Gower Tip, Tividale

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Land Quality Assessment

09 September2021

Project No.: 0509665

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Gower Tip, Tividale

Land Quality Assessment

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1. INTRODUCTION

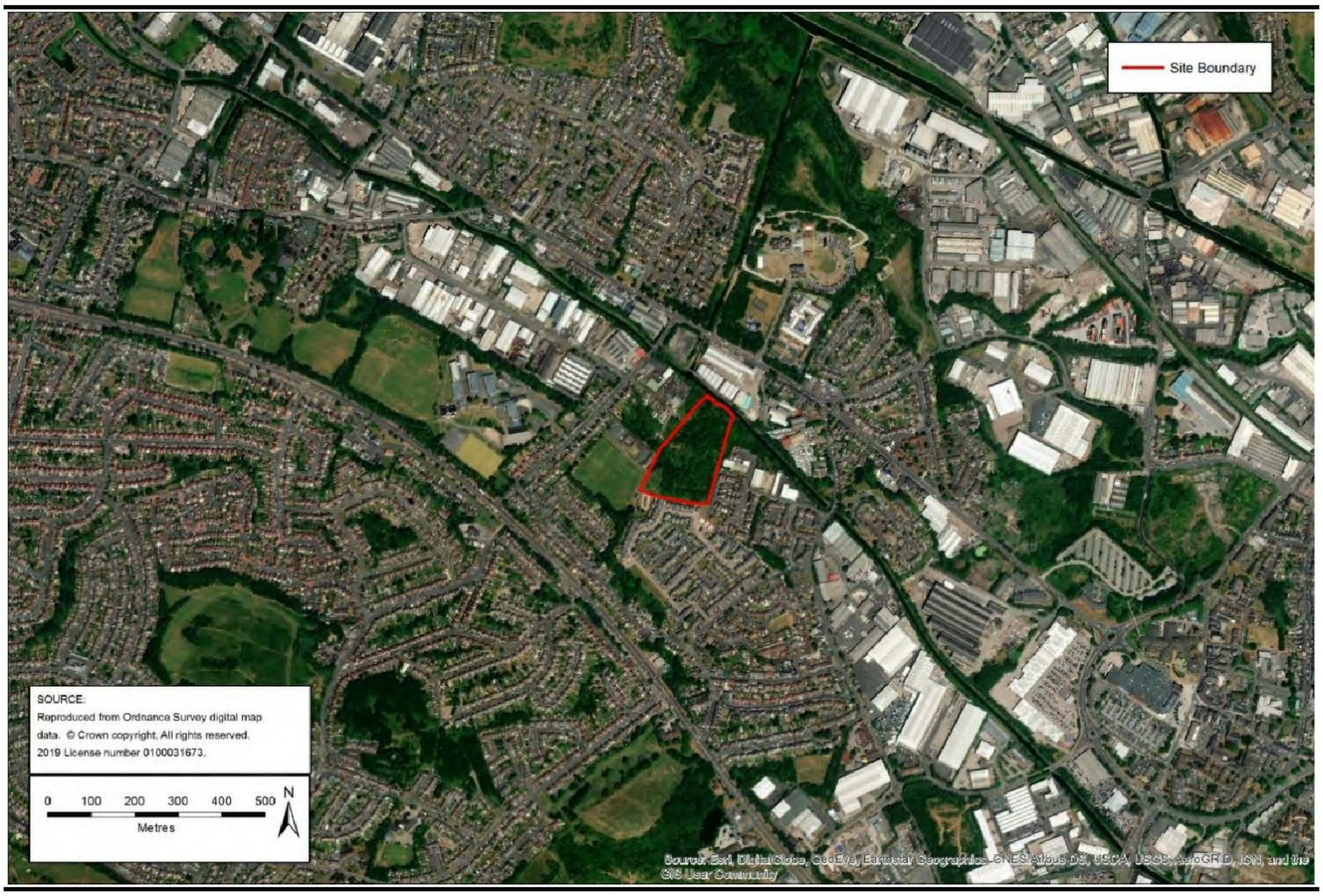
1.3 Background

Environmental Resources Management Limited ("ERM") has been instructed by Solvay (the "Client") to produce a Land Quality Assessment to accompany the Planning Application for the works proposed for the Gower site.

1.4 Site Location

The Gower site (herein referred to as the 'Site') is located to the west of Lower City Road and north of Birmingham Canal in Tividale, Oldbury and is situated within a mixed residential and industrial area. Figure 1.1, below shows the location of the Site.

Figure 1.1 Site Location



1.5 Summary Project Description

Solvay is seeking planning permission to carry out remediation works at the Site, which are likely to comprise the following:

- Remodelling the sites surface to facilitate better drainage and install a perimeter track for maintenance purposes;
- Installation of a cap at the surface of the site;
- Installation of a groundwater barrier along the eastern part of the site; and
- Re-vegetation of the site surface following the capping works.

The site is currently fenced off with no access to unauthorised personnel, and this will remain the case once remediation of the site is finalised. During the remediation works it is the intention that the

working practices will be governed by a Construction Environmental Management Plan which will set standards and state mitigation measures to be employed in order to prevent any nuisance from the proposed works.

1.6 Terms of Reference

This report presents an assessment of the current site conditions (geology, hydrology, and hydrogeology), and considers the potential impact the Project could have on these conditions. This assessment has been produced using information obtained during the previous assessments (desk-based and intrusive investigations) completed for the Site.

2. OVERVIEW OF PROJECT DESIGN

2.1 Design Status

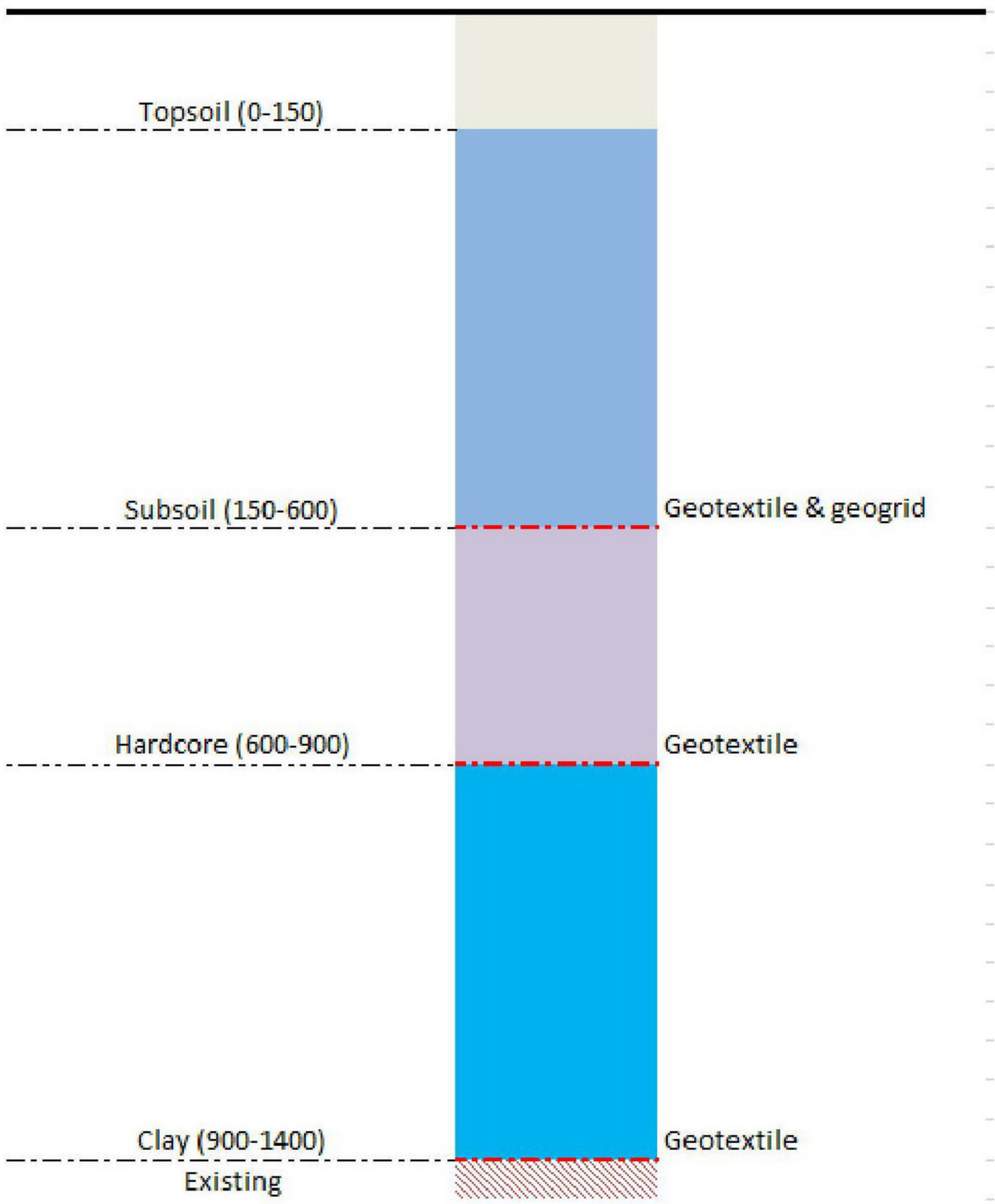
The remedial specification for the designs of the project will be composed of two primary components:

- Capping of site surface; and
- Installation of a sub-surface groundwater cut-off system.

2.2 Capping System

It is proposed that a clay soil cap is installed at the surface of the Site to form a low permeability barrier over the underlying waste materials, this will lead to a site uplift in the order of 1.4m. Figure 2.1 below provides details of the proposed cap design.

Figure 2.1 Proposed Cap Design



In addition, the cap should lead to a reduction in surface infiltration of rainwater into the waste materials at the Site, due to a reformed surface profile. Storm water detention will be provided. Current site contours are shown on Figure 2.2, while the proposed works phasing and information on the proposed cap and sub surface groundwater cut off system is shown on Figure 2.3, both in Appendix A, which also contains a figure of the proposed finished levels on completion of the works.

Re-profiling of the Site will be required prior to the installation of a cap to facilitate the installation of a competent system.

Solvay proposes to revegetate the Site following capping. The revegetation scheme comprises low-maintenance native species.

2.2.1 Drainage Management

The construction of the cap across the surface of the Site will result in approximately 2.9ha of permeable made ground being replaced with a low permeability clay soil capped surface. If unmitigated, this could result in an increase in surface water flooding on site, and potentially increase surface water run-off to adjacent sites.

To address this risk, the design of the remediation works includes a surface water drainage strategy that includes surface detention and attenuation ponds, and French drains around the perimeter of the Site. This system has the capacity to capture, and attenuate, the additional runoff generated by the new low permeability surface. Further information is contained in the Flood Risk Assessment, submitted as part of the Planning Application for the Project.

2.3 Cut-off System

A sub-surface cut-off wall will be installed to create an impermeable barrier along the eastern site boundary. It is anticipated that the barrier will be anchored into the underlying bedrock in order to form an effective barrier.

3. CONCEPTUAL SITE MODEL & EXISTING CONDITIONS

3.1 Introduction

The following sections set out information in relation to the environmental site setting of the Gower Site, information on the soil and groundwater conditions, and the resultant Conceptual Site Model (CSM) for the Site.

3.2 Historical Use of Land

The following is a timeline showing the land uses associated with the site from 1884.

1884
Undeveloped land

Between circa 1904 and circa 1916
Clay pit excavated in the central part of the site to feed brickworks in the northern part of the site

1916 – Circa 1938
Second clay pit excavated in the southern part of the site to feed the brickworks to the east of the site

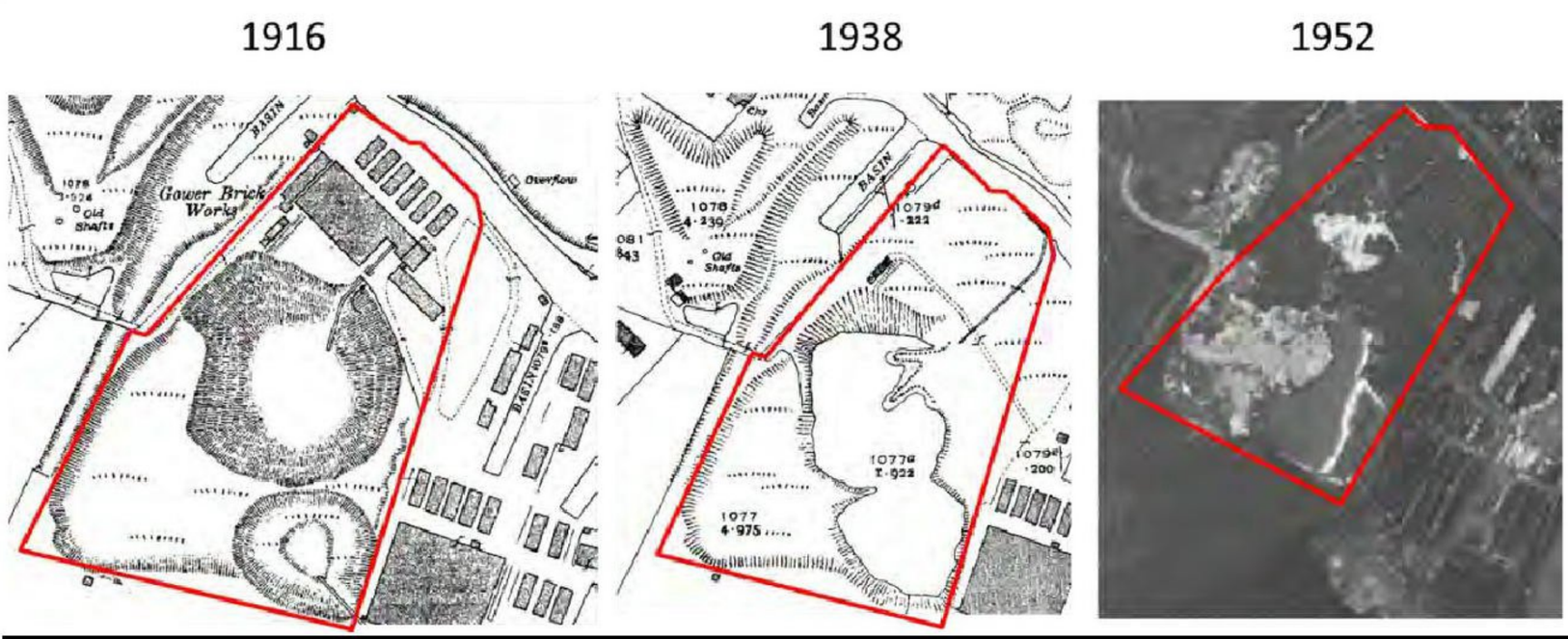
Circa 1938
Brickworks in the northern part of the site has been demolished and the backfilling of the excavations with waste initially from British Cyanide followed by Albrigton and Wilson's/Rhodia Oldbury plant began.

1986
Site ceased ceased accepting "special waste"

1995
The waste management license was surrendered.

Historical mapping is shown in Figure 3.1, below, this provides information on the evolution of the Site from its initial excavation, through to it being backfilled.

Figure 3.1 Historical Mapping and Aerial Image



The following wastes are known to have been deposited at the site between 1938 and 1995:

- Building rubble contaminated with sodium hydroxide, sodium carbonate and lime;
- Pentasulphide;
- Lime dross from slaking plant;
- Sodium carbonate with sodium phosphate;
- Drums containing waste oil additives (malathion and tributlyphosphate);
- Packaging contaminated with sodium hydroxide, sodium carbonate; and
- Lime.

3.3 Current Land Use

This section provides a summary of the land uses both at the Site, and in the surrounding areas.

3.3.1 Onsite

The Site is 2.9 hectares in area, and is fully covered in low-lying vegetation. There are no structures, or sub-surface structures, on the Site aside from a culvert near the northern boundary of the Site that runs from west to east, and the associated access chamber. This Site is accessed via a narrow track located off Lower City Road, or via a neighbouring industrial site (operated by Lift & Skate).

3.3.2 Surrounding Land Uses

The following land uses are noted to be adjacent to the Site:

North: Birmingham Canal (Old Mainline branch).

South: Residential properties, which form part of the 'Brades Rise' development.

East: Southern part of the boundary is formed by residential housing (Summerton Road Development). An industrial facility (Beta Heat Treatment Ltd) occupies the land adjacent to the northern section of the eastern boundary.

West: The northern part of the boundary is adjacent to an industrial site (Lift & Skate), the southern part of the boundary adjoins a school.

Figure 3.2, below provides an aerial view of the Site, and the surrounding areas.

Figure 3.2 Aerial View of Site & Surrounding Areas

3.4 Proposed Future Land Uses

There are no plans to develop the site upon completion of the remediation works, the site will remain unused with limited access to the site by authorised persons only.

3.5 Development of Conceptual Site Model

The development of the Conceptual Site Model (CSM) has been completed in line the current regulatory guidance[1] for the assessment of contaminated land, whereby a plausible mechanism ('pathway') must exist by which contamination from a given source can reach a given receptor for risk to be considered plausible. Such complete source-pathway-receptor (SPR) are termed 'pollutant linkages'. The sections below present information to develop the initial CSM, which is presented in Section 3.7.5, below.

3.5.1 Geology

The following sections provide information on the geological setting for the Site, with an understanding of the regional geology developed from geological mapping[2] and online geology maps[3] In addition a number of phases of investigation have been undertaken (between 1992 and 2019) and these have been used to present detail of the site specific conditions underlying the site. Some 55 boreholes have been drilled at the site, with 38 intersecting the underlying geology and 17 being solely in waste materials.

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[1] Environment Agency online Land Contamination: Risk Management guidance. Last updated 19 April 2021

[2] Geological Society of Great Britain (England & Wales), Solid, Sheet 168 (Birmingham)

[3] http://mapapps.bgs.ac.uk/geologyofbritain/home.html - accessed 17th February 2020

3.5.1.1 Regional Geology

The Site is underlain by the Etruria Formation (formally the Etruria Marl), this is comprised of mudstone, sandstones and conglomerates, and are fluvial in origin. They are detrital, ranging from coarse to fine-grained, and form beds and lenses of deposits reflecting the channels, floodplains and levees of a river. No superficial deposits are associated with this site on a regional scale.

3.5.1.2 Site Specific Geology

The Site is directly underlain by various thicknesses of deposited waste material. The greatest thicknesses of waste materials (approximately 14m) directly correlates with the location of the original clay pits, as seen in Figure 3.1, above.

The waste has been identified to largely comprise of a waste furnace material (slag, ash and coal fragments) and occasional bricks, with a lesser component of sandy, gravelly clay. Furthermore, metallic drums have been encountered close to the surface, along with asbestos, and construction wastes.

It is considered that the clay (that directly underlies the waste) was formed as a result of the total weathering of Etruria Formation deposits. The presence of the clay was exploited for the production of bricks in the local factories. Prior to its removal for brick making, clay materials would have been present at the Site surface.

The thickness of the clay varies throughout the site (due to its removal for brick making and naturally undulating base) and is underlain by mudstone. The mudstone is generally weak with varying degrees of fracturing.

In the north-eastern area of the Site, sandstone beds were encountered. It is considered that these are unweathered Espley Beds, which are derived from river channels associated with the fluvial origins of the Etruria Formation. Localised extents of natural sand and gravels deposits have been encountered, it is considered that these have been formed through the weathering of Espley beds.

3.5.2 Hydrology

The following sections provide information on the hydrological setting for the Site.

3.5.2.1 Regional Hydrology

The Site is within the River Tame catchment area, the river is located ~500m north of the Site. The River flows in a north-west direction. The hydromorphological designation of the River, given by the Environment Agency[4], is 'heavily modified'. In 2016, the overall classification was 'moderate', based on an ecological classification of 'moderate' and a chemical classification of 'fail'.

3.5.2.2 Site Specific Hydrology

The nearest surface water to the site is the Birmingham Canal (Old Mainline branch) which runs along the northern boundary of the Site. The Marine and Coastguard Authority (MCA)[5] classifies the canal as a type 'A' which would be no deeper than 1.5m, it is considered that the canal extents would be formed of clay to retain the canal waters. There are currently no surface water features on site.

A culverted stream is present in the northern section of the Site. The feature flows from west to east across the site and into a manhole chamber to the east of the Site. There are no drainage connections into the culvert from the Site.

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[4] https://environment.data.gov.uk/catchment-planning/WaterBody/GB104028042601 - accessed 7th February 2020

[5] https://mcanet.mcga.gov.uk/public/c4/cat-waters/search_map.asp

3.5.3 Hydrogeology

The following sections provide information on the hydrogeological setting for the Site.

3.5.3.1 Regional Hydrogeology

The site is situated upon a Secondary A aquifer[6] (*permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers*) with regards to bedrock and are unproductive strata in relation to superficial deposits.

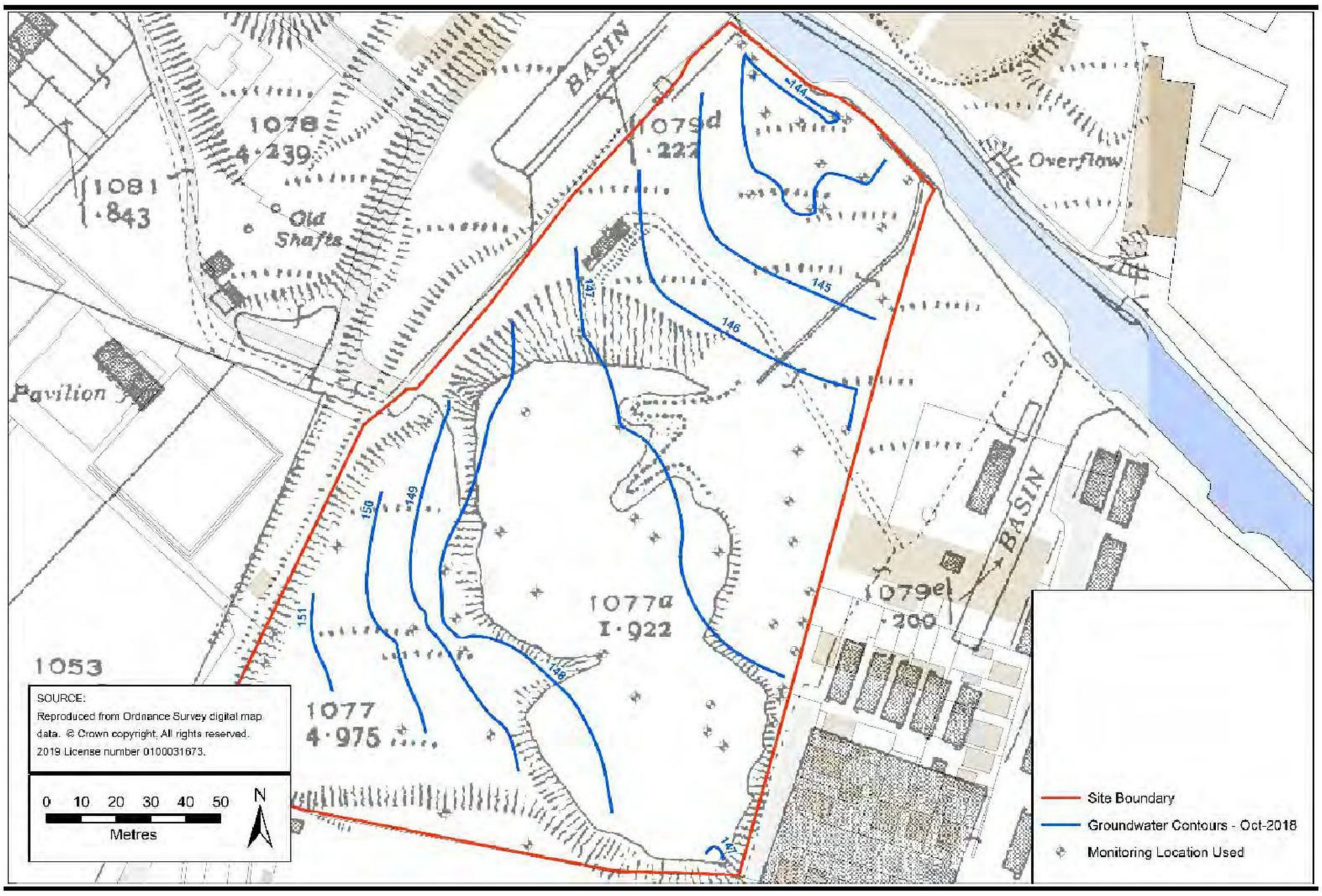
The groundwater vulnerability for the extent of the Site is 'Low'; however, the area immediately to the south of the Site is classified as having a 'High' groundwater vulnerability (this area is hydraulically up gradient of the site).

