ARCADIS Design & Consultancy for natural and built assets

BACK PLOT B – VALIDATION REPORT

Dagenham Facility

APRIL 2016

Incorporating

EC HARRIS BUILT ASSET CONSULTANCY

Hyder

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CONTENTS

TABLES

APPENDICES

APPENDIX G

Verification Findings

APPENDIX H

Chloroform, Cis-1,2-Dichloroethene and Trichloroethene Additional Groundwater Sampling and Soil Gas Analysis

APPENDIX I

Assessment of Non-target CoC Detected During Validation Monitoring

ANNEXES

ANNEX A

Back Plot B Validation Plan

ANNEX B

Laboratory Certificates

1 Introduction

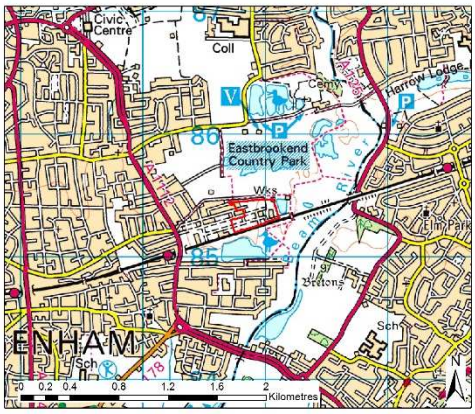
This validation report has been prepared to demonstrate the successful remediation of development footprint Back Plot B (the site) within the former Sanofi Dagenham facility boundary which was conducted between 2011 and 2015. Validation of the remediation works was undertaken in accordance with the criteria specified in the Back Plot B Validation Plan (Arcadis Ref: 2572312306_01, August 2015) in order to assist with the discharge of Planning Condition 9 and 10 of Planning Application 11/01044/OUT.

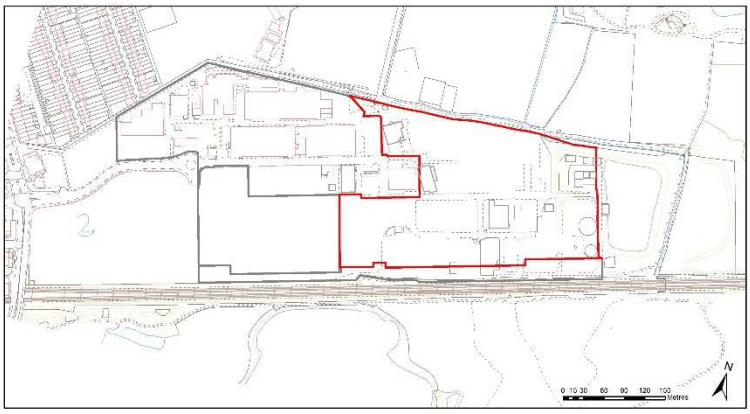
Throughout the remediation and validation works, Arcadis have acted as the remediation designer whilst the role of remediation contractor was carried out by EDS from 2012- 2013 and HBR from 2013 – 2015.

1.1 Site Description

The site occupies a south eastern portion of the Dagenham Facility, located on Rainham Road South, Dagenham, Essex, at National Grid Coordinates (NGC) 550658, 185267 as shown below[1] and on Figure 1 (see Appendix A) and is bound by other areas of the Facility to the north, south, east and west. The area to the south of Back Plot B, known to be hydraulically down gradient, comprises a strip of land which contains a permeable reactive barrier (PRB) that runs along the majority of the southern boundary of the facility. The site is located hydraulically upgradient of the Beam Valley Country Park and residential properties beyond.

Since the Back Plot B Validation Plan (Arcadis Ref: 2572312306_01, August 2015) was written, minor changes have been made to the Back Plot B boundaries. Drawings presented within this report reflect the updated boundary lines. The boundary line changes are not considered to effect the validation of the site as intended.





1.2 Remediation Objectives

The overall objective for the Dagenham Facility is to remediate in order to facilitate redevelopment and use of the land for industrial purposes in view of the best available remediation technologies available and cost benefit considerations.

The remediation strategy for the facility includes the following steps:

- Permeable Reactive Barrier (PRB) - existing pollutant pathways breakage
- Source reduction remediation works (soil and groundwater treatment)
- Groundwater monitoring following remediation (validation monitoring and longer term monitoring)
- PRB decommissioning
- Off-site groundwater monitoring

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As of December 2014, source reduction remediation works have been completed in Back Plot B. This report describes the works undertaken and presents the results of the validation process.

1.3 Regulatory Liaison

Both the Local Authority and the Environment Agency have been advised on the environmental strategy for the wider Dagenham Facility. Approval of the previous site wide investigation, detailed quantitative risk assessment, remediation implementation and original validation plans has been obtained from the Environment Agency, leading to the discharge of Planning Condition 8. Copies of relevant correspondence with Regulators are presented in Appendix B.

2 Remediation Implementation

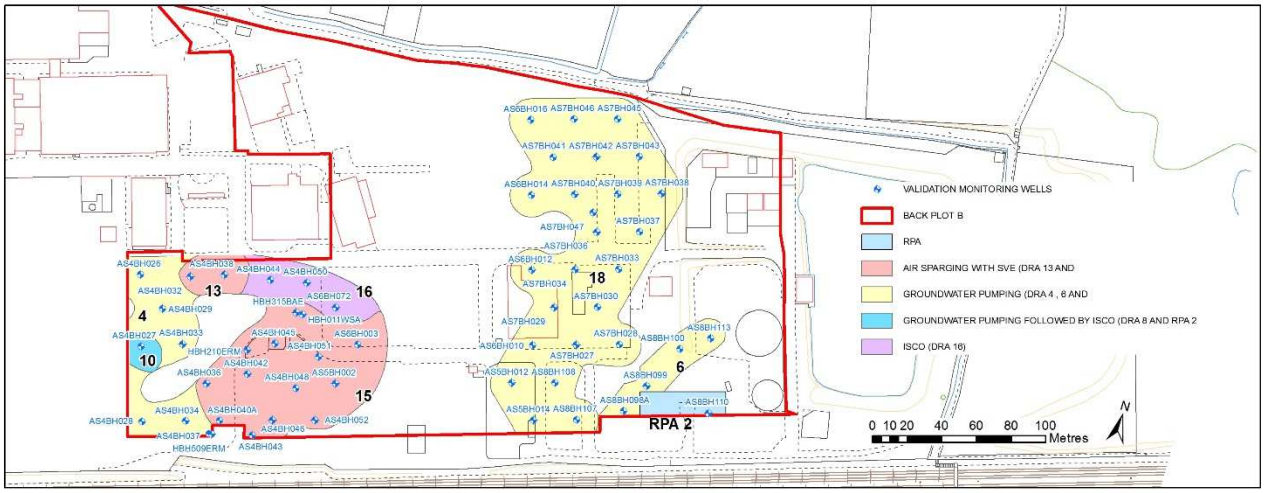
Source reduction works were undertaken to reduce the contaminant mass present and address the active pollutant linkages as far as reasonably practicable, using best available technologies and considering costs and benefits. In order to optimise source reduction, the works were designed to target contaminant mass, with the focus on reducing the largest potential sources containing the highest measured concentrations.

The works were undertaken in accordance with the Remediation Implementation Plans (RIPs). The RIPs which relate to the remediation areas within Back Plot A include:

- Site Wide Remediation Implementation Plan (Arcadis Ref: 928875401_01 April 2012)
- Remediation Priority Area Remediation Implementation Plan (Arcadis Ref: 928874502_01 November 2011)
- Former D44 Landfill Groundwater Remediation Implementation Plan (Arcadis Ref: 2572310201_01, February 2013)

Remediation works were undertaken in Back Plot B between March 2011 and December 2014. The remediation was undertaken as a staged iterative process comprising multiple phases of remediation across the eight remediation areas defined at the site known as Defined Remediation Areas (DRAs) and Remediation Priority Areas (RPAs) which are presented below and fully or partially incorporates the following remediation areas:

- DRA 10, DRA 13, DRA 16 and DRA 18 (fully incorporated); and,
- RPA 2, DRA 4, DRA 6 and DRA 15 (partially incorporated).



Appendix C presents details of the remediation works undertaken, including their duration and location within Back Plot B. The table below provides a summary of the remediation works undertaken:

Remediation Area	Remediation Works Undertaken	Date Range(s)
DRA 4 and 6	Groundwater pumping	October 2012 – December 2014
DRA 10	Groundwater pumping and in situ chemical oxidation (ISCO)	April 2013 – December 2014
DRA 13 and 15	Air sparging / soil vapour extraction (SVE)	January 2014 – August 2014
DRA 16	ISCO	November 2013 – July 2014
DRA 18 [2]	Groundwater pumping	January 2014 – July 2014
RPA 2	Groundwater pumping and ISCO	September 2012 – May 2014

3 Validation Methodology

The sections below present the primary elements of the validation methodology which comprises the collection of field and laboratory data to demonstrate remediation system performance and the comparison of target CoC concentrations in groundwater against remediation performance criteria.

Based on the source reduction works previously undertaken within DRA 18 relating to landfilled materials, the remediation undertaken within DRA 18 was designed to target readily recoverable mass within groundwater, rather than on the basis of specific target values for mass reduction.

Further detail is presented in the Back Plot B Validation Plan (Arcadis Ref: 2572312306_01, August 2015) which is included as an Annex A in this report.

3.1 Lines of Evidence

The lines of evidence used to verify the remediation works are summarised below:

- Weekly monitoring of groundwater pumping (via groundwater sampling and laboratory analysis) and air sparge/soil vapour extraction systems (via PID measurement), including calculations of contaminant mass removal *via* the treatment technologies employed (All remediation areas);
- Groundwater sampling of remediation and validation monitoring wells and analysis for presence of chemical oxidant (sodium persulphate) during and following ISCO works using field based test kits to determine reagent distribution during injection works and reagent persistence to determine when reagent activity has ceased (DRAs 10, 16 and RPA 2);
- Post remediation groundwater performance monitoring to determine contaminant reduction and whether further remediation is required (All remediation areas); and,
- Four quarterly groundwater sampling events of validation monitoring wells and laboratory analysis for target compounds (All remediation areas).

[2] PRIOR TO UNDERTAKING GROUNDWATER PUMPING IN DRA 18, EXTENSIVE REMEDIAL TREATMENT WORKS HAVE BEEN UNDERTAKEN IN THIS AREA IN RELATION TO HISTORICALLY LANDFILLED MATERIAL IN AN AREA FORMERLY KNOWN AS THE D44 LANDFILL. THESE WORKS WERE UNDERTAKEN BETWEEN MARCH 2011 AND MAY 2012 AND ARE REPORTED WITHIN THE D44 LANDFILL REMEDIATION VALIDATION REPORT (LANDFILLED MATERIAL) (ARCADIS REPORT REF: 928873227, SEPTEMBER 2012).

3.2 Remediation Performance Criteria

The remediation performance criteria for each of the target compounds are detailed in Appendix D and were defined considering both human health and environmental receptors, and took into account achievability based on the best available technologies in the context of cost benefit considerations.

The performance criteria will be considered to have been met when one or more of the following conditions have been achieved:

RPA 2 and DRAs 4, 6, 10, 13, 15 and 16

- **Condition 1** - 70 to 90% reduction in the concentrations of target compounds averaged over the network of validation monitoring wells and where achievable, meeting the specific defined target levels protective of human health receptors;
- **Condition 2** - A revision of the risk assessment, justified by changes in the plume geometry or the conceptual understanding of the site, indicates that the reduced mass of contaminants does not present a risk to the identified receptors; or
- **Condition 3** - Contamination mass reduction reaches an asymptotic condition and/or cost benefit analysis indicates that additional remediation works cannot be justified considering likely improvement to the site condition that could be achieved vs. environmental and financial considerations.

DRA 18

- **Condition 4** - Contaminant mass reduction in target compounds reaches an asymptotic condition and/or cost benefit analysis indicates that additional remediation works cannot be justified considering likely improvement to the site condition that could be achieved versus environmental and financial considerations; and,
- **Condition 5 -** A revision of the risk assessment, justified by changes in the plume geometry or the conceptual understanding of The Site, indicates that the reduced residual mass of representative CoC does not present a potential risk to the identified receptors

Based on the source reduction works previously undertaken within DRA 18 relating to landfilled materials (Arcadis report ref: 928873227) the remediation performance criteria for DRA 18 are designed to target residual contaminant mass within groundwater.

4 Verification Evidence

The verification data collected during the remediation works is presented in Appendix E and includes:

- System performance monitoring data, including:
    - Contaminant mass removal *via* groundwater pumping – DRAs 4, 6, 10, 18 and RPA 2 (Appendix E1)
    - Contaminant mass removal *via* soil vapour extraction – DRAs 13 and 15 (Appendix E1)
    - Groundwater monitoring during system performance monitoring – All remediation areas (Appendix E2)
- Results of sodium persulphate persistence monitoring – DRAs 10, 16 and RPA 2 (Appendix E3);
- Concentrations of quantified target compounds measured over time (Appendix E2)
- Results of groundwater sampling of monitoring wells during four rounds of validation monitoring including:
    - Groundwater elevation and non-aqueous phase liquid (NAPL) inspection data (Appendix E4)
    - Laboratory analysis (Appendix E5 and Annex B)

A summary of the verification evidence data is presented below:

Verification Evidence	Timeline/Summary
System performance monitoring	Weekly samples collected during system operation to determine mass recovery rates (2012 – 2014). Approximately 43 kg of VOC and 22 kg of site-specific compounds removed across Back Plot B during remediation works (excluding ISCO and D44 excavation and washing works).
Persulphate distribution and persistence monitoring	Weekly persulphate monitoring undertaken to determine reagent distribution during ISCO injection works. Fortnightly monitoring undertaken following the completion of ISCO injection works to assess the persistence of persulphate within the aquifer to determine when active remediation has been completed (2013-2014).
Performance Monitoring	Post system performance monitoring undertaken (2013 – 2014) to determine contaminant reduction. DNAPL identified in eastern area of DRA 16 during 2014 remediation works. Approximately 7 litres removed during weekly DNAPL monitoring.
Groundwater validation sampling	Four quarterly monitoring visits undertaken during 2014 - 2015. Groundwater elevation data collected ranged from 6.02 to 11.25 m above ordnance datum, indicating a south to south easterly groundwater flow direction.

5 Quality Assurance

The validation plan (Arcadis ref: 2572312306_01) details a number of quality procedures and data management tools which have been employed as part of a quality assurance plan.

Key aspects of the quality assurance plan employed include:

- Documentation of field data
- Sample handling and sample management protocol
- Quality assurance sampling
- Use of a data management system

Supporting evidence collected as part of the quality assurance programme is presented in Appendix F and includes duplicate data from quality assurance sampling. A high degree of comparability was observed between the primary samples and duplicates taken. In addition, no VOCs were measured in any of the trip blank samples sent to the laboratory indicating that no cross contamination occurred during sample transit. Further information collected, including field data recorded, will be held on record by Arcadis.

6 Verification Findings

6.1 Validation Performance Criteria

The results of the validation monitoring are presented in Tables 1a and 1b, whilst a comparison of validation monitoring data with baseline data and concentrations measured during remediation works is presented in Tables 2a and 2b. A detailed discussion of the verification evidence for each of the 18 target CoC is provided in Appendix G.

Due to the separate remediation performance criteria for DRA 18, the discussion in Appendix G for the five DRA 18 indicator compounds considers percentage reduction achieved both for DRA 18 and the rest of the site separately, as well as for the whole site combined.

The tables below summarise the verification findings for each of the 18 target CoC and presents the performance against each of the performance conditions. The performance criteria are considered to have been met when at least one of the conditions have been achieved.

RPA 2 and DRAs 4, 6, 10, 13, 15 and 16				
Target Compound	**Below Human Health Target**	**Condition 1***	**Condition 2**	**Condition 3**
Acebutol	✓	>99%	✓	✓
Benzene	✓	72%	✓	✓
Carbendazim	✓	>99%	✓	✓
Carbofuran	✓	>99%	✓	✓
Chloroform	✓	88%	✓	✓
Cis-1,2-dichloroethene	✓	0% 84%**	✓	✓
1,2-Dichlorobenzene	✓	>99%	✓	✓
Diphenylguanidine	✓	>99%	✓	✓
Ethylbenzene	✓	>99%	✓	✓
Ketoprofen	✓	>99%	✓	✓
N-1,2-Pyridyl Sulfanilamide	✓	78%	✓	✓
Sulphamethizole	✓	81%	✓	✓
Sulphthiazole	✓	83%	✓	✓
Toluene	✓	>99%	✓	✓
Trichloroethene	✓	74%	✓	✓
Vinyl Chloride	✓	90%	✓	✓
Xylenes		n/a	✓	✓

* Based on final validation visit.

** Reduction figure does not include data from AS6BH072.

n/a - Not applicable. Measured concentrations from single target monitoring well not available for the calculation of percentage reduction.

Criteria met or exceeded.

Meeting percentage reduction target (Condition 1) is based on maximum during remediation rather original validation plan baseline data. Data provides supporting line of evidence to verify contaminant mass reduction achieved.

Criteria not met. % reduction has not been met due to localised elevations in measured concentrations in a single validation well.

Criteria not applicable for this CoC. Single validation monitoring well could not be sampled due to being dry during the validation visits.

DRA 18			
Target Compound	**Below Human Health Target**	**Condition 4***	**Condition 5**
Carbendazim	✓	44%	✓
Diphenylguanidine	✓	60%	✓
N-1,2-Pyridyl Sulfanilamide	✓	59%	✓
Pentobarbital	✓	37%	✓
Sulphathiazole	✓	67%	✓
Sum Site Specific Pharmaceutical Compounds		53%	✓
Sum VOC		84%	✓

* Based on final validation visit.

Criteria met or exceeded.

Criteria not applicable. Group comprises multiple CoC.

6.1.1 Key Findings

The above tables show that none of the measured concentrations were in excess of the applicable human health Site Specific Assessment Criteria (SSAC), and all but two CoCs (Cis 1,2-dichloroethene and N-1,2-pyridyl sulphanilamide) meet all conditions set out in the Back Plot B Validation Plan (Arcadis Ref: 2572312306_01, August 2015).

Conditions 1-3 (RPA 2 and DRAs 4, 6, 10, 13, 15 and 16)

Elevated concentrations of Cis 1,2-dichloroethene in a single validation well (AS6BH072) have skewed the overall reduction such that that the % reduction for Back Plot B has not been met. Excluding this single location from the reduction calculation would result in an overall % reduction of 84%. As such, additional lines of evidence on the distribution and potential risks associated with Cis 1,2-dichloroethene in the vicinity of AS6BH072 have been considered. A high resolution groundwater monitoring exercise and assessment of soil gas concentrations was undertaken in the area. The results obtained are presented in full in Appendix H and demonstrate that the elevated concentrations of Cis 1,2-dichloroethene in AS6BH072 are localised and do not present a significant risk to either human health or environmental receptors.

Whilst N-1,2-pyridyl sulphanilamide meets Conditions 2 to 3, Condition 1 is only met when compared to the maximum groundwater concentration recorded during remediation works. Comparing validation data with the maximum groundwater concentration during remediation works as well as baseline data is considered appropriate due to the fluctuations in contaminant concentrations pre, and during remdiation, likely as a result of mass desorption (a comparison of performance reduction target against the maximum measured concentration during remediation is provided in Tables 1a and 1b).

With respect to Conditions 2 and 3, a specific revised risk assessment has not been prepared, however an assessment of the plume geometry, trends and potential for further degradation has been undertaken in

Appendix G which concludes that the residual contaminant mass does not warrant further remediation and cannot be justified considering likely improvement to the site condition that could be achieved vs. environmental and financial considerations.

Conditions 4 and 5 (DRA 18)

Contaminant reductions have been achieved within DRA18 and remediation performance data demonstrates that asymptotic conditions have been reached (as evidenced in Appendix E1). As such, Condition 4 has been met for the 5 target compounds.

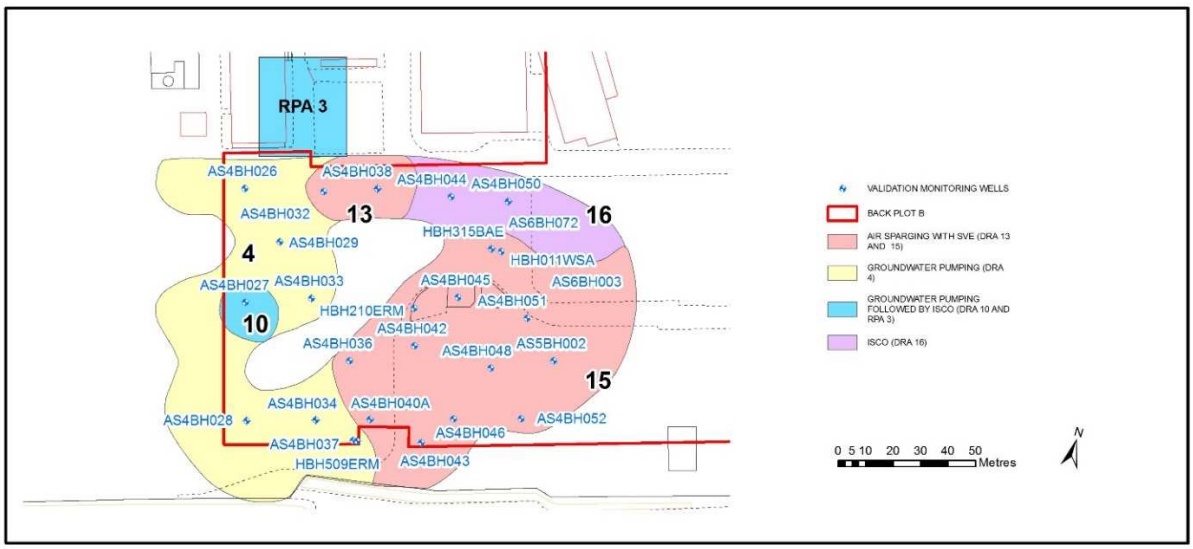
With respect to Condition 5, a specific revised risk assessment has not been prepared, however an assessment of the plume geometry, trends and potential for further degradation has been undertaken in Appendix G which concludes that the residual contaminant mass does not warrant further remediation and that the criteria set out in Condition 5 have been met for all CoCs.

6.2 Non Target Compounds

A number of non-target compounds were also measured in Back Plot B during the validation monitoring as part of the wider analytical suite which was used to measure remediation performance. This was undertaken to provide confidence that no significant VOC daughter products were created during the remediation and that concentrations of other compounds had not significantly increased which would present a risk to receptors. All of the detections were reviewed and this is presented in Appendix I. Based on this review the measured concentrations of non-target compounds across the four validation monitoring visits are not considered to present a significant risk to receptors or change the conceptual understanding of the site.

6.3 Potential Off-Site Sources

Hydraulically up gradient of the north-western corner of Back Plot B is RPA 3, as shown below. Remediation works were undertaken up gradient in RPA 3 between November 2012 and July 2014. The assessment of non-target CoC and non-target wells for target CoC (as evidenced in Appendix I) is considered to provide evidence that groundwater quality beneath Back Plot B is not adversely impacted by off-site potential sources. Specifically, concentrations of target CoCs relating to RPA 3 including chlorobenzenes (including 1,2-dichlorobenzene), n-1,2-pyridyl sulphanilamide, toluene chloroform and trichloroethene in monitoring wells AS4BH026, AS4BH032 and AS4BH038 located directly downgradient of RPA 3 are presented in Appendix Table I2 and have been considered further in the following section.



RPA3 Target Compound	Down-gradient distribution observed in Back Plot B and significance
1,2-Dichlorobenzene	All concentrations are below both human health and environmental SSAC
Acebutolol	Concentrations almost exclusively below laboratory MDL
Chlorobenzene	All concentrations are below both human health and environmental SSAC
N(1)-2-Pyridyl Sulfanilamide	Concentrations do not present a risk to human health. Compound is considered to be an indicative compound of the wider Back Plot B area and hence detections in AS4BH026 (16-969 µg/l) cannot be necessarily attributed to RPA3.
Toluene	Concentrations do not present a risk to human health and are below environmental SSAC.
Trichloroethene	Concentrations below human health SSAC. Compound is considered to be an indicative compound of the wider Back Plot B area and hence detections in AS4BH032 (74-139 µg/l) cannot be necessarily attributed to RPA3.

Some contamination remains in RPA3 though the concentrations are not considered to present a risk to human health and the potential to migrate is considered to be limited. Based on the available information, the impacts in RPA3 are not considered to present a future risk to Back Plot B; however, any future development works should consider the presence of the residual contamination and such works will need to be appropriately managed to prevent any localised mobilisation.

7 Summary and Conclusions

Following the remediation works undertaken in Back Plot B between September 2012 and December 2014:

- Over 40 kg of VOC have been removed
- 22 kg of site specific compounds have been removed
- Quality of laboratory data confirmed
- All human health SSAC have been met
- Performance criteria have been met or exceeded for each target compound
- Consideration of non-target compounds measured during the works are not considered to present any significant residual risk to receptors

Source reduction works have been undertaken and contaminant mass reduction has been successfully demonstrated to target the active pollutant linkages identified. Based on the evaluation against the performance criteria defined, the remediation assessment criteria as defined within the validation plan are considered to have been met.

Based on the inferred groundwater flow direction observed during the project, no areas which are undergoing remediation or are considered to require further remediation are located hydraulically up-gradient of Back Plot B. Therefore, groundwater quality within Back Plot B is considered unlikely to be detrimentally impacted in the future by up gradient sources associated with the surrounding former Sanofi Dagenham facility.

Tables

Tables 1a – 2b

Table 1a

Back Plot B Validation Monitoring Target Compounds - RPA 2 and DRAs 4, 6, 10, 13, 15 and 16 (µg/L)

Validation Well ID	Baseline (µg/L)	Maximum Concentration During Remediation	Validation Monitoring Round 1	Validation Monitoring Round 2	Validation Monitoring Round 3	Validation Monitoring Round 4
Target Compound	Acebutolol					
AS8BH098A	320	173	**5**	**5**	**5**	**5**
Average	320	173	**5**	**5**	**5**	**5**
Target Compound	Benzene					
AS4BH028	410	950	468	413	364	340
AS4BH037	770	719	413	402	337	385
HBH509ERM [1]	811	NS	NS	NS	NS	NS
AS4BH027	1256	1607	283	506	311	825
AS4BH036	283	1223	959	245	401	456
AS4BH040A	1498	1854	242	335	146	298
AS4BH042	5719	261	**0.5**	NS	275	**0.5**
AS4BH043	1192	836	515	495	219	326
AS4BH045	1488	163	14	54	101	104
AS4BH046 [3]	660	4	NS	NS	NS	NS
AS4BH048	803	188	**0.5**	**0.5**	15	**0.5**
AS4BH051	817	**0.5**	3.4	**0.5**	3	**0.5**
AS4BH052	1134	177	482	49	25	465
AS5BH002	206	1128	54.2	617	**0.5**	**0.5**
AS6BH003	3190	2180	1840	1810	2340	2110
HBH210ERM	2638	174	38	245	202	104
AS4BH050	176	96	5	2	**0.5**	**0.5**
AS6BH072 [2]	1696	311	1010	1270	742	746
Average	1375	698	395	430	343	385
Target Compound	Carbendazim					
AS4BH037	26	93	**5**	21	**5**	**5**
AS4BH027	63	53	**5**	**5**	**5**	**5**
Average	45	73	**5**	13	**5**	**5**
Target Compound	Carbofuran					
AS8BH110	**10**	**10**	**10**	**10**	**10**	**10**
Average	**10**	**10**	**10**	**10**	**10**	**10**
Target Compound	Chloroform					
HBH315BAE	40	2964	**2**	83	**2**	**2**
AS4BH044	119733	29000	12300	24600	435	13800
AS4BH050	59	102	89	95	71	82
AS8BH110	3	4	2	**2**	**2**	**2**
Average	29959	8018	3098	6195	128	3472
Target Compound	Cis-1,2-Dichloroethene					
AS4BH034	264	184	265	231	131	51
AS4BH027	2738	4144	42	614	206	1130
AS4BH036	174	1380	144	212	153	140
AS4BH042	3041	194	**3**	NS	10	**3**
HBH210ERM	2346	155	**3**	**3**	79	40
AS6BH072 [2]	17058	3090	67300	62700	36900	32400
Average	4270	1525	11293	12752	6247	5627
Target Compound	1,2-Dichlorobenzene					
AS8BH110	**3**	10	**3**	**3**	**3**	**3**
Average	**3**	10	**3**	**3**	**3**	**3**

Table 1a

Back Plot B Validation Monitoring Target Compounds - RPA 2 and DRAs 4, 6, 10, 13, 15 and 16 (µg/L)

Validation Well ID	Baseline (µg/L)	Maximum Concentration During Remediation	Validation Monitoring Round 1	Validation Monitoring Round 2	Validation Monitoring Round 3	Validation Monitoring Round 4
Target Compound	Diphenylguanidine					
AS4BH037	456	159	**5**	**5**	**5**	**5**
HBH509ERM [1]	54	NS	NS	NS	NS	NS
AS4BH040A	79	21	**5**	12	**5**	**5**
AS4BH042	71	**5**	**5**	NS	**5**	**5**
AS8BH099	50	73	41	**5**	22	**5**
Average	142	84	14	7	9	**5**
Target Compound	Ethylbenzene					
HBH011WSA [3]	949	3	NS	NS	NS	NS
HBH210ERM	601	41	4	24	52	**0.5**
Average	775	22	4	24	52	**0.5**
Target Compound	Ketoprofen*					
AS8BH110	11	**10**	**10**	**10**	**10**	**10**
AS4BH026	49	**10**	**10**	**10**	**10**	**10**
AS4BH028	55	**10**	**10**	**10**	17	**10**
AS4BH037	106	76	**10**	66	40	**10**
HBH509ERM [1]	610	NS	NS	NS	NS	NS
AS4BH027	43	196	**10**	**10**	**10**	**10**
AS4BH036	76	10	**10**	63	34	**10**
AS4BH040A	613	28	**10**	74	65	**10**
AS4BH042	77	**10**	**10**	NS	**10**	**10**
AS4BH043	113	140	**10**	58	14	**10**
AS4BH045	313	12	**10**	**10**	**10**	**10**
AS4BH048	264	**10**	**10**	31	**10**	**10**
AS4BH051	146	**10**	**10**	**10**	**10**	**10**
AS4BH052	268	**10**	**10**	136	22	**10**
AS5BH002	30	50	**10**	280	**10**	**10**
AS8BH100	276	**10**	**10**	**10**	**10**	**10**
AS8BH113 [4]	152	12	NS	NS	NS	NS
Average	188	38	**10**	56	19	**10**
Target Compound	N(1)-2-Pyridyl Sulfanilamide					
AS4BH026	58	157	16	969	18	31
AS4BH028	142	592	158	150	259	367
AS4BH029	579	8527	204	349	218	206
AS4BH033	2155	6123	444	416	389	126
AS4BH037	3682	7078	1960	1990	**5**	2300
AS4BH027	14390	30639	1680	5380	2160	8410
AS4BH040A	8013	5536	1490	1880	1570	3110
AS4BH042	5276	629	**5**	NS	363	10
AS4BH043	8522	1816	800	1100	489	970
AS4BH051	124	22	**5**	**5**	**5**	**5**
AS4BH052	27	135	286	105	140	498
AS8BH098A	440	653	107	106	**5**	**5**
AS8BH099	785	13747	5310	5120	6160	504
AS8BH110	108	**5**	**5**	**5**	**5**	**5**
Average	3164	5404	891	1352	842	1182

Table 1a

Back Plot B Validation Monitoring Target Compounds - RPA 2 and DRAs 4, 6, 10, 13, 15 and 16 (µg/L)

Validation Well ID	Baseline (µg/L)	Maximum Concentration During Remediation	Validation Monitoring Round 1	Validation Monitoring Round 2	Validation Monitoring Round 3	Validation Monitoring Round 4
Target Compound	Sulphamethizole					
AS4BH028	80	103	68	63	62	62
AS4BH033	33	447	6	10	6	**5**
AS4BH037	913	807	479	531	**5**	376
HBH509ERM [1]	1159	NS	NS	NS	NS	NS
AS4BH027	213	949	50	88	40	102
AS4BH040A	1017	372	140	176	92	180
AS4BH042	303	18	**5**	NS	9	**5**
AS4BH043	820	93	52	92	25	53
AS8BH099	291	773	679	587	557	51
Average	537	445	185	221	100	104
Target Compound	Sulphathiazole					
AS4BH026	29	128	8	**5**	14	12
AS4BH028	47	105	32	42	85	89
AS4BH029	79	396	21	42	23	23
AS4BH033	684	986	113	205	109	126
AS4BH037	1395	1630	759	833	**5**	521
HBH509ERM [1]	2386	NS	NS	NS	NS	NS
AS4BH027	264	915	109	152	102	131
AS4BH040A	2487	807	303	492	316	524
AS4BH042	362	14	**5**	NS	22	**5**
AS4BH043	1640	184	69	119	35	50
AS6BH072 [2]	17	6	-	37	14	10
AS8BH098A	20	685	26	20	1140	**5**
AS8BH099	637	1627	959	998	795	105
Average	773	624	219	268	222	133
Target Compound	Toluene					
AS4BH038	5721	67662	**0.5**	**0.5**	**0.5**	**0.5**
HBH210ERM	3216	5	**0.5**	**0.5**	4	1
AS4BH044	57059	147	**0.5**	683	37	182
Average	21999	22605	**0.5**	228	14	61
Target Compound	Trichloroethene					
AS4BH032	80	111	57	139	74	136
AS4BH044	7696	2920	1510	2550	47	1890
AS8BH110	73	82	**10**	15	16	21
Average	2616	1038	526	901	46	682
Target Compound	Vinyl Chloride					
AS4BH037	146	276	87	51	74	79
HBH509ERM [1]	108	NS	NS	NS	NS	NS
AS4BH027	1238	990	210	211	267	334
AS4BH040A	444	2058	104	211	44	166
AS4BH042	6769	979	**0.1**	NS	43	7
AS4BH043	117	1483	449	576	171	336
AS4BH051	636	0.3	**0.1**	**0.1**	**0.1**	**0.1**
AS4BH052	137	19	11	2	1	2
HBH210ERM	2122	140	3	7	112	93
Average	1302	743	108	151	89	127
Target Compound	Xylenes					
HBH011WSA [3]	1109	389	NS	NS	NS	NS
Average	1109	389	NS	NS	NS	NS

Notes

Where SUM calculations include data reported as below the laboratory Method Detection Limit (MDL), half the MDL figure has been used.

Where reduction is to <MDL, a >99% reduction value has been given.

First validation visit undertaken Dec 2014 - April 2015, second March - June 2015, third June - September 2015, and fourth September - December 2015.

Trend lines includes data from baseline, the maximum concentration from during remediation works and the four validation visits.

Xylene was a target compound in only one well (HBH011WSA) which was dry during validation monitoring.

1	Measured concentration reported below the laboratory Method Detection Limit (MDL)
<MDL	Measured concentration and basline concentration below the laboratory Method Detection Limit (MDL)
NS	No sample. Sample unable to be taken.
*	Ketoprofen concentration includes daughter breakdown compound 3-ethylbenzophenone
[1]	HBH509ERM has been unable to be located since pre 2013.
[2]	AS6BH072 replaced ASS6BH001 in March 2015 due to well becoming blocked.
[3]	HBH011WSA and AS4BH046 was dry during validation monitoring and therefore unable to be sampled.
[4]	AS8BH113 was unable to be sampled due to localised flooding.

Table 1b

Back Plot B Validation Monitoring Target Compounds - DRA18 (µg/L)

Validation Well ID	Baseline (µg/L)	Maximum Concentration During Remediation	Validation Monitoring Round 1	Validation Monitoring Round 2	Validation Monitoring Round 3	Validation Monitoring Round 4
Target Compound	Carbendazim					
AS5BH012	10	12	5	**5**	7	**5**
AS5BH014	11	9	**5**	**5**	**5**	**5**
AS6BH010	6	**5**	**5**	**5**	**5**	**5**
AS6BH012	**5**	33	7	**5**	8	**5**
AS6BH014	**5**	**5**	**5**	**5**	**5**	**5**
AS6BH016	**5**	14	**5**	**5**	**5**	**5**
AS7BH027	**5**	5	**5**	**5**	**5**	**5**
AS7BH028	**5**	28	15	**5**	23	24
AS7BH029	**5**	6	**5**	**5**	**5**	**5**
AS7BH030	7	8	**5**	**5**	**5**	**5**
AS7BH033	10	14	**5**	**5**	11	5
AS7BH034	10	13	6	**5**	**5**	9
AS7BH036	**5**	**5**	**5**	**5**	**5**	**5**
AS7BH037	6	6	**5**	**5**	6	**5**
AS7BH038	**5**	6	**5**	**5**	**5**	**5**
AS7BH039	**5**	7	**5**	**5**	**5**	**5**
AS7BH040	**5**	**5**	**5**	**5**	**5**	**5**
AS7BH041	**5**	17	**5**	**5**	**5**	**5**
AS7BH042	**5**	17	**5**	**5**	**5**	**5**
AS7BH043	**5**	13	**5**	**5**	**5**	**5**
AS7BH045	**100**	330	52	**5**	86	**5**
AS7BH046	**5**	786	6	**5**	**5**	**5**
AS7BH047	**5**	**5**	**5**	**5**	**5**	**5**
AS8BH107	**5**	**5**	**5**	**5**	**5**	**5**
AS8BH108	22	32	**5**	**5**	**5**	**5**
Average	10	55	7	5	9	6

Target Compound	Diphenylguanidine					
AS5BH012	52	82	9	**5**	12	38
AS5BH014	48	11	**5**	**5**	**5**	11
AS6BH010	34	45	**5**	**5**	13	**5**
AS6BH012	43	44	**5**	**5**	6	36
AS6BH014	29	39	**5**	**5**	**5**	**5**
AS6BH016	44	25	**5**	13	**5**	**5**
AS7BH027	36	29	**5**	**5**	**5**	53
AS7BH028	306	112	25	**5**	123	110
AS7BH029	45	20	**5**	**5**	**5**	24
AS7BH030	35	24	**5**	**5**	**5**	15
AS7BH033	46	66	**5**	**5**	**5**	77
AS7BH034	58	33	**5**	**5**	**5**	49
AS7BH036	77	9	**5**	**5**	**5**	19
AS7BH037	**5**	22	**5**	39	**5**	14
AS7BH038	30	30	**5**	**5**	**5**	**5**
AS7BH039	74	180	**5**	**5**	**5**	**5**
AS7BH040	67	24	**5**	**5**	6	**5**
AS7BH041	24	46	**5**	**5**	**5**	**5**
AS7BH042	31	394	**5**	**5**	**5**	**5**
AS7BH043	15	263	**5**	**5**	**5**	**5**
AS7BH045	**100**	87	**5**	22	6	**5**
AS7BH046	27	**5**	**5**	32	**5**	**5**
AS7BH047	27	45	**5**	**5**	**5**	**5**
AS8BH107	28	32	**5**	24	**5**	**5**
AS8BH108	**5**	**5**	6	**5**	**5**	**5**
Average	51	67	6	9	10	21

Target Compound	N(1)-2-Pyridyl Sulfanilamide					
AS5BH012	1945	2000	849	964	682	862
AS5BH014	771	447	128	76	284	179
AS6BH010	946	945	945	1010	188	941
AS6BH012	1501	1330	631	396	754	406
AS6BH014	1005	380	60	91	284	**5**
AS6BH016	288	183	135	497	119	30
AS7BH027	905	1067	487	127	718	615
AS7BH028	1154	1784	1010	1110	1610	1670
AS7BH029	932	1007	490	447	807	699
AS7BH030	355	385	172	96	250	221
AS7BH033	812	1122	68	62	798	418
AS7BH034	1421	999	999	763	499	891
AS7BH036	948	451	334	108	313	360
AS7BH037	786	861	581	539	933	186
AS7BH038	990	438	105	147	13	**5**
AS7BH039	1231	1071	270	282	688	45
AS7BH040	190	165	121	87	58	77
AS7BH041	462	513	104	131	353	142
AS7BH042	191	503	19	23	138	**5**
AS7BH043	553	506	141	114	199	202
AS7BH045	997	1206	638	112	888	11
AS7BH046	1065	3824	66	61	183	**5**
AS7BH047	206	386	386	415	332	347
AS8BH107	552	606	382	344	599	491
AS8BH108	11976	10300	2350	1260	3700	4260
Average	1287	1299	459	370	616	523

Table 1b

Back Plot B Validation Monitoring Target Compounds - DRA18 (µg/L)

Validation Well ID	Baseline (µg/L)	Maximum Concentration During Remediation	Validation Monitoring Round 1	Validation Monitoring Round 2	Validation Monitoring Round 3	Validation Monitoring Round 4
Target Compound	Pentobarbital					
AS5BH012	87	78	78	109	119	102
AS5BH014	57	19	**10**	**10**	22	**10**
AS6BH010	77	98	70	82	97	89
AS6BH012	136	140	77	66	100	87
AS6BH014	49	43	18	18	22	34
AS6BH016	86	39	39	140	44	50
AS7BH027	93	99	71	18	107	83
AS7BH028	500	440	194	236	329	236
AS7BH029	80	114	56	54	92	93
AS7BH030	50	69	17	**10**	52	25
AS7BH033	65	212	14	13	167	111
AS7BH034	171	197	172	200	239	190
AS7BH036	245	109	109	18	103	62
AS7BH037	20	109	32	31	64	20
AS7BH038	94	72	72	27	95	104
AS7BH039	187	115	55	53	127	119
AS7BH040	92	33	14	**10**	42	20
AS7BH041	50	43	**10**	**10**	22	16
AS7BH042	41	84	**10**	**10**	33	**10**
AS7BH043	11	119	**10**	41	159	95
AS7BH045	689	224	114	41	288	380
AS7BH046	209	269	49	61	99	52
AS7BH047	46	41	41	44	40	46
AS8BH107	147	112	112	129	71	30
AS8BH108	49	27	**10**	**10**	22	19
Average	133	116	58	58	102	83
Target Compound	Sulphathiazole					
AS5BH012	627	558	249	374	343	330
AS5BH014	304	209	49	24	165	84
AS6BH010	495	361	361	460	**5**	424
AS6BH012	1616	1116	427	242	561	326
AS6BH014	92	24	**5**	**5**	165	61
AS6BH016	441	219	207	448	6	33
AS7BH027	240	169	89	61	272	201
AS7BH028	1661	1176	614	785	1020	842
AS7BH029	554	442	183	156	277	270
AS7BH030	212	169	78	48	98	117
AS7BH033	353	1060	29	34	874	421
AS7BH034	802	349	25	96	**5**	40
AS7BH036	110	438	90	34	70	150
AS7BH037	445	438	195	192	248	186
AS7BH038	376	136	8	15	**5**	**5**
AS7BH039	616	536	43	19	**5**	9
AS7BH040	74	56	**5**	9	6	**5**
AS7BH041	254	376	40	31	133	65
AS7BH042	803	3616	33	16	659	**5**
AS7BH043	581	1293	140	208	583	410
AS7BH045	1292	1335	456	185	979	9
AS7BH046	355	1553	**5**	19	48	**5**
AS7BH047	192	177	158	171	168	167
AS8BH107	44	56	36	54	15	6
AS8BH108	6	37	**5**	**5**	**5**	**5**
Average	502	636	141	148	269	167
Target Compound	SUM Site Specific Pharmaceutical Compounds					
AS5BH012	3548	2740	1769	2164	1968	2220
AS5BH014	1890	1124	317	155	880	528
AS6BH010	2179	1150	1952	2169	545	2146
AS6BH012	4425	3613	1780	1106	2284	1493
AS6BH014	1520	655	186	219	426	183
AS6BH016	1678	830	955	2198	732	336
AS7BH027	1822	1760	1085	333	1778	1672
AS7BH028	5498	4795	2774	3226	4880	4295
AS7BH029	2360	2305	1136	1008	1866	1740
AS7BH030	1137	2096	473	262	704	691
AS7BH033	1699	3136	152	156	3072	1684
AS7BH034	3767	2197	2469	2106	1807	2939
AS7BH036	2377	1276	1198	279	1204	1101
AS7BH037	1683	1926	1169	1185	1955	1040
AS7BH038	2383	1205	618	410	309	160
AS7BH039	3520	3112	715	691	2025	457
AS7BH040	1335	1090	287	186	939	374
AS7BH041	1151	1047	248	265	717	454
AS7BH042	1536	6071	111	76	1682	22
AS7BH043	2252	4792	608	1019	3482	2492
AS7BH045	5605	5723	2381	842	4698	508
AS7BH046	2391	8175	423	465	731	192
AS7BH047	921	664	898	953	923	899
AS8BH107	1030	967	681	733	807	574
AS8BH108	12166	10501	743	1280	3766	4343
Average	2795	2918	1005	939	1767	1302

Table 1b

Back Plot B Validation Monitoring Target Compounds - DRA18 (µg/L)

Validation Well ID	Baseline (µg/L)	Maximum Concentration During Remediation	Validation Monitoring Round 1	Validation Monitoring Round 2	Validation Monitoring Round 3	Validation Monitoring Round 4
Target Compound	SUM VOC					
AS5BH012	441	578	213	355	171	200
AS5BH014	1008	298	79	51	145	119
AS6BH010	102	67	27	26	36	38
AS6BH012	141	120	121	108	88	137
AS6BH014	9	7	7	4	<MDL	11
AS6BH016	12	5	16	9	60	4
AS7BH027	70	55	29	33	60	41
AS7BH028	60	51	32	31	35	48
AS7BH029	170	139	90	101	117	151
AS7BH030	1223	1968	174	179	143	270
AS7BH033	49	44	13	9	32	39
AS7BH034	19	36	38	17	16	39
AS7BH036	42	63	43	7	21	33
AS7BH037	9	24	25	13	4	26
AS7BH038	<	6	4	7	8	17
AS7BH039	20	260	13	4	23	24
AS7BH040	17	78	13	<	14	12
AS7BH041	11	4	8	<	7	5
AS7BH042	1	43	<	<	9	<
AS7BH043	4	79	7	17	33	37
AS7BH045	124	233	<	<	24	34
AS7BH046	1396	18356	9	8	322	50
AS7BH047	48	45	17	31	10	33
AS8BH107	6510	7963	5535	7138	3056	461
AS8BH108	39	43	5	6	10	7
Average	480	1223	283	388	185	76

Notes

Where reduction is to <MDL, a 99% reduction value has been given.

First validation visit undertaken Dec 2014 , second March 2015, third June 2015, and fourth September 2015.

Trend lines includes data from baseline, the maximum concentration from during remediation works and the four validation visits.

<	SUM VOC or SUM Site Specific Pharmaceutical Compounds value <MDL. Therfore no value given.
1	Measured concentration reported below the laboratory Method Detection Limit (MDL)
<MDL	Measured concentration and basline concentration below the laboratory Method Detection Limit (MDL)

Table 2a

Back Plot B Validation Monitoring Target Compounds - RPA 2 and DRAs 4, 6, 10, 13, 15 and 16 (µg/L)

Validation Well ID	Average Baseline Concentration	Maximum Concentration During Remediation	Validation Monitoring Round 1			Validation Monitoring Round 2			Validation Monitoring Round 3			Validation Monitoring Round 4		
			Average Groundwater Concentration	% Reduction Relative to Max Remediation Concentration	% Reduction Relative to Baseline Concentration	Average Groundwater Concentration	% Reduction Relative to Max Remediation Concentration	% Reduction Relative to Baseline Concentration	Average Groundwater Concentration	% Reduction Relative to Max Remediation Concentration	% Reduction Relative to Baseline Concentration	Average Groundwater Concentration	% Reduction Relative to Max Remediation Concentration	% Reduction Relative to Baseline Concentration
Acebutolol	320	173	**5**	>99%	>99%	**5**	>99%	>99%	**5**	>99%	>99%	**5**	>99%	>99%
Benzene	1375	698	395	43%	71%	430	38%	69%	343	51%	75%	385	45%	72%
Carbendazim	45	73	**5**	>99%	>99%	13	82%	71%	**5**	>99%	>99%	**5**	>99%	>99%
Carbofuran	**10**	**10**	**10**	<MDL	<MDL	**10**	<MDL	<MDL	**10**	<MDL	<MDL	**10**	<MDL	<MDL
Chloroform	29959	8018	3098	61%	90%	6195	23%	79%	128	98%	>99%	3472	57%	88%
Cis-1,2-Dichloroethene	4270	1525	11293	0%	0%	12752	0%	0%	6247	0%	0%	5627	0%	0%
1,2-Dichlorobenzene	**3**	10	**3**	>99%	<MDL	**3**	>99%	<MDL	**3**	>99%	<MDL	**3**	>99%	<MDL
Diphenylguanidine	142	84	14	83%	90%	7	91%	95%	9	89%	93%	**5**	>99%	>99%
Ethylbenzene	775	22	4	83%	>99%	24	-7%	97%	52	-137%	93%	**0.5**	>99%	>99%
Ketoprofen*	188	38	**10**	>99%	>99%	56	-47%	70%	19	50%	90%	**10**	>99%	>99%
N(1)-2-Pyridyl Sulfanilamide	3164	5404	891	84%	72%	1352	75%	57%	842	84%	73%	1182	78%	63%
Sulphamethizole	537	445	185	58%	66%	221	50%	59%	100	78%	81%	104	77%	81%
Sulphathiazole	773	624	219	65%	72%	268	57%	65%	222	64%	71%	133	79%	83%
Toluene	21999	22605	**0.5**	>99%	>99%	228	99%	99%	14	>99%	>99%	61	>99%	>99%
Trichloroethene	2616	1038	526	49%	80%	901	13%	66%	46	96%	98%	682	34%	74%
Vinyl Chloride	1302	743	108	85%	92%	151	80%	88%	89	88%	93%	127	83%	90%
Xylenes	1109	389	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes

Where reduction is to <MDL, a >99% reduction value has been given.

First validation visit undertaken Jan-March 2015, second June 2015, third September 2015, and fourth December 2015.

Xylene was a target compound in only one well (HBH011WSA) which was dry during validation monitoring.

1	Measured concentration reported below the laboratory Method Detection Limit (MDL)
*	Ketoprofen concentration includes daughter breakdown compound 3-ethylbenzophenone
<MDL	Measured concentration and baseline concentration below the laboratory Method Detection Limit (MDL)
NS	No sample. Sample unable to be taken.

Table 2b

Comparision of Back Plot B Validation Monitoring Target Compounds - DRA18 (µg/L)

Validation Well ID	Average Baseline Concentration	Maximum Concentration During Remediation	Validation Monitoring Round 1			Validation Monitoring Round 2			Validation Monitoring Round 3			Validation Monitoring Round 4		
			Average Groundwater Concentration	% Reduction Relative to Max Remediation Concentration	% Reduction Relative to Baseline Concentration	Average Groundwater Concentration	% Reduction Relative to Max Remediation Concentration	% Reduction Relative to Baseline Concentration	Average Groundwater Concentration	% Reduction Relative to Max Remediation Concentration	% Reduction Relative to Baseline Concentration	Average Groundwater Concentration	% Reduction Relative to Max Remediation Concentration	% Reduction Relative to Baseline Concentration
Carbendazim	10	55	7	87%	29%	**5**	91%	>99%	9	83%	10%	6	89%	44%
Diphenylguanidine	51	67	6	91%	88%	9	86%	82%	10	84%	80%	21	69%	60%
N(1)-2-Pyridyl Sulfanilamide	1287	1299	459	65%	64%	370	71%	71%	616	53%	52%	523	60%	59%
Pentobarbital	133	116	58	50%	56%	58	50%	57%	102	12%	23%	83	28%	37%
Sulphathiazole	502	636	141	78%	72%	148	77%	71%	269	58%	46%	167	74%	67%
SUM Site Specific Pharmaceutical Compounds	2795	2918	1005	66%	64%	939	68%	66%	1767	39%	37%	1302	55%	53%
SUM VOC	480	1223	283	77%	41%	388	68%	19%	185	85%	61%	76	94%	84%

Notes

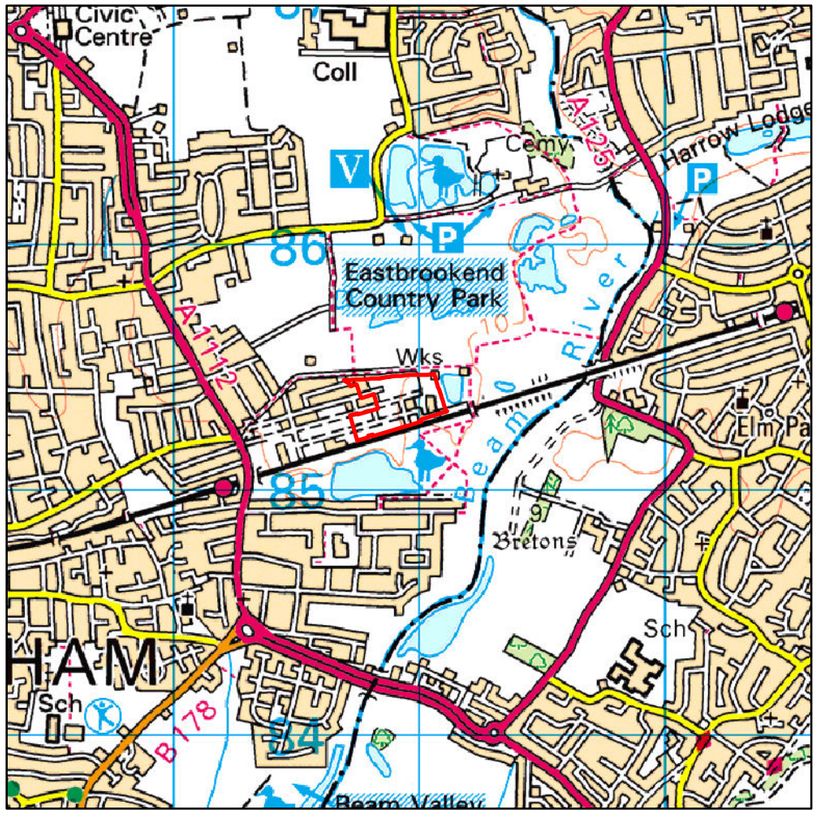
Where reduction is to <MDL, a 99% reduction value has been given.

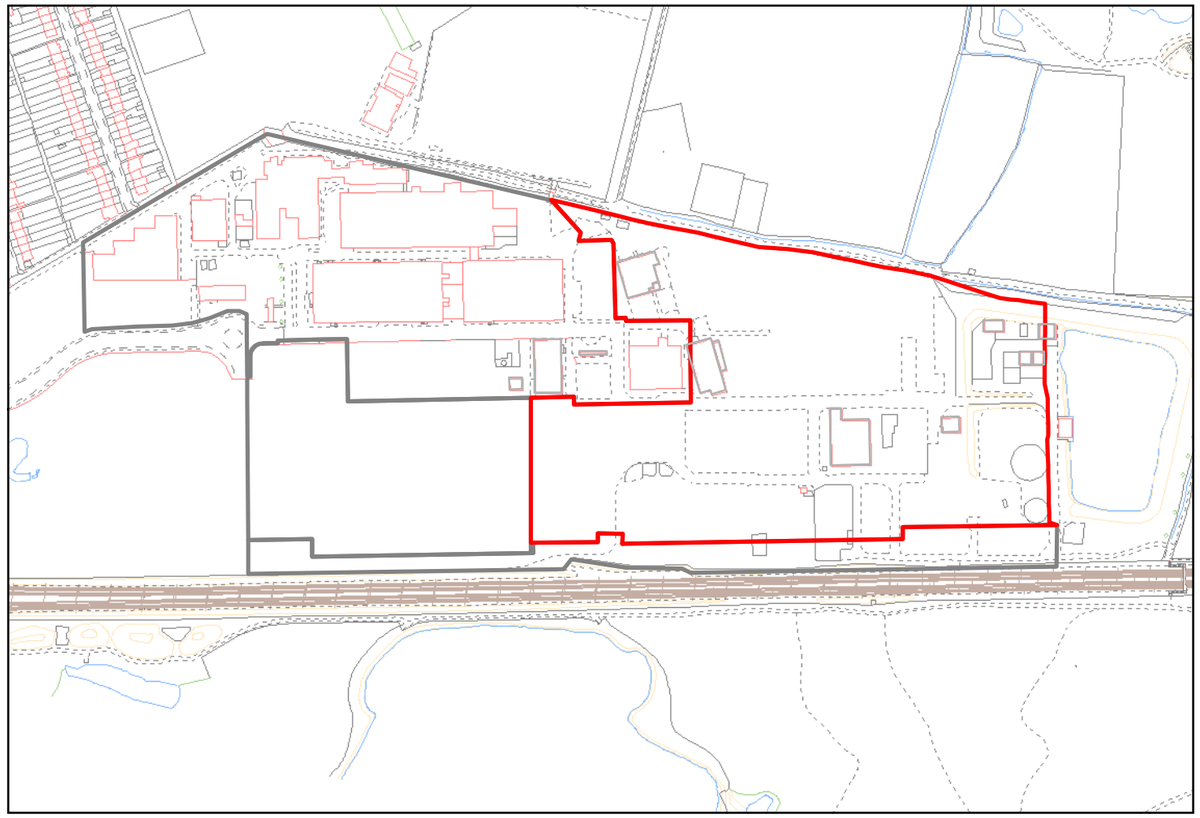
First validation visit undertaken Dec 2014 , second March 2015, third June 2015, and fourth September 2015.

5 Measured concentration reported below the laboratory Method Detection Limit (MDL)

APPENDIX A

FIGURES





LEGEND

- VALIDATION MONITORING WELLS
- OTHER DEVELOPMENT AREAS
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

*AS6BH072 REPLACED AS6BH001 FOLLOWING WELL BECOMING BLOCKED

0 5 10 20 30 40 50 Metres

N

TITLE: **SITE LOCATION AND LAYOUT PLAN**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 1	
DATE :	15/03/16	DRAWN BY :	RJM
DRG No. :	92887012301 GIS		
SCALE :	1 : 2,000	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets

LEGEND

- VALIDATION MONITORING WELLS
- BACK PLOT B
- RPA
- AIR SPARGING WITH SVE (DRA 13 AND 15)
- GROUNDWATER PUMPING (DRA 4 , 6 AND 18)
- GROUNDWATER PUMPING FOLLOWED BY ISCO (DRA 8 AND RPA 2)
- ISCO (DRA 16)

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

0 5 10 20 30 40 50 Metres

N

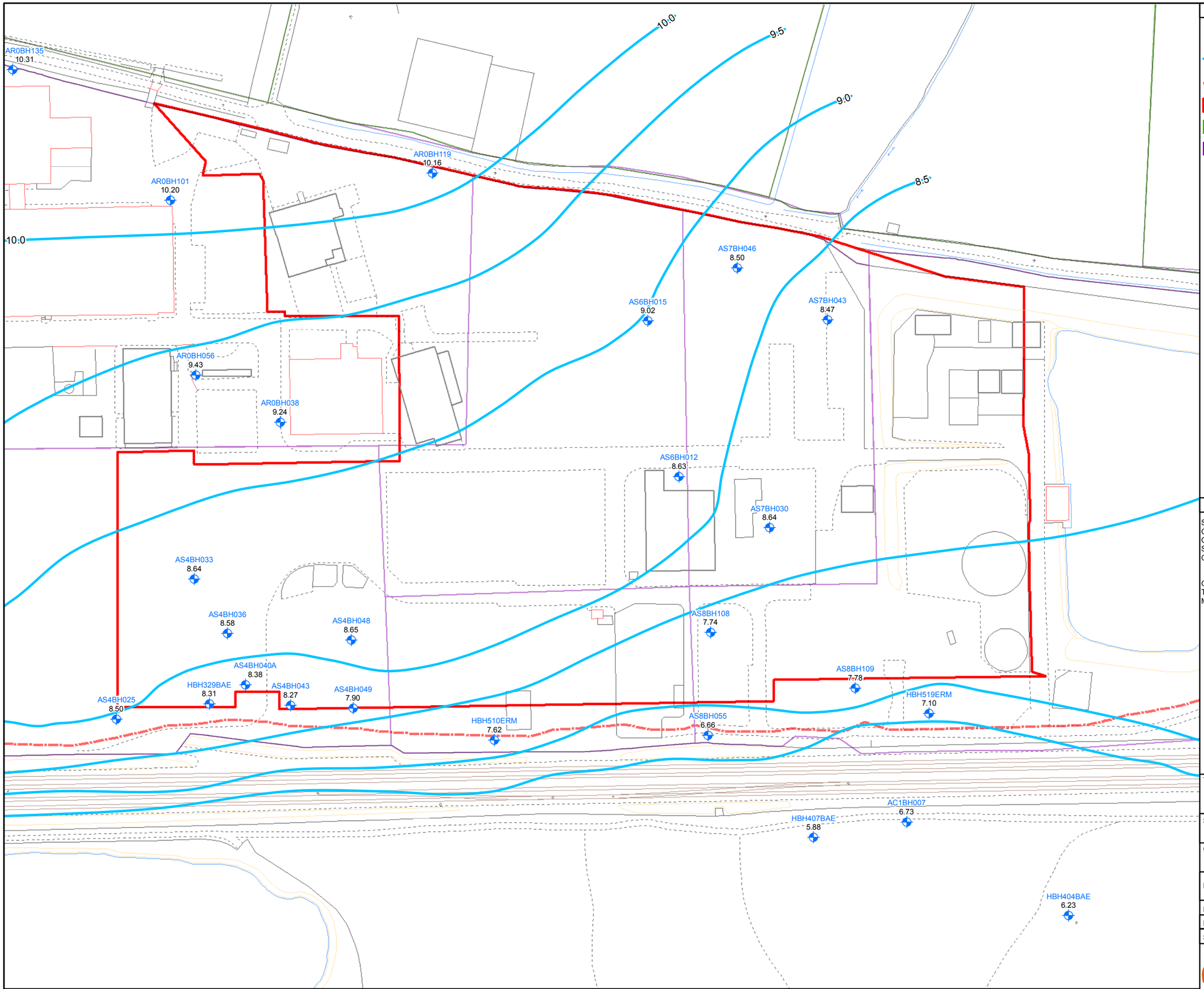
TITLE: **VALIDATION MONITORING WELLS**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 2	
DATE :	08/04/16	DRAWN BY :	RJM
DRG No. :	92887012302 GIS		
SCALE :	1 : 1,300	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets



LEGEND

- MONITORING WELL
- INFERRED GROUNDWATER CONTOURS (mAOD)
- PRB
- DEVELOPMENT PLOTS
- GREEN BELT ZONE BOUNDARY
- SITE ZONE BOUNDARY

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

GROUNDWATER ELEVATION DATA TAKEN FROM THE OCTOBER 2015 SITE WIDE BIANNUAL MONITORING VISIT

0 4.5 9 18 27 36 45 Metres

N

TITLE: **GROUNDWATER ELEVATION AND INFERRED CONTOUR PLAN (mAOD) - BACKPLOT B**

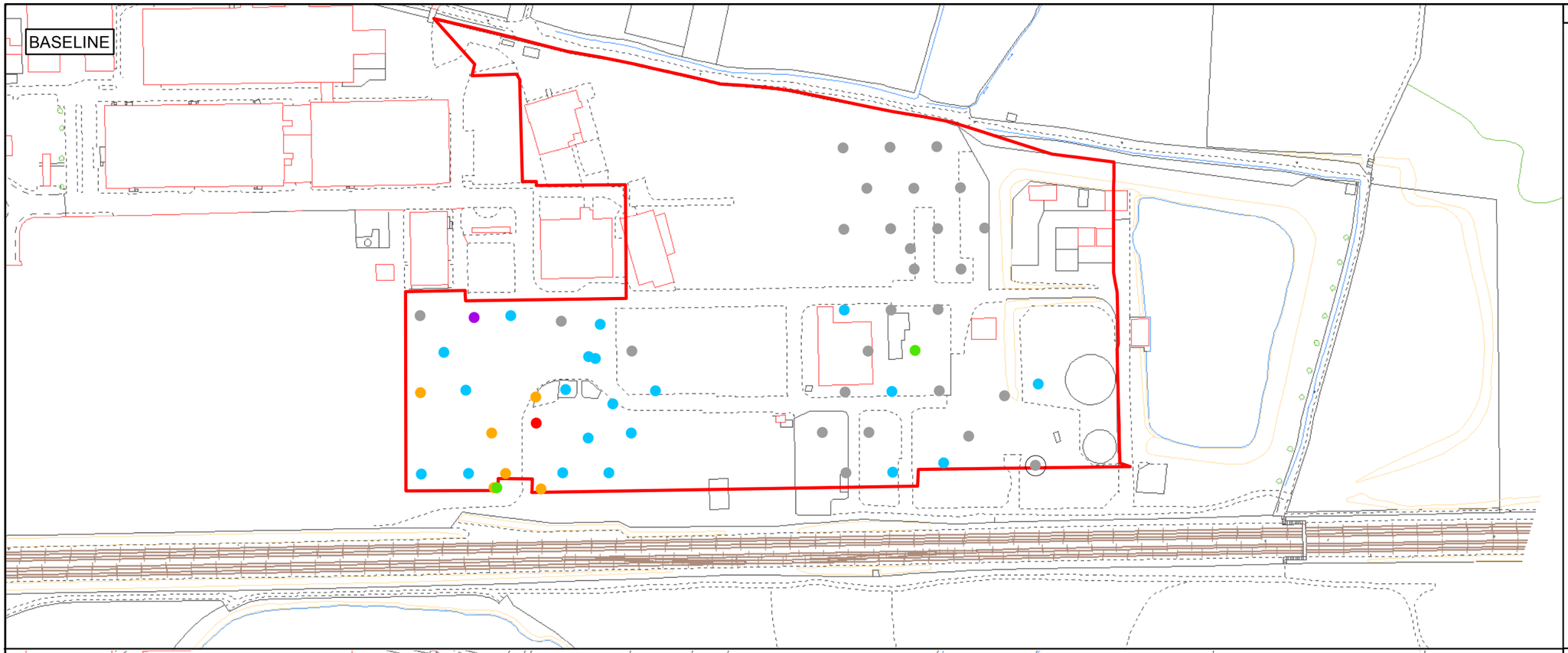
SITE : **DAGENHAM FACILITY**

CLIENT : **SANOFI**

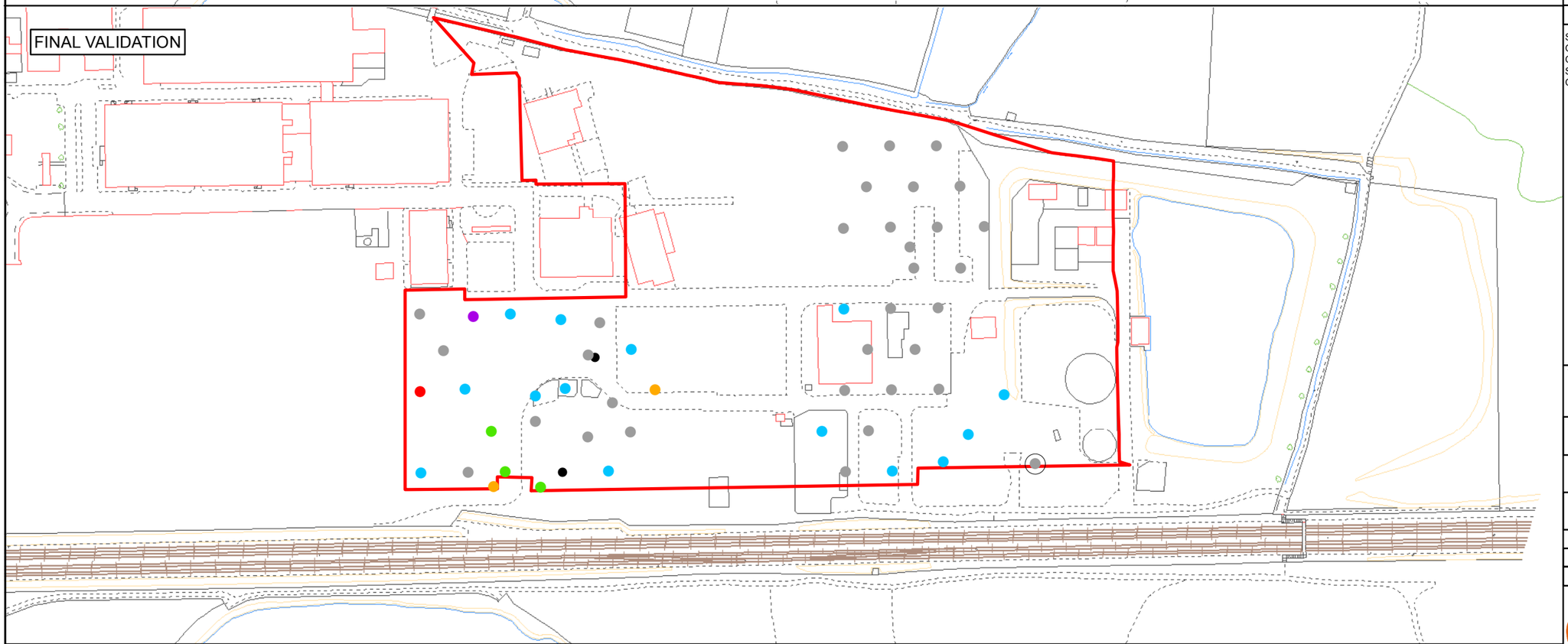
PROJECT :	**27127107**	**FIGURE 3**	
DATE :	15/03/16	DRAWN BY :	RJM
DRG No. :	92887012307 GIS		
SCALE :	**1 : 1,500**	PRINT :	**A3**

ARCADIS Design & Consultancy for natural and built assets

BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - 1,2-DICHLOROBENZENE - BASELINE AND FINAL VALIDATION**

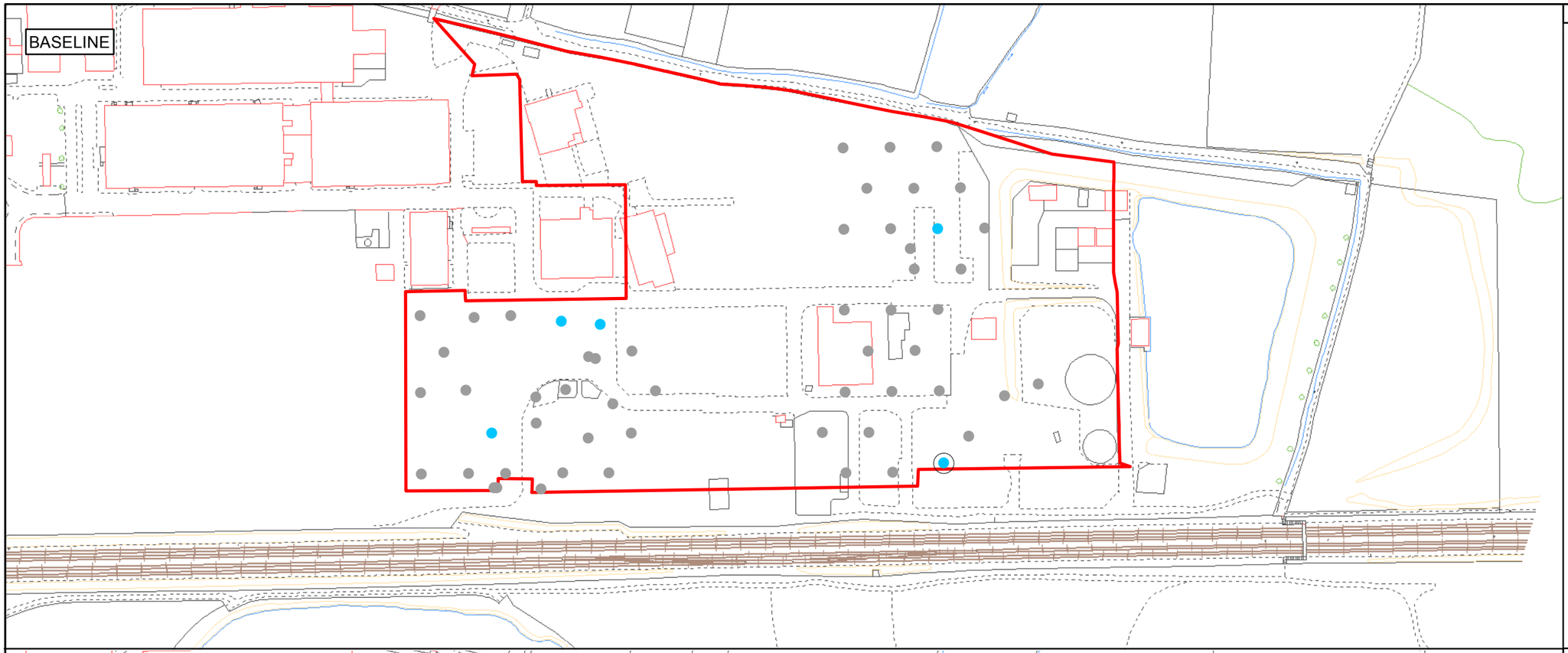
SITE : **BACK PLOT B**

CLIENT : **SANOFI**

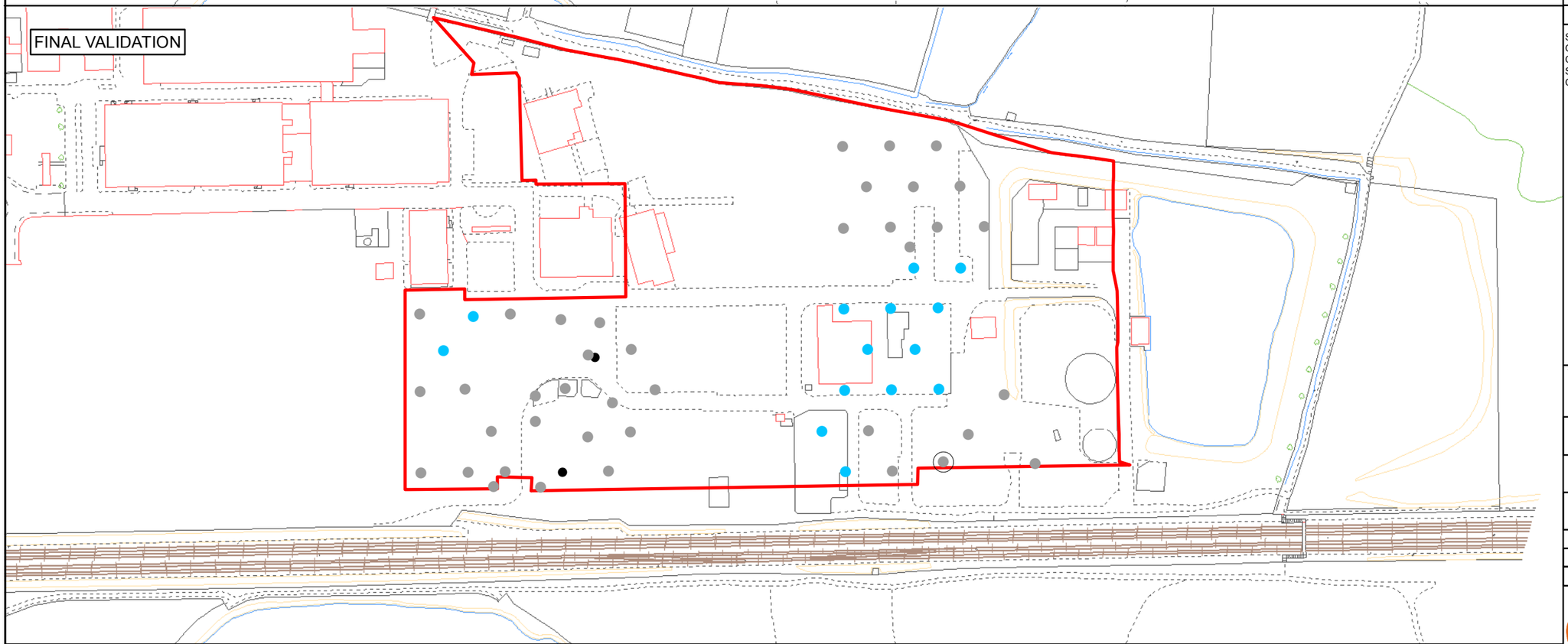
PROJECT :	27127107	FIGURE 4	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012279 GIS		
SCALE :	1 : 2,500	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets

BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µG/L
- 500 - 1,000 µG/L
- 1,000 - 5,000 µG/L
- 5,000 - 10,000 µG/L
- > 10,000 µG/L
- DRY WELL
- Target Compound for this well
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - ACEBUTOLOL - BASELINE AND FINAL VALIDATION**

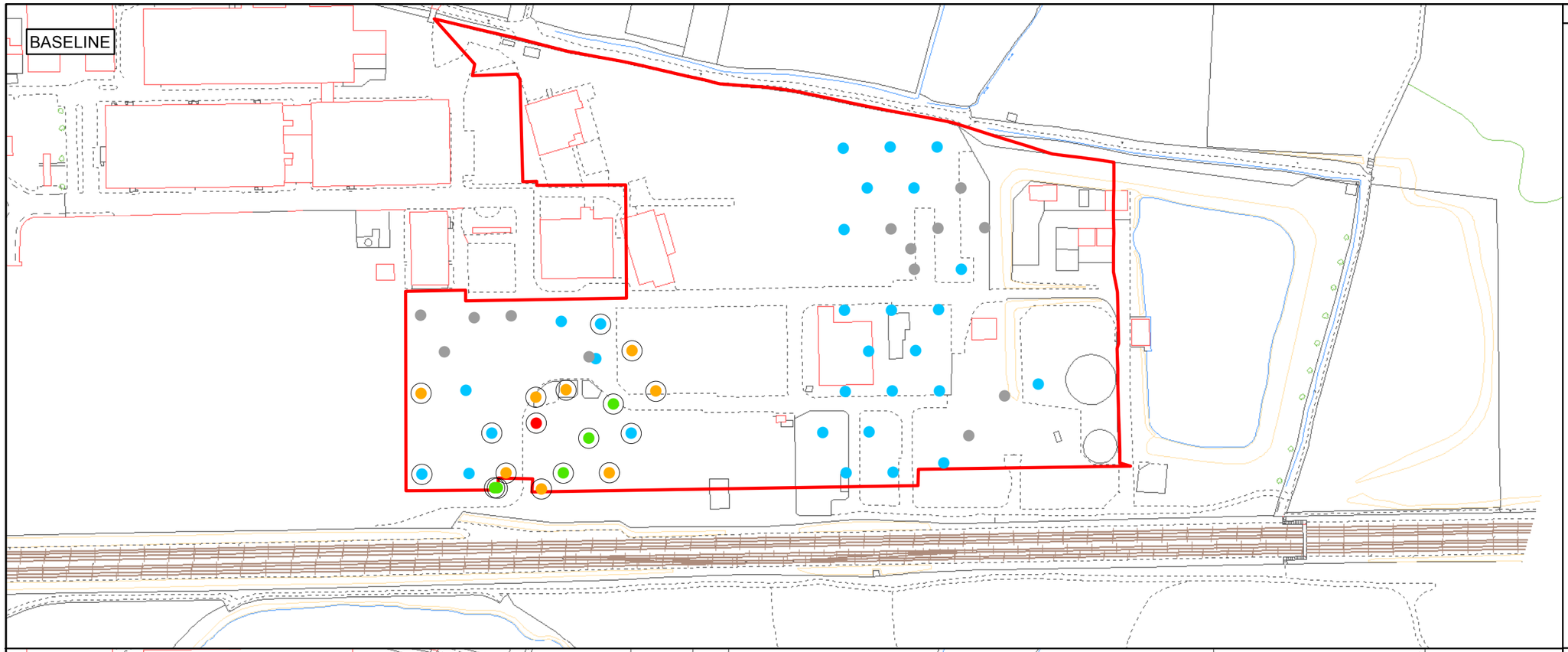
SITE : **BACK PLOT B**

CLIENT : **SANOFI**

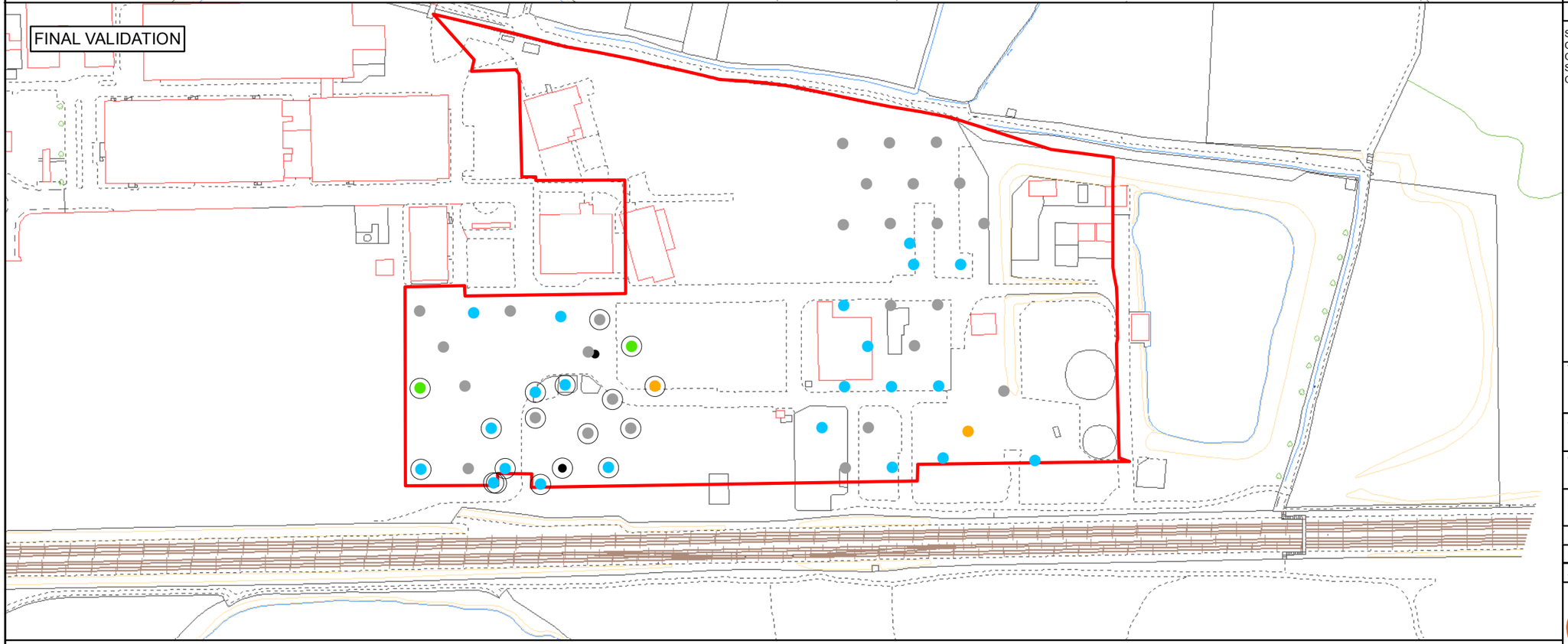
PROJECT :	27127107	FIGURE 5	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012280 GIS		
SCALE :	1 : 2,500	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets

BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

0 10 20 40 60 80 100 Metres

N

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - BENZENE - BASELINE AND FINAL VALIDATION**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	**27127107**	**FIGURE 6**	
DATE :	19/04/16	DRAWN BY :	RJM
DRG No. :	92887012282 GIS		
SCALE :	**1 : 2,500**	PRINT :	**A3**

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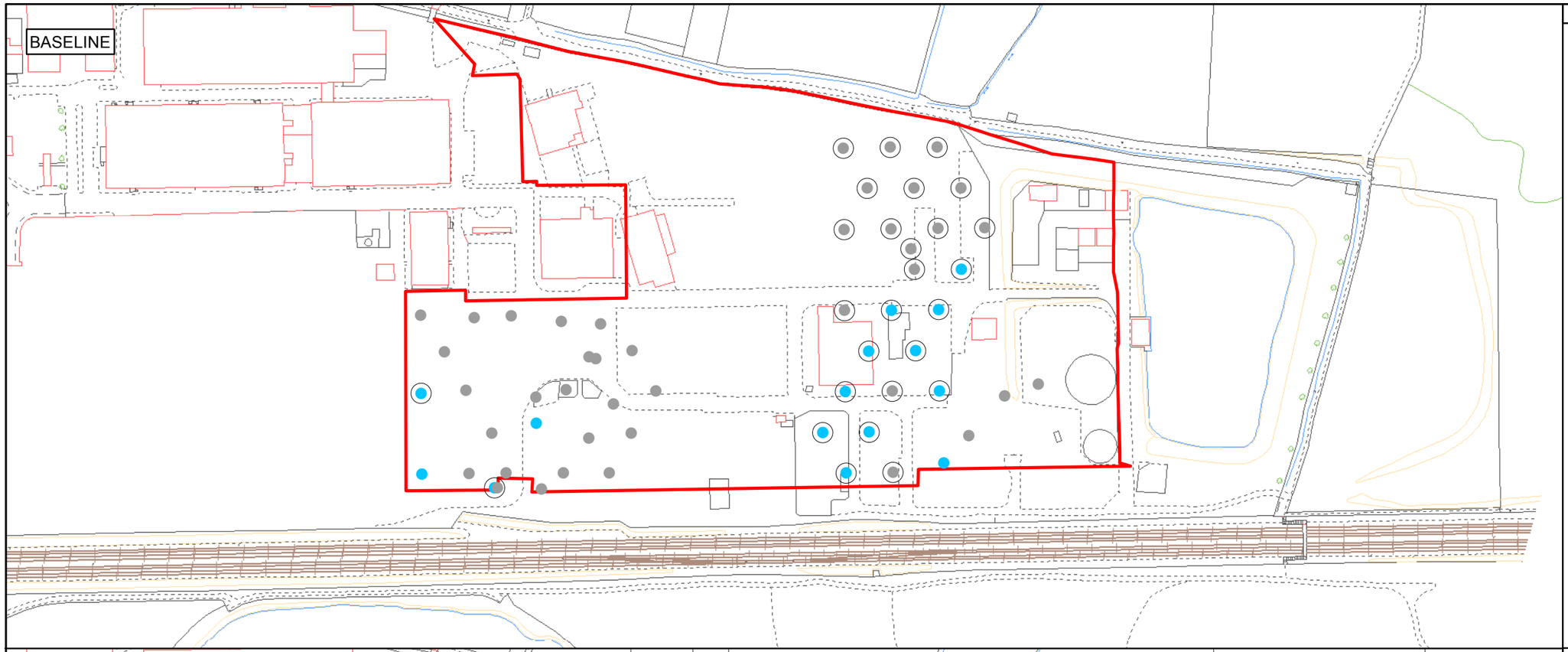
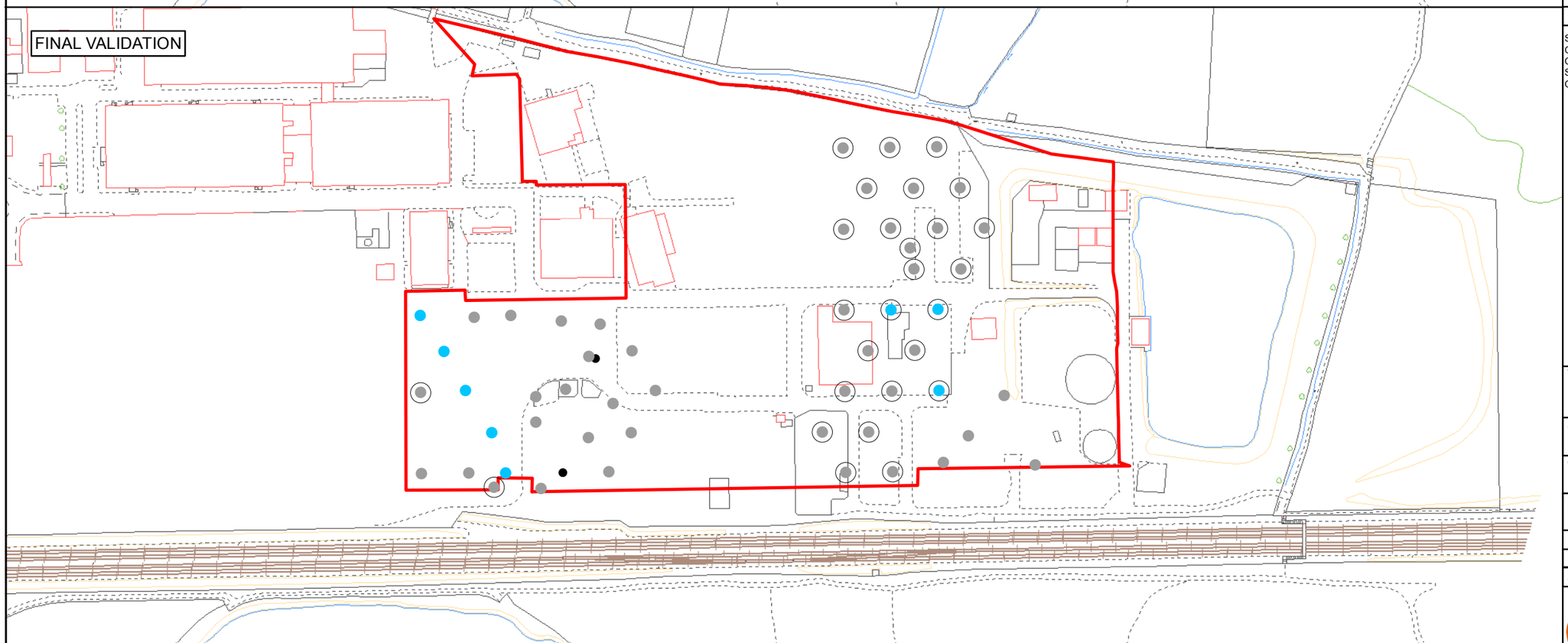
BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

0 10 20 40 60 80 100 Metres

N

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - CARBENDIAZM - BASELINE AND FINAL VALIDATION**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	**27127107**	**FIGURE 7**	
DATE :	19/04/16	DRAWN BY :	RJM
DRG No. :	92887012283 GIS		
SCALE :	**1 : 2,500**	PRINT :	**A3**

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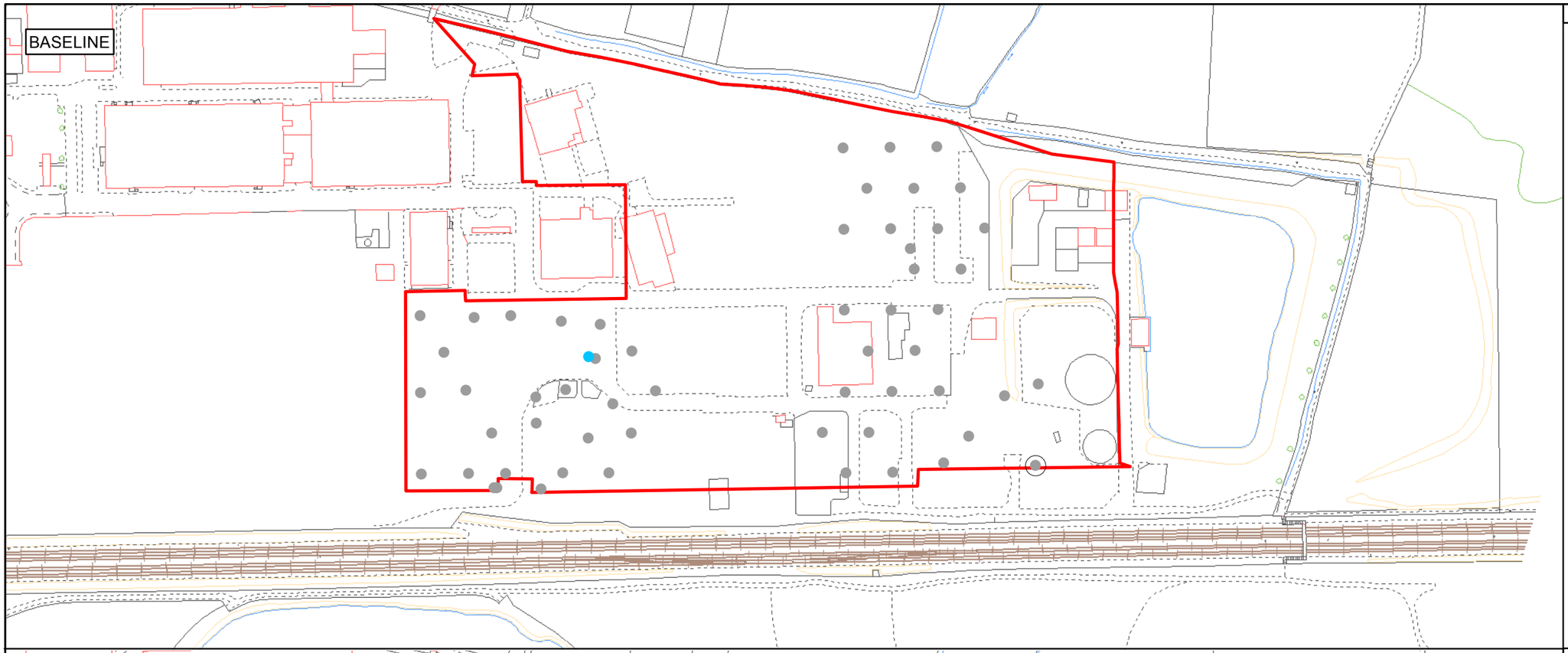
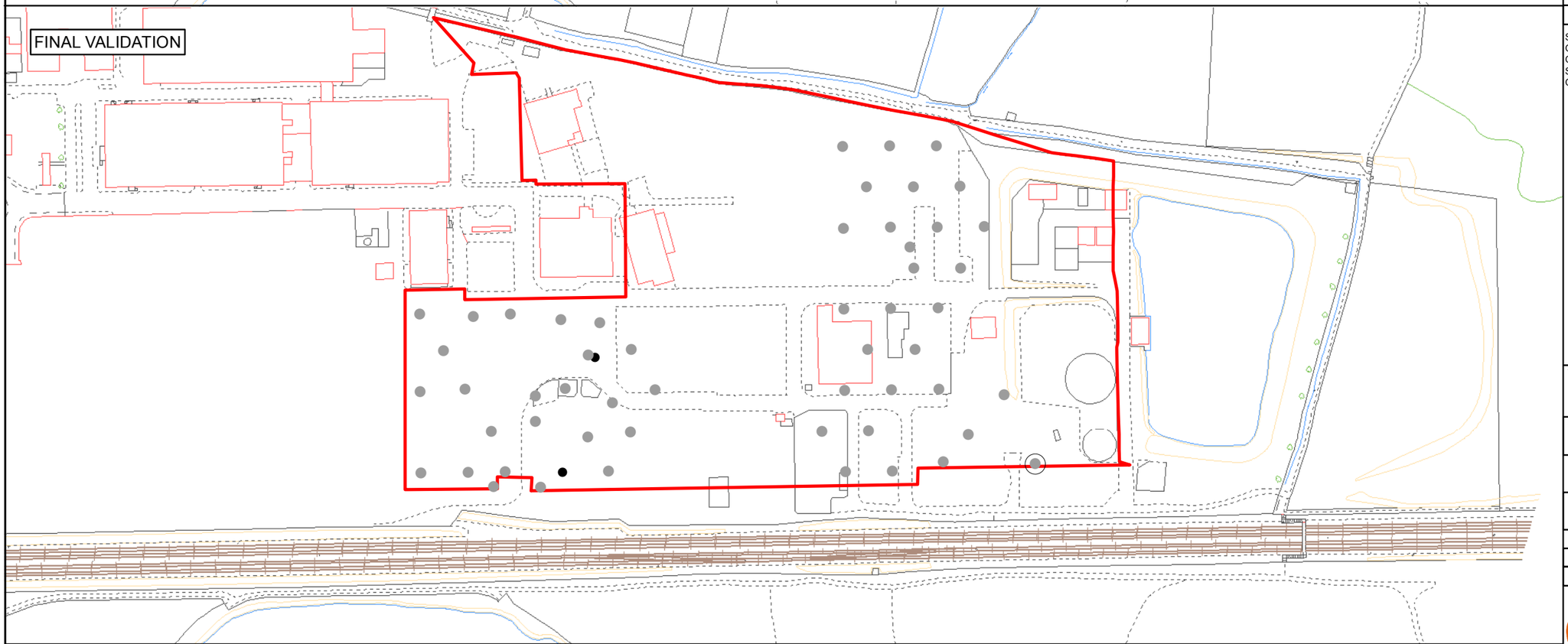
BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - CARBOFURAN - BASELINE AND FINAL VALIDATION**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 8	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012284 GIS		
SCALE :	1 : 2,500	PRINT :	A3

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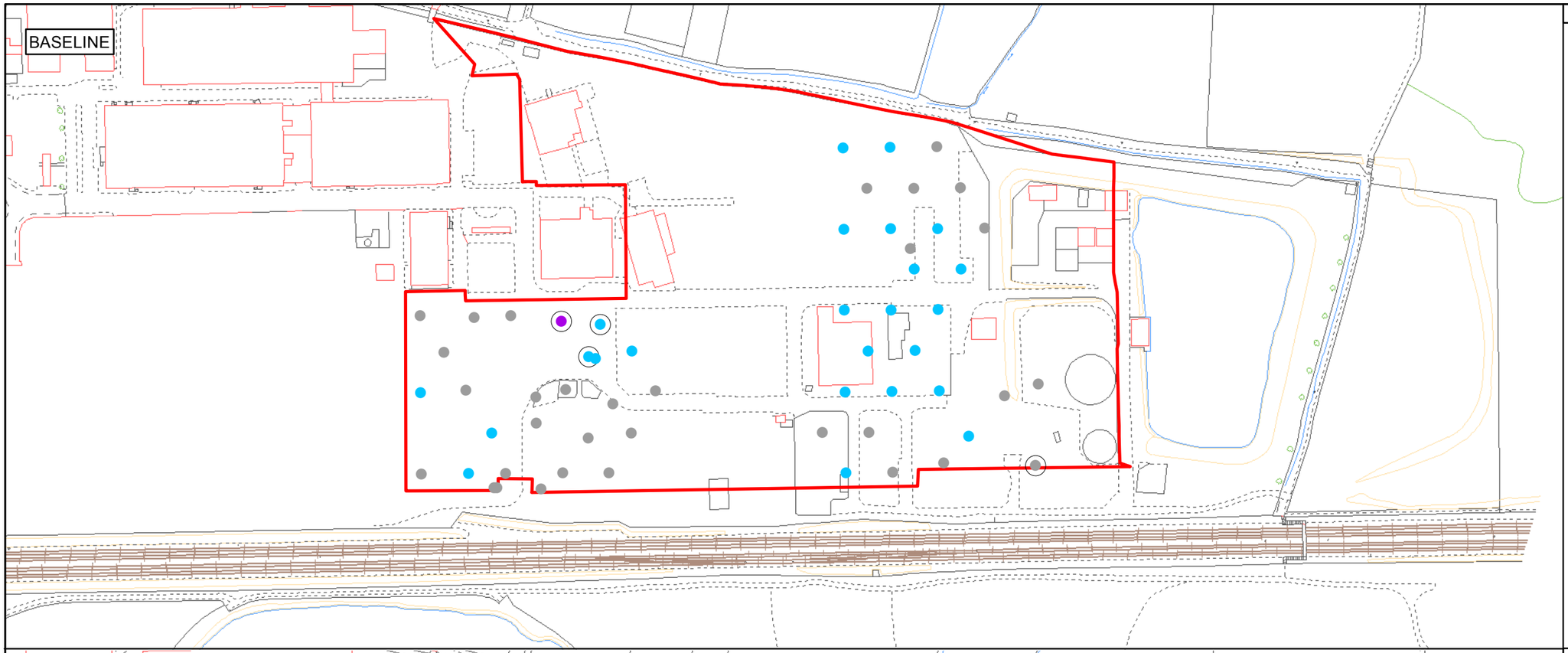
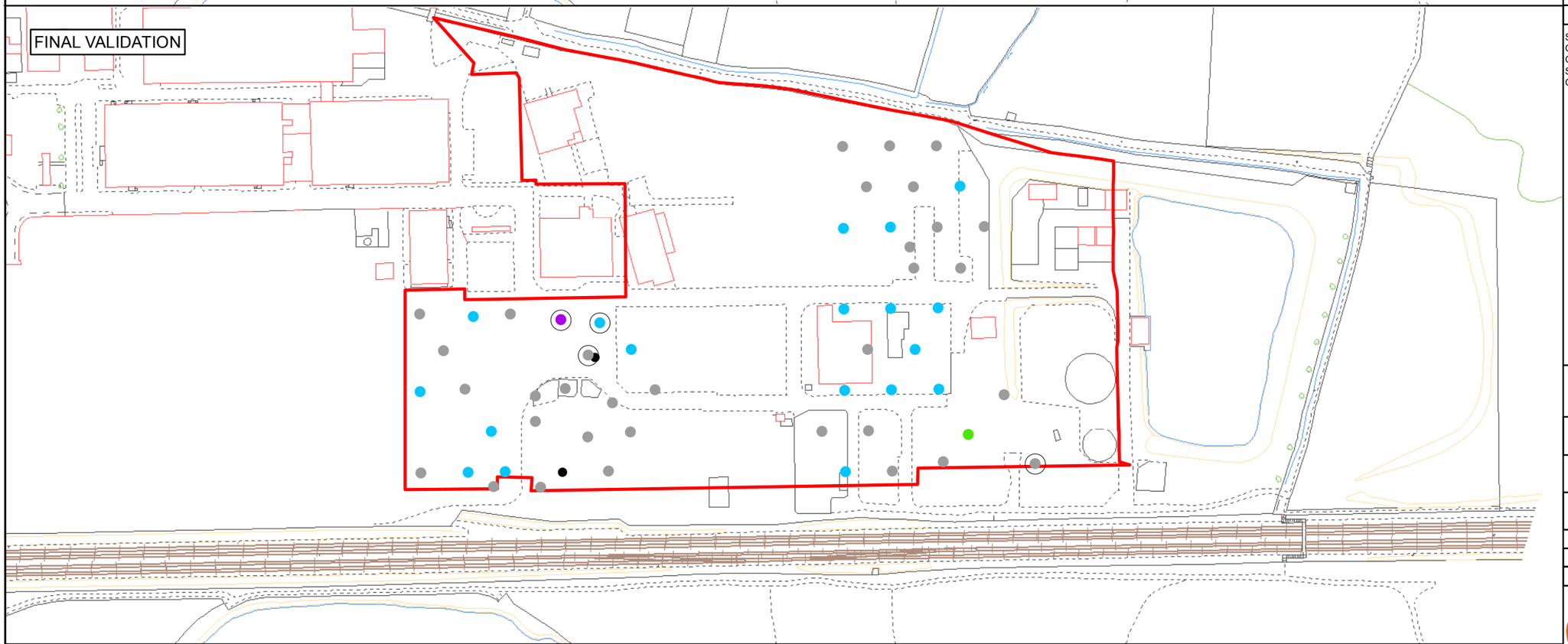
BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - CHLOROFORM - BASELINE AND FINAL VALIDATION**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 9	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012285 GIS		
SCALE :	1 : 2,500	PRINT :	A3

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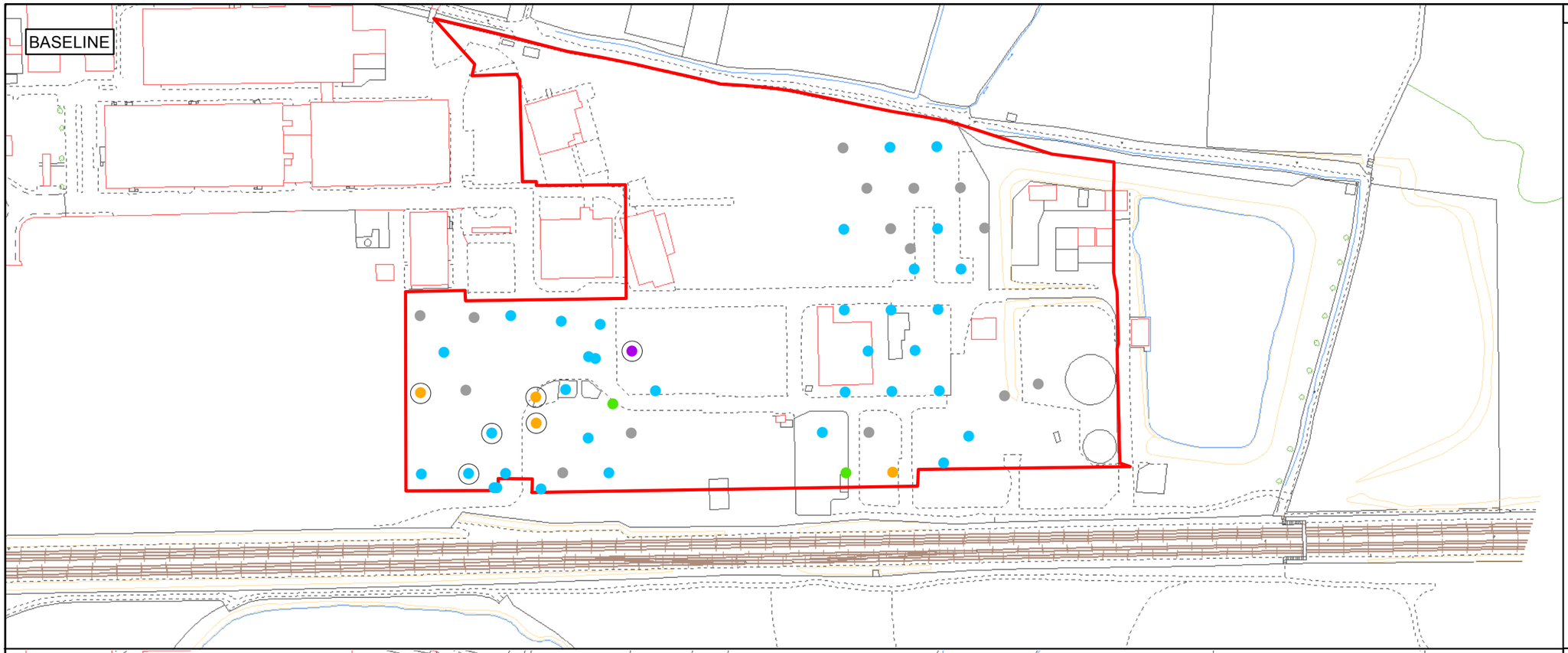
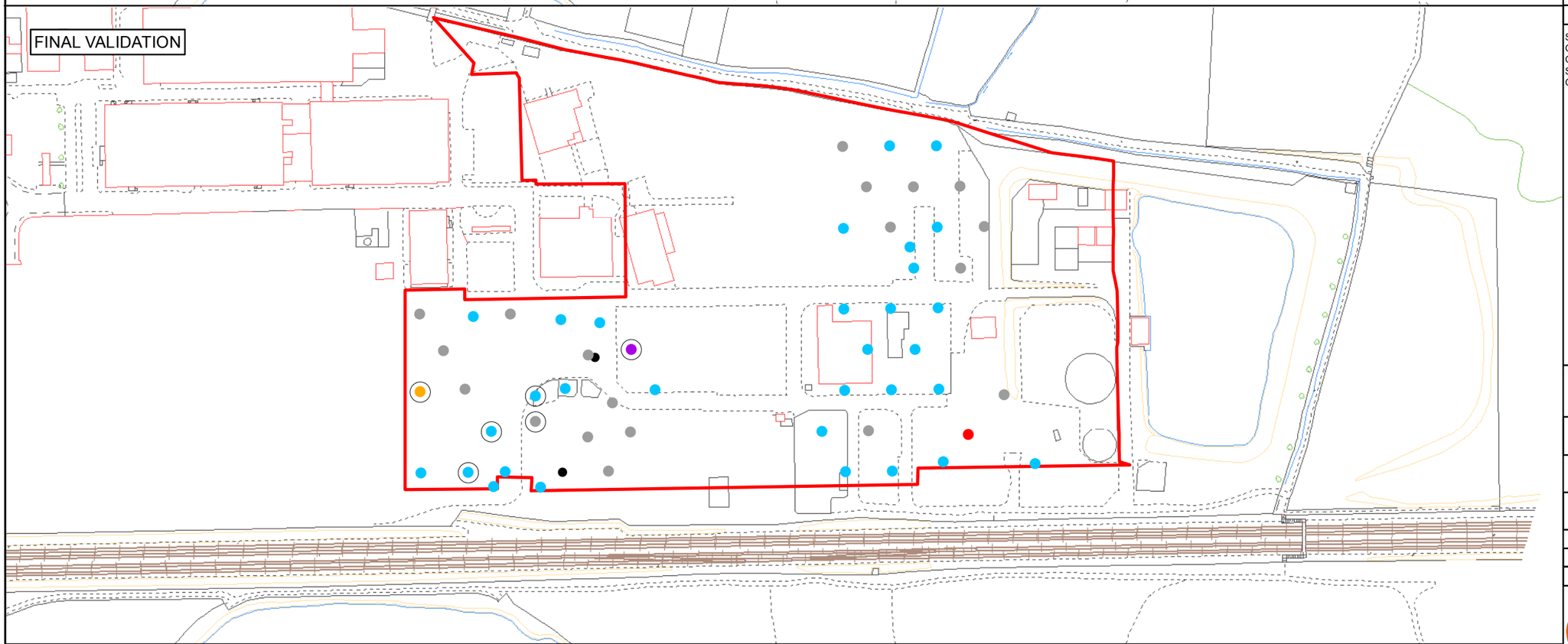
BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - CIS-1,2-DICHLOROETHENE - BASELINE AND FINAL VALIDATION**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 10	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012286 GIS		
SCALE :	1 : 2,500	PRINT :	A3

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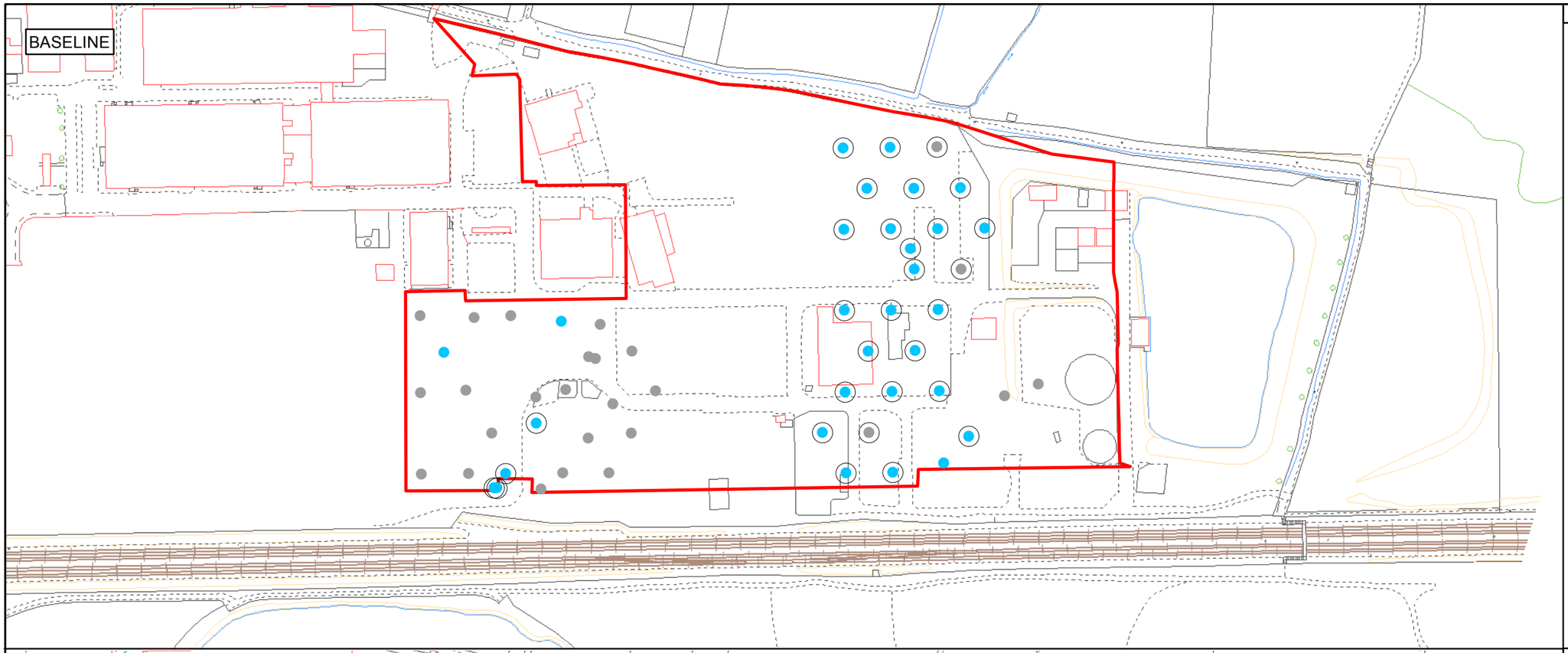
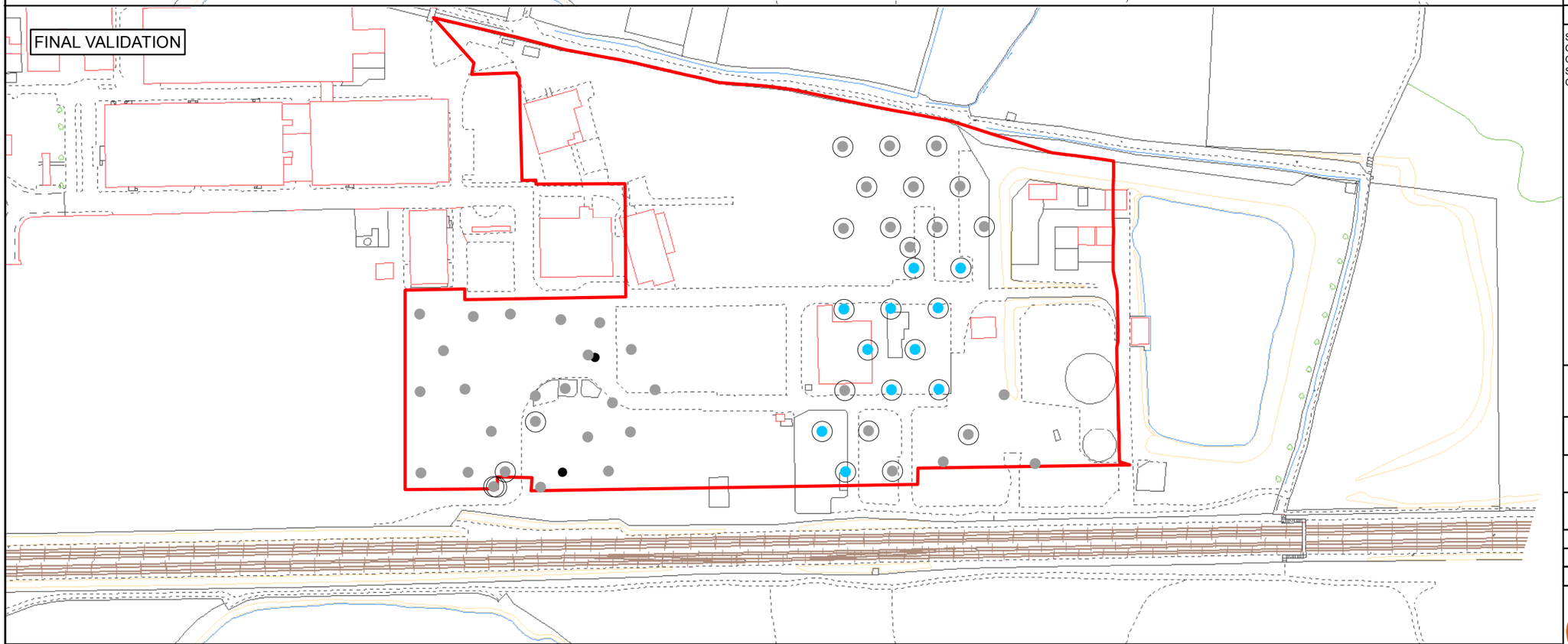
BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - DIPHENYLGUANIDINE - BASELINE AND FINAL VALIDATION**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 11	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012287 GIS		
SCALE :	1 : 2,500	PRINT :	A3

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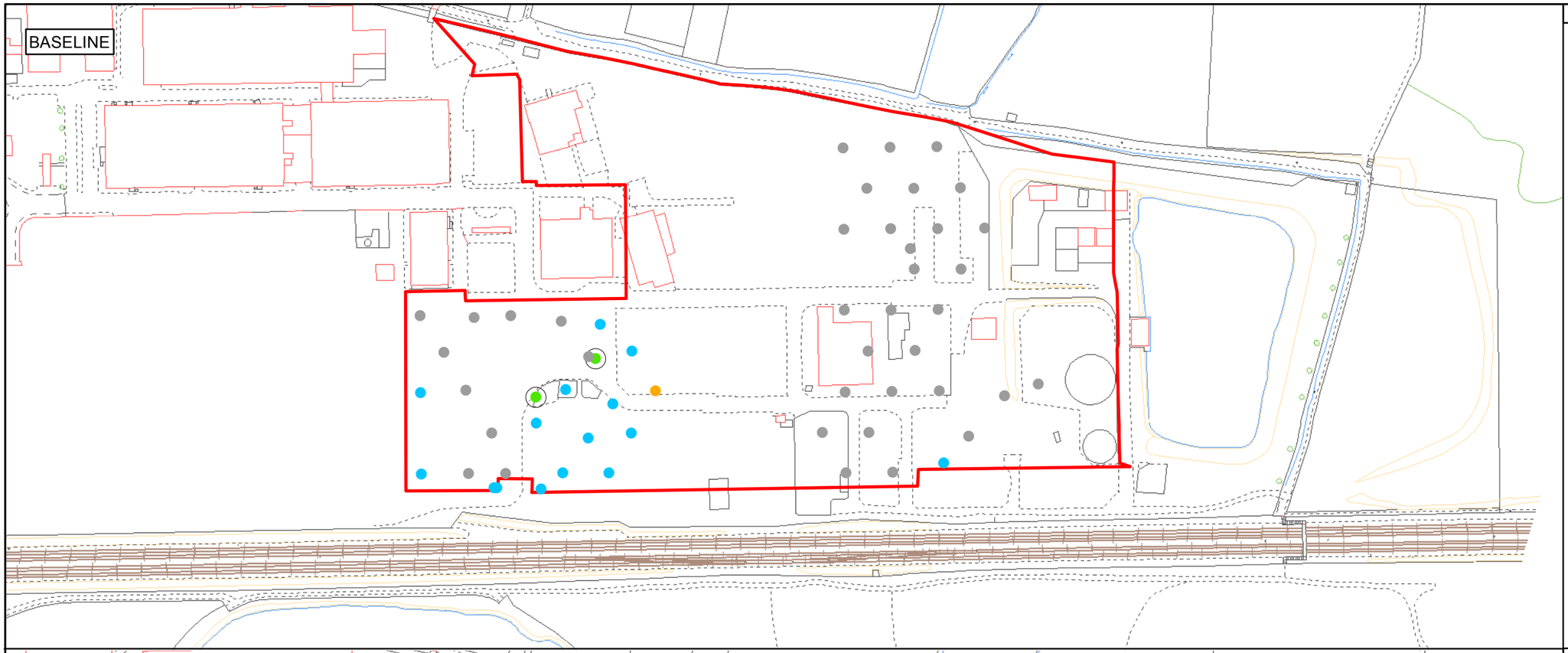

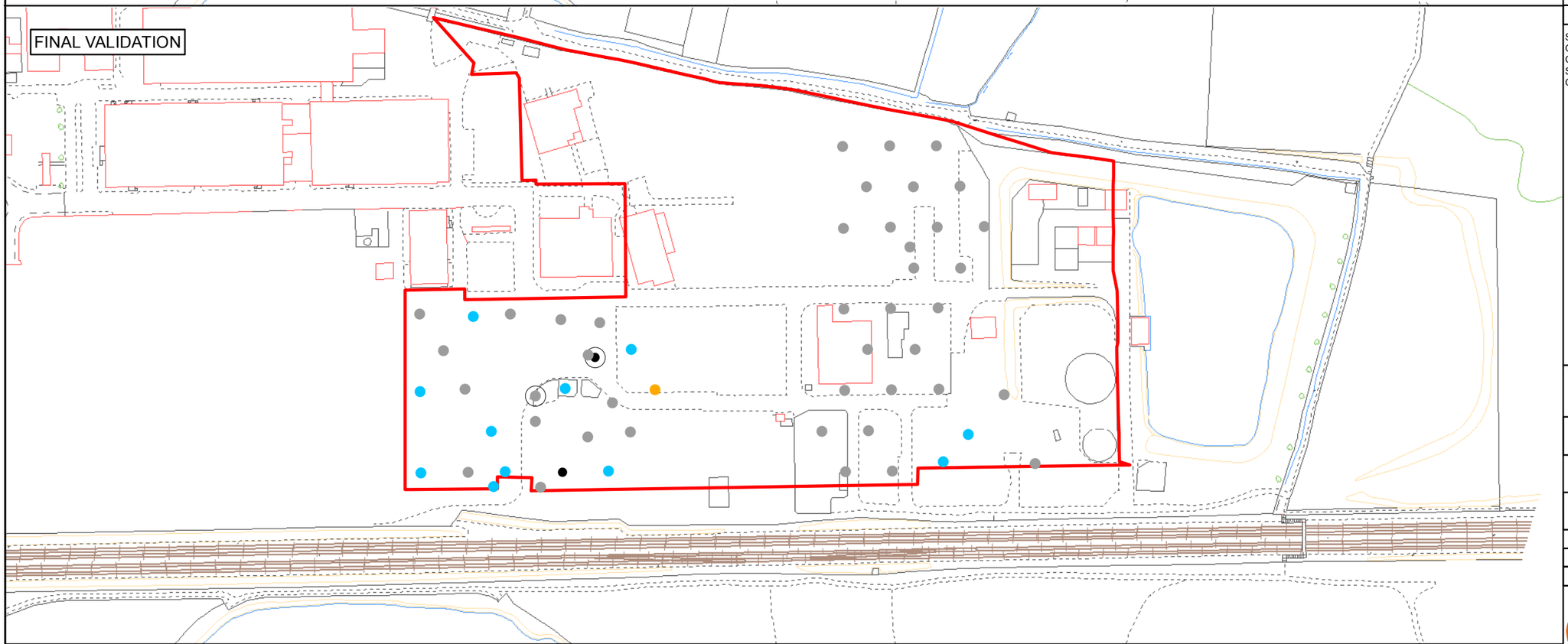

LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - ETHYLBENZENE - BASELINE AND FINAL VALIDATION**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 12	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012288 GIS		
SCALE :	1 : 2,500	PRINT :	A3

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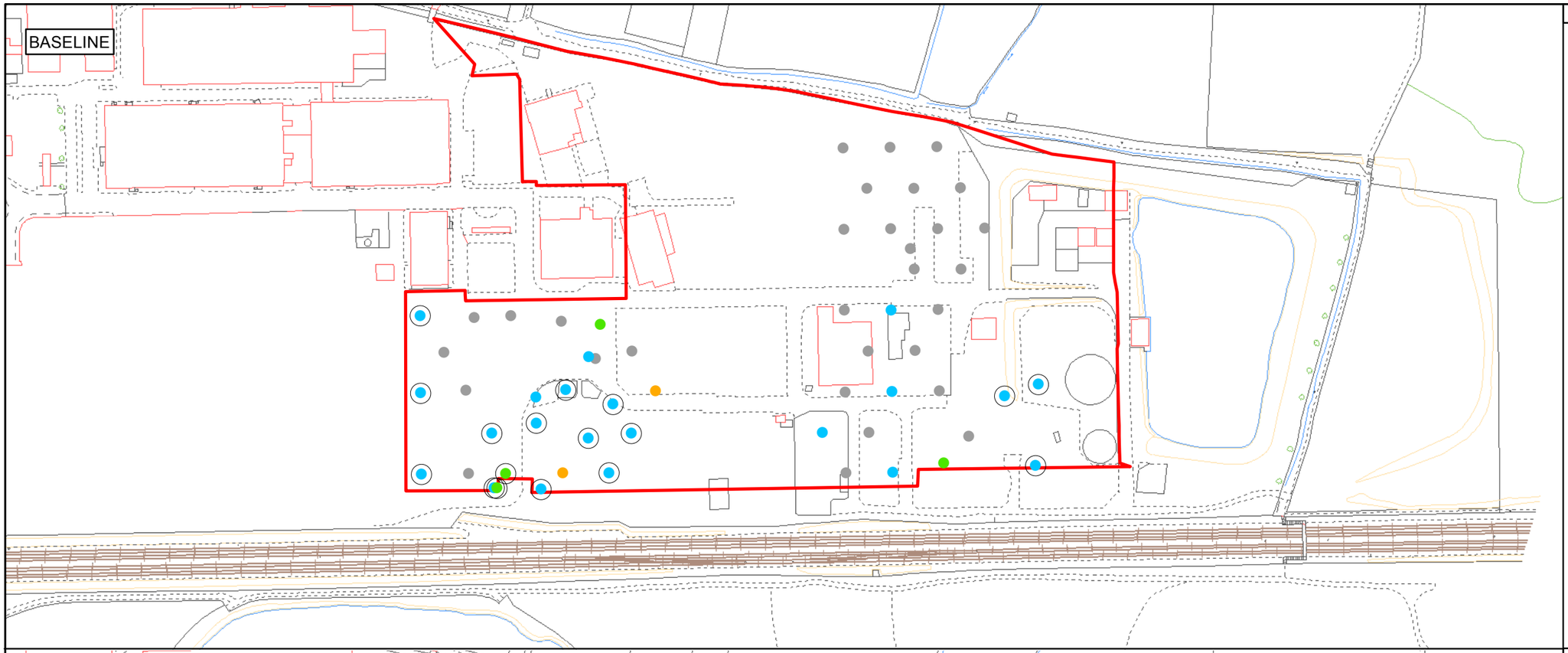
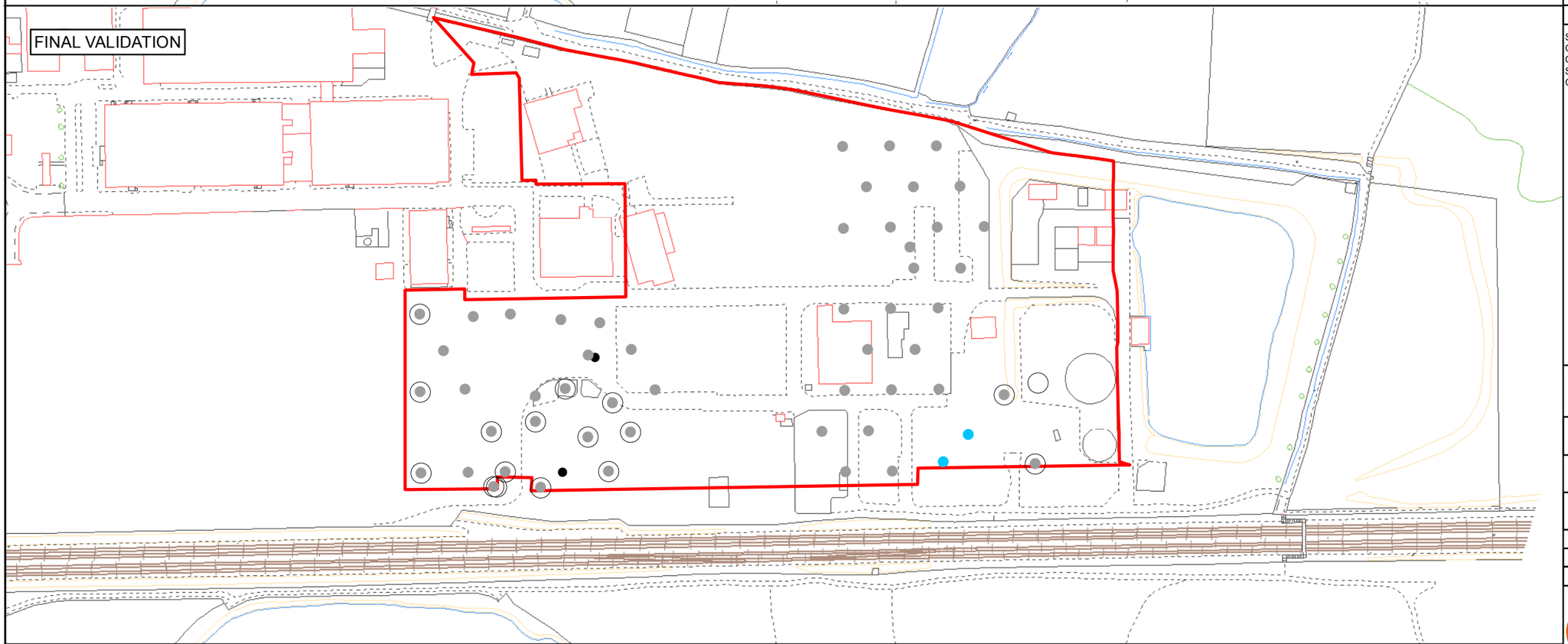
BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - KETOPROFEN - BASELINE AND FINAL VALIDATION**

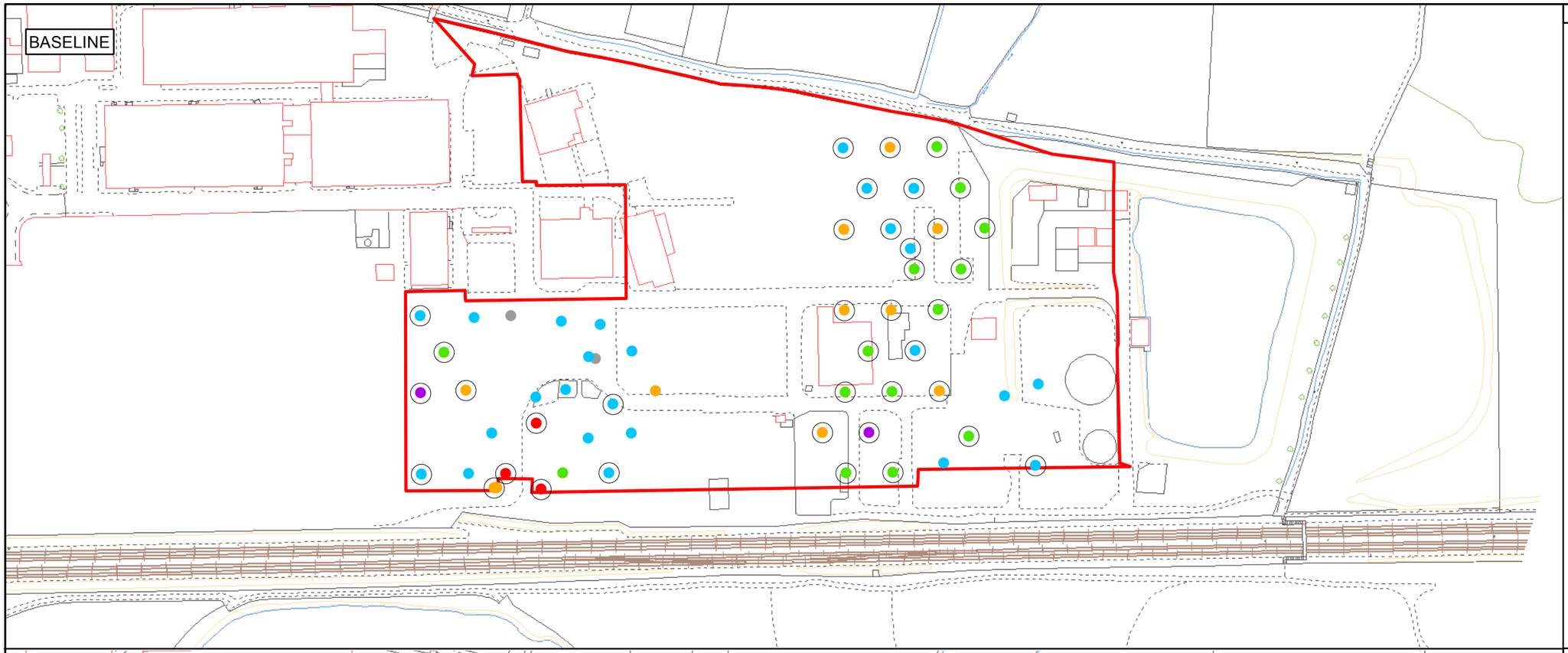
SITE : **BACK PLOT B**

CLIENT : **SANOFI**

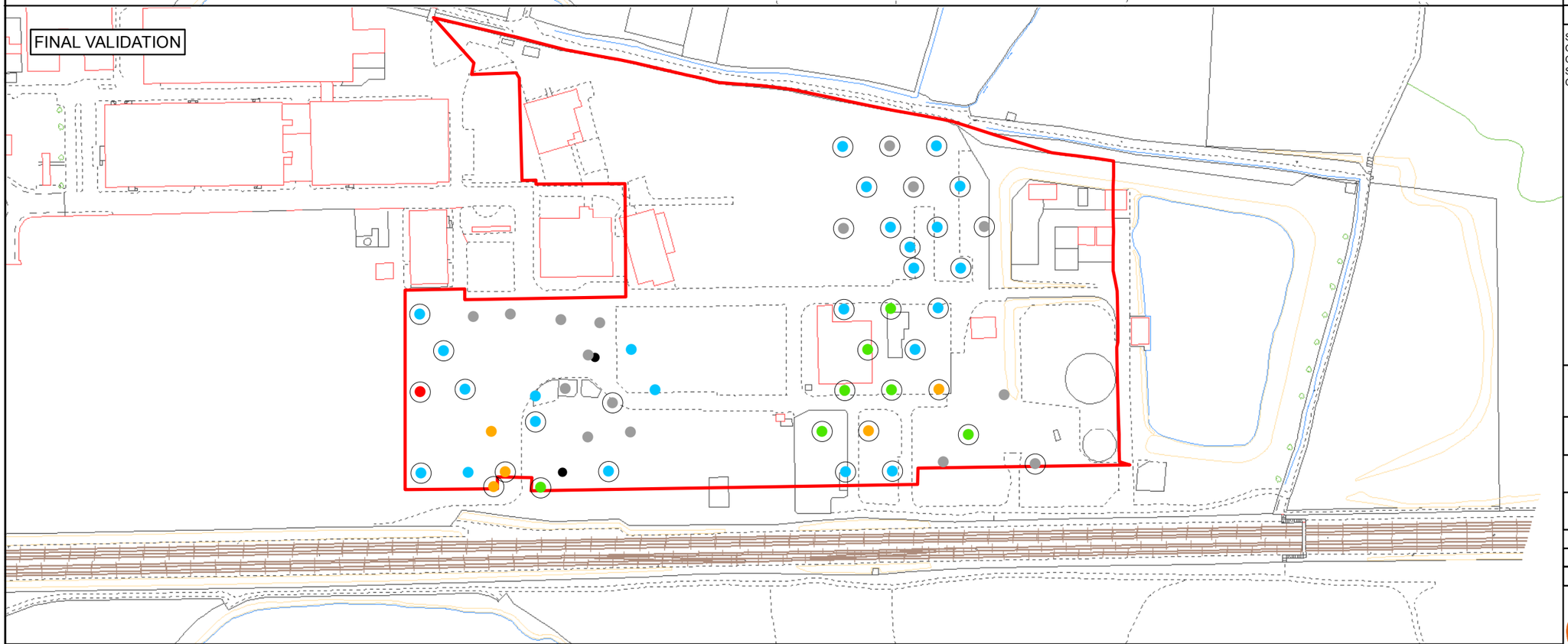
PROJECT :	27127107	FIGURE 13	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012289 GIS		
SCALE :	1 : 2,500	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets

BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE:
DISTRIBUTION OF TARGET COMPOUNDS - N (1) 2-PYRIDYL SULFANILAMIDE - BASELINE AND FINAL VALIDATION

SITE :
BACK PLOT B

CLIENT :
SANOFI

PROJECT :	27127107	FIGURE 14	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012290 GIS		
SCALE :	1 : 2,500	PRINT :	A3

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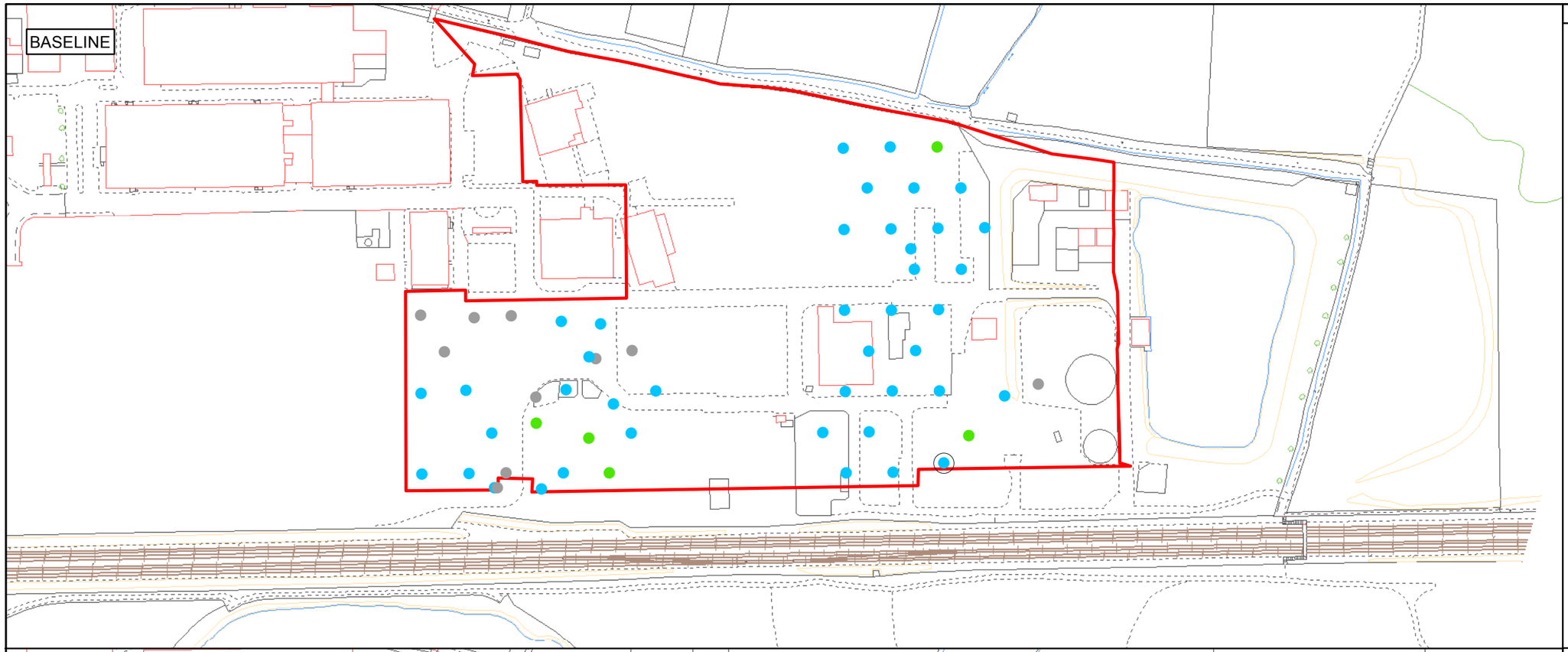
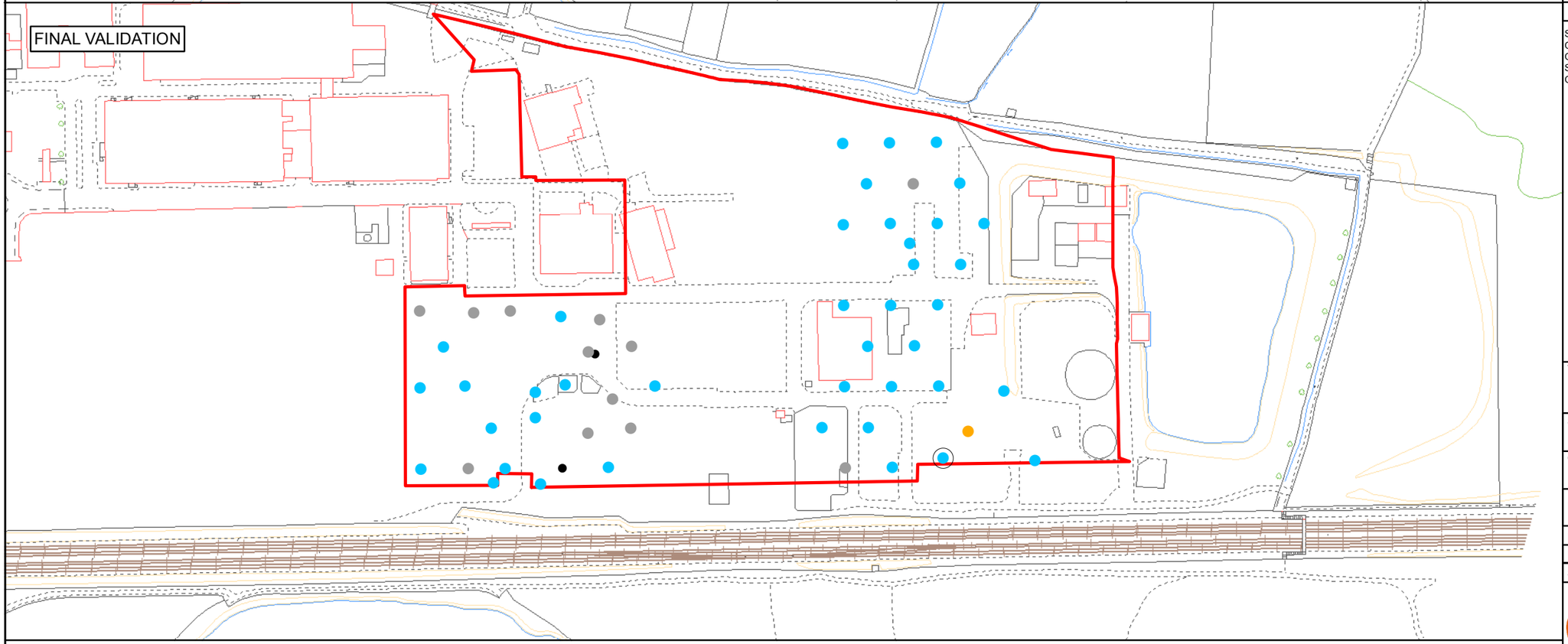
BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

0 10 20 40 60 80 100 Metres

N

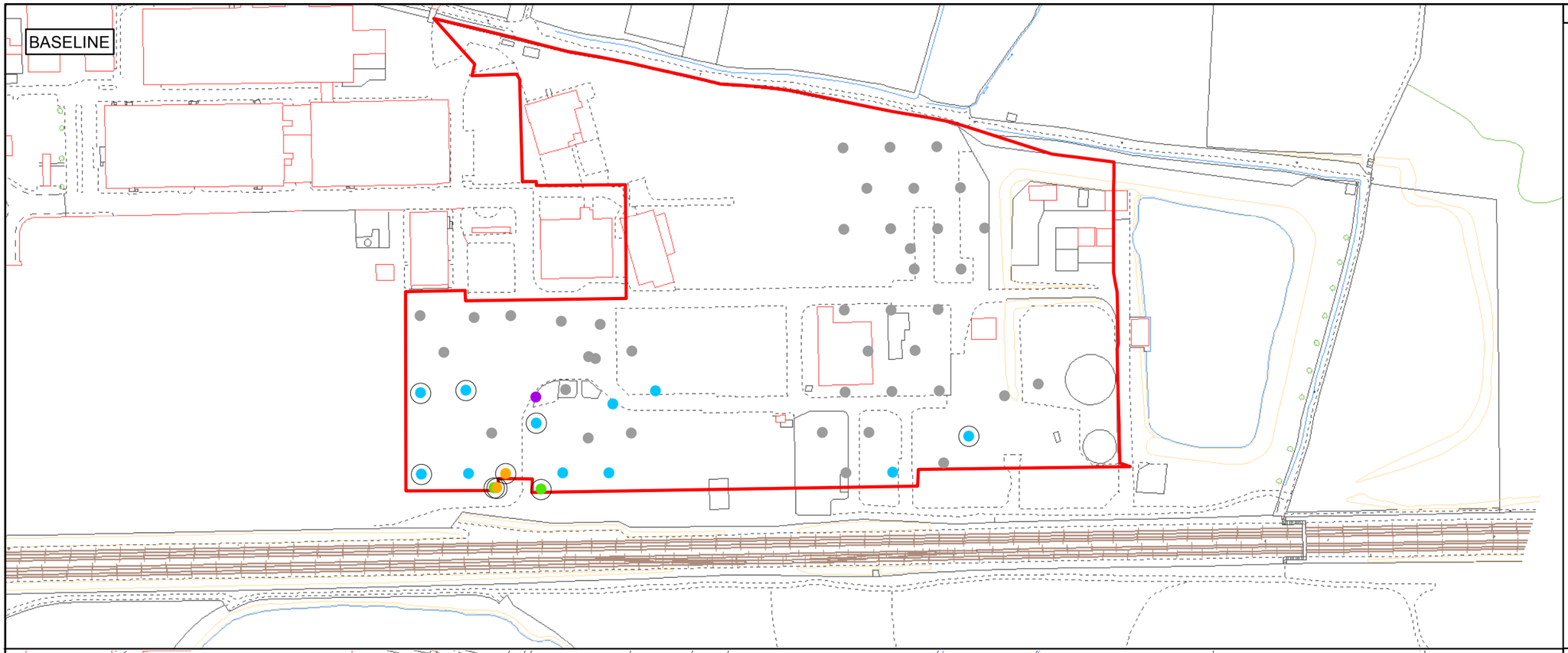
TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - AMYLO / PENTOBARB - BASELINE AND FINAL VALIDATION**

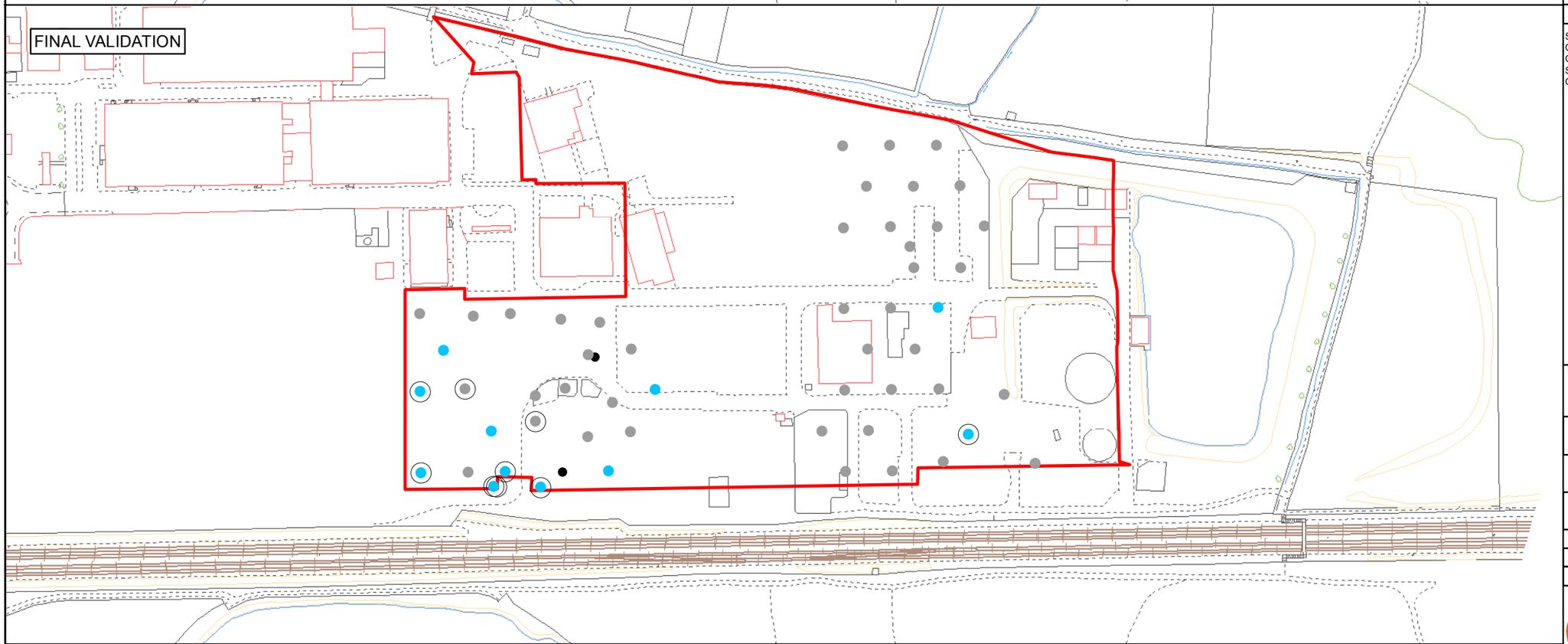
SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 15	
DATE :	19/04/16	DRAWN BY :	RJM
DRG No. :	92887012281 GIS		
SCALE :	1 : 2,500	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets





LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - SULPHAMETHIZOLE - BASELINE AND FINAL VALIDATION**

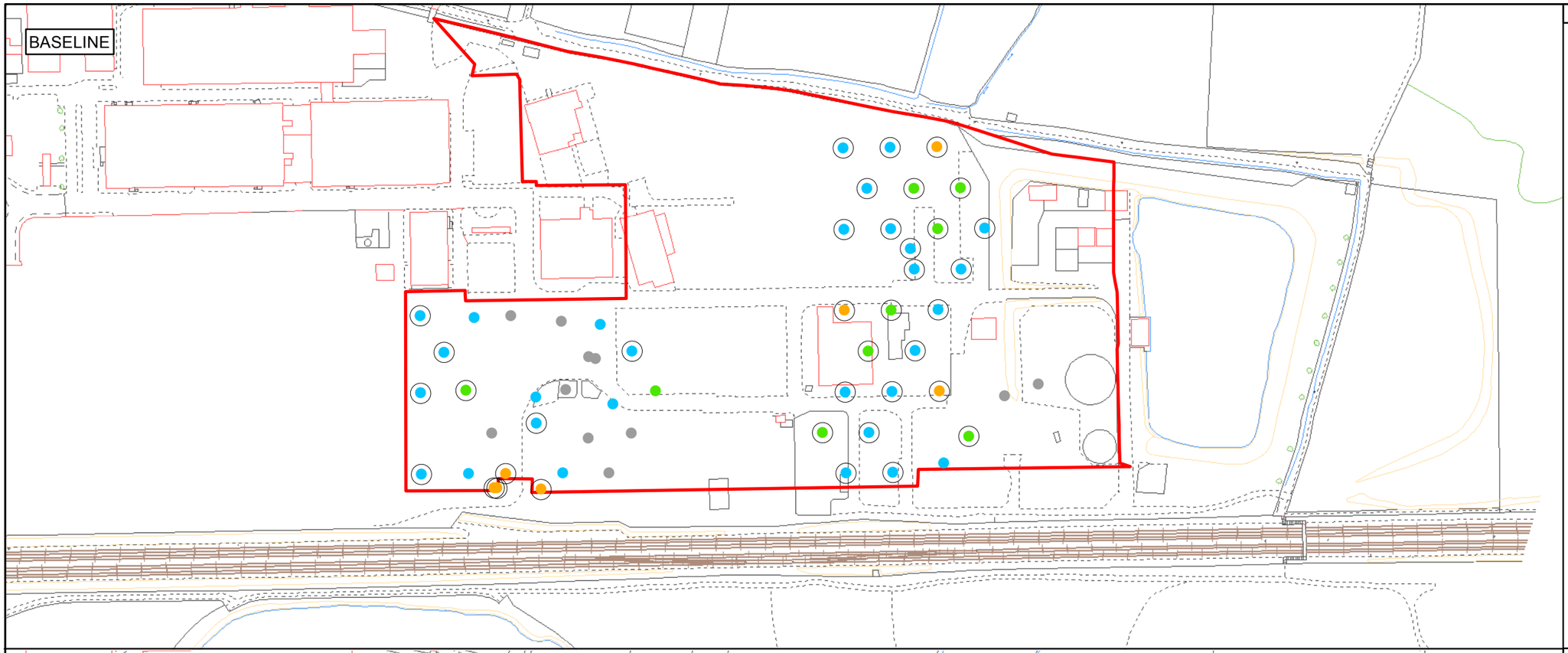
SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 16	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012292 GIS		
SCALE :	1 : 2,500	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets

BASELINE



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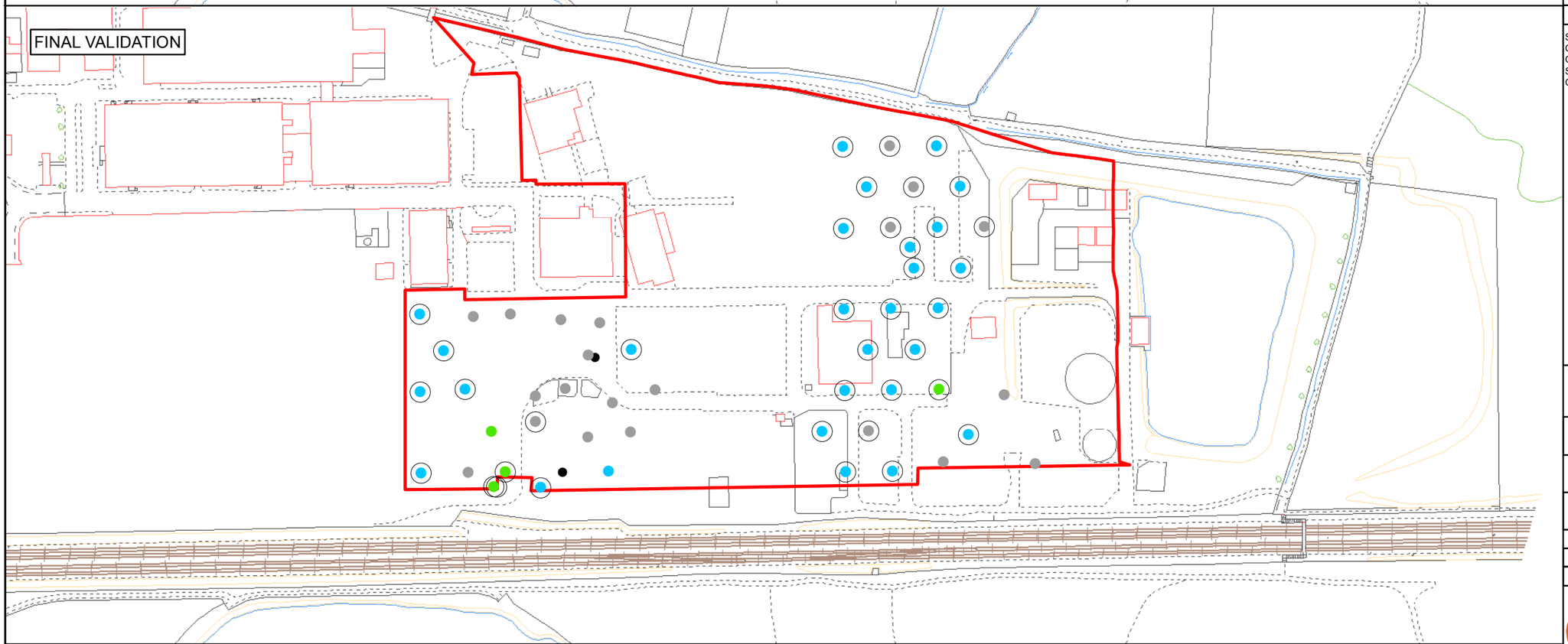

LEGEND

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- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - SULPHATHIAZOLE - BASELINE AND FINAL VALIDATION**

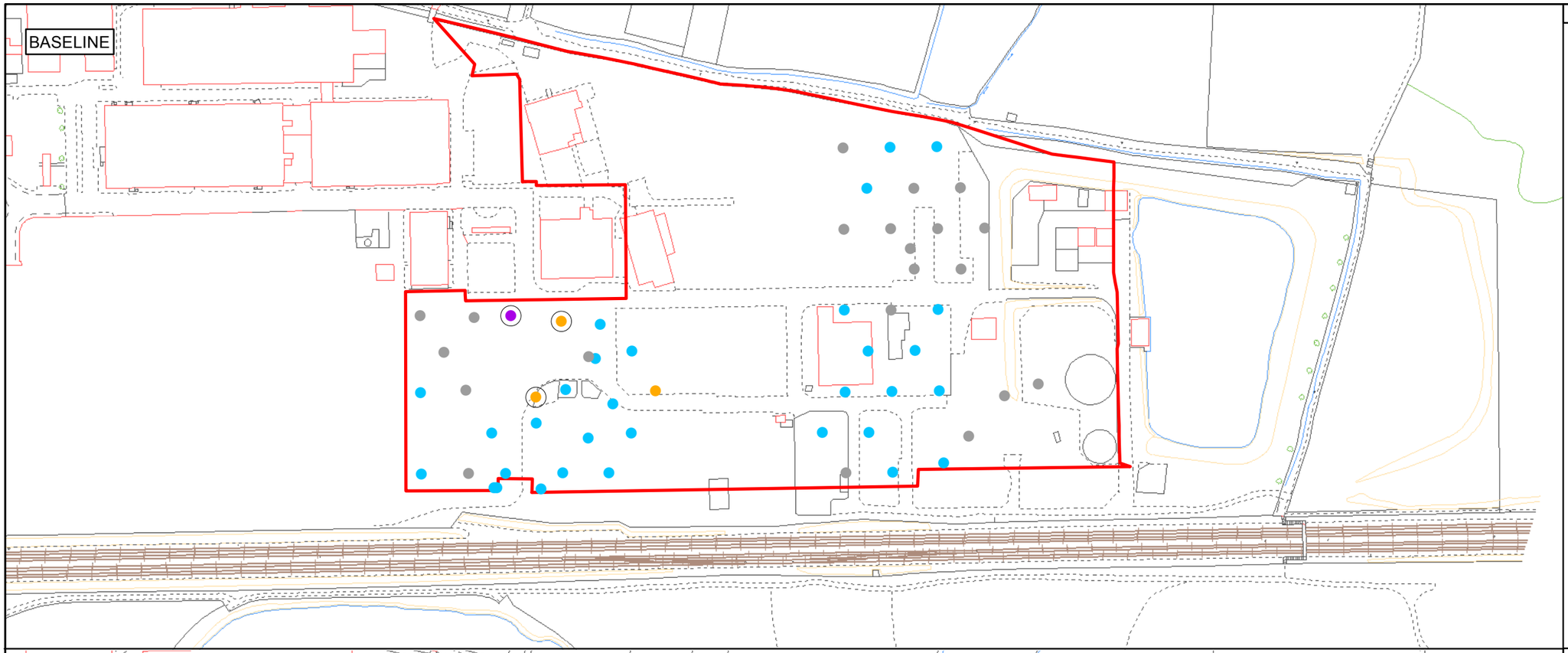
SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 17	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012293 GIS		
SCALE :	1 : 2,500	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets

BASELINE



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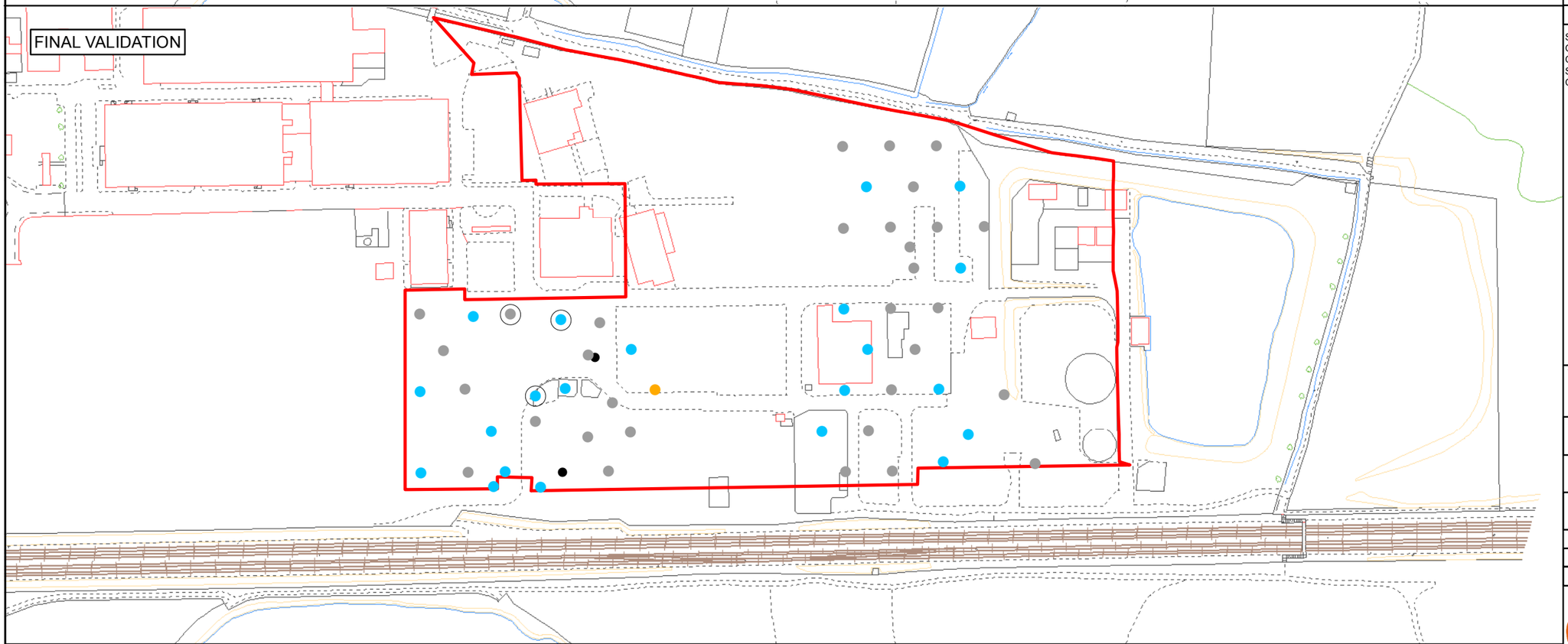

LEGEND

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- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - TOLUENE - BASELINE AND FINAL VALIDATION**

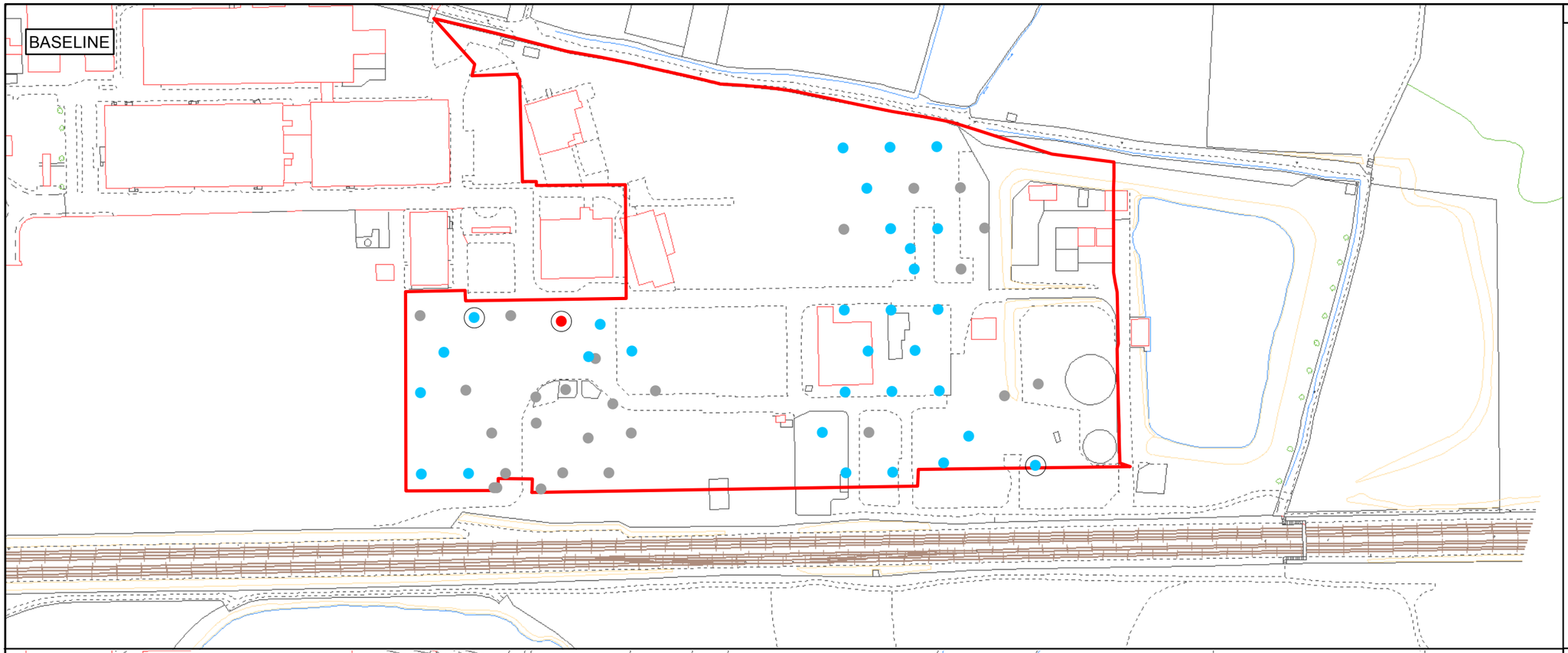
SITE : **BACK PLOT B**

CLIENT : **SANOFI**

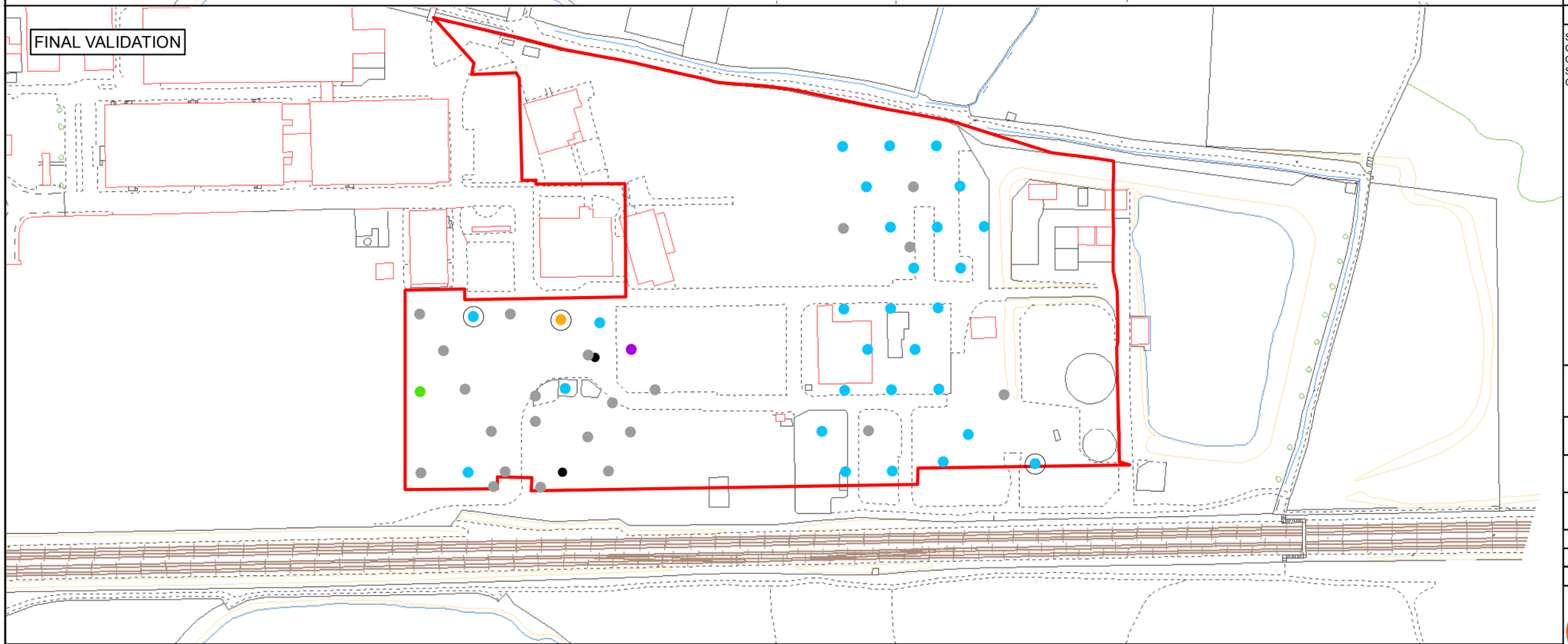
PROJECT :	27127107	FIGURE 18	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012294 GIS		
SCALE :	1 : 2,500	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets

BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

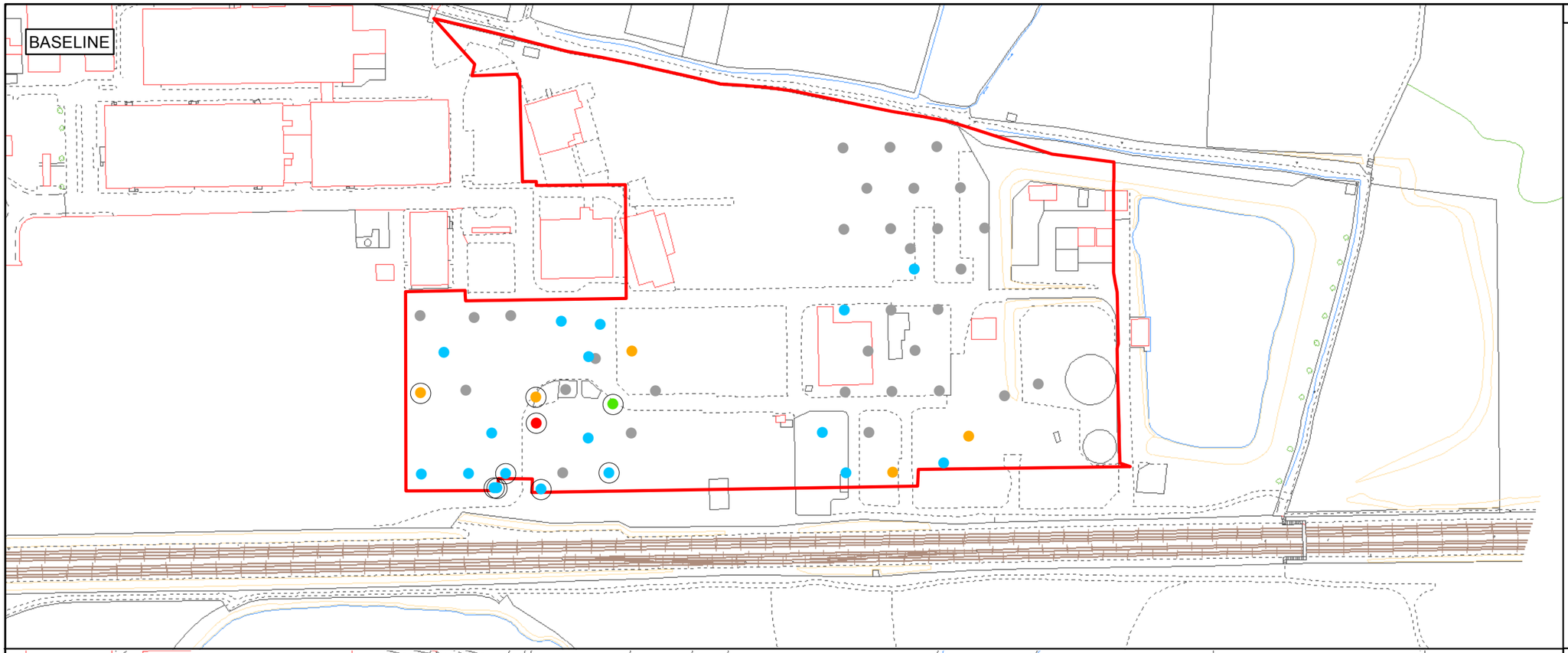
TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - TRICHLOROETHENE - BASELINE AND FINAL VALIDATION**

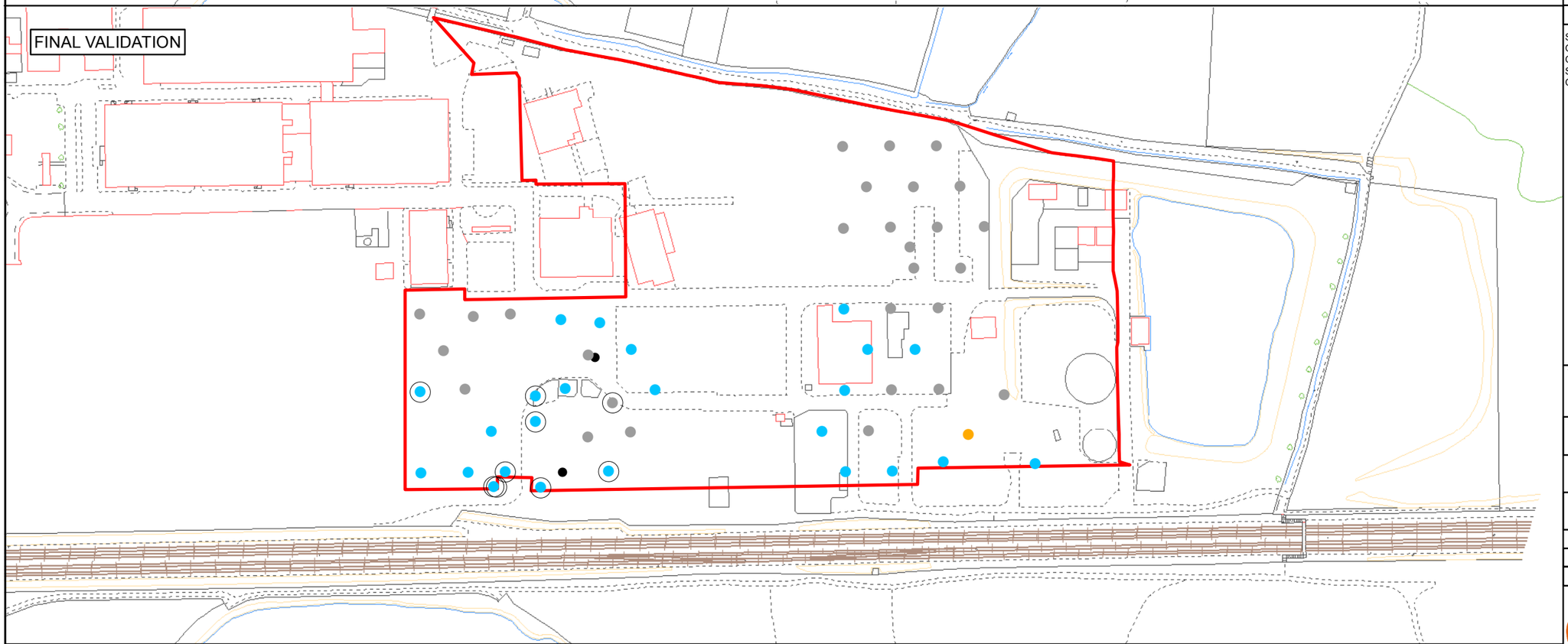
SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 19	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012295 GIS		
SCALE :	1 : 2,500	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets





LEGEND

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- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
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- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - VINYL CHLORIDE - BASELINE AND FINAL VALIDATION**

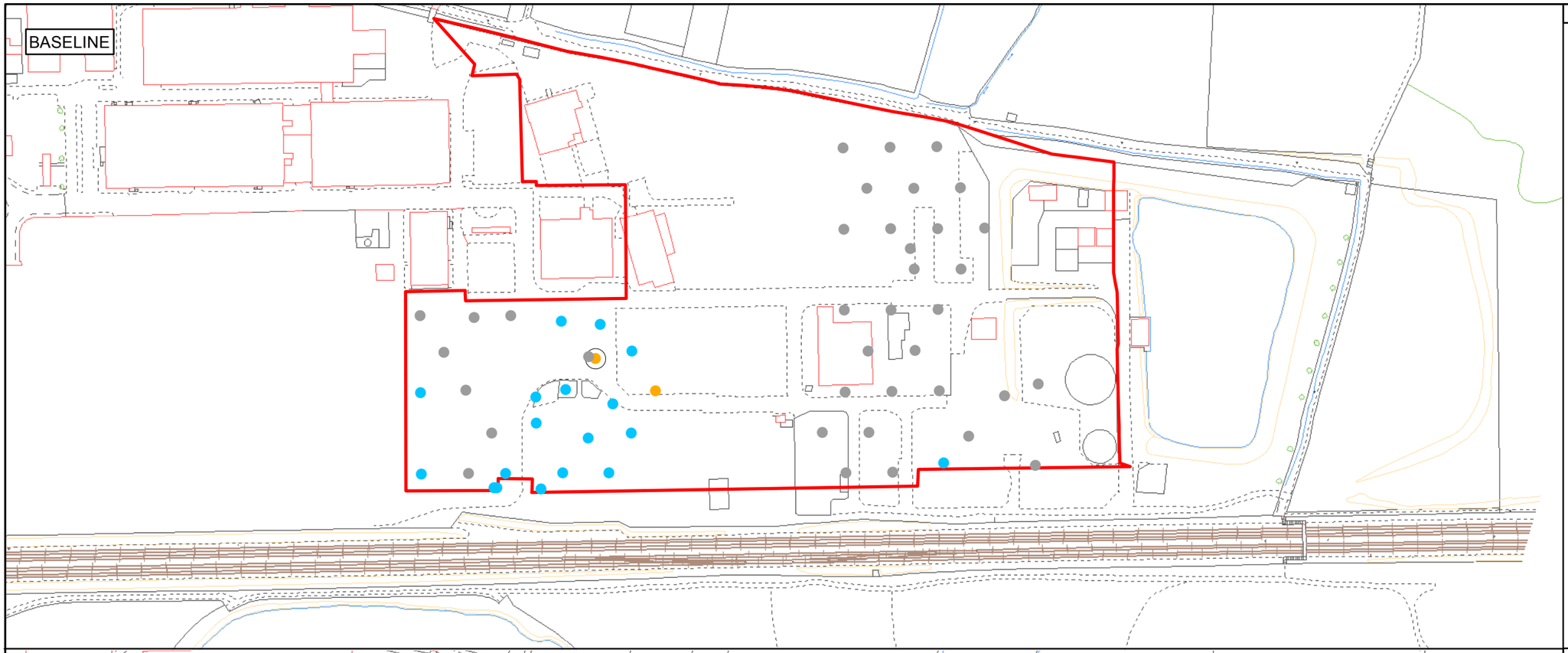
SITE : **BACK PLOT B**

CLIENT : **SANOFI**

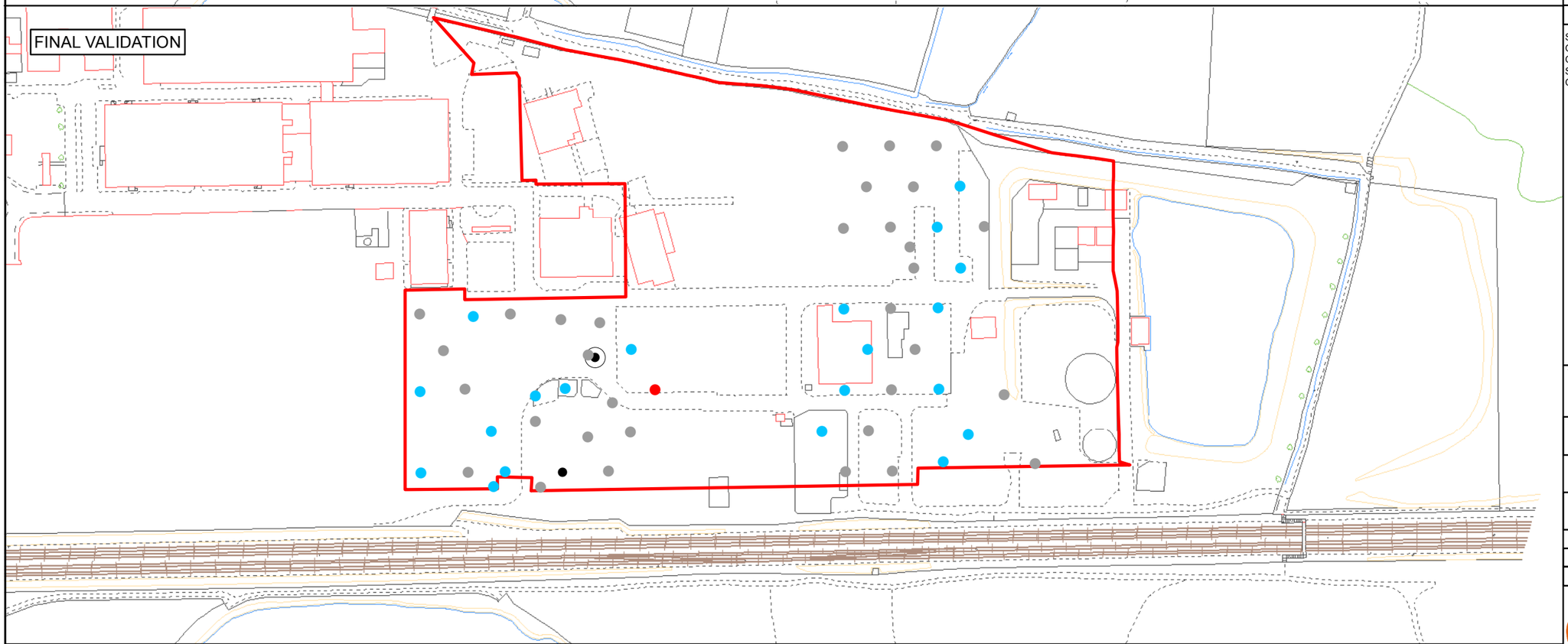
PROJECT :	27127107	FIGURE 20	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012296 GIS		
SCALE :	1 : 2,500	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets

BASELINE



FINAL VALIDATION



LEGEND

- < MDL
- MDL - 500 µg/l
- 500 - 1,000 µg/l
- 1,000 - 5,000 µg/l
- 5,000 - 10,000 µg/l
- > 10,000 µg/l
- DRY WELL
- TARGET COMPOUND FOR THIS WELL
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 10 20 40 60 80 100 Metres

TITLE: **DISTRIBUTION OF TARGET COMPOUNDS - XYLENES - BASELINE AND FINAL VALIDATION**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	27127107	FIGURE 21	
DATE :	31/03/16	DRAWN BY :	RJM
DRG No. :	92887012291 GIS		
SCALE :	1 : 2,500	PRINT :	A3

ARCADIS Design & Consultancy for natural and built assets

APPENDIX B

Planning Conditions

Application No. 11/01044/OUT

TOWN AND COUNTRY PLANNING ACT 1990
TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (England) ORDER 2010

To: Sanofi
c/o Savills Planning & Regeneration
20 Grosvenor Hill
London W1K 3HQ
FAO: Mr N Rowley

In pursuance of the powers exercised by them as Local Planning Authority, the Council of the London Borough of Barking and Dagenham, having considered your application to carry out the following development:-

Mixed use redevelopment comprising erection of up to 30,000m2 of buildings (Use classes B1(c), B2, B8, D1), retention and re-use of 41,637m2 of buildings (Use classes B1, B2, B8, D1) including up to 3,500m2 healthcare building (Use class D1), erection of 9,816m2 training centre (Use class D1), 9,276m2 supermarket including petrol station, 80 bed hotel and restaurant (Use class C1) and 2 floodlit synthetic turf football pitches with associated landscaping and parking

at Sanofi Aventis Rainham Road South Dagenham Essex

In accordance with the drawing(s) accompanying the said application, do hereby give notice of their decision to **GRANT PERMISSION** for the said development, subject to the following condition(s):-

1) Approval of the details of the appearance, layout, scale, the means of access thereto and the landscaping of the site (hereinafter called "the reserved matters") for each Area shown on drawing 013 Rev D (or another sub area as may be agreed with the Local Planning Authority) shall be obtained from the Local Planning Authority. The development within that Area shall not be carried out except in accordance with the details so approved.

Reason:
The application is in outline only, and these details remain to be submitted and approved.

2) Application for approval of the reserved matters for the first Area shall be made to the Local Planning Authority before the expiration of three years from the date of this outline permission. Applications for approval of reserved matters for other Areas shall be made to the Local Planning Authority before the expiration of five years from the date of this outline permission.

Reason:
To comply with Section 92 of the Town and Country Planning Act 1990 (as amended by Section 51 of the Planning and Compulsory Purchase Act 2004).

3) The development permitted for each Area shall commence before the expiration of two years from the date of the approval of the last of the reserved matters to be approved for that Area.

Reason:
To comply with Section 92 of the Town and Country Planning Act 1990 (as amended by S.51 of the Planning and Compulsory Purchase Act 2004).

4) Notwithstanding conditions 1, 2 and 3, and drawing number 014 Revision B the first reserved matter submitted to the Local Planning Authority shall be the means of access and no other reserved matters shall be submitted until the reserved matters for the means of access has been approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the details approved and the approved means of access shall be implemented prior to the commencement of uses.

Reason:
To ensure that satisfactory means of access is provided for the development and to accord with Policies BR10 and BP11 of the Borough Wide Development Policies Development Plan Document.

5) The development hereby permitted shall be carried out in accordance with the following approved plans:

LHUD222201-0017 Rev A - Site Location Plan
007 Rev G - Illustrative Masterplan
014 Rev B - Access
013 Rev D - Maximum Quantums of Development
00009 Rev D - Illustrative Masterplan: Land Uses
008 Rev E - Parameter Plan: Building Heights and Dimensions

Reason:
For the avoidance of doubt and in the interest of proper planning.

6) Up to 20,000 sq.m of the overall development can be used for Use Class B8 (storage and distribution) in areas 4a and 4b as shown on the drawings submitted with application and up to 7000 sq.m in area 5 as shown on the drawings submitted with the application.

Reason:
To ensure an appropriate mix of employment generating uses on site in accordance with Policy CE4 of the Core Strategy.

7) Notwithstanding the details indicated on the submitted plans, no permission is hereby given to any uses within Class D1 of the Town and Country Planning (Use Classes) Order 1987 (as amended) other than for the provision of education, medical and health facilities.

Reason:
To ensure that an appropriate mix of D1 uses on the site and to accord with Policy SSA SMA5 of the Site Specific Allocations Development Plan Document.

8) Prior to the commencement of development (other than demolition and site clearance) approved by this planning permission (or such other date or stage in development as may be agreed in writing with the Local Planning Authority), the following components of a scheme to deal with the risks associated with contamination of the site shall each be submitted to and approved, in writing, by the Local Planning Authority:

1) A preliminary risk assessment which has identified:

- All previous uses
- Potential contaminants associated with those uses
- A conceptual model of the site indicating sources, pathways and receptors
- Potentially unacceptable risks arising from contamination at the site.

2) A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.

3) The site investigation results and the detailed risk assessment (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.

4) A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

Any changes to these components require the express consent of the Local Planning Authority. The scheme shall be implemented as approved.

Reason:
To ensure protection of controlled waters and to accord with Policy BR5 of the Borough Wide Development Policies Development Plan Document.

9) Prior to the occupation of the development in any Area, a verification report demonstrating completion of the works set out in the approved remediation strategy for that Area and the effectiveness of the remediation shall be submitted to and approved, in writing, by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall also include any plan (a "long-term monitoring and maintenance plan") for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan, and for the reporting of this to the Local Planning Authority. The long-term monitoring and maintenance plan shall be implemented as approved.

Reason:
To ensure protection of controlled waters and to accord with Policy BR5 of the Borough Wide Development Policies Development Plan Document.

10) The approved remediation scheme must be carried out in accordance with its terms prior to the commencement of development (other than demolition and site clearance) in the relevant Area, unless otherwise agreed in writing by the Local Planning Authority. The Local Planning Authority must be given two weeks written notification of commencement of the remediation scheme works

Reason:
To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to works, neighbours and other offsite receptors in accordance with policy BR5 of the Borough Wide Development Policies Development Plan Document.

11) If, during development, contamination not previously identified is found to be present at the site then no further development within the affected part of the development (unless otherwise agreed in writing with the Local Planning Authority) shall be carried out until the developer has submitted, and obtained written approval from the Local Planning Authority for, a remediation strategy detailing how this unsuspected contamination shall be dealt with. The remediation strategy shall be implemented as approved.

Reason:
To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to works, neighbours and other offsite receptors in accordance with policy BR5 of the Borough Wide Development Policies Development Plan Document.

12) No infiltration of surface water drainage into the ground is permitted other than with the express written consent of the Local Planning Authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to controlled waters. The development shall be carried out in accordance with the approval details.

Reason:
To ensure protection of controlled waters and to accord with Policy BR4 of the Borough Wide Development Policies Development Plan Document.

13) Piling or any other foundation designs using penetrative methods shall not be permitted other than with the express written consent of the Local Planning Authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to ground water. The development shall be carried out in accordance with the approved details.

Reason:
To ensure protection of controlled waters and to accord with Policy BR4 of the Borough Wide Development Policies Development Plan Document.

14) No development (other than demolition and site clearance) shall take place in the relevant part of the development until a surface water drainage scheme, for that part of the development, based on sustainable drainage principles and an assessment of the hydrological and hydro geological context of the development, has been submitted to and approved in writing by the Local Planning Authority. The scheme shall subsequently be implemented in accordance with the approved details before the development is completed.

The scheme shall also include details of

- How Sustainable Drainage Systems (SUDs) such as permeable pavements, filter drains and strips, swales, temporary basins, ponds, wetlands and green/brown roofs will be maximised on this site with any obstacles to their use clearly justified.
- How the surface water drainage discharge from the site will be reduced, as far as is practical, to Greenfield rates and that it is managed as close to its source as possible and set out how this will be achieved in line with Policy 5.13 of the Mayors London Plan.
- How the scheme shall be maintained after completion.

The scheme shall be fully implemented and subsequently maintained, in accordance with the timing/phasing arrangements embodied within the scheme, or within any other period as may subsequently be agreed, in writing, by the Local Planning Authority.

Reason:
To prevent flooding by ensuring the satisfactory storage and disposal of surface water from the site and to reduce the risk of flooding on the proposed development and future occupants and to accord with policy BR4 of the Borough Wide Development Policies Development Plan Document and Policy 5.13 of the London Plan (2011).

15) No development (other than demolition and site clearance) shall take place in the relevant part of the development until such time as a scheme to dispose of foul and surface water from that part of the development has been submitted to, and approved in writing by, the Local Planning Authority. The scheme shall be implemented as approved.

Reason:
To prevent pollution of the water environment and to accord with Policy BR4 of the Borough Wide Development Policies Development Plan Document.

16) No development (other than demolition and site clearance) shall take place in the relevant part of the development until such time as a scheme to install underground tanks for that part of the development has been submitted to, and approved in writing by, the Local Planning Authority. The scheme shall include the full structural details

of the installation, including details of: excavation, the tank(s), tank surround, associated pipework and monitoring system. The scheme shall be fully implemented and subsequently maintained, in accordance with the scheme, or any changes as may subsequently be agreed, in writing, by the Local Planning Authority.

Reason:
To prevent the pollution of the water environment and to accord with Policy BR4 of the Borough Wide Development Policies Development Plan Document.

17) Development of the synthetic turf pitches shall not be commenced until a scheme for the floodlighting of the synthetic turf sport pitches is submitted to and approved in writing by the Local Planning Authority. The scheme shall include details of lighting materials, number of poles to be used, the height of the poles and measures to control glare and overspill light from floodlighting and to ensure that floodlights are switched off when not in use. The scheme shall be designed, installed, operated and maintained so as to fully comply with The Association of Chief Police Officers - Secured by Design publication "Lighting Against Crime - A Guide for Crime Reduction Professional", ACPO SPD, January 2011. The design shall satisfy criteria to limit obtrusive light presented in Table 1, p25 of the guide, relating to Environmental Zone E2 - Low district brightness areas - Rural, small village or relatively dark urban locations. The floodlights shall thereafter be operated in accordance with the approved scheme.

Reason:
In the interest of safeguarding neighbouring amenities, to preserve the character of the green belt and to ensure that there is no adverse impact on biodiversity in accordance with Policy CM3 of the Core Strategy and Policies BP8 and BP11 of the Borough Wide Development Policies Development Plan Document.

18) No development (other than demolition and site clearance) shall take place in the relevant part of the development until a lighting management strategy for that part of the development that sets out measures to limit unnecessary illumination levels and mitigate bat and other nocturnal species disturbance has been submitted to and approved in writing by the Local Planning Authority. The development shall be implemented in accordance with the approved lighting management strategy and thereafter retained as such.

Reason:
In order to protect nature conservation value of the site and in accordance with Policy BR3 of the Borough Wide Development Policies Development Plan Document.

19) No development shall take place in the relevant part of the development until a scheme specifying the provisions to be made to control noise and dust emanating from that part of the development during construction works has been submitted to, and approved in writing by, the Local Planning Authority. This scheme should include details of the construction methods to be employed and the equipment to be used.

Reason:
To ensure that the proposed construction work does not cause nuisance and disturbance to neighbouring occupiers and in accordance with Policy BP8 of the Borough Wide Development Policies Development Plan Document.

20) No development shall take place in the relevant part of the development until a scheme to control noise and vibration emanating from fixed plant and machinery within that part of the development is submitted to and approved in writing by the Local Planning Authority. The approved scheme shall be fully implemented before the first use of any development to which it relates and is to be maintained at all times thereafter.

Reason:
To ensure that the noise emanating from plant and machinery does not cause nuisance and disturbance to neighbouring occupiers and in accordance with Policy BP8 of the Borough Wide Development Policies Development Plan Document.

21) No development shall take place, including any works of demolition, until a Construction Method Statement has been submitted to, and approved in writing by, the Local Planning Authority. The approved Statement shall be adhered to throughout the construction period. The Statement shall provide for;

i. the parking of vehicles of site operatives and visitors;
ii. details of access to the site;
iii. loading and unloading and the storage of plant and materials used in constructing the development;
iv. the erection and maintenance of security hoardings including decorative displays;
v. wheel washing facilities
vi. measures to control the emission of noise, dust and dirt during construction;
vii. a scheme for recycling/disposing of waste resulting from demolition and construction works; and
viii. details of a nominated developer/resident liaison representative with an address and contact telephone number to be circulated to hose residents consulted on the application by the developer's representatives. This person will act as first point of contact for residents who have any problems or questions related to the ongoing development.

Reason:
To order to reduce the environmental impact of the construction and the impact on the amenities of the neighbouring residents and in accordance with Policy BP8 of the Borough Wide Development Policies Development Plan Document.

22) Prior to the commencement of the development a Construction Logistics Plan shall be submitted to and approved in writing by the Local Planning Authority. The Plan shall be designed to minimise deliveries of materials and export of any waste materials within the times of peak traffic congestion on the local road network. The Plan shall be implemented in accordance with the approved details and thereafter

maintained.

Reason:
In order to minimise the impact of the development on the free flow of traffic on the local highway network and in the interests of highway safety and in accordance with Policy BR10 of the Borough Wide Development Policies Development Plan Document.

23) No development (other than demolition and site clearance) shall take place in the relevant part of the development until a Delivery and Servicing Plan to incorporate details of deliveries to the site, including size of vehicle, routing of deliveries, and times of deliveries for that part of the development has been submitted to and approved in writing by the Local Planning Authority. The Plan shall be adhered to thereafter unless otherwise agreed in writing by the Local Planning Authority.

Reason:
In order to minimise the impact of the development on the local highway network and traffic congestion and in accordance with Policy BR10 of the Borough Wide Development Policies Development Plan Document.

24) Notwithstanding the details submitted with the planning application, no more than a maximum of 1043 car parking spaces shall be provided for the development. No more than 700 of these spaces shall be provided within areas 1, 2, 3, 4a, 4b and 5 as indicated on drawing number 013RevisionD. These 700 spaces shall only be accessed from Rainham Road South. A maximum of 343 of these spaces shall be provided in area 6 as indicated on drawing number 013RevisionD. These 343 spaces shall only be accessed from Dagenham Road. The allocation of the proposed car parking provision for each land uses shall be indicated in a car parking management plan to be submitted to and approved in writing by the Local Planning Authority prior to the commencement of development (not including site clearance and demolition). The car parking management plan shall also include measures to prevent commuter car parking. The car parking management plan shall also include details of proposed coach parking incorporating a set-down and pick-up area. The car parking management plan shall also identify provision for accessible car parking provision, car club spaces, motorcycle parking and commercial vehicle parking. The development shall be implemented in accordance with the car parking management plan. The plan shall be adhered to thereafter unless otherwise agreed in writing by the Local Planning Authority.

Reason:
To ensure that an appropriate level off-street parking areas are provided for different modes of transport and not to prejudice the free flow of traffic or conditions of general safety along the adjoining highway in accordance with Policy BR9 of the Borough Wide Development Policies Development Plan Document.

25) Notwithstanding condition number 24, only 343 of the 597 of existing car parking spaces (accessed from Dagenham Road) shall be used for the development hereby approved. The remaining 254 car parking spaces shall only be used as overflow car parking for one-off special events held by the May & Baker sports club, Eastbrookend Country Park, The Chase Nature Reserve and the Barking Expo.

Prior to these events taking place the Local Planning Authority shall be notified and the proposed date, times and full details of the events shall be provided. The car park shall only be used for over-flow car parking for a maximum of 10 days a calendar year unless otherwise agreed in writing by the Local Planning Authority.

Reason:
To ensure that sufficient off-street car parking provision is provided for one-off special events and not to prejudice the free flow of traffic or conditions of general safety along the adjoining highway in accordance with Policy BR9 of the Borough Wide Development Policies Development Plan Document.

26) Notwithstanding the details of condition number 24, 10 per cent of all car parking spaces for the retail superstore shall be for electric vehicles with an additional 10 per cent passive provision incorporating for electric vehicles in the future. 20 per cent of all spaces for B1 employment uses shall be for electric vehicles with an additional 10 per cent incorporating passive provision for electric vehicles in the future unless otherwise agreed in writing by the Local Planning Authority. The electric vehicle spaces shall be constructed and marked out and the charging points installed prior to the occupation of the development, and thereafter retained permanently for the accommodation of vehicles of occupiers and visitors to the premises and not used for any other purpose.

Reason:
To encourage the use of electric cars in order to reduce carbon emissions, and in accordance with Policy BR10 of the Borough Wide Development Policies Development Plan Document.

27) Notwithstanding the details submitted with the planning application the development shall provide a minimum of 417 cycle parking spaces. Should it transpire that the use in area 3 (Training Centre - Use Class D1) exceeds 80 staff/students, the development shall make provision for additional cycle parking spaces (1 cycle parking space per 8 staff or students) and thereafter maintained as such.

Reason:
In the interests of promoting cycle as a sustainable and non-polluting mode of transport and in accordance with Policy BR11 of the Borough Wide Development Policies Development Plan Document.

28) The development shall not be commenced (other than demolition and site clearance) until a site wide access strategy that demonstrates that adequate facilities and provisions will be made within all buildings and across the site for people with disabilities. The access strategy shall demonstrate that at least 10% of rooms within the new hotel will be accessible and identify suitable facilities for disabled people within the sports facilities and retail superstore. The development shall be implemented in accordance with the approved access strategy and thereafter retained as such unless otherwise agreed in writing by the Local Planning Authority.

Reason:
To ensure and promote easier access for disabled persons to be the development in accordance with Policy BP11 of the Borough Wide Development Policies Development Plan Document.

29) No development (other than demolition and site clearance) shall take place in the relevant part of the development until the applicant has provided to the Local Planning Authority for approval an independently verified BREEAM assessment for the relevant part of the development that achieves an 'Excellent' rating with certification. The approved scheme shall then be implemented in accordance with these details. A certificated Post Construction Review, or other verification process agreed with the Local Planning Authority, shall be provided, confirming that the agreed standards have been met, prior to the first occupation of the development. For the avoidance of doubt the re-use of existing buildings within this site is excluded from this condition.

Reason:
To ensure the proposed development is designed in an environmentally sustainable manner and in accordance with Policy CR1 of the Core Strategy and Policy BR1 of the Borough Wide Development Policies Development Plan Document.

30) No development (other than demolition and site clearance) shall take place in the relevant part of the development until full details for each unit in that part of the development demonstrating that a 25% per cent improvement on Part L of 2010 Building Regulations have been submitted to and approved in writing by the Local Planning Authority. Energy output monitoring devices and data, in a form to be agreed with the Local Planning Authority shall be available to the Local Planning Authority before installation.

Reason:
In the interests of safeguarding the environment, to ensure that the development provides renewable energy in accordance with Policy BR2 of the Borough Wide Development Policies Development Plan Document.

31) The development shall not be commenced (other than demolition and site clearance) until a site wide energy strategy has been submitted to and approved by the Local Planning Authority. The energy strategy shall provide a commitment to connect to any potential future district heating network, demonstrate with an accompanying plan the route of the proposed onsite heat network linking all buildings on the site and details of the energy centre including its floor area and its siting and location and include other renewable energy measures including photovoltaics (unless otherwise agreed in writing by the Local Planning Authority). The development shall be implemented in accordance with the approved energy strategy.

Reason:
In the interests of safeguarding the environment, to ensure that the development provides renewable energy in accordance with Policy BR2 of the Borough Wide Development Policies Development Plan Document.

32) The superstore shall not trade outside the hours of 07:00 am and 23:00 pm Monday to Saturday and 10:00 am and 18:00 pm on Sunday; the store shall not be serviced outside the hours of 06:00 am and 00:00 midnight Monday to Saturday and 09:00 am and 19:00 pm on Sunday;

Reason:
To prevent the use causing any undue disturbance to occupants of neighbouring properties at unreasonable hours and in accordance with policy BP8 of the Borough Wide Development Policies Development Plan Document.

33) The net sales area (excluding checkouts) of the building (as defined by Annex A of the PPS4 Practice Guide) should not exceed 6,958 square metres and comparison goods should not account for more than 2,435 square metres.

Reason:
To protect the viability and vitality of neighbouring shopping parades and to comply with Policy BE3 of the Borough Wide Development Policies Development Plan Document.

34) The development hereby permitted within Areas 2, 3 or 4a shall not be commenced until detailed design and method statements (in consultation with London Underground) for all of the foundations, basement and ground floor structures, or for any other structures below ground level, including piling (temporary and permanent) within that Area, have been submitted to and approved in writing by the Local Planning Authority which:

- Provide details of all structures.
- Accommodate the location of the existing London Underground Structures.
- Demonstrate access to elevations of the building adjacent to the property boundary with London Underground can be undertaken without recourse to entering London Underground Land.
- Demonstrate that there will at no time be any potential security risk to London Underground's railway, property or structures.
- Accommodate ground movement arising from the construction thereof.
- Mitigate the effects of noise and vibration arising from the adjoining operations within the structure.
- Provide details of any tall plant to be used on site.
- Provide details of any scaffolding to be erected on the elevation facing the railway.

The development shall thereafter be carried out in all respects in accordance with the approved design and method statements.

Reason:
To ensure that the development does not impact on existing London Underground transport infrastructure, in accordance with London Plan policy 3C.4 and 'Land for Transport Functions' Supplementary Planning Guidance.

35) No development (other than demolition and site clearance) shall take place in the relevant part of the development until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme for investigation within that part of the development which has been submitted by the applicant and approved by the Local Planning Authority. The development shall only take place in accordance with the detailed scheme pursuant to this condition. The archaeological works shall be carried out by a suitably qualified investigating body acceptable to the Local Planning Authority.

Reason:
Significant archaeological remains may survive on the site. The planning authority wishes to secure the provision of archaeological investigation and the subsequent recording of the remains prior to development, in accordance with the guidance set out in Planning Policy Statement 5.

36) No development shall take place in Area 5 until the applicant has secured the implementation of a programme of historic buildings recording work in accordance with a written scheme for investigation which has been submitted by the applicant and approved by the Local Planning Authority. The development in Area 5 shall only take place in accordance with the detailed scheme pursuant to this condition. The works shall be carried out by a suitably qualified investigating body acceptable to the Local Planning Authority.

Reason:
Historically significant structures may survive on the site. The planning authority wishes to secure the provision of archaeological investigation and the subsequent recording of the remains prior to the development, in accordance with the guidance set out in Planning Policy Statement 5.

37) No open storage shall be permitted on site unless otherwise agreed in writing with the Local Planning Authority.

Reason:
To ensure a satisfactory standard of external appearance, in accordance with Policy CP3 of the Core Strategy and Policy BP11 of the Borough Wide Development Policies Development Plan Document.

38) No development (other than demolition and site clearance) shall take place in the relevant part of the development until a scheme for the storage and disposal of refuse has been submitted for that part to and approved in writing by the Local Planning Authority.

Reason:
To protect the amenity of future occupiers and adjoining occupiers in accordance with Policy BR15 of the Borough Wide Development Policies Development Plan Document.

39) No development (other than demolition and site clearance) shall take place in the relevant part of the development until details of the proposed living roofs including their type, location and specific purpose together with a maintenance schedule shall

be submitted to an approved in writing by the Local Planning Authority prior to the construction of the parts of the development containing a living roof. The living roofs shall be constructed in accordance with the approved details and thereafter maintained in accordance with the approved maintenance schedule.

Reason:
In the interests of reducing the impact of the development on the mains drainage system, enhancing the insulation of the building and contributing to biodiversity and in accordance with Policy CR1 of the Core Strategy and Policies BR3, BR4 and BP11 of the Borough Wide Development Policies Development Plan Document.

40) No development (other than demolition and site clearance) shall take place in the relevant part of the development until a security management scheme for that part of the development, including, for example, details of CCTV, door entry systems and car park security, has been submitted to and approved in writing by the Local Planning Authority. The security management scheme for that part of the development shall be implemented in accordance with the approved details and prior to the first occupation of that of that part of the development and permanently retained thereafter to the satisfaction of the Local Planning Authority.

Reason:
In order to provide a safe and secure development, in accordance with Policy BC7 of the Borough Wide Development Policies Development Plan Document.

41) No part of the development shall be occupied until there has been submitted to and approved in writing by the Local Planning Authority a Travel Plan for that part of the development which shall include proposals for minimising car-borne travel and encouraging walking, cycling and the use of public transport. The Travel Plan shall include details of funding, implementation, monitoring and review. The approved Travel Plan shall be implemented and monitored with the approved scheme.

Reason:
In order to encourage the use of sustainable transport and in accordance with Policy BR10 of the Borough Wide Development Policies Development Plan Document.

42) No development (other than demolition and site clearance) shall take place in the relevant part of the development until full details of cycle parking, including its external appearance, location and the means of secure storage proposed for that part, have been submitted to and approved in writing by the Local Planning Authority. The cycle parking shall be provided prior to the occupation of that part of the development, and shall be retained thereafter, and used for no other purpose.

Reason:
In order to encourage the use of cycling as a sustainable mode of transport, in accordance with Policy BR10 of the Borough Wide Development Policies Development Plan Document.

43) The development shall not be commenced until an Ecological Management Plan has been submitted to and approved in writing by the Local Planning Authority.

Reason:
In order to protect the nature conservation value of the site and in accordance with Policy BR3 of the Borough Wide Development Policies Development Plan Document.

44) No development shall take place in the relevant part of the development until the submission to and approval by the Local Planning Authority of a habitat survey and implications assessment of that part by a qualified ecologist which shall assess the bio-diversity impact of the development and propose any necessary habitat mitigation measures. Any agreed habitat mitigation measures shall be carried out in accordance with the approved details.

Reason:
In order to protect the nature conservation value of the site and in accordance with policy BR3 of the Borough Wide Development Policies Development Plan Document.

45) No occupation shall take place in the relevant part of the development until a scheme for the provision of bird and bat boxes has been submitted to and approved in writing by the Local Planning Authority, and implemented prior to first occupation of the relevant part of the development to the satisfaction of the Local Planning Authority.

Reason:
To protect and conserve the natural features, ecology, and character of the area and ensure their long term sustainability in accordance with Policy CR2 of the Core Strategy (July 2010).

46) No development shall take place in the relevant part of the development until a detailed tree survey of the site comprising a plan and schedule indicating the precise location, species, spread, height and condition of each tree accurately plotted and showing those trees to be retained and those to be felled (within that part) with a reason for felling has been submitted to and approved in writing by the Local Planning Authority.

Reason:
To provide for the retention and protection of existing trees in the interests of visual amenity and biodiversity and in accordance with policies BR3 and BP11 of the Borough Wide Development Policies Development Plan Document and Section 197 of the Town and Country Planning Act 1990.

47) No development shall take place in the relevant part of the development and until all such works are completed before:

a) all trees to be retained within that part shall be protected by secure, stout exclusion fencing erected at a minimum distance equivalent to the branch spread of the trees and in accordance with BS.5837;

b) any works connected with the approved scheme within that part within the branch spread of the trees shall be by hand only. No materials, supplies, plant or

machinery shall be stored, parked or allowed access beneath the branch spread or within the exclusion fencing. Any trees that are damaged or felled during construction work must be replaced with semi mature trees of the same or similar species.

Reason:
To ensure the safety and well-being of the trees on the site that are to remain after building works are completed in accordance with policies BR3 and BP11 of the Borough Wide Development Policies Development Plan Document.

Summary of Reasons for Granting Planning Permission and Summary of Development Plan Policies relevant to the Decision to Grant Permission

This application was granted planning permission for the following reasons:

The Local Planning Authority has considered the particular circumstance of this application against the Council's approved planning policies contained in the London Borough of Barking and Dagenham Local Development Framework and the London Plan and concluded that:

1. The principle of a retail superstore with a petrol station, a hotel with ancillary restaurant, B1, B2, B8 and D1 uses at the application site is acceptable and in keeping with the relevant Local Development Framework and London Plan policies.

2. The development has demonstrated that the proposed retail superstore will not have any significant impact on the vitality and viability of the stores and district and neighbourhood centres within its catchment area and that there are no sequentially preferable sites for the proposed retail superstore.

3. The development has demonstrated that there are no sequentially preferable sites for the proposed hotel.

4. The application proposes a high standard of design and should result in a high quality development that is, sustainable, accessible, attractive, durable and well-integrated with its surroundings and does not unduly impact on the adjoining Eastbrookend Country Park and the Chase Local Nature Reserve.

5. It has been demonstrated that the proposal will have no undue impact on the local road network and that subject to the requirement of further detailed information the car parking provision proposed is satisfactory.

6. The development seeks to take a positive approach to the protection and enhancement of the ecological value of the site.

7. The development will achieve a 25% improvement on 2010 Building Regulations (Part L – conservation of fuel and power) and will achieve a Building Research Establishment Environmental Assessment method (BREEAM) rating of 'Excellent'.

8. The development will provide improvements to the local road network through a S.106 Legal Agreement.

9. The proposal is considered to comply generally with the relevant London Borough of Barking and Dagenham Local Development Framework policies and the relevant London Plan policies.

In reaching this decision the following policies were of particular relevance:

Core Strategy:

Policy CC3	Achieving Community Benefits through Developer Contributions
Policy CE2	Location of Office Development
Policy CE4	Mix and Balance of uses within Designated Employment Areas
Policy CM3	Green Belt and Public Open Space
Policy CM5	Town Centre Hierarchy
Policy CM12	General Principles for Development
Policy CR1	Climate Change and Environmental Management
Policy CR2	Preserving and Enhancing the Natural Environment
Policy CR4	Flood Management
Policy CR3	Sustainable Waste Management
Policy CP1	Vibrant Culture and Tourism
Policy CP3	High Quality Built Environment

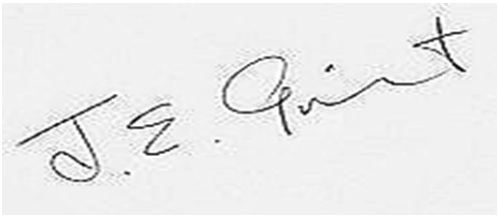
Borough Wide Development Policies Development Plan Document:

Policy BC7	Crime Prevention
Policy BR1	Environmental Building Standards
Policy BR2	Energy and On-Site Renewables
Policy BR3	Greening the Urban Environment
Policy BR4	Water Resource Management
Policy BR5	Contaminated Land
Policy BR9	Parking
Policy BR10	Sustainable Transport
Policy BR13	Noise Mitigation
Policy BR14	Air Quality
Policy BR15	Sustainable Waste Management
Policy BP2	Conservation Areas and Listed Buildings
Policy BP3	Archaeology
Policy BP4	Tall Buildings
Policy BP8	Protecting Residential Amenity
Policy BP11	Urban Design
Policy BE3	Retail Outside or on the Edge of Town Centres

London Plan Policies:

Policy 5.2	Minimising Carbon Dioxide
Policy 5.3	Sustainable Design and Construction
Policy 5.10	Urban Greening
Policy 5.11	Green Roofs and Development Site Environs
Policy 6.13	Parking
Policy 7.7	Location and Design of Tall and Large Buildings
Policy 7.19	Biodiversity and Access to Nature

Dated 29th March 2012
Development Management
Regeneration & Economic Development
Room 104 Barking Town Hall
1, Town Square
Barking IG11 7LU



……
Divisional Director of Regeneration & Economic Development

In connection with this decision, it would be appreciated that you take notice of the following:-

1) Reference to 'Areas' within the above conditions refers to those areas shown on drawing 013 Rev D. Other sub areas may be agreed with the Local Planning Authority.

2) None of the above conditions shall prevent Sanofi from carrying on its current operations within Areas 5 and 4b or the re-use of those buildings for their permitted uses.

IMPORTANT - ATTENTION IS DRAWN TO THE NOTES OVERLEAF

NOTES

APPEALS TO THE SECRETARY OF STATE

If you are aggrieved by the decision of your local planning authority to refuse permission for the proposed development or grant permission subject to conditions then you can appeal to the Planning Inspectorate under section 78 of the Town and Country Planning Act 1990.

If you wish to appeal, then you must do so within SIX MONTHS; from the date of this decision notice (**except in the case of applications subject to an Enforcement Notice where appeals must be lodged within 28 DAYS**) using a form which you can get from Planning Inspectorate, 3/15 Eagle Wing, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6PN (downloadable from www.planning-inspectorate.gov.uk).

The Planning Inspectorate has introduced an on-line appeals service which you can use to make your appeal online. You can find the service through the Appeals area of the Planning Portal – see http://www.planningportal.gov.uk/pcs. The Inspectorate will publish details of your appeal on the internet (on the Appeals area of the Planning Portal). This may include a copy of the original planning application form and relevant supporting documents supplied to the local authority by you or your agent, together with the completed appeal form and information you submit to the Planning Inspectorate. Please ensure that you only provide information belonging to you that are happy will be made available to others in this way. If you supply information belonging to a third party please ensure you have their permission to do so. More detailed information about data protection and privacy matters is available on the Planning Portal.

The Secretary of State can allow a longer period for giving notice of appeal, but will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal.

The Secretary of State need not consider an appeal if it seems that the local planning authority could not have granted permission for the proposed development or could not have granted it without the conditions it imposed, having regard to the statutory requirements, to the provisions of the development order and to any directions given under that order.

In practice, the Secretary of State does not refuse to consider appeals solely because the local planning authority based its decision on a direction given by them**.**

PURCHASE NOTICES

If either the local planning authority or the Secretary of State refuses permission to develop land or grants it subject to conditions, the owner may claim that he can neither put the land to a reasonably beneficial use in its present state nor can render the land capable of a reasonable beneficial use by carrying out any development which has been or would be permitted.

In these circumstances, the owner may serve a purchase notice on the Council. His notice will require the Council to purchase his interest in the land in accordance with the provisions of Part IV of the Town and Country Planning Act 1990.

NOTES

(1) The attention of developers is drawn to the fact that any failure to adhere to the details of the approved plans, or failure to comply with conditions attached to a planning permission, constitutes a contravention of the provisions of the Town and Country Planning Acts in respect of which enforcement action may be taken.

(2) The decision overleaf is for planning permission only, but it may be necessary for your plans to be passed under BUILDING REGULATIONS (unless this has already been done). Nor does this consent relieve the applicant of any duties or obligations to obtain the necessary consent of any other interested party under Common Law or any other Statute other than the Town and Country Planning Acts.

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Environment Agency

Alastair Dunster
Arcadis
2 Craven Court
Willie Snaith Road
Newmarket
CB8 7FA

Our ref: CL/3830
Your ref:

Date: 7 June 2012

Dear Alastair

Re: Sanofi Aventis, Rainham Road South, Dagenham – Remediation Priority Areas, Remediation Implementation Plan and Validation Plan

Thank you for the above reports for the Sanofi Aventis site. The Environment Agency (EA) has now reviewed the following reports and I would like to make the following comments.

Remediation Priority Areas, Remediation Implementation Plan

The Remediation Implementation Plan (RIP) has gone into a good level of detail for each of the three Remediation Priority Areas (RPA). It is understood that the following remediation treatment trains will be implemented for each RPA:

RPA 1:

- Groundwater pumping
- Soil flushing
- In situ chemical oxidation
- Soil vapour extraction

RPA 2:

- Groundwater pumping
- In situ chemical oxidation

RPA 3:

- Excavation and disposal
- In situ chemical oxidation

I have no objections to the proposed remediation technologies for treatment of impacted soils and groundwater. Ground conditions have been well characterized which has enabled accurate assessment of dosing quantities for treatments such as in situ chemical oxidation. Where DNAPL is encountered this should be removed and disposed of to an appropriately permitted facility. With regard to RPA 3 and excavation and disposal of impacted soils are there any treatment technologies of the soil that could be used to enable re-use at the site?

Remediation Priority Areas Validation Plan

I have no objections to the proposed Validation Plan. With regard to groundwater monitoring at the validation stage please could you confirm whether the 12 months monitoring will take place monthly or quarterly? Section 6.1 of the report states that sampling will be carried out quarterly but then the table below refers to monthly sampling.

If you have any further questions please don't hesitate to contact me on the number below.

Yours sincerely

Chris Ford
Technical Specialist

Direct dial 01707 632472
Direct fax 01707 632499
Direct e-mail chris.ford@environment-agency.gov.uk

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Environment Agency

Alastair Dunster
Arcadis
2 Craven Court
Willie Snaith Road
Newmarket
CB8 7FA

Our ref: CL/3830
Your ref:

Date: 26th October 2012

Dear Alastair

Re: Sanofi Aventis, Rainham Road South, Dagenham

Thank you for the reports relating to the above site. The Environment Agency (EA) has now reviewed the following reports:

- Site Wide Remediation Implementation Plan, April 2012, reference: 928875401_01
- Site Wide Remediation Areas Validation Plan, May 2012, reference: 928875402_02

Site Wide Remediation Plan

The Environment Agency has no objections to the proposed remediation plan for the site. This is understood to be a treatment train approach, allowing for a degree of flexibility such as altering treatment efficiency at certain stages along the process. The use of pilot testing to confirm the suitability of the selected remediation techniques on identified contaminants of concern also gives extra confidence in the selected techniques. The report comments on the variability of ground conditions at the site as a possible limitation due to the large range of hydraulic conductivities measured. It is however expected that the flexibility in the treatment train approach will be able to mitigate this to some extent, for example changing pumping rates to reflect any change in ground conditions.

The performance criteria detailed in section 3.2 is acceptable. This is specific to groundwater where a reduction of 70% will be required for all contaminants of concern when compared to the baseline starting concentrations. It is acknowledged that some of the remedial targets derived for controlled waters may not be practically achievable, particularly where remedial targets are below laboratory limits of detection.

Site Wide Remediation Areas Validation Plan

It is understood that groundwater verification monitoring will take place over 12 months with sampling carried out on a quarterly basis. This monitoring will not commence until the effects of the sodium persulphate injections have ended.

With regard to laboratory accreditation not being available for some contaminants will this be mitigated to some extent by an increased frequency of duplicate or blank sampling, compared to contaminants where MCERTS or UKAS accreditation is available?

Considering the scope of remedial works proposed and the overall site sensitivity with respect to controlled waters I am in agreement with the proposed validation plan. As mentioned previously the success of the remediation will be assessed based on a 70% reduction of contaminants of concern with evidence of a stable or reducing plume also assisting in demonstrating the efficacy of the remedial works.

If you have any further questions please don't hesitate to contact me on the number below.

Yours sincerely

Chris Ford
Technical Specialist

Direct dial 01707 632472
Direct fax 01707 632499
Direct e-mail chris.ford@environment-agency.gov.uk

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Mr Chris Ford – Technical Officer
Environment Agency
Apollo Court
2 Bishops Square Business Park
St Albans Road West
Hatfield
Hertfordshire
AL10 9EX

For the Attention of Mr Chris Ford

Date:
18th July 2012

Contact:
Alastair Dunster

Telephone:
01638 674767

Email:
Alastair.Dunster@arcadis-uk.com

Mobile:
07730 814922

Our Ref:
92887.4507

Dear Chris,

Thank you for your letter of the 7th of June regarding our proposed works and reports for the Remediation Priority Areas at the Sanofi Dagenham Facility. Please find below our responses to your comments.

RPA - Remediation Implementation Plan

With respect to your query regarding re-using material excavated in RPA3, the remediation strategy comprises a treatment train approach to achieve a pragmatic solution that balances implementation costs and liability reduction. Based on the results of the RPA3 remediation pilot trials the following remediation technologies were selected to manage the risks posed by contamination in RPA3:

- Excavation and off-site disposal of impacted soils
- *In Situ* Chemical Oxidation

It is proposed that some material will be re-used - the estimated excavation mass is approximately 1,990 tonnes, of which, 660 tonnes of material are expected to be suitable for re-use on-site and 1,330 tonnes would require disposal off-site.

ARCADIS are committed to minimising the amount of material that is disposed of off-site. Whilst treatment technologies are available which could enable further re-use the following justification is made in favour of off-site disposal for the most impacted material:

- the works are to be carried out within the operational footprint of the site and there would not be an appropriate area to carry out the works without disrupting site operations via significant movements of soils
- the contaminant mass means that ex-situ bioremediation methods would not be effective in a timely enough manner and ex-situ chemical oxidation would not be cost effective as it would require a high mass of oxidant to be mixed with the soils to reduce the contaminant mass;
- the volume of material requiring treatment is relatively small and would entail disproportionate costs to remediate on-site.

RPA – Validation Plan

We can confirm that the 12 months groundwater monitoring will be undertaken on a quarterly basis. The Validation plan has been updated to ensure this is now clear (Section 6.1), a copy of which is included on the enclosed CD.

I trust the above information address yours comments. If you have any further questions or need further clarification please don't hesitate to contact me.

Yours sincerely

Alastair Dunster BSc, MSc, MRSC
Account Principal

Kaye, Joseph

From: Alastair Dunster
Sent: 19 June 2012 09:30
To: Martin Andrew
Subject: RE: Sanofi Dagenham Remediation Priority Areas Remediation Implementation Plan and Validation Plan

Andrew,

Further to our issue of the Remediation Implementation Plan and Validation Plan, I can confirm the remediation works are expected to commence in the next couple of weeks (HBR will be acting as Remediation Contractor).

Can you confirm if you have any comments or queries relating to the RIP and Validation Plan? As we have had no response to date we assume that there are no significant concerns.

Many thanks,
Alastair

From: Martin Andrew [mailto:Andrew.Martin@lbbd.gov.uk]
Sent: 23 February 2012 10:55
To: Alastair Dunster
Subject: RE: Sanofi Dagenham Remediation Priority Areas Remediation Implementation Plan and Validation Plan

Alistair,

I confirm I received both reports attached to your email of 6th January 2012

Best Regards

Andrew

Andrew Martin | Environmental Health Officer -Environmental Protection

London Borough of Barking and Dagenham | First Floor Roycraft House| 15 Linton Road | Barking | Essex | IG11 8HE

Mobile: 07971 111704 | Fax: 020 8227 5699 | Office: 0208 227 5188

Email: andrew.martin@lbbd.gov.uk | www.barking-dagenham.gov.uk

Facebook: www.facebook.com/barkinganddagenham | Twitter: http://twitter.com/lbbdcouncil

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From: Alastair Dunster [mailto:Alastair.Dunster@Arcadis-UK.com]
Sent: 23 February 2012 10:42
To: Martin Andrew
Subject: Sanofi Dagenham Remediation Priority Areas Remediation Implementation Plan and Validation Plan

Andrew,

Can you confirm that you received the email below with the two report attachments, as the most recent report pertaining to the Remediation Works in Zone 9 bounced back I am concerned that you may not have received this earlier email.

Best Regards,
Alastair.

From: Alastair Dunster
Sent: 06 January 2012 17:18
To: Martin Andrew
Subject:

Andrew

Happy New Year, hope you had an enjoyable break over Christmas.

Please find attached the Remediation Implementation Plan and Validation Plan for Remediation Priority Areas at the Sanofi Dagenham site. The Remediation Priority Areas are three areas of the site where Non Aqueous Phase Liquid (NAPL) or groundwater concentrations indicative of NAPL have been identified.

We briefly discussed these areas of the site in the meeting on the 30th September and we intend to go into more detail on the proposed remediation and validation works during next weeks meeting. The remediation works will be significant and therefore we would appreciate your comments on the documents to enable agreement with you on the proposed remediation works before they commence (likely to be early March). If you have any questions on the reports please do not hesitate to contact me.

During the meeting next week we can discuss the environmental works completed to date and the concerns raised around the use of radio labelled materials.

Best Regards,
Alastair

Alastair Dunster | Senior Environmental Consultant | alastair.dunster@arcadis-uk.com

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Environment Agency

Mr Alastair Dunster
Arcadis

Alastair.Dunster@arcadis.com

Our ref: NE/2016/124376/01-L01
Your ref: 11/01044/OUT

Date: 19 January 2016

Dear Mr Dunster

Request for meeting and the review of technical documents prior to their submission to the Local Planning Authority.
Mixed use redevelopment comprising erection of up to 30,000m2 of building (use classes b1(c), b2, b8, d1) including 3,500m2 healthcare building (use classes d1) erection of 9,816m2 training centre (use class d1), 9,276m2 supermarket including petrol station, 80 bed hotel and restaurant (use class c1) and 2 floodlit synthetic turf football pitches with associated landscaping and parking.

Sanofi Aventis, Rainham Road South, Dagenham Essex.

Thank you for contacting the Environment Agency. I apologise for the delay in responding to your request.

Regrettably we are unable to enter into a cost recovery agreement with you to provide detailed technical planning advice on issues related to groundwater protection. The Groundwater and Contaminated Land Team is only able to focus technical expertise onto the highest risk proposals (e.g. sites in Source Protection Zone 1, cemeteries, petrol stations and applications with Environmental Impact Assessments etc). We are unable to take on any additional work in relation to this issue at this time.

We remain able to provide advice on other issues within our remit, such as flood risk, development next to a main river, water related conservation, discharge or abstraction proposals, mineral abstractions, EIAs, the Water Framework Directive etc. If you wish to enter into a cost recovery agreement to discuss these other issues, please contact me on 0203 025 5486.

If there is a potential risk to groundwater due to pollution from land contamination at the site, we advise that you provide information to satisfactorily demonstrate to the local planning authority that the risk to controlled waters has been fully understood and can be addressed through appropriate measures. This information should contain all the elements as listed in our Guiding Principles for Land Contamination reporting checklist to ensure it addresses risks to groundwater, not just human health. You should apply the principles as described in Groundwater protection: Principles and practice 3 and Environmental Permits if necessary.

A competent person (as described in NPPF paragraph, 121) should compile this information. This competent person would normally be expected to be a chartered member of an appropriate body (such as the Institution of Civil Engineers, Geological

Cont/d..

Society of London, Royal Institution of Chartered Surveyors, Institution of Environmental Management) and also have relevant experience of investigating contaminated sites.

I apologise that we are unable to assist you at this time. If you have any further queries please contact northlondonplanning@environment-agency.gov.uk.

Yours sincerely

Mr Andy Goymer
Planning Advisor

Telephone: 0203 025 5486
E-mail: northlondonplanning@environment-agency.gov.uk
Address: Environment Agency, Ergon House, Horseferry Road, London SW1P 2AL

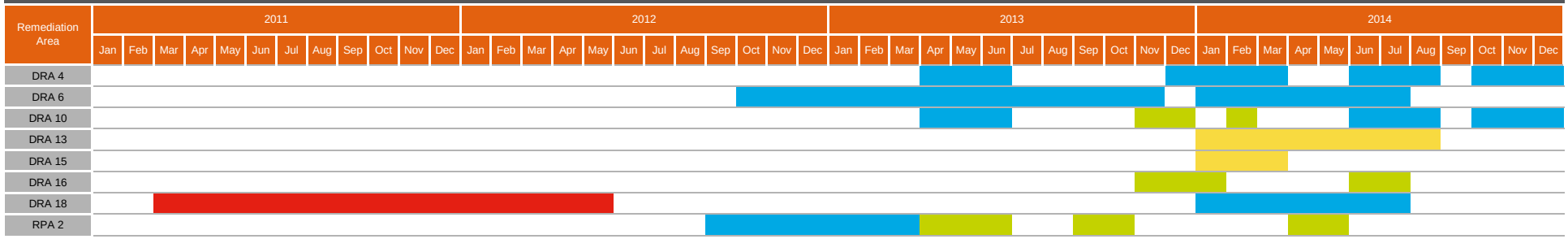
End

APPENDIX C

Remediation Implementation

Appendix C

Back Plot B Remediation Timeline



Notes

- Groundwater Pumping
- Soil Vapour Extraction
- In Situ Chemical Oxidation (ISCO) injections
- Soil excavation, washing and capping works

APPENDIX D

Remediation Assessment Criteria

Remediation Assessment Criteria

Target Compound(s)

Due to the wide range of chemical compounds historically used and manufactured at the site, ARCADIS undertook a screening process to determine representative CoC. An initial laboratory analytical screen was undertaken during site investigation phases followed by a review of identified contaminants in the DQRA undertaken for the Dagenham Facility as a whole (including the DQRA (ARCADIS Ref; 928871204, March 2010) and updated DQRA (ARCADIS Ref: 928873302_02, July 2011)) which determined a list of 'representative CoC'.

Based on the remediation objectives of each of the remediation areas and additional verification areas under the scope of this validation plan; remediation areas and specific target CoC lists were defined and these are detailed in the following sections.

Remediation Priority Area 2

Based on the risk to receptors and expected remediation performance, a "Target List" of CoCs was defined for groundwater for RPA 2, shown below.

Groundwater
N(1)-2-Pyridyl Sulfanilamide
Ketoprofen
3-Ethylbenzophenone
Carbofuran
Chloroform
Trichloroethene
1,2-Dichlorobenzene

Defined Remediation Areas 4, 6, 10, 13, 15 and 16

Based on the risk to receptors and expected remediation performance, a List of Target CoCs was defined for groundwater for the DRAs across the Dagenham Facility, shown overleaf.

Groundwater	Unsaturated Soils
Sulphamethizole	Elemental Mercury*
Sulphathiazole	
N(1)-2-Pyridyl Sulfanilamide	
Butalbarbital	
Amphetamine	
Ketoprofen	
Acebutolol	
N-Ethyl-m-toluidine	
Diphenylguanidine	
Carbendazim	
Benzene	
O-Xylene	
p/m-Xylene	
Toluene	
Chloroform	
Trichloroethene	
Cis-1,2-Dichloroethene	
Vinyl Chloride	

*The identification of elemental mercury as a target CoC in unsaturated soils in the Site wide Validation Plan was based on total mercury concentrations identified in this area which were assessed as elemental mercury until further mercury speciation was undertaken. Since the issue of the Site Wide Validation plan, speciated mercury analysis of soils in this area has been carried out and concentrations in soil were not identified in exceedance of human health SSAC and hence remediation action for mercury is not required. Hence, no remediation of unsaturated soils for elemental mercury has been undertaken. The results of the mercury investigation are included in Appendix D7.

Not all of the above target CoC will apply for every validation well within each DRA. The target CoCs are identified for each monitoring well based on their presence/magnitude established previously in the baseline and presented in Table B1.

Defined Remediation Area 18

Based on a review of the most prevalent and / or concentrated CoC within DRA18, a list of "indicator compounds" was derived for groundwater beneath DRA18. These indicator compounds, along with other sum compounds were selected as target compounds for DRA18, presented below.

Groundwater
N(1)-2-Pyridyl Sulfanilamide
Sulphathiazole
Diphenylguanidine
Pentobarbital
Carbendazim
Sum site specific pharmaceutical compounds
VOCs

The target CoCs are identified for each monitoring well based on their presence/magnitude established previously in the baseline.

Performance and Assessment Criteria

Performance criteria have been defined considering both human health and environmental receptors and have taken into account achievability based on the best available technologies in the context of cost benefit considerations.

A review of the results of pilot test remediation trials, considered to represent the best available technologies, demonstrated that concentrations of the target compounds in groundwater should be able to be reduced between 70% of starting (baseline) concentrations in the DRAs and between 75% and 90% in RPA2. Hence, the performance criteria for the remediation were based on these magnitudes of contaminant reduction.

<u>RPA 2 and DRAs 4, 6, 10, 13, 15 and 16</u>
The performance criteria will be considered to have been met when one or more of the following criteria have been achieved:

- 70 to 90% reduction in the concentrations of target compounds averaged over the network of validation monitoring wells and where achievable, meeting the specific defined target levels protective of human health receptors*;
- A revision of the risk assessment, justified by changes in the plume geometry or the conceptual understanding of the site, indicates that the reduced mass of contaminants does not present a risk to the identified receptors; or
- Contamination mass reduction reaches an asymptotic condition and/or cost benefit analysis indicates that additional remediation works cannot be justified considering likely improvement to the site condition that could be achieved vs. environmental and financial considerations.

*Trichloroethene is present in RPA 2 at particularly high concentrations and therefore a specific defined target level has been defined in addition to the average contaminant reduction.

The baseline concentration for each target CoC in each validation monitoring well. Verification will be demonstrated by a reduction in the average concentration of each target CoC for the locations identified in the Back Plot B Validation Plan (Arcadis Ref: 2572312306_01 July 2015). For example, the effectiveness of the proposed remediation of chloroform will be shown through the monitoring of validation monitoring well AS4BH044, AS4BH050 and HBH315BAE and averaging the concentrations in these wells post remediation and comparing to the average baseline concentration in these wells.

DRA18

The performance criteria will be considered to have been met when one or more of the following criteria have been achieved:

- Contamination mass reduction (assessed through measurement of indicator compounds, sum site specific pharmaceutical compounds and VOCs) reaches an asymptotic condition and/or cost benefit analysis indicates that additional remediation works cannot be justified considering likely improvement to the site condition that could be achieved versus environmental and financial considerations; and,
- A revision of the risk assessment, justified by changes in the plume geometry or the conceptual understanding of The Site, indicates that the reduced residual mass of representative CoC does not present a potential risk to the identified receptors.

In the event that, prior to meeting either of the above criteria, groundwater monitoring undertaken demonstrates that measured concentrations are below the environmental SSAC, the remediation will also be considered to have been successful.

The baseline concentration for each target CoC in each validation monitoring well, along with the average concentration over those wells, is presented in Table 1. Verification will be demonstrated by a reduction in the average concentration of each target CoC for the locations identified in the Back Plot B Validation Plan (Arcadis Ref: 2572312306_01 July 2015).

The locations of Back Plot B validation monitoring wells present within DRA18 are shown on Figure 1.

Contaminant of Concern	Human Health Target Levels # (µg/l)	Environmental	
		% Reduction in average baseline groundwater concentrations in selected validation wells*	
		Defined Remediation Areas	Remediation Priority Area 2
Sulphonamides			
Sulphamethizole	ND	>70%	NTC
Sulphathiazole	ND	>70%	NTC
N(1)-2-Pyridyl Sulfanilamide	ND	>70%	80%
Barbiturates			
Butalbarbital	ND	>70%	NTC
Anti-psychotics			
Amphetamine	4,270,000	>70%	NTC
Miscellaneous Pharmaceuticals			
Ketoprofen	ND	>70%	90%
3-Ethylbenzophenone	ND		
Acebutolol	ND	>70%	NTC
Miscellaneous Chemicals			
N-Ethyl-m-toluidine	ND	>70%	NTC
Diphenylguanidine	ND	>70%	NTC
Pesticides			
Carbendazim	ND	>70%	NTC
Carbofuran	ND	NTC	80%
BTEX			
Benzene	110,000	>70%	NTC
O-Xylene	ND	>70%	NTC
p/m-Xylene			
Toluene	ND	>70%	NTC
Chlorinated Aliphatics			
Chloroform	1,100,000	>70%	85%
Trichloroethene	229,000	>70%	80%^
Cis-1,2-Dichloroethene	219,000	>70%	NTC
Vinyl Chloride	9,280	>70%	NTC
Chlorinated Aromatics			
1,2-Dichlorobenzene	ND	NTC	75%

Notes:

ND: CoC not considered to pose a significant risk via the pathway considered

: Human Health SSAC adopted from the Updated Site Wide DQRA (ARCADIS Ref: 928873302_01, July 2011)

NTC: Not Target Compound in this area

* : Target % reduction varies between RPA1 and DRAs based on achievable reductions observed during remediation pilot trials

^ : Additional defined target level of 1,700 ug/l also applicable due to high concentrations identified.

Contaminant of Concern	Human Health Target Levels (mg/kg)
N(1)-2-Pyridyl Sulfanilamide	30

The performance criteria will be considered to have been met when one or more of the following criteria have been achieved:

Asbestos

Management of asbestos is not covered by the remediation scope and is therefore not covered within this Validation Report.

Appendix D

Target Compound Well Identification

Remediation Area	Validation Well ID	Target Compounds																			
		Quantified Site Specific Compounds												Volatile Organic Compounds							
		Sulphonamides			Barbiturates		Anti-psychotics	Miscellaneous Pharmaceuticals		Miscellaneous Chemicals		Pesticides		BTEX				Chlorinated Aliphatics				Chlorinated Aromatics
		Sulphamethizole	Sulphathiazole	N(1)-2-Pyridyl Sulfanilamide	Butalbarbital	Pentobarbital	Amphetamine	Ketoprofen*	Acebutolol	N-Ethyl-m-toluidine	Diphenylguanidine	Carbendazim	Carbofuran	Benzene	Ethylbenzene	Xylenes	Toluene	Chloroform	Trichloroethene	Cis-1,2-Dichloroethene	Vinyl Chloride	1,2-Dichlorobenzene
DRA4	AS4BH026		■	■				■														
	AS4BH028	■	■	■				■						■								
	AS4BH029		■	■							■											
	AS4BH033	■	■	■																		
	AS4BH034																			■		
	AS4BH037	■	■	■				■			■	■		■							■	
	HBH509ERM	■	■					■			■			■							■	
DRA6**	AS8BH098A		■	■					■													
	AS8BH099	■	■	■							■											
	AS8BH100							■														
	AS8BH113							■														
DRA10	AS4BH027	■	■	■				■				■		■						■	■	
DRA13	AS4BH032																		■			
	AS4BH038																■					
DRA15	AS4BH036							■						■						■		
	AS4BH040A	■	■	■				■			■			■							■	
	AS4BH042	■	■	■				■			■			■						■	■	
	AS4BH043	■	■	■				■						■							■	
	AS4BH045							■						■								
	AS4BH046													■								
	AS4BH048							■						■								
	AS4BH051			■				■						■						■	■	
	AS4BH052			■				■						■							■	
	AS5BH002							■						■								
	AS6BH003													■								
	HBH210ERM													■	■		■			■	■	
	HBH315BAE																	■				
DRA16	AS4BH044																■	■	■			
	AS4BH050													■				■				
	AS6BH072***		■											■						■		
DRA18	AS5BH012		■	■		■					■	■									■	
	AS5BH014		■	■		■					■	■									■	
	AS6BH010		■	■		■					■	■									■	
	AS6BH012		■	■		■					■	■									■	
	AS6BH014		■	■		■					■	■									■	
	AS6BH016		■	■		■					■	■									■	
	AS7BH027		■	■		■					■	■									■	
	AS7BH028		■	■		■					■	■									■	
	AS7BH029		■	■		■					■	■									■	
	AS7BH030		■	■		■					■	■									■	
	AS7BH033		■	■		■					■	■									■	
	AS7BH034		■	■		■					■	■									■	
	AS7BH036		■	■		■					■	■									■	
	AS7BH037		■	■		■					■	■									■	
	AS7BH038		■	■		■					■	■									■	
	AS7BH039		■	■		■					■	■									■	
	AS7BH040		■	■		■					■	■									■	
	AS7BH041		■	■		■					■	■									■	
	AS7BH042		■	■		■					■	■									■	
	AS7BH043		■	■		■					■	■									■	
	AS7BH045		■	■		■					■	■									■	
	AS7BH046		■	■		■					■	■									■	
	AS7BH047		■	■		■					■	■									■	
	AS8BH108		■	■		■					■	■									■	
RPA 2	AS8BH110			■				■					■					■	■			■

Notes

* Ketoprofen concentration includes daughter breakdown compound 3-ethylbenzophenone

** DRA 6 Validation Monitoring wells AS8BH004, AS8BH005, AS8BH006 and HBH325ERM were destroyed during previous works at the site and, therefore, monitoring wells AS8BH096 to AS8BH100 were installed as replacements.

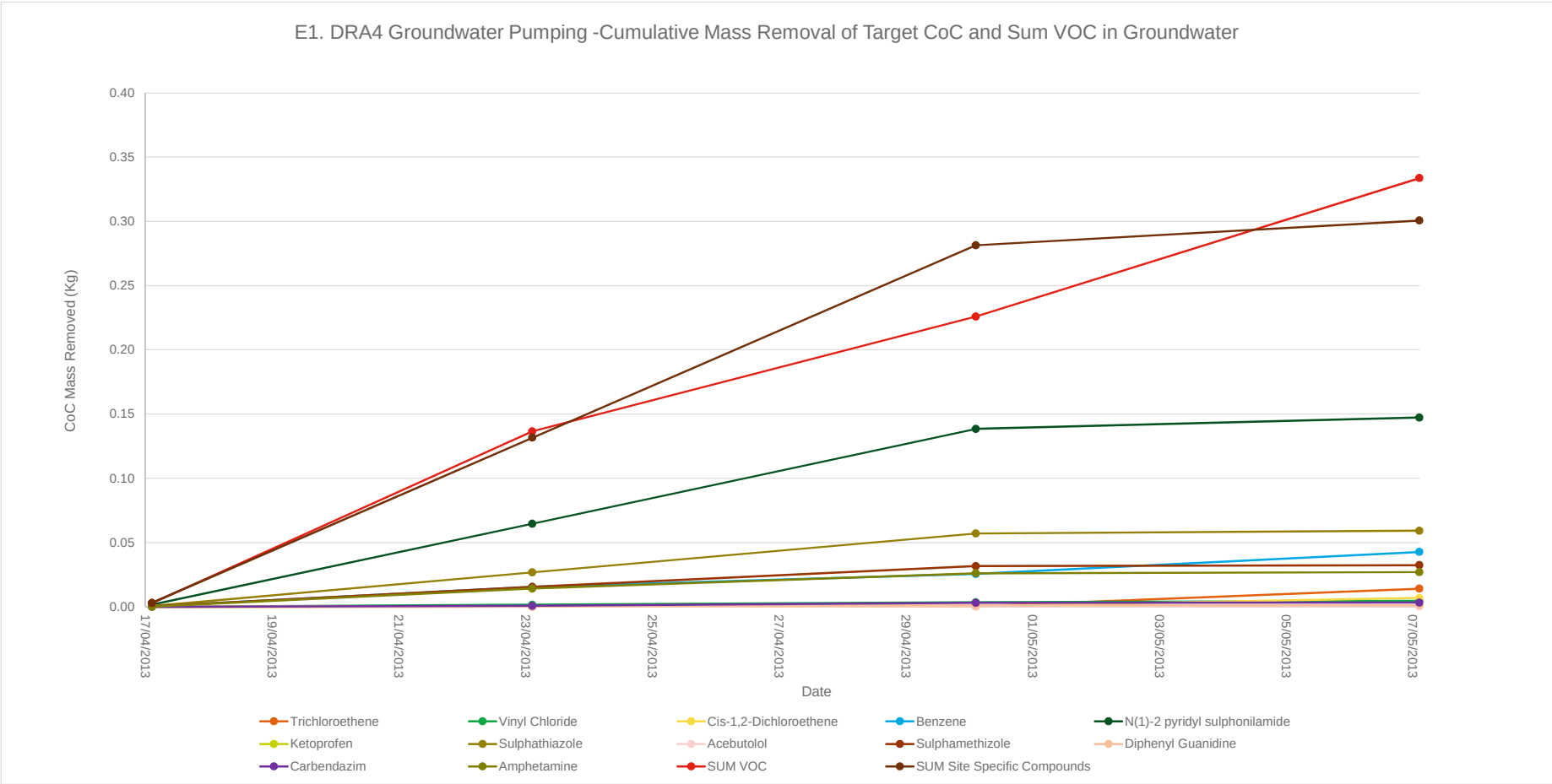
*** AS6BH072 replaced AS6BH001 due to well becoming blocked.

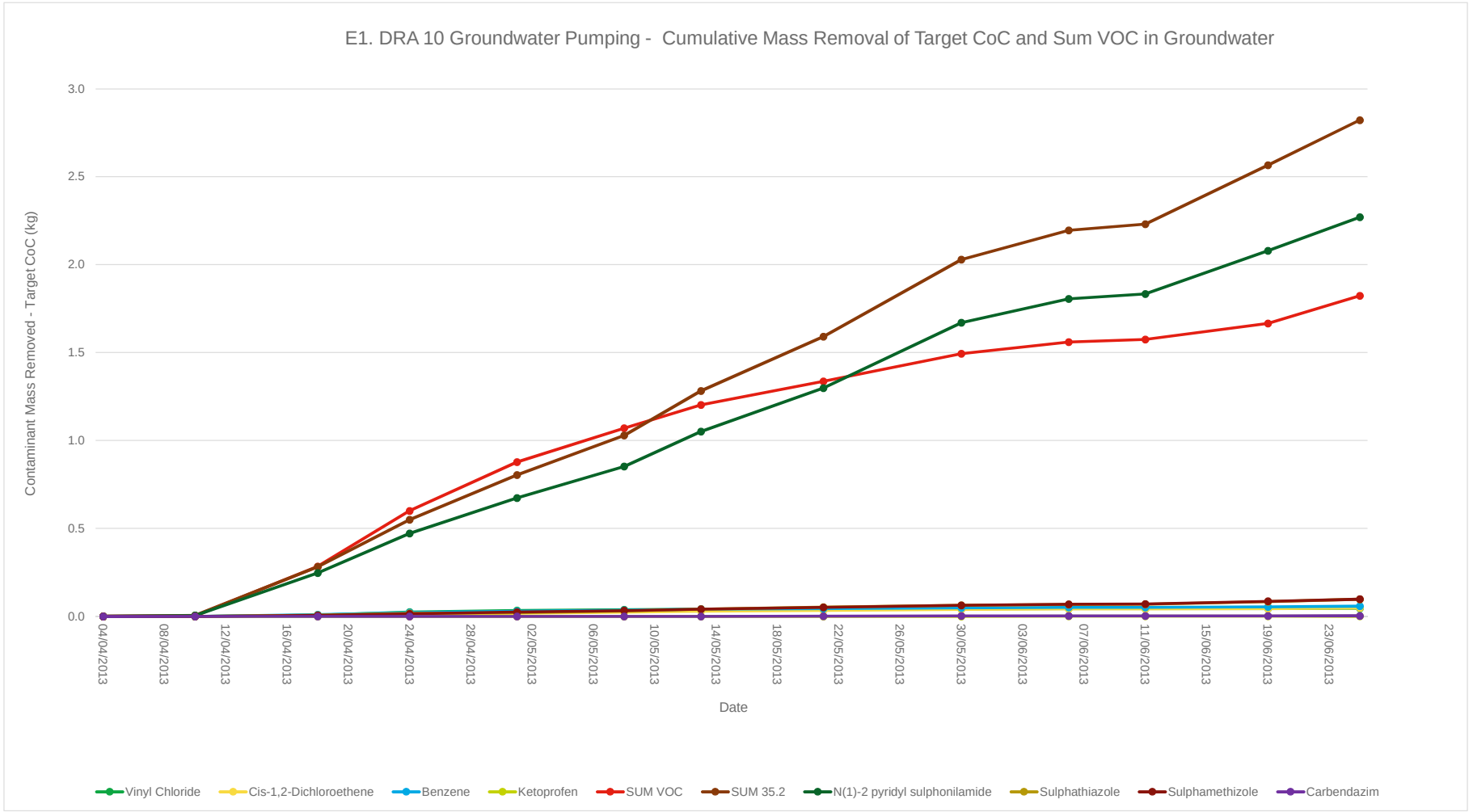
■ Compound selected as target compound

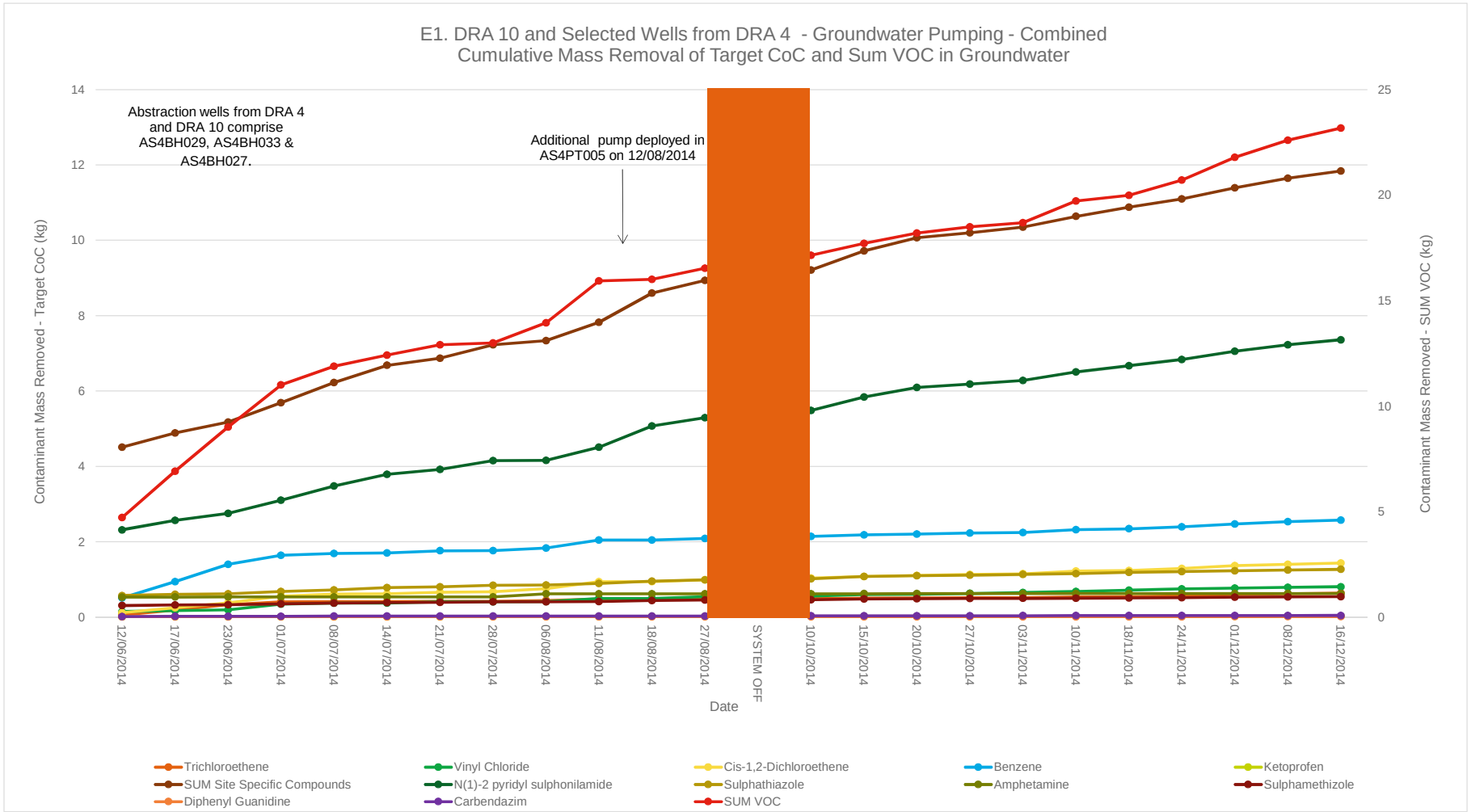
APPENDIX E

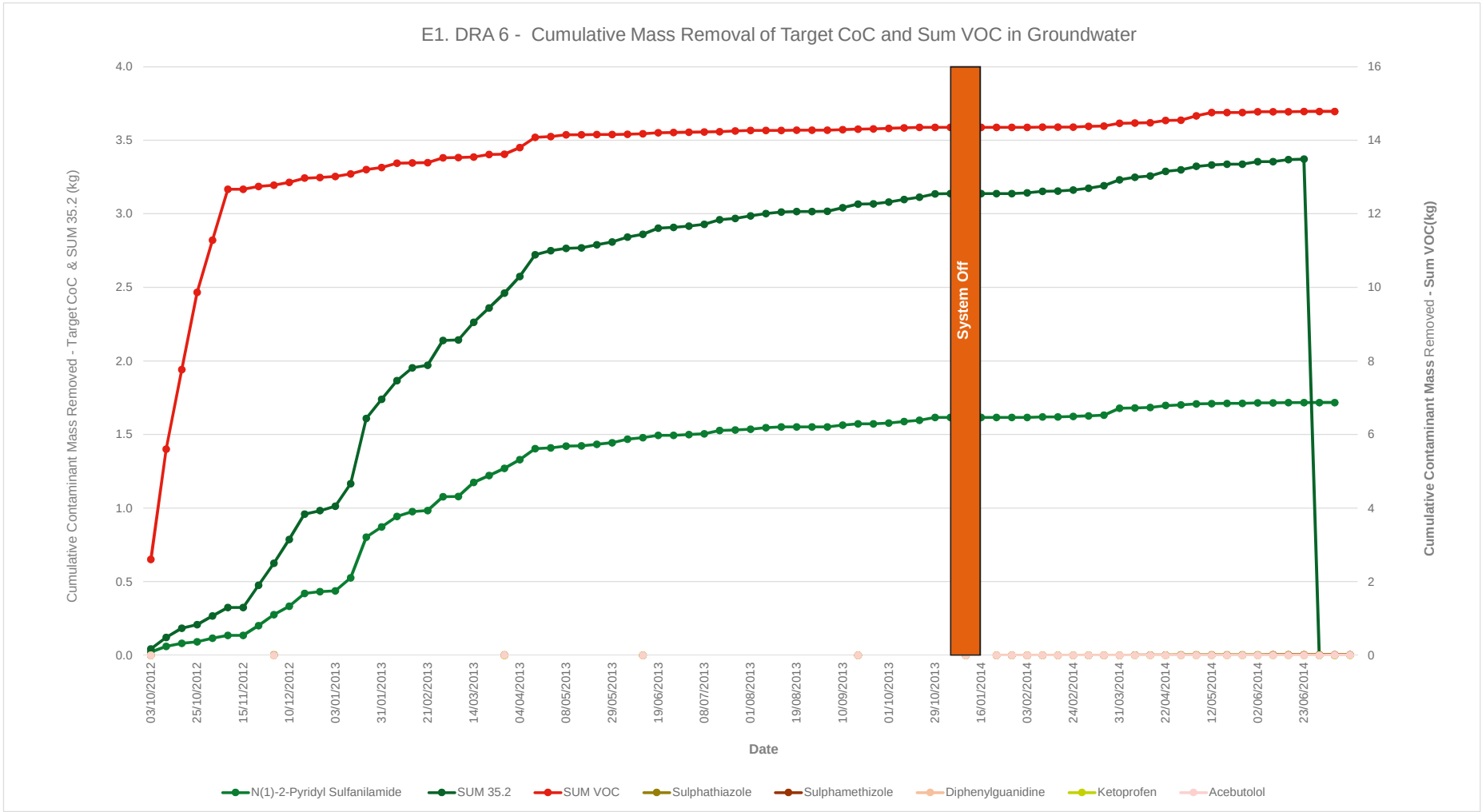
Verification Evidence

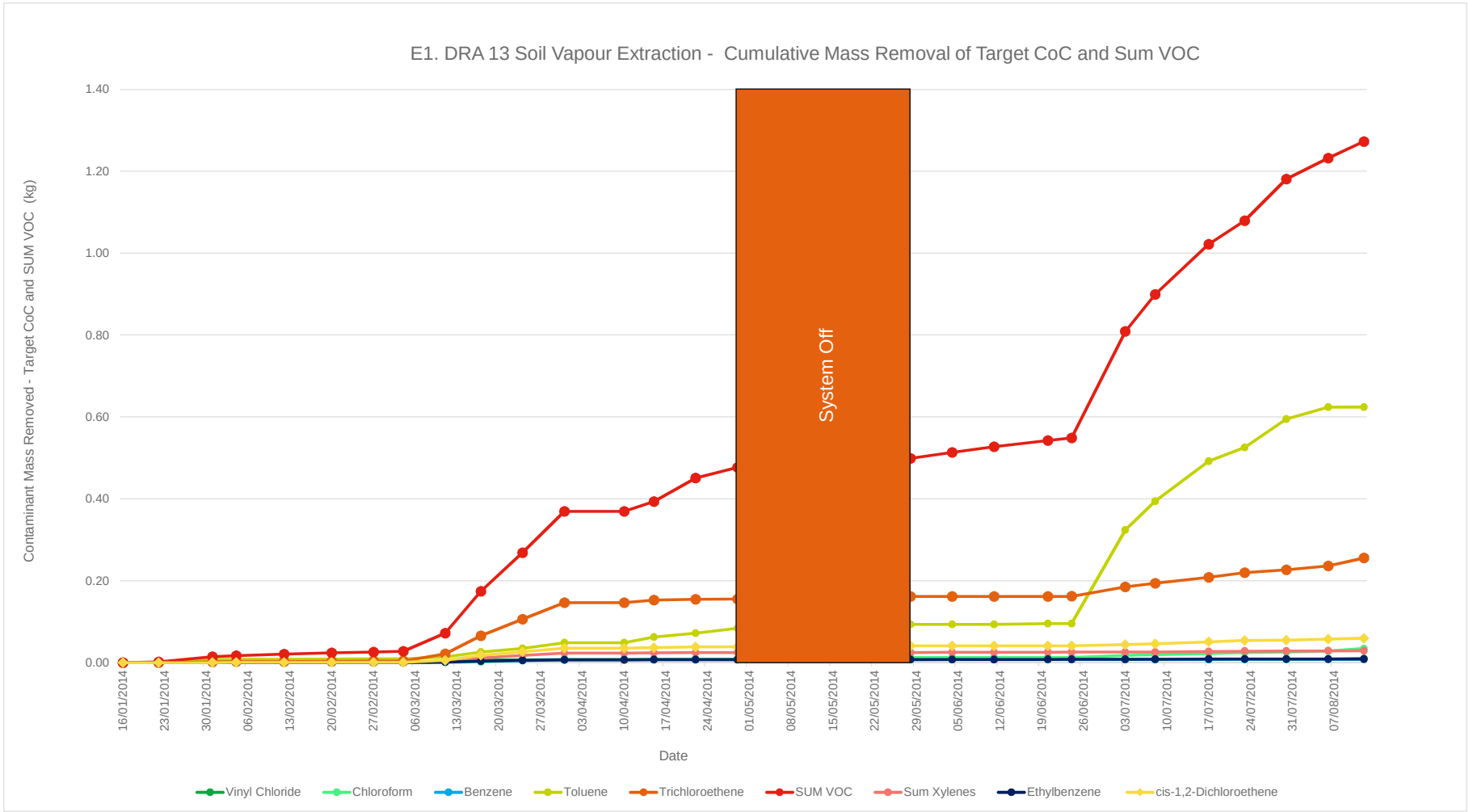
Remediation Area	Remediation Works Undertaken	Performance Evidence
DRA 4, 6 and 18	Groundwater pumping	• Total mass removed • Cumulative mass removal graph
DRA 10 & RPA 2	Groundwater pumping and *in situ* chemical oxidation (ISCO)	• Total mass removed • Cumulative mass removal graph • Persulphate concentrations
DRA 13 and 15	Air sparging / soil vapour extraction (SVE)	• Total dissolved mass removed • Cumulative dissolved mass removal graph • Total vapour mass removed • Cumulative vapour mass removal graph
DRA 16	*In situ* chemical oxidation (ISCO)	• Persulphate concentrations

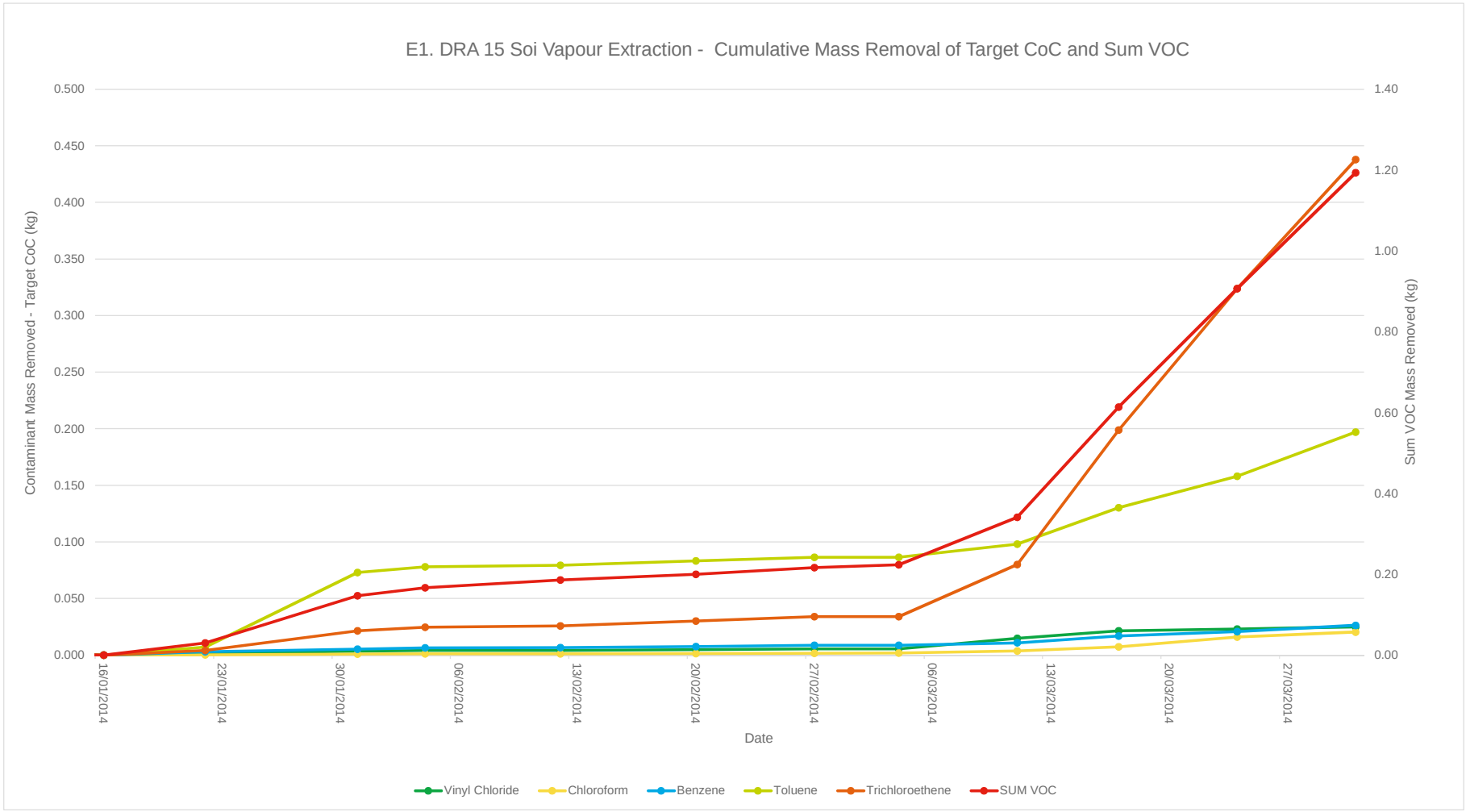

E1. DRA4 Groundwater Pumping -Cumulative Mass Removal of Target CoC and Sum VOC in Groundwater
CoC Mass Removed (Kg)
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
17/04/2013
19/04/2013
21/04/2013
23/04/2013
25/04/2013
27/04/2013
29/04/2013
01/05/2013
03/05/2013
05/05/2013
07/05/2013
Date
Trichloroethene
Vinyl Chloride
Cis-1,2-Dichloroethene
Benzene
N(1)-2 pyridyl sulphonilamide
Ketoprofen
Sulphathiazole
Acebutolol
Sulphamethizole
Diphenyl Guanidine
Carbendazim
Amphetamine
SUM VOC
SUM Site Specific Compounds

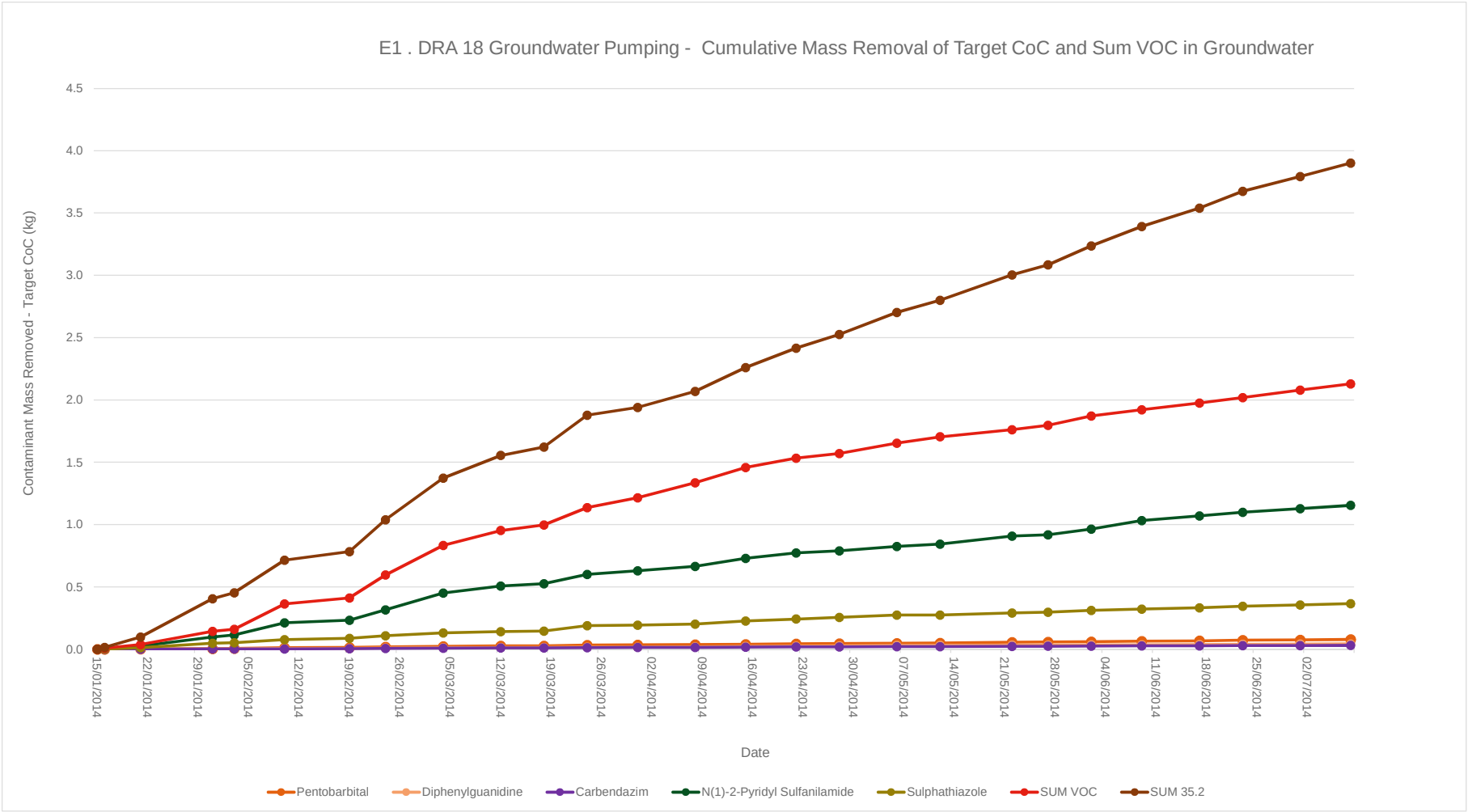

E1. DRA 10 Groundwater Pumping - Cumulative Mass Removal of Target CoC and Sum VOC in Groundwater
Contaminant Mass Removed - Target CoC (kg)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
04/04/2013
08/04/2013
12/04/2013
16/04/2013
20/04/2013
24/04/2013
28/04/2013
02/05/2013
06/05/2013
10/05/2013
14/05/2013
18/05/2013
22/05/2013
26/05/2013
30/05/2013
03/06/2013
07/06/2013
11/06/2013
15/06/2013
19/06/2013
23/06/2013
Date
Vinyl Chloride
Cis-1,2-Dichloroethene
Benzene
Ketoprofen
SUM VOC
SUM 35.2
N(1)-2 pyridyl sulphonilamide
Sulphathiazole
Sulphamethizole
Carbendazim

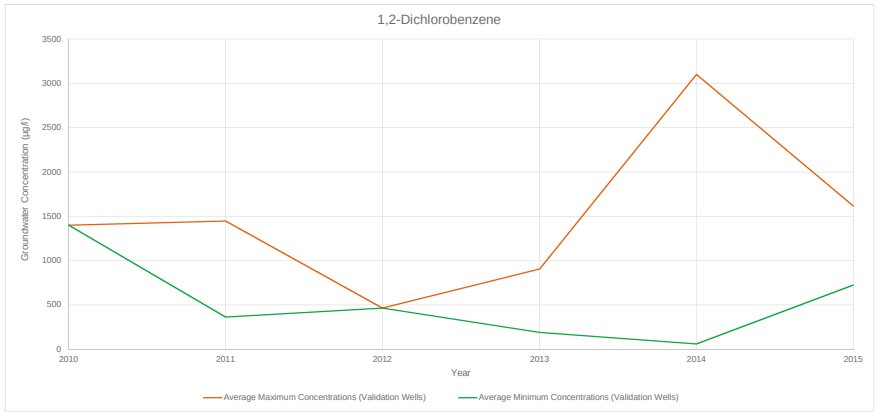

E1. DRA 10 and Selected Wells from DRA 4 - Groundwater Pumping - Combined
Cumulative Mass Removal of Target CoC and Sum VOC in Groundwater
Abstraction wells from DRA 4 and DRA 10 comprise AS4BH029, AS4BH033 & AS4BH027.
Additional pump deployed in AS4PT005 on 12/08/2014
SYSTEM OFF
Contaminant Mass Removed - Target CoC (kg)
Contaminant Mass Removed - SUM VOC (kg)
Date
0
2
4
6
8
10
12
14
0
5
10
15
20
25
12/06/2014
17/06/2014
23/06/2014
01/07/2014
08/07/2014
14/07/2014
21/07/2014
28/07/2014
06/08/2014
11/08/2014
18/08/2014
27/08/2014
10/10/2014
15/10/2014
20/10/2014
27/10/2014
03/11/2014
10/11/2014
18/11/2014
24/11/2014
01/12/2014
08/12/2014
16/12/2014
Trichloroethene
Vinyl Chloride
Cis-1,2-Dichloroethene
Benzene
Ketoprofen
SUM Site Specific Compounds
N(1)-2 pyridyl sulphonilamide
Sulphathiazole
Amphetamine
Sulphamethizole
Diphenyl Guanidine
Carbendazim
SUM VOC

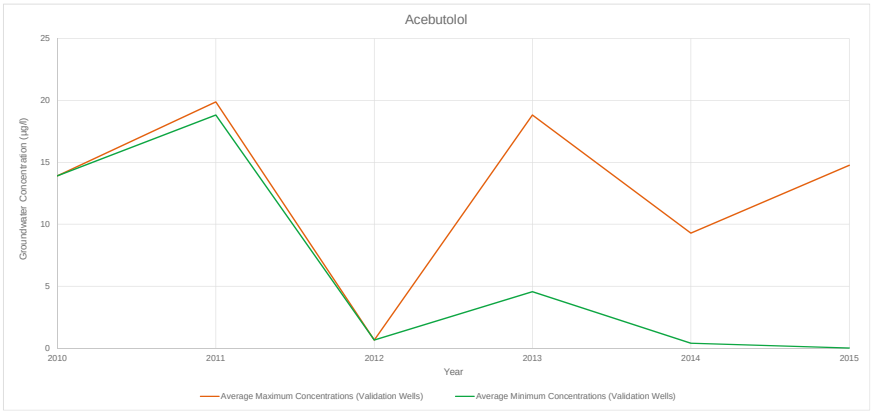


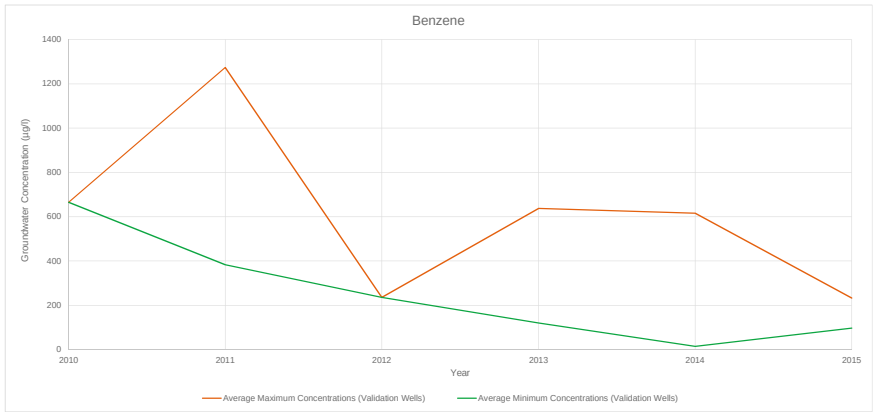


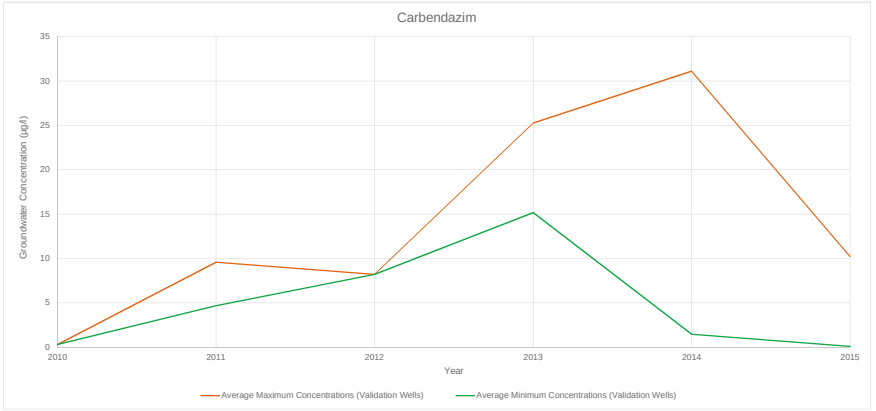


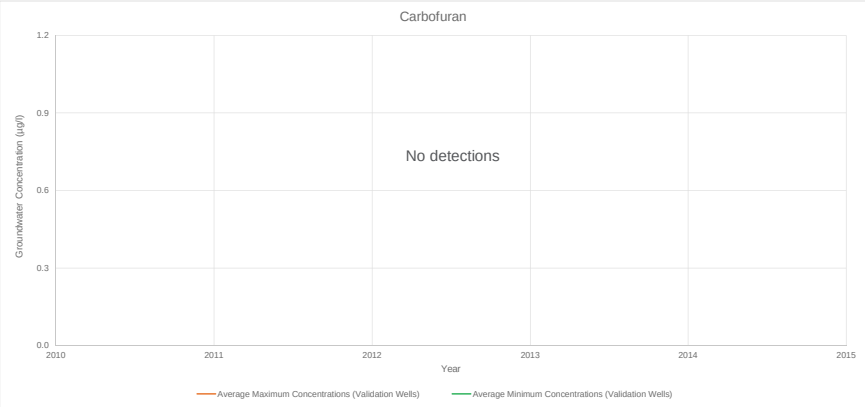


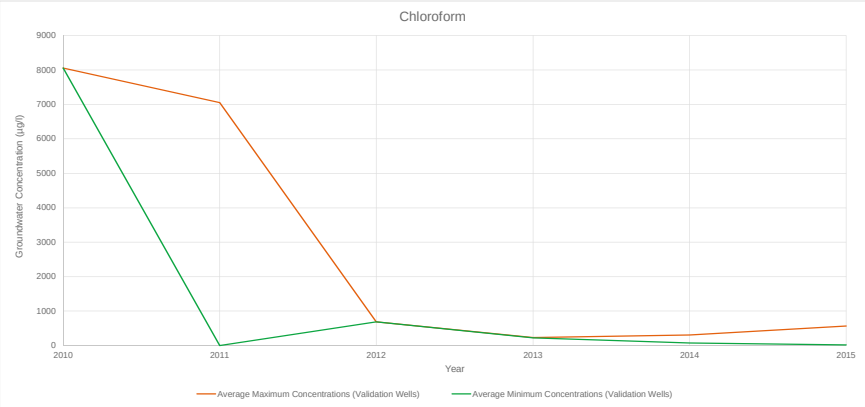

1,2-Dichlorobenzene
Groundwater Concentration (µg/l)
3500
3000
2500
2000
1500
1000
500
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

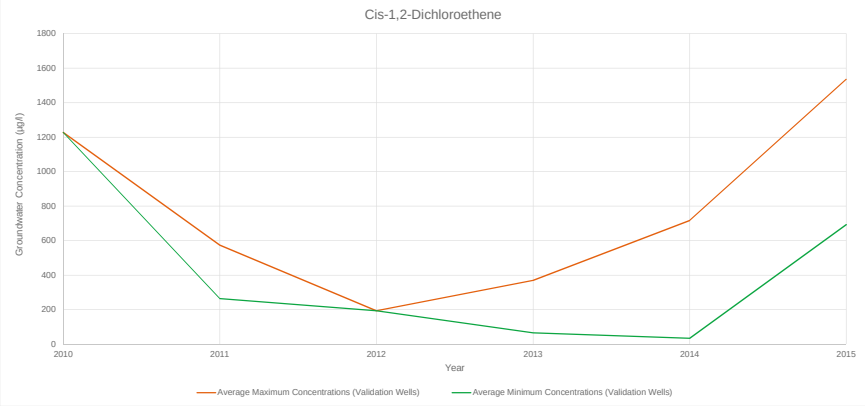

Acebutolol
Groundwater Concentration (µg/l)
25
20
15
10
5
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

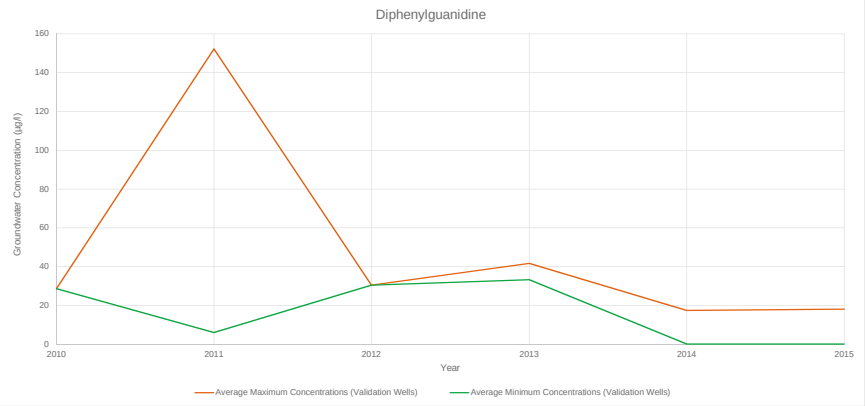

Benzene
Groundwater Concentration (µg/l)
1400
1200
1000
800
600
400
200
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

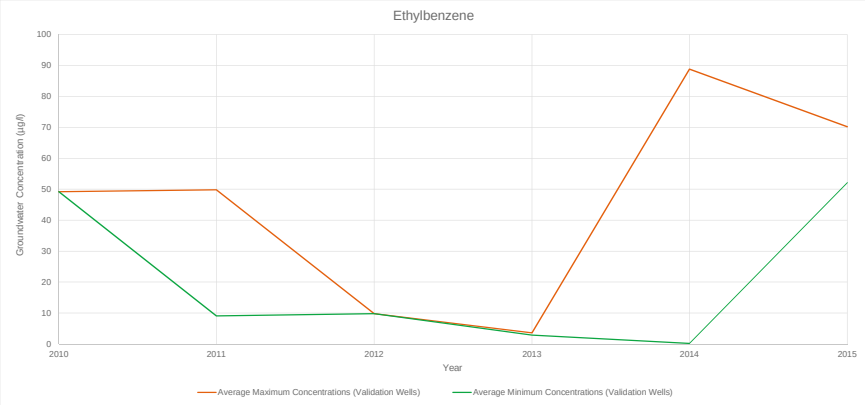

Carbendazim
Groundwater Concentration (µg/l)
35
30
25
20
15
10
5
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

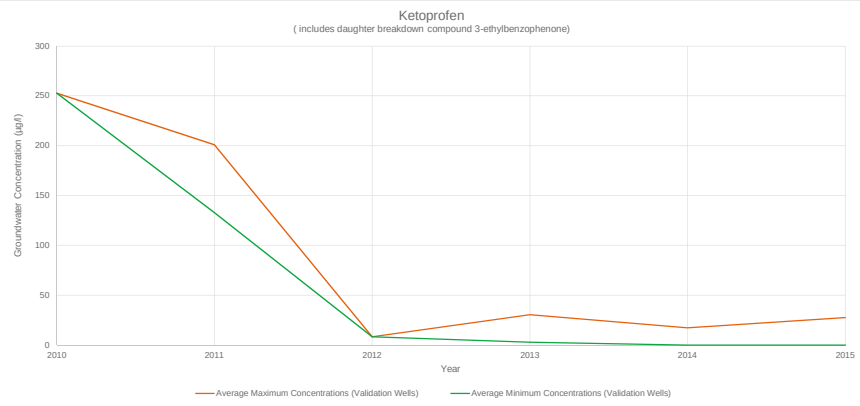

Carbofuran
No detections
Groundwater Concentration (µg/l)
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

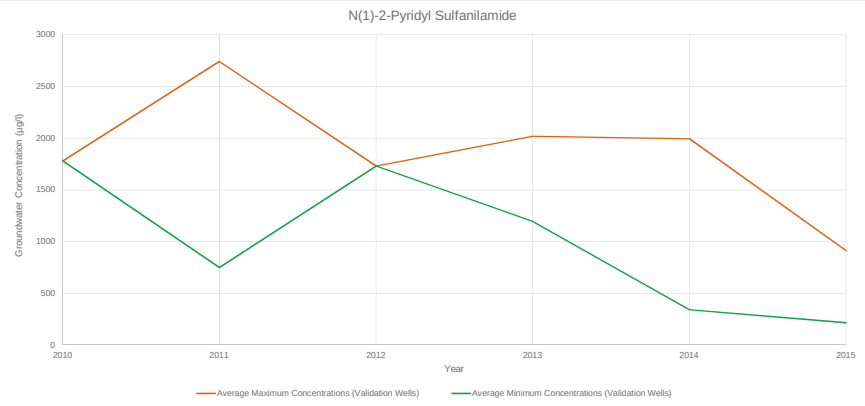

Chloroform
Groundwater Concentration (µg/l)
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

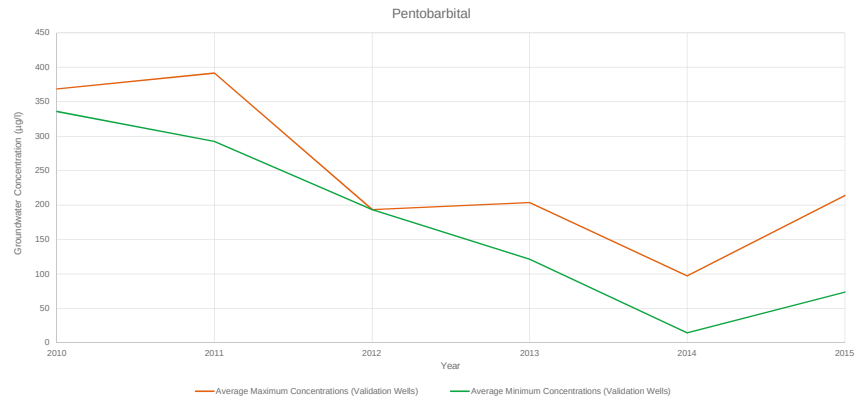

Cis-1,2-Dichloroethene
Groundwater Concentration (µg/l)
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

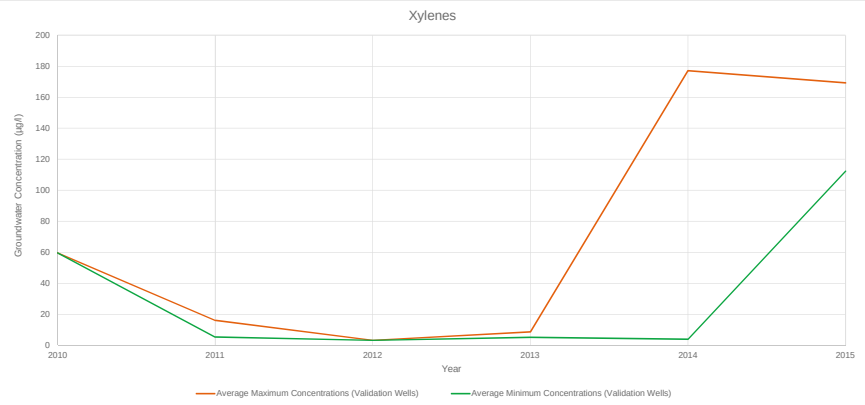

Diphenylguanidine
Groundwater Concentration (µg/l)
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

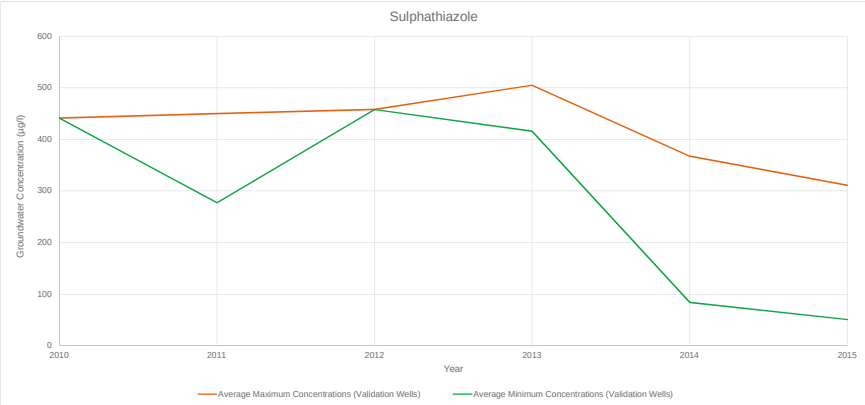

Ethylbenzene
Groundwater Concentration (µg/l)
100
90
80
70
60
50
40
30
20
10
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

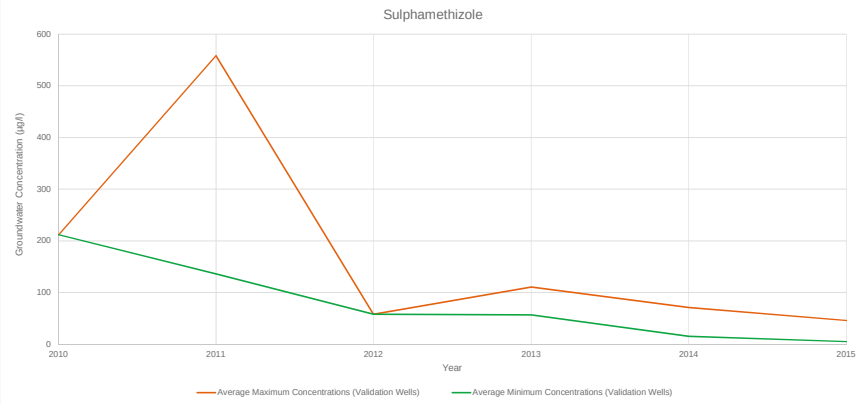

Ketoprofen
(includes daughter breakdown compound 3-ethylbenzophenone)
Groundwater Concentration (µg/l)
300
250
200
150
100
50
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

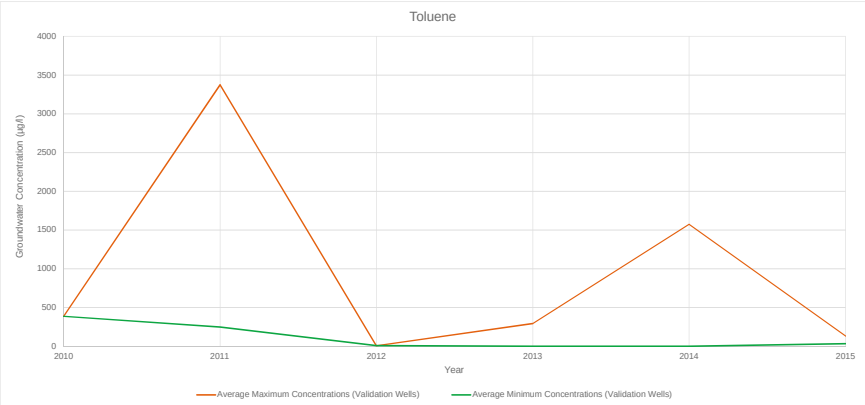

N(1)-2-Pyridyl Sulfanilamide
Groundwater Concentration (µg/l)
3000
2500
2000
1500
1000
500
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

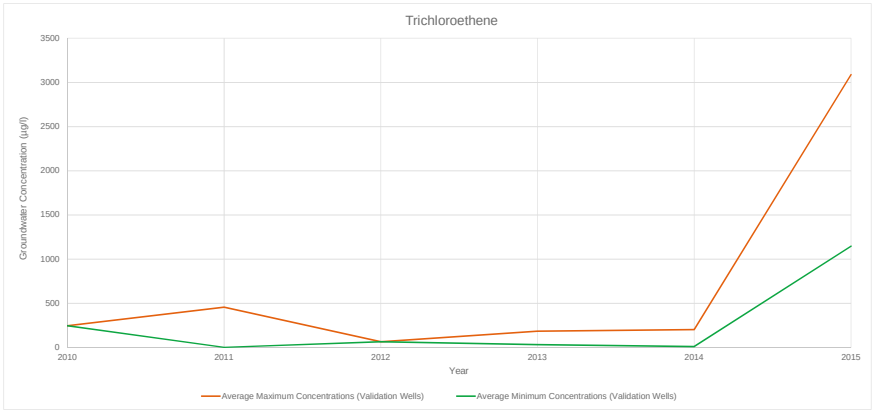

Pentobarbital
Groundwater Concentration (µg/l)
450
400
350
300
250
200
150
100
50
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

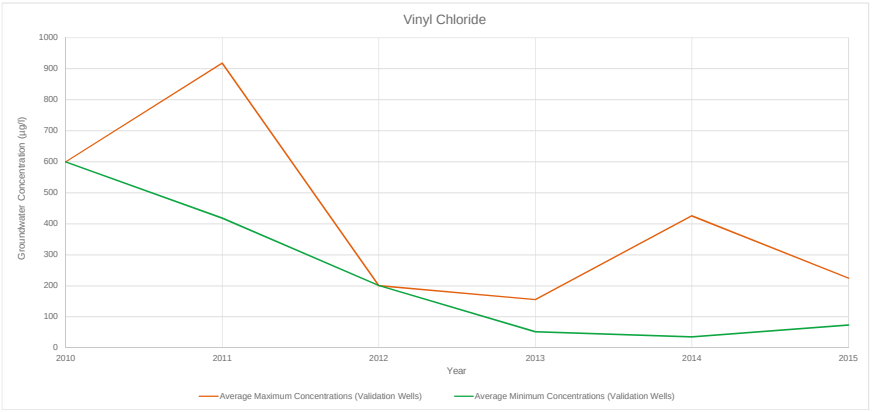

Xylenes
Groundwater Concentration (µg/l)
200
180
160
140
120
100
80
60
40
20
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

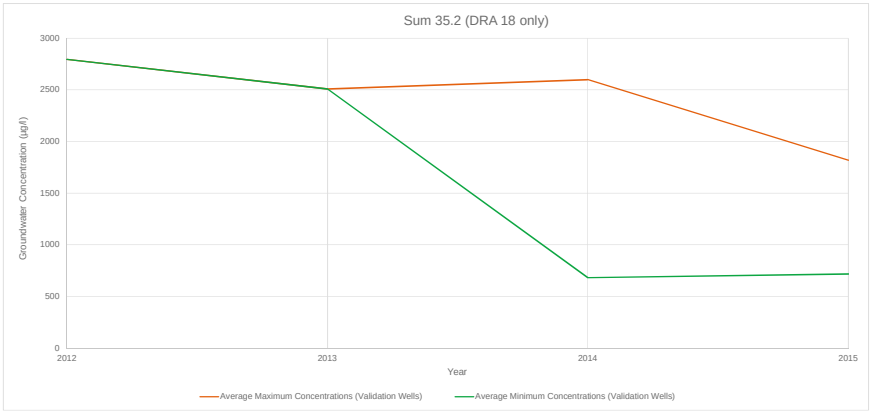

Sulphathiazole
Groundwater Concentration (µg/l)
600
500
400
300
200
100
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

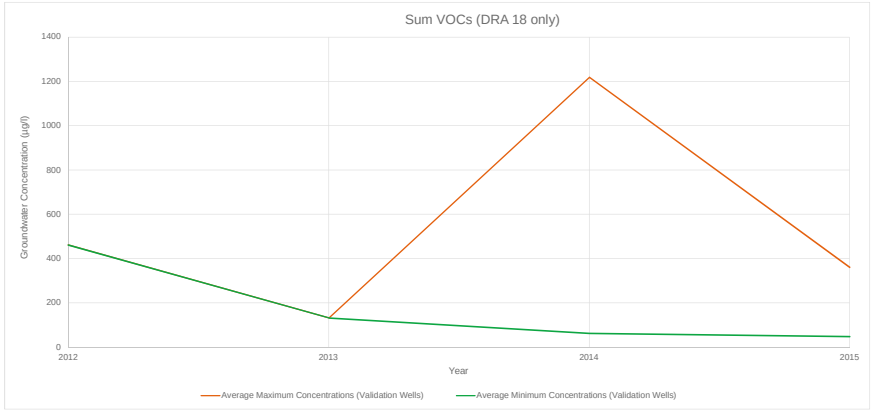

Sulphamethizole
Groundwater Concentration (µg/l)
600
500
400
300
200
100
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)


Toluene
Groundwater Concentration (µg/l)
4000
3500
3000
2500
2000
1500
1000
500
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)


Trichloroethene
Groundwater Concentration (µg/l)
3500
3000
2500
2000
1500
1000
500
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)


Vinyl Chloride
Groundwater Concentration (µg/l)
1000
900
800
700
600
500
400
300
200
100
0
2010
2011
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)


Sum 35.2 (DRA 18 only)
Groundwater Concentration (µg/l)
3000
2500
2000
1500
1000
500
0
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)


Sum VOCs (DRA 18 only)
Groundwater Concentration (µg/l)
1400
1200
1000
800
600
400
200
0
2012
2013
2014
2015
Year
Average Maximum Concentrations (Validation Wells)
Average Minimum Concentrations (Validation Wells)

Appendix E3

Persulphate Weekly Distribution and Fortnightly Persistence Monitoring

Location	DTW (m bgl)	DTB (m bgl)	Conductivity (µ)	pH	Sulphate		Persulphate		
					Total (mg/l)	DLL	Absorbance	Total (mg/l)	DLL
DRA 10 1st Injection Event									
Max weekly - 15th November - 17th December 2013									
AS4BH027	1.828	5.26	4,479	7.03	6,800	100	0.087	7,878	NA
Final persistence monitoring - 8th January 2014									
AS4BH027	1.706	5.12	3,514	6.45	-	-	0.000	0	NA
DRA 10 2nd Injection Event									
Max weekly - 14th February - 25th February 2014									
AS4BH027	0.477	5.08	4,891	6.97	-	-	0.200	18,369	NA
Final persistence monitoring - 11th April 2014									
AS4BH027	-	-	-	-	820,000	10,000	0.007	451	NA
DRA 16 1st Injection Event									
Max weekly - 15th November - 17th December 2013									
AS4BH044	0.292	2.94	3,980	6.00	-	-	0.032	2,772	NA
AS4BH050	0.388	2.86	4,293	11.61	-	-	0.025	2,122	NA
AS6BH001*	1.398	1.76	219	7.10	8,000	100	0.018	1,472	NA
Final persistence monitoring - 11th April 2014									
AS4BH044	0.415	2.93	1,042	8.99	6,000	100	0.000	0	NA
AS4BH050	0.445	2.86	2,266	11.51	9,500	100	0.007	451	NA
AS6BH001*	1.420	1.72	441	7.20	8,000	100	0.000	0	NA
DRA 16 2nd Injection Event**									
Max weekly - 26th June - 11th July 2014									
AS4BH050	0.398	2.83	5,659	12.27	8,800	100	0.007	451	NA
AS6BH001*	1.270	1.72	4,217	8.14	10,500	100	0.024	2,030	NA
Final persistence monitoring - 11th April 2014									
AS4BH050	1.041	2.79	-	12.32	-	-	0.000	0	NA
AS6BH072*	1.540	4.17	-	9.55	-	-	0.000	0	NA
RPA 2 1st Injection Event***									
Max weekly - 3rd May - 21st June 2013									
AS8BH110	1.361	4.32	9,280	8.96	1,000,000	10,000	NA	60,000	10,000
Final persistence monitoring - 5th August 2013									
AS8BH110	1.755	4.37	5,259	6.84	200-5000	0 & 100	NA	420	100
RPA 2 2nd Injection Event****									
Max weekly - 12th September - 17th October 2013									
AS8BH110	1.158	4.31	32,000	6.65	11,000	100	NA	70,000	10,000
Final persistence monitoring - 21st February 2014									
AS8BH110	1.006	4.30	19,000	8.65	1,100,000	10,000	NA	35,000	10,000

Notes

DTW	Depth to Water
DTB	Depth to Base
DLL	Dilution Factor
-	No data recorded
NA	Not Applicable
*	AS6BH072 replaced ASS6BH001 in March 2015 due to well becoming blocked.
**	ISCO injection area varied to the first and second events. As such only validation wells within the expected zone of influence were monitored.
***	AS8BH110 is only one of six validation wells within RPA 2 which is located within Back Plot B
****	RPA 2 3rd Injection event undertaken downgradient of AS8BH110. As such only validation wells within the expected zone of influence were monitored.

Persulphate distribution monitoring undertaken on a weekly basis during injection works

Persulphate persistence monitoring undertaken on a fortnightly or monthly basis following completion of injection works

Appendix E4

Groundwater Elevations

Remediation Area	Borehole ID	Surface Elevation (m AOD)	Validation Monitoring Round 1 Dec 2014 - April 2015 µg/L				Validation Monitoring Round 2 March - June 2015 µg/L				Validation Monitoring Round 3 June - Sept 2015 µg/L				Validation Monitoring Round 4 Sept - Dec 2015 µg/L			
			Depth to NAPL	Depth to Grou-water (m bgl)	Depth to Base (m bgl)	Grou-water Elevation (m AOD)	Depth to NAPL	Depth to Grou-water (m bgl)	Depth to Base (m bgl)	Grou-water Elevation (m AOD)	Depth to NAPL	Depth to Grou-water (m bgl)	Depth to Base (m bgl)	Grou-water Elevation (m AOD)	Depth to NAPL	Depth to Grou-water (m bgl)	Depth to Base (m bgl)	Grou-water Elevation (m AOD)
DRA4	AS4BH026	11.13	-	1.400	2.96	9.73	-	1.706	2.97	9.42	-	0.816	3.00	10.31	-	1.079	2.94	10.05
	AS4BH028	10.996	-	2.245	5.51	8.75	-	2.687	5.56	8.31	-	2.218	5.48	8.78	-	2.215	5.55	8.78
	AS4BH029	11.141	-	2.336	5.78	8.81	-	2.702	5.81	8.44	-	2.182	5.81	8.96	-	2.205	5.78	8.94
	AS4BH033	10.811	-	2.126	4.79	8.69	-	2.485	4.79	8.33	-	1.972	4.77	8.84	-	4.792	2.05	6.02
	AS4BH034	10.857	-	2.471	6.80	8.39	-	2.924	6.77	7.93	-	2.362	6.76	8.50	-	2.378	6.77	8.48
	AS4BH037	10.695	-	2.301	4.73	8.39	-	2.862	4.69	7.83	-	2.233	4.63	8.46	-	2.231	4.66	8.46
DRA6	AS8BH098A	9.4168	-	1.051	3.25	8.37	-	0.870	3.19	8.55	-	1.598	3.18	7.82	-	1.179	3.29	8.24
	AS8BH099	9.9073	-	1.435	3.42	8.47	-	1.245	3.456	8.66	-	1.753	3.40	8.15	-	1.393	3.39	8.51
	AS8BH100	10.3277	-	1.588	3.40	8.74	-	1.330	3.31	9.00	-	1.954	3.28	8.37	-	1.819	3.23	8.51
	AS8BH113*	7.996	-	Flooded	Flooded	>7.996	-	Flooded	Flooded	>7.996	-	Flooded	Flooded	>7.996	-	Flooded	Flooded	>7.996
DRA10	AS4BH027	10.982	-	2.145	4.77	8.84	-	2.532	4.81	8.45	-	2.028	4.80	8.95	-	2.084	4.80	8.90
DRA13	AS4BH032	11.159	-	1.551	2.70	9.61	-	2.624	2.72	8.54	-	1.668	2.78	9.49	-	1.661	2.73	9.50
	AS4BH038	11.08	-	0.902	3.88	10.18	-	1.998	3.90	9.08	-	0.967	3.94	10.11	-	1.140	3.95	9.94
DRA15	AS4BH036	10.87	-	1.942	3.88	8.93	-	2.574	4.62	8.30	-	2.138	4.64	8.73	-	2.150	4.65	8.72
	AS4BH040A	10.577	-	2.290	5.56	8.29	-	2.734	5.57	7.84	-	2.226	5.57	8.35	-	2.250	5.58	8.33
	AS4BH042	10.741	-	2.025	2.63	8.72	-	2.364	2.46	8.38	-	1.915	2.31	8.83	-	2.021	2.43	8.72
	AS4BH043	10.592	-	2.297	5.46	8.30	-	2.706	5.47	7.89	-	2.392	5.68	8.20	-	2.261	5.50	8.33
	AS4BH045	10.74	-	2.200	4.23	8.54	-	2.469	4.99	8.27	-	2.015	5.03	8.73	-	2.076	5.02	8.66
	AS4BH046	10.445	-	DRY	2.07	-	-	DRY	2.07	-	-	DRY	2.09	-	-	DRY	2.09	-
	AS4BH048	10.699	-	2.015	2.75	8.68	-	2.431	2.67	8.27	-	2.773	2.72	7.93	-	1.855	2.63	8.84
	AS4BH051	10.172	-	1.781	5.15	8.39	-	2.022	5.14	8.15	-	1.699	5.21	8.47	-	1.704	5.21	8.47
	AS4BH052	9.966	-	1.890	4.61	8.08	-	2.181	4.60	7.79	-	1.885	4.70	8.08	-	1.834	4.64	8.13
	AS5BH002	10.031	-	1.685	4.20	8.35	-	2.044	4.22	7.99	-	1.614	4.21	8.42	-	1.616	4.22	8.42
	AS6BH003	10.144	-	1.888	3.75	8.26	-	2.142	3.81	8.00	-	1.872	3.79	8.27	-	1.842	3.80	8.30
	HBH210ERM	10.46	-	1.860	4.25	8.60	-	2.252	4.25	8.21	-	1.803	4.46	8.66	-	1.940	4.28	8.52
	HBH315BAE	10.354	-	1.627	3.54	8.73	-	1.976	4.09	8.38	-	1.397	4.15	8.96	-	1.531	4.17	8.82
DRA16	AS4BH044	10.493	-	1.175	2.89	9.32	-	1.301	2.90	9.19	-	0.451	2.86	10.04	-	0.494	2.85	10.00
	AS4BH050	10.533	-	1.041	2.79	9.49	-	1.020	2.79	9.51	-	0.534	2.80	10.00	-	0.475	2.79	10.06
	AS6BH072*	10.46	-	1.540	4.17	8.92	-	1.561	4.19	8.90	-	1.371	4.19	9.09	-	1.320	4.18	9.14
DRA18	AS5BH012	9.4054	-	1.501	4.54	7.90	-	1.552	4.57	7.85	-	1.833	4.54	7.57	-	1.558	4.56	7.85
	AS5BH014	9.2599	-	0.906	3.63	8.35	-	0.626	3.67	8.63	-	1.535	3.69	7.72	-	1.056	3.69	8.20
	AS6BH010	9.6976	-	1.726	3.01	7.97	-	-	-	-	-	1.768	2.97	7.93	-	1.735	2.98	7.96
	AS6BH012	9.9029	-	1.327	4.28	8.58	-	1.350	2.77	8.55	-	1.593	2.81	8.31	-	1.325	2.75	8.58
	AS6BH014	10.4059	-	1.574	3.23	8.83	-	1.620	3.19	8.79	-	2.170	3.20	8.24	-	1.881	3.24	8.52
	AS6BH016	10.9473	-	1.620	3.66	9.33	-	1.611	3.66	9.34	-	2.315	3.65	8.63	-	1.904	3.58	9.04
	AS7BH027	10.0694	-	2.035	3.12	8.03	-	2.012	3.09	8.06	-	2.028	3.03	8.04	-	1.986	2.92	8.08
	AS7BH028	10.2103	-	1.188	2.85	9.02	-	1.170	2.81	9.04	-	1.542	2.90	8.67	-	1.274	2.84	8.94
	AS7BH029	10.0393	-	1.533	3.21	8.51	-	1.556	3.18	8.48	-	1.660	3.18	8.38	-	1.527	3.20	8.51
	AS7BH030	10.291	-	1.531	3.08	8.76	-	1.465	3.03	8.83	-	1.841	3.07	8.45	-	1.613	3.07	8.68
	AS7BH033	10.5455	-	0.996	3.19	9.55	-	0.960	3.23	9.59	-	1.352	3.21	9.19	-	1.092	3.22	9.45
	AS7BH034	10.4223	-	1.960	4.28	8.46	-	2.049	4.27	8.37	-	2.585	4.31	7.84	-	1.976	4.23	8.45
	AS7BH036	10.4845	-	2.020	5.18	8.46	-	2.133	5.16	8.35	-	2.612	5.18	7.87	-	2.333	5.17	8.15
	AS7BH037	10.3515	-	0.386	2.27	9.97	-	0.431	2.30	9.92	-	0.621	2.33	9.73	-	0.432	2.22	9.92
	AS7BH038	10.3941	-	1.654	3.19	8.74	-	0.766	3.20	9.63	-	1.003	3.19	9.39	-	0.723	3.22	9.67
	AS7BH039	10.6342	-	1.946	4.17	8.69	-	1.800	4.08	8.83	-	2.401	4.73	8.23	-	1.147	4.74	9.49
	AS7BH040	10.5793	-	1.818	3.93	8.76	-	1.930	3.90	8.65	-	2.465	3.90	8.11	-	2.247	3.88	8.33
	AS7BH041	10.7983	-	1.083	3.86	9.72	-	1.056	3.82	9.74	-	1.160	3.81	9.64	-	1.096	3.82	9.70
	AS7BH042	10.6657	-	1.345	2.91	9.32	-	1.316	2.91	9.35	-	1.545	2.85	9.12	-	1.599	2.86	9.07
	AS7BH043	10.5235	-	1.291	5.08	9.23	-	1.820	5.12	8.70	-	2.231	5.06	8.29	-	1.936	5.10	8.59
	AS7BH045	10.6106	-	1.385	3.55	9.23	-	1.425	3.58	9.19	-	1.492	3.54	9.12	-	1.552	3.62	9.06
	AS7BH046	10.8276	-	1.794	3.91	9.03	-	1.876	3.95	8.95	-	2.442	3.95	8.39	-	2.285	3.94	8.54
	AS7BH047	10.5225	-	2.242	13.64	8.28	-	2.267	13.57	8.26	-	2.707	13.63	7.82	-	2.448	13.62	8.07
	AS8BH108	9.5658	-	1.683	3.18	7.88	-	1.662	3.20	7.90	-	1.926	3.19	7.64	-	1.653	3.18	7.91
RPA 2	AS8BH110	10.44	-	1.265	4.34	9.18	-	-	-	-	-	2.091	4.51	8.35	-	2.033	4.24	8.41

Notes

AOD	Above ordinance datum
bgl	Below ground- level
-	No Non aqueos phase liquid (NAPL) encountered
*	AS6BH072 replaced AS6BH001 in March 2015 due to well becoming blocked.

Appendix E5

Validation Monitoring Results of Volatile Organic Compounds in Groundwater (µg/l)

DRA							DRA 4																			
Location ID	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	AS4BH026				AS4BH028				AS4BH029				AS4BH033				AS4BH034				AS4BH037			
Date							18/03/2015	17/06/2015	21/09/2015	15/12/2015	18/03/2015	17/06/2015	25/09/2015	15/12/2015	18/03/2015	17/06/2015	21/09/2015	15/12/2015	18/03/2015	17/06/2015	21/09/2015	15/12/2015	18/03/2015	18/06/2015	25/09/2015	15/12/2015	18/03/2015	17/06/2015	25/09/2015	15/12/2015
Volatile Organic Compounds																														
1,1,1,2-Tetrachloroethane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,1-Trichloroethane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane							< 4	< 4	< 4	< 4	<4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,1,2-Trichloroethane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethane							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloroethene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloropropene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichlorobenzene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichloropropane							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trichlorobenzene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trimethylbenzene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dibromo-3-chloropropane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dibromoethane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	ND	142,000	72,710	ND	ND	23,600	< 3	21	< 3	< 3	58	41	127	98	1100	2370	< 3	< 3	155	166	36	8	339	132	22	< 3	1320	1330	1230	1110
1,2-Dichloroethane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-Trimethylbenzene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichlorobenzene							< 3	< 3	< 3	< 3	6	< 3	6	< 3	16	23	< 3	< 3	4	4	< 3	< 3	5	< 3	< 3	< 3	20	8	12	6
1,3-Dichloropropane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,4-Dichlorobenzene	ND	196,000	23,150	ND	ND	7,000	< 3	< 3	4	< 3	20	< 3	39	25	467	713	< 3	< 3	63	87	32	13	103	< 3	7	< 3	441	401	380	310
2,2-Dichloropropane							< 1	< 1	< 1	< 1	<1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Chlorotoluene							< 3	< 3	< 3	< 3	15	9	17	9	< 3	< 3	< 3	< 3	36	59	21	62	58	22	4	< 3	392	429	370	239
4-Chlorotoluene							< 3	< 3	< 3	< 3	6	< 3	< 3	< 3	< 3	< 3	< 3	< 3	5	11	3	16	6	< 3	< 3	< 3	100	87	85	62
4-Isopropyltoluene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Benzene	249,000	6,000	40	110,000	ND	ND	< 0.5	4	< 0.5	< 0.5	468	413	364	340	88.6	350	< 0.5	< 0.5	6.3	4.5	< 0.5	< 0.5	57.2	44.3	5	< 0.5	413	402	337	385
Bromobenzene							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromodichloromethane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromoform							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane							< 1	< 1	< 1	< 1	<1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Carbon Tetrachloride							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	< 2	< 2	< 2	< 2	1410	1090	1400	949	568	1330	< 2	< 2	290	289	5	20	294	60	21	< 2	1880	1790	1700	1440
Chloroethane							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Chloroform	1,100,000	12,000	4	1,100,000	ND	118	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	14	14	12	7	< 2	< 2	< 2	< 2
Chloromethane							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1,554	< 3	< 3	< 3	< 3	<3	< 3	44	53	67	42	< 3	< 3	< 3	< 3	< 3	< 3	265	231	131	51	16	15	34	44
Cis-1,3-Dichloropropene							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromochloromethane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromomethane							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dichlorodifluoromethane							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dichloromethane							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	4	5	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Ethylbenzene	ND	ND	180	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	13	11.3	11.6	6.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.9	3	3.8	3.2
Hexachlorobutadiene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Isopropylbenzene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Methyl Tertiary Butyl Ether							< 0.1	< 0.1	< 0.1	< 0.1	6.7	2.6	2.4	1.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
n-Butylbenzene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
O-Xylene	ND	ND	250	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	3.5	1.7	2.9	1.3	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.6	2.1	3.6	2.1
p/m-Xylene							< 1	< 1	< 1	< 1	<1	< 1	3	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	3	2	4	2
Propylbenzene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
sec-Butylbenzene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Styrene							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
tert-Butylbenzene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Tetrachloroethene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	18	15	13	6	< 3	< 3	< 3	< 3
Toluene	ND	ND	440	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	7.2	6.3	119	221	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	11.2	7.5	8.4	6.4
Trans-1,2-Dichloroethene							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Trans-1,3-Dichloropropene							< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	140,000	1,780	9	229,000	ND	354	< 3	< 3	< 3	< 3	<3	< 3	3	< 3	115	197	9	< 3	< 3	< 3	< 3	< 3	13	12	10	4	< 3	< 3	< 3	< 3
Trichlorofluoromethane							< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Vinyl Chloride	2,390	1,470	28	9280	ND	1234	< 0.1	< 0.1	< 0.1	< 0.1	3.2	18.6	93.2	138	32.2	7.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	70.2	93.1	9.4	3.3	86.8	51.2	74	78.9

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Volatile Organic Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 6										DRA 10				DRA 13							
Location ID							AS8BH098A				AS8BH099				AS8BH100				AS4BH027				AS4BH032				AS4BH038			
Date							10/12/2014	05/03/2015	29/06/2015	28/09/2015	10/12/2014	05/03/2015	29/06/2015	28/09/2015	10/12/2014	05/03/2015	29/06/2015	28/09/2015	18/03/2015	17/06/2015	21/09/2015	15/12/2015	17/11/2014	16/06/2015	21/09/2015	16/12/2015	17/11/2014	16/06/2015	21/09/2015	16/12/2015
Volatile Organic Compounds																												
1,1,1,2-Tetrachloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
1,1,1-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane							< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	<4	< 4	< 4	< 4	<4	< 4	< 4	< 4
1,1,2-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
1,1-Dichloroethane							< 3	< 3	< 3	< 3	5	3	6	10	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
1,1-Dichloroethene							< 3	< 3	< 3	< 3	9	6	10	20	< 3	< 3	< 3	< 3	< 3	3	< 3	4	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
1,1-Dichloropropene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
1,2,3-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
1,2,3-Trichloropropane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
1,2,4-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
1,2,4-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
1,2-Dibromo-3-chloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
1,2-Dibromoethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
1,2-Dichlorobenzene	ND	142,000	72,710	ND	ND	23,600	6	6	327	41	268	220	294	387	10	6	7	7	3330	6030	5870	5500	40200	63100	51500	49100	<3	< 3	< 3	172
1,2-Dichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
1,2-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
1,3,5-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
1,3-Dichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	17	40	31	27	62	52	58	55	<3	< 3	< 3	< 3
1,3-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
1,4-Dichlorobenzene	ND	196,000	23,150	ND	ND	7,000	< 3	< 3	19	< 3	50	36	45	52	10	7	< 3	8	706	1000	978	874	3400	4090	3680	3510	<3	< 3	< 3	12
2,2-Dichloropropane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	< 1	< 1	<1	< 1	< 1	< 1
2-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	81	985	463	910	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
4-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	74	613	340	601	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
4-Isopropyltoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	6	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Benzene	249,000	6,000	40	110,000	ND	ND	1.4	2	271	19.6	924	783	1460	1560	5.6	3.2	4.4	< 0.5	283	506	311	825	<0.5	1.5	< 0.5	1.3	<0.5	< 0.5	< 0.5	< 0.5
Bromobenzene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
Bromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
Bromodichloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
Bromoform							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
Bromomethane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	< 1	< 1	<1	< 1	< 1	< 1
Carbon Tetrachloride							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	2	3	110	12	597	476	758	836	< 2	35	59	55	844	924	952	929	<2	< 2	42	65	<2	< 2	< 2	< 2
Chloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Chloroform	1,100,000	12,000	4	1,100,000	ND	118	< 2	< 2	< 2	< 2	361	247	388	609	< 2	< 2	< 2	< 2	< 2	34	8	54	<2	< 2	< 2	3	<2	< 2	< 2	< 2
Chloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1,554	18	15	401	63	2390	1700	3340	5870	< 3	< 3	< 3	< 3	42	614	206	1130	<3	9	< 3	7	<3	< 3	< 3	< 3
Cis-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
Dibromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
Dibromomethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Dichlorodifluoromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
Dichloromethane							< 3	< 3	236	< 3	4	< 3	< 3	11	< 3	< 3	< 3	< 3	< 3	27	< 3	14	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Ethylbenzene	ND	ND	180	ND	ND	ND	< 0.5	< 0.5	6	2	< 0.5	2.1	10.5	18.3	< 0.5	< 0.5	< 0.5	< 0.5	2.9	20.9	9.6	19.2	4.8	6.2	4	6.4	<0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Isopropylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Methyl Tertiary Butyl Ether							< 0.1	< 0.1	< 0.1	< 0.1	17.2	13.8	20.6	34.5	< 0.1	< 0.1	< 0.1	2.1	< 0.1	< 0.1	< 0.1	< 0.1	<0.1	< 0.1	< 0.1	< 0.1	<0.1	< 0.1	< 0.1	< 0.1
Naphthalene							< 2	< 2	12	5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
n-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
O-Xylene	ND	ND	250	ND	ND	ND	< 0.5	< 0.5	3.4	1.5	5.5	3.5	3.6	6.1	< 0.5	< 0.5	< 0.5	< 0.5	4.7	48.7	21.4	42.8	1.5	2.1	1.9	2.6	<0.5	< 0.5	< 0.5	< 0.5
p/m-Xylene							< 1	< 1	15	4	< 1	< 1	3	9	< 1	< 1	< 1	< 1	16	181	71	157	14	22	15	23	<1	< 1	< 1	< 1
Propylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
sec-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Styrene							< 2	< 2	4	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
tert-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Tetrachloroethene							< 3	< 3	55	5	16	12	12	13	< 3	< 3	< 3	< 3	141	1440	676	1500	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Toluene	ND	ND	440	ND	ND	ND	6.3	5.2	635	53.8	4.8	6.9	39.6	64.2	< 0.5	< 0.5	< 0.5	< 0.5	22.1	269	94.8	354	19.6	25.1	17.4	24.6	<0.5	< 0.5	< 0.5	< 0.5
Trans-1,2-Dichloroethene							< 3	< 3	8	< 3	6	4	8	12	< 3	< 3	< 3	< 3	< 3	5	< 3	6	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Trans-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2	<2	< 2	< 2	< 2
Trichloroethene	140,000	1,780	9	229,000	ND	354	16	23	587	48	784	659	607	272	< 3	4	< 3	< 3	49	737	197	841	82	139	74	136	<3	< 3	< 3	< 3
Trichlorofluoromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	< 3	< 3	< 3	<3	< 3	< 3	< 3
Vinyl Chloride	2,390	1,470	28	9280	ND	1234	1.7	3	113	9.4	1360	1180	2240	2020	5.7	2.3	3	< 0.1	210	211	267	334	<0.1	< 0.1	< 0.1	< 0.1	<0.1	< 0.1	< 0.1	< 0.1

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Volatile Organic Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 16												DRA 15											
Location ID							AS4BH044				AS4BH050				AS6BH072				AS4BH036				AS4BH040A				AS4BH042			
Date							12/05/2015	16/06/2015	23/09/2015	16/12/2015	12/05/2015	16/06/2015	23/09/2015	16/12/2015	12/05/2015	16/06/2015	23/09/2015	16/12/2015	16/03/2015	18/06/2015	24/09/2015	14/12/2015	16/03/2015	18/06/2015	24/09/2015	14/12/2015	16/03/2015	18/06/2015	24/09/2015	14/12/2015
Volatile Organic Compounds																														
1,1,1,2-Tetrachloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
1,1,1-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
1,1,2,2-Tetrachloroethane							< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	12	< 4	< 4	< 4	< 4	< 4	DRY	< 4	< 4
1,1,2-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	10	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
1,1-Dichloroethane							10	< 3	< 3	3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	8	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
1,1-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	109	101	61	58	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
1,1-Dichloropropene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
1,2,3-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
1,2,3-Trichloropropane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
1,2,4-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
1,2,4-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
1,2-Dibromo-3-chloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
1,2-Dibromoethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
1,2-Dichlorobenzene	ND	142,000	72,710	ND	ND	23,600	538	545	91	27	7	18	4	< 3	92	79	58	40	2330	319	602	741	669	710	355	540	16	DRY	847	< 3
1,2-Dichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
1,2-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
1,3,5-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
1,3-Dichlorobenzene							5	6	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	26	3	4	5	8	7	6	6	< 3	DRY	7	< 3
1,3-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
1,4-Dichlorobenzene	ND	196,000	23,150	ND	ND	7,000	104	223	21	32	30	23	21	< 3	14	14	12	7	630	66	129	174	229	257	206	227	< 3	DRY	243	31
2,2-Dichloropropane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	DRY	< 1	< 1
2-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	4	10	31	236	363	273	327	< 3	DRY	< 3	< 3
4-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	4	34	38	27	34	< 3	DRY	< 3	< 3
4-Isopropyltoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Benzene	249,000	6,000	40	110,000	ND	ND	143	74.8	3.3	56.1	2	< 0.5	< 0.5	< 0.5	1270	1320	742	746	959	245	401	456	242	335	146	298	< 0.5	DRY	275	< 0.5
Bromobenzene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
Bromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
Bromodichloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
Bromoform							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
Bromomethane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	DRY	< 1	< 1
Carbon Tetrachloride							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	30	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	< 2	< 2	< 2	< 2	10	< 2	< 2	< 2	68	< 2	46	32	4220	136	1680	1870	1120	1550	963	1370	9	DRY	1350	< 2
Chloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Chloroform	1,100,000	12,000	4	1,100,000	ND	118	24600	15600	435	13800	95	159	71	82	272	321	176	169	4	13	12	9	< 2	4	< 2	11	< 2	DRY	< 2	< 2
Chloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1,554	48	77	196	27	88	143	60	62	62700	56900	36900	32400	144	212	153	140	39	56	13	80	< 3	DRY	10	< 3
Cis-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
Dibromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
Dibromomethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Dichlorodifluoromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
Dichloromethane							1050	706	15	64	38	66	31	24	9	< 3	7	8	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Ethylbenzene	ND	ND	180	ND	ND	ND	0.8	1.5	< 0.5	< 0.5	0.9	< 0.5	2.2	< 0.5	41.9	36.6	30.8	23	174	< 0.5	3.2	3.4	1.9	3.8	2.3	3.8	1.3	DRY	14.6	< 0.5
Hexachlorobutadiene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Isopropylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	184	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	16	< 3
Methyl Tertiary Butyl Ether							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	3.5	< 0.1	2	1.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	DRY	< 0.1	< 0.1
Naphthalene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
n-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
O-Xylene	ND	ND	250	ND	ND	ND	0.8	< 0.5	< 0.5	< 0.5	1.2	< 0.5	< 0.5	< 0.5	4.1	2.9	3.3	2.1	4.2	< 0.5	< 0.5	1.4	1.7	1.2	1.4	2.1	2.9	DRY	< 0.5	< 0.5
p/m-Xylene							3	3	< 1	< 1	< 1	< 1	< 1	< 1	23	18	18	13	4	< 1	< 1	< 1	< 1	< 1	1	2	5	DRY	< 1	< 1
Propylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
sec-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Styrene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
tert-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	17	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Tetrachloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	6	< 3	DRY	< 3	< 3
Toluene	ND	ND	440	ND	ND	ND	683	586	36.9	182	6.3	< 0.5	< 0.5	< 0.5	135	138	106	86.7	19.8	< 0.5	9.3	10.9	5.8	8.6	5.9	14.3	< 0.5	DRY	3.8	< 0.5
Trans-1,2-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	310	290	218	220	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Trans-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	< 2	< 2
Trichloroethene	140,000	1,780	9	229,000	ND	354	2550	1900	47	1890	32	39	72	26	116000	112000	87100	61400	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Trichlorofluoromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	< 3	< 3
Vinyl Chloride	2,390	1,470	28	9280	ND	1234	2.6	2.4	< 0.1	1.1	12	23.7	7.8	8.9	1080	1110	334	443	1090	620	326	386	104	211	43.5	166	< 0.1	DRY	42.7	6.9

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Volatile Organic Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 15																	
Location ID							AS4BH043				AS4BH045				AS4BH046				AS4BH048				AS4BH051				AS4BH052			
Date							16/03/2015	18/06/2015	24/09/2015	14/12/2015	17/03/2015	18/06/2015	24/06/2015	24/09/2015	17/03/2015	18/06/2015	24/06/2015	24/09/2015	17/03/2015	18/06/2015	24/09/2015	14/12/2015	17/03/2015	18/06/2015	24/09/2015	14/12/2015	16/03/2015	18/06/2015	25/09/2015	14/12/2015
Volatile Organic Compounds																														
1,1,1,2-Tetrachloroethane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,1-Trichloroethane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane							<4	<4	<4	<4	< 4	< 4	< 4	< 4	DRY	DRY	DRY	DRY	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,1,2-Trichloroethane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethane							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	3	< 3	< 3	4
1,1-Dichloroethene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloropropene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichlorobenzene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichloropropane							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trichlorobenzene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trimethylbenzene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dibromo-3-chloropropane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dibromoethane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	ND	142,000	72,710	ND	ND	23,600	928	1340	654	787	7	93	< 3	18	DRY	DRY	DRY	DRY	< 3	< 3	12	< 3	< 3	< 3	5	< 3	562	254	175	420
1,2-Dichloroethane							<2	<2	<2	<2	< 2	< 2	3	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-Trimethylbenzene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichlorobenzene							7	6	6	6	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	7	< 3	4	5
1,3-Dichloropropane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,4-Dichlorobenzene	ND	196,000	23,150	ND	ND	7,000	232	309	205	192	< 3	26	< 3	19	DRY	DRY	DRY	DRY	< 3	< 3	6	< 3	< 3	< 3	6	< 3	183	97	70	208
2,2-Dichloropropane							<1	<1	<1	<1	< 1	< 1	< 1	< 1	DRY	DRY	DRY	DRY	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Chlorotoluene							10	19	6	7	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Chlorotoluene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Isopropyltoluene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Benzene	249,000	6,000	40	110,000	ND	ND	515	495	219	326	14	53.8	< 0.5	101	DRY	DRY	DRY	DRY	< 0.5	< 0.5	14.6	< 0.5	3.4	< 0.5	2.6	< 0.5	482	48.7	25	465
Bromobenzene							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromodichloromethane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromoform							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane							<1	<1	<1	<1	< 1	< 1	< 1	< 1	DRY	DRY	DRY	DRY	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Carbon Tetrachloride							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	1160	1630	768	864	256	552	< 2	1540	DRY	DRY	DRY	DRY	< 2	< 2	86	< 2	< 2	< 2	37	< 2	2210	706	415	2380
Chloroethane							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Chloroform	1,100,000	12,000	4	1,100,000	ND	118	<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloromethane							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1,554	118	151	53	107	< 3	8	< 3	8	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	4	< 3	< 3	< 3
Cis-1,3-Dichloropropene							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromochloromethane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromomethane							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dichlorodifluoromethane							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dichloromethane							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Ethylbenzene	ND	ND	180	ND	ND	ND	<0.5	<0.5	<0.5	<0.5	< 0.5	6.1	< 0.5	7.1	DRY	DRY	DRY	DRY	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	21.9	2.8	3	17.5
Hexachlorobutadiene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Isopropylbenzene							<3	<3	<3	<3	< 3	6	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	48	12	10	34
Methyl Tertiary Butyl Ether							<0.1	<0.1	<0.1	<0.1	< 0.1	< 0.1	< 0.1	< 0.1	DRY	DRY	DRY	DRY	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
n-Butylbenzene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
O-Xylene	ND	ND	250	ND	ND	ND	<0.5	<0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	2.2	DRY	DRY	DRY	DRY	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.1	< 0.5	< 0.5	< 0.5
p/m-Xylene							<1	<1	<1	<1	< 1	< 1	< 1	2	DRY	DRY	DRY	DRY	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Propylbenzene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
sec-Butylbenzene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Styrene							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
tert-Butylbenzene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	5	< 3	< 3	4
Tetrachloroethene							<3	<3	<3	<3	< 3	< 3	9	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Toluene	ND	ND	440	ND	ND	ND	3.1	<0.5	<0.5	1.7	< 0.5	< 0.5	< 0.5	4.8	DRY	DRY	DRY	DRY	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	< 0.5
Trans-1,2-Dichloroethene							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Trans-1,3-Dichloropropene							<2	<2	<2	<2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	140,000	1,780	9	229,000	ND	354	<3	<3	<3	<3	8	11	12	8	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Trichlorofluoromethane							<3	<3	<3	<3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Vinyl Chloride	2,390	1,470	28	9280	ND	1234	449	576	171	336	4.5	5.9	< 0.1	6.2	DRY	DRY	DRY	DRY	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	11.2	2	1.4	1.5

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Volatile Organic Compounds in Groundwater (µg/l)

DRA							DRA 15															
Location ID	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	AS5BH002				AS6BH003				HBH011WSA				HBH210ERM				HBH315BAE			
Date							16/03/2015	18/06/2015	25/09/2015	14/12/2015	17/03/2015	18/06/2015	25/09/2015	14/12/2015	17/03/2015	18/06/2015	24/09/2015	14/12/2015	17/03/2015	18/06/2015	24/09/2015	14/12/2015	17/03/2015	18/06/2015	23/09/2015	14/12/2015
Volatile Organic Compounds																										
1,1,1,2-Tetrachloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,1-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane							< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	DRY	DRY	DRY	DRY	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,1,2-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethane							< 3	5	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	6	3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloropropene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichloropropane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trimethylbenzene							< 3	< 3	< 3	< 3	4	< 3	3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dibromo-3-chloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dibromoethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	ND	142,000	72,710	ND	ND	23,600	103	890	9	< 3	1370	1270	1470	1520	DRY	DRY	DRY	DRY	531	1410	1480	434	31	1480	< 3	< 3
1,2-Dichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichlorobenzene							< 3	6	< 3	< 3	8	< 3	16	16	DRY	DRY	DRY	DRY	6	11	16	9	< 3	6	< 3	< 3
1,3-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,4-Dichlorobenzene	ND	196,000	23,150	ND	ND	7,000	< 3	258	< 3	< 3	302	297	378	399	DRY	DRY	DRY	DRY	166	392	437	200	< 3	217	< 3	< 3
2,2-Dichloropropane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	DRY	DRY	DRY	DRY	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Chlorotoluene							< 3	3	< 3	< 3	< 3	5	10	8	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Isopropyltoluene							< 3	< 3	< 3	< 3	< 3	< 3	1120	1590	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Benzene	249,000	6,000	40	110,000	ND	ND	54.2	617	< 0.5	< 0.5	1840	1810	2340	2110	DRY	DRY	DRY	DRY	37.8	245	202	104	5.8	126	< 0.5	< 0.5
Bromobenzene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromodichloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromoform							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	DRY	DRY	DRY	DRY	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Carbon Tetrachloride							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	< 2	2330	< 2	< 2	1900	2340	2860	2950	DRY	DRY	DRY	DRY	369	1820	1680	666	< 2	531	< 2	< 2
Chloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Chloroform	1,100,000	12,000	4	1,100,000	ND	118	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	83	< 2	< 2
Chloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1,554	< 3	< 3	< 3	< 3	11	< 3	< 3	7	DRY	DRY	DRY	DRY	< 3	< 3	79	40	19	949	< 3	< 3
Cis-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromomethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dichlorodifluoromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dichloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Ethylbenzene	ND	ND	180	ND	ND	ND	1.1	39.1	< 0.5	< 0.5	3320	2770	2840	3230	DRY	DRY	DRY	DRY	3.7	23.5	52.3	< 0.5	< 0.5	16.1	< 0.5	< 0.5
Hexachlorobutadiene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Isopropylbenzene							< 3	43	< 3	< 3	28	32	82	99	DRY	DRY	DRY	DRY	16	37	82	< 3	< 3	< 3	< 3	< 3
Methyl Tertiary Butyl Ether							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	DRY	DRY	DRY	DRY	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
n-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
O-Xylene	ND	ND	250	ND	ND	ND	< 0.5	1.9	< 0.5	< 0.5	948	678	656	673	DRY	DRY	DRY	DRY	1	1.5	2.2	1.3	< 0.5	1.9	< 0.5	< 0.5
p/m-Xylene							< 1	< 1	< 1	< 1	7770	5640	5340	6030	DRY	DRY	DRY	DRY	< 1	< 1	2	< 1	< 1	< 1	< 1	< 1
Propylbenzene							< 3	< 3	< 3	< 3	11	5	9	8	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
sec-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Styrene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
tert-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	6	7	DRY	DRY	DRY	DRY	< 3	4	9	4	< 3	< 3	< 3	< 3
Tetrachloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Toluene	ND	ND	440	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	4870	4050	2780	1780	DRY	DRY	DRY	DRY	< 0.5	< 0.5	3.8	1.2	< 0.5	< 0.5	< 0.5	< 0.5
Trans-1,2-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Trans-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	DRY	DRY	DRY	DRY	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	140,000	1,780	9	229,000	ND	354	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	5	16	< 3	< 3
Trichlorofluoromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	DRY	DRY	DRY	DRY	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Vinyl Chloride	2,390	1,470	28	9280	ND	1234	< 0.1	< 0.1	< 0.1	< 0.1	3.7	< 0.1	< 0.1	2.3	DRY	DRY	DRY	DRY	3.3	6.6	112	93.3	< 0.1	170	< 0.1	< 0.1

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Volatile Organic Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 18																			
Location ID							AS5BH012				AS5BH014				AS6BH010				AS6BH012				AS6BH014			
Date							04/12/2014	03/03/2015	02/07/2015	02/10/2015	04/12/2014	03/03/2015	02/07/2015	02/10/2015	04/12/2014	03/03/2015	02/07/2015	02/10/2015	03/12/2014	03/03/2015	01/07/2015	01/10/2015	03/12/2014	04/03/2015	01/07/2015	30/09/2015
Volatile Organic Compounds																										
1,1,1,2-Tetrachloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,1-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane							< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,1,2-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloropropene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichloropropane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	3	< 3	< 3	4	< 3	< 3	< 3	< 3
1,2,4-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dibromo-3-chloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dibromoethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	ND	142,000	72,710	ND	ND	23,600	3	< 3	< 3	3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	7	4	7	5	< 3	< 3	< 3	< 3
1,2-Dichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichlorobenzene							< 3	< 3	< 3	4	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	6	< 3	< 3	< 3	< 3	3	< 3	< 3
1,3-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,4-Dichlorobenzene	ND	196,000	23,150	ND	ND	7,000	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
2,2-Dichloropropane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Chlorotoluene							5	8	5	6	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	4	< 3	< 3	< 3	< 3	< 3	4	< 3
4-Chlorotoluene							3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	3	< 3
4-Isopropyltoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Benzene	249,000	6,000	40	110,000	ND	ND	7.6	10.4	5.3	6.9	< 0.5	< 0.5	< 0.5	< 0.5	2.7	2.8	< 0.5	3	10.7	7.4	2.3	9.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromobenzene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromodichloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromoform							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Carbon Tetrachloride							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	< 2	48	35	39	< 2	< 2	< 2	3	< 2	9	< 2	10	< 2	21	22	27	< 2	< 2	< 2	2
Chloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Chloroform	1,100,000	12,000	4	1,100,000	ND	118	3	< 2	< 2	< 2	3	< 2	< 2	3	4	3	4	3	7	4	7	6	3	< 2	< 2	2
Chloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1,554	86	122	50	56	26	12	58	33	5	3	8	5	18	16	12	22	< 3	< 3	< 3	3
Cis-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromomethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dichlorodifluoromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dichloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Ethylbenzene	ND	ND	180	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Isopropylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Methyl Tertiary Butyl Ether							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene							3	2	< 2	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
n-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
O-Xylene	ND	ND	250	ND	ND	ND	1.1	< 0.5	< 0.5	1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.9	< 0.5	< 0.5	1.1	< 0.5	< 0.5	< 0.5	< 0.5
p/m-Xylene							3	3	< 1	2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2	4	3	2	3	< 1	< 1	< 1	< 1
Propylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
sec-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Styrene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
tert-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Tetrachloroethene							19	32	27	30	33	29	52	56	5	< 3	18	3	23	26	21	27	4	4	< 3	4
Toluene	ND	ND	440	ND	ND	ND	6.1	9.7	5.8	7	< 0.5	1.1	< 0.5	< 0.5	1.1	< 0.5	< 0.5	1.3	7.7	6.3	< 0.5	6.3	< 0.5	< 0.5	< 0.5	< 0.5
Trans-1,2-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Trans-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	140,000	1,780	9	229,000	ND	354	11	12	11	15	5	4	10	10	8	7	6	10	10	8	11	12	< 3	< 3	< 3	4
Trichlorofluoromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Vinyl Chloride	2,390	1,470	28	9280	ND	1234	61.8	108	31.4	26.9	11.6	5	24.5	13.9	1.1	1.1	< 0.1	1.1	15.7	12.7	4	13.6	< 0.1	< 0.1	< 0.1	< 0.1

Notes	
1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Volatile Organic Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 18																			
Location ID							AS7BH027				AS7BH028				AS7BH029				AS7BH030				AS7BH033				AS7BH034			
Date							04/12/2014	03/03/2015	02/07/2015	02/10/2015	04/12/2014	03/03/2015	02/07/2015	02/10/2015	03/12/2014	03/03/2015	02/07/2015	01/10/2015	03/12/2014	03/03/2015	02/07/2015	01/10/2015	03/12/2014	03/03/2015	01/07/2015	01/10/2015	03/12/2014	03/03/2015	01/07/2015	01/10/2015
Volatile Organic Compounds																														
1,1,1,2-Tetrachloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,1-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane							< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,1,2-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloropropene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichloropropane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	11	< 3	< 3	< 3	< 3
1,2,4-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dibromo-3-chloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dibromoethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	ND	142,000	72,710	ND	ND	23,600	< 3	< 3	3	< 3	< 3	< 3	< 3	< 3	4	3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,4-Dichlorobenzene	ND	196,000	23,150	ND	ND	7,000	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	14	5	28	20	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
2,2-Dichloropropane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Isopropyltoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Benzene	249,000	6,000	40	110,000	ND	ND	1.3	< 0.5	3.8	1.9	2.4	4.4	2.9	3.5	10.5	7	14.6	19.3	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromobenzene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromodichloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromoform							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Carbon Tetrachloride							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	< 2	< 2	< 2	7	< 2	< 2	< 2	7	< 2	31	44	52	< 2	< 2	< 2	5	< 2	< 2	< 2	3	< 2	< 2	< 2	< 2
Chloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Chloroform	1,100,000	12,000	4	1,100,000	ND	118	2	< 2	11	2	8	7	8	7	3	< 2	< 2	< 2	4	3	< 2	5	4	3	7	5	4	< 2	< 2	4
Chloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1,554	7	12	8	7	7	5	8	6	21	17	15	23	58	50	37	92	< 3	< 3	6	4	5	< 3	< 3	5
Cis-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromomethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dichlorodifluoromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dichloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Ethylbenzene	ND	ND	180	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Isopropylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Methyl Tertiary Butyl Ether							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
n-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
O-Xylene	ND	ND	250	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
p/m-Xylene							< 1	< 1	< 1	< 1	< 1	< 1	< 1	1	2	< 1	< 1	2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1	< 1	< 1	< 1	< 1
Propylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
sec-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Styrene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
tert-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Tetrachloroethene							15	20	11	17	9	9	9	11	29	26	24	27	82	103	66	120	6	6	9	9	22	13	16	22
Toluene	ND	ND	440	ND	ND	ND	< 0.5	< 0.5	3.1	< 0.5	< 0.5	< 0.5	< 0.5	0.9	6.5	4.4	6.2	7.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trans-1,2-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Trans-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	140,000	1,780	9	229,000	ND	354	4	< 3	20	6	6	6	7	9	11	8	11	13	11	10	9	17	3	< 3	8	6	7	4	< 3	8
Trichlorofluoromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Vinyl Chloride	2,390	1,470	28	9280	ND	1234	< 0.1	1.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	3.4	4.9	2.5	2.9	5.4	8.1	3.3	10.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Volatile Organic Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 18																			
Location ID							AS7BH036				AS7BH037				AS7BH038				AS7BH039				AS7BH040				AS7BH041			
Date							03/12/2014	03/03/2015	01/07/2015	01/10/2015	03/12/2014	04/03/2015	01/07/2015	01/10/2015	03/12/2014	04/03/2015	01/07/2015	30/09/2015	03/12/2014	03/03/2015	01/07/2015	30/09/2015	03/12/2014	04/03/2015	01/07/2015	30/09/2015	03/12/2014	04/03/2015	24/06/2015	30/09/2015
Volatile Organic Compounds																														
1,1,1,2-Tetrachloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,1-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane							< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,1,2-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloropropene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichloropropane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dibromo-3-chloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dibromoethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	ND	142,000	72,710	ND	ND	23,600	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichlorobenzene							< 3	< 3	< 3	< 3	< 3	3	< 3	4	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,4-Dichlorobenzene	ND	196,000	23,150	ND	ND	7,000	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
2,2-Dichloropropane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Isopropyltoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Benzene	249,000	6,000	40	110,000	ND	ND	< 0.5	< 0.5	< 0.5	2.2	2.7	2.7	3.5	4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromobenzene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromodichloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromoform							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Carbon Tetrachloride							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	< 2	< 2	< 2	10	< 2	< 2	< 2	7	< 2	< 2	< 2	9	< 2	< 2	< 2	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Chloroform	1,100,000	12,000	4	1,100,000	ND	118	3	< 2	< 2	< 2	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	4	< 2	3	< 2	3	3	3	< 2	3	< 2
Chloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1,554	16	< 3	13	10	4	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	4	6	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Cis-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromomethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dichlorodifluoromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dichloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Ethylbenzene	ND	ND	180	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Isopropylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Methyl Tertiary Butyl Ether							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
n-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
O-Xylene	ND	ND	250	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
p/m-Xylene							< 1	< 1	< 1	< 1	2	1	< 1	1	< 1	2	< 1	< 1	< 1	< 1	< 1	2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Propylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
sec-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Styrene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
tert-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Tetrachloroethene							15	7	8	8	8	6	< 3	5	< 3	3	5	4	8	< 3	9	7	6	< 3	6	5	< 3	< 3	< 3	< 3
Toluene	ND	ND	440	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.3	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1
Trans-1,2-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Trans-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	140,000	1,780	9	229,000	ND	354	6	< 3	< 3	3	4	< 3	< 3	4	4	< 3	3	4	5	4	6	6	4	< 3	5	4	5	< 3	4	4
Trichlorofluoromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Vinyl Chloride	2,390	1,470	28	9280	ND	1234	3.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Volatile Organic Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 18																			
Location ID							AS7BH042				AS7BH043				AS7BH045				AS7BH046				AS7BH047				AS8BH107			
Date							03/12/2014	04/03/2015	01/07/2015	30/09/2015	03/12/2014	04/03/2015	01/07/2015	30/09/2015	03/12/2014	04/03/2015	24/06/2015	30/09/2015	03/12/2014	04/03/2015	24/06/2015	30/09/2015	03/12/2014	03/03/2015	01/07/2015	01/10/2015	04/12/2014	03/03/2015	02/07/2015	02/10/2015
Volatile Organic Compounds																														
1,1,1,2-Tetrachloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,1-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane							< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,1,2-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	4	4	< 3	< 3
1,1-Dichloropropene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichloropropane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dibromo-3-chloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dibromoethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	ND	142,000	72,710	ND	ND	23,600	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	123	202	15	39
1,2-Dichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	3	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichlorobenzene							< 3	< 3	3	< 3	< 3	5	5	5	< 3	< 3	< 3	< 3	4	3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,4-Dichlorobenzene	ND	196,000	23,150	ND	ND	7,000	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	16	29	< 3	8
2,2-Dichloropropane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	5
4-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Isopropyltoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Benzene	249,000	6,000	40	110,000	ND	ND	< 0.5	< 0.5	1.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.5	< 0.5	1.5	1.5	1.5	1.6	20.9	27.8	8.4	3.2
Bromobenzene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromodichloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromoform							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Carbon Tetrachloride							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	< 2	< 2	< 2	< 2	< 2	< 2	< 2	5	< 2	< 2	< 2	6	< 2	< 2	305	35	< 2	16	< 2	16	< 2	88	31	19
Chloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Chloroform	1,100,000	12,000	4	1,100,000	ND	118	< 2	< 2	< 2	< 2	< 2	< 2	6	4	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1,554	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	5	< 3	< 3	4	5	5	5	< 3	6	2320	2780	1270	167
Cis-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromomethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dichlorodifluoromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dichloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Ethylbenzene	ND	ND	180	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.2	4	< 0.5	< 0.5
Hexachlorobutadiene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Isopropylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Methyl Tertiary Butyl Ether							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	3.2	2.7	< 0.1	< 0.1
Naphthalene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
n-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
O-Xylene	ND	ND	250	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9	1.6	1.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.3	< 0.5	< 0.5
p/m-Xylene							< 1	< 1	< 1	< 1	< 1	2	< 1	2	< 1	< 1	< 1	< 1	< 1	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2	< 1	< 1
Propylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
sec-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Styrene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
tert-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Tetrachloroethene							< 3	< 3	4	< 3	7	9	14	13	< 3	< 3	9	8	< 3	< 3	3	3	10	8	8	9	< 3	< 3	< 3	4
Toluene	ND	ND	440	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	6.1	14.8	< 0.5	< 0.5
Trans-1,2-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	11	13	6	< 3
Trans-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	140,000	1,780	9	229,000	ND	354	< 3	< 3	< 3	< 3	< 3	< 3	6	5	< 3	< 3	12	12	5	4	5	7	< 3	< 3	< 3	< 3	109	69	36	7
Trichlorofluoromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Vinyl Chloride	2,390	1,470	28	9280	ND	1234	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2920	3900	1690	209

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Volatile Organic Compounds in Groundwater (µg/l)

DRA							DRA 18				RPA2			
Location ID	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	AS8BH108				AS8BH110			
Date							04/12/2014	03/03/2015	02/07/2015	02/10/2015	29/01/2015	05/03/2015	30/06/2015	29/09/2015
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,1-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane							< 4	< 4	< 4	< 4	< 4	< 4	< 4	8
1,1,2-Trichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloropropene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,3-Trichloropropane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2,4-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dibromo-3-chloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dibromoethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	ND	142,000	72,710	ND	ND	23,600	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,2-Dichloroethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-Trimethylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichlorobenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichloropropane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,4-Dichlorobenzene	ND	196,000	23,150	ND	ND	7,000	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
2,2-Dichloropropane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Chlorotoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Isopropyltoluene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Benzene	249,000	6,000	40	110,000	ND	ND	< 0.5	1	9.9	< 0.5	< 0.5	< 0.5	< 0.5	5.6
Bromobenzene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromodichloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromoform							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Carbon Tetrachloride							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	< 2	< 2	< 2	3	4	< 2	< 2	< 2
Chloroethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Chloroform	1,100,000	12,000	4	1,100,000	ND	118	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1,554	< 3	< 3	< 3	< 3	24	10	79	150
Cis-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromochloromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dibromomethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dichlorodifluoromethane							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dichloromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Ethylbenzene	ND	ND	180	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Isopropylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Methyl Tertiary Butyl Ether							< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
n-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
O-Xylene	ND	ND	250	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
p/m-Xylene							< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Propylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
sec-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Styrene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
tert-Butylbenzene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Tetrachloroethene							5	5	< 3	4	< 3	< 3	< 3	< 3
Toluene	ND	ND	440	ND	ND	ND	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trans-1,2-Dichloroethene							< 3	< 3	< 3	< 3	< 3	< 3	< 3	12
Trans-1,3-Dichloropropene							< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	140,000	1,780	9	229,000	ND	354	< 3	< 3	< 3	< 3	10	15	16	21
Trichlorofluoromethane							< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Vinyl Chloride	2,390	1,470	28	9280	ND	1234	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	6.3

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Site Specific Quantified Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 4																			
Location Name							AS4BH026				AS4BH028				AS4BH029				AS4BH033				AS4BH034				AS4BH037			
Sample Date							18/03/2015	17/06/2015	21/09/2015	15/12/2015	18/03/2015	17/06/2015	25/09/2015	15/12/2015	18/03/2015	17/06/2015	21/09/2015	15/12/2015	18/03/2015	17/06/2015	21/09/2015	15/12/2015	18/03/2015	18/06/2015	25/09/2015	15/12/2015	18/03/2015	17/06/2015	25/09/2015	15/12/2015
Target Pharmaceutical Compounds																														
3-Ethylbenzophenone#	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	17	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	17	< 10	< 10	< 10	66	40	< 10
Acebutolol	ND	ND	4.6	ND	ND	7.32	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	11	11	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Acetophenetidin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	< 10	< 10	< 10	< 10	243	371	236	229	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amylo/pentabarb	ND	ND	13070	ND	ND	340	< 10	50	13	< 10	70	96	80	70	19	52	21	36	141	112	26	12	45	55	< 10	< 10	123	169	127	122
Atrazine	ND	ND	ND	ND	ND	1.8	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Brucine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Butalbarbital	ND	ND	18	ND	ND	350	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Caffeine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Carbendazim	ND	ND	7.2	ND	ND	9	< 5	< 5	< 5	7	< 5	< 5	< 5	< 5	< 5	< 5	< 5	8	< 5	35	18	49	< 5	< 5	< 5	< 5	< 5	21	< 5	< 5
Carbofuran	ND	ND	320	ND	ND	320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chlorpromazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Cyclandelate							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	< 5	14	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Diuron	ND	ND	1	ND	ND	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ethotoin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Fenbufen							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hexamine	ND	ND	10	ND	ND	14	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Isometheptene	ND	ND	6.41	ND	ND	7.32	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ketoprofen	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Mepyramine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Methcathinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Molindone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	16	969	18	31	158	150	259	367	204	349	218	206	444	416	389	126	275	470	< 5	23	1960	1990	< 5	2300
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenazone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenobarbital	ND	ND	1850	ND	ND	57170	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Promethazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphadiazine							< 5	< 5	7	6	5	6	5	7	17	15	20	19	< 5	< 5	< 5	< 5	< 5	9	< 5	< 5	15	14	< 5	< 5
Sulphamerazine							< 5	17	< 5	< 5	< 5	12	16	< 5	< 5	9	8	< 5	6	17	17	< 5	< 5	8	< 5	< 5	17	35	< 5	< 5
Sulphamethizole	ND	ND	6	ND	ND	5	< 5	14	< 5	< 5	68	63	62	62	11	22	13	10	6	10	6	< 5	38	67	< 5	< 5	479	531	< 5	376
Sulphanilamide							20	61	< 5	37	28	36	52	79	50	72	52	39	35	54	26	30	22	47	< 5	< 5	184	200	125	143
Sulphathiazole	ND	ND	6	ND	ND	4	8	< 5	14	12	32	42	85	59	21	42	23	23	113	205	109	126	62	125	< 5	< 5	759	833	< 5	521
Thozalinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
pH							10.6	9.71	11.2	-	6.53	6.52	6.52	-	11.2	10.7	11.4	-	7.07	7.26	6.8	-	-	6.73	6.77	-	6.89	6.83	7	-

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
#	3-Ethylbenzophenone is a daughter product of ketoprofen, SSAC provided are for Ketoprofen
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Site Specific Quantified Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 6										DRA 10				DRA 13							
Location Name							AS8BH098A				AS8BH099				AS8BH100				AS4BH027				AS4BH032				AS4BH038			
Sample Date							10/12/2014	05/03/2015	29/06/2015	28/09/2015	10/12/2014	05/03/2015	29/06/2015	28/09/2015	10/12/2014	05/03/2015	29/06/2015	28/09/2015	18/03/2015	17/06/2015	21/09/2015	15/12/2015	02/12/2014	16/06/2015	21/09/2015	16/12/2015	02/12/2014	16/06/2015	21/09/2015	16/12/2015
Target Pharmaceutical Compounds																												
3-Ethylbenzophenone#	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	27	< 10	71	< 10	125	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acebutolol	ND	ND	4.6	ND	ND	7.32	< 5	< 5	< 5	< 5	12	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	27	< 5	< 5	< 5	< 5
Acetophenetidin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amylo/pentabarb	ND	ND	13070	ND	ND	340	56	49	263	39	45	2090	2970	2770	< 10	12	14	15	85	100	71	56	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Atrazine	ND	ND	ND	ND	ND	1.8	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Brucine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Butalbarbital	ND	ND	18	ND	ND	350	< 10	< 10	< 10	< 10	< 10	35	39	55	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Caffeine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Carbendazim	ND	ND	7.2	ND	ND	9	< 5	< 5	26	< 5	52	58	141	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbofuran	ND	ND	320	ND	ND	320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chlorpromazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Cyclandelate							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	< 5	< 5	206	< 5	41	< 5	22	< 5	< 5	< 5	< 5	< 5	< 5	12	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Diuron	ND	ND	1	ND	ND	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ethotoin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Fenbufen							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hexamine	ND	ND	10	ND	ND	14	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Isometheptene	ND	ND	6.41	ND	ND	7.32	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ketoprofen	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	178	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Mepyramine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Methcathinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Molindone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	107	106	< 5	< 5	5310	5120	6160	504	33	22	21	< 5	1680	5380	2160	8410	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenazone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenobarbital	ND	ND	1850	ND	ND	57170	< 10	< 10	< 10	< 10	< 10	132	143	214	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Promethazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphadiazine							< 5	< 5	27	< 5	490	392	541	< 5	12	8	8	< 5	10	< 5	< 5	53	< 5	< 5	< 5	17	< 5	< 5	< 5	< 5
Sulphamerazine							< 5	< 5	15	< 5	145	132	< 5	< 5	< 5	< 5	< 5	< 5	< 5	35	15	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphamethizole	ND	ND	6	ND	ND	5	7	11	249	< 5	679	587	557	51	< 5	< 5	< 5	< 5	50	88	40	102	< 5	6	< 5	< 5	< 5	< 5	< 5	< 5
Sulphanilamide							33	37	186	< 5	994	961	1200	103	20	16	17	< 5	56	439	110	526	24	117	104	66	< 5	< 5	< 5	< 5
Sulphathiazole	ND	ND	6	ND	ND	4	26	20	1140	< 5	959	998	795	105	21	14	13	< 5	109	152	102	131	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Thozalinone							< 10	< 10	442	< 10	< 10	< 10	151	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
pH							-	-	12.7	12	-	-	7.01	7.18	-	-	7.34	7.56	6.25	6.51	6.04	-	-	7.04	6.11	-	-	9.39	7.2	-

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
#	3-Ethylbenzophenone is a daughter product of ketoprofen, SSAC provided are for Ketoprofen
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Site Specific Quantified Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 16									DRA 15											
Location Name							AS4BH044			AS4BH050			AS6BH072			AS4BH036				AS4BH040A				AS4BH042			
Sample Date							12/05/2015	23/09/2015	16/12/2015	12/05/2015	23/09/2015	16/12/2015	12/05/2015	23/09/2015	16/12/2015	16/03/2015	18/06/2015	24/09/2015	14/12/2015	16/03/2015	18/06/2015	24/09/2015	14/12/2015	16/03/2015		24/09/2015	14/12/2015
Target Pharmaceutical Compounds																											
3-Ethylbenzophenone#	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	63	34	< 10	< 10	74	65	< 10	< 10	DRY	< 10	< 10
Acebutolol	ND	ND	4.6	ND	ND	7.32	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	DRY	< 5	< 5
Acetophenetidin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Amylo/pentabarb	ND	ND	13070	ND	ND	340	16	22	13	< 10	< 10	< 10	16	< 10	< 10	159	134	113	107	81	106	71	101	< 10	DRY	104	30
Atrazine	ND	ND	ND	ND	ND	1.8	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Brucine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Butalbarbital	ND	ND	18	ND	ND	350	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Caffeine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Carbendazim	ND	ND	7.2	ND	ND	9	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	25	30	47	< 5	23	10	78	< 5	DRY	< 5	< 5
Carbofuran	ND	ND	320	ND	ND	320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Chlorpromazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Cyclandelate							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	DRY	< 50	< 50
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	14	< 5	< 5	< 5	12	< 5	< 5	< 5	DRY	< 5	< 5
Diuron	ND	ND	1	ND	ND	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Ethotoin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Fenbufen							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Hexamine	ND	ND	10	ND	ND	14	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Isometheptene	ND	ND	6.41	ND	ND	7.32	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Ketoprofen	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Mepyramine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Methcathinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Molindone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	< 5	< 5	< 5	< 5	< 5	< 5	41	22	25	685	1760	2910	3550	1490	1880	1570	3110	< 5	DRY	363	10
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Phenazone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Phenobarbital	ND	ND	1850	ND	ND	57170	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Promethazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
Sulphadiazine							< 5	< 5	< 5	< 5	< 5	< 5	13	9	6	8	78	< 5	14	6	5	< 5	< 5	< 5	DRY	< 5	< 5
Sulphamerazine							< 5	< 5	< 5	< 5	< 5	< 5	10	< 5	< 5	< 5	7	< 5	7	7	17	< 5	< 5	< 5	DRY	< 5	< 5
Sulphamethizole	ND	ND	6	ND	ND	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	17	116	166	203	140	176	92	190	< 5	DRY	9	< 5
Sulphanilamide							47	< 5	19	54	48	61	43	17	17	213	454	679	396	175	266	132	908	< 5	DRY	84	< 5
Sulphathiazole	ND	ND	6	ND	ND	4	< 5	< 5	< 5	< 5	< 5	< 5	37	14	10	35	317	481	530	303	492	316	524	< 5	DRY	22	< 5
Thozalinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	< 10	< 10
pH							7.47	6.94	-	12.3	-	-	8.48	-	-	6.85	6.85	6.55	7.22	6.98	6.75	6.51	6.99	7.12	DRY	6.59	7.1

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
#	3-Ethylbenzophenone is a daughter product of ketoprofen, SSAC provided are for Ketoprofen
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Site Specific Quantified Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 15																			
Location Name							AS4BH043				AS4BH045				AS4BH046				AS4BH048				AS4BH051				AS4BH052			
Sample Date							16/03/2015	18/06/2015	24/09/2015	14/12/2015	17/03/2015	18/06/2015	24/06/2015	24/09/2015	17/03/2015	18/06/2015	24/06/2015	24/09/2015	17/03/2015	18/06/2015	24/09/2015	14/12/2015	17/03/2015	18/06/2015	24/09/2015	14/12/2015	16/03/2015	18/06/2015	25/09/2015	14/12/2015
Target Pharmaceutical Compounds																														
3-Ethylbenzophenone#	ND	ND	6.41	ND	ND	5	<10	58	14	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	31	< 10	< 10	< 10	< 10	< 10	< 10	< 10	136	22	< 10
Acebutolol	ND	ND	4.6	ND	ND	7.32	<5	<5	<5	<5	< 5	< 5	< 5	< 5	DRY	DRY	DRY	DRY	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Acetophenetidin							<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amylo/pentabarb	ND	ND	13070	ND	ND	340	<10	<10	<10	<10	< 10	20	288	22	DRY	DRY	DRY	DRY	12	66	16	< 10	< 10	< 10	< 10	< 10	193	105	113	164
Atrazine	ND	ND	ND	ND	ND	1.8	<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Brucine							<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Butalbarbital	ND	ND	18	ND	ND	350	<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Caffeine							<5	9	<5	<5	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Carbendazim	ND	ND	7.2	ND	ND	9	<10	<10	<10	<10	< 5	< 5	86	< 5	DRY	DRY	DRY	DRY	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbofuran	ND	ND	320	ND	ND	320	<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chlorpromazine							<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Cyclandelate							<50	<50	<50	<50	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	<5	7	<5	<5	< 50	< 50	< 50	< 50	DRY	DRY	DRY	DRY	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	<10	<10	<10	<10	< 5	< 5	6	< 5	DRY	DRY	DRY	DRY	< 5	7	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Diuron	ND	ND	1	ND	ND	1	<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ethotoin							<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Fenbufen							<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hexamine	ND	ND	10	ND	ND	14	<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Isometheptene	ND	ND	6.41	ND	ND	7.32	<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ketoprofen	ND	ND	6.41	ND	ND	5	<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Mepyramine							<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Methcathinone							<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Molindone							800	1100	489	970	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	<10	<10	<10	<10	< 5	< 5	888	< 5	DRY	DRY	DRY	DRY	5	36	< 5	< 5	< 5	< 5	< 5	< 5	286	105	140	498
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	139	187	105	131	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenazone							<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenobarbital	ND	ND	1850	ND	ND	57170	<10	<10	<10	<10	< 10	< 10	52	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Promethazine							<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphadiazine							<5	20	9	8	< 5	< 5	1430	< 5	DRY	DRY	DRY	DRY	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphamerazine							<5	<5	<5	<5	< 5	< 5	328	< 5	DRY	DRY	DRY	DRY	< 5	25	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphamethizole	ND	ND	6	ND	ND	5	52	92	25	53	< 5	< 5	9	< 5	DRY	DRY	DRY	DRY	< 5	17	< 5	< 5	< 5	< 5	< 5	< 5	11	7	< 5	17
Sulphanilamide							151	259	111	171	< 5	< 5	632	< 5	DRY	DRY	DRY	DRY	< 5	11	19	< 5	< 5	< 5	< 5	< 5	78	36	45	114
Sulphathiazole	ND	ND	6	ND	ND	4	69	119	35	50	< 5	< 5	979	< 5	DRY	DRY	DRY	DRY	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	14	8	9	18
Thozalinone							<10	<10	<10	<10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
pH							6.89	6.68	6.42	6.47	6.56	6.47	9.72	6.42	DRY	DRY	DRY	DRY	6.96	6.81	6.79	6.97	6.95	6.71	6.53	7.02	6.82	6.67	6.79	6.86

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
#	3-Ethylbenzophenone is a daughter product of ketoprofen, SSAC provided are for Ketoprofen
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Site Specific Quantified Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 15																	
Location Name							AS5BH002				AS6BH003				HBH011WSA				HBH210ERM				HBH315BAE			
Sample Date							16/03/2015	18/06/2015	25/09/2015	14/12/2015	17/03/2015	18/06/2015	25/09/2015	14/12/2015	17/03/2015	18/06/2015	24/09/2015	14/12/2015	17/03/2015	18/06/2015	24/09/2015	14/12/2015	17/03/2015	18/06/2015	23/09/2015	14/12/2015
Target Pharmaceutical Compounds																										
3-Ethylbenzophenone#	ND	ND	6.41	ND	ND	5	< 10	280	< 10	< 10	< 10	186	143	< 10	DRY	DRY	DRY	DRY	< 10	42	< 10	< 10	< 10	161	< 10	< 10
Acebutolol	ND	ND	4.6	ND	ND	7.32	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	DRY	DRY	DRY	DRY	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Acetophenetidin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	< 10	11	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amylo/pentabarb	ND	ND	13070	ND	ND	340	70	152	< 10	< 10	21	33	45	26	DRY	DRY	DRY	DRY	< 10	80	67	24	20	25	< 10	< 10
Atrazine	ND	ND	ND	ND	ND	1.8	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Brucine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Butalbarbital	ND	ND	18	ND	ND	350	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Caffeine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Carbendazim	ND	ND	7.2	ND	ND	9	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	DRY	DRY	DRY	DRY	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbofuran	ND	ND	320	ND	ND	320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chlorpromazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Cyclandelate							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	DRY	DRY	DRY	DRY	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	DRY	DRY	DRY	DRY	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Diuron	ND	ND	1	ND	ND	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ethotoin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Fenbufen							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hexamine	ND	ND	10	ND	ND	14	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Isometheptene	ND	ND	6.41	ND	ND	7.32	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ketoprofen	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Mepyramine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Methcathinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Molindone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	133	194	< 5	< 5	10	11	9	13	DRY	DRY	DRY	DRY	< 5	91	143	40	< 5	< 5	< 5	< 5
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenazone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenobarbital	ND	ND	1850	ND	ND	57170	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Promethazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphadiazine							22	< 5	< 5	< 5	< 5	< 5	7	8	DRY	DRY	DRY	DRY	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphamerazine							< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	DRY	DRY	DRY	DRY	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphamethizole	ND	ND	6	ND	ND	5	< 5	9	< 5	< 5	< 5	7	< 5	13	DRY	DRY	DRY	DRY	< 5	< 5	5	< 5	< 5	< 5	< 5	< 5
Sulphanilamide							33	96	< 5	< 5	12	25	36	40	DRY	DRY	DRY	DRY	< 5	37	63	11	< 5	14	< 5	< 5
Sulphathiazole	ND	ND	6	ND	ND	4	5	16	< 5	< 5	< 5	14	8	< 5	DRY	DRY	DRY	DRY	< 5	7	9	< 5	< 5	< 5	< 5	< 5
Thozalinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	DRY	DRY	DRY	DRY	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
pH							10.9	7.24	10.7	11.2	6.86	6.74	6.82	6.79	DRY	DRY	DRY	DRY	7.01	6.54	-	7.21	7.69	7.35	-	7.67

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
#	3-Ethylbenzophenone is a daughter product of ketoprofen, SSAC provided are for Ketoprofen
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Site Specific Quantified Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 18																			
Location Name							AS5BH012				AS5BH014				AS6BH010				AS6BH012				AS6BH014			
Sample Date							04/12/2014	03/03/2015	02/07/2015	02/10/2015	04/12/2014	03/03/2015	02/07/2015	02/10/2015	04/12/2014	03/03/2015	02/07/2015	02/10/2015	03/12/2014	03/03/2015	01/07/2015	01/10/2015	03/12/2014	04/03/2015	01/07/2015	30/09/2015
Target Pharmaceutical Compounds																										
3-Ethylbenzophenone#	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acebutolol	ND	ND	4.6	ND	ND	7.32	< 5	6	< 5	76	< 5	< 5	< 5	15	< 5	< 5	< 5	25	< 5	< 5	< 5	37	< 5	< 5	< 5	< 5
Acetophenetidin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amylo/pentabarb	ND	ND	13070	ND	ND	340	78	109	119	102	< 10	< 10	22	< 10	70	82	97	89	77	66	100	87	18	18	45	34
Atrazine	ND	ND	ND	ND	ND	1.8	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Brucine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Butalbarbital	ND	ND	18	ND	ND	350	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10	< 10	< 10	< 10	38	< 10	< 10	< 10	31	< 10
Caffeine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Carbendazim	ND	ND	7.2	ND	ND	9	5	< 5	7	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	7	< 5	8	< 5	< 5	< 5	< 5	< 5
Carbofuran	ND	ND	320	ND	ND	320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chlorpromazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Cyclandelate							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	9	< 5	12	38	< 5	< 5	< 5	11	< 5	< 5	13	< 5	< 5	< 5	6	36	< 5	< 5	< 5	< 5
Diuron	ND	ND	1	ND	ND	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ethotoin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Fenbufen							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hexamine	ND	ND	10	ND	ND	14	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Isometheptene	ND	ND	6.41	ND	ND	7.32	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ketoprofen	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Mepyramine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Methcathinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Molindone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	849	964	682	862	128	76	284	179	945	1010	188	941	631	396	754	406	60	91	146	< 5
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenazone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenobarbital	ND	ND	1850	ND	ND	57170	13	< 10	17	20	< 10	< 10	< 10	< 10	24	27	35	38	37	31	41	45	13	10	49	24
Promethazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphadiazine							245	305	364	388	39	< 5	113	69	228	233	113	239	278	163	381	263	22	29	33	12
Sulphamerazine							26	38	45	46	7	< 5	27	13	22	27	13	26	30	19	46	31	< 5	< 5	< 5	< 5
Sulphamethizole	ND	ND	6	ND	ND	5	9	< 5	6	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphanilamide							286	368	373	358	94	55	269	157	302	330	76	364	293	189	349	262	73	71	122	52
Sulphathiazole	ND	ND	6	ND	ND	4	249	374	343	330	49	24	165	84	361	460	< 5	424	427	242	561	326	< 5	< 5	< 5	61
Thozalinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
pH							11.1	10.1	10.1	10.4	12.2	11.9	11.6	11.7	8.69	8.08	7.78	8.1	9.68	9.6	9.78	9.56	9.4	7.52	6.97	7.26

DRA	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 18																						
Location Name				AS6BH016																						
Sample Date				03/12/2014	04/03/2015	24/06/2015	30/09/2015																			
Target Pharmaceutical Compounds																										
3-Ethylbenzophenone#	ND	ND	6	< 10	< 10	< 10	< 10																			
Acebutolol	ND	ND	4.6	< 5	< 5	< 5	< 5																			
Acetophenetidin				< 10	< 10	< 10	< 10																			
Amphetamine	4,270,000	ND	107	< 10	< 10	< 10	< 10																			
Amylo/pentabarb	ND	ND	340	39	140	44	50																			
Atrazine	ND	ND	1.8	< 10	< 10	< 10	< 10																			
Brucine				< 10	< 10	< 10	< 10																			
Butalbarbital	ND	ND	350	< 10	< 10	< 10	< 10																			
Caffeine				< 10	< 10	< 10	< 10																			
Carbendazim	ND	ND	9	< 5	< 5	< 5	< 5																			
Carbofuran	ND	ND	320	< 10	< 10	< 10	< 10																			
Chlorpromazine				< 10	< 10	< 10	< 10																			
Cyclandelate				< 10	< 10	< 10	< 10																			
Diisopropylamine	ND	ND	7.32	< 50	< 50	< 50	< 50																			
Diphenylguanidine	ND	ND	6.82	< 5	13	< 5	< 5																			
Diuron	ND	ND	1	< 10	< 10	< 10	< 10																			
Ethotoin				< 10	< 10	< 10	< 10																			
Fenbufen				< 10	< 10	< 10	< 10																			
Hexamine	ND	ND	14	< 10	< 10	< 10	< 10																			
Isometheptene	ND	ND	7.32	< 10	< 10	< 10	< 10																			
Ketoprofen	ND	ND	5	< 10	< 10	< 10	< 10																			
Mepyramine				< 10	< 10	< 10	< 10																			
Methcathinone				< 10	< 10	< 10	< 10																			
Molindone				< 10	< 10	< 10	< 10																			
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	135	497	119	30																			
N-Ethyl-m-toluidine	ND	ND	7.51	< 10	< 10	< 10	< 10																			
Phenazone				< 10	< 10	< 10	< 10																			
Phenobarbital	ND	ND	1850	69	22	83	104																			
Promethazine				< 10	< 10	< 10	< 10																			
Sulphadiazine				216	701	158	36																			
Sulphamerazine				15	149	16	< 5																			
Sulphamethizole	ND	ND	6	< 5	< 5	< 5	< 5																			
Sulphanilamide				274	228	306	83																			
Sulphathiazole	ND	ND	6	207	448	6	33																			
Thozalinone				< 10	< 10	< 10	< 10																			
pH				7.97	8.04	7.96	7.93																			

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
#	3-Ethylbenzophenone is a daughter product of ketoprofen, SSAC provided are for Ketoprofen
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Site Specific Quantified Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 18																			
Location Name							AS7BH027				AS7BH028				AS7BH029				AS7BH030				AS7BH033				AS7BH034			
Sample Date							04/12/2014	03/03/2015	02/07/2015	02/10/2015	04/12/2014	03/03/2015	02/07/2015	02/10/2015	03/12/2014	03/03/2015	02/07/2015	01/10/2015	03/12/2014	03/03/2015	02/07/2015	01/10/2015	03/12/2014	03/03/2015	01/07/2015	01/10/2015	03/12/2014	03/03/2015	01/07/2015	01/10/2015
Target Pharmaceutical Compounds																												
3-Ethylbenzophenone#	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acebutolol	ND	ND	4.6	ND	ND	7.32	< 5	< 5	< 5	34	< 5	< 5	< 5	125	< 5	< 5	< 5	31	< 5	< 5	< 5	18	< 5	< 5	< 5	40	< 5	< 5	< 5	277
Acetophenetidin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	108	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amylo/pentabarb	ND	ND	13070	ND	ND	340	71	18	107	83	194	236	329	236	56	54	92	93	17	< 10	52	25	14	13	167	111	172	200	239	190
Atrazine	ND	ND	ND	ND	ND	1.8	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Brucine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Butalbarbital	ND	ND	18	ND	ND	350	< 10	< 10	34	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	62	< 10	< 10	< 10	44	< 10
Caffeine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Carbendazim	ND	ND	7.2	ND	ND	9	< 5	< 5	< 5	< 5	15	< 5	23	24	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	11	5	6	5	5	9
Carbofuran	ND	ND	320	ND	ND	320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chlorpromazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Cyclandelate							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	5	< 5	< 5	53	25	< 5	123	110	< 5	< 5	< 5	24	< 5	< 5	< 5	15	< 5	< 5	< 5	77	< 5	< 5	< 5	49
Diuron	ND	ND	1	ND	ND	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ethotoin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Fenbufen							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hexamine	ND	ND	10	ND	ND	14	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Isometheptene	ND	ND	6.41	ND	ND	7.32	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ketoprofen	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Mepyramine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Methcathinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Molindone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	487	127	718	615	1010	1110	1610	1670	490	447	807	699	172	96	250	221	68	62	798	418	999	763	499	891
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenazone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenobarbital	ND	ND	1850	ND	ND	57170	42	< 10	89	69	27	28	43	33	20	21	30	28	< 10	< 10	23	11	< 10	< 10	88	54	93	102	153	126
Promethazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphadiazine							163	41	286	257	523	643	1050	749	172	151	286	270	70	32	137	112	26	28	622	330	637	528	427	694
Sulphamerazine							10	7	25	21	52	122	125	89	17	18	33	31	6	6	17	16	< 5	8	76	40	41	41	31	58
Sulphamethizole	ND	ND	6	ND	ND	5	< 5	< 5	8	< 5	< 5	< 5	11	< 5	< 5	< 5	8	< 5	< 5	< 5	< 5	< 5	< 5	< 5	6	7	< 5	< 5	6	< 5
Sulphanilamide							218	79	239	339	314	302	546	417	198	161	333	294	130	80	19	156	15	11	368	181	496	371	403	605
Sulphathiazole	ND	ND	6	ND	ND	4	89	61	272	201	614	785	1020	842	183	156	277	270	78	48	98	117	29	34	874	421	25	96	< 5	40
Thozalinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
pH							10.9	11.3	8.13	9.05	7.87	7.37	7.65	7.88	11.1	10.6	10.8	11	9.44	11.3	9.66	10.4	7.42	9.52	8.89	9.2	7.83	7.56	7.45	7.58

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
#	3-Ethylbenzophenone is a daughter product of ketoprofen, SSAC provided are for Ketoprofen
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Site Specific Quantified Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 18																			
Location Name							AS7BH036				AS7BH037				AS7BH038				AS7BH039				AS7BH040				AS7BH041			
Sample Date							03/12/2014	03/03/2015	01/07/2015	01/10/2015	03/12/2014	04/03/2015	01/07/2015	01/10/2015	03/12/2014	04/03/2015	01/07/2015	30/09/2015	03/12/2014	03/03/2015	01/07/2015	30/09/2015	03/12/2014	04/03/2015	01/07/2015	30/09/2015	03/12/2014	04/03/2015	24/06/2015	30/09/2015
Target Pharmaceutical Compounds																														
3-Ethylbenzophenone#	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acebutolol	ND	ND	4.6	ND	ND	7.32	< 5	< 5	24	23	< 5	< 5	< 5	13	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Acetophenetidin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amylo/pentabarb	ND	ND	13070	ND	ND	340	109	18	103	62	32	31	64	20	72	27	95	104	55	53	127	119	14	< 10	42	20	< 10	< 10	22	16
Atrazine	ND	ND	ND	ND	ND	1.8	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Brucine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Butalbarbital	ND	ND	18	ND	ND	350	< 10	< 10	55	< 10	< 10	< 10	50	< 10	< 10	< 10	33	< 10	< 10	< 10	58	< 10	< 10	< 10	71	< 10	< 10	< 10	< 10	< 10
Caffeine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Carbendazim	ND	ND	7.2	ND	ND	9	< 5	< 5	< 5	< 5	< 5	< 5	6	< 5	< 5	< 5	< 5	< 5	< 5	< 5	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbofuran	ND	ND	320	ND	ND	320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chlorpromazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Cyclandelate							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	< 5	< 5	< 5	19	< 5	39	< 5	14	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	6	< 5	< 5	< 5	< 5	< 5
Diuron	ND	ND	1	ND	ND	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ethotoin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Fenbufen							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hexamine	ND	ND	10	ND	ND	14	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Isometheptene	ND	ND	6.41	ND	ND	7.32	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ketoprofen	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Mepyramine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Methcathinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Molindone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	334	108	313	360	581	539	933	426	105	147	13	< 5	270	282	688	45	121	87	58	77	104	131	353	142
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenazone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenobarbital	ND	ND	1850	ND	ND	57170	67	< 10	79	56	27	43	110	46	32	16	42	56	83	86	230	220	21	11	118	39	< 10	< 10	< 10	< 10
Promethazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphadiazine							345	51	200	107	139	134	263	103	248	113	56	< 5	165	196	585	40	74	50	407	146	42	46	85	112
Sulphamerazine							27	13	15	9	15	9	18	12	12	6	6	< 5	5	9	12	< 5	< 5	< 5	12	< 5	10	10	18	27
Sulphamethizole	ND	ND	6	ND	ND	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphanilamide							226	55	345	315	180	198	263	220	141	86	64	< 5	94	46	320	24	57	29	219	92	52	47	106	92
Sulphathiazole	ND	ND	6	ND	ND	4	90	34	70	150	195	192	248	186	8	15	< 5	< 5	43	19	< 5	9	< 5	9	6	< 5	40	31	133	65
Thozalinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
pH							8.22	9.02	7.44	7.12	7.14	8.46	7.79	8.07	9.19	7.9	7.52	7.37	7.68	7.19	7.37	7.71	7.21	8.51	7.57	7.72	8.79	8.66	10.4	9.32

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
#	3-Ethylbenzophenone is a daughter product of ketoprofen, SSAC provided are for Ketoprofen
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Site Specific Quantified Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 18																			
Location Name							AS7BH042				AS7BH043				AS7BH045				AS7BH046				AS7BH047				AS8BH107			
Sample Date							03/12/2014	04/03/2015	01/07/2015	30/09/2015	03/12/2014	04/03/2015	01/07/2015	30/09/2015	03/12/2014	04/03/2015	24/06/2015	30/09/2015	03/12/2014	04/03/2015	24/06/2015	30/09/2015	03/12/2014	03/03/2015	01/07/2015	01/10/2015	04/12/2014	03/03/2015	02/07/2015	02/10/2015
Target Pharmaceutical Compounds																														
3-Ethylbenzophenone#	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acebutolol	ND	ND	4.6	ND	ND	7.32	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	28	30	15	< 5
Acetophenetidin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	12	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amylo/pentabarb	ND	ND	13070	ND	ND	340	< 10	< 10	33	< 10	< 10	41	159	95	114	41	288	380	49	61	99	52	41	44	40	46	112	129	71	30
Atrazine	ND	ND	ND	ND	ND	1.8	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Brucine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Butalbarbital	ND	ND	18	ND	ND	350	< 10	< 10	66	< 10	< 10	< 10	107	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	35	< 10	< 10	< 10	< 10	< 10
Caffeine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Carbendazim	ND	ND	7.2	ND	ND	9	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	52	< 5	86	< 5	6	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbofuran	ND	ND	320	ND	ND	320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chlorpromazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Cyclandelate							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	< 5	< 5	< 5	< 5	< 5	52	< 5	< 5	< 5	22	6	< 5	< 5	32	5	< 5	< 5	< 5	< 5	< 5	< 5	24	< 5	< 5
Diuron	ND	ND	1	ND	ND	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ethotoin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Fenbufen							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hexamine	ND	ND	10	ND	ND	14	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Isometheptene	ND	ND	6.41	ND	ND	7.32	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ketoprofen	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Mepyramine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Methcathinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Molindone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	19	23	138	< 5	141	114	199	202	638	112	888	11	66	61	183	< 5	386	415	332	347	382	344	599	491
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenazone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenobarbital	ND	ND	1850	ND	ND	57170	< 10	< 10	154	22	< 10	68	375	241	13	76	52	85	65	75	92	53	56	64	74	76	< 10	< 10	< 10	< 10
Promethazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphadiazine							33	19	341	< 5	130	352	1630	1110	734	174	1430	15	74	73	77	< 5	76	68	71	77	29	32	17	5
Sulphamerazine							< 5	< 5	22	< 5	19	12	24	38	144	14	328	< 5	9	9	12	< 5	5	5	6	6	< 5	6	< 5	< 5
Sulphamethizole	ND	ND	6	ND	ND	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	9	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	11	22	6	< 5
Sulphanilamide							26	18	269	< 5	178	172	405	396	230	218	632	8	154	135	203	87	176	186	197	180	83	92	84	42
Sulphathiazole	ND	ND	6	ND	ND	4	33	16	659	< 5	140	208	583	410	456	185	979	9	< 5	19	48	< 5	158	171	168	167	36	54	15	6
Thozalinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
pH							10.7	10.7	9.17	9.37	11.9	11.1	9.62	10	8.21	10.9	9.72	9.01	7.87	7.96	7.39	7.45	7.14	7.02	6.96	6.73	10.1	7.12	7.21	7.15

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
#	3-Ethylbenzophenone is a daughter product of ketoprofen, SSAC provided are for Ketoprofen
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

Appendix E5

Validation Monitoring Results of Site Specific Quantified Compounds in Groundwater (µg/l)

DRA	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	DRA 18				RPA2			
Location Name							AS8BH108				AS8BH110			
Sample Date							04/12/2014	03/03/2015	02/07/2015	02/10/2015	29/01/2015	05/03/2015	30/06/2015	29/09/2015
Target Pharmaceutical Compounds														
3-Ethylbenzophenone#	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acebutolol	ND	ND	4.6	ND	ND	7.32	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Acetophenetidin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Amylo/pentabarb	ND	ND	13070	ND	ND	340	< 10	< 10	22	19	< 10	< 10	< 10	11
Atrazine	ND	ND	ND	ND	ND	1.8	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Brucine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Butalbarbital	ND	ND	18	ND	ND	350	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Caffeine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Carbendazim	ND	ND	7.2	ND	ND	9	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbofuran	ND	ND	320	ND	ND	320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chlorpromazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Cyclandelate							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Diuron	ND	ND	1	ND	ND	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ethotoin							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Fenbufen							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Hexamine	ND	ND	10	ND	ND	14	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Isometheptene	ND	ND	6.41	ND	ND	7.32	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Ketoprofen	ND	ND	6.41	ND	ND	5	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Mepyramine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Methcathinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Molindone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	734	1260	3700	4260	< 5	< 5	< 5	< 5
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenazone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenobarbital	ND	ND	1850	ND	ND	57170	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Promethazine							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphadiazine							< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphamerazine							< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphamethizole	ND	ND	6	ND	ND	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphanilamide							9	20	44	64	< 5	< 5	< 5	< 5
Sulphathiazole	ND	ND	6	ND	ND	4	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Thozalinone							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
pH							7.83	7.76	7.58	7.64	6.85	-	6.72	6.73

Notes

1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
#	3-Ethylbenzophenone is a daughter product of ketoprofen, SSAC provided are for Ketoprofen
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.
	No SSAC calculated

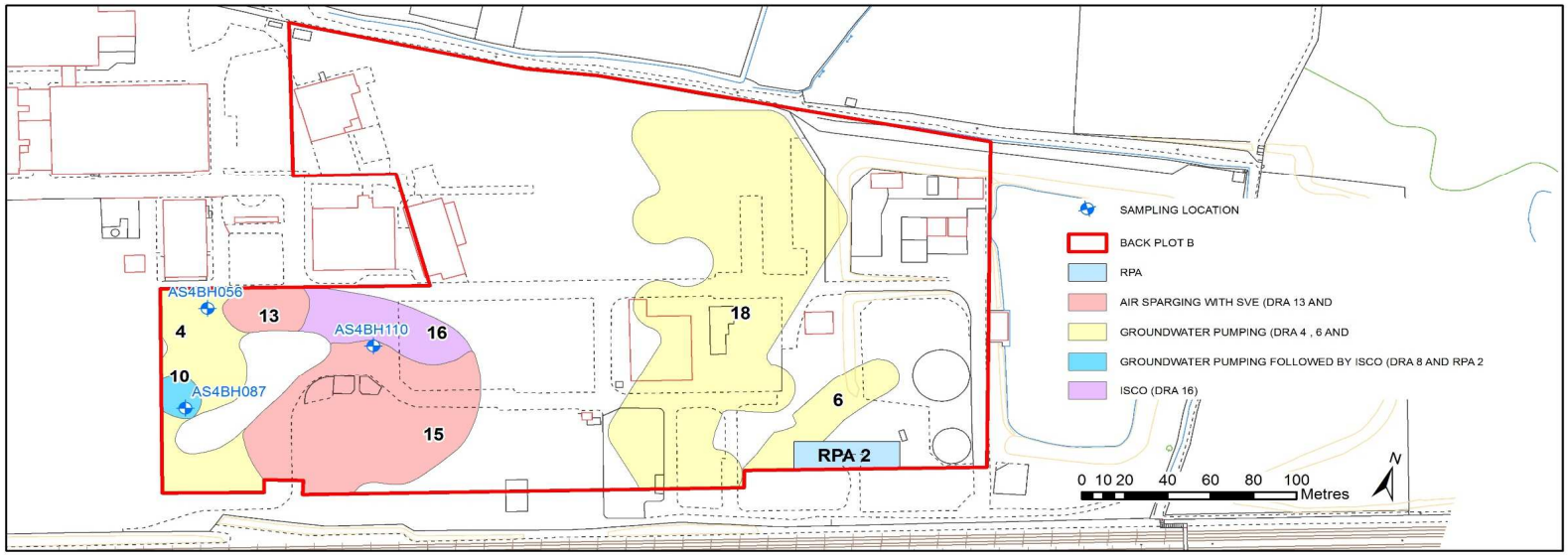
Appendix E6

Back Plot A Elemental Mercury Analysis

Location ID		Area 1 Human Health Soil SSAC (mg/kg)	AS4BH056			AS4BH110			AS4BH087		
Date			17/01/2013	17/01/2013	17/01/2013	11/03/2013	11/03/2013	11/03/2013	18/03/2013	18/03/2013	18/03/2013
Start Depth			0.5	1	1.5	0.5	1	1.5	0.5	1	1.5
Analyte	Unit										
Total Mercury (by ICP-OES)	mg/kg	3660	0.1	<0.1	<0.1	1.3	1.2	0.7	**33.9**	**45**	**10.5**
Total Mercury (by CVAF)	mg/kg	3660	*	*	*	*	*	*	**	**	**
Elemental Mercury	mg/kg	6.72	*	*	*	*	*	*	**	0.004	**

Notes

ICP-OES	Inductively Coupled Plasma – Optical Emission spectroscopy
CVAF	Cold Vapour Atomic Fluorescence
*	Concentration of total mercury by ICP-OES measured below the human health SSAC for elemental mercury therefore no further analysis undertaken
**	Concentration of total mercury by ICP-OES measured above the human health SSAC for elemental mercury within the borehole. Analysis for elemental mercury undertaken at depth corresponding to highest total mercury concentration as well as, in selected locations, the maximum depth of concentrations measured above the SSAC.
<0.1	Below the laboratory method detection limit
1.23	Result above Elemental Mercury SSAC
-	Not tested



APPENDIX F

Quality Assurance Data

Appendix F

Validation Monitoring VOC Duplicate Data (µg/l)

Location ID	AS4BH027	DUP A	AS4BH029	DUP B	AS4BH038	DUP C	AS4BH050	DUP D	AS6BH003	DUP E	AS7BH042	DUP F	AS4BH025	DUP G	AS8BH109	DUP H	AS8BH057	DUP I	AS8BH097	DUPJ	TRIP BLANK A	TRIP BLANK B	TRIP BLANK C	TRIP BLANK D
Date	15/12/2015		21/01/2015		06/06/2015		23/09/2015		25/03/2014		04/03/2015		17/02/2015		08/01/2015		29/06/2015		29/06/2015		09/03/2015	09/06/2015	02/09/2015	17/12/2015
Volatile Organic Compounds																								
1,1,1,2-Tetrachloroethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
1,1,1-Trichloroethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
1,1,2,2-Tetrachloroethane	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	<4	<4	<4	<4	<4	<4	<4	<4	< 4	< 4	< 4	< 4
1,1,2-Trichloroethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
1,1-Dichloroethane	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
1,1-Dichloroethene	4	5	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	7	8	<3	<3	< 3	< 3	< 3	< 3
1,1-Dichloropropene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
1,2,3-Trichlorobenzene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
1,2,3-Trichloropropane	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
1,2,4-Trichlorobenzene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
1,2,4-Trimethylbenzene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
1,2-Dibromo-3-chloropropane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
1,2-Dibromoethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	5500	5390	248	200	< 3	< 3	4	4	346	334	< 3	< 3	10	11	<3	<3	6	7	41	40	< 3	< 3	< 3	< 3
1,2-Dichloroethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
1,2-Dichloropropane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
1,3,5-Trimethylbenzene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
1,3-Dichlorobenzene	27	27	6	6	< 3	< 3	< 3	< 3	3	4	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
1,3-Dichloropropane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
1,4-Dichlorobenzene	874	810	284	272	< 3	< 3	21	22	35	33	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
2,2-Dichloropropane	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<1	<1	< 1	< 1	< 1	< 1
2-Chlorotoluene	910	819	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	8	8	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
4-Chlorotoluene	601	547	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	3	3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
4-Isopropyltoluene	6	5	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Benzene	825	708	12	10.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	215	214	5	5	2	3	20	20	< 0.5	< 0.5	< 0.5	< 0.5
Bromobenzene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Bromochloromethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Bromodichloromethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Bromoform	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Bromomethane	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<1	<1	< 1	< 1	< 1	< 1
Carbon Tetrachloride	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Chlorobenzene	929	876	157	137	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	516	509	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Chloroethane	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Chloroform	54	55	< 2	< 2	< 2	< 2	71	71	< 2	< 2	< 2	< 2	94	93	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Chloromethane	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	266	246	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Cis-1,2-Dichloroethene	1130	1170	32	31	< 3	< 3	60	52	< 3	< 3	< 3	< 3	<3	<3	33	31	2340	2900	55	56	< 3	< 3	< 3	< 3
Cis-1,3-Dichloropropene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Dibromochloromethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Dibromomethane	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Dichlorodifluoromethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Dichloromethane	14	15	< 3	< 3	< 3	< 3	31	31	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Ethylbenzene	19.2	17.3	< 0.5	< 0.5	< 0.5	< 0.5	2.2	2.3	< 0.5	< 0.5	< 0.5	< 0.5	5	5	<0.5	<0.5	<0.5	<0.5	2	2	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Isopropylbenzene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Methyl Tertiary Butyl Ether	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	4	4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
n-Butylbenzene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
O-Xylene	42.8	37.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9	56	55.6	< 0.5	< 0.5	1	1	<0.5	<0.5	<0.5	<0.5	1	1	< 0.5	< 0.5	< 0.5	< 0.5
p/m-Xylene	157	136	< 1	< 1	< 1	< 1	< 1	< 1	96	131	< 1	< 1	<1	<1	<1	<1	<1	<1	4	3	< 1	< 1	< 1	< 1
Propylbenzene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
sec-Butylbenzene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Styrene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
tert-Butylbenzene	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Tetrachloroethene	1500	1470	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Toluene	354	334	16	13.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	45	44	< 0.5	< 0.5	< 0.5	< 0.5
Trans-1,2-Dichloroethene	6	7	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	93	136	<3	<3	< 3	< 3	< 3	< 3
Trans-1,3-Dichloropropene	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	< 2	< 2	< 2
Trichloroethene	841	706	65	63	< 3	< 3	72	48	< 3	< 3	< 3	< 3	<3	<3	64	59	526	780	25	25	< 3	< 3	< 3	< 3
Trichlorofluoromethane	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	< 3	< 3	< 3	< 3
Vinyl Chloride	334	288	8.8	8.9	< 0.1	< 0.1	7.8	8	< 0.1	< 0.1	< 0.1	< 0.1	2	2	6	6	2850	3210	21	20	< 0.1	< 0.1	< 0.1	< 0.1

Notes

1.23 Concentration greater than Method Detection Limit (MDL)

< Concentration less than laboratory MDL

APPENDIX G

Verification Findings

Appendix G
Verification Findings

Each of the 18 target CoC defined for Back Plot B across the 56 validation wells in eight remediation areas are discussed in turn below.

Trend graphs showing the measured groundwater concentration in target CoC are presented in Appendix E2. Data presented includes quantitative laboratory analysis undertaken since 2011 until December 2015. Trend lines presented are based on average annual measured concentrations taken from across the 56 validation monitoring wells within Back Plot B. Where a well has been measured multiple times in a given year, annual averages have been calculated based on both the measured maximum and measured minimum annual concentrations from the 56 monitoring wells.

Target CoC distribution plots showing measured groundwater concentrations from the most recent round of validation groundwater monitoring, conducted in December 2014, are presented as Figure 4 to 20 for the 18 target CoC and are compared against the pre-remediation baseline data.

1,2-Dichlorobenzene

1,2-dichlorobenzene was selected as a target compound in the RPA 2 remediation area which is located towards the south-eastern boundary of Back Plot B. This selection was based on the wider contaminant distribution in the area located downgradient of Back Plot B and as such baseline concentrations in the single validation well (AS8BH110) are relatively low when compared to the wider baseline distribution observed across Back Plot B.

Remediation undertaken in the remediation area (RPA 2) for which 1,2-dichlorobenzene was a target compound included groundwater pumping and ISCO. Contaminant mass removal was demonstrated by groundwater pumping (Appendix E1) and a total 1,2-dichlorobenzene removal mass by these techniques of 0.33kg was calculated based on RPA 2 (note, RPA 2 mass removal also includes areas outside of Back Plot B). Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

Performance reduction criteria are considered to have been satisfied as measured concentrations of 1,2-dichlorobenzene in the single validation monitoring well for 1,2-dichlorobenzene remained below the laboratory MDL of 3µg/l throughout the validation and baseline monitoring. Furthermore, measured 1,2-dichlorobenzene concentrations from across the 56 validation monitoring wells, measured during the four rounds of validation monitoring, were below the environmental SSAC as define in the DQRA (Arcadis report ref: 928871204, March 2010). Human health assessment criteria were not derived as 1,2-dichlorobenzene was not considered to present a significant risk to human health via the pathways modelled.

The target percentage reduction as defined in performance criteria Condition 1 has been achieved. As measured 1,2-dichlorobenzene concentrations from across the 56 validation monitoring wells were below both the environmental and human health SSAC, further remediation works are not considered to be required. As such, no further work is considered to be required in relation to Condition 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

1,2-Dichlorobenzene - Baseline

1,2-Dichlorobenzene - Final Validation (December 2015)

< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

1,2-Dichlorobenzene Defined Baseline Concentrations (µg/l)	September to December 2015 1,2-Dichlorobenzene Measured Validation Well Concentrations (µg/l)	September to December 2015 1,2-Dichlorobenzene Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction (Based on Target Wells)
<3	<3	<3-49,100	>99%

Acebutol

Remediation undertaken in the remediation area (DRA 6) for which acetutol was a target compound included groundwater pumping. Contaminant mass removal was demonstrated by groundwater pumping (Appendix E1) and a total Sum 35.2 (sum of target site specific pharmaceutical CoC) removal mass by these techniques of 0.71kg was calculated based on DRA 6. Note, DRA 6 mass removal also includes areas outside of Back Plot B.

The overall percentage reduction target for acebutol of 70% or greater has been met in the single validation monitoring well for acebutol. Human health assessment criteria were not derived as acebutol was not considered to present a significant risk to human health via the pathways modelled.

Baseline concentrations prior to remediation were defined as 320µg/l based on measured concentrations in the validation monitoring wells. Post remediation, measured concentrations in the validation well during the four validation monitoring visits were less than the laboratory MDL (5µg/l). This is supported by the annual average trend graph for acebutol, (Appendix E2), which shows a generally stable or decreasing trend until remediation completion.

Outside of the validation monitoring well, concentrations of acebutol were <3 to 277µg/l, measured during the four rounds of validation monitoring (maximum measured during the most recent round of monitoring, September to December 2015). As presented on the contaminant distribution plot, Figure 5, the measured concentrations above the laboratory MDL were located generally in the centre of Back Plot B, with the maximum measured concentrations measured in monitoring well AS7BH034, located centrally in remediation area DRA 18. Based on a generally southerly flow direction, this well is up gradient within Back Plot B indicating that the risk to down gradient receptors reduces with distance.

Acebutol was considered in the DQRA undertaken (Arcadis report ref: 928873302, July 2011) to have a low potential for biodegradation (half-life of 1,825 days modelled). As such, the concentrations measured during the validation monitoring over a period of approximately 1 year are considered to represent stable conditions.

The target percentage reduction as defined in performance criteria Condition 1 has been achieved. Based on the distribution of measured concentrations, the mass recovery demonstrated and the stable or decreasing trends reported the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Acebutol - Baseline

Acebutol - Final Validation (December 2015)

< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Acebutol Defined Baseline Concentrations (µg/l)	September to December 2015 Acebutol Measured Validation Well Concentrations (µg/l)	September to December 2015 Acebutol Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction (Based on Target Wells)
320	<5	<5-277	>99%

Benzene

Remediation undertaken in the areas for which benzene was a target compound included groundwater pumping (DRA 4 and DRA 10), ISCO (DRA 10 and DRA 16) and SVE (DRA 15).

Contaminant mass removal was demonstrated by groundwater pumping and SVE (Appendix E1) and a total benzene removal mass by these techniques of 2.67kg was calculated based on DRA 4, DRA 10 and DRA 15 (note, DRA 4 mass removal also includes areas outside of Back Plot B). Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

The overall percentage reduction targets for benzene of 70% or greater has been met, averaged over the network of 18 validation monitoring wells for benzene. All measured concentrations during validation monitoring are below the human health assessment criteria.

Baseline concentrations prior to remediation were defined as 176-5,719µg/l, based on measured concentrations in the validation monitoring wells. Post remediation, measured concentrations in the 17 validation wells during the four validation monitoring visits were <0.5-2,340µg/l (<0.5-2,110µg/l for the most recent monitoring, September to December 2015).

Benzene was considered in the DQRA undertaken (Arcadis report ref: 928873302, July 2011) to have moderate potential for biodegradation (half-life of 350 days modelled). As such, the concentrations measured during the validation monitoring over a period of approximately 1 year are considered to represent a generally decreasing trend. This is supported by the annual average trend graph for benzene (Appendix E2) which also shows a generally decreasing trend.

As presented on Figure 6, the current maximum measured concentrations are generally located within the western portion of Back Plot B (maximum of 2,340µg/l in monitoring well AS6BH003 to the west of the centre of the site). Based on a generally southerly flow direction, measured concentrations in down gradient wells including monitoring well AS5BH002 (approximately 25m down gradient, off set 15m to the west) shows a decrease to <0.5µg/l, indicating that the risk to down gradient receptors reduces with distance. Measured concentrations along the downgradient, southern site boundary are a maximum of 456µg/l (Monitoring well AS4BH052, located towards the centre of the site). Whilst the majority of measured concentrations are less than 500µg/l, a single measured concentration of greater than 1,000µg/l (1,560µg/l, December 2015) was also measured in monitoring well AS8BH099, located in the eastern portion of the site. The maximum measured concentration in surrounding monitoring wells was 19.6µg/l (AS8BH098A, December 2015), located approximately 25m to the southwest of monitoring well AS8BH099 indicating that the maximum concentration is isolated.

Outside of the 17 validation monitoring wells, measured concentrations of benzene were <0.5 – 1,560µg/l (maximum measured during most recent monitoring).

The target percentage reduction as defined in performance criteria Condition 1 has been achieved. Based on the distribution of measured concentrations, the generally decreasing trend in measured benzene concentrations, the potential for further biodegradation to occur and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Benzene - Baseline

Benzene - Final Validation (December 2015)

Benzene Defined Baseline Concentrations (µg/l)	September to December 2015 Benzene Measured Validation Well Concentrations (µg/l)	September to December 2015 Benzene Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
176-5,719	<0.5-2,110	<0.5-1,560	72%

Carbendazim

Remediation undertaken in the areas for which carbendazim was a target compound included groundwater pumping (DRA 4, DRA 10 and DRA 18) and ISCO (DRA 10). Contaminant mass removal was demonstrated by groundwater pumping (Appendix E1) and a total carbendazim removal mass by this technique of 0.0817kg was calculated based on DRA 4, DRA 10 and DRA 18 (0.0317 from DRA 18 alone). Note, DRA 4 mass removal also includes areas outside of Back Plot B. Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

The overall percentage reduction targets for carbendazim of 70% or greater has been met, averaged over the network of two validation monitoring wells for carbendazim outside of DRA 18. Within DRA 18, measured concentrations compared to the baseline have decreased by 44%, averaged over the 25 monitoring wells present. When maximum concentrations measured during remediation are considered, a percentage reduction of 89% is calculated within DRA 18. Human health assessment criteria were not derived as carbendazim was not considered to present a significant risk to human health via the pathways modelled.

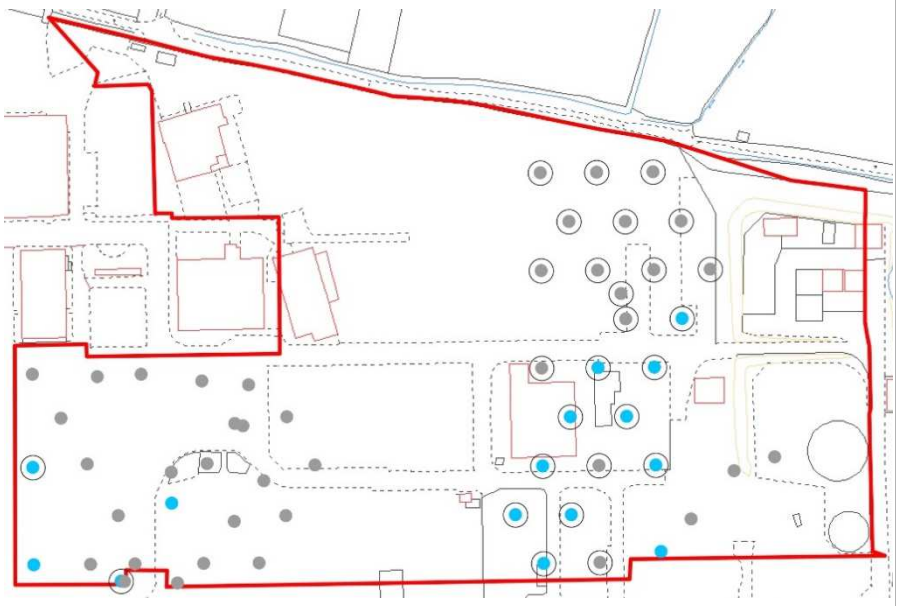
Baseline concentrations prior to remediation were defined as <5-786µg/l, based on measured concentrations in the 27 validation monitoring wells from across Back Plot B (<5-786µg/l measured across DRA 18 and 26-93µg/l measured in the two target validation wells in the remainder of the site). Post remediation, measured concentrations in the 25 DRA 18 target validation wells during the four validation monitoring visits were <5-86µg/l (<5-24µg/l measured during the most recent monitoring visit) and <5-21µg/l (<5µg/l measured during the most recent monitoring visit) in the two target validation wells in the remainder of the site.

Outside of the 27 target validation monitoring well, measured concentrations of carbendazim were <5 - 141µg/l (<5 - 78µg/l during most recent monitoring only). Measured concentrations of carbendiazim above the laboratory MDL of 5µg/l were only reported in eight out of the total 56 validation monitoring wells across the site during the most recent monitoring. As presented on Figure 7, measured carbendazim concentrations are generally towards the centre of the site with, down gradient monitoring wells, based on a southerly flow direction, generally less than the laboratory MDL.

Whilst a reduction in concentration is demonstrated by comparing baseline data to validation data, it is noted that the annual average trend graph for carbendazim (Appendix E2) shows an increasing trend in measured concentrations between 2012 up to 2014. In 2014 DRA 18 groundwater pumping commenced and the baseline concentrations for remediation were defined. The period of 2012 to 2014 follows the cessation in 2012 of the former D44 Landfill remediation works in the area of DRA 18. The measured increase is attributed to the installation of a greater number of new wells within the backfill material in this area and the equilibration of associated residual contaminant mass.

The target percentage reduction as defined in performance criteria Condition 1 has been achieved (applicable to DRA4 and DRA 10). Based on the distribution of measured concentrations, the generally stable or decreasing trend in measured carbendazim concentrations and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2 and 4, that a risk to the identified receptors is not present and Condition 3 and 5, that additional remediation works are not justified.

Carbendazim - Baseline



Carbendazim - Final Validation (December 2015)

Carbendazim Defined Baseline Concentrations (µg/l)	September to December 2015 Carbendazim Measured Validation Well Concentrations (µg/l)	September to December 2015 Carbendazim Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction (excluding DRA 18)	Percentage Reduction (DRA 18)
5-786µg	<5-24	<5-78	>99%	44% / 89%*

* Based on maximum measured concentration during remediation

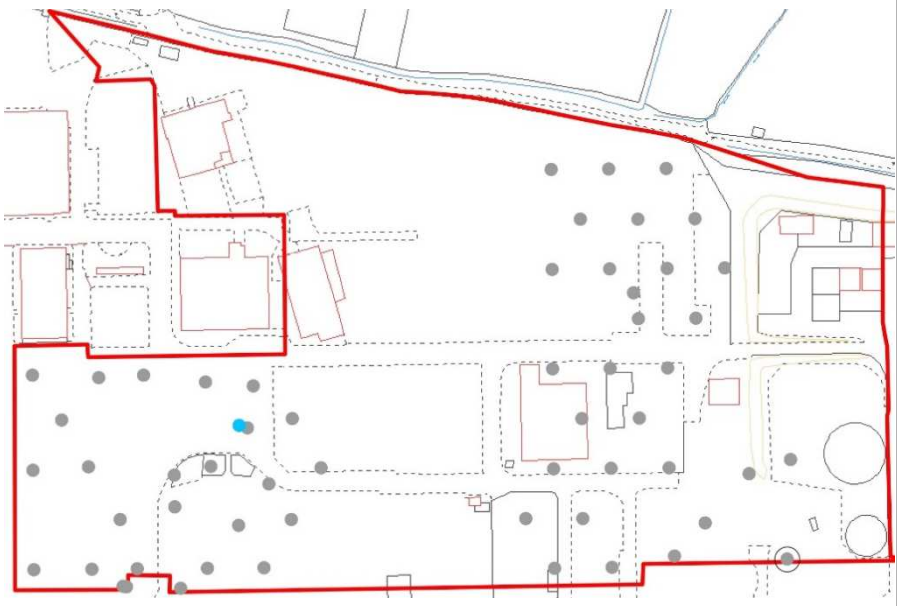
Carbofuran

Performance reduction criteria are considered to have been satisfied as measured concentrations of carbofuran in the single validation monitoring well for carbofuran remained below the laboratory MDL of 10µg/l throughout the validation monitoring.

Outside of the single validation monitoring well, measured concentrations of carbofuran were also below the laboratory MDL of 10µg/l during the four rounds of validation monitoring conducted in the 55 non-target validation monitoring wells (Figure 8).

The target percentage reduction as defined in performance criteria Condition 1 has been achieved. Based on the measured concentrations below the laboratory MDL, Conditions 2 and 3, that a risk to the identified receptors is not present and that additional remediation works are not justified, are considered to have been satisfied. As such, measured carbofuran concentrations are not considered to warrant further remediation.

Carbofuran - Baseline



Carbofuran - Final Validation (December 2015)

< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Carbofuran Defined Baseline Concentrations (µg/l)	September to December 2015 Carbofuran Measured Validation Well Concentrations (µg/l)	September to December 2015 Carbofuran Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
<10	<10	<10	>99%

Chloroform

Remediation undertaken in the areas for which chloroform was a target compound included groundwater pumping (RPA 2), ISCO (RPA 2 and DRA 16) and SVE (DRA 16).

Contaminant mass removal was demonstrated by groundwater pumping and SVE (Appendix E1) and a total chloroform removal mass by these techniques of 0.89kg was calculated based on DRA 15 and RPA 2 (note, RPA 2 mass removal also includes areas outside of Back Plot B). Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

The overall percentage reduction targets for chloroform have been met or exceeded (70% for DRA, 85% for RPA), averaged over the network of four validation monitoring wells for chloroform. All measured concentrations during validation monitoring are below the human health assessment criteria.

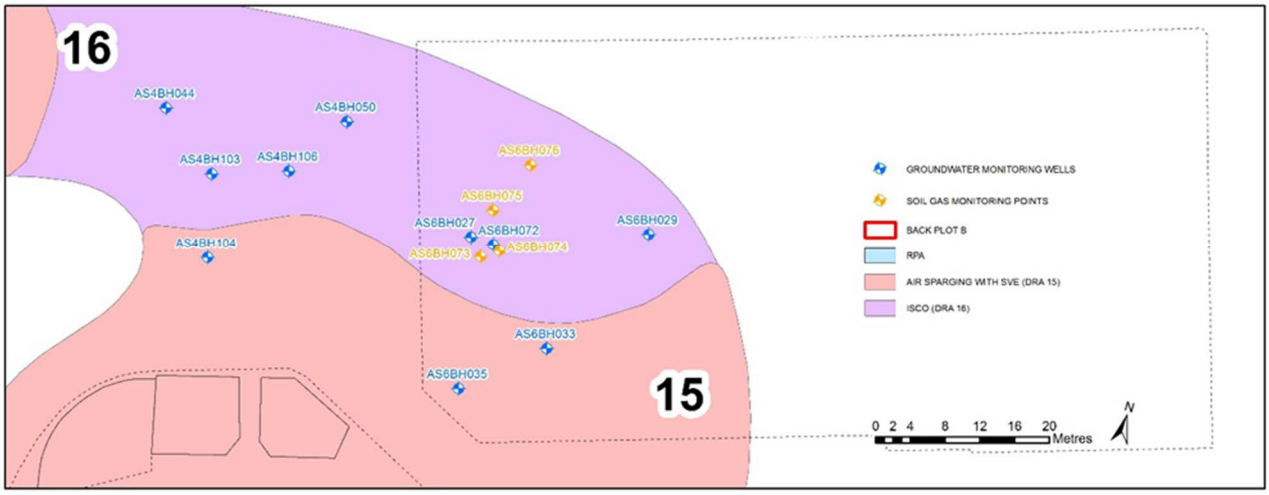
Baseline concentrations prior to remediation were defined as <3-119,733µg/l, based on measured concentrations in the four validation monitoring wells. Post remediation, measured concentrations in the four validation wells during the four validation monitoring visits were <2-24,600µg/l (<2-13,800µg/l for the most recent monitoring in December 2015). This is supported by the annual average trend graph for chloroform (Appendix E2) which shows a generally decreasing trend.''.

Outside of the four validation monitoring wells, measured concentrations of chloroform were <2-609µg/l, measured during the four rounds of validation monitoring (maximum measured during the most recent monitoring) (Figure 9).

Measured concentrations above the laboratory MDL were reported in less than half of the validation monitoring wells during the most recent round of monitoring in September to December 2015 (21 out of 56 wells). Measured concentrations were generally less than 500µg/l and distributed across the site.

As presented on Figure 9, the maximum measured concentration during the most recent monitoring of 13,800µg/l was measured in monitoring well AS4BH044, located to the west of the centre of the site (next highest measured of 609µg/l in monitoring well AS8BH099, located in the southeast of the site). Based on the contaminant distribution measured, the maximum concentration appears to be localised and the risk to down gradient receptors appears to reduce with distance. In addition to the validation wells, a number of downgradient remediation wells were sampled between April 2015 and July 2015.. The results of the additional groundwater monitoring are presented below (and in Appendix H, Table H1) and are considered to provide evidence that the measured chloroform concentrations in monitoring well AS4BH044 are localised as the nearest down gradient concentrations (monitoring well AS4BH103) were generally <2µg/l during the four rounds of monitoring undertaken (maximum of 5µg/l). As such, the concentrations of chloroform measured in AS4BH044 are not considered to present a risk to either environmental or human health receptors.

Contaminant	Chlorform				
	01/04/2015	12/05/2015	16/06/2015	21/07/2015	MAX
AS4BH044	12,300	24,600	15,600	13,500	24,600
AS4BH050	89	95	159	133	159
AS6BH072*	190	272	321	258	321
AS4BH103	2	5	2	2	5
AS4BH104	2	2	2	2	2
AS4BH106	4	2	2	2	4
AS6BH027	2	2	2	2	2
AS6BH029	5	4	2	2	5
AS6BH033	2	2	2	2	2
AS6BH035	2	6	2	2	6



In the DQRA (Arcadis report ref: 928873302, July 2011) chloroform was considered to have a low potential for biodegradation (half-life of 1,800 days modelled). As such, the concentrations measured during the validation monitoring over a period of approximately 1 year are considered to represent stable conditions.

The target percentage reduction as defined in performance criteria Condition 1 has been achieved. Based on the distribution of measured concentrations, the generally stable or decreasing trend in measured chloroform concentrations and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Chloroform - Baseline

Chloroform - Final Validation (December 2015)

< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Chloroform Defined Baseline Concentrations (µg/l)	September to December 2015 Chloroform Measured Validation Well Concentrations (µg/l)	September to December 2015 Chloroform Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
<3-119,733	<2-13,800	<2-609	88%

Cis-1,2-dichloroethene

Remediation undertaken in the areas for which cis-1,2-dichloroethane was a target compound included groundwater pumping (DRA 4 and DRA 10), ISCO (DRA 10 and DRA 16) and SVE (DRA 15). DNAPL removal via low flow pumping was also undertaken in DRA 16, during which 7.3 litres of product was removed (product typing identified the composition was 6% cis-1,2-dichloroethane) .

Contaminant mass removal was demonstrated by groundwater pumping and SVE (Appendix E1) and a total cis-1,2-dichloroethene removal mass by these techniques of 1.60kg was calculated based on DRA 4, DRA 10 and DRA 15. Note, DRA 4 mass removal also includes areas outside of Back Plot B. Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

Based on the contaminant distribution measured (Figure 10), the maximum concentration (monitoring well AS6BH072 - 32,400µg/l) appears to be localised. Sampling of additional down gradient remediation wells was undertaken between April 2015 and July 2015 in addition to the validation monitoring well sampling. The results of the additional groundwater monitoring presented below.

Contaminant	Cis1,2-dichloroethene				
	01/04/2015	12/05/2015	16/06/2015	21/07/2015	MAX
AS4BH044	12	48	77	148	148
AS4BH050	110	88	143	149	149
AS6BH072*	**67,300**	**62,700**	**56,900**	**62,600**	**67,300**
AS4BH103	5	3	3	5	5
AS4BH104	3	3	3	3	3
AS4BH106	29	179	38	3	179
AS6BH027	22	87	29	45	87
AS6BH029	141	154	289	774	774
AS6BH033	174	3	3	7	174
AS6BH035	3	3	3	8	8

Notes:

1.23 Exceeds human health SSAC for neighbouring residents (2,170 ug/l)

* AS6BH072 replaced AS6BH001 in March 2015

The overall percentage reduction targets for cis-1,2-dichloroethane have been met or exceeded (70% for DRA, 85% for RPA), averaged over five of the six validation monitoring wells for cis-1,2-dichloroethane. Measured concentrations in a single validation monitoring well, AS6BH072 (a replacement for AS6BH001 which had become blocked) are at concentrations in excess of 10,000µg/l, which is at least an order of magnitude higher than the next highest cis-1,2-dichloroethane concentration measured across Back Plot B. As such, this well has been assessed individually as a potential localised hotspot, considering the potential risk via groundwater and soil gas concentrations.

Measured concentrations during validation monitoring are below the human health assessment criteria protective of future on-site commercial workers though concentrations in AS6BH072 do exceed human health assessment criteria for neighbouring residents. However, these concentrations are not considered to present a risk to off-site human health receptors as none of the concentrations in monitoring wells down-gradient including those along the southern site boundary exceed the human health assessment criteria protective of neighbouring residents.

Due to the localised nature of the contamination and in view of when the contamination is likely to have occurred the impacts in AS6BH072 are considered unlikely to present a future risk to off-site receptors via groundwater migration.

Cis-1,2-dichloroethene was considered in the DQRA undertaken (Arcadis report ref: 928873302, July 2011) to have low potential for biodegradation (half-life of 2,875 days modelled assuming aerobic degradation is the primary degradation route). Cis-1,2-dichloroethene is known to form vinyl chloride, primarily via an anaerobic degradation process. Based on the stable cis-1,2-dichloroethane concentrations observed following completion of remediation, stable vinyl chloride concentrations and the generally aerobic conditions present, degradation to vinyl chloride is considered unlikely to increase vinyl chloride concentrations such that human health SSAC would be exceeded. Trend graphs for vinyl chloride are presented in Appendix E2, and show a generally decreasing trend.

In order to provide further evidence that a potentially unacceptable risk via the inhalation pathway is not present, a detailed pathway assessment has been undertaken via soil gas sampling and the results presented below.

Measured Soil Gas Concentrations and Comparison to SSAC (mg/m3)

Contaminant	Cis-1,2-Dichloroethene			
	20/05/2015	15/06/2015	09/07/2015	25/07/2015
AS6BH073	11	6	137	26
AS6BH074	15	48	55	26
AS6BH075	120	142	84	59
AS6BH076	396	360	50	40

Notes:

1.23 Exceeds human health SSAC (9,590 mg/m3)

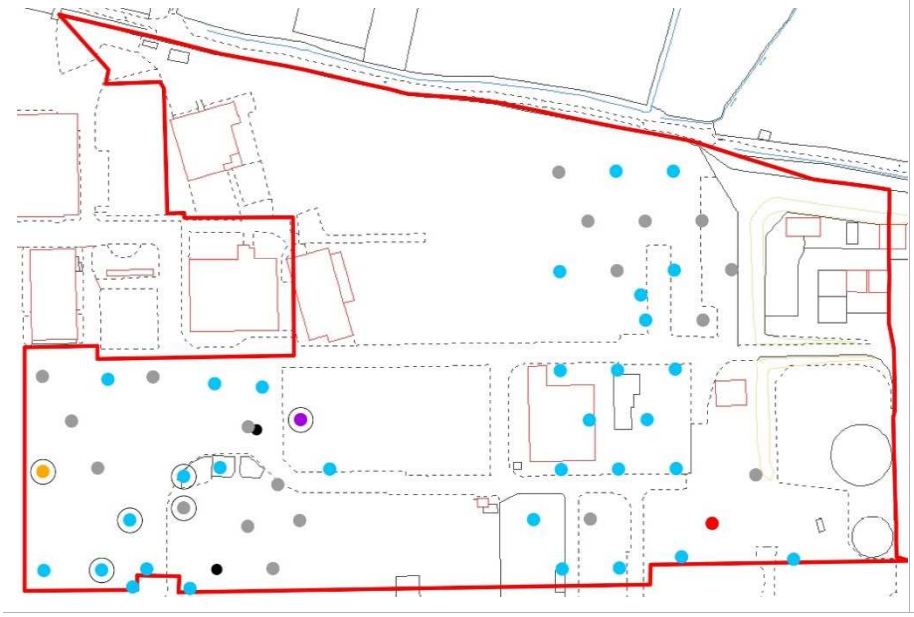
The assessment undertaken concludes that a significant risk to future on-site commercial workers is not present via the vapour inhalation pathway.

With the exclusion of an identified localised elevated concentration in AS6BH072, the target percentage reduction as defined in performance criteria, Condition 1 has been achieved. Additional investigative works have been undertaken in the vicinity of AS6BH072 which concluded that measured concentrations did not present a significant risk to down gradient groundwater quality or to human health receptors.

Based on the distribution of measured concentrations, the generally stable or decreasing trend in measured cis-1,2-dichloroethane concentrations and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Condition 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Cis-1,2-dichloroethene - Baseline

Cis-1,2-dichloroethene - Final Validation (December 2015)



< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Cis-1,2-dichloroethene Defined Baseline Concentrations (µg/l)	September to December 2015 Cis-1,2-dichloroethene Measured Validation Well Concentrations (µg/l)	September to December 2015 Cis-1,2-dichloroethene Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
174-17,058	<3-32,400	<3-58,870	84%*

* Excluding monitoring well AS6BH072, assessed individually.

Diphenylguanidine

Remediation undertaken in the areas for which diphenylguanidine was a target compound included groundwater pumping (DRA 4, DRA 6 and DRA 18) and SVE (DRA 15).

Groundwater pumping was the primary technique by which diphenylguanidine mass reduction was targeted. Contaminant mass removal was demonstrated by groundwater pumping (Appendix E1) and a total diphenylguanidine removal mass by this technique of 0.065kg was calculated based on DRA 4, DRA 6 and DRA 18 (0.0428 from DRA 18 alone). Note, DRA 4 and DRA 6 mass removal also includes areas outside of Back Plot B.

The overall percentage reduction targets for diphenylguanidine of 70% or greater has been met, averaged over the network of five validation monitoring wells for diphenylguanidine outside of DRA 18. Within DRA 18, measured concentrations compared to the baseline have decreased by 61%, averaged over the 25 monitoring wells present. When maximum concentrations measured during remediation are considered, a percentage reduction of 71% is calculated within DRA 18.

Human health assessment criteria were not derived as diphenylguanidine was not considered to present a significant risk to human health via the pathways modelled.

Baseline concentrations prior to remediation were defined as <5-456µg/l, based on measured concentrations in the 30 validation monitoring wells from across Back Plot B (<5-306µg/l measured across DRA 18 and <5-456µg/l measured in the five target validation wells in the remainder of the site). Post remediation, measured concentrations in the 25 DRA 18 target validation wells during the four validation monitoring visits were <5-123µg/l (<5-110µg/l measured during the most recent monitoring visit) and <5-41µg/l (<5µg/l measured during the most recent monitoring visit) in the five target validation wells in the remainder of the site. This is supported by the annual average trend graph for chloroform (Appendix E2) which shows a generally decreasing trend until remediation completion.

Outside of the 30 target validation monitoring well, measured concentrations of diphenylguanidine were <5 - 206µg/l (<5µg/l during most recent monitoring only). Measured concentrations of diphenylguanidine above the laboratory MDL of 5µg/l were only reported in 11 out of the total 56 validation monitoring wells across the site during the most recent monitoring. As presented on Figure 11, measured diphenylguanidine concentrations are generally towards the centre and east of the site (DRA 18).

The target percentage reduction as defined in performance criteria Condition 1 has been achieved (applicable to DRA4 and DRA 10). Based on the distribution of measured concentrations, the generally stable or decreasing trend in measured diphenylguanidine concentrations and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2 and 4, that a risk to the identified receptors is not present and Condition 3 and 5, that additional remediation works are not justified.

Diphenylguanidine - Baseline

Diphenylguanidine - Final Validation (December 2015)

Diphenylguanidine Defined Baseline Concentrations (µg/l)	September to December 2015 Diphenylguanidine Measured Validation Well Concentrations (µg/l)	September to December 2015 Diphenylguanidine Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction (excluding DRA 18)	Percentage Reduction (DRA 18)
<5-456	<5-123	<5	>99%	60% / 69%*

* Based on maximum measured concentration during remediation

Ethylbenzene

Remediation undertaken in the areas for which ethylbenzene was a target compound included and SVE (DRA 15), commence in 2014. Contaminant mass removal was demonstrated by SVE (Appendix E1) and a total ethylbenzene removal mass by these techniques of 0.02kg was calculated based on DRA 15.

The overall percentage reduction targets for ethylbenzene of 70% or greater has been met, averaged over the network of two validation monitoring wells for ethylbenzene. All measured concentrations during validation monitoring are below the human health assessment criteria.

Baseline concentrations prior to remediation were defined as 601-949µg/l, based on measured concentrations in the validation monitoring wells. During validation monitoring, sampling was undertaken in one out of the two target validation wells as target validation monitoring well HBH011WSA was found to be dry. Monitoring well HBH315BAE is located in close vicinity to monitoring well HBH011WSA (within 5m) and has also been sampled during validation monitoring. The most recent measured ethylbenzene concentration in HBH315BAE is <0.5µg/l (maximum 16µg/l measured during four rounds of validation monitoring). Post remediation, measured concentrations in the remaining single validation well during the four validation monitoring visits were <0.5-52µg/l (<0.5µg/l for the most recent monitoring, September to December 2015).

Whilst a reduction in concentration is demonstrated by comparing baseline data to validation data, it is noted that the annual average trend graph for ethylbenzene (Appendix E2) shows an increasing trend in measured concentrations between 2013 up to 2014. This is primarily attributed to the inclusion of monitoring well AS6BH003 as a monitoring well, which until 2014 had not been routine monitored and is the location where maximum measured concentrations have historically been reported (maximum of 4,130µg/l measured in 2014, 3,230µg/l measured during the most recent round of monitoring in December 2015).

As presented on Figure 12, the current maximum measured concentrations are generally located to the west of the centre of Back Plot B (maximum of 3,230µg/l in monitoring well AS6BH003, a non-target validation monitoring well for ethylbenzene, located to the west of the centre of the site). Based on a generally southerly flow direction, measured concentrations in down gradient wells including monitoring well AS5BH002 (approximately 25m down gradient, off set 15m to the west) shows a decrease to <0.5µg/l, indicating that the risk to down gradient receptors reduces with distance. Measured concentrations along the downgradient, southern site boundary are a maximum of 17.5µg/l (Monitoring well AS4BH052, located towards the centre of the site).

Ethylbenzene was considered in the DQRA undertaken (Arcadis report ref: 928873302, July 2011) to have moderate potential for biodegradation (half-life of 200 days modelled). As such, the concentrations measured during the validation monitoring over a period of approximately 1 year are considered to represent a generally decreasing trend.

The target percentage reduction as defined in performance criteria Condition 1 has been achieved. Based on the distribution of measured concentrations, the generally decreasing trend in measured ethylbenzene concentrations, the potential for further biodegradation to occur and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Ethylbenzene - Baseline

Ehtylbenzene - Final Validation (December 2015)

< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Ethylbenzene Defined Baseline Concentrations (µg/l)	September to December 2015 Ethylbenzene Measured Validation Well Concentrations (µg/l)	September to December 2015 Ethylbenzene Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
601-949	<0.5	0.5-3,2303	>99%

Ketoprofen

Remediation undertaken in the areas for which ketoprofen was a target compound included SVE (DRA 15), ISCO (DRA 10 and RPA 2) and groundwater pumping (DRA 4, DRA 6, DRA 10 and RPA 2). ISCO and groundwater pumping were the primary technique by which ketoprofen mass reduction was targeted. Contaminant mass removal was demonstrated by groundwater pumping (Appendix E1) and a total ketoprofen removal mass by these techniques of 0.034kg was calculated based on DRA 4, DRA 6, DRA 10 and RPA 2 (note, DRA 4, DRA 6 and RPA 2 mass removal also includes areas outside of Back Plot B). Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

The overall percentage reduction target for ketoprofen (70% for DRA and 90% for RPA) has been met or exceeded, averaged over the network of 16 validation monitoring wells for ketoprofen. Human health assessment criteria were not derived as ketoprofen was not considered to present a significant risk to human health via the pathways modelled.

Baseline concentrations prior to remediation were defined as 11-613µg/l based on measured concentrations in the 16 validation monitoring wells. Post remediation, measured concentrations in the validation wells during the four validation monitoring visits were <10-280µg/l (<10µg/l measured during the most recent round of validation monitoring in September to December 2015). This is supported by the annual average trend graph for ketoprofen (Appendix E2) which shows a generally decreasing trend until remediation completion.

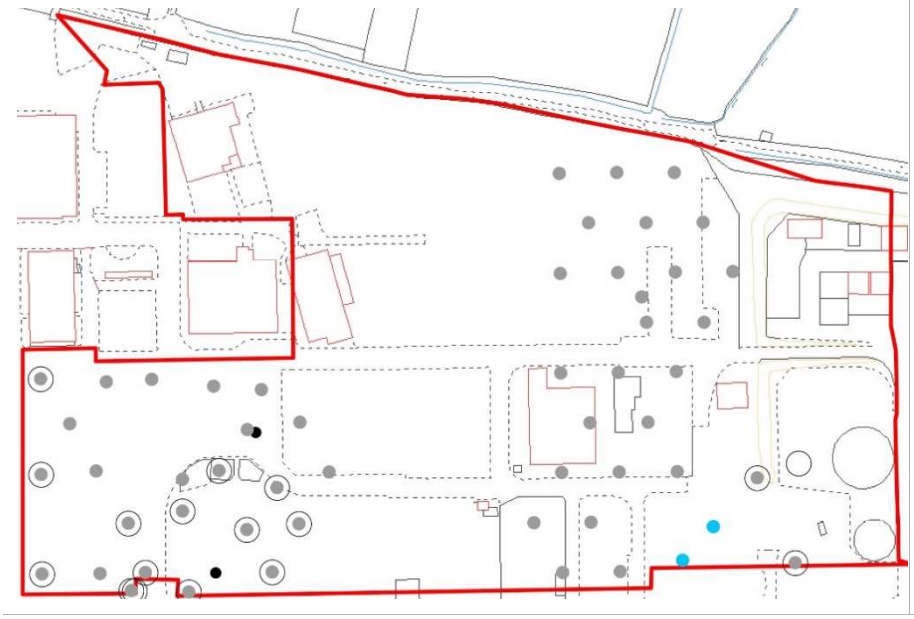
Outside of the 16 validation monitoring well, measured concentrations of ketoprofen were <10 - 303µg/l (maximum measured during most recent monitoring). As presented on Figure 13, concentrations were measured above the laboratory MDL in two out of the 56 validation monitoring wells only, both located in the southwest corner of the site.

Ketoprofen was considered in the DQRA undertaken (Arcadis report ref: 928873302, July 2011) to have a low potential for biodegradation (half-life of 1,825 days modelled). As such, the concentrations measured during the validation monitoring over a period of approximately 1 year are considered to represent stable conditions. 3-Ethylbenzophenone is a related degradation product of ketoprofen which has also been monitored to provide further assurance. Maximum concentrations of 3-ethylbenzophenone of 280µg/l were measured during the four validation monitoring visits undertaken (125µg/l during the most recent, September to December 2015).

The target percentage reduction as defined in performance criteria Condition 1 has been achieved. Based on the distribution of measured concentrations, the generally stable or decreasing trend in measured ethylbenzene concentrations and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Ketoprofen - Baseline

Ketoprofen - Final Validation (December 2015)



Ketoprofen Defined Baseline Concentrations (µg/l)	September to December 2015 Ketoprofen Measured Validation Well Concentrations (µg/l)	September to December 2015 Ketoprofen Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
11-613	<10	303	>99%

N-1,2-Pyridyl Sulphanilamide

Remediation undertaken in the areas for which n-1,2-pyridyl sulphanilamide was a target compound included SVE (DRA 15), ISCO (DRA 10) and groundwater pumping (DRA 4, DRA 10, DRA 6 and DRA 18). ISCO and groundwater pumping were the primary technique by which n-1,2-pyridyl sulphanilamide mass reduction was targeted. Contaminant mass removal was demonstrated by groundwater pumping (Appendix E1) and a total n-1,2-pyridyl sulphanilamide removal mass by these techniques of 12.49kg was calculated based on DRA 4, DRA 6, DRA 10 and DRA 18 (note, DRA 4 [7.36kg calculated mass removal] mass removal also includes areas outside of Back Plot B). Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

An overall percentage reduction for n-1,2-pyridyl sulphanilamide of 63% has been calculated against the validation baseline data, averaged over the network of 14 validation monitoring wells for n-1,2-pyridyl sulphanilamide outside of DRA 18. Based on the higher post baseline concentrations measured in some wells following remediation works, additional lines of evidence must be considered when assessing remediation performance. Based on maximum concentrations measured during remediation works, a percentage reduction of 78% is calculated for n-1,2-pyridyl sulphanilamide.

Within DRA 18, measured concentrations compared to the baseline have decreased by 59%, averaged over the 25 monitoring wells present. When maximum concentrations measured during remediation are considered, a percentage reduction of 60% is calculated within DRA 18.

Baseline concentrations prior to remediation were defined as 27-14,390µg /l, based on measured concentrations in the 38 validation monitoring wells from across Back Plot B (190-11,976µg/l measured across DRA 18 and 27-14,390µg/l measured in the 14 target validation wells in the remainder of the site). Post remediation, measured concentrations in the 25 DRA 18 target validation wells during the four validation monitoring visits were <5-4,260µg/l (maximum measured during the most recent monitoring visit) and <5-8,410µg/l (maximum measured during the most recent monitoring visit) in the 13 target validation wells in the remainder of the site. This is supported by the annual average trend graph for n-1,2-pyridyl sulphanilamide (Appendix E2) which shows a generally decreasing trend until remediation completion.

Outside of the 38 validation monitoring wells, measured concentrations of n-1,2-pyridyl sulphanilamide were <5 – 3,350µg/l (maximum measured during most recent monitoring only).

As presented on Figure 14, low measured concentrations of for n-1,2-pyridyl sulphanilamide are present across Back Plot B. The current maximum concentration of 8,410µg/l, measured in n-1,2-pyridyl sulphanilamide target validation monitoring well AS4BH027, is located in the west of Back Plot B. Down gradient measured concentrations in monitoring wells AS4BH028 and AS4BH034 are 367µg/l and 23µg/l respectively, indicating that the area associated with the maximum measured concentration is localised.

Based on the overall percentage reduction achieved, the distribution of measured concentrations, the stable or decreasing trends reported and the demonstrated mass recovery achieved to date, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2 and 4, that a risk to the identified receptors is not present and Conditions 3 and 5, that additional remediation works are not justified.

N-1,2-pyridyl sulphanilamide - Baseline

N-1,2-pyridyl sulphanilamide - Final Validation (December 2015)

N-1,2-pyridyl sulphanilamide Defined Baseline Concentrations (µg/l)	September to December 2015 N-1,2-pyridyl sulphanilamide Measured Validation Well Concentrations (µg/l)	September to December 2015 N-1,2-pyridyl sulphanilamide Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
27-14,390	<5-8,410	<5 – 3,350	63% / 78%*

* Based on maximum measured concentration during remediation

Pentobarbital

Remediation undertaken in DRA 18, for which pentobarbital was a target compound, included groundwater pumping. Contaminant mass removal was demonstrated by groundwater pumping (Appendix E1) and a total pentobarbital removal mass by this technique of 0.079kg was calculated.

A percentage reduction for pentobarbital of 37% can be demonstrated against measured baseline concentrations, averaged over the network of 25 validation monitoring wells for pentobarbital, all of which are located within DRA 18. Human health assessment criteria were not derived as pentobarbital was not considered to present a significant risk to human health via the pathways modelled.

Baseline concentrations prior to remediation were defined as 11-689µg/l, based on measured concentrations in the 25 validation monitoring wells from across Back Plot B. Post remediation, measured concentrations in the 25 target validation wells during the four validation monitoring visits were <10-380µg/l (maximum measured during the most recent monitoring visit). This is supported by the annual average trend graph for chloroform (Appendix E2) which shows a generally decreasing trend until remediation completion.

Outside of the 25 target validation monitoring well, measured concentrations of pentobarbital were <10 – 2,970µg/l (<10-2,770µg/l measured during most recent monitoring only).

Measured concentrations above the laboratory MDL were distributed through the majority of validation monitoring wells during the most recent round of monitoring in September to December 2015 (45 out of 56 wells). Measured concentrations were generally less than 200µg/l and distributed across the site. As presented on Figure 15, the maximum measured concentration during the most recent monitoring of 2,770µg/l was measured in monitoring well AS8BH099, located in the southeast of the site (next highest measured of 164µg/l in monitoring well AS4BH052, located near the southern site boundary, to the west of the centre of the site). Based on the contaminant distribution measured, the maximum concentration appears to be localised. The risk to down gradient receptors appears to reduce with distance based on the down gradient measured concentrations in monitoring well AS8BH098A (approximately 25m southeast and generally down gradient assuming a generally southerly groundwater flow).

Based on the distribution of measured concentrations, the generally stable or decreasing trend in measured pentobarbital concentrations and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 4, that a risk to the identified receptors is not present and Condition 5, that additional remediation works are not justified.

Pentobarbital - Baseline

Pentobarbital - Final Validation (December 2015)

< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Pentobarbital Defined Baseline Concentrations (µg/l)	September to December 2015 Pentobarbital Measured Validation Well Concentrations (µg/l)	September to December 2015 Pentobarbital Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction (DRA 18)
11-689	<10-380	<10-2,770	37%

Sulphamethizole

Remediation undertaken in the areas for which sulphamethizole was a target compound included groundwater pumping (DRA 4, DRA 6 and DRA 10), ISCO (DRA 10) and SVE (DRA 15).

Groundwater pumping and ISCO were the primary technique by which sulphamethizole mass reduction was targeted. Contaminant mass removal was demonstrated by groundwater pumping (Appendix E1) and a total sulphamethizole removal mass of 0.66kg was calculated based on DRA 4, DRA 6 and DRA 10 (Note, DRA 4 and DRA 6 mass removal also includes areas outside of Back Plot B). Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

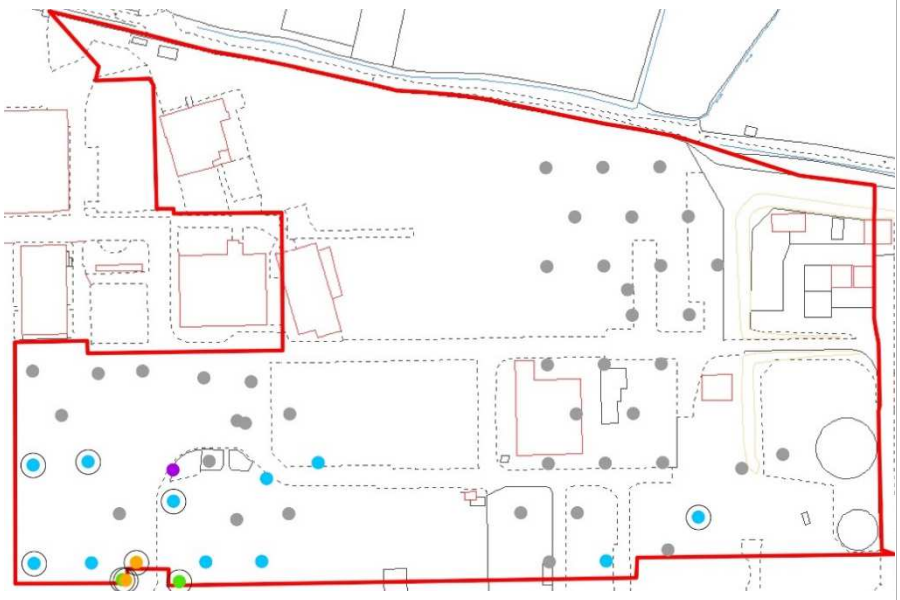
The overall percentage reduction targets for sulphamethizole of 70% have been met or exceeded, averaged over the network of eight validation monitoring wells for sulphamethizole. Human health assessment criteria were not derived as sulphamethizole was not considered to present a significant risk to human health via the pathways modelled.

Baseline concentrations prior to remediation were defined as 33-1,159µg/l, based on measured concentrations in the validation monitoring wells. Post remediation, measured concentrations in the eight validation wells during the four validation monitoring visits were <5-679µg/l (<5-376µg/l for the most recent monitoring in September to December 2015). This is supported by the annual average trend graph for sulphamethizole (Appendix E2) which shows a generally decreasing trend until remediation completion.

Outside of the nine validation monitoring wells, measured concentrations of sulphamethizole were <5-249µg/l, measured during the four rounds of validation monitoring (<5-203µg/l for most recent monitoring only) (Figure 16).

The target percentage reduction as defined in performance criteria Condition 1 has been achieved. Based on the distribution of measured concentrations, the generally stable or decreasing trend in measured sulphamethizole concentrations and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Sulphamethizole - Baseline



Sulphamethizole - Final Validation (December 2015)

< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Sulphamethizole Defined Baseline Concentrations (µg/l)	September to December 2015 Sulphamethizole Measured Validation Well Concentrations (µg/l)	September to December Sulphamethizole Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
33-1,159	<5-376	<5-203	81%

Sulphthiazole

Remediation undertaken in the areas for which sulphathiazole was a target compound included groundwater pumping (DRA 4, DRA 6 and DRA 18) and SVE (DRA 15).

Groundwater pumping was the primary technique by which sulphathiazole mass reduction was targeted. Contaminant mass removal was demonstrated by groundwater pumping (Appendix E1) and a total sulphathiazole removal mass by this technique of 1.65kg was calculated based on DRA 4, DRA 6 and DRA 18 (0.37kg from DRA 18 alone). Note, DRA 4 and DRA 6 mass removal also includes areas outside of Back Plot B.

The overall percentage reduction targets for sulphthiazole of 70% or greater has been met, averaged over the network of 13 validation monitoring wells for sulphthiazole outside of DRA 18. Within DRA 18, measured concentrations compared to the baseline have decreased by 67%, averaged over the 25 monitoring wells present. When maximum concentrations measured during remediation are considered, a percentage reduction of 74% is calculated within DRA 18.

Human health assessment criteria were not derived as sulphthiazole was not considered to present a significant risk to human health via the pathways modelled.

Baseline concentrations prior to remediation were defined as 6-2,487µg/l, based on measured concentrations in the 37 validation monitoring wells from across Back Plot B (6-1,661µg/l measured across DRA 18 and 17-2,487µg/l measured in the 12 target validation wells in the remainder of the site). Post remediation, measured concentrations in the 25 DRA 18 target validation wells during the four validation monitoring visits were <5-1,020µg/l (<5-842µg/l measured during the most recent monitoring visit) and <5-1,140µg/l (<5-524µg/l measured during the most recent monitoring visit) in the 12 target validation wells in the remainder of the site.

Whilst a reduction in measured concentration is demonstrated by comparing baseline data to validation data, it is noted that the annual average trend graph for sulphthiazole (Appendix E2) shows an increasing trend in measured concentrations between 2012 up to 2014. In 2014, DRA 18 groundwater pumping commenced and the baseline concentrations for remediation were defined. The period of 2012 to 2014 follows the cessation in 2012 of the former D44 Landfill remediation works in the area of DRA 18. The measured increase is attributed to the installation of a greater number of new wells within the backfill material in this area and the equilibration of associated residual contaminant mass.

Outside of the 37 target validation monitoring wells, measured concentrations of sulphthiazole were <5 - 979µg/l (<5-530µg/l during most recent monitoring only). As presented on Figure 17, measured sulphthiazole concentrations are generally towards west of the site.

The target percentage reduction as defined in performance criteria Condition 1 has been achieved (applicable to DRA4 and DRA 10). Based on the distribution of measured concentrations, the generally stable or decreasing trend in measured sulphathiazole concentrations and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2 and 4, that a risk to the identified receptors is not present and Condition 3 and 5, that additional remediation works are not justified.

Sulphathiazole- Baseline

Sulphathiazole - Final Validation (December 2015)

< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Sulphathiazole Defined Baseline Concentrations (µg/l)	September to December 2015 Sulphathiazole Measured Validation Well Concentrations (µg/l)	September to December Sulphathiazole Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction (excluding DRA 18)	Percentage Reduction (DRA 18)
6-2,487	<5-842	<5-530	83%	67% / 74%*

* Based on maximum measured concentration during remediation

Toluene

Remediation undertaken in the areas for which toluene was a target compound included ISCO (DRA 16) and SVE (DRA 13 and DRA 16).

Contaminant mass removal was demonstrated by SVE (Appendix E1) and a total toluene removal mass by these techniques of 0.82kg was calculated based on DRA 13 and DRA 15. Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

The overall percentage reduction targets for toluene of 70% or greater has been met, averaged over the network of three validation monitoring wells. All measured concentrations during validation monitoring are below the human health assessment criteria.

Baseline concentrations prior to remediation were defined as 3,216-57,029µg/l, based on measured concentrations in the validation monitoring wells. Post remediation, measured concentrations in the three validation wells during the four validation monitoring visits were <0.5-683µg/l (<0.5-182µg/l for the most recent monitoring in December 2015).

Outside of the three validation monitoring wells, measured concentrations of toluene were <0.5 – 4,870µg/l (<0.5µg/l – 2,780µg/l during most recent monitoring only).

Toluene was considered in the DQRA undertaken (Arcadis report ref: 928873302, July 2011) to have moderate potential for biodegradation (half-life of 200 days modelled). As such, the concentrations measured during the validation monitoring over a period of approximately 1 year are considered to represent a generally decreasing trend.

As presented on Figure 18, the current maximum measured concentration is located towards the centre of Back Plot B (maximum of 2,780µg/l in monitoring well AS6BH003). No further concentrations above 500µg/l were measured, compared with four concentrations greater than 1,000µg/l measured during the defined baseline (measured concentrations in monitoring well AS4BH044 where maximum value of 58,059µg/l was reported has reduced to 182µg/l). Based on a generally southerly flow direction, measured concentrations along the down gradient site boundary are 14.3µg/l (monitoring well AS4BH040A).

Whilst a reduction in concentration is demonstrated by comparing baseline data to validation data, it is noted that the annual average trend graph for toluene (Appendix E2), shows a spike in maximum measured concentrations in 2014. This increase is due to monitoring well AS4BH038 where maximum measured concentrations in 2014 were 67,700µg/l. This corresponds with the start of SVE remediation works in this area and measured concentrations have remained below the laboratory MDL during validation monitoring after remediation works were completed.

The target percentage reduction as defined in performance criteria Condition 1 has been achieved. Based on the distribution of measured concentrations, the generally decreasing trend in measured toluene concentrations, the potential for further biodegradation to occur and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Back Plot B – Validation Report

Toluene- Baseline

Toluene - Final Validation (December 2015)

< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Toluene Defined Baseline Concentrations (µg/l)	September to December 2015 Toluene Measured Validation Well Concentrations (µg/l)	September to December 2015 Toluene Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
3,216-57,029	<0.5-182	<0.5µg/l – 2,780	>99%

Trichloroethene

Remediation undertaken in the areas for which trichloroethene was a target compound included groundwater pumping (RPA 2), ISCO (DRA 16 and RPA 2) and SVE (DRA 13). DNAPL removal via low flow pumping was also undertaken in DRA 16, during which 7.3 litres of product was removed (product typing identified the composition was 91% trichloroethene).

Contaminant mass removal was demonstrated by groundwater pumping and SVE (Appendix E1) and a total trichloroethene removal mass by these techniques of 26.1kg was calculated based on RPA 2 and DRA 13. Note, RPA 2 mass removal also includes areas outside of Back Plot B (0.2557kg for DRA 13 alone). Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

Baseline concentrations prior to remediation were defined as 73-7,696µg/l based on measured concentrations in the validation monitoring wells. Post remediation, measured concentrations in the three validation wells during the most recent validation monitoring visit were <10-2,550µg/l (136-1,890µg/l for the most recent monitoring). Outside of the three validation monitoring wells, measured concentrations of trichloroethene were <10 – 116,000µg/l (<10-61,400µg/l measured during most recent monitoring only).

The overall percentage reduction targets for trichloroethene for DRA of 70% have been met or exceeded, averaged over the two DRA validation monitoring wells for trichloroethene. For RPA, the percentage reduction calculated in the single validation monitoring well in RPA 2 of 71% was marginally below the target of 80%. However, actual measured concentrations were relatively low compared to the rest of the site (21µg/l during most recent monitoring). The majority of trichloroethene mass within RPA 2 is considered to be outside of (hydraulically down gradient based on a southerly flow direction) Back Plot B. As such, comparison to an 80% reduction target for this single monitoring well is not considered applicable and further lines of evidence are required in order to validate successful remediation in the area of RPA 2.

Measured concentrations during validation monitoring are below the human health assessment criteria protective of future on-site commercial workers though concentrations in AS6BH072 do exceed human health assessment criteria for neighbouring residents. However, these concentrations are not considered to present a risk to off-site human health receptors as none of the concentrations in monitoring wells down-gradient (results presented below from additional monitoring undertaken) including those along the southern site boundary exceed the human health assessment criteria protective of neighbouring residents.

Contaminant	Trichloroethene				
	01/04/2015	12/05/2015	16/06/2015	21/07/2015	MAX
AS4BH044	1,510	**2,550**	**1,900**	1,450	**2,550**
AS4BH050	34	32	39	36	39
AS6BH072*	**161,000**	**116,000**	**112,000**	**112,000**	**161,000**
AS4BH103	3	4	3	6	6
AS4BH104	3	3	3	3	3
AS4BH106	13	23	12	6	23
AS6BH027	28	22	7	10	28
AS6BH029	162	63	92	191	191
AS6BH033	**2,430**	3	3	12	**2,430**
AS6BH035	13	4	3	14	14

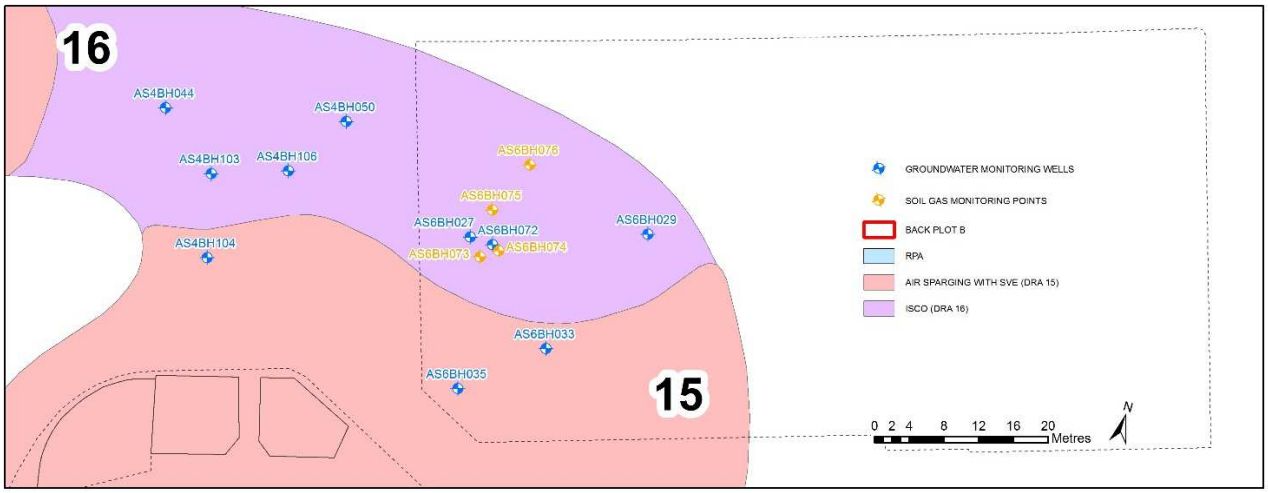
Notes:

1.23 Exceeds human health SSAC for neighbouring residents (1,780 ug/l)

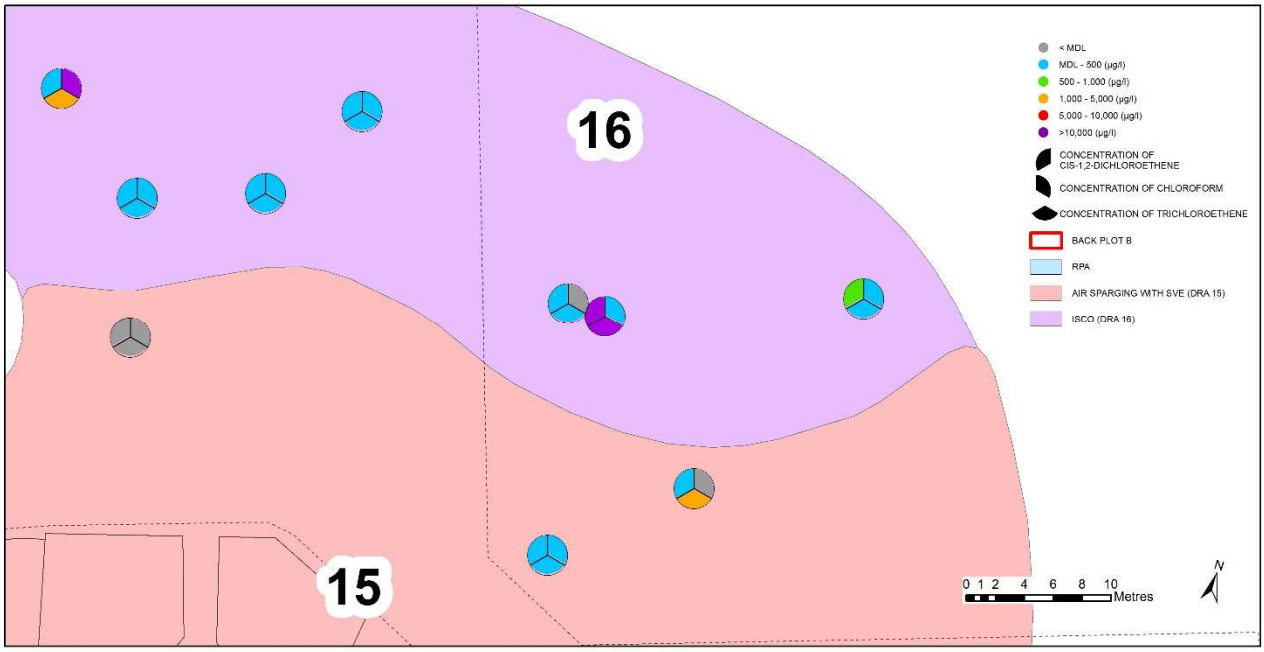
* AS6BH072 replaced AS6BH001 in March 2015

The results of the additional groundwater monitoring listed above are considered to provide evidence that the measured trichloroethene concentrations in monitoring well AS6BH072 are localised. A CoC distribution dot plot of the additional information is present below.

Due to the localised nature of the contamination and in view of when the contamination is likely to have occurred the impacts in AS6BH072 are considered unlikely to present a future risk to off-site receptors via groundwater migration.



Groundwater Monitoring Well and Soil Gas Point Layout Plan



Measured Cis-1,2-dichloroethene, Chloroform and Trichloroethene Concentrations in Groundwater

As presented on Figure 19, the maximum measured concentration during the most recent validation monitoring of 61,400µg/l was measured in monitoring well AS6BH072, located to the west of the centre of the site (next highest measured of 1,890µg/l in monitoring well AS4BH044, located approximately 40m to the northwest of the maximum measured).

Trichloroethene was considered in the DQRA undertaken (Arcadis report ref: 928873302, July 2011) to have moderate potential for biodegradation (half-life of 1,653 days modelled). Trichloroethene is known to form cis-1,2-dichloroethene, which in turn may form vinyl chloride, primarily via an anaerobic degradation process. Based on the generally stable cis-1,2-dichloroethane concentrations observed following completion of

remediation, stable or decreasing vinyl chloride concentrations and the generally aerobic conditions present, degradation of trichloroethene is considered unlikely to increase cis-1,2-dichloroethene or vinyl chloride concentrations such that human health SSAC are exceeded. Trend graphs for vinyl chloride are presented in Appendix E2, showing a generally decreasing trend.

In order to provide further evidence that a potentially unacceptable risk to human health receptors via the inhalation pathway is not present, a detailed pathway assessment has been undertaken via soil gas sampling and the results presented below.

Measured Soil Gas Concentrations and Comparison to SSAC (mg/m3)

Contaminant	Trichlorethene			
	20/05/2015	15/06/2015	09/07/2015	25/07/2015
AS6BH073	26	23	494	38
AS6BH074	75	164	193	49
AS6BH075	452	294	283	73
AS6BH076	1,590	498	198	60

Notes:

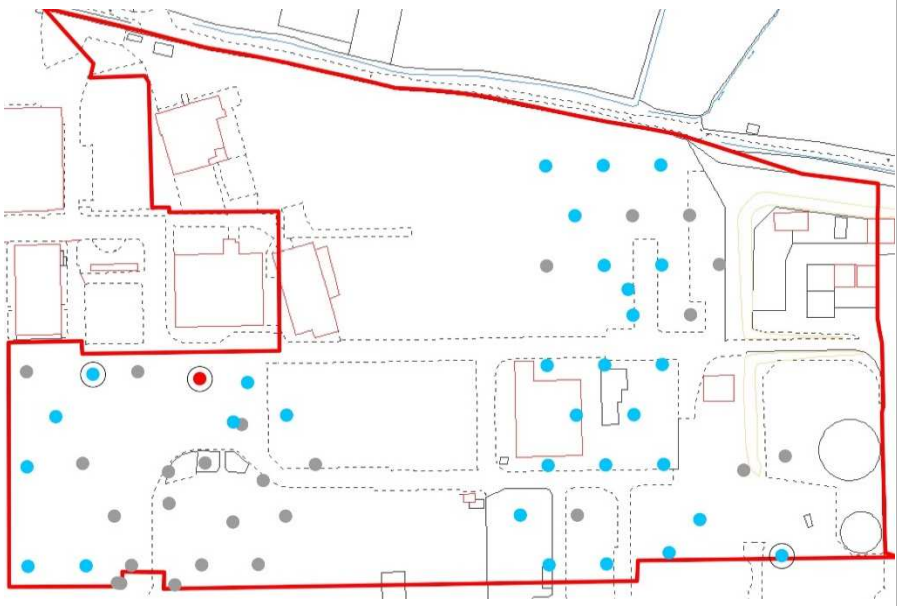
1.23 Exceeds human health SSAC (5,570 mg/m3)

The assessment undertaken concludes that a significant risk to future on-site commercial workers is not present via the vapour inhalation pathway.

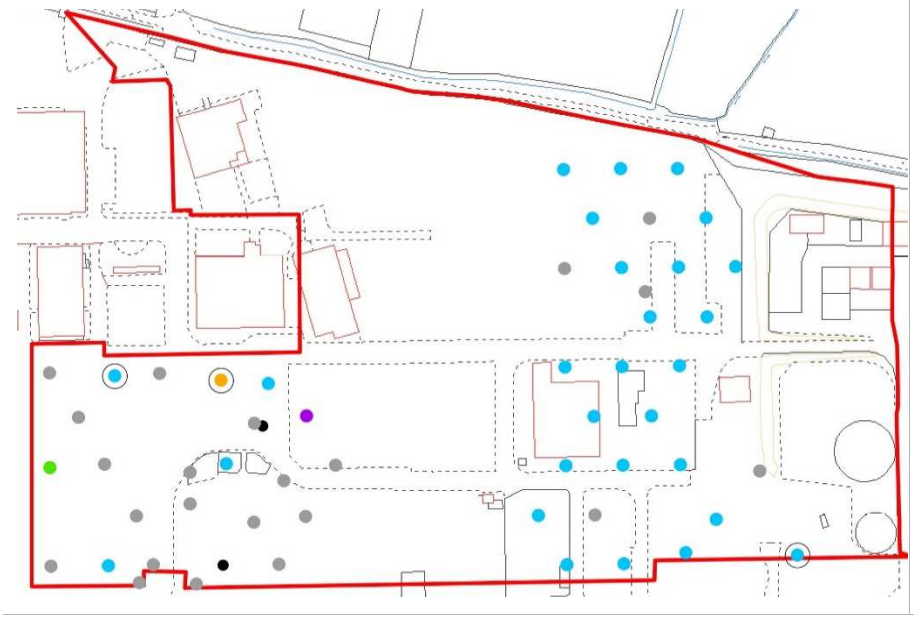
With the exception of RPA 2 where actual measured concentrations are relatively low, the target percentage reduction as defined in performance criteria Condition 1 has been achieved. Additional investigative works have been undertaken in the vicinity of AS6BH072 (a non-target validation well for trichloroethene) which concluded that measured concentrations did not present a significant risk to down gradient groundwater quality or to human health receptors.

Based on the distribution of measured concentrations, the generally stable or decreasing trend in measured trichloroethene concentrations and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Trichloroethene- Baseline



Trichloroethene - Final Validation (December 2015)



< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Trichloroethene Defined Baseline Concentrations (µg/l)	September to December 2015 Trichloroethene Measured Validation Well Concentrations (µg/l)	September to December 2015 Trichloroethene Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
73-7,696	136-1,890	<10-61,400	74%

Vinyl Chloride

Remediation undertaken in the areas for which vinyl chloride was a target compound included groundwater pumping (DRA 4 and DRA 10), ISCO (DRA 10) and SVE (DRA 15).

Contaminant mass removal was demonstrated by groundwater pumping and SVE (Appendix E1) and a total vinyl chloride removal mass by these techniques of 0.88kg was calculated based on DRA 4, DRA 10 and DRA 15 (Note, DRA 4 mass removal also includes areas outside of Back Plot B). Reagent distribution monitoring undertaken during ISCO confirmed that distribution was achieved to the validation wells (Appendix E3).

The overall percentage reduction targets for vinyl chloride of 70% have been met or exceeded, averaged over the network of eight validation monitoring wells for vinyl chloride. All measured concentrations during validation monitoring are below the human health assessment criteria.

Baseline concentrations prior to remediation were defined as 108-6,769µg/l, based on measured concentrations in the validation monitoring wells. Post remediation, measured concentrations in the eight validation wells during the four validation monitoring visits were <0.1-334µg/l (maximum measured during the most recent monitoring in December 2015). This is supported by the annual average trend graph for chloroform (Appendix E2) which shows a generally decreasing trend until remediation completion.

Outside of the nine validation monitoring wells, measured concentrations of vinyl chloride were <0.1-3,900µg/l, measured during the four rounds of validation monitoring (<0.1-2,020µg/l for most recent monitoring only). As presented on Figure 20, the current maximum concentration was measured in monitoring well AS8BH099, located in the east Back Plot B.

Vinyl chloride was considered in the DQRA undertaken (Arcadis report ref: 928873302, July 2011) to have a moderate potential for biodegradation (half-life of 100 days modelled). As such, the concentrations measured during the validation monitoring over a period of approximately 1 year are considered to represent a generally decreasing trend.

The target percentage reduction as defined in performance criteria Condition 1 has been achieved. Based on the distribution of measured concentrations, the generally decreasing trend in measured vinyl chloride concentrations, the potential for further biodegradation to occur and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Vinyl Chloride- Baseline

Vinyl Chloride - Final Validation (December 2015)

< MDL
MDL - 500 µg/l
500 - 1,000 µg/l
1,000 - 5,000 µg/l
5,000 - 10,000 µg/l
> 10,000 µg/l
DRY WELL
TARGET COMPOUND FOR THIS WELL
BACK PLOT B

Vinyl Chloride Defined Baseline Concentrations (µg/l)	September to December 2015 Vinyl Chloride Measured Validation Well Concentrations (µg/l)	September to December 2015 Vinyl Chloride Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
108-6,769	0.1-334	0.1-2,020	90%

Xylenes

Remediation undertaken in the areas for which xylenes were a target compound comprises SVE (DRA 15). Contaminant mass removal was demonstrated by SVE (Appendix E1) and a total xylenes removal mass by this technique of 0.08 kg was calculated based on DRA 15.

No measured concentrations of xylenes in the single validation monitoring well for xylene were collected during validation monitoring as the well was dry throughout the validation monitoring. As such, a percentage mass reduction cannot be calculated in accordance with the validation plan and so xylenes have also been assessed via Conditions 2 and 3.

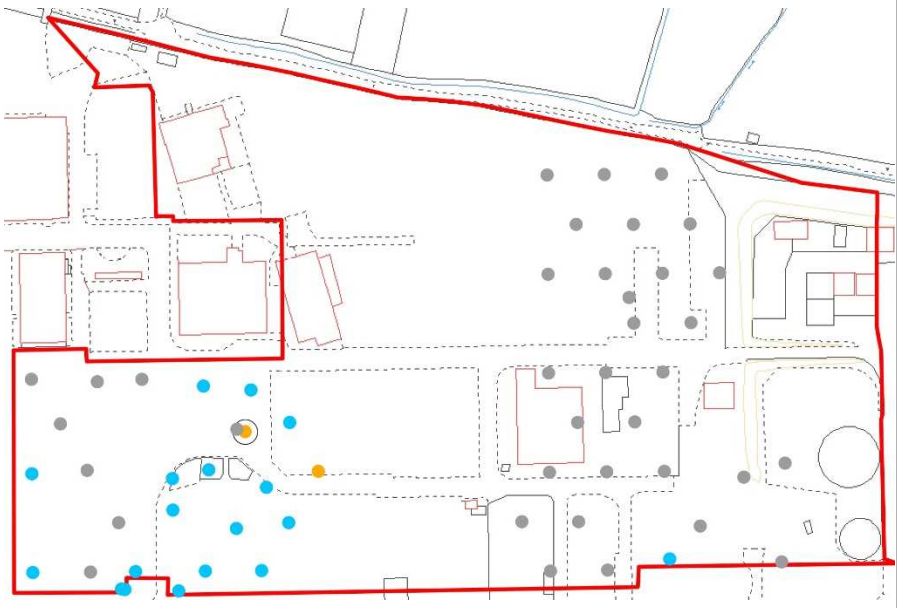
Baseline concentrations prior to remediation were defined as <0.5-1,109µg/l, based on measured concentrations in the single validation monitoring well. Outside of the single validation monitoring wells, measured concentrations of xylene were <0.5-8,718µg/l, measured during the four post remediation rounds of validation monitoring (<0.5-6,703µg/l for most recent monitoring only). As presented on Figure 21, the current maximum concentration was measured in monitoring well AS6BH003, located in the centre of Back Plot B and no further measured concentrations are greater than 500µg/l. Baseline data presented on Figure 21 shows that two adjacent measured concentrations were in excess of 1,000µg/l, indicating a reduction in source area size based on the current data set. Measured concentrations in monitoring well AS6BH003 are considered to represent a generally stable or decreasing trends during the four rounds of validation monitoring (Appendix E5).

Whilst a reduction in source area size is demonstrated by comparing baseline data to validation data, it is noted that the annual average trend graph for xylenes (Appendix E2) shows an increasing trend in measured concentrations between 2013 up to 2015. This is primarily attributed to the inclusion of monitoring well AS6BH003 as a monitoring well, which until 2014 had not been routinely monitored and is the location where maximum measured concentrations have historically been reported (maximum of 8,718µg/l measured in 2015, 6,703µg/l measured during the most recent round of monitoring in December 2015).

Xylenes were considered in the DQRA undertaken (Arcadis report ref: 928873302, July 2011) to have a moderate potential for biodegradation (half-life of 200 days modelled) As such, the concentrations measured during the validation monitoring over a period of approximately 1 year are considered to represent a generally decreasing trend. Xylene concentrations in groundwater are not considered to present a significant risk to human health via the available exposure pathways.

Based on the distribution of measured concentrations, the generally decreasing trend in measured xylenes concentrations, the potential for further biodegradation to occur and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 2, that a risk to the identified receptors is not present and Condition 3, that additional remediation works are not justified.

Xylenes - Baseline



Xylenes - Final Validation (December 2015)

Xylenes Defined Baseline Concentrations (µg/l)	September to December 2015 Xylenes Measured Validation Well Concentrations (µg/l)	September to December 2015 Xylenes Non-Target Well Concentrations (µg/l)	Overall Percentage Reduction
1,109	Data not available*	<0.5-6,703	Unable to calculate

* Unable to sample due to localised surface water flooding in the location of the single validation monitoring well HBH011WSA.

Elemental Mercury

Soil samples were collected from unsaturated soils from four locations across Back Plot B at sample depths of 0.5, 1.0 and 1.5m and scheduled for total and elemental mercury analysis. The results of the laboratory analysis and sample locations are presented in Appendix E6 and indicate that measured concentrations do not exceed the human health SSAC. Additionally, the majority of mercury is not present in elemental form, the species presenting the highest risk upon which SSAC are based. Maximum elemental mercury concentrations are 0.004mg/kg, compared with a corresponding total mercury concentration of 45mg/kg. As such, the evidence presented in this report is considered to confirm the conclusion in the validation plan (Arcadis report ref: 25723106, August 2015) that no remediation of unsaturated soil for elemental mercury is required.

Sum site specific pharmaceutical compounds and VOCs (DRA 18 Only)

A percentage reduction for sum site specific pharmaceutical compounds of 53% and of 84% sum VOC can be demonstrated against measured baseline concentrations, averaged over the network of 25 validation monitoring wells located within DRA 18.

Baseline concentrations prior to remediation were defined as 921-12,166µg/l (sum site specific pharmaceutical compounds) and 1-6,510µg/l (sum VOC), based on measured concentrations in the 25 validation monitoring wells from across DRA 18. Post remediation, measured concentrations in the 25 validation wells during the most recent validation monitoring visit was 22-4,343µg/l (sum site specific pharmaceutical compounds) and 4-461µg/l (sum VOC).

Remediation undertaken in DRA 18 included groundwater pumping. Contaminant mass removal was demonstrated (Appendix E1) and a total removal mass by this technique of 3.9kg sum site specific pharmaceutical compounds and 2.1kg sum VOC was calculated.

Based on the generally stable or decreasing trend in measured concentrations and the mass removal demonstrated, the residual risk relating to contaminant mass does not warrant further remediation. As such, no further work is considered to be required in relation to Conditions 4, that a risk to the identified receptors is not present and Condition 5, that additional remediation works are not justified.

Sum CoC Group	Defined Baseline Concentrations (µg/l)	September to December 2015 Measured Validation Well Concentrations (µg/l)	Overall Percentage Reduction (DRA 18)
Sum VOC	1-6,510	4-461	84%
Sum site specific pharmaceutical compounds	921-12,166	22-4,343	53%

APPENDIX H

Chloroform, Cis-1,2-Dichloroethene and Trichloroethene Additional Groundwater Sampling and Soil Gas Analysis

Appendix H

Chloroform, Cis-1,2-Dichloroethene and Trichloroethene Additional Groundwater Sampling and Soil Gas Analysis

Introduction
Following remediation works via ISCO within DRA 16, measured chloroform, cis-1,2-dichloroethene and trichloroethene remained at concentrations in excess of 10,000µg/l in validation monitoring wells AS4BH044 (chloroform) and AS6BH072 (replacement for AS6BH001) (cis-1,2-dichloroethene and trichloroethene). In comparison with measured concentrations across the remainder of the site, these measured concentrations appeared relatively high are potentially warranting further assessment in terms of their extent potential to impact groundwater quality downgradient.

Measured cis-1,2-dichloroethene and trichloroethene concentrations in groundwater sampled from AS6BH072 (replacement for AS6BH001) are currently close to (in the same order of magnitude as) the human health SSAC for protection of commercial workers. Historically, measured concentrations have on occasion exceeded this SSAC. In order to provide further evidence that a potentially unacceptable risk via the inhalation pathway is not present, a detailed pathway assessment has been undertaken via soil gas sampling. The risk to neighbouring residents is not considered in this assessment as it is considered best assessed via down gradient groundwater concentrations.

Objectives

- To provide evidence that measured chloroform, cis-1,2-dichloroethene and trichloroethene concentrations are localised within validation monitoring wells AS4BH044 (chloroform) and AS6BH072 (replacement for AS6BH001) and the potential impact on downgradient groundwater quality is limited.

- To provide a detailed pathway assessment of the vapour inhalation pathway in relation to measured cis-1,2-dichloroethene and trichloroethene concentrations within validation monitoring well AS6BH072 (replacement for AS6BH001).

Methodology
Ten downgradient groundwater monitoring wells were selected based on location (i.e. generally to the south of monitoring wells AS4BH044 and AS6BH072) and depth of screening. Only wells screened deep enough to encounter the London Clay were considered to target any potential DNAPL. The location of the ten selected wells is presented overleaf on Figure H1. The ten selected wells were monitored by low flow sampling on four occasions between April 2015 and July 2015. Inspection for DNAPL using an interface probe was also undertaken during the monitoring.

Four soil gas points were positioned to intercept soil gas associated with the vapour inhalation pathway from the area of maximum measured cis-1,2-dichloroethene and trichloroethene groundwater concentrations. The location of soil gas points is presented below on Figure H1. Soil gas points were installed into the unsaturated zone at depths of approximately 1.2m below ground level (bgl). Monitoring of soil gas points was undertaken on four occasions, corresponding with groundwater monitoring events.

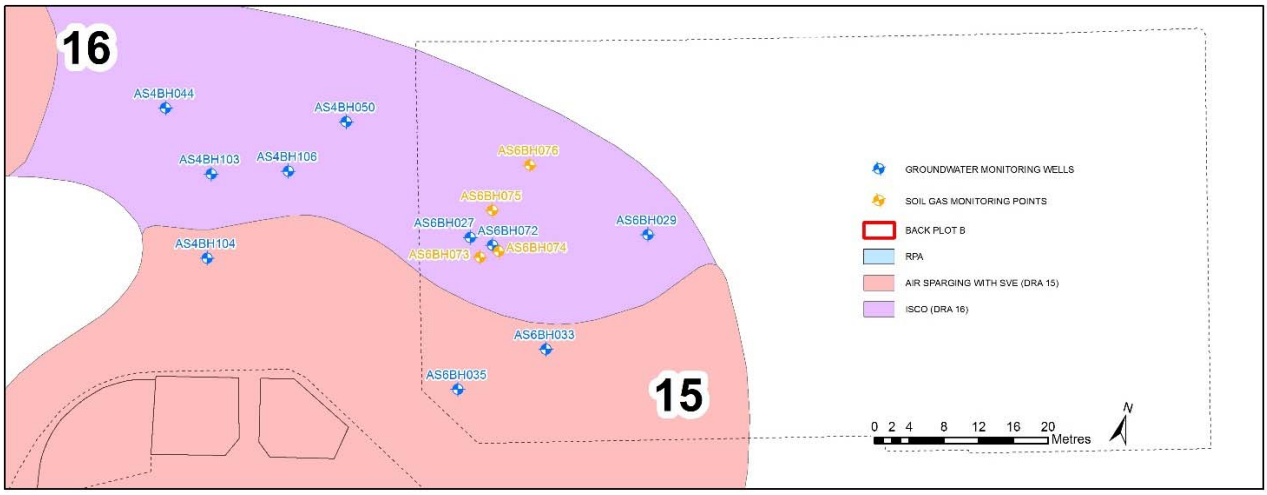


Figure H1 – Groundwater Monitoring Well and Soil Gas Point Layout Plan

Results and Discussion

Groundwater Data

The results of the groundwater monitoring are presented in Table H1. Dot plots presenting the distribution of the three CoC are present below in Figure H2 below.

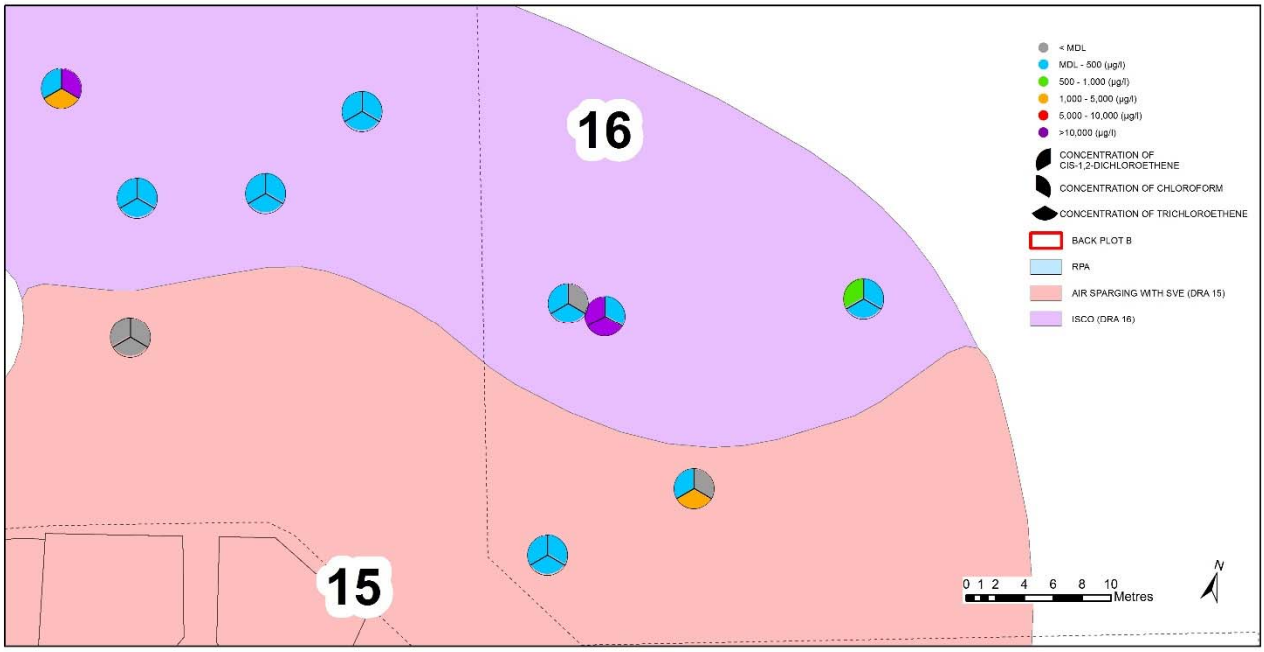


Figure H2 – Measured Cis-1,2-dichloroethene, Chloroform and Trichloroethene Concentrations in Groundwater

The groundwater sampling undertaken confirmed that the maximum concentrations were in the previously identified monitoring wells, AS4BH044 and AS6BH072 (replacement for AS6BH001).

No DNAPL was identified via the interface probe inspection undertaken. It is noted that removal of DNAPL via low flow pumping was previously undertaken in this area, during which 7.3 litres of product was removed (product typing identified the composition was 91% trichloroethene).

The injection data flow rate data during ISCO indicates a likely low hydraulic conductivity across the area. According to borehole logs, shallow clay was generally encountered within DRA 16 (potentially weathered London Clay surface).

Based on the results of the groundwater monitoring, the measured concentrations associated with monitoring wells AS4BH044 and AS6BH072 appear localised and are generally related to the more cohesive areas of DRA 16. As such, the potential to impact down gradient groundwater quality is considered to be low, as supported by the monitoring data.

Soil Gas Data

Soil gas data is presented in Table H2.

Measured soil gas concentrations above the laboratory MDL were detected in the four samples. In order to evaluate the potential risk presented by the measured concentrations, soil gas SSAC were derived based on the parameters used in the DQRA (Arcadis report ref: 928873302, July 2011). The soil gas SSAC derived are presented in Table H2 and compared to soil gas monitoring data.

Measured concentrations in Table H2 do not exceed the soil gas SSAC derived. As such, the potential risk to future onsite commercial workers via the vapour inhalation pathway is not considered significant in this area.

Table H1

Measured Goundwater Concentrations Comparison to Commericial Worker SSAC

Contaminant	Human Health Target Levels Comercial/Light End Use(µg/l) [1]	AS4BH044				AS4BH050				AS6BH072*				AS4BH103				AS4BH104			
		01/04/2015	12/05/2015	16/06/2015	21/07/2015	01/04/2015	12/05/2015	16/06/2015	21/07/2015	01/04/2015	12/05/2015	16/06/2015	21/07/2015	01/04/2015	12/05/2015	16/06/2015	21/07/2015	01/04/2015	12/05/2015	16/06/2015	21/07/2015
Chloroform	1,100,000	12,300	24,600	15,600	13,500	89	95	159	133	190	272	321	258	<2	5	<2	<2	<2	<2	<2	<2
Trichloroethene	140,000	1,510	2,550	1,900	1,450	34	32	39	36	161,000	116,000	112,000	112,000	<3	4	<3	6	<3	<3	<3	<3
Cis-1,2-Dichloroethene	209,000	12	48	77	148	110	88	143	149	67,300	62,700	56,900	62,600	5	<3	<3	5	<3	<3	<3	<3
Vinyl Chloride	2,390	<0.1	3	2	4	13	12	24	27	1,080	1,080	1,110	1,100	1	0.4	<0.1	1	<0.1	<0.1	<0.1	<0.1

Contaminant	Human Health Target Levels Comercial/Light End Use(µg/l) [1]	AS4BH106				AS6BH027				AS6BH029				AS6BH033				AS6BH035			
		01/04/2015	12/05/2015	16/06/2015	21/07/2015	01/04/2015	12/05/2015	16/06/2015	21/07/2015	01/04/2015	12/05/2015	16/06/2015	21/07/2015	01/04/2015	12/05/2015	16/06/2015	21/07/2015	01/04/2015	12/05/2015	16/06/2015	21/07/2015
Chloroform	1,100,000	4	<2	<2	<2	<2	<2	<2	<2	5	4	<2	<2	<2	<2	<2	<2	<2	6	<2	<2
Trichloroethene	140,000	13	23	12	6	28	22	7	10	162	63	92	191	2,430	<3	<3	12	13	4	3	14
Cis-1,2-Dichloroethene	209,000	29	179	38	<3	22	87	29	45	141	154	289	774	174	<3	<3	7	<3	<3	<3	8
Vinyl Chloride	2,390	8	65	19	2	5	81	42	66	19	16	40	89	5	<0.1	<0.1	<0.1	<0.1	1	<0.1	<0.1

Table H2

Measured Soil Gas Concentrations and Comparison to SSAC

Contaminant	Human Health SSAC (µg/m3) [2]	AS6BH073				AS6BH074				AS6BH075				AS6BH076			
		20/05/2015	15/06/2015	09/07/2015	25/07/2015	20/05/2015	15/06/2015	09/07/2015	25/07/2015	20/05/2015	15/06/2015	09/07/2015	25/07/2015	20/05/2015	15/06/2015	09/07/2015	25/07/2015
Benzene	13,800,000	217	332	572	399	348	422	294	418	3,710	1,960	2,260	1,190	10,900	7,030	7,790	6,900
Ethylbenzene	2,560,000,000	411	33	57	10	75	22	12	7	2,170	46	44	11	2,800	95	89	155
Xylenes	681,000,000	1,097	60	158	22	132	43	12	7	6,140	7	57	50	5,580	325	145	129
Toluene	15,100,000,000	192	135	156	89	80	98	93	138	3,410	243	309	183	3,810	1,070	1,470	1,620
Chloroform	120,000	425	630	796	635	1,130	1,630	1,160	1,840	991	1,740	3,200	2,730	1,710	1,560	1,140	703
Trichloroethene	5,570,000	26,300	23,000	494,000	38,200	74,700	164,000	193,000	48,800	452,000	294,000	283,000	73,100	1,590,000	498,000	198,000	60,200
Cis-1,2-Dichloroethene	9,590,000	11,300	6,340	137,000	25,700	15,000	48,000	55,100	25,700	120,000	142,000	84,400	59,100	396,000	360,000	50,000	40,000
Vinyl Chloride	250,000	1,570	2,260	2,990	2,060	1,280	2,090	1,330	2,030	19,200	13,800	5,650	6,290	32,000	32,500	4,450	22,100
SUM VOC	-	44,683	33,529	639,503	70,807	95,051	218,060	253,183	80,702	621,360	463,699	386,842	147,143	2,057,374	906,611	271,457	140,717

Notes

<	Concentration less than laboratory MDL
[1]	Taken from Back Plot B Validation Plan (Arcadis Ref: 2572312306_01, August 2015).
[2]	Derived based on the parameters used in the DQRA (Arcadis report ref: 928873302, July 2011)

* AS6BH072 replaced AS6BH001 in March 2015

APPENDIX I

Assessment of Non-target CoC Detected During Validation Monitoring

Appendix I1

Assessment of Non-Target CoC Detected during Validation Monitoring

DRA / Location ID / Date	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	Area 2 Commercial/Light Industrial End Use Human Health SSAC* [1]	Area 2 Neighbouring Residents Human Health SSAC* [1]	Area 2 Mean Environmental SSAC [1]	Number of Detections During Validation Monitoring (Total Across 4 Rounds of Monitoring)	Maximum Concentration Detected During Validation Monitoring	Location Where Maximum Concentration Detected	Further Consideration Required?*
1,1,2,2-Tetrachloroethane							2	12	AS4BH040A	Number and magnitude of detections comparable with baseline monitoring, further consideration not required
1,1,2-Trichloroethane							1	10	AS6BH072	Localised detection in a single well with no detections above the laboratory detection limit in hydraulically down-gradient wells
1,1-Dichloroethane							12	10	AS4BH044, AS8BH099	Number and magnitude of detections comparable with baseline monitoring, further consideration not required
1,1-Dichloroethene							12	127	AS6BH072	Number and magnitude of detections comparable with baseline monitoring, further consideration not required
1,2,3-Trichloropropane							1	11	AS7BH033	Localised detection in a single well with no detections above the laboratory detection limit in hydraulically down-gradient wells
1,2,4-Trichlorobenzene							2	4	AS6BH012	Number and magnitude of detections less than baseline monitoring, further consideration not required
1,2-Dichloroethane							2	3	AS4BH045, AS7BH045	Number and magnitude of detections less than baseline monitoring, further consideration not required
1,3-Dichlorobenzene							50	62	AS4BH032	Number and magnitude of detections comparable with baseline monitoring, further consideration not required
1,4-Dichlorobenzene	ND	ND	23,150	ND	ND	7,000	73	4,090	AS4BH032	Several detections however concentrations are predominantly below maximum baseline concentrations with the exception of two locations. All detections during validation monitoring below mean environmental SSAC, no further consideration required
2-Chlorotoluene							35	985	AS4BH027	Number and magnitude of detections less than baseline monitoring, further consideration not required
4-Chlorotoluene							21	613	AS4BH027	Number and magnitude of detections less than baseline monitoring, further consideration not required
4-Isopropyltoluene							1	6	AS4BH027	Localised detection in a single well with no detections above the laboratory detection limit in hydraulically down-gradient wells
Bromodichloromethane							1	15	AS6BH072	Localised detection in a single well with no detections above the laboratory detection limit in hydraulically down-gradient wells
Chlorobenzene	ND	260,000	9,470	ND	ND	3,100	95	4,220	AS4BH036	Several detections however concentrations are less than maximum baseline concentration. All detections during validation monitoring below mean environmental SSAC, no further consideration required
Dichloromethane							19	1,050	AS4BH044	Number and magnitude of detections comparable with baseline monitoring, further consideration not required
Isopropylbenzene							11	184	AS4BH036	Several detections, however concentrations are localised with decrease in concentration hydraulically down-gradient, further consideration not required
Methyl Tertiary Butyl Ether							14	34.5	AS8BH099	Several detections, however concentrations are generally low (marginally above laboratory detection limit). Highest concentrations are localised detections in isolated wells, further consideration not required
Naphthalene							7	12	AS8BH098A	Several detections however concentrations are low (marginally above the laboratory detection limit) and localised, further consideration not required
Styrene							1	4	AS8BH098A	Localised detection in a single well at a low concentration, further consideration not required
tert-Butylbenzene							6	17	AS4BH036	Several detections however concentrations are low (marginally above the laboratory detection limit) and localised, further consideration not required
Tetrachloroethene							86	1,500	AS4BH027	Several detections however concentrations predominantly below maximum baseline concentration with the exception of a single well. Based on decrease in concentration hydraulically downgradient, no further consideration required
Trans-1,2-Dichