/kg	11.44	65	43	3770		0	8.76	17	32.6832308	462	1-398 0.20 2019-09-17	
Aromatics >C8-C10 Acenaphthene	mg/kg mg/kg	5.22	65 65	1	7300 14700	(	0 0	0.08	4.6 0.1	4.61707692 0.10296923	5.22 0.5	1-181 27.80 2019-06-26 1-180 0.20 2019-06-13	
Acenaphthylene	mg/kg	0.5	65	1	14700		0	0.08	0.1	0.11958462	1.17	1-309 1.00 2019-08-12	
Anthracene Phenanthrene	mg/kg mg/kg	0.5	65 65	10	74100 74100		0 0	0.08	0.1	0.12127692		1-309 1.00 2019-08-12 1-309 1.00 2019-08-12	
Benzo(a)anthracene Benzo(a) anthracene	mg/kg mg/kg	0.08	64	11			0 0	0.08 0.12	0.1	0.23290625		1-309 1.00 2019-08-12 1-314 0.50 2019-09-12	
Benzo(a)pyrene	mg/kg	1	64	11	10.3			0.08	0.1	0.307	5.77	1-309 1.00 2019-08-12	
Benzo(a) pyrene Benzo(b)fluoranthene	mg/kg mg/kg	0.08	1 64	1 12	10.3	0		0.11	0.11	0.11	0.11 6.88	1-314 0.50 2019-09-12 1-309 1.00 2019-08-12	
Benzo(b) fluoranthene	mg/kg	0.08	1	1		(	0	0.11	0.11	0.11	0.11	1-314 0.50 2019-09-12	
Benzo(g,h,i) perylene Benzo(g,h,i) perylene	mg/kg mg/kg	2.5 0.09	64	10		(	0 0	0.08	0.1	0.38890625 0.09	6.26 0.09	1-309 1.00 2019-08-12 1-314 0.50 2019-09-12	
Benzo(k)fluoranthene Benzo(k) fluoranthene	mg/kg mg/kg	0.09	64	8		(	0 0	0.08	0.1	0.20010938	2.73 0.09	1-309 1.00 2019-08-12 1-314 0.50 2019-09-12	
	mg/kg mg/kg	0.5	65	11			0	0.08	0.1	0.215	4.26	1-309 1.00 2019-08-12	
Chrysene		1.5	15	0			0 0	0.09	0.342	0.38973333		1-180 0.20 2019-06-13 1-180 0.20 2019-06-13	
	mg/kg mg/kg		65	4	1								
Chrysene Coronene Dibenzo(a,h)anthracene Fluoranthene	mg/kg mg/kg	2.5	65 65	13		(	0	0.08	0.1	0.29138462	6.54	1-309 1.00 2019-08-12	
Chrysene Coronene Dibenzo(a,h)anthracene	mg/kg			13 1 9	9870 9870	0	0 0		_	0.29138462 0.13241539 0.4	6.54 1		
Chrysene Cotonene Diberzo(a,l.)anthracene Fluoranthene Fluorane Fluorene Indeno(1,2,3-d)pyrene Naphthalene	mg/kg mg/kg mg/kg mg/kg mg/kg	2.5 1 1 2.5 0.6	65 65 65 65	1 9 2	9870 3490	(	0 0	0.08 0.08 0.08 0.005	0.1 0.1 0.1 0.09	0.13241539 0.4 0.08958923	6.54 1 6.79 0.6	1-309 1.00 2019-08-12 1-180 0.20 2019-06-13 1-309 1.00 2019-08-12 1-364 0.50 0.50 2020-01-13	
Chrysene Coronene Diberzo(a,h)anthracene Filuoranthene Filuorene Irdeno(1,2,3-cd)pyrene	mg/kg mg/kg mg/kg mg/kg	2.5 1 1 2.5	65 65 65	1 9	9870 3490	(	0 0 0	0.08 0.08 0.08	0.1 0.1 0.1 0.09 1.53	0.13241539 0.4	6.54 1 6.79 0.6 53.9	1-309 1.00 2019-08-12 1-180 0.20 2019-06-13 1-309 1.00 2019-08-12 1-364 0.50 0.50 2020-01-13 1-309 1.00 2019-08-12 1-309 1.00 2019-08-12	

Public Open Space (Residential) Screening	Janimary 5												
Determinand	Unit	Maximum LOD	Number of Samples	Number of Samples above LOD	GAC	LOD above GAC	Number of Exceedances	Minimum	Median	Mean	Maximum	Location of Maximum Value	Locations of Exceedances with Detail
													Detail
1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane	mg/kg mg/kg	0.0013	13	0				_	0.0011	0.00113846	0.0013		
1,1-Dichloroethane	mg/kg	0.0013	13	C	42200		0 0	0.001	0.0011	0.00113846	0.0013	1-181 27.80 2019-06-26	
1,1-Dichloroethene 1,2,4-Trimethylbenzene	mg/kg mg/kg	0.0013	13	1	9190 244		0 0	0.001	0.0011	0.00113846 0.00123846	0.0013		
1,2-Dichloroethane	mg/kg	0.0013	13	C	85.2		0 0	0.001	0.0011	0.00113846	0.0013		
1,2-Dichloropropane 2-Chloronaphthalene	mg/kg mg/kg	0.0013	13	0			0 0	0.001	0.0011	0.00113846	0.0013		
2-Cnoronaphinaiene Biphenyl	mg/kg mg/kg	0.5	13		9440		0 0	0.107	0.115	0.145	0.5		
Bromobenzene	mg/kg	0.0013	13	0	4700	-	0 0	0.001	0.0011	0.00113846	0.0013		
Bromodichloromethane Bromoform	mg/kg mg/kg	0.0013	13	0			0 0		0.0011	0.00113846 0.00113846	0.0013	1-181 27.80 2019-06-26 1-181 27.80 2019-06-26	
Carbon Tetrachloride	mg/kg	0.0013	13	0			0	0.001	0.0011	0.00113846	0.0013	1-181 27.80 2019-06-26	
Chlorobenzene Chloroethane	mg/kg mg/kg	0.0013	13	0		-				0.00113846	0.0013	1-181 27.80 2019-06-26 1-181 27.80 2019-06-26	
Chloroform	mg/kg	0.0020	13	0	1700		0 0	0.002	0.0023	0.00227092	0.0020		
Chloromethane	mg/kg	0.0047	13	0	465		0 0	0.003	0.0034	0.00350769		1-339 5.50 2019-10-28	
cis 1,2-Dichloroethene Dibromochloromethane	mg/kg mg/kg	0.0065	13		1240			0.005	0.0057	0.00570769 0.00113846	0.0065		
Dichloromethane (Methylene Chloride)	mg/kg	0.007	1		755		0 0	0.007	0.007	0.007	0.007		
Hexachloroethane 1.1-Dichloropropene	mg/kg mg/kg	0.0013	13	0	122	- 1	0 0	0.107	0.115	0.145	0.5	1-180 0.20 2019-06-13 1-181 27.80 2019-06-26	
1,2,3-Trichlorobenzene	mg/kg	0.0039	13				0 0		0.0034	0.00341539		1-181 27.80 2019-06-26	
1,2,3-Trichloropropane	mg/kg	0.0013	13	0					0.0011	0.00113846	0.0013		
1,2,4-Trichlorobenzene 1,2-Dibromo-3-chloropropane	mg/kg mg/kg	0.0039	13			-		0.003	0.0034	0.00341539 0.00113846	0.0039		
1,2-Dibromoethane	mg/kg	0.0013	13	0			0 0		0.0011	0.00113846	0.0013		
1,2-Dichlorobenzene 1,3,5-Trimethylbenzene	mg/kg mg/kg	0.0013	13		-		0 0	0.001	0.0011	0.00113846	0.0013		
1,3-Dichlorobenzene	mg/kg	0.0013	13				0 0	0.001	0.0011	0.00113846	0.0013		
1,3-Dichloropropane 1.4-Dichlorobenzene	mg/kg mg/kg	0.0013	13	0	_		-	0.001	0.0011	0.00113846	0.0013		
2,2-Dichloropropane	mg/kg mg/kg	0.0013	13				0 0	_	0.0011	0.00113846	0.0013		
2-Chlorotoluene	mg/kg	0.0013	13				0 0	0.001	0.0011	0.00113846		1-181 27.80 2019-06-26	
4-Chlorotoluene Bromochloromethane	mg/kg mg/kg	0.0013	13	0	-		D 0	0.001	0.0011	0.00113846	0.0013	1-181 27.80 2019-06-26 1-181 27.80 2019-06-26	
Bromomethane	mg/kg	0.0013	13	1			0 0		0.0011	0.00113846	0.0013		
cis 1,3-Dichloropropene Dibromomethane	mg/kg	0.0013	13	0					0.0011	0.00113846	0.0013	1-181 27.80 2019-06-26 1-181 27.80 2019-06-26	
Dichlorodifluoromethane	mg/kg mg/kg	0.0013	13						0.0011	0.00113846		1-181 27.80 2019-06-26	
Hexachlorobutadiene	mg/kg	0.0026	13	C	1	-	0 0	0.002	0.0023	0.00227692	0.0026		
n-Butylbenzene p-Isopropyltoluene	mg/kg mg/kg	0.0013	13				0 0	0.001	0.0011	0.00113846	0.0013	1-181 27.80 2019-06-26 1-181 27.80 2019-06-26	
sec-Butylbenzene	mg/kg	0.0013	13	C				0.001	0.0011	0.00113846	0.0013		
tert-Butylbenzene trans 1,3-Dichloropropene	mg/kg mg/kg	0.0013	13				0 0	0.001	0.0011	0.00113846	0.0013		
Trichlorofluoromethane	mg/kg	0.0013	13				0 0	0.001	0.0011	0.00113846	0.0013		
iso-Propylbenzene	mg/kg	0.0013	13	0	24700		0 0	0.001	0.0011	0.00113846	0.0013		
Propylbenzene Styrene	mg/kg mg/kg	0.0013	13	0		-			0.0011	0.00113846 0.00113846	0.0013		
Tetrachloroethene	mg/kg	0.0039	13	C	3360		0	0.003	0.0034	0.00341539	0.0039	1-181 27.80 2019-06-26	
trans 1,2-Dichloroethene Trichloroethene	mg/kg mg/kg	0.0013	13	1	3550 33.1		0 0	0.001	0.0011	0.00113846	0.0013		
Vinyl Chloride	mg/kg	0.0013	13	C	3.45		0 0	0.001	0.0011	0.00113846	0.0013		
2,4-Dinitrotoluene	mg/kg	2.5	13		501	-	0 0	0.214	0.23	0.28992308	2.5	1-180 0.20 2019-06-13	
bis(2-Ethylhexyl)phthalate	mg/kg mg/kg	2.5	13				-	0.534	0.575	0.28992308	2.5	1-180 0.20 2019-06-13 1-180 0.20 2019-06-13	
Butylbenzylphthalate	mg/kg	1	13	0			0 0		0.23	0.28992308	1		
Diethylphthalate Di-n-butylphthalate	mg/kg mg/kg	0.5	13	0	49300 1300			0.107	0.115	0.145 0.145	0.5		
Di-n-octylphthalate	mg/kg	1	13	C	10600			0.214	0.23	0.28992308		1-180 0.20 2019-06-13	
1-Methylnaphthalene 2,4-Dinitrophenol	mg/kg mg/kg	0.5 2.5	13	0					0.115	0.145	0.5 2.5		
2-Methylnaphthalene	mg/kg	0.5	13	C			0 0		_	0.145		1-180 0.20 2019-06-13	
2-Nitroaniline	mg/kg	2.5	13	0			0 0		0.575	0.72476923	2.5		
3-Nitroaniline 4,6-Dinitro-2-methylphenol	mg/kg mg/kg	72.5	13				0 0	15.5 0.214	16.7 0.23	21.0153846 0.28992308	72.5 1	1-180 0.20 2019-06-13	
4-Bromophenyl-phenylether	mg/kg	0.5	13	C			0	0.107	0.115	0.145	0.5	1-180 0.20 2019-06-13	
4-Chloroaniline 4-Chlorophenyl-phenylether	mg/kg mg/kg	2.5 0.5	13	0			0 0	0.534	0.575	0.72476923	2.5		
4-Nitroaniline	mg/kg	3	13	C			0 0	0.641	0.69	0.86992308		1-180 0.20 2019-06-13	
Benzoic Acid Benzyl alcohol	mg/kg mg/kg	2.5 2.5	13		1		0 0	0.534	0.575 0.575	0.72476923		1-180 0.20 2019-06-13 1-180 0.20 2019-06-13	
bis(2-Chloroethoxy)methane	mg/kg mg/kg	0.5	13		L		0 0			0.72476923		1-180 0.20 2019-06-13	
bis(2-Chloroethyl)ether	mg/kg	0.5	13	0				0.107	0.115	0.145	0.5	1-180 0.20 2019-06-13	
bis(2-Chloroisopropyl)ether Dibenzofuran	mg/kg mg/kg	2.5	13	0				0.534	0.575	0.72476923	2.5	1-180 0.20 2019-06-13 1-180 0.20 2019-06-13	
Dimethylphthalate	mg/kg	0.5	13	C			0 0	0.107	0.115	0.145	0.5	1-180 0.20 2019-06-13	
Diphenyl ether Hexachlorobenzene	mg/kg mg/kg	0.5	13		-		0 0	0.107	0.115	0.145 0.145	0.5	1-180 0.20 2019-06-13 1-180 0.20 2019-06-13	
Hexachlorocyclopentadiene	mg/kg mg/kg	0.5	13				0 0	0.107	0.115	0.145	0.5		
Isophorone Nitrobenzene	mg/kg	0.5	13	C			0 0	0.107	0.115	0.145	0.5		
Nitrobenzene N-Nitroso-di-n-propylamine	mg/kg mg/kg	2.5 4.5	13	0	-				0.575 1.034	0.72476923 1.30484615		1-180 0.20 2019-06-13 1-180 0.20 2019-06-13	
N-Nitrosodiphenylamine	mg/kg	0.5	13	C		-	0 0	0.107	0.115	0.145	0.5	1-180 0.20 2019-06-13	
PCB101 PCB105	mg/kg mg/kg	0.00605	2	0			0 0			0.005705 0.0055	0.00605	1-152 0.40 1.50 2020-02-07 1-376 0.20 2019-10-09	
PCB114	mg/kg	0.00568	3						0.00543	0.0055	0.00568	1-376 0.20 2019-10-09	
PCB118	mg/kg	0.00605	5	0						0.005582		1-152 0.40 1.50 2020-02-07	
PCB123 PCB126	mg/kg mg/kg	0.00568	3				0 0	0.00539		0.0055 0.0055	0.00568		
PCB138	mg/kg	0.00605	2	C			0 0	0.00536	0.00571	0.005705	0.00605	1-152 0.40 1.50 2020-02-07	
PCB153 PCB156	mg/kg mg/kg	0.00605	2		-			0.00536	0.00571	0.005705	0.00605		
PCB157	mg/kg mg/kg	0.00568	3		L			0.00539	0.00543	0.0055	0.00568		
PCB167	mg/kg	0.00568	3				0 0	0.00539		0.0055		1-376 0.20 2019-10-09	
PCB169 PCB180	mg/kg mg/kg	0.00568	2		-		D 0	0.00539	0.00543	0.0055	0.00568		
PCB189	mg/kg	0.00568	3	0		i	0 0	0.00539	0.00543	0.0055	0.00568	1-376 0.20 2019-10-09	
PCB28 PCB52	mg/kg mg/kg	0.00605	2	0				0.00536	0.00571	0.005705	0.00605		
PCB52 PCB77	mg/kg mg/kg	0.00568	3	0					_	0.005705		1-376 0.20 2019-10-09	
PCB81	mg/kg	0.00568	3				0 0	0.00539		0.0055	0.00568		
Non Detected	mg/kg	0.007	1		1		u 0	0.007	0.007	0.007	0.007	1-181 27.80 2019-06-26	

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#### **Data Input and Screening**

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0.00015         0.000101         0.00015         0.000101         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.000011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011         0.00011
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0.27   0.08   0.00   0.00   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.000	126	56	1071 0.07 0.08 0.32 0.0 0.00 0.00 0.00 0.00 0.00 0.00	0 000 111 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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#### **Appendix E. Ground Gas Results**

		Flow		Concentration CH4		Concenti	ration CO2	Qhg CH4	Qhg CO2		Flooded	Barometric
	BH ID	Peak L/H	Steady L/H	Peak %	Steady %	Peak %	Steady %	(peak)	(peak) Sti	ratum Screened	response zone	pressure
Round 1	1-228	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 Bag	shot	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 Bag	shot	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 Bag	shot	Yes	_
	1-715 (S)	< 0.1	< 0.1	0.1	0.1	< 0.1	< 0.1	0.000	0.000 Bag	shot	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 Bag	shot	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 Bag	shot	Yes	•
	1-511 (S)	< 0.1	< 0.1	46	45.5	< 0.1	< 0.1	0.046	0.000 RTD	)	Partially	•

<sup>\*</sup> 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



			Baseline			Construction w	rithout mitigat	ion		Construction v	vith mitigation		Operation		
Source	Receptor	Pathway	Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk	Mitigation measures	Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk
		Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres				Medium	Low likelihood	Moderate/Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
Potential sources of contamination (including soil, water, vapors and	Human Health (within the Scheme)	Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater				Medium	Unlikely	Low Risk	Implementation of measures in the Environmental	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
ground gases) within the Scheme include:	•Construction workers and future site maintenance	Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Receptor not pro	esent on-site du	uring baseline	Severe	Unlikely	Moderate/Low Risk	Management Plan (EMP) such as good management of stockpiles in	Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk
•historical pollution from vehicles using the current M25, A3,	workers	Inhalation, ingestion and dermal contact with contaminants within surface water				Medium	Unlikely	Low Risk	accordance with Environment Agency Pollution Prevention	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
A245 and local access roads;		Inhalation of vapors from contaminated soil and / or water				Medium	Unlikely	Low Risk	Guidelines (PPG), implementation of	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
•Made Ground/infill material of	Human Health (within the	Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Medium	Low likelihood	Moderate/Low Risk			,	pollution incident control e.g. plant drip trays and spill kits. Implementation of dust			•	Medium	Unlikely	Low Risk
unknown quality associated with the construction of the M25, A3, A245 Byfleet		Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Unlikely	Low Risk				management systems. Risk Assessment and Method Statements (RAMS) to be				Medium	Unlikely	Low Risk
Road, local access roads, Former Wisley Airfield, San	Scheme) •Members of the public using public rights of way (non motorised users).	Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	Moderate/Low Risk	Receptor not pro construction	esent on-site d	uring	completed prior to construction and risk management with appropriate PPE.	construction and risk management with appropriate PPE.			Severe	Unlikely	Moderate/Low Risk
Domenico site and other existing infrastructure;	motorised users).	Inhalation, ingestion and dermal contact with contaminants within surface water	Medium	Unlikely	Low Risk				Implementation of a safe system of work if entry to a confined space is required and				Medium	Unlikely	Low Risk
<ul><li>material of unknown quality</li></ul>		Inhalation of vapors from contaminated soil and / or water	Medium	Unlikely	Low Risk				unavoidable. Guidance issued by the				Medium	Unlikely	Low Risk
associated with the infilling/potential infilling of former	Human Health (within the study area) •Local residents	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	HSE for working in confined spaces should be followed. Piling Risk Assessment	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
water features and mineral extraction pits; •three historical	(including Elm Corner) •School children and staff (e.g.	Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	(PRA) to consider the risk of ground gas. Ground gas mitigation measures to be	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
landfills (understood to be inert fill); •three recorded	Feltonfleet School) •Workers and visitors at nearby	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	included within the design of below ground chambers and ducts.  See section 10.9 of the	Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk
pollution incidents (minor severity and occurred prior to 1999);	commercial premises and recreational	Inhalation, ingestion and dermal contact with contaminants within surface water	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	Environmental Statement for further details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
<ul> <li>part of former</li> <li>Wisley Airfield</li> <li>and associated</li> <li>activities</li> </ul>	facilities  •Members of the public using public rights of way (non motorised users).	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
(historical GI identified some contamination); and	Controlled Waters (within the Scheme)	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.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
•farms and agricultural land use.	•Groundwater (superficial Principal and Secondary A	Vertical migration of contaminants via preferential pathways such as via piles to deeper groundwater	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	Implementation of measures in the EMP such as good management of	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	aquifers and bedrock	Migration of contaminants entrained in surface water run-off	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	stockpiles in accordance with	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk



Source			Baseline			Construction without mitigation				Construction w	ith mitigation		Operation		
	Receptor	Pathway	Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk	Mitigation measures	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	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	Controlled Waters (within the study area) •Groundwater	Leaching/ vertical migration of contaminants in soils to underlying groundwater followed by lateral migration	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	management systems. See section 10.9 of Environmental Statement for further	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	(Superficial Principal and Secondary A aquifers and bedrock	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	details.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	Secondary A aquifer)	Lateral migration of contamination in groundwater	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	•Surface water (River Wey, Bolder Mere,	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
	Pond Farm Pond, Manor Pond and unnamed drains, ditches and ponds.	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	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
	Heath SPA, Ockham Common and Wisley 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	Chemical attack from aggressive chemical constituents in soil or groundwater	Medium	Unlikely	Low Risk	Medium	Low likelihood	Moderate/Low Risk	GOLGO.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	foundations  Historic remains/structures and listed buildings  Underground services.	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	Implementation of measures in the EMP. PRA to consider the	Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk
	Property (within the study area) •Residential,	Chemical attack from aggressive chemical constituents in soil or groundwater	Medium	Unlikely	Low Risk	Medium	Low likelihood	Moderate/Low Risk	risk of ground gas. See section 10.9 of Environmental	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
	commercial and industrial properties •Historic remains/structures and listed buildings •Underground services.	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	Statement for further details.	Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk



			Baseline			Construction w	ithout mitigat	ion		Construction v	vith mitigation		Operation		
Source	Receptor	Pathway	Consequence of risk	Probability of risk	Classification of risk (assuming reasonable worst case)	Consequence of risk	Probability of risk	Classification of risk	Mitigation measures	Consequence of risk	Probability of risk	Classification of risk	Consequence of risk	Probability of risk	Classification of risk
Potential sources of contamination (including soil,		Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres				Medium	Low likelihood	Moderate/Low Risk		Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
water, vapors and ground gases) within the study area include:	Human Health (within the Scheme)	Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater				Medium	Unlikely	Low Risk	RAMS to be completed prior to construction	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
•Made Ground/infill material of unknown quality	Construction     workers and     future site     maintenance	Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Receptor not pro	esent on-site du	uring baseline	Severe	Unlikely	Moderate/Low Risk	and risk management with appropriate PPE. Implementation of a safe system of work if	Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk
associated with the construction of Feltonfleet	workers.	Inhalation, ingestion and dermal contact with contaminants within surface water				Medium	Unlikely	Low Risk	entry to a confined space is required and unavoidable.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
School, the railway, RHS		Inhalation of vapors from contaminated soil and / or water				Medium	Unlikely	Low Risk	Guidance issued by the HSE for working in confined spaces should	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
Wisley and other existing infrastructure; •material of		Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres	Medium	Unlikely	Low Risk				be followed. PRA to consider the risk of ground gas. Ground gas mitigation				Medium	Unlikely	Low Risk
unknown quality associated with the infilling/potential	Human Health (within the Scheme) •Members of the public using public rights of way (non motorised users)	Inhalation, ingestion and dermal contact with contaminants within perched water and shallow groundwater	Medium	Unlikely	Low Risk	_			measures to be included within the design of below ground chambers and ducts.				Medium	Unlikely	Low Risk
infilling of former water features and mineral extraction pits;		Migration and accumulation of ground gases followed by inhalation or ignition causing asphyxiation and/or explosion	Severe	Unlikely	Moderate/Low Risk	Receptor not pro construction	esent on-site d	uring	See section 10.9 of the Environmental Statement for further details.	Receptor not pr	esent on-site du	iring construction	Severe	Unlikely	Moderate/Low Risk
five recorded pollution incidents (minor severity and occurred prior	motorised users)	Inhalation, ingestion and dermal contact with contaminants within surface water	Medium	Unlikely	Low Risk								Medium	Unlikely	Low Risk
to 1998); •wider area of the		Inhalation of vapors from contaminated soil and / or water	Medium	Unlikely	Low Risk								Medium	Unlikely	Low Risk
former Wisley Airfield and associated activities	Controlled Waters (within the	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	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
(historical GI identified some contamination); •farms and agricultural land	Scheme) •Groundwater (superficial Principal and Secondary A	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	measures in the EMP such as good management of stockpiles in accordance with	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
use; •the railway; •five historical	aquifers and bedrock Secondary A	Lateral migration of contamination in groundwater	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	Environment Agency PPG, implementation of pollution incident	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
landfills; and •potentially	aquifer) •Surface water	Migration of contaminants entrained in surface water run-off	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	control e.g. plant drip trays and spill kits.	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
contaminative land uses (current and historical), including vehicle service stations, electricity substation,	(Stratford Brook, River Mole, unnamed drains, ditches and ponds).	Migration of contamination via surface waters	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk	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
sewage treatment, gas works, asphalt and coated macadam laying	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			Baseline			Construction w	vithout mitigat	tion		Construction w	ith mitigation		Operation		
	Receptor	Pathway	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
p.i.i.d.e.	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	Medium	Unlikely	Low Risk	Medium	Unlikely	Low Risk
		groundwater  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	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.	Severe	Unlikely	Moderate/Low Risk	Severe	Unlikely	Moderate/Low Risk

### Howard Williams BBA Project Director

Atkins Offices Woodcote Grove Ashley Road Epsom Surrey KT18 5BW

howard.williams@balfourbeatty.com