3.5.3.2 Site Specific Hydrogeology

Extensive groundwater monitoring has been undertaken on the Site, and the general direction of groundwater flow is considered to be from the south-west to north-east. This flow reflects the regional groundwater flow to the River Tame. However, the natural groundwater flow appears to have been disrupted by the removal of impermeable clays, and the subsequent deposition of permeable wastes, and as a result, the flow direction in the central part of the Site (which correlates with the former clay pit) is modelled to take on more of an easterly flow direction, before returning to a north easterly flow.

Figure 3.3, below, presents the inferred groundwater flow contours for the Site based on the latest sampling round (October 2018), the historical mapping from 1938 has been used to provide spatial context in relation to the former clay pit extents.

Figure 3.3 Inferred Groundwater Contours



6 https://magic.defra.gov.uk/MagicMap.aspx - accessed 30th January 2020

The canal (located immediately north of the Site) is not in itself considered a receptor for contaminated groundwater in the northern part of the Site. Furthermore (as discussed in *Section 3.5.2.2*, above) the canal is considered to be lined with clay to aid the retention of the waters and so is not considered a receptor for groundwater. Groundwater has instead been modelled as flowing towards the River Tame to the north.

3.5.3.3 Depth to Groundwater

The depth to groundwater varies across the site due to the changes in surface topography, the greatest depth to groundwater is noted in BH202 at 6.33m below ground level; whereas, the minimum depth to groundwater has been noted in BH403 as 0.69 m below ground level. The average variation in changes in groundwater depth across the site is 0.856 m.

3.5.3.4 Hydraulic Conductivity Data

In-situ hydraulic conductivity (K) data has been obtained using the groundwater monitoring wells installed at the Site. ERM has obtained the following information:

- **Wastes**: Information obtained from BH503 and BH506 (screened in the wastes) showed K values of $6.55x10^{-6}$m/s and $2.51x10^{-5}$m/s . The wastes are heterogeneous but predominantly granular;
- **Clay**: K values ranging between $5.62x10^{-7}$ and $4.06x10^{-9}$m/s were recorded in BH205, BH505 and BH512 (screened across the made ground and the underlying clay horizon, probably weathered mudstone / Etruria Formation – but with saturated sections predominantly or wholly within the clay); and
- **Mudstone**: K value of $7.39x10^{-8}$m/s was recorded in BH2 (screened within the mudstone strata).

It is considered that the differences in hydraulic conductivity between the wastes and clays will result in there being a preferential flow within the waste deposits if both are saturated.

3.5.4 Potential Pollutant Linkages

The following sections provide information in relation to the assessment of the presence of potential pollutant linkages at the Site based on the proposed land use post the completion of the Project.

3.5.4.1 Groundwater Flow to River Tame

The groundwater is not considered to be a receptor in its own right, this is due to the groundwater aquifer being classified as a 'Secondary A' aquifer, and so is unlikely to be a viable resource. Instead, the groundwater is considered to be a potential pathway for the migration of contaminated groundwater toward the River Tame.

Groundwater data collected during the various investigations shows broadly two discrete source areas:

- **Source Area A** – focused in the north eastern part of the site, as groundwater flows in this area of the Site are inferred to be to the north. Contaminants assessed include: lead, boron, phenols, cyanide, and Total Petroleum Hydrocarbons (TPH).
- **Source Area B** – focussed along the eastern site boundary, differentiated from Source Area A due to the easterly flow component. Contaminants assessed include: lead, boron, benzene, toluene, xylenes, chlorinated hydrocarbons, phenols and Total Petroleum Hydrocarbons (TPH).

3.5.4.2 Groundwater Derived Vapours

It is considered that the only viable pollutant linkage, relating to groundwater, is the potential for vapours to be present as a result of any elevated concentrations of contaminants in groundwater. The potential receptor for this pathway is the neighbouring residential properties to the east, down hydraulic gradient of the site. To assess the risk of this pathway, ERM has screened the groundwater

quality data obtained during the most recent sampling event (March 2018) against the derived residential Site Specific Assessment Criteria (SSAC). See section 4.2.2 for summary of the results.

3.5.4.3 Soil Data

Whilst it is recognised that waste materials are present within the soils at the Site, it is considered that the installation of the surface capping, in conjunction with the access controls, will result in there being no uncontrolled pathways between the materials and site users. For example, if works are required in the future that will involve personnel breaking into the capping surface this will be controlled via Method Statements and Risk Assessment process as set out in Section 4, below.

However, soil samples collected from the intrusive investigation locations advanced at the Site have been compared to the compounds detected in groundwater. The soil analytical results are presented in Appendix B. A summary of the identified compounds detected in soils and observed in groundwater, is presented below:

- **Metals & Inorganics –** heavy metals and cyanide compounds are noted within the soils across the Site.
- **Semi Volatile Organic Compounds** – a range of SVOCs have been detected within the soils, the average total SVOC concentration is 41mg/kg (with a peak of 1,152 mg/kg in BH505). The peak concentration relates to PAH compounds, this correlates with the observation of 'ash' materials within the encountered wastes at the sample depth.
- **Phenolic Compounds** – the average concentration of phenolic compounds detected in the soils is 4.6 mg/kg, with a peak concentration of 21 mg/kg (BH404) of which 15.65 mg/kg was 2,3,5 trimethylphenol.
- **Volatile Organic Compounds** – the average concentration of VOCs detected in the soils samples is 26.5 mg/kg, with a peak concentration of 531.8 mg/kg in BH107R, of which 149 mg/kg was toluene.

These compounds have been recorded in groundwater samples, but a controlled waters Detailed Quantitative Risk Assessment (DQRA) undertaken in 2015, indicated that concentrations in groundwater are not at a level so as to pose a risk to the River Tame (See Section 3.5.4.4 below and Appendix C).

Based on the considered lack of viable pathway to receptors through inhalation, ingestion or dermal contact, and due to the proposed installation of a cap in conjunction with access restrictions and controls, ERM has not undertaken a screening exercise on the soils data. Potential risks to off site receptors through potential inhalation of soil vapours has been assessed separately (see section 4.2.2).

3.5.4.4 Surface Water

The sections below provide information in relation to the potential pollutant linkages between contaminated groundwater beneath the Site, and surface waters.

Canal

As discussed in *Section 3.5.3.2,* above, the canal is not considered to be a receptor for contamination within groundwater beneath the Site. It is considered that the soils beyond the extent of the canal clay liner would provide a preferential flow pathway, due to their higher permeability.

Culvert

A groundwater level logger was installed in PZ6 between the 8th of February 2017 and the 9th of January 2018 with the aim of determining a likely maximum ground water level relative to the invert of the culvert to determine the potential for groundwater ingress. A level logger was re-deployed in PZ6

to obtain further information in addition to a second logger being installed in PZ1 (at other end of the culvert from PZ6). The second period of monitoring occurred between 22nd of March 2018 and 29th of November 2018. Barometric data was collected at the same time as the groundwater level data to allow compensation of the recorded water levels.

Data obtained over the periods show that the water level did not exceed the elevation of the culvert invert level. This confirms the earlier finding that the culvert does not represent a pathway for groundwater to the River Tame. However, although groundwater does not interact with the culvert, with a culvert invert level of 144.64mAOD during high groundwater levels then works just below the base of the culvert could encounter groundwater. The highest groundwater elevation of 144.57mAOD was recorded in June 2018 at PZ6, while the lowest elevation recorded was 143.96mAOD (November 2018).

As stated above, the proposed works will involve the replacement of the existing culvert in the northern part of the Site with a new, lined, culvert.

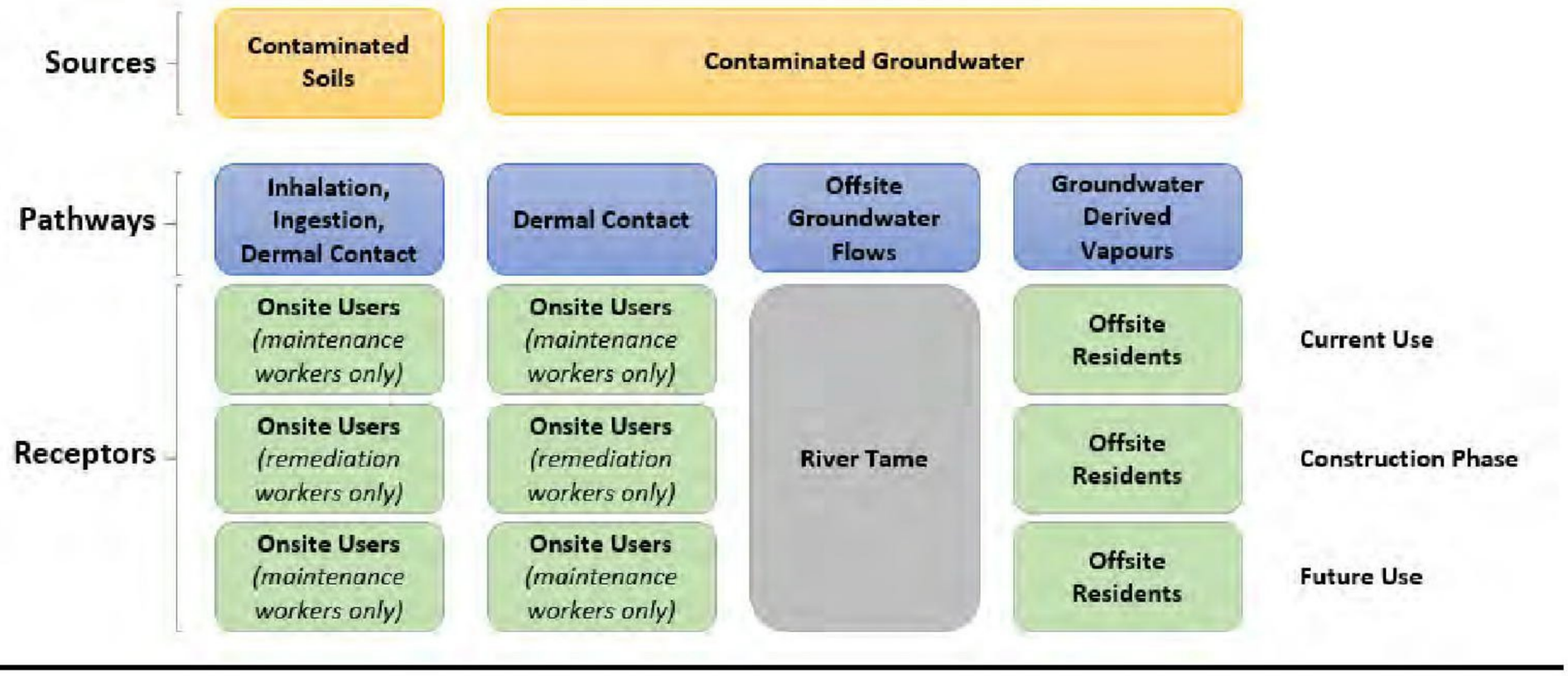
Therefore, it is considered that there will be no viable pollutant linkage between groundwater beneath the Site and surface waters.

3.5.5 Initial Conceptual Site Model

Information obtained in the sections above, has been consolidated to produce the initial CSM for the Site, this is shown in *Figure 3.4*, below. The model considers the three stages of the Site:

- Current Use;
- Construction Phase; and
- Future Use (i.e. post construction).

Figure 3.4 Conceptual Site Model – Showing Potentially Viable Pathways (without remediation)



Notes: Green shading on receptors are considered to be potentially 'active' pollutant linkages; Grey shading on receptors are considered to be 'inactive' pollutant linkages as a result of the Project

4. ASSESSMENT OF POTENTIAL IMPACT

4.1 Introduction

This section considers the potential impacts on Human Health and Environmental receptors in light of the information obtained (and the subsequent assessments undertaken) and the proposed mitigation measures to address any residual significant risks.

4.2 Summary of Risk Current Use

The following section present a summary of the considered risks in light of the information obtained on the current site condition, and the subsequent assessments.

4.2.1 Risk to Surface Waters

A DQRA was undertaken in 2015 to determine the potential risk of contaminated groundwater reaching the River Tame, see Appendix C for details of the assessment.

A two-stage approach was undertaken for the assessment:

- Stage 1 – model assumed that an infilled canal basin, located ~60m east of the site, is the receptor
- Stage 2 – model assumed that River Tame, located 500m north east of the Site, is the receptor.

The DQRA shows that there is no significant risk, arising from migration of groundwater beneath the Site, to the River Tame.

4.2.2 Local Residents

An assessment of the potential risks from groundwater derived vapours to local residents has been undertaken. The assessment undertaken has utilised groundwater data from within the boundary of the Site, and has not included information beneath the properties; therefore, it is considered that the assessment is conservative as data is from within the waste materials, and are not representative of offsite conditions

The assessment shows that the majority of the analytes are below the groundwater derived vapour SSAC, the exception to this is hydrogen sulphide which was reported above the SSAC (0.09mgl) in five of the 20 samples, with a peak concentration of 60mg/l in BH1 and BH110. The results of the assessment are presented in Appendix D, along with a monitoring well location plan. Details for the derivation of assessment criteria is provided in Appendix E. With the exception of BH401 (located along the north eastern boundary), the hydrogen sulphide exceedances are predominantly scattered across the centre in isolated monitoring wells and not indicative of wide spread groundwater impact. In addition, concentrations along the down hydraulic boundary of the site (eastern boundary) adjacent to the off-site residential properties, were less than the analytical detection limit for hydrogen sulphide, indicating that hydrogen sulphide impacted groundwater is not currently migrating off site towards the residential properties.

It should also be noted that the assessment of vapour generation from groundwater is inherently conservative due to the assumptions required in relation to partitioning from the groundwater to vapour phase. Therefore, whilst there is a theoretical risk of a pollutant linkage being present (but not currently indicated by groundwater monitoring along the site boundary), it is not certain that this would be realised at the receptor. In order to support the risk assessment, soil vapour monitoring has been carried out at the site and discussed below. Furthermore, Planning documents for the neighbouring residential housing (Summerton Road – DC/08/50416) indicate that gas protection measures are to be incorporated into the design of the properties due to elevated levels of carbon dioxide being detected within near surface materials.

It is considered that the installation of the cut-off system along the eastern site boundary will provide certainty on the containment of groundwater along the eastern boundary.

Assessment of Gas Migration

Gas monitoring has been undertaken on up to nine occasions, on up to seven locations (i.e. BH107R, GS1-5, and BH403) between November 2017 and April 2018 along the eastern boundary of the site. During the monitoring data on bulk gases, phosphine, and Volatile Organic Compounds were recorded in addition to ground gas flow rate, shown in the Table 1 below.

Table 1 – Summary of Gas Monitoring Data

Location	Sample Date	CH4 (%)	CO_2 (%)	Flow (l/hr)	O_2 (%)	PH3 (ppmv)	VOC (ppmv)
BH107R	29-Nov-17	-	-	-	-	0.10	10.00
	19-Dec-17	-	-	0.00	-	<0.1	20.00
	09-Jan-18	-	-	0.00	-	0.20	55.00
	14-Feb-18	-	-	-1.00	-	0.10	39.00
	22-Mar-18	-	-	0.00	-	<0.1	31.00
	10-Apr-18	-	-	0.00	-	0.20	40.00
	20-Jun-18	-	-	-	-	0.10	16.00
	13-Jul-18	-	-	-	-	<0.1	43.00
	10-Aug-18	-	-	-0.10	-	0.10	42.00
BH403	14-Feb-18	<DL	<DL	0.00	20.20	<0.1	3.00
	22-Mar-18	<DL	2.40	0.40	17.90	<0.1	1.00
	10-Apr-18	<DL	0.00	0.00	20.40	<0.1	3.00
	20-Jun-18	<DL	<DL	0.00	14.90	<0.1	<0.1
	13-Jul-18	<DL	8.20	0.00	10.90	<0.1	<0.1
	10-Aug-18	<DL	2.70	0.00	17.60	<0.1	<0.1
GS1	19-Dec-17	<DL	3.60	0.00	16.30	<0.1	<0.1
	09-Jan-18	<DL	5.60	0.00	14.40	<0.1	<0.1
	14-Feb-18	<DL	<DL	-0.40	20.00	<0.1	<0.1
	22-Mar-18	<DL	3.50	0.00	17.70	<0.1	<0.1
	10-Apr-18	<DL	0.20	0.00	20.40	<0.1	<0.1
	20-Jun-18	<DL	4.60	0.00	16.80	<0.1	<0.1
	13-Jul-18	<DL	3.50	0.00	16.70	<0.1	<0.1
	10-Aug-18	<DL	3.80	0.00	17.00	<0.1	<0.1
GS2	29-Nov-17	-	-	-	-	0.10	<0.1
	19-Dec-17	<DL	7.90	0.00	9.00	<0.1	<0.1
	09-Jan-18	<DL	6.60	0.00	9.80	<0.1	<0.1
	14-Feb-18	<DL	<DL	-0.40	20.00	<0.1	<0.1
	22-Mar-18	<DL	7.10	0.00	13.80	0.10	<0.1
	10-Apr-18	<DL	<DL	0.00	20.40	<0.1	<0.1

Location	Sample Date	CH4 (%)	CO_2 (%)	Flow (l/hr)	O_2 (%)	PH3 (ppmv)	VOC (ppmv)
	20-Jun-18	<DL	8.90	0.00	8.10	<0.1	<0.1
	13-Jul-18	<DL	7.60	0.00	10.90	<0.1	<0.1
	10-Aug-18	<DL	11.50	0.00	6.30	<0.1	<0.1
GS3	29-Nov-17	-	-	-	-	<0.1	<0.1
	19-Dec-17	<DL	7.60	0.00	11.10	<0.1	<0.1
	09-Jan-18	<DL	9.90	0.00	6.60	<0.1	<0.1
	14-Feb-18	<DL	<DL	0.40	20.10	<0.1	<0.1
	22-Mar-18	<DL	8.30	0.00	13.90	<0.1	<0.1
	10-Apr-18	<DL	<DL	0.00	20.40	<0.1	<0.1
	20-Jun-18	<DL	7.80	0.00	12.00	<0.1	<0.1
	13-Jul-18	<DL	7.30	0.00	12.20	<0.1	<0.1
	10-Aug-18	<DL	9.70	0.00	9.50	<0.1	<0.1
GS4	29-Nov-17	-	-	-	-	<0.1	2.00
	19-Dec-17	<DL	3.90	0.00	16.40	<0.1	<0.1
	09-Jan-18	<DL	5.70	0.00	10.10	<0.1	<0.1
	14-Feb-18	<DL	<DL	-0.30	20.20	<0.1	<0.1
	22-Mar-18	<DL	7.30	0.00	14.50	<0.1	<0.1
	10-Apr-18	<DL	<DL	0.00	20.30	<0.1	<0.1
	20-Jun-18	<DL	10.20	0.00	8.00	<0.1	<0.1
	13-Jul-18	<DL	9.30	0.00	10.30	<0.1	<0.1
	10-Aug-18	<DL	10.40	0.00	10.40	<0.1	<0.1
GS5	29-Nov-17	-	-	-	-	<0.1	1.00
	19-Dec-17	<DL	9.20	0.00	6.20	<0.1	<0.1
	09-Jan-18	<DL	11.30	0.00	5.10	<0.1	<0.1
	14-Feb-18	<DL	<DL	0.00	20.10	<0.1	<0.1
	22-Mar-18	<DL	8.50	0.00	12.80	<0.1	<0.1
	10-Apr-18	<DL	<DL	0.00	20.50	<0.1	<0.1
	20-Jun-18	<DL	11.50	0.00	6.30	<0.1	<0.1
	13-Jul-18	<DL	11.90	0.10	5.20	<0.1	<0.1
	10-Aug-18	<DL	13.70	0.00	5.80	<0.1	<0.1

Comparatively high total VOC readings were consistently detected in BH107R, therefore soil vapour samples were obtained from this location on 10 occasions and submitted for laboratory analysis and compared against soil vapour SSAC. In addition, a single soil vapour sample was obtained from BH403 on a single occasion (see Appendix F)

Key points of note include:

- VOC concentrations only were measured above 10pmmv in BH107R, and so gas samples for laboratory analysis were frequently collected from this location (N.B. Free phase oils are also noted in this monitoring well)
- Phosphine concentrations were generally below (or close to) the detection limit of the equipment;
- Limited gas flow was noted during monitoring;
- No methane was measured in any of the wells; however, carbon dioxide was measured at levels upto 13% in conjunction with depleted oxygen levels;
- None of the soil vapour samples obtained from the eastern boundary recorded concentrations exceeding the soil vapour SSAC; and
- Whilst concentrations of carbon dioxide have been frequently detected at levels greater than 5% (up to 13%), VOC concentrations observed in soil vapour samples have not been recorded at levels exceeding the residential soil vapour SSAC along the eastern boundary and gas flow rates have been very limited. As such the potential risk to off-site residential properties along the eastern boundary from on-site soil vapours and ground gases is considered to be low. In addition, it is understood, gas protection were proposed to be installed within the residential properties during construction (due to carbon dioxide), further reducing the potential risk.

4.2.3 Maintenance Works

It is considered that due to the presence of the waste materials at the Site, there is potential for Site personnel to come into contact with contaminated materials.

The effects will be controlled through health and safety regulations applicable to the management of such works. These procedures will include:

1. Task specific exposure assessments to determine the nature of hazardous substances likely to be present in the working area and if exposure to hazardous substances is likely to be significant for that task;
2. Production of method statements which identify the working practices and reasonably practical control measures to be adopted in order to reduce exposure to hazardous substances to an acceptable level; and
3. A response plan will be prepared which outlines procedures to address unexpected contamination identified during the works.

The effects on the health of construction workers from potentially contaminated soils and waters will be controlled under the Construction (Design and Management) Regulations 2015. A Health and Safety Management Plan, including a site specific risk assessment, will be prepared to manage the protection of workers during the construction phase. This document will specify safe working practices. If required, specific PPE and RPE will be utilised, particularly during ground works.

All persons engaged in the Project will be made aware of the potential contamination risk on-site. The works will be conducted in accordance with the Health and Safety guidance document ‘Protection of Workers and General Public during the Development of Contaminated Land’ 1991.

The employment of mitigation measures will be controlled through a Construction Environmental Management Plan (CEMP), and appropriate health and safety legislation

As detailed in Section 3, risks to local receptors are summarised below:

- No risk to surface water arising from migration of groundwater;
- Risks to maintenance works will be controlled via CDM regulations;
- No risk to local residents due to proposed controls.

4.3 Construction Phase Related Impacts

The following sections set out information in relation to potential for impacts resulting from the construction phase, and the considered risk mitigation measures.

4.3.1 Onsite Human Health Receptors

Risks to construction workers would be managed in a similar way to those for maintenance workers (with the Site in its current condition), see Section 4.2.3 i.e. utilising current HSE legislation and provision of information under CDM regulations, and good practice.

4.3.2 Offsite Human Receptors

It is recognised that the Site is located close to residential housing; therefore, monitoring has been proposed for dusts, noise, and odours during the course of the works. Details in relation to the proposed monitoring are set out in the relevant technical documents submitted with the Planning Application.

4.3.3 Environmental Receptors

Construction works will be designed in such a way as to minimise the potential for surface run off which could impact watercourses (either chemically or physically).

4.3.4 Unexpected Contamination

Given the historical use of the Site (i.e. a waste disposal site), and the findings of the previous site investigations, a range of contamination is known to be present. However, if any unexpected contamination is encountered during the course of the works, the implication of the presence of the material will be considered to determine if it impacts on the implementation of the design.

4.3.5 Management of Wastes

A waste management plan will be prepared during the planning stage for the work. The plan will detail the proposed processes for the minimisation and management of waste soils during the construction phase of the work. Materials will be managed in accordance with the CL:AIRE guidance (The Definition of Waste: Development Industry Code of Practice).

4.4 Post-construction Impacts

It is considered in the post-construction phase, there will be no significant impacts on Human Health, or Environmental receptors.

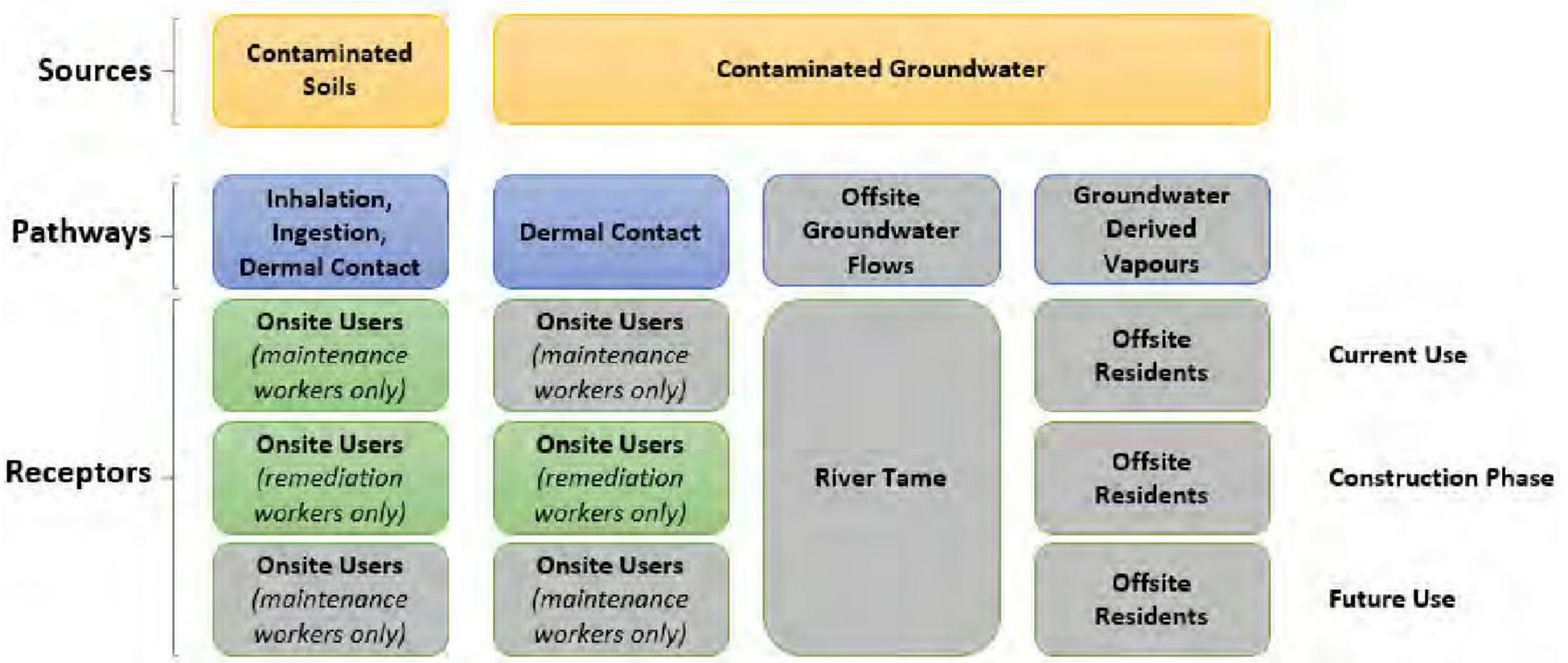
4.4.1 Future Intrusive Works

Risks to construction workers would be managed in a similar way to those for maintenance workers (with the Site in its current condition), see Section 4.2.3 i.e. utilising current HSE legislation and provision of information under CDM regulations, and good practice.

4.5 Summary of Risk Assessment

Based on the information presented in the earlier sections of this report, it is considered that the assessments and (where applicable) the proposed mitigation measures, will result in there being no significant risk to receptors in relation to the conditions at the Site post remediation. This is shown in Figure 4.1, below.

Figure 4.1 Conceptual Site Model – Showing Mitigated Pathways



Notes:

Green shading on receptors are considered to be potentially 'active' pollutant linkages; Grey shading on receptors are considered to be 'inactive' pollutant linkages as a result of the Project

5. CONCLUSION

The Site has been investigated since 1992 to determine the nature of the materials deposited at the Site during the course of its operation. Since 2014, ERM has advanced investigations with the aim of developing the remediation strategy for the Site. During this study, the assessment process has utilised the existing information obtained for the Site, with results being compared against screening criteria (where applicable).

The groundwater risk assessments show that there is no significant risk of groundwater impacting the local surface water courses. In addition, the majority of analytes are below residential groundwater derived vapour site specific assessment criteria (SSAC). Elevated concentrations of hydrogen sulphide were recorded in 5 out of 20 groundwater samples. However, the exceedances are predominantly scattered across the centre of the site in isolated monitoring wells and not indicative of widespread groundwater impact. In addition, concentrations along the down hydraulic gradient boundary of the site (eastern boundary) adjacent to off site residential boundaries, were less than the analytical detection limit for hydrogen sulphide, indicating that hydrogen sulphide impacted groundwater is not migrating off site towards residential properties. As such, the potential risks to off site residential properties along the eastern boundary from on site groundwater derived vapours is considered to be low.

Soil vapour concentrations obtained from monitoring wells installed along the eastern boundary of the site, adjacent to residential properties, have not been recorded at concentrations exceeding soil vapour SSAC for residential land use. As such the potential risks to off site residential properties along the eastern boundary from on site soil vapours is considered to be low, supporting the findings of the groundwater derived vapour assessment.

The CSM for the Site considers that there will be no significant risk to Human Health or Controlled Waters receptors on completion of the Project. It is considered that the only existing risks relate to Human Health (current and construction phase) due to potential for site users (i.e. maintenance and remediation contractors) to come into contact with the waste soils and contaminated groundwater; however, the effects will be controlled through procedures required by health and safety regulations applicable to the management of such works.

Notwithstanding the absence of risks to receptors, Solvay propose to undertake the aforementioned works to improve the management of the Site.

APPENDIX A CAPPING SYSTEM DRAWINGS

Site Ownership Boundary (Inc. Areas with Access Rights)

Surface Water Drain

Areas With Access Rights

Existing Access Track

Permitted Site Access Route During Construction

0 20 40 60 80 100

Metres

N

SCALE: See Scale Bar	VERSION: A01
SIZE: A4	DRAWN: WB
PROJECT: 0509665	CHECKED: ST
DATE: 16/08/2021	APPROVED: PH

Figure 2.2
Existing Site Contours and Site Boundary / Access Routes

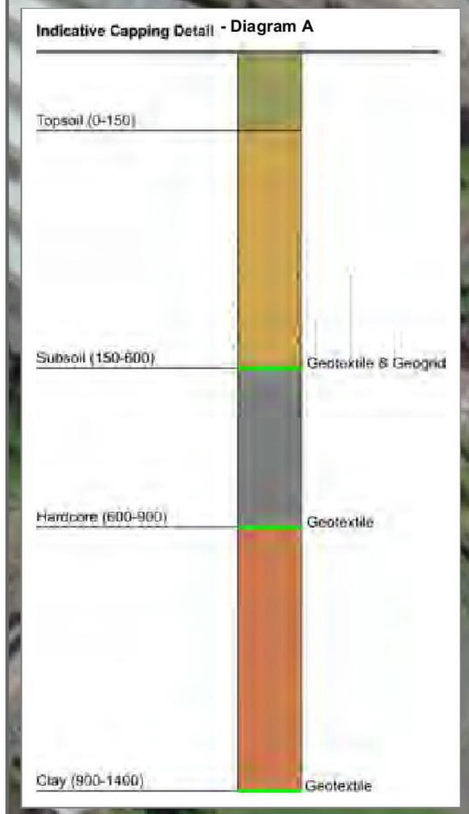
ERM

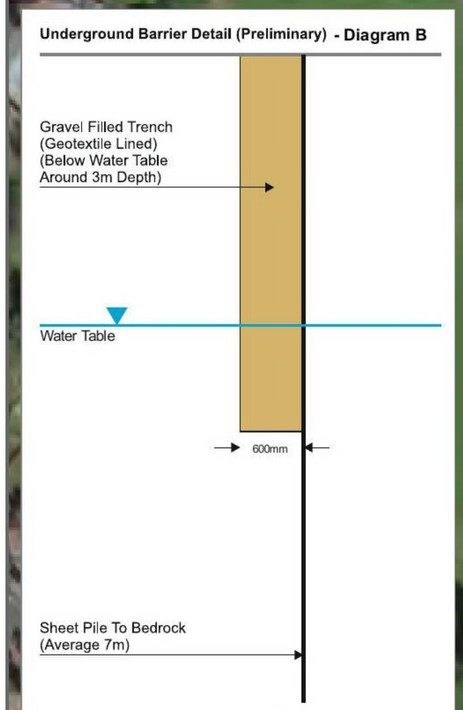
SOLVAY Way
doing business, being responsible

PROJECTION: British National Grid

SOURCE: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Path: \\ukldcfs01\Data\London\Projects\0403257 Solvay-UK-Gower Tip Apr-Sep.PH\Working\06. GIS\MAPS\RemedialWorks\P0509665_CurrentSiteContours_A01.mxd





Site Ownership Boundary (Inc. Areas with Access Rights)

Permitted Site Access Route During Construction

4.5m Wide Perimeter Access Track for Construction & Maintenance

Works Phasing

Phase 1 - Re-Profiling of Boundary Embankments (to provide 5 m wide level working area and 45 deg embankment batter)

Phase 2 - Surface Profiling and Capping - Southern Area - See Diagram A (note material import will be required early in programme)

Phase 3 – Surface Profiling and Capping – Northern Area – See Diagram A

Phase 4 - Underground Barrier Installation - See Diagram B

Note: Final finish levels to be detailed as part of planning application.

The top soil and sub soil depth profile identified in Diagram A may vary depending on seed mix, but the overall combined top soil and sub soil thickness (600mm) will remain the same.

0 10 20 30 40 50
Metres

N

SCALE: See Scale Bar	VERSION: A01
SIZE: A4	DRAWN: WB
PROJECT: 0509665	CHECKED: ST
DATE: 16/08/2021	APPROVED: PH

Figure 2.3
Indicative Works Phasing for Main Works

ERM

SOLVAY Way
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PROJECTION: British National Grid

SOURCE: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Path: \\ukldcfs01\Data\London\Projects\0403257 Solvay-UK-Gower Tip Apr-Sep.PH\Working\06. GIS\MAPS\RemedialWorks\P0509665_IndicativeWorksPhasing_A01.mxd

PLAN SHOWING PROPOSED TOPOGRAPHY OF SITE AT COMPLETION
SCALE 1:500 @ A1

GENERAL NOTES:

1: This drawing to be read in conjunction with Architect's drawings, Francis Bradshaw Partnership's drawings and all other relevant drawings and specifications.
2: Do not scale this drawing. Any discrepancies are to be reported to the Engineer immediately.
3: All dimensions and levels to be checked on site by the Contractor prior to preparing any working drawings or commencing work on site.
4: The Contractor must ensure and will be considered responsible for the overall stability of the building/structure/excavations etc. at all stages of the work.
5: All work by the contractor must be carried out in such a way that all requirements under the Health and Safety at Work Act and the CDM regulations 2015 are satisfied.
6: All work to be carried out in compliance with the requirements of the relevant Statutory Authorities and Regulations.
7: Details of the treatment of the contaminated land including site capping is the responsibility of ERM.
8: All drainage pipes to laid to a minimum fall of 1:100
9: MCHW refers to the Manual of Contract documents for Highway Works which is part of the Specification for Highway Works (SHW). Latest editions of both documents to be used for reference

REF	REVISION	DATE	INITIAL	APRVD

Status: FOR INFORMATION

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Client: ERM / Rhodia Member of the Solvay group

Job: FORMER RHODIA SITE, LOWER CITY ROAD, OLDBURY B69 2HF

Drawing Title: TOPOGRAPHICAL PLAN OF PROPOSED SITE AT COMPLETION

Year:	Job N°:	Drg N°:	Rev:
2019	B4250	212	P0

Scale:	Date:	Drawn:
1:500 @ A1	07.11.2019	DB

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APPENDIX B SOIL ANALYSIS RESULTS

- Borehole
- Gas well
- Monitoring Well
- Piezometer

0 10 20 30 40 50
Metres

N

SCALE: See Scale Bar	VERSION: A02
SIZE: A4	DRAWN: OB
PROJECT: 0531663	CHECKED: PN
DATE: 20/02/2020	APPROVED: PH

Borehole Location Plan

ERM

SOLVAY Way
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PROJECTION: British National Grid

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Path: P:\Projects\0531663 Consolidated Solvay Solvay Gower Tip Planning.PH\GIS\MAPS\0531663_Gower_BHPlan.A02.mxd

0 10 20 30 40 50
Metres

N

SCALE: See Scale Bar	VERSION: A01
SIZE: A4	DRAWN: MTC
PROJECT: 0531663	CHECKED: ST
DATE: 09/09/2021	APPROVED:

Trial Pit Location Plan

ERM

SOLVAY Way
doing business, being responsible

PROJECTION: British National Grid

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Table
Soil Summary Table
Gower Tip Facility
Oldbury

Location ID		BH107R	BH403	BH404	BH404	BH500	BH500	BH501	BH501	BH502	BH503	BH504	BH504	BH505	BH506
Sample Date		17-Jun-15	18-Jun-15	16-Jun-15	17-Jun-15	16-Oct-17	16-Oct-17	16-Oct-17	16-Oct-17	20-Oct-17	24-Oct-17	26-Oct-17	26-Oct-17	19-Oct-17	19-Oct-17
Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	N
Depth		4.5 - 4.6 m	4.1 - 4.2 m	6 - 6.1 m	13.5 - 13.6 m	0.4 - 0.5 m	3.6 - 3.7 m	1.9 - 2 m	3.4 - 3.5 m	0.4 - 0.5 m	1.6 - 1.7 m	6.5 - 6.6 m	12.4 - 12.5 m	2.7 - 2.8 m	0.2 - 0.3 m
Analyte	Unit														
Metals, mg/kg															
Arsenic	mg/kg	55.3	25	13.3	30.4	27.1	< 0.5	4.6	16.2	29.7	55.8	89.1	11.8	6.4	45.7
Beryllium	mg/kg	5.9	1	1.6	3.1										
Boron	mg/kg	15.6	4.9	5	30.6										
Cadmium	mg/kg	78	1.1	15	6.5	6.8	1.5	4.5	1.5	13.3	12	21.3	2.2	2.3	0.5
Chromium	mg/kg	101.6	102.4	212.2	59.9	65.4	14,340.00	14.7	44.8	361.6	506.7	198.2	36.7	33.6	37
Copper	mg/kg	109	36	361	74	251	2,639	50	92	2,735	653	237	52	121	88
Lead	mg/kg	109	25	491	54	659	18,930	18	112	1,649	565	3,656	32	44	59
Mercury	mg/kg	0.3	0.7	0.5	< 0.1	1.7	4.5	< 0.1	0.2	4	1.3	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	mg/kg	101.1	26.9	35.7	52.1	54.1	14.2	12.9	28.6	234.6	225	200.7	36	28.1	29.3
Selenium	mg/kg	3	1	1	5	3	2	< 1	3	2	7	6	2	2	2
Vanadium	mg/kg	117	33	77	70										
Zinc	mg/kg	2,608	464	846	505	1,335	128	239	294	7,605	3,096	629	104	190	115
mg/kg															
Complex Cyanide	mg/kg	34.3	1.3	4.1	< 0.5										
Cyanide_Total	mg/kg	34.3	1.3	4.1	< 0.5	37.1	14.4	< 0.5	< 0.5	88.5	175.5	132.3	40.5	0.8	< 0.5
Free cyanide	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5										
pH, mg/kg															
pH (Lab)	mg/kg					8.22	3.69	6.8	7.48	7.64	7.67	8.74	9.39	8.15	7.29
Semi-volatile Organic Compounds, mg/kg															
Acenaphthylene	mg/kg	< 0.01	< 0.01	0.06	< 0.01	0.15	< 0.01	< 0.01	0.08	0.44	1.97	0.36	< 0.01	5.34	0.02
Acenaphthene	mg/kg	1.21	< 0.01	0.35	< 0.01	0.13	< 0.01	< 0.01	0.04	0.8	0.91	0.25	< 0.01	14.38	< 0.01
Anthracene	mg/kg	2	0.04	0.42	< 0.01	0.31	< 0.01	< 0.01	0.11	1.94	5.78	0.4	< 0.01	28.61	0.02
Benzo(a)anthracene	mg/kg	< 0.01	0.07	0.69	< 0.01	0.73	< 0.01	< 0.01	0.55	7.01	6.5	0.6	< 0.01	74.76	0.07
Benzo(b)fluoranthene	mg/kg					1	< 0.01	< 0.01	0.89	6.78	5.84	0.84	< 0.01	106.36	0.22
Benzo(k)fluoranthene	mg/kg					0.39	< 0.01	< 0.01	0.35	2.63	2.27	0.32	< 0.01	41.36	0.09
Benzo(ghi)perylene	mg/kg	< 0.01	0.04	0.15	< 0.01	0.44	< 0.01	< 0.01	0.44	2.41	2.01	0.43	< 0.01	59.22	0.14
Benzo(a)pyrene	mg/kg	< 0.01	0.05	0.21	< 0.01	0.59	< 0.01	< 0.01	0.6	3.92	4.15	0.68	< 0.01	79.74	0.15
Dibenz(ah)anthracene	mg/kg	< 0.01	0.02	0.07	< 0.01	0.14	< 0.01	< 0.01	0.13	0.89	0.82	0.1	< 0.01	15.48	0.04
Chrysene	mg/kg	< 0.01	0.09	1.03	< 0.01	1.07	< 0.01	< 0.01	0.68	7.7	6.06	0.7	< 0.01	71.82	0.1
Fluoranthene	mg/kg	< 0.01	0.15	1.07	< 0.01	1.9	< 0.01	< 0.01	0.98	14.2	15.45	1.36	0.02	171.78	0.09
Fluorene	mg/kg	< 0.01	0.04	0.62	< 0.01	0.18	< 0.01	< 0.01	0.04	0.76	3.44	0.3	< 0.01	7.77	< 0.01
Indeno(1,2,3_cd)pyrene	mg/kg	< 0.01	0.04	0.11	< 0.01	0.36	< 0.01	< 0.01	0.38	1.99	1.83	0.34	< 0.01	52.39	0.12
2-Methylnaphthalene	mg/kg	8.03	0.12	0.84	< 0.01	0.08	< 0.01	< 0.01	0.02	0.61	1.68	0.77	0.04	1.59	0.02
2-Chloronaphthalene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
Phenanthrene	mg/kg	5.51	0.23	1.76	< 0.01	1.96	< 0.01	< 0.01	0.52	9.67	18.38	1.25	< 0.01	84.94	0.06
Pyrene	mg/kg	< 0.01	0.16	0.76	< 0.01	1.65	< 0.01	< 0.01	0.9	12.3	11.52	1.41	0.01	154.16	0.1
Benzo(b+k)fluoranthene	mg/kg	< 0.01	0.14	0.61	< 0.01	1.39	< 0.01	< 0.01	1.24	9.41	8.11	1.16	< 0.01	147.72	0.31
4-Chloro-3-methylphenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
2,4-Dimethylphenol	mg/kg	< 0.01	< 0.01	16.16	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	5.77	1.44	< 0.20	< 0.01
2-Methylphenol	mg/kg	0.42	< 0.01	6.75	< 0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	2.12	0.4	< 0.20	< 0.01
4-methylphenol	mg/kg	< 0.01	< 0.01	13.4	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	7.34	0.62	< 0.20	< 0.01
Pentachlorophenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
2,4,5-Trichlorophenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
2,4,6-Trichlorophenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
2,4-Dichlorophenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
2-Chlorophenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
2-Nitrophenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
4-Nitrophenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
1 Napthol	mg/kg	< 0.01	< 0.01	< 0.1	< 0.1										
Phenol	mg/kg	6.08	1.06	5.46	4.54	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	1.44	< 0.01	< 0.20	< 0.01
Total cresols	mg/kg	1.72	0.05	9.14	< 0.3										
Total xylenols	mg/kg	1.41	0.09	17.81	< 0.6										
Total phenols	mg/kg	18.33	3.68	35.21	20.19										
2,3,5 Trimethylphenol	mg/kg	9.04	2.42	0.94	15.65										
2-Isopropyl Phenol	mg/kg	< 0.01	< 0.01	1.86	< 0.1										
Bis(2-ethylhexyl)phthalate	mg/kg	< 0.01	< 0.01	2.55	< 0.01	0.3	10.9	< 0.1	< 0.1	< 1.0	< 0.1	< 0.1	< 0.1	< 2.0	< 0.1
Butyl benzyl Phthalate	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 0.1	< 0.1	< 2.0	< 0.1
Di-n-butyl Phthalate	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.4	< 0.1	< 0.1	< 0.1	< 1.0	0.2	< 0.1	< 0.1	< 2.0	< 0.1
Di-n-octyl Phthalate	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 0.1	< 0.1	< 2.0	< 0.1
Diethyl Phthalate	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	0.6	< 0.1	< 0.1	< 1.0	< 0.1	< 0.1	< 0.1	23.1	< 0.1
Dimethyl Phthalate	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 0.1	< 0.1	< 2.0	< 0.1
Bis(2-chloroethyl)ether	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
4-Bromophenylphenylether	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
4-Chlorophenylphenylether	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
4-Chloroaniline	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
2-Nitroaniline	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
3-Nitroaniline	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
4-Nitroaniline	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
Isophorone	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
N-Nitrosodi-n-propylamine	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
Hexachlorobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
Nitrobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
2,4-Dinitrotoluene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
2,6-Dinitrotoluene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
Hexachlorocyclopentadiene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
Dibenzofuran	mg/kg	0.64	0.01	0.32	< 0.01	0.13	< 0.01	< 0.01	0.03	0.46	2.81	0.18	< 0.01	6.5	0.01
Bis(2-chloroethoxy)methane	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
Hexachloroethane	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
Azobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20	< 0.01
Carbazole	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.19	< 0.01	< 0.01	0.05	1.14	1.76	< 0.01	< 0.01	5.68	< 0.01
Soils_BTEX, mg/kg															
Benzene	mg/kg	45.401	0.114	5.025	0.027	< 0.003	0.005	< 0.003	< 0.003	< 0.003	< 0.003	0.04	0.089	0.004	0.184
Ethylbenzene	mg/kg	0.718	< 0.003	3.718	0.014	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.197	0.026	< 0.003	< 0.003
Toluene	mg/kg	149.634	0.061	1.547	0.033	< 0.003	1.354	< 0.003	0.006	< 0.003	< 0.003	0.329	0.046	0.004	< 0.003
p/m-Xylene	mg/kg	3.992	0.013	17.432	0.072	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.851	0.032	< 0.005	0.006
Speciated Phenols, mg/kg															
1 Napthol	mg/kg	< 0.01	< 0.01	< 0.1	< 0.1										
2,3,5 Trimethylphenol	mg/kg	9.04	2.42	0.94	15.65										
2-Isopropyl Phenol	mg/kg	< 0.01	< 0.01	1.86	< 0.1										
2-Methylphenol	mg/kg	0.42	< 0.01	6.75	< 0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	2.12	0.4	< 0.20	< 0.01
Catechol	mg/kg	< 0.01	< 0.01	< 0.1	< 0.1										
m/p-cresol	mg/kg	1.3	0.05	6.08	< 0.2										
Phenol	mg/kg	6.08	1.06	5.46	4.54	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	1.44	< 0.01	< 0.20	< 0.01
Resorcinol	mg/kg	0.08	0.06	< 0.1	< 0.1										
Total cresols	mg/kg	1.72	0.05	9.14	< 0.3										
Total phenols	mg/kg	18.33	3.68	35.21	20.19										
Total xylenols	mg/kg	1.41	0.09	17.81	< 0.6										
Total Petroleum Hydrocarbons, mg/kg															
C5-C6 Aliphatics (EC=5.5)	mg/kg	17.5	< 0.1	4.3	< 0.5	< 0.1	1.3	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1
>C6-C8 Aliphatics	mg/kg	135.6	0.9	27.6	< 0.5	< 0.1	2.4	< 0.1	< 0.1	< 0.1	< 0.1	1.1	0.4	< 0.1	< 0.1
>C8-C10 Aliphatics	mg/kg	59.3	9.4	54.2	< 0.5	< 0.1	1.1	< 0.1	< 0.1	0.1	< 0.1	5.7	0.6	< 0.1	< 0.1
>C10-C12 Aliphatics	mg/kg	475.2	83.2	29	< 0.2	< 0.2	< 0.2	< 0.2	4.5	< 0.2	< 0.2	31	< 0.2	2.4	< 0.2
>C12-C16 Aliphatics	mg/kg	1,355	22	122	< 4	< 4	< 4	< 4	19	< 4	5	134	< 4	41	< 4
>C16-C21 Aliphatics	mg/kg	15,574	422	2,933	< 7	< 7	< 7	< 7	16	61	36	836	14	151	< 7
>C21-C35 Aliphatics	mg/kg	60,872	1,660	8,297	< 7	41	< 7	< 7	29	370	274	1,793	52	507	< 7
Total Aliphatics C5-C35	mg/kg	78,489	2,198	11,467	< 19	41	< 19	< 19	69	431	315	2,801	67	701	< 19
>C16-C35 Aliphatics	mg/kg	76,446	2,082	11,230	< 14	41	< 14	< 14	45	431	310	2,629	66	658	< 14
>C35-C44 Aliphatics	mg/kg	3,045	83	415	< 7	< 7	< 7	< 7	< 7	23	51	47	< 7	60	< 7
>C5-C44 Aliphatics	mg/kg	81,534	2,281	11,882	< 26	41	< 26	< 26	69	454	366	2,848	67	761	< 26
>C5-EC7 Aromatics	mg/kg	32.5	0.2	15.4	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C7-C8 Aromatics	mg/kg	109.2	0.1	3.3	< 0.5	< 0.1	0.7	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
>C8-C10 Aromatics	mg/kg	3.4	0.2	53.1	< 0.5	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	0.7	< 0.1	< 0.1	< 0.1
>C10-C12 Aromatics	mg/kg	304.8	32.5	28.3	< 0.2	< 0.2	157.1	< 0.2	< 0.2	8.3	9.5	27.7	8.5	< 0.2	< 0.2

Location ID		BH507	BH507	BH509	BH510	BH510	BH511	BH511	BH511	BH512	BH512	TP101	TP101	TP101	TP102
Sample Date		18-Oct-17	18-Oct-17	17-Oct-17	25-Oct-17	25-Oct-17	26-Oct-17	26-Oct-17	26-Oct-17	18-Oct-17	18-Oct-17	29-Jan-20	29-Jan-20	29-Jan-20	30-Jan-20
Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	N
Depth		2.3 - 2.4 m	4.9 - 5 m	0.4 - 0.5 m	6.9 - 7 m	11.4 - 11.5 m	0.2 - 0.3 m	2.5 - 2.6 m	6.5 - 6.6 m	3.4 - 3.5 m	5.5 - 5.6 m	0.5 - 3 m	1 - 1.1 m	2.8 - 2.9 m	0.5 - 3 m
Analyte	Unit														
Metals, mg/kg															
Arsenic	mg/kg	7.1	12.4	50.8	31.9	15.3	14.2	32.3	87.6	14	12.9	30.2	2.2	163.4	8
Beryllium	mg/kg											1.2	< 0.5	1.8	0.9
Boron	mg/kg											3.1	1.9	4.5	7
Cadmium	mg/kg	< 0.1	< 0.1	2.2	0.6	9.4	1.7	33.9	4.3	0.2	0.3	< 0.1	0.7	< 0.1	< 0.1
Chromium	mg/kg	28.9	51	100	96.2	70.4	56.9	64.7	43.6	77.5	51.4	107.9	16.5	138.6	60.3
Copper	mg/kg	40	< 1	157	98	112	94	72	251	41	56	127	30	238	75
Lead	mg/kg	127	97	202	49	138	43	393	1,028	1,776	49	250	70	1,353	70
Mercury	mg/kg	0.7	< 0.1	0.2	< 0.1	< 0.1	1.2	3.1	< 0.1	0.2	< 0.1	0.1	< 0.1	0.2	< 0.1
Nickel	mg/kg	5.9	2.6	50.7	194.8	118.6	144	61.9	56.6	15.4	37.1	23.2	11.5	52.1	24.2
Selenium	mg/kg	2	< 1	5	2	6	< 1	1	4	2	1	3	< 1	13	1
Vanadium	mg/kg											93	10	238	74
Zinc	mg/kg	17	8	512	339	249	410	17,420	943	42	152	248	460	300	120
mg/kg															
Complex Cyanide	mg/kg											1,634.60	< 0.5		34
Cyanide_Total	mg/kg	1.8	< 0.5	18.3	3.5	< 0.5	< 0.5	0.7	14.9	0.7	< 0.5	1,637.00	< 0.5		34
Free cyanide	mg/kg											2.4	< 0.5		< 0.5
pH, mg/kg															
pH (Lab)	mg/kg	6.51	3.7	7.34	8.29	9.53	8.11	7.26	9.1	3.71	7.26				
Semi-volatile Organic Compounds, mg/kg															
Acenaphthylene	mg/kg	0.23	< 0.01	0.07	< 0.01	0.47	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.16	0.13	0.58	< 0.01
Acenaphthene	mg/kg	0.06	0.08	0.04	0.02	0.36	0.06	< 0.01	< 0.01	< 0.01	0.02	0.08	< 0.01	< 0.01	< 0.01
Anthracene	mg/kg	0.23	0.11	0.18	< 0.01	0.58	0.05	< 0.01	< 0.01	0.06	0.07	0.33	0.07	0.41	0.02
Benzo(a)anthracene	mg/kg	0.95	0.42	0.87	< 0.01	0.91	0.18	< 0.01	< 0.01	0.13	0.09	1.48	0.12	1.55	0.09
Benzo(b)fluoranthene	mg/kg	1.25	0.6	1.1	< 0.01	0.89	0.28	0.04	< 0.01	0.3	0.13	1.86	0.13	2.64	0.06
Benzo(k)fluoranthene	mg/kg	0.48	0.23	0.43	< 0.01	0.35	0.11	0.02	< 0.01	0.12	0.05	0.73	0.05	1.02	0.03
Benzo(ghi)perylene	mg/kg	0.43	0.3	0.53	< 0.01	0.41	0.12	< 0.01	< 0.01	0.09	0.04	1.11	0.07	1.47	0.04
Benzo(a)pyrene	mg/kg	0.69	0.41	0.7	< 0.01	0.66	0.19	0.03	< 0.01	0.09	0.06	1.58	0.09	1.56	0.07
Dibenz(ah)anthracene	mg/kg	0.17	0.09	0.18	< 0.01	0.14	0.03	< 0.01	< 0.01	0.04	0.02	0.32	0.02	0.34	< 0.01
Chrysene	mg/kg	1.93	0.44	0.95	< 0.01	0.83	0.2	< 0.01	< 0.01	0.34	0.12	1.5	0.1	1.63	0.07
Fluoranthene	mg/kg	0.95	0.82	1.67	< 0.01	1.65	0.33	< 0.01	< 0.01	0.55	0.19	2.85	0.12	3.28	0.13
Fluorene	mg/kg	0.06	0.03	0.03	0.02	0.53	0.02	< 0.01	< 0.01	< 0.01	0.02	0.11	< 0.01	0.13	< 0.01
Indeno(1,2,3_cd)pyrene	mg/kg	0.36	0.26	0.44	< 0.01	0.32	0.11	< 0.01	< 0.01	0.09	0.04	0.91	0.04	1.32	0.03
2-Methylnaphthalene	mg/kg	0.09	< 0.01	0.05	0.02	0.55	0.05	< 0.01	< 0.01	< 0.01	0.03	< 0.01	< 0.01	0.08	< 0.01
2-Chloronaphthalene	mg/kg	< 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
Phenanthrene	mg/kg	0.52	0.44	0.58	0.02	1.32	0.21	< 0.01	< 0.01	0.23	0.18	1.06	0.07	1.29	0.09
Pyrene	mg/kg	0.86	0.76	1.39	< 0.01	1.39	0.31	< 0.01	< 0.01	0.37	0.14	2.54	0.13	2.46	0.11
Benzo(b+k)fluoranthene	mg/kg	1.73	0.83	1.53	< 0.01	1.24	0.39	0.06	< 0.01	0.42	0.18	2.59	0.18	3.66	0.09
4-Chloro-3-methylphenol	mg/kg	< 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
2,4-Dimethylphenol	mg/kg	0.24	< 0.01	< 0.01	0.11	2.33	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.37	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
4-methylphenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	1.19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.1	< 0.01
Pentachlorophenol	mg/kg	< 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
2,4,5-Trichlorophenol	mg/kg	< 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
2,4,6-Trichlorophenol	mg/kg	< 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
2,4-Dichlorophenol	mg/kg	< 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
2-Chlorophenol	mg/kg	< 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
2-Nitrophenol	mg/kg	< 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
4-Nitrophenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	1.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1 Napthol	mg/kg											< 0.01	< 0.01	< 0.01	< 0.01
Phenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05	< 0.01
Total cresols	mg/kg											< 0.03	< 0.03	0.04	0.39
Total xylenols	mg/kg											< 0.06	< 0.06	< 0.06	0.31
Total phenols	mg/kg											< 0.15	< 0.15	< 0.15	0.7
2,3,5 Trimethylphenol	mg/kg											< 0.01	< 0.01	< 0.01	< 0.01
2-Isopropyl Phenol	mg/kg											< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-ethylhexyl)phthalate	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butyl benzyl Phthalate	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butyl Phthalate	mg/kg	0.2	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl Phthalate	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl Phthalate	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl Phthalate	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	< 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
4-Bromophenylphenylether	mg/kg	< 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
4-Chlorophenylphenylether	mg/kg	< 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
4-Chloroaniline	mg/kg	< 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
2-Nitroaniline	mg/kg	< 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
3-Nitroaniline	mg/kg	< 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
4-Nitroaniline	mg/kg	< 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
Isophorone	mg/kg	< 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
N-Nitrosodi-n-propylamine	mg/kg	< 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
Hexachlorobenzene	mg/kg	< 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
Nitrobenzene	mg/kg	< 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
2,4-Dinitrotoluene	mg/kg	< 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
2,6-Dinitrotoluene	mg/kg	< 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
Hexachlorocyclopentadiene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.12	0.15	0.37	0.05
Dibenzofuran	mg/kg	0.06	0.02	0.05	< 0.01	0.3	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.07	< 0.01	0.15	< 0.01
Bis(2-chloroethoxy)methane	mg/kg	< 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
Hexachloroethane	mg/kg	< 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
Azobenzene	mg/kg	< 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
Carbazole	mg/kg	0.06	0.05	0.04	< 0.01	0.11	0.03	< 0.01	< 0.01	0.03	0.01	0.08	< 0.01	0.41	< 0.01
Soils_BTEX, mg/kg															
Benzene	mg/kg	< 0.003	< 0.003	< 0.003	0.006	0.006	< 0.015	< 0.003	0.158	< 0.003	< 0.003	< 0.005	< 0.005	< 0.005	< 0.005
Ethylbenzene	mg/kg	< 0.003	< 0.003	< 0.003	0.025	0.013	< 0.015	0.056	< 0.003	0.166	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Toluene	mg/kg	< 0.003	< 0.003	0.005	0.009	0.029	< 0.015	0.034	0.049	0.05	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
p/m-Xylene	mg/kg	< 0.005	< 0.005	< 0.005	0.014	0.052	< 0.025	0.038	< 0.005	3.889	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Speciated Phenols, mg/kg															
1 Napthol	mg/kg											< 0.01	< 0.01	< 0.01	< 0.01
2,3,5 Trimethylphenol	mg/kg											< 0.01	< 0.01	< 0.01	< 0.01
2-Isopropyl Phenol	mg/kg											< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.37	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
Catechol	mg/kg											< 0.01	< 0.01	< 0.01	< 0.01
m/p-cresol	mg/kg											< 0.02	< 0.02	0.04	0.39
Phenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05	< 0.01
Resorcinol	mg/kg											< 0.01	< 0.01	< 0.01	< 0.01
Total cresols	mg/kg											< 0.03	< 0.03	0.04	0.39
Total phenols	mg/kg											< 0.15	< 0.15	< 0.15	0.7
Total xylenols	mg/kg											< 0.06	< 0.06	< 0.06	0.31
Total Petroleum Hydrocarbons, mg/kg															
C5-C6 Aliphatics (EC=5.5)	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	0.3	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C6-C8 Aliphatics	mg/kg	< 0.1	< 0.1	< 0.1	0.4	0.7	< 0.1	0.1	0.4	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C8-C10 Aliphatics	mg/kg	< 0.1	0.4	< 0.1	0.5	1.1	< 0.1	1.8	1.1	130.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C10-C12 Aliphatics	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	6.9	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
>C12-C16 Aliphatics	mg/kg	< 4	< 4	< 4	< 4	21	< 4	25	< 4	12	< 4	< 4	< 4	< 4	< 4
>C16-C21 Aliphatics	mg/kg	< 7	< 7	31	< 7	34	< 7	666	< 7	110	< 7	< 7	< 7	103	< 7
>C21-C35 Aliphatics	mg/kg	38	< 7	147	< 7	68	17	4,322	< 7	676	28	55	23	466	< 7
Total Aliphatics C5-C35	mg/kg	38	< 19	178	< 19	125	< 19	5,015	< 19	936	28	55	23	569	< 19
>C16-C35 Aliphatics	mg/kg	38	< 14	178	< 14	102	17	4,988	< 14	786	28	55	23	569	< 14
>C35-C44 Aliphatics	mg/kg	< 7	< 7	13	< 7	< 7	< 7	90	< 7	41	< 7	< 7	< 7	16	< 7
>C5-C44 Aliphatics	mg/kg	38	< 26	191	< 26	125	< 26	5,105	< 26	977	28	55	< 26	585	< 26
>C5-EC7 Aromatics	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C7-C8 Aromatics	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C8-C10 Aromatics	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	0.3	< 0.1	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C10-C12 Aromatics	mg/kg	< 0.2	< 0.2	< 0.2	4.9	16.3	< 0.2	39.4	< 0.2	33.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Location ID		TP102	TP102	TP103	TP103	TP103	TP104	TP104	TP104	TP105	TP105	TP105	TP106	TP106	TP106
Sample Date		30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20
Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	N
Depth		1 - 1.1 m	2.5 - 2.6 m	-	1.5 - 1.6 m	2.5 - 2.6 m	0.5 - 3 m	1 - 1.1 m	2.5 - 2.6 m	0.5 - 3 m	1 - 1.1 m	2.5 - 2.6 m	0.5 - 0.3 m	1 - 1.1 m	2 - 2.1 m
Analyte	Unit														
Metals, mg/kg															
Arsenic	mg/kg	2.5	9.7	11.9	11.4	14.1	8.5	5.6	5.7	59.1	15.7	8.9	28	4.6	5.7
Beryllium	mg/kg	< 0.5	0.8	4	2.6	3.4	1.2	1.4	1.3	18.5	1.8	1.4	1.5	1.3	1.5
Boron	mg/kg	1	9.6	2.7	2.4	2.6	1	0.6	1.1	9.2	0.9	1.7	1.7	1.1	1.7
Cadmium	mg/kg	3.3	< 0.1	11.1	0.9	18.6	83.4	7.4	1,263.60	22.2	10.5	14.8	239.2	10.4	8.6
Chromium	mg/kg	38.1	73.1	41.2	15.1	125.7	27.8	60.4	115.6	69.4	89.9	133.3	84.5	60.1	106.1
Copper	mg/kg	905	70	123	43	3,109	215	32	64	325	145	273	49	72	48
Lead	mg/kg	17	35	221	66	800	70	19	495	1,480	346	223	95	42	20
Mercury	mg/kg	< 0.1	< 0.1	1.2	0.2	1.2	0.2	< 0.1	< 0.1	< 0.1	1.7	3.5	< 0.1	0.9	< 0.1
Nickel	mg/kg	16.8	20.8	67.7	35.5	100.3	26.8	17.1	38.7	177.9	55.9	74.1	13.7	24	16.2
Selenium	mg/kg	< 1	1	1	< 1	1	< 1	1	2	4	4	4	16	3	9
Vanadium	mg/kg	12	86	56	28	54	28	64	129	258	116	103	56	61	57
Zinc	mg/kg	75	100	3,726	223	15,944	592	125	6,450	5,081	1,107	647	8,339	1,408	11,850
mg/kg															
Complex Cyanide	mg/kg	< 0.5													
Cyanide_Total	mg/kg	< 0.5													
Free cyanide	mg/kg	< 0.5													
pH, mg/kg															
pH (Lab)	mg/kg														
Semi-volatile Organic Compounds, mg/kg															
Acenaphthylene	mg/kg	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.09	< 0.01	< 0.01	< 0.01
Acenaphthene	mg/kg	< 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
Anthracene	mg/kg	0.02	0.01	0.09	0.13	< 0.01	0.02	< 0.01	0.01	0.01	0.03	0.07	0.01	0.02	< 0.01
Benzo(a)anthracene	mg/kg	0.1	0.03	0.12	0.15	0.19	0.13	0.05	0.05	0.06	0.16	0.67	0.06	0.05	0.06
Benzo(b)fluoranthene	mg/kg	0.13	0.03	0.11	0.12	0.2	0.22	0.04	0.03	0.02	0.22	0.84	0.07	0.04	0.04
Benzo(k)fluoranthene	mg/kg	0.05	0.01	0.04	0.04	0.08	0.08	0.01	0.01	< 0.01	0.08	0.33	0.03	0.01	0.01
Benzo(ghi)perylene	mg/kg	0.11	< 0.01	0.09	0.09	1.74	0.1	0.02	0.02	< 0.01	0.14	0.4	0.06	0.02	0.03
Benzo(a)pyrene	mg/kg	0.12	0.04	0.07	0.08	1.34	0.13	0.02	0.02	0.02	0.16	0.59	0.04	0.03	0.02
Dibenz(ah)anthracene	mg/kg	0.03	< 0.01	0.02	0.02	0.47	0.04	< 0.01	< 0.01	< 0.01	0.05	0.17	0.01	< 0.01	< 0.01
Chrysene	mg/kg	0.08	0.03	0.13	0.15	0.22	0.2	0.05	0.03	0.03	0.18	0.66	0.06	0.04	0.04
Fluoranthene	mg/kg	0.1	0.02	0.17	0.19	0.25	0.3	0.05	0.03	0.02	0.24	0.81	0.06	0.05	0.04
Fluorene	mg/kg	< 0.01	< 0.01	0.03	0.04	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01
Indeno(1,2,3_cd)pyrene	mg/kg	0.08	< 0.01	0.05	0.04	1.3	0.09	0.01	< 0.01	< 0.01	0.08	0.37	0.04	0.01	0.02
2-Methylnaphthalene	mg/kg	< 0.01	< 0.01	0.99	1.63	0.42	0.1	0.03	0.06	0.03	< 0.01	0.04	0.04	0.22	0.06
2-Chloronaphthalene	mg/kg	< 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
Phenanthrene	mg/kg	0.04	0.02	0.61	1.03	< 0.01	0.34	0.14	0.08	0.05	0.18	0.15	0.16	0.17	0.11
Pyrene	mg/kg	0.11	0.02	0.14	0.15	0.17	0.22	0.04	0.03	0.02	0.23	0.79	0.06	0.05	0.04
Benzo(b+k)fluoranthene	mg/kg	0.18	0.04	0.15	0.16	0.28	0.3	0.05	0.04	0.03	0.3	1.17	0.1	0.05	0.05
4-Chloro-3-methylphenol	mg/kg	< 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
2,4-Dimethylphenol	mg/kg	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	mg/kg	< 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
4-methylphenol	mg/kg	< 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
Pentachlorophenol	mg/kg	< 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
2,4,5-Trichlorophenol	mg/kg	< 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
2,4,6-Trichlorophenol	mg/kg	< 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
2,4-Dichlorophenol	mg/kg	< 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
2-Chlorophenol	mg/kg	< 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
2-Nitrophenol	mg/kg	< 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
4-Nitrophenol	mg/kg	< 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
1 Napthol	mg/kg	< 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
Phenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.36	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total cresols	mg/kg	< 0.03	0.55	< 0.03	< 0.03	0.13	< 0.03	< 0.03	0.11	0.49	< 0.03	0.03	< 0.03	< 0.03	< 0.03
Total xylenols	mg/kg	< 0.06	0.35	0.13	< 0.06	1.82	0.1	< 0.06	0.17	1.4	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Total phenols	mg/kg	< 0.15	0.9	< 0.15	< 0.15	1.95	< 0.15	< 0.15	0.28	1.89	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
2,3,5 Trimethylphenol	mg/kg	< 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
2-Isopropyl Phenol	mg/kg	< 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
Bis(2-ethylhexyl)phthalate	mg/kg	< 0.1	< 0.1	1.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butyl benzyl Phthalate	mg/kg	< 0.1	< 0.1	1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butyl Phthalate	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.1	< 0.1	< 0.1	< 0.1
Di-n-octyl Phthalate	mg/kg	< 0.1	< 0.1	5.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl Phthalate	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethyl Phthalate	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	< 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
4-Bromophenylphenylether	mg/kg	< 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
4-Chlorophenylphenylether	mg/kg	< 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
4-Chloroaniline	mg/kg	< 0.01	0.19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	mg/kg	< 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
3-Nitroaniline	mg/kg	< 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
4-Nitroaniline	mg/kg	< 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
Isophorone	mg/kg	< 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
N-Nitrosodi-n-propylamine	mg/kg	< 0.01	0.27	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	mg/kg	< 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
Nitrobenzene	mg/kg	< 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
2,4-Dinitrotoluene	mg/kg	< 0.01	4.19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,6-Dinitrotoluene	mg/kg	< 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
Hexachlorocyclopentadiene	mg/kg	0.09	0.11	0.73	0.05	0.35	< 0.01	< 0.01	< 0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	mg/kg	< 0.01	< 0.01	0.19	0.3	0.14	0.05	0.02	0.01	< 0.01	0.02	0.02	0.02	0.05	0.02
Bis(2-chloroethoxy)methane	mg/kg	< 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
Hexachloroethane	mg/kg	< 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
Azobenzene	mg/kg	< 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
Carbazole	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01
Soils_BTEX, mg/kg															
Benzene	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	< 0.005	0.007	< 0.005	0.009
Ethylbenzene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Toluene	mg/kg	< 0.003	0.161	0.02	0.011	0.015	< 0.003	0.006	0.008	< 0.003	0.005	< 0.003	0.016	< 0.003	0.008
p/m-Xylene	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.009	< 0.005	< 0.005	< 0.005	< 0.005
Speciated Phenols, mg/kg															
1 Napthol	mg/kg	< 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
2,3,5 Trimethylphenol	mg/kg	< 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
2-Isopropyl Phenol	mg/kg	< 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
2-Methylphenol	mg/kg	< 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
Catechol	mg/kg	< 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
m/p-cresol	mg/kg	< 0.02	0.55	< 0.02	< 0.02	0.13	< 0.02	< 0.02	0.11	0.49	< 0.02	0.03	< 0.02	< 0.02	< 0.02
Phenol	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.36	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Resorcinol	mg/kg	< 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
Total cresols	mg/kg	< 0.03	0.55	< 0.03	< 0.03	0.13	< 0.03	< 0.03	0.11	0.49	< 0.03	0.03	< 0.03	< 0.03	< 0.03
Total phenols	mg/kg	< 0.15	0.9	< 0.15	< 0.15	1.95	< 0.15	< 0.15	0.28	1.89	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
Total xylenols	mg/kg	< 0.06	0.35	0.13	< 0.06	1.82	0.1	< 0.06	0.17	1.4	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Total Petroleum Hydrocarbons, mg/kg															
C5-C6 Aliphatics (EC=5.5)	mg/kg	< 0.1	0.3	< 0.1	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C6-C8 Aliphatics	mg/kg	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C8-C10 Aliphatics	mg/kg	< 0.1	0.5	< 0.1	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C10-C12 Aliphatics	mg/kg	< 0.2	< 0.2	21.4	16.4	9.6	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
>C12-C16 Aliphatics	mg/kg	< 4	< 4	20	26	17	< 4	< 4	< 4	< 4	6	< 4	< 4	< 4	< 4
>C16-C21 Aliphatics	mg/kg	< 7	< 7	46	26	395	< 7	< 7	< 7	< 7	31	31	< 7	< 7	< 7
>C21-C35 Aliphatics	mg/kg	282	< 7	287	60	2,545	19	< 7	17	< 7	189	233	46	< 7	< 7
Total Aliphatics C5-C35	mg/kg	282	< 19	374	128	2,967	19	< 19	< 19	< 19	226	264	46	< 19	< 19
>C16-C35 Aliphatics	mg/kg	282	< 14	333	86	2,940	19	< 14	17	< 14	220	264	46	< 14	< 14
>C35-C44 Aliphatics	mg/kg	21	< 7	< 7	< 7	34	< 7	< 7	< 7	< 7	22	17	< 7	< 7	< 7
>C5-C44 Aliphatics	mg/kg	303	< 26	374	128	3,001	< 26	< 26	< 26	< 26	248	281	46	< 26	< 26
>C5-EC7 Aromatics	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C7-C8 Aromatics	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C8-C10 Aromatics	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
>C10-C12 Aromatics	mg/kg	< 0.2	< 0.2	25.5	12.6	220	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

	Location ID	BH107R	BH403	BH404	BH404	BH500	BH500	BH501	BH501	BH502	BH503	BH504	BH504	BH505
	Sample Date	17-Jun-15	18-Jun-15	16-Jun-15	17-Jun-15	16-Oct-17	16-Oct-17	16-Oct-17	16-Oct-17	20-Oct-17	24-Oct-17	26-Oct-17	26-Oct-17	19-Oct-17
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
	Depth	4.5 - 4.6 m	4.1 - 4.2 m	6 - 6.1 m	13.5 - 13.6 m	0.4 - 0.5 m	3.6 - 3.7 m	1.9 - 2 m	3.4 - 3.5 m	0.4 - 0.5 m	1.6 - 1.7 m	6.5 - 6.6 m	12.4 - 12.5 m	2.7 - 2.8 m
Analyte	**Unit**													
>C12-C16 Aromatics	mg/kg	1,060	25	107	< 4	< 4	158	< 4	53	10	17	132	80	135
>C16-C21 Aromatics	mg/kg	9,047	225	2,711	< 7	12	908	< 7	159	50	70	958	13	1,393
>C21-C35 Aromatics	mg/kg	34,782	929	3,754	< 7	73	471	< 7	272	342	557	1,970	98	4,235
Total Aromatics C5-C35	mg/kg	45,339	1,212	6,672	< 19	85	1,695	< 19	484	410	654	3,089	200	5,763
>EC5-EC44 Aromatics	mg/kg	50,556	1,305	6,860	< 26	104	1,728	< 26	517	463	856	3,174	213	6,313
>EC35-EC44 Aromatics	mg/kg	5,217	93	188	< 7	19	33	< 7	33	53	202	85	13	550
Aliphatics/Aromatics C5-C35 (TPH)	mg/kg	123,828	3,410	18,139	< 38	126	1,695	< 38	553	841	969	5,890	267	6,464
>C5-C44 Aliphatics/Aromatics	mg/kg	132,090	3,586	18,742	< 52	145	1,728	< 52	586	917	1,222	6,022	280	7,074
Volatile Organic Compounds, mg/kg														
Carbontetrachloride	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.073	< 0.004	< 0.004	< 0.004	< 0.004	0.009
Chloroform	mg/kg	5.351	0.05	0.426	< 0.003	< 0.003	< 0.003	< 0.003	0.21	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Dichloromethane	mg/kg	< 0.007	< 0.007	< 0.007	< 0.007	0.07	< 0.03	< 0.03	0.11	< 0.03	< 0.03	< 0.03	< 0.03	0.1
Chloromethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	1.342	< 0.003	0.02	0.004	< 0.003	< 0.003	< 0.003	< 0.003
Bromoform	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Dibromomethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Bromomethane	mg/kg	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,1,1,2-Tetrachloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1,2,2-Tetrachloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1,1-Trichloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.006	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1,2-Trichloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1-Dichloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Chloroethane	mg/kg	< 0.002	< 0.002	< 0.002	0.027	< 0.002	0.11	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachloroethene	mg/kg	< 0.003	< 0.003	0.101	< 0.003	0.028	< 0.003	< 0.003	0.051	0.044	< 0.003	< 0.003	< 0.003	< 0.003
Trichloroethene	mg/kg	2.31	< 0.003	0.104	< 0.003	< 0.003	< 0.003	< 0.003	0.164	< 0.003	< 0.003	0.057	< 0.003	< 0.003
cis-1,2-Dichloroethene	mg/kg	0.044	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.023	< 0.003	< 0.003
trans-1,2-Dichloroethene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1-Dichloroethene	mg/kg	0.049	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Vinyl chloride	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,2,3-Trichlorobenzene	mg/kg	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
1,2,4-Trichlorobenzene	mg/kg	< 0.01	< 0.01	0.29	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20
1,2-Dichlorobenzene	mg/kg	81.01	0.564	110.54	0.72	< 0.01	0.069	< 0.01	< 0.01	< 0.10	< 0.01	1.469	0.04	< 0.20
1,3-Dichlorobenzene	mg/kg	0.81	0.01	0.507	0.016	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20
1,4-Dichlorobenzene	mg/kg	19.14	0.162	23.31	0.191	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	0.152	< 0.01	< 0.20
Chlorobenzene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.904	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Bromobenzene	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.039	< 0.002	< 0.002
1,2-Dibromo-3-chloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,2-Dichloropropane	mg/kg	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	0.022	< 0.006	< 0.006
1,3-Dichloropropane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
2,2-Dichloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,2,3-Trichloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,2-Dibromoethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2-Dichloroethane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
2-Chlorotoluene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	1.079	< 0.003	< 0.003
4-Chlorotoluene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.399	< 0.003	< 0.003
1,1-Dichloropropene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
cis-1,3-Dichloropropene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
trans-1,3-Dichloropropene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Bromochloromethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Bromodichloromethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Dibromochloromethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Dichlorodifluoromethane	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Trichlorofluoromethane	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Hexachloro-1,3-butadiene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10	< 0.01	< 0.01	< 0.01	< 0.20
Benzene	mg/kg	45.401	0.114	5.025	0.027	< 0.003	0.005	< 0.003	< 0.003	< 0.003	< 0.003	0.04	0.089	0.004
Toluene	mg/kg	149.634	0.061	1.547	0.033	< 0.003	1.354	< 0.003	0.006	< 0.003	< 0.003	0.329	0.046	0.004
Ethylbenzene	mg/kg	0.718	< 0.003	3.718	0.014	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.197	0.026	< 0.003
p/m-Xylene	mg/kg	3.992	0.013	17.432	0.072	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.851	0.032	< 0.005
o-Xylene	mg/kg	1.768	0.025	13.58	0.049	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.544	0.036	< 0.003
Methyl-tert-butylether	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Total Xylenes	mg/kg	5.76	0.038	31.012	0.121	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	1.395	0.068	< 0.008
Sum Of BTEX	mg/kg	201.513	0.213	41.302	0.196									
Styrene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.009	< 0.003	< 0.003	< 0.003	< 0.003
1,2,4-Trimethylbenzene	mg/kg	1.925	0.11	2.509	0.022	< 0.006	0.016	< 0.006	< 0.006	< 0.006	< 0.006	0.662	0.009	< 0.006
1,3,5-Trimethylbenzene	mg/kg	4.66	0.533	4.683	0.027	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.661	0.008	< 0.003
Propylbenzene	mg/kg	< 0.004	0.027	1.165	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.089	< 0.004	< 0.004
Isopropylbenzene	mg/kg	< 0.003	0.015	1.298	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.094	< 0.003	< 0.003
n-Butylbenzene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.039	< 0.004	< 0.004
sec-Butylbenzene	mg/kg	< 0.004	0.072	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.026	< 0.004	< 0.004
tert-Butylbenzene	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
4-Isopropyltoluene	mg/kg	3.966	0.195	0.486	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.414	< 0.004	0.027
Naphthalene	mg/kg	3.83	0.25	1	< 0.027	0.196	0.041	< 0.027	0.06	2	0.97	1.906	0.26	3.66
Tentatively Identified Compound.														
Semi-volatile Organic Compounds, mg/kg														
1-Methyl Naphthalene	mg/kg													
Volatile Organic Compounds, mg/kg														
4-Isopropyltoluene	mg/kg													

	Location ID	BH506	BH507	BH507	BH509	BH510	BH510	BH511	BH511	BH511	BH512	BH512	TP101	TP101	TP101	TP102	TP102	TP102
	Sample Date	19-Oct-17	18-Oct-17	18-Oct-17	17-Oct-17	25-Oct-17	25-Oct-17	26-Oct-17	26-Oct-17	26-Oct-17	18-Oct-17	18-Oct-17	29-Jan-20	29-Jan-20	29-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	Depth	0.2 - 0.3 m	2.3 - 2.4 m	4.9 - 5 m	0.4 - 0.5 m	6.9 - 7 m	11.4 - 11.5 m	0.2 - 0.3 m	2.5 - 2.6 m	6.5 - 6.6 m	3.4 - 3.5 m	5.5 - 5.6 m	0.5 - 3 m	1 - 1.1 m	2.8 - 2.9 m	0.5 - 3 m	1 - 1.1 m	2.5 - 2.6 m
Analyte	**Unit**																	
>C12-C16 Aromatics	mg/kg	< 4	< 4	< 4	< 4	25	100	< 4	189	< 4	63	< 4	16	< 4	< 4	< 4	< 4	< 4
>C16-C21 Aromatics	mg/kg	< 7	< 7	< 7	28	23	216	< 7	1,016	< 7	106	< 7	127	< 7	59	< 7	< 7	< 7
>C21-C35 Aromatics	mg/kg	50	< 7	< 7	140	12	604	< 7	3,663	< 7	908	55	564	< 7	514	< 7	140	< 7
Total Aromatics C5-C35	mg/kg	50	< 19	< 19	168	65	936	< 19	4,908	< 19	1,110	55	707	< 19	573	< 19	140	< 19
>EC5-EC44 Aromatics	mg/kg	59	< 26	< 26	200	65	976	< 26	5,215	< 26	1,325	78	784	30	636	< 26	178	< 26
>EC35-EC44 Aromatics	mg/kg	9	< 7	< 7	32	< 7	40	< 7	307	< 7	215	23	77	30	63	< 7	38	< 7
Aliphatics/Aromatics C5-C35 (TPH)	mg/kg	50	38	< 38	346	65	1,061	< 38	9,923	< 38	2,046	83	762	< 38	1,142	< 38	422	< 38
>C5-C44 Aliphatics/Aromatics	mg/kg	59	< 52	< 52	391	65	1,101	< 52	10,320	< 52	2,302	106	839	< 52	1,221	< 52	481	< 52
Volatile Organic Compounds, mg/kg																		
Carbontetrachloride	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.020	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.072
Chloroform	mg/kg	< 0.003	0.028	< 0.003	0.058	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	0.028	< 0.003	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.26
Dichloromethane	mg/kg	0.08	< 0.03	< 0.03	0.11	< 0.03	< 0.03	< 0.15	< 0.03	< 0.03	0.08	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chloromethane	mg/kg	< 0.003	0.005	< 0.003	0.014	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	0.028	< 0.003	< 0.003	< 0.003	0.008	< 0.003	< 0.003	0.009
Bromoform	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Dibromomethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Bromomethane	mg/kg	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,1,1,2-Tetrachloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,1,2,2-Tetrachloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1,1-Trichloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,1,2-Trichloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,1-Dichloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Chloroethane	mg/kg	< 0.002	< 0.002	< 0.002	0.034	< 0.002	< 0.002	< 0.010	< 0.002	< 0.002	< 0.002	< 0.002	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Tetrachloroethene	mg/kg	< 0.003	0.02	< 0.003	0.136	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	0.011	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Trichloroethene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	0.014	0.005	< 0.015	< 0.003	< 0.003	0.028	< 0.003	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
cis-1,2-Dichloroethene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
trans-1,2-Dichloroethene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1-Dichloroethene	mg/kg	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.030	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Vinyl chloride	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.010	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,2,3-Trichlorobenzene	mg/kg	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.035	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
1,2,4-Trichlorobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.035	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	1.15	0.042	< 0.020	0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.020	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.061	< 0.01	< 0.020	0.056	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	0.134	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Bromobenzene	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.010	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,2-Dibromo-3-chloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.020	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,2-Dichloropropane	mg/kg	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.030	< 0.006	< 0.006	< 0.006	< 0.006	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,3-Dichloropropane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
2,2-Dichloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.020	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,2,3-Trichloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.020	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,2-Dibromoethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2-Dichloroethane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.020	< 0.004	< 0.004	< 0.004	< 0.004	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
2-Chlorotoluene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	0.038	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
4-Chlorotoluene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1-Dichloropropene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
cis-1,3-Dichloropropene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.020	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
trans-1,3-Dichloropropene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Bromochloromethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Bromodichloromethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Dibromochloromethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Dichlorodifluoromethane	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.010	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Trichlorofluoromethane	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.010	< 0.002	< 0.002	< 0.002	< 0.002	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Hexachloro-1,3-butadiene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.020	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04
Benzene	mg/kg	0.184	< 0.003	< 0.003	< 0.003	0.006	0.006	< 0.015	< 0.003	0.158	< 0.003	< 0.003	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	mg/kg	< 0.003	< 0.003	< 0.003	0.005	0.009	0.029	< 0.015	0.034	0.049	0.05	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.161
Ethylbenzene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	0.025	0.013	< 0.015	0.056	< 0.003	0.166	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
p/m-Xylene	mg/kg	0.006	< 0.005	< 0.005	< 0.005	0.014	0.052	< 0.025	0.038	< 0.005	3.889	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
o-Xylene	mg/kg	0.003	< 0.003	< 0.003	< 0.003	0.012	0.078	< 0.015	0.021	< 0.003	0.22	< 0.003	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Methyl-tert-butylether	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.010	< 0.002	< 0.002	< 0.002	< 0.002	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Total Xylenes	mg/kg	0.009	< 0.008	< 0.008	< 0.008	0.026	0.13	< 0.040	0.059	< 0.008	4.109	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
Sum Of BTEX	mg/kg																	
Styrene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.015	0.881	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.049
1,2,4-Trimethylbenzene	mg/kg	< 0.006	< 0.006	< 0.006	< 0.006	0.01	0.077	< 0.030	0.025	< 0.006	0.261	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
1,3,5-Trimethylbenzene	mg/kg	< 0.003	< 0.003	0.02	< 0.003	0.005	0.025	< 0.015	1.297	0.008	0.261	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	23.482
Propylbenzene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.005	< 0.020	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Isopropylbenzene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	0.005	0.004	< 0.015	0.025	< 0.003	0.25	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
n-Butylbenzene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.020	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
sec-Butylbenzene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.020	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
tert-Butylbenzene	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.025	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
4-Isopropyltoluene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.017	< 0.020	0.109	< 0.004	344.285	0.017	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Naphthalene	mg/kg	< 0.027	0.1	0.076	0.06	0.335	6.88	< 0.135	< 0.027	< 0.027	< 0.027	< 0.027	0.08	< 0.027	0.25	0.09	< 0.027	< 0.027
Tentatively Identified Compound.																		
Semi-volatile Organic Compounds, mg/kg																		
1-Methyl Naphthalene	mg/kg																	
Volatile Organic Compounds, mg/kg																		
4-Isopropyltoluene	mg/kg																	

	Location ID	TP103	TP103	TP103	TP104	TP104	TP104	TP105	TP105	TP105	TP106	TP106	TP106
	Sample Date	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20	30-Jan-20
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
	Depth	-	1.5 - 1.6 m	2.5 - 2.6 m	0.5 - 3 m	1 - 1.1 m	2.5 - 2.6 m	0.5 - 3 m	1 - 1.1 m	2.5 - 2.6 m	0.5 - 0.3 m	1 - 1.1 m	2 - 2.1 m
Analyte	**Unit**												
>C12-C16 Aromatics	mg/kg	69	56	330	< 4	< 4	< 4	< 4	9	< 4	< 4	< 4	< 4
>C16-C21 Aromatics	mg/kg	621	105	2,395	< 7	< 7	< 7	< 7	29	< 7	15	< 7	< 7
>C21-C35 Aromatics	mg/kg	790	382	2,740	< 7	< 7	< 7	< 7	246	165	90	< 7	< 7
Total Aromatics C5-C35	mg/kg	1,506	556	5,685	< 19	< 19	< 19	< 19	284	165	105	< 19	< 19
>EC5-EC44 Aromatics	mg/kg	1,578	633	6,048	< 26	< 26	< 26	< 26	356	202	139	< 26	< 26
>EC35-EC44 Aromatics	mg/kg	72	77	363	< 7	< 7	< 7	< 7	72	37	34	< 7	< 7
Aliphatics/Aromatics C5-C35 (TPH)	mg/kg	1,880	684	8,652	< 38	< 38	< 38	< 38	510	429	151	< 38	< 38
>C5-C44 Aliphatics/Aromatics	mg/kg	1,952	761	9,049	< 52	< 52	< 52	< 52	604	483	185	< 52	< 52
Volatile Organic Compounds, mg/kg													
Carbontetrachloride	mg/kg	0.21	0.4	0.159	0.025	0.017	0.02	< 0.004	< 0.004	0.009	0.456	0.378	0.452
Chloroform	mg/kg	0.244	0.196	0.256	< 0.005	< 0.005	< 0.005	0.012	0.022	0.022	0.267	0.41	0.229
Dichloromethane	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chloromethane	mg/kg	0.022	0.047	0.013	0.011	< 0.003	< 0.003	< 0.003	0.005	< 0.003	0.033	0.008	0.016
Bromoform	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Dibromomethane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Bromomethane	mg/kg	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,1,1,2-Tetrachloroethane	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,1,2,2-Tetrachloroethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1,1-Trichloroethane	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
1,1,2-Trichloroethane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,1-Dichloroethane	mg/kg	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Chloroethane	mg/kg	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Tetrachloroethene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Trichloroethene	mg/kg	< 0.005	< 0.005	< 0.005	0.02	0.023	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005
cis-1,2-Dichloroethene	mg/kg	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
trans-1,2-Dichloroethene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1-Dichloroethene	mg/kg	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Vinyl chloride	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,2,3-Trichlorobenzene	mg/kg	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007
1,2,4-Trichlorobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Bromobenzene	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,2-Dibromo-3-chloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,2-Dichloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,3-Dichloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
2,2-Dichloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,2,3-Trichloropropane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,2-Dibromoethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2-Dichloroethane	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
2-Chlorotoluene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
4-Chlorotoluene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1-Dichloropropene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
cis-1,3-Dichloropropene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
trans-1,3-Dichloropropene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Bromochloromethane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Bromodichloromethane	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Dibromochloromethane	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Dichlorodifluoromethane	mg/kg	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Trichlorofluoromethane	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Hexachloro-1,3-butadiene	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	< 0.005	0.007	< 0.005	0.009
Toluene	mg/kg	0.02	0.011	0.015	< 0.003	0.006	0.008	< 0.003	0.005	< 0.003	0.016	< 0.003	0.008
Ethylbenzene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
p/m-Xylene	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.009	< 0.005	< 0.005	< 0.005	< 0.005
o-Xylene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.006	< 0.004	< 0.004	< 0.004	< 0.004
Methyl-tert-butylether	mg/kg	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Total Xylenes	mg/kg	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	0.015	< 0.008	< 0.008	< 0.008	< 0.008
Sum Of BTEX	mg/kg												
Styrene	mg/kg	< 0.003	< 0.003	0.102	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2,4-Trimethylbenzene	mg/kg	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
1,3,5-Trimethylbenzene	mg/kg	0.404	< 0.003	0.33	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Propylbenzene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Isopropylbenzene	mg/kg	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
n-Butylbenzene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
sec-Butylbenzene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
tert-Butylbenzene	mg/kg	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
4-Isopropyltoluene	mg/kg	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Naphthalene	mg/kg	0.68	1.08	0.24	0.1	0.07	0.06	0.04	0.05	0.08	0.19	0.15	0.09
Tentatively Identified Compound.													
Semi-volatile Organic Compounds, mg/kg													
1-Methyl Naphthalene	mg/kg	2.7	2									0.4	
Volatile Organic Compounds, mg/kg													
4-Isopropyltoluene	mg/kg			2.6									

Notes:
< = Compound not detected at
concentrations
above the laboratory reporting
detection limit.
The laboratory reporting detection
limit is shown.
Empty cells = Not analyzed
Units are in mg/kg = milligrams per kilogram
m = metre

analyses performed by Exova Jones Environmental, Element Materials Technology.

APPENDIX C GROUNDWATER DQRA

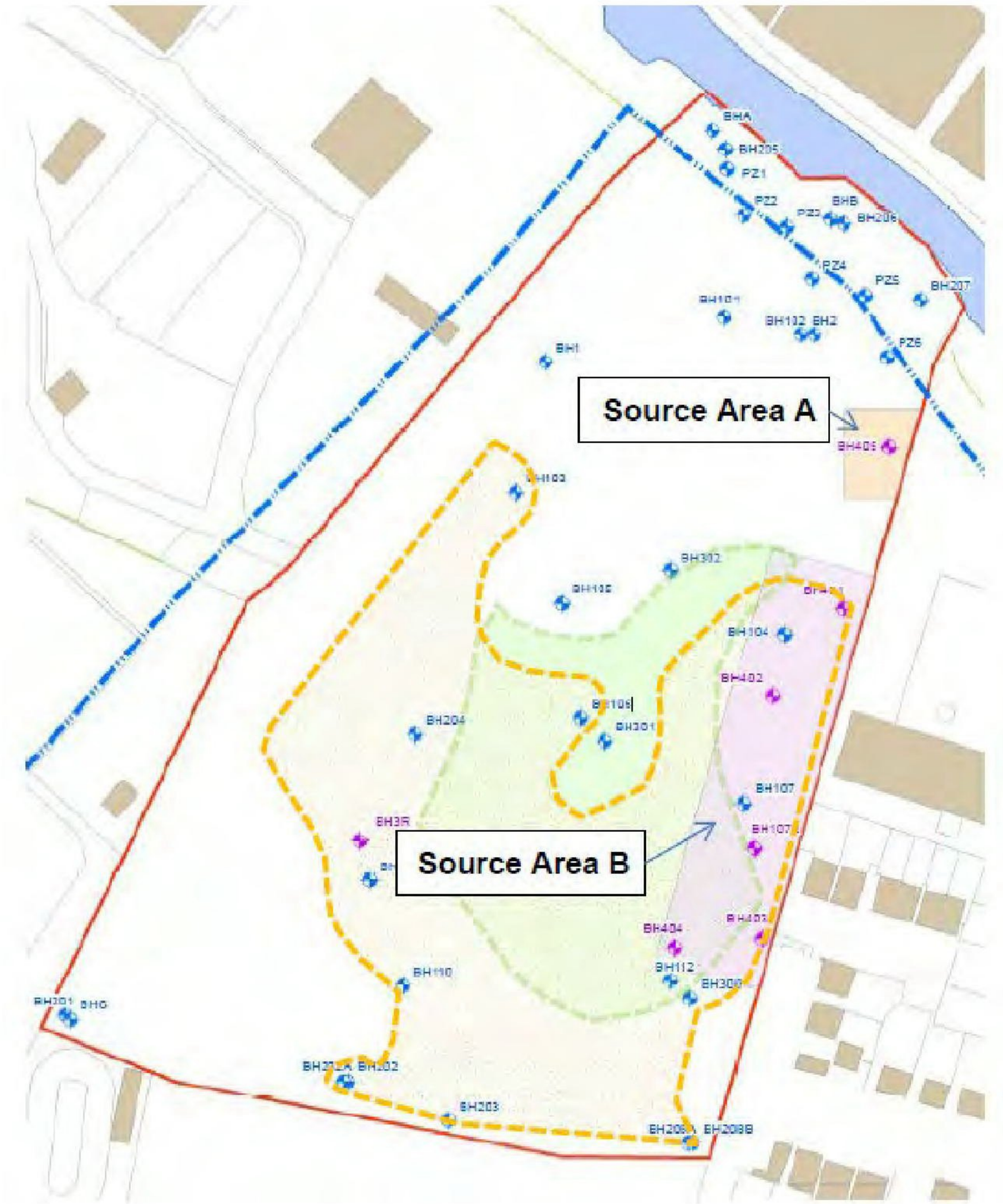
C1.1 Overview & Rationale of the DQRA process

The Detailed Quantitative Risk Assessment (DQRA) has been updated using data from the latest set of groundwater sampling from the six locations along the eastern site boundary. The previous DQRA utilised data mainly from the centre of the site (due to the location of monitoring locations at the time of the work); as the key driver for this phase of work is to assess the level of risk of contamination migrating across the eastern site boundary the DQRA process used only the data obtained from the new wells installed in this area of the site.

The approach used for the (DQRA) is consistent with the approach utilised in the previous assessment in 2014; probabilistic outputs from the models have been used rather than the deterministic outputs as they are considered to greater reflect the 'real world' input parameters as the calculations includes variations either side of the inputted values rather than simply using the input value as an absolute.

The source areas used in the DQRA are shown in Box C1.1, below

Box C1.1 DQRA Source Areas



Notes: Orange shading=Source Area A; Purple shading=Source Area B. Green shading represents the modelled extent of Espley beds with a thickness greater than 1m. Yellow shading represents the sands and gravels in the made ground with a modelled thickness of greater than 1m.

It should be noted that data from BH405 was placed in a separate source area for this DQRA as the inferred groundwater flow directions (as shown in *Box C1.1* in *Section C1.3.1*) indicate that any contamination present at this location would flow to the north rather than to the east. The table below provides a summary of the source areas.

Table C1.1 Summary of 2015 DQRA Source Areas

Area	Description	Receptors	Data included
A	Groundwater flows to the north in the northern part of the site via clays	Canal; River Tame	BH405
B	Groundwater flows to east via the Espley beds / made ground sands and gravels	Canal; River Tame	BH401, 402, 403, 404 and BH107R.

It should be noted that canal itself is not considered to be a receptor for contaminated groundwater; this is due to the presence of a clay liner to aid the retention of the waters within the canal. Therefore, it is considered that groundwater will preferentially migrate via higher permeability deposits, and not through the clay and into the canal. However, as a conservative approach to the DQRA, the canal was retained in the assessment.

C1.2 Results of DQRA

The results of the DQRA for the sources areas described above are summarised in the following sections.

C1.2.1 Source Area A – Groundwater Flow to North

The geology and hydrogeology in the northern part of the site indicate that groundwater flows to the north through clay deposits towards the canal.

Source Area A – Stage 1

The DQRA model predicts that the only risk posed to the canal is from cyanide; however, the model indicates that the likely travel time from the location used (BH405) is >1,000 years. This is consistent with the findings of the DQRA run for the northern part of the site in 2014.

Source Area A – Stage 2

Cyanide does not persist above the GAC greater than 60 metres from the source; therefore, it is not considered to be a risk to the River Tame which is located 500m from the site.

C1.2.2 Source Area B – Groundwater Flow to East

The geology and hydrogeology in the central and eastern part of the site indicate that groundwater flows to the east through sand and gravels deposits and potentially towards the canal via the former basin.

Source Area B – Stage 1

This stage of the DQRA assumes that contamination in the groundwater is travelling the entire distance to the canal basin via sand and gravels (55m); the table below provides a summary of analytes which the model predicts will result in an impact to the canal basin.

Source Area B – Stage 2

This stage of the assessment process has been run for the analytes modelled which present a risk to the canal basin (i.e. in Stage 1 above); for this stage of the assessment it is considered that the geological flow pathway between the canal basin and the River is composed of cohesive deposits. This is considered to be a realistic assumption as it is unlikely that the Espley beds would form a continuous layer for the entire distance to the River.

Table C1.2 Summary of Modelled Impacts to Canal Basin - Source Area B

Analytes	Stage 1		Stage 2	
	Predicted Travel Time to Canal Basin (years)	Modelled Concentration at Canal Basin (µg/l)	Predicted Extent of Impact beyond Canal Basin (m)	Considered Risk to River?
Total Petroleum Hydrocarbons (C5-C35)	1	257	305	No
Boron	50	2022.45	395	No
Cyanide	50	1.01	125	No
Chloroform	1	12.13	1	No
Dichloromethane	1	20.2	355	No
Isopropylbenzene	1	22.2	395	No
Trichloroethene	1	10.1	395	No
4-Methyphenol	2	101	1	No
Phenol	1	127.83	235	No

C1.2.3 DQRA Summary

Source Area A

The DQRA indicates that for Source Area A (northern part of the site) there is a modelled risk to the canal for concentrations of cyanide. However, the predicted time for impact to be observed is >1,000 years. It should be noted that the guidance document '*Remedial Targets Methodology, Hydrogeological Risk Assessment for Land Contamination, Environment Agency, 2006*'suggests that no remedial action will be required where the remedial target is exceeded at the receptor but the impact of the contamination is localised around the source and travel times to the receptor exceed 1,000 years; therefore, this predicted risk is not considered to be significant. When the model is advanced to the River Tame this risk does not persist.

Source Area B

The DQRA for Source Area B indicates that there is a modelled risk to the canal from TPH C5-C35, boron, cyanide, chloroform, dichloromethane, isopropylbenzene, trichloroethene, 4-methylphenol and phenol. A second stage of the model process was undertaken which used the simulated concentration at the canal from DQRA Stage 1 and applied a flow pathway via cohesive materials to the River Tame, this indicated that for the contaminants detailed above that there was no longer a predicted risk to the River Tame.

APPENDIX D GROUNDWATER DERIVED VAPOURS RISK ASSESSMENT

- Borehole
- Gas well
- Monitoring Well
- Piezometer

0 10 20 30 40 50
Metres

N

SCALE: See Scale Bar	VERSION: A02
SIZE: A4	DRAWN: OB
PROJECT: 0531663	CHECKED: PN
DATE: 20/02/2020	APPROVED: PH

Borehole Location Plan

ERM

SOLVAY Way
doing business, being responsible

PROJECTION: British National Grid

SOURCE: Reproduced from Ordnance Survey digital map data. © Crown copyright, All rights reserved. 2020 License number 0100031673.

Path: P:\Projects\0531663 Consolidated Solvay Solvay Gower Tip Planning.PH\GIS\MAPS\0531663_Gower_BHPlan.A02.mxd

Analyte	Unit	Location ID	BH1	BH1	BH102	BH102	BH104	BH107R	BH108	BH108	BH110	BH2	BH2	BH202	BH204	BH205	BH206	BH207	BH208A	BH208A	BH208B	BH300	BH301	BH301	BH302	BH401	BH401	BH402	BH403	BH403	BH404
		Sample Date	07-Aug-14	23-Mar-18	04-Aug-14	23-Mar-18	07-Aug-14	13-Jul-15	07-Aug-14	23-Mar-18	23-Mar-18	04-Aug-14	23-Mar-18	07-Aug-14	07-Aug-14	04-Aug-14	04-Aug-14	04-Aug-14	07-Aug-14	23-Mar-18	07-Aug-14	07-Aug-14	07-Aug-14	23-Mar-18	07-Aug-14	13-Jul-15	23-Mar-18	13-Jul-15	13-Jul-15	23-Mar-18	13-Jul-15
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Depth	9 - 30 m	-	1 - 4.7 m	-	2.6 - 9.6 m	-	1 - 6 m	-	-	4 - 12 m	-	1 - 6 m	1 - 6 m	0.5 - 4 m	0.8 - 3.3 m	0.7 - 3.2 m	6 - 7 m	-	0.5 - 4.7 m	3 - 8.7 m	3 - 8.8 m	-	3 - 10.5 m	-	-	-	-	-	-
		GOWERTIP_SSAC_GW_VAPOUR																													
Gower Tip SSAC Analytes, Dissolved, mg/l																															
Boron	mg/l	NS	1.165	0.993		0.901	7.419	8.664	2.6	2.769	0.762		0.087		3.4				0.368	0.486	3.375	4.829	6.93	7.717	2.96	3.386	3.665	7.505	2.612	2.326	3.808
Arsenic	mg/l	NS	< 0.0025	0.0365	0.0167	0.0542	0.0244	0.048	0.0026	0.0067	0.0188	< 0.0025	0.0254		0.0091	0.1896	0.0146	0.0359	0.0601	0.0766	0.0071	0.0524	0.0102	< 0.0009	0.0252	0.1803	0.0454	< 0.0025	0.0408	0.0181	0.0205
Gower Tip SSAC Analytes, mg/l																															
>C6-C8 Aliphatics	mg/l	NRP	< 0.005	0.018	< 0.005	< 0.01	0.123	1.66	0.411	0.391	0.031	< 0.005	< 0.01		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.01	< 0.005	< 0.005	0.129	0.098	0.948	< 0.005	< 0.01	< 0.005	1.315	0.495	18.054
>C8-C10 Aliphatics	mg/l	NRP	< 0.005	0.013	< 0.005	< 0.01	0.169	0.451	0.169	0.321	0.036	< 0.005	< 0.01		0.084	< 0.005	< 0.005	< 0.005	< 0.005	< 0.01	0.007	< 0.005	0.164	0.078	0.401	< 0.005	0.013	< 0.005	2.574	0.415	0.354
>C10-C12 Aliphatics	mg/l	NRP	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.015	0.013	< 0.005	< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.017	< 0.005	< 0.005	< 0.005	0.116	0.22	0.032
>C12-C16 Aliphatics	mg/l	NRP	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.27	< 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	< 0.01
>C16-C35 Aliphatics	mg/l	NRP	< 0.01	0.04	< 0.01	< 0.01	< 0.01	1.28	< 0.01	< 0.01	27.51	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.18	< 0.01	1.43	< 0.01	< 0.01	< 0.01	1.09	1.43	< 0.01
>C5-EC7 Aromatics	mg/l	NRP	< 0.005	< 0.01	< 0.005	< 0.01	0.099	2.265	0.033	< 0.01	< 0.01	< 0.005	< 0.01		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.01	< 0.005	< 0.005	0.015	< 0.01	0.207	< 0.005	< 0.01	< 0.005	2.897	2.194	0.154
>C7-C8 Aromatics	mg/l	NRP	< 0.005	< 0.01	< 0.005	< 0.01	0.02	3.068	0.005	< 0.01	< 0.01	< 0.005	< 0.01		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.01	< 0.005	< 0.005	< 0.005	< 0.01	0.044	< 0.005	< 0.01	< 0.005	0.559	0.088	0.084
>C8-C10 Aromatics	mg/l	46.37	< 0.005	< 0.01	< 0.005	< 0.01	0.038	0.062	0.108	0.128	0.01	< 0.005	< 0.01		0.046	< 0.005	< 0.005	< 0.005	< 0.005	< 0.01	0.012	< 0.005	0.049	0.044	0.123	< 0.005	< 0.01	< 0.005	0.459	0.264	0.336
>C10-C12 Aromatics	mg/l	NRP	< 0.005	< 0.005	0.047	0.069	< 0.005	0.157	0.187	< 0.005	0.035	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	0.009	< 0.005	< 0.005	< 0.005	< 0.005	0.064	0.125	0.106	0.047	< 0.005	< 0.005	0.604	0.634	4.83
>C12-C16 Aromatics	mg/l	NRP	< 0.01	0.02	0.05	0.06	< 0.01	0.15	0.53	< 0.01	0.24	< 0.01	0.11		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.14	0.19	0.11	< 0.01	< 0.01	< 0.01	0.31	0.2	0.3
>C16-C21 Aromatics	mg/l	NRP	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.2	< 0.01	< 0.01	2.06	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.2	< 0.01	< 0.01	< 0.01	0.2	0.16	2.38
>C21-C35 Aromatics	mg/l	NRP	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.23	< 0.01	< 0.01	10.4	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.61	< 0.01	< 0.01	< 0.01	0.61	0.57	2.4
Benzene	mg/l	9.7	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0728	2.9388	0.0026	0.0033	0.0019	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0043	0.0054	0.121	< 0.0005	< 0.0005	0.0024	3.5943	1.9414	0.2035
Ethylbenzene	mg/l	NRP	< 0.0005	< 0.001	< 0.0005	< 0.001	0.0034	0.0034	0.012	0.017	0.001	< 0.0005	< 0.001	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.0005	< 0.0005	0.0022	0.003	0.0008	< 0.0005	< 0.001	< 0.0005	0.0991	0.022	0.0548
Toluene	mg/l	NRP	< 0.0005	< 0.005	< 0.0005	< 0.005	0.013	4.0509	0.0048	0.009	< 0.005	< 0.0005	< 0.005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.005	< 0.0005	< 0.0005	0.0037	< 0.005	0.0175	< 0.0005	< 0.005	< 0.0005	0.9413	0.093	0.2233
Total Xylenes	mg/l	192.09	< 0.0015	< 0.003	< 0.0015	< 0.003	0.0082	0.0178	0.013	0.03	0.006	< 0.0015	< 0.003	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.003	< 0.0015	< 0.0015	0.0117	0.01	0.0066	0.0025	< 0.003	< 0.0015	0.7356	0.165	0.4066
Tetrachloroethene	mg/l	6.71	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Trichloroethene	mg/l	1.1	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.036	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	< 0.003	0.015	0.007	0.022
1,1-Dichloroethene	mg/l	3.52	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
cis-1,2-Dichloroethene	mg/l	7.06	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.012	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.014	< 0.003	< 0.003	0.043	< 0.003	< 0.003	< 0.003	0.079	0.051	< 0.003
trans-1,2-Dichloroethene	mg/l	3.4	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Vinyl chloride	mg/l	0.01	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0025	< 0.0001	< 0.0001	0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0004	< 0.0001
Hexachloroethane	mg/l	1.6	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.01	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,1,1,2-Tetrachloroethane	mg/l	4.18	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,1,2,2-Tetrachloroethane	mg/l	12.75	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,1,1-Trichloroethane	mg/l	68.87	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,1,2-Trichloroethane	mg/l	6.04	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,1-Dichloroethane	mg/l	40.65	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2-Dichloroethane	mg/l	0.35	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Chloroethane	mg/l	206.31	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.009
Hexachlorobenzene	mg/l	NRP	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.01	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,2,3-Trichlorobenzene	mg/l	15.22	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2,4-Trichlorobenzene	mg/l	13.62	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.01	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,4-Dichlorobenzene	mg/l	NRP	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.022	0.022	0.031	< 0.01	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.024	< 0.003	< 0.003	< 0.003	0.065	0.006	0.051
1,3-Dichlorobenzene	mg/l	0.59	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.01	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2-Dichlorobenzene	mg/l	51.15	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.087	0.134	0.15	0.01	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.006	< 0.003	< 0.003	0.013	0.009	0.111	< 0.003	< 0.003	< 0.003	0.237	0.025	0.267
Chlorobenzene	mg/l	60.65	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.117	0.134	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Carbontetrachloride	mg/l	0.12	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Chloroform	mg/l	16.77	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.988	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01	< 0.002	< 0.002	< 0.002	< 0.002	0.043	< 0.002	< 0.002	< 0.002	0.132	0.038	0.605
Dichloromethane	mg/l	52.48	< 0.003	< 0.005	< 0.003	< 0.005	< 0.003	0.067	< 0.003	< 0.005	< 0.005	< 0.003	< 0.005	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.005	< 0.003	< 0.003	< 0.003	< 0.005	< 0.003	< 0.003	< 0.005	< 0.003	< 0.003	< 0.005	0.016
Chloromethane	mg/l	0.09	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.005
1,2,3-Trichloropropane	mg/l	0.16	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2-Dichloropropane	mg/l	0.51	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.004	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,3-Dichloropropane	mg/l	5.82	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
2,2-Dichloropropane	mg/l	0.25	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,1-Dichloropropene	mg/l	0.03	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Acetone	mg/l	52,407.77		< 0.05		< 0.05				< 0.05	< 0.05		< 0.05							< 0.05				< 0.05			< 0.05			0.163	
Bromobenzene	mg/l	16.12	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Bromochloromethane	mg/l	646.94	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Bromodichloromethane	mg/l	0.05	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Bromoform	mg/l	40.06	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Bromomethane	mg/l	0.21	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
n-Butylbenzene	mg/l	NRP	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.315	0.005	< 0.003
sec-Butylbenzene	mg/l	NRP	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.005	< 0.003
tert-Butylbenzene	mg/l	NRP	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
2-Chlorotoluene	mg/l	11.82	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.004	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
4-Chlorotoluene	mg/l	11.94	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Isopropylbenzene	mg/l	NRP	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.004	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.081	0.01	0.005
1,2-Dibromo-3-chloropropane	mg/l	0.0013	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Dibromochloromethane	mg/l	6.98	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,2-Dibromoethane	mg/l	0.01	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Dibromomethane	mg/l	1.19	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Dichlorodifluoromethane	mg/l	0.13	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
4-Isopropyltoluene	mg/l	21.93	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.129	0.009	< 0.003
Methanol	mg/l	84,053.62		< 0.5		< 0.5				< 0.5	< 0.5		< 0.5							< 0.5				< 0.5			< 0.5			1.206	
Propylbenzene	mg/l	NRP	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.166	0.019	< 0.003
Styrene	mg/l	NRP	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Trichlorofluoromethane	mg/l	5.53	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003

Analyte	Unit	Location ID Sample Date Sample Type Depth GOWERTIP_SSAC_GW_VAPOUR	BH1 07-Aug-14 N 9 - 30 m	BH1 23-Mar-18 N -	BH102 04-Aug-14 N 1 - 4.7 m	BH102 23-Mar-18 N -	BH104 07-Aug-14 N 2.6 - 9.6 m	BH107R 13-Jul-15 N -	BH108 07-Aug-14 N 1 - 6 m	BH108 23-Mar-18 N -	BH110 23-Mar-18 N -	BH2 04-Aug-14 N 4 - 12 m	BH2 23-Mar-18 N -	BH202 07-Aug-14 N 1 - 6 m	BH204 07-Aug-14 N 1 - 6 m	BH205 04-Aug-14 N 0.5 - 4 m	BH206 04-Aug-14 N 0.8 - 3.3 m	BH207 04-Aug-14 N 0.7 - 3.2 m	BH208A 07-Aug-14 N 6 - 7 m	BH208A 23-Mar-18 N -	BH208B 07-Aug-14 N 0.5 - 4.7 m	BH300 07-Aug-14 N 3 - 8.7 m	BH301 07-Aug-14 N 3 - 8.8 m	BH301 23-Mar-18 N -	BH302 07-Aug-14 N 3 - 10.5 m	BH401 13-Jul-15 N -	BH401 23-Mar-18 N -	BH402 13-Jul-15 N -	BH403 13-Jul-15 N -	BH403 23-Mar-18 N -	BH404 13-Jul-15 N -
1,2,4-Trimethylbenzene	mg/l	NRP	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.004	0.005	0.006	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	1.457	0.221	0.009
1,3,5-Trimethylbenzene	mg/l	44.2	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.011	0.007	< 0.003	0.004	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.555	0.064	0.014
Methyl-tert-butylether	mg/l	1,273.99	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0015	< 0.0001	< 0.0001	< 0.0001	0.0016
Naphthalene	mg/l	17.1	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.003	< 0.002	< 0.002	< 0.01	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01	< 0.002	0.006	< 0.002	< 0.002	< 0.002	0.072	0.009	< 0.002
4-Chloro-3-methylphenol	mg/l	295.42	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0050	< 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	< 0.0005
2-Chlorophenol	mg/l	115.79	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.01	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
2-Methylphenol	mg/l	9,374.04	< 0.01	< 0.0005	< 0.01	< 0.0005	0.33	0.1128	0.02	0.0031	< 0.0050	< 0.01	< 0.0005	< 0.01	< 0.2	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0005	< 0.01	< 0.2	0.1	0.0357	1.27	0.02	< 0.0005	0.2	0.85	0.4995	4.39
4-methylphenol	mg/l	27,067.02	< 0.001	1.251	< 0.001	< 0.001	0.052	0.275	< 0.001	< 0.001	< 0.01	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.03	< 0.001	0.417	< 0.001	< 0.001	< 0.001	< 0.001	0.064	< 0.001	4.366
2,4-Dichlorophenol	mg/l	147.48	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0050	< 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	< 0.0005
2,4-Dimethylphenol	mg/l	2,102.46	< 0.001	< 0.001	< 0.001	< 0.001	0.148	0.139	0.028	0.096	0.022	< 0.001	< 0.001		0.006	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.207	0.161	0.768	< 0.001	< 0.001	< 0.001	0.002	0.666	0.98	0.024
2-Nitrophenol	mg/l	50.83	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0050	< 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	< 0.0005
4-Nitrophenol	mg/l	2,347.14	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 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	< 0.01	< 0.01
Pentachlorophenol	mg/l	NRP	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.004	< 0.01	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Phenol	mg/l	1,911.65	0.13	0.1526	0.27	0.0022	18.56	17.12	0.66	0.5003	8.9026	< 0.01	< 0.001	< 0.01	1.27	< 0.01	< 0.01	< 0.01	< 0.01	< 0.001	0.13	5.87	1.91	1.5718	0.28	9.2	3.3766	20.21	12.2	3.6844	158.98
Resorcinol	mg/l	NRP	< 0.01	< 0.0005	< 0.01	< 0.0005	< 0.01	< 0.01	< 0.01	< 0.0005	< 0.0005	< 0.01	< 0.0005	0.04	< 0.2	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0005	< 0.01	< 0.2	< 0.01	< 0.0005	< 0.01	< 0.01	< 0.0005	0.35	0.07	< 0.0005	< 1
2,4,5-Trichlorophenol	mg/l	NRP	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0050	< 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	< 0.0005
2,4,6-Trichlorophenol	mg/l	NRP	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.01	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Hydrogen Sulphide	mg/l	**0.09**		**60**		< 0.1				**4.3**	**60**		< 0.1							< 0.1				**4.9**			< 0.1				
Malathion	mg/l	NRP		< 0.00002		< 0.00002				< 0.00050	< 0.00050		< 0.00002							< 0.00001				< 0.00050			< 0.00001			< 0.00050	
n-butyl alcohol	mg/l	2,552.15		< 0.1		< 0.1				< 0.1	< 0.1		< 0.1							< 0.1				< 0.1			< 0.1			< 0.1	
Cyclohexane	mg/l	NRP		< 0.05		< 0.05				< 0.05	< 0.05		< 0.05							< 0.05				< 0.05			< 0.05			< 0.05	
Free cyanide	mg/l	NS						0.01																			< 0.01		< 0.01	< 0.01		< 0.01
Complex Cyanide	mg/l	NS						0.693																			0.397		1.041	0.339		2.123
Tentatively Identified Compound.																																
Gower Tip SSAC Analytes, mg/l																																
2,6-Dimethylphenol	mg/l	31.77																							0.102							
3,4-Dimethylphenol	mg/l	803.71																														
Tributyl phosphate	mg/l	NS								0.765																						

Notes:
< = Compound not detected at concentrations above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.
Empty cells = Not analyzed
NS = No Standard due to non-volatile nature of substance.
NRP = No Risk Predicted since the sum of Hazard Quotients at the boundary limits is less than 1.
Units are in mg/l = milligrams per litre
m = metre
All analyses performed by Exova Jones Environmental.

GOWERTIP_SSAC_GW_VAPOUR = .

Appendix B - Groundwater Vapour Summary
Gower Tip Facility
Oldbury

Analyte	Unit	Location ID	BH404	BH405	BH405	BH502	BH502	BH503	BH503	BH504	BH504	BH505	BH505	BH506	BH506	BH508	BH508	BH509	BH510	BH510	BH511	BH511	BH512	BH512	BHA	BHB	BHC	GS1	GS2	GS3
		Sample Date	23-Mar-18	13-Jul-15	23-Mar-18	08-Nov-17	23-Mar-18	08-Nov-17	23-Mar-18	08-Nov-17	23-Mar-18	08-Nov-17	23-Mar-18	08-Nov-17	23-Mar-18	08-Nov-17	23-Mar-18	08-Nov-17	08-Nov-17	23-Mar-18	08-Nov-17	23-Mar-18	08-Nov-17	23-Mar-18	04-Aug-14	04-Aug-14	07-Aug-14	04-Nov-16	04-Nov-16	04-Nov-16
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Depth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5 - 4 m	0.5 - 4 m	0.5 - 4 m	-	-	-
		GOWERTIP_SSAC_GW_VAPOUR																												
Gower Tip SSAC Analytes, Dissolved, mg/l																														
Boron	mg/l	NS	4.776	4.008	4.294	3.783	3.158	4.466	5.978	8.14	7.905	2.943	2.531	2.68	2.736	2.123	1.344	4.292	6.88	7.574	6.984	8.357	0.557	0.767						
Arsenic	mg/l	NS	< 0.0009	0.0135	0.1328	< 0.0009	< 0.0009	0.0399	0.0123	< 0.0009	0.0023	0.0055	0.0336	< 0.0009	0.0032	0.0169	0.0638	0.0373	0.0253	0.0260	0.0038	0.0032	0.0147	0.5829	0.157	< 0.0025				
Gower Tip SSAC Analytes, mg/l																														
>C6-C8 Aliphatics	mg/l	NRP	3.277	< 0.005	< 0.01	0.205	0.135	0.068	0.258	< 0.01	0.024	< 0.01	< 0.01	< 0.01	0.024	< 0.01	0.022	0.304	0.106	0.075	0.189	0.144	< 0.01	< 0.01	< 0.005	< 0.005	< 0.005	0.032	< 0.005	0.031
>C8-C10 Aliphatics	mg/l	NRP	11.002	< 0.005	< 0.01	0.087	0.036	0.398	0.154	0.049	0.065	< 0.01	< 0.01	0.011	0.036	0.041	0.049	0.283	0.169	0.068	0.146	0.154	< 0.01	0.025	< 0.005	< 0.005	< 0.005	0.055	< 0.005	0.07
>C10-C12 Aliphatics	mg/l	NRP	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
>C12-C16 Aliphatics	mg/l	NRP	< 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	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C16-C35 Aliphatics	mg/l	NRP	< 0.01	< 0.01	< 0.01	0.12	< 0.01	1.14	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.51	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	2.17	0.53	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	8.28	3.03	< 0.01
>C5-EC7 Aromatics	mg/l	NRP	0.122	< 0.005	< 0.01	0.048	0.094	0.014	0.021	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.025	< 0.01	< 0.01	0.383	0.375	< 0.01	< 0.01	< 0.005	< 0.005	< 0.005	0.023	< 0.005	0.152
>C7-C8 Aromatics	mg/l	NRP	0.151	< 0.005	< 0.01	0.182	0.223	0.02	0.011	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.058	0.014	< 0.01	0.081	0.011	< 0.01	< 0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.023
>C8-C10 Aromatics	mg/l	46.37	0.564	< 0.005	< 0.01	0.017	0.019	0.069	0.046	0.03	0.037	< 0.01	< 0.01	0.029	0.028	0.051	0.035	0.048	0.063	0.037	0.057	0.038	< 0.01	< 0.01	< 0.005	< 0.005	< 0.005	0.044	< 0.005	0.014
>C10-C12 Aromatics	mg/l	NRP	31.915	< 0.005	< 0.005	0.071	0.102	0.073	0.106	0.059	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.737	0.874	0.264	0.046	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.054	0.025	0.048
>C12-C16 Aromatics	mg/l	NRP	0.33	< 0.01	< 0.01	0.19	0.2	0.02	0.06	0.08	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	4.42	1.1	0.42	0.09	0.06	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.07	0.06	0.07
>C16-C21 Aromatics	mg/l	NRP	0.07	< 0.01	< 0.01	0.09	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	3.51	0.12	0.07	0.41	0.21	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.25	0.27	< 0.01
>C21-C35 Aromatics	mg/l	NRP	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.33	< 0.01	< 0.01	< 0.01	1.89	< 0.01	< 0.01	0.87	0.39	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	3.99	1.47	< 0.01
Benzene	mg/l	9.7	0.1097	0.0057	< 0.0005	0.0580	0.0983	0.0142	0.0281	0.0020	0.0029	< 0.0005	< 0.0005	0.0013	0.0014	0.0006	< 0.0005	0.0366	0.0060	0.0031	0.4250	0.4223	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0339	< 0.0005	0.2245
Ethylbenzene	mg/l	NRP	0.067	< 0.0005	< 0.001	0.002	0.001	0.006	0.003	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.008	0.004	0.002	0.001	0.002	< 0.001	< 0.001	< 0.0005	< 0.0005	< 0.0005	0.0009	< 0.0005	0.0029
Toluene	mg/l	NRP	0.155	0.0058	< 0.005	0.214	0.24	0.021	0.013	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.063	0.015	0.009	0.087	0.009	< 0.005	< 0.005	< 0.0005	< 0.0005	0.02	< 0.005	< 0.005	0.035
Total Xylenes	mg/l	192.09	0.452	0.0049	< 0.003	0.01	0.008	0.041	0.02	0.003	0.008	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.033	0.019	0.013	< 0.003	< 0.003	< 0.003	< 0.003	< 0.0015	< 0.0015	< 0.0015	0.0019	< 0.0015	0.0044
Tetrachloroethene	mg/l	6.71	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Trichloroethene	mg/l	1.1	0.007	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.004	0.007	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,1-Dichloroethene	mg/l	3.52	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
cis-1,2-Dichloroethene	mg/l	7.06	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.005	< 0.003	0.016
trans-1,2-Dichloroethene	mg/l	3.4	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Vinyl chloride	mg/l	0.01	0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	0.0006	0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	< 0.0001	0.0001
Hexachloroethane	mg/l	1.6	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.1	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
1,1,1,2-Tetrachloroethane	mg/l	4.18	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,1,2,2-Tetrachloroethane	mg/l	12.75	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
1,1,1-Trichloroethane	mg/l	68.87	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,1-Dichloroethane	mg/l	40.65	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2-Dichloroethane	mg/l	0.35	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Chloroethane	mg/l	206.31	0.118	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Hexachlorobenzene	mg/l	NRP	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.1	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
1,2,3-Trichlorobenzene	mg/l	15.22	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2,4-Trichlorobenzene	mg/l	13.62	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.05	< 0.1	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,4-Dichlorobenzene	mg/l	NRP	0.066	< 0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.05	< 0.1	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,3-Dichlorobenzene	mg/l	0.59	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.05	< 0.1	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2-Dichlorobenzene	mg/l	51.15	0.397	< 0.003	< 0.003	0.01	0.004	0.033	0.013	0.003	0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.05	< 0.1	0.004	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.023	0.005	0.003
Chlorobenzene	mg/l	60.65	0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.005	< 0.002	< 0.002	< 0.002	< 0.002	0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Carbontetrachloride	mg/l	0.12	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Chloroform	mg/l	16.77	0.069	< 0.002	< 0.002	0.007	< 0.002	0.006	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.017	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.054
Dichloromethane	mg/l	52.48	< 0.005	< 0.003	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Chloromethane	mg/l	0.09	0.038	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.013	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2,3-Trichloropropane	mg/l	0.16	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.008	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.027	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2-Dichloropropane	mg/l	0.51	< 0.002	< 0.002	< 0.002	0.007	< 0.002	0.084	0.093	0.008	0.013	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.006	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,3-Dichloropropane	mg/l	5.82	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
2,2-Dichloropropane	mg/l	0.25	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
1,1-Dichloropropene	mg/l	0.03	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Acetone	mg/l	52,407.77	3.595		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05			< 0.05		1.815		< 0.05						
Bromobenzene	mg/l	16.12	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Bromochloromethane	mg/l	646.94	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Bromodichloromethane	mg/l	0.05	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Bromoform	mg/l	40.06	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Bromomethane	mg/l	0.21	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
n-Butylbenzene	mg/l	NRP	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
sec-Butylbenzene	mg/l	NRP	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
tert-Butylbenzene	mg/l	NRP	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
2-Chlorotoluene	mg/l	11.82	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
4-Chlorotoluene	mg/l	11.94	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Isopropylbenzene	mg/l	NRP	0.008	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,2-Dibromo-3-chloropropane	mg/l	0.0013	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Dibromochloromethane	mg/l	6.98	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
1,2-Dibromoethane	mg/l	0.01	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Dibromomethane	mg/l	1.19	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Dichlorodifluoromethane	mg/l	0.13	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
4-Isopropyltoluene	mg/l	21.93	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.004	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.006
Methanol	mg/l	84,053.62	6.098		< 0.5		< 0.5		< 0.5		< 0.5		< 0.5		< 0.5		< 0.5			< 0.5		< 0.5		< 0.5						
Propylbenzene	mg/l	NRP	0.006	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Styrene	mg/l	NRP	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Trichlorofluoromethane	mg/l	5.53	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003

Analyte	Unit	Location ID Sample Date Sample Type Depth GOWERTIP_SSAC_GW_VAPOUR	BH404 23-Mar-18 N -	BH405 13-Jul-15 N -	BH405 23-Mar-18 N -	BH502 08-Nov-17 N -	BH502 23-Mar-18 N -	BH503 08-Nov-17 N -	BH503 23-Mar-18 N -	BH504 08-Nov-17 N -	BH504 23-Mar-18 N -	BH505 08-Nov-17 N -	BH505 23-Mar-18 N -	BH506 08-Nov-17 N -	BH506 23-Mar-18 N -	BH508 08-Nov-17 N -	BH508 23-Mar-18 N -	BH509 08-Nov-17 N -	BH510 08-Nov-17 N -	BH510 23-Mar-18 N -	BH511 08-Nov-17 N -	BH511 23-Mar-18 N -	BH512 08-Nov-17 N -	BH512 23-Mar-18 N -	BHA 04-Aug-14 N 0.5 - 4 m	BHB 04-Aug-14 N 0.5 - 4 m	BHC 07-Aug-14 N 0.5 - 4 m	GS1 04-Nov-16 N -	GS2 04-Nov-16 N -	GS3 04-Nov-16 N -
1,2,4-Trimethylbenzene	mg/l	NRP	0.023	0.017	< 0.003	0.004	< 0.003	0.005	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.008	0.004	0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
1,3,5-Trimethylbenzene	mg/l	44.2	0.02	0.006	< 0.003	0.01	0.004	0.005	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.01	0.016	0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Methyl-tert-butylether	mg/l	1,273.99	0.0015	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0004	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Naphthalene	mg/l	17.1	0.006	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.05	< 0.1	0.016	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
4-Chloro-3-methylphenol	mg/l	295.42	< 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	< 0.0250	< 0.0500	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
2-Chlorophenol	mg/l	115.79	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.1	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
2-Methylphenol	mg/l	9,374.04	9.2334	< 0.01	< 0.0005	0.09	0.0045	0.16	0.0274	< 0.01	0.1256	< 0.01	< 0.0250	0.03	< 0.0005	0.11	< 0.0050	64.45	2.20	1.3979	0.42	0.1665	< 0.01	< 0.0005	< 0.01	< 0.01	< 0.01	< 0.05	0.06	< 0.1
4-methylphenol	mg/l	27,067.02	17.251	< 0.001	< 0.001	< 0.001	< 0.001	0.062	0.077	0.016	< 0.001	< 0.001	< 0.001	0.011	< 0.001	0.02	< 0.001	7.197	5.522	2.601	0.258	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.395		< 0.001	< 0.001	< 0.001
2,4-Dichlorophenol	mg/l	147.48	< 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	< 0.0250	< 0.0500	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005		< 0.0005	< 0.0005	< 0.0005
2,4-Dimethylphenol	mg/l	2,102.46	5.189	< 0.001	< 0.001	0.026	0.033	0.133	0.2	0.283	0.272	< 0.001	< 0.001	0.014	0.006	0.127	0.004	3.123	9.346	4.463	0.316	0.078	< 0.001	< 0.001	< 0.001	< 0.001			0.022	0.014	0.184
2-Nitrophenol	mg/l	50.83	< 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	< 0.0250	< 0.0500	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005		< 0.0005	< 0.0005	< 0.0005
4-Nitrophenol	mg/l	2,347.14	< 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	< 0.5	< 1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01
Pentachlorophenol	mg/l	NRP	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.1	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Phenol	mg/l	1,911.65	135.4069	0.12	0.0309	2.14	8.0830	5.14	12.4401	9.09	8.0549	< 0.01	1.0676	1.17	0.7479	3.52	2.2363	124.37	1.75	0.9670	15.16	23.1740	< 0.01	< 0.001	< 0.01	0.05	< 0.01	< 0.05	< 0.02	< 0.1
Resorcinol	mg/l	NRP	< 0.0005	< 0.01	< 0.0005	< 0.01	< 0.0005	< 0.01	< 0.0005	< 0.01	< 0.0005	< 0.01	< 0.0005	< 0.01	< 0.0005	< 0.01	< 0.0050	31.66	< 0.50	0.0113	< 0.05	< 0.0005	< 0.01	< 0.0005	< 0.01	0.03	< 0.01	< 0.05	< 0.02	< 0.1
2,4,5-Trichlorophenol	mg/l	NRP	< 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	< 0.0250	< 0.0500	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005		< 0.0005	< 0.0005	< 0.0005
2,4,6-Trichlorophenol	mg/l	NRP	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.1	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001
Hydrogen Sulphide	mg/l	**0.09**	**3.2**		< 0.1		< 0.1		< 0.1		< 0.1		< 0.1		< 0.1		< 0.1			< 0.1		< 0.1		< 0.1							
Malathion	mg/l	NRP	< 0.00100		< 0.00001		< 0.00050		< 0.00050		< 0.00050		< 0.00001		< 0.00050		< 0.00001			< 0.00050		< 0.00001		0.00001							
n-butyl alcohol	mg/l	2,552.15	0.282		< 0.1		< 0.1		< 0.1		< 0.1		< 0.1		< 0.1		< 0.1			< 0.1		< 0.1		< 0.1							
Cyclohexane	mg/l	NRP	< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05			< 0.05		< 0.05		< 0.05							
Free cyanide	mg/l	NS		< 0.01																											
Complex Cyanide	mg/l	NS		0.293																											
Tentatively Identified Compound.																															
Gower Tip SSAC Analytes, mg/l																															
2,6-Dimethylphenol	mg/l	31.77									0.3									0.143		0.105									
3,4-Dimethylphenol	mg/l	803.71																		1.412		0.997									
Tributyl phosphate	mg/l	NS													5.583																

Notes:
< = Compound not detected at concentrations above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.
Empty cells = Not analyzed
NS = No Standard due to non-volatile nature of substance.
NRP = No Risk Predicted since the sum of Hazard Quotients at the boundary limits is less than 1.
Units are in mg/l = milligrams per litre
m = metre
All analyses performed by Exova Jones Environmental.

GOWERTIP_SSAC_GW_VAPOUR = .

Appendix B - Groundwater Vapour Summary
Gower Tip Facility
Oldbury

		Location ID	GS4	GS5
		Sample Date	04-Nov-16	04-Nov-16
		Sample Type	N	N
		Depth	-	-
Analyte	Unit	GOWERTIP_SSAC_GW_VAPOUR		
Gower Tip SSAC Analytes, Dissolved, mg/l				
Boron	mg/l	NS		
Arsenic	mg/l	NS		
Gower Tip SSAC Analytes, mg/l				
>C6-C8 Aliphatics	mg/l	NRP	0.106	0.274
>C8-C10 Aliphatics	mg/l	NRP	0.525	0.024
>C10-C12 Aliphatics	mg/l	NRP	< 0.005	< 0.005
>C12-C16 Aliphatics	mg/l	NRP	< 0.01	< 0.01
>C16-C35 Aliphatics	mg/l	NRP	0.11	< 0.01
>C5-EC7 Aromatics	mg/l	NRP	1.189	1.413
>C7-C8 Aromatics	mg/l	NRP	0.255	0.035
>C8-C10 Aromatics	mg/l	46.37	0.068	0.034
>C10-C12 Aromatics	mg/l	NRP	0.12	0.069
>C12-C16 Aromatics	mg/l	NRP	0.15	0.12
>C16-C21 Aromatics	mg/l	NRP	0.04	< 0.01
>C21-C35 Aromatics	mg/l	NRP	0.11	< 0.01
Benzene	mg/l	9.7	2.0415	2.1631
Ethylbenzene	mg/l	NRP	0.0048	0.0018
Toluene	mg/l	NRP	0.402	0.054
Total Xylenes	mg/l	192.09	0.035	0.0133
Tetrachloroethene	mg/l	6.71	< 0.003	< 0.003
Trichloroethene	mg/l	1.1	0.006	0.006
1,1-Dichloroethene	mg/l	3.52	< 0.003	< 0.003
cis-1,2-Dichloroethene	mg/l	7.06	0.059	0.065
trans-1,2-Dichloroethene	mg/l	3.4	< 0.003	< 0.003
Vinyl chloride	mg/l	0.01	0.0004	0.0004
Hexachloroethane	mg/l	1.6	< 0.001	< 0.001
1,1,1,2-Tetrachloroethane	mg/l	4.18	< 0.002	< 0.002
1,1,2,2-Tetrachloroethane	mg/l	12.75	< 0.004	< 0.004
1,1,1-Trichloroethane	mg/l	68.87	< 0.002	< 0.002
1,1,2-Trichloroethane	mg/l	6.04	< 0.002	< 0.002
1,1-Dichloroethane	mg/l	40.65	< 0.003	< 0.003
1,2-Dichloroethane	mg/l	0.35	< 0.002	< 0.002
Chloroethane	mg/l	206.31	< 0.003	< 0.003
Hexachlorobenzene	mg/l	NRP	< 0.001	< 0.001
1,2,3-Trichlorobenzene	mg/l	15.22	< 0.003	< 0.003
1,2,4-Trichlorobenzene	mg/l	13.62	< 0.003	< 0.003
1,4-Dichlorobenzene	mg/l	NRP	0.007	< 0.003
1,3-Dichlorobenzene	mg/l	0.59	< 0.003	< 0.003
1,2-Dichlorobenzene	mg/l	51.15	0.027	0.011
Chlorobenzene	mg/l	60.65	< 0.002	< 0.002
Carbontetrachloride	mg/l	0.12	< 0.002	< 0.002
Chloroform	mg/l	16.77	0.07	0.006
Dichloromethane	mg/l	52.48	< 0.003	< 0.003
Chloromethane	mg/l	0.09	< 0.003	< 0.003
1,2,3-Trichloropropane	mg/l	0.16	< 0.003	< 0.003
1,2-Dichloropropane	mg/l	0.51	< 0.002	< 0.002
1,3-Dichloropropane	mg/l	5.82	< 0.002	< 0.002
2,2-Dichloropropane	mg/l	0.25	< 0.001	< 0.001
1,1-Dichloropropene	mg/l	0.03	< 0.003	< 0.003
Acetone	mg/l	52,407.77		
Bromobenzene	mg/l	16.12	< 0.002	< 0.002
Bromochloromethane	mg/l	646.94	< 0.002	< 0.002
Bromodichloromethane	mg/l	0.05	< 0.002	< 0.002
Bromoform	mg/l	40.06	< 0.002	< 0.002
Bromomethane	mg/l	0.21	< 0.001	< 0.001
n-Butylbenzene	mg/l	NRP	< 0.003	< 0.003
sec-Butylbenzene	mg/l	NRP	< 0.003	< 0.003
tert-Butylbenzene	mg/l	NRP	< 0.003	< 0.003
2-Chlorotoluene	mg/l	11.82	< 0.003	< 0.003
4-Chlorotoluene	mg/l	11.94	< 0.003	< 0.003
Isopropylbenzene	mg/l	NRP	< 0.003	< 0.003
1,2-Dibromo-3-chloropropane	mg/l	0.0013	< 0.002	< 0.002
Dibromochloromethane	mg/l	6.98	< 0.002	< 0.002
1,2-Dibromoethane	mg/l	0.01	< 0.002	< 0.002
Dibromomethane	mg/l	1.19	< 0.003	< 0.003
Dichlorodifluoromethane	mg/l	0.13	< 0.002	< 0.002
4-Isopropyltoluene	mg/l	21.93	< 0.003	< 0.003
Methanol	mg/l	84,053.62		
Propylbenzene	mg/l	NRP	< 0.003	< 0.003
Styrene	mg/l	NRP	< 0.002	< 0.002
Trichlorofluoromethane	mg/l	5.53	< 0.003	< 0.003

Analyte	Unit	Location ID Sample Date Sample Type Depth GOWERTIP_SSAC_GW_VAPOUR	GS4 04-Nov-16 N -	GS5 04-Nov-16 N -
1,2,4-Trimethylbenzene	mg/l	NRP	0.007	*< 0.003*
1,3,5-Trimethylbenzene	mg/l	44.2	0.012	*< 0.003*
Methyl-tert-butylether	mg/l	1,273.99	*< 0.0001*	*< 0.0001*
Naphthalene	mg/l	17.1	0.013	0.005
4-Chloro-3-methylphenol	mg/l	295.42	*< 0.0005*	*< 0.0005*
2-Chlorophenol	mg/l	115.79	*< 0.001*	*< 0.001*
2-Methylphenol	mg/l	9,374.04	0.59	*< 0.1*
4-methylphenol	mg/l	27,067.02	*< 0.001*	*< 0.001*
2,4-Dichlorophenol	mg/l	147.48	*< 0.0005*	*< 0.0005*
2,4-Dimethylphenol	mg/l	2,102.46	0.968	0.497
2-Nitrophenol	mg/l	50.83	*< 0.0005*	*< 0.0005*
4-Nitrophenol	mg/l	2,347.14	*< 0.01*	*< 0.01*
Pentachlorophenol	mg/l	NRP	*< 0.001*	*< 0.001*
Phenol	mg/l	1,911.65	*< 0.1*	*< 0.1*
Resorcinol	mg/l	NRP	*< 0.1*	*< 0.1*
2,4,5-Trichlorophenol	mg/l	NRP	*< 0.0005*	*< 0.0005*
2,4,6-Trichlorophenol	mg/l	NRP	*< 0.001*	*< 0.001*
Hydrogen Sulphide	mg/l	**0.09**		
Malathion	mg/l	NRP		
n-butyl alcohol	mg/l	2,552.15		
Cyclohexane	mg/l	NRP		
Free cyanide	mg/l	NS		
Complex Cyanide	mg/l	NS		
Tentatively Identified Compound.				
Gower Tip SSAC Analytes, mg/l				
2,6-Dimethylphenol	mg/l	31.77		
3,4-Dimethylphenol	mg/l	803.71		
Tributyl phosphate	mg/l	NS		

Notes:
< = Compound not detected at concentrations above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.
Empty cells = Not analyzed
NS = No Standard due to non-volatile nature of substance.
NRP = No Risk Predicted since the sum of Hazard Quotients at the boundary limits is less than 1.
Units are in mg/l = milligrams per litre
m = metre
All analyses performed by Exova Jones Environmental.

GOWERTIP_SSAC_GW_VAPOUR = .

APPENDIX E DERIVATION OF HUMAN HEALTH SITE SPECIFIC ASSESSENT CRITERIA

E1 CONCEPTUAL EXPOSURE MODEL

Site Specific Assessment Criteria have been derived to assess the potential risks to residents and visitors to properties located directly adjacent to the eastern site boundary of Gower Tip from groundwater derived vapours and soil vapours. The adjacent residential properties are less than 10 years old and consist of semi-detached and detached houses with gardens. Occupants of the properties are likely to include young children through to adults.

Harmful effects from exposure to hazardous substances may occur as a result of either short-term exposure (acute effects) or long-term exposure (chronic effects). Generally for the vast majority of contaminants the long-term exposure to relatively low levels of the substance is of greatest concern since short-term effects generally occur at much higher concentrations. Any assessment based on the effects of long-term exposure is also likely to be overly protective with respect to the effects from short-term exposure. The assessment of risks to human health for the vast majority of the contaminants of concern is therefore based on the assessment of chronic exposure.

The land use behaviour will significantly influence the exposure of end users to soil contaminants and should be reflected in any site specific assessment of those contaminants which represent a hazard as a result of chronic exposure. Influencing factors include: the age and gender of site users; the number of visits to the site; the duration of each visit; and the likely activities that could bring about contact with soil contamination.

Table 1 presents the exposure pathways included in the derivation of residential SSAC conservatively assuming that the residential properties are located onsite and directly above the areas soil and groundwater impact.

Table 1 Exposure Pathways Included for Land Use

	Gower Tip Residential SSAC
SSACGW - Exposure from Substances Present in Groundwaters	
Inhalation of Vapours – Indoors	✓
Inhalation of Vapours – Outdoors	✓
SSACSV - Exposure from Substances Present in Soil Vapours	
Inhalation of Vapours – Indoors	✓
Inhalation of Vapours – Outdoors	✓

The residential land use adjacent to the Site is considered to match, allowing for reasonable variation, the standard residential land use detailed in UK guidance (SR3[7]). Therefore, the default exposure recommendations detailed within SR3, and more recently updated by DEFRA as part of the production of Category 4 Screening Levels (C4SLs), have been adopted in the derivation of the SSAC with the exception of the following:

- Semi-detached property (rather than small terraced house adopted in the production of Generic Assessment Criteria published by EA and DEFRA); and
- Site specific soil properties (see Section E2).

E2 SITE SPECIFIC SOIL PROPOERTIES

Many parameters such as soil texture and fraction of organic carbon will vary greatly across the site, however, within the risk assessment models they are required as representative single point

7 Environment Agency 'Updated Technical background to the CLEA Model', January 2009.

deterministic values. The values selected for the generation of the SSAC have been chosen with consideration of their distribution.

E2.1 Soil Type

The selection of an appropriate soil type is important as the soil properties impact greatly upon the fate and transport algorithms that are used, with a sandy soil generally producing the most conservative assessment.

The area of impact (for both soils and groundwaters) appears to be primarily within the Made Ground deposits beneath the site and these are variable in nature ranging from silty clays to sands and gravels. Given the variable nature of the Made Ground deposits beneath the site it is considered reasonable to assume a sandy loam soil type in the derivation of the SSAC. Whilst the Environment Agency (SR3) states that the sand soil type represents the most conservative choice for modelling diffusion and advection transport processes, they also state that the most common UK sandy soils are actually closer in form to a sandy loam, and it is this soil type used in the derivation of C4SLs and SGVs by DEFRA and the Environment Agency.

E2.2 Soil Organic Matter Content

The selection of an appropriate organic carbon value is important, as this can impact greatly upon the fate and transport algorithms that are used in risk assessment models, particularly for vapour inhalation exposure pathways.

Table 2 presents a summary of the soil organic matter results from soil samples obtained from historical site investigations undertaken at the Site together with the adopted value used within the models.

Table 2 Summary of Soil Organic Matter (SOM)# Results

	SOM %
No of SOM Samples	18
Min	0.9%
Max	17%
Average	5.2%
Median	3.5%
Geometric Mean	3.5%
Adopted SOM Value	**3.5%**

Historical Total Organic Carbon (TOC) data converted to SOM by dividing by 0.58

E2.3 Depth of Impact

The depth of impact is assumed to be 0.8 meters below ground level (m bgl) which is based upon the depth to groundwater along the eastern boundary (BH403 in November 2016) and the potential presence of LNAPL within other monitoring wells along the eastern boundary (BH107R) albeit these are at depths greater than 0.8m bgl, and as such the output is conservative in relation to this.

E3 SUBSTANCE SPECIFIC PROPERTIES

In conjunction with the conceptual exposure model, the physical and toxicological properties of each substance of potential concern form the basis of the assessments of risk from contaminated land.

Historical investigation and assessments have identified the primary substances of potential concern at the site to consist of volatile organic compounds (VOCs), phenols, Total Petroleum Hydrocarbons (TPH) and additional organics and inorganic substances associated with the material deposited at the

site. As such, SSAC have been derived for the VOC USEPA 8260 target list, phenolic compounds identified within the SVOC USEPA 8270 suite, the 13 petroleum hydrocarbon fractions proposed by the TPHCWG[8] and for the additional individual additional organics and inorganics associated with the waste materials (and associated breakdown products) deposited at the site.

The toxicological and physico-chemical properties adopted as part of the assessment are available upon request.

E3.1 Toxicological Properties

Health criteria values (HCV) used to benchmark exposure have been compiled from a review of the scientific and technical literature. Where several health criteria values have been identified, preference has been given to authoritative UK sources. Where available, "Low Levels of Toxicological Concern" (LLTC) reported by DEFRA have been adopted as HCV.

In the absence of a published LLTC, HCV have been adopted based on guidance presented within SR2, and are considered to represent a "tolerable" or "minimal" level of risk. LQM/CIEH also adopted the "tolerable" or "minimal" level of risk presented within SR2 as the basis of their S4ULs[9]. The final selection of the most appropriate value has been made with consideration of the following hierarchy in relation to published guidance:

1. Authoritative UK Sources (e.g. DEFRA C4SL LLTCs, Environment Agency TOX reports, UK Drinking Water Inspectorate, UK Air Quality Strategy);
2. European/International Authoritative Sources (e.g. WHO Drinking Water Guidelines (underlying toxicological data), WHO Air Quality Guidelines for Europe, International Programme on Chemical Safety (IPCS) Environmental Health Criteria Monographs (EHC), IPCS Concise International Chemical Assessment Documents (CICADs));
3. Other National Organisations (e.g. USEPA, RIVM)

In deriving HCVs for non-threshold substances, preference was given to the use of an Index Dose (ID) where these were available. Where ID were not available slope factors have been used and amended by multiplying by an appropriate level of excess lifetime cancer risk. SR2 states that, when using human data, the ID is based on estimates of the daily dose corresponding to an excess lifetime cancer risk of 1 in 100,000. This has been used, where required for slope factors in the absence of an ID.

In the absence of appropriate dermal or inhalation HCVs, extrapolated oral values have been adopted as described within SR2. Where available, the dermal absorption fractions presented within SR3 have been adopted. In their absence the default approach adopted within the CLEA model, as outlined within SR3, has been adopted (0.1 for all organic chemicals and zero for inorganic chemicals).

Where required, inhalation HCVs have been converted from reference concentrations quoted in mg/m-3 unit risk factors by assuming a 70kg adult typically inhales 20m3 of air per day.

Where available, the mean daily intakes (MDI) have been sourced from UK diet studies and the Food Standard Agency. In the absence of any UK sources, the IPCS EHC and CICADs have been reviewed to help determine potential background exposure. In accordance with SR2, if no data or information on background information are available, background exposure is considered to be negligible and MDI set to zero for all age groups. If qualitative information is available suggesting background exposure may significantly contribute to overall exposure the pragmatic default outlined within SR2, that land should be allowed to contribute at least half the tolerable daily intake (TDI), has been applied.

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[8] Total Petroleum Hydrocarbon Working Group Methodology

[9] LQM/CIEH, 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment

E3.2 Physico-Chemical Properties

Physico-chemical properties have been compiled from a review of the scientific and technical literature. Where available, the physico-chemical properties have been adopted from the Environment Agency Report SR7 [10]. In their absence, parameters have been sourced from the references detailed within SR7, where available.

Many of the references present a range of values from numerous scientific studies, with the same studies being presented within each reference. Based upon the values presented within the studies and their own professional expertise, Mackay et al [11] provide recommended values for many parameters and have been adopted where available.

Where a range of values have been sourced, consideration has been given to the selection hierarchy detailed within SR7:

1. If all values are the same, select this value;
2. Select value from a consistent range;
3. Central value from a consistent range;
4. Newest value (if there is no consistent range or no single central value)

Where available, parameters have been sourced at 10^0C, which is the assumed annual average temperature of UK soils (SR3) and required for the CLEA model.

Where chemical data was unavailable in the literature, or adjustments needed for temperature (i.e. literature source not at 10^0C), property estimation methods and adjustment calculations detailed within SR7 have been used.

E3.3 Petroleum Hydrocarbon Indoor Air Attenuation Factor

An indoor air attenuation factor of 10 has been adopted for petroleum hydrocarbons in soils and groundwater in accordance with the recommendations contained within SR3.

E4 EXPOSURE MODELLING

E4.1 Modelling Approach Applied

In deriving human health SSAC for soils, ERM has adopted the CLEA software version 1.071, which incorporates the modelling approach detailed within SR3 and used by the Environment Agency to derive Soil Guideline Values, together with the more recent approach adopted by DEFRA in the derivation of the DEFRA C4SLs.

The soil vapour SSAC (SSACSV) have been back calculated from the indoor and outdoor vapour inhalation soil criteria derived using the CLEA software using the soil to soil vapour partitioning approach detailed within Section 5 of SR3. The results have been directly compared to the soil gas media concentration provided within the CLEA outputs when running the model for vapour inhalation pathways only, to ensure parity.

The SSAC for groundwater derived vapours (SSACGW) have been calculated using the Johnson and Ettinger vapour transport algorithms / models used within the modelling software RISC V5 specifically for groundwater, assuming both the diffusive and advective transport of vapours. Where applicable, the same receptor, soil and building properties adopted for the soil and groundwater vapour SSAC have been utilised. In the absence of capillary fringe assumptions within SR3, these have been

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[10] Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values (SR7). Environment Agency, November 2008.

[11] Handbook of Physical-Chemical Properties and Environmental fate for Organic Chemicals. 2nd edition. Mackay et al, 2006.

calculated using equations recommended by the USEPA[12] and the soil properties presented within SR3, assuming a sandy loam soil. Inhalation health criteria values have been inputted into the model as a dose (i.e. mg/kg/bw/day) and substance specific assessment criteria based on a hazard quotient of 1 (as adopted by CLEA methodology). The site specific conceptual model and exposure characteristics adopted in deriving the groundwater vapour SSAC are detailed in Appendix C. The RISC model does not allow the incorporation of an indoor air attenuation factor, therefore, the RISC outputs for petroleum hydrocarbons from indoor vapour inhalation pathway have been manually adjusted by the indoor air attenuation factor of 10, in accordance with the recommendations contained within SR3.

For acute exposure to free cyanide the conceptual exposure model assumes a one off ingestion of 2000mg of soil by a 1 to 2 year old female child using the algorithms presented by Beck et al 2006[13] and SNIFFER 2000[14].

E4.2 Estimating the Combined Exposure from All Relevant Pathways

For some chemicals, intake and/or uptake via different routes (via the nose, mouth, or through the skin) may lead to different local effects or may affect different organs. People using a contaminated site may be exposed to the same chemical via all three routes of exposure. If the contaminant exhibits systemic toxicity (i.e. reaches the main blood circulation system unchanged following absorption), each route of exposure may contribute to an aggregate total systemic load that results in adverse systemic effects. The SSAC takes this possible effect into account by automatically adopting the methodology used by the CLEA software and the Environment Agency, and combining the reciprocal from each relevant exposure pathway. This helps ensure that the assessment criteria is set at a concentration where the total risk via all relevant routes of entry into the body is mathematically no greater than the risk due to exposure by any single route of entry. The only exception is where a DEFRA C4SL or Environment Agency Soil Guideline Value (SGV) report identifies that a single exposure route is more appropriate for an individual contaminant, in such cases the same exposure routes used by DEFRA or the Environment Agency in deriving the C4SL or SGV have been adopted by ERM in deriving the GAC for the same contaminant.

Environment Agency report SR4 [15] states that an important assumption used in the CLEA model is that of simple linear partitioning of a chemical in the soil between the sorbed, dissolved, and vapour phases. The theoretical upper boundaries to this behaviour are represented by the maximum aqueous solubility and pure saturated vapour concentration of the chemical. Environment Agency report SR3 presents equations for using these chemical properties to estimate the saturated soil concentrations where these limits are reached. These boundaries are important when considering vapour phase transport of chemicals into ambient and indoor air.

The CLEA software uses a traffic-light system to identify when individual and/or combined assessment criteria exceed the lower of either the aqueous or vapour based saturation limit.

In instances where the combined assessment criteria of all relevant pathways outputted from the CLEA software is highlighted green or amber and the vapour pathway is not an important contributor, these have been adopted as ERM GAC.

Where the combined assessment criteria exceeds the theoretical saturation limits (aqueous or vapour based) and the vapour pathway is an important contributor to exposure, the methodology detailed within the CLEA Software Handbook (SR4) for such circumstances has been adopted, which is detailed below:

1. Determining the relevant inhalation ADE/HCV ratio at the lower saturation limit;

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[12] USEPA, 2004. Users Guide for Evaluating Vapour Intrusion into Buildings
[13] Human Health Risk Assessment of Cyanide in Water and Soil. Beck et al. Published in Cyanide in water and Soil, Chemistry Risk and Management, Dzombak et al 2006.
[14] Framework for Deriving Numeric Targets to Minimise the Adverse Human Health Effects of Long-term Exposure to Contaminants in Soil. SR99(02)F. SNIFFER April 2000.
[15] Environment Agency, September 2009. CLEA software (version 1.071) and handbook (SR4 version 1.05).

2. Estimate relevant contribution required from other pathways by subtracting this value by 1 (since the contribution from the vapour pathway is capped at the saturation limit);

3. Determine the soil concentration at which the relevant combined HCV/ADE ratio is equal to the value calculated in (2) without the vapour inhalation pathways.

E4.3 Uncertainty

As with any form of modelling of the interaction between humans and the wider environment, there is a substantial amount of uncertainty involved. This relates both to the way in which the interaction is modelled (the pathway algorithms) and the input parameters defining the substances, the pathways and the receptors. The CLEA model is deterministic, meaning that in any calculation a single value is assigned to each variable. Many of these values are assigned on the basis of average or conservative (the most health protective) measurements and by expert judgement.

Historically, in dealing with parameter uncertainty and variability in a deterministic model, it has been good practice to select values representative of a worst case exposure scenario. This has the assumed comfort of being more protective against an unforeseen situation or risks to sensitive individuals. However, the problem with this approach can be that such choices, however defensible individually, tend to be implausible collectively.

Over the recent years there has been an increasing desire on the part of authoritative bodies to move away from modelling a worst case individual to more realistic or reasonable exposure scenarios. This is the approach adopted by the CLEA model and takes into account not only the degree of conservatism from individual choices, but also the collective effect of these choices.

APPENDIX F SOIL VAPOUR ASSESSENT

- Borehole
- Gas well
- Monitoring Well
- Piezometer

0 10 20 30 40 50
Metres

N

SCALE: See Scale Bar	VERSION: A02
SIZE: A4	DRAWN: OB
PROJECT: 0531663	CHECKED: PN
DATE: 20/02/2020	APPROVED: PH

Borehole Location Plan

ERM

SOLVAY Way
doing business, being responsible

PROJECTION: British National Grid

SOURCE: Reproduced from Ordnance Survey digital map data. © Crown copyright, All rights reserved. 2020 License number 0100031673.

Path: P:\Projects\0531663 Consolidated Solvay Solvay Gower Tip Planning.PH\GIS\MAPS\0531663_Gower_BHPlan.A02.mxd

Table
Soil Gas Summary Table
Gower Tip Facility
Oldbury

Analyte	Unit	Location ID Sample Date Sample Type GOWERTIP_SSAC_GAS	BH107R 24-May-16 N	BH107R 29-Nov-17 N	BH107R 19-Dec-17 N	BH107R 09-Jan-18 N	BH107R 14-Feb-18 N	BH107R 22-Mar-18 N	BH107R 10-Apr-18 N	BH107R 20-Jun-18 N	BH107R 13-Jul-18 N	BH107R 10-Aug-18 N	BH403 24-May-16 N
Gower Tip SSAC Analytes - Gas, ppmv													
Benzene	ppmv	5.33	2.937	0.3132	0.1096	0.0438	0.1138	0.0147	0.0571	0.395	0.9938	0.1529	0.761
Ethylbenzene	ppmv	293.4	0.0024	0.022	0.0142	0.004	0.0101	*< 0.0015*	0.0025	0.0316	0.0391	0.0128	0.0016
Toluene	ppmv	2,032.79	1.1054	1.0042	0.4496	0.1211	0.2024	0.0216	0.1466	0.8641	4.0191	0.1202	0.0803
o-Xylene	ppmv	66.98	0.0035	0.0335	0.014	0.0034	0.0088	0.0015	0.0026	0.052	0.059	0.0073	0.0019
Tetrachloroethene	ppmv	39.55	0.0025	0.0122	0.0154	0.006	0.0142	*< 0.0015*	0.0034	0.0279	0.0295	0.0087	*< 0.0015*
Trichloroethene	ppmv	5.36	0.1727	0.1773	0.2564	0.1485	0.2445	0.0417	0.1112	0.2874	0.4198	0.0367	0.0246
1,1-Dichloroethene	ppmv	72.3	0.0185	0.0069	0.0134	0.0141	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.0155	*< 0.0015*	*< 0.0015*
cis-1,2-Dichloroethene	ppmv	21.23	0.015	0.006	0.016	*< 0.001*	0.013	*< 0.001*	0.007	0.008	0.016	0.004	0.105
trans-1,2-Dichloroethene	ppmv	21.18	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.0026	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Vinyl chloride	ppmv	0.52	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,1,1,2-Tetrachloroethane	ppmv	5.02	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,1,2,2-Tetrachloroethane	ppmv	4.88	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,1,1-Trichloroethane	ppmv	597.63	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,1,2-Trichloroethane	ppmv	4.93	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,1-Dichloroethane	ppmv	182.64	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,2-Dichloroethane	ppmv	0.47	0.0415	0.0094	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.0184	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Chloroethane	ppmv	4,930.01	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.0022	*< 0.0015*	*< 0.0015*
1,2,3-Trichlorobenzene	ppmv	12.23	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,2,4-Trichlorobenzene	ppmv	12.24	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,4-Dichlorobenzene	ppmv	54.39	*< 0.0015*	0.0117	*< 0.0015*	*< 0.0015*	0.0053	*< 0.0015*	*< 0.0015*	0.0373	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,3-Dichlorobenzene	ppmv	1.03	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.003	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,2-Dichlorobenzene	ppmv	287.48	*< 0.0015*	0.0431	*< 0.0015*	*< 0.0015*	0.0204	*< 0.0015*	*< 0.0015*	0.1241	*< 0.0015*	*< 0.0015*	*< 0.0015*
Chlorobenzene	ppmv	168.68	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Carbontetrachloride	ppmv	1.46	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Chloroform	ppmv	42.79	0.6862	0.1633	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.3007
Dichloromethane	ppmv	145.64	*< 0.0144*	*< 0.0144*	0.124	0.1052	0.0927	*< 0.0144*	*< 0.0144*	0.0966	0.2122	*< 0.0144*	*< 0.0144*
Chloromethane	ppmv	5.1	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,2,3-Trichloropropane	ppmv	0.09	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,2-Dichloropropane	ppmv	1	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.0027	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,3-Dichloropropane	ppmv	6.07	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
2,2-Dichloropropane	ppmv	1.38	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,1-Dichloropropene	ppmv	0.86	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Bromobenzene	ppmv	15.65	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Bromodichloromethane	ppmv	0.06	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Bromoform	ppmv	10.57	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Bromomethane	ppmv	1.59	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
n-Butylbenzene	ppmv	61.14	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
sec-Butylbenzene	ppmv	122.14	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
tert-Butylbenzene	ppmv	64.53	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
2-Chlorotoluene	ppmv	23.53	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
4-Chlorotoluene	ppmv	23.56	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Isopropylbenzene	ppmv	124.91	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.0119	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.0209	*< 0.0015*	*< 0.0015*
1,2-Dibromo-3-chloropropane	ppmv	0.0003	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Dibromochloromethane	ppmv	14	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
1,2-Dibromoethane	ppmv	0.003	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Dibromomethane	ppmv	0.81	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Dichlorodifluoromethane	ppmv	28.23	*< 0.0025*	*< 0.0025*	*< 0.0025*	*< 0.0025*	*< 0.0025*	*< 0.0025*	*< 0.0025*	*< 0.0025*	*< 0.0025*	*< 0.0025*	*< 0.0025*
4-Isopropyltoluene	ppmv	61.3	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.0454	*< 0.0015*	*< 0.0015*
Propylbenzene	ppmv	284.43	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Styrene	ppmv	102.23	0.002	0.0377	0.011	0.0033	0.0081	*< 0.0015*	0.0028	0.1113	0.0922	*< 0.0015*	*< 0.0015*
Trichlorofluoromethane	ppmv	187.91	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	0.015	*< 0.0015*	*< 0.0015*
1,2,4-Trimethylbenzene	ppmv	15.34	*< 0.0015*	0.0795	0.0242	0.008	0.0191	*< 0.0015*	0.004	0.0135	*< 0.0015*	0.003	*< 0.0015*
1,3,5-Trimethylbenzene	ppmv	20.51	*< 0.0015*	0.0084	0.0028	*< 0.0015*	0.0025	*< 0.0015*	*< 0.0015*	0.1377	0.0781	0.002	*< 0.0015*
Methyl-tert-butylether	ppmv	1,285.42	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*	*< 0.0015*
Naphthalene	ppmv	0.8	*< 0.00032*	*< 0.00032*	*< 0.00032*	*< 0.00032*	*< 0.00032*	*< 0.00032*	*< 0.00032*	*< 0.00032*	*< 0.00032*	*< 0.00032*	*< 0.00032*
Tentatively Identified Compound.													
Gower Tip SSAC Analytes - Gas, ppmv													
Benzene	ppmv	5.33		0.142									
Toluene	ppmv	2,032.79								1.12			
1,3-Dichlorobenzene	ppmv	1.03								0.311			
Dichloromethane	ppmv	145.64							0.018				
Carbon Disulphide	ppmv	41.65						0.015					
1-Pentene, 2,4,4-trimethyl-	ppmv	79.08	0.192	0.213	0.146	0.159	0.298	0.137	0.18	0.566	0.426	0.108	
3-Methylpentane	ppmv	8,399.98		1.084	0.694	1.122	1.414	1.744	1.554	1.758	1.138	0.946	
Cyclohexane	ppmv	2,743.09		0.327	0.203	0.259	0.446	0.295	0.32	0.79	0.575	0.214	
Hexane	ppmv	327.52		1.799	1.03	1.609	2.193	2.328	2.308	2.44	1.577	1.12	
Methylcyclopentane	ppmv	458.25			0.612	0.942	1.246	1.169	1.131	1.825	1.245	0.84	
Pentane	ppmv	515.8			0.334	0.547	0.521	0.988	0.654	1.073	0.76	0.659	
2-Pentene, 2,4-dimethyl-	ppmv	85.68		0.244	0.171	0.207	0.331	0.203	0.219	0.608	0.44		
1-Pentene, 2,4-dimethyl-	ppmv	85.4	0.056	0.071	0.041	0.048	0.092	0.048	0.058	0.2	0.154	0.063	
2-Pentene, 3,4-dimethyl-, (Z)-	ppmv	85.71	0.167	0.442	0.236	0.267		0.18	0.285				

Notes:
< = Compound not detected at
concentrations
above the laboratory reporting
detection limit.
The laboratory reporting detection limit
is shown.
Empty cells = Not analyzed
NS = No Standard
Units are in ppmv = parts per million by volume
m = metre
All analyses performed by Exova Jones Environmental.

GOWERTIP_SSAC_GAS = .

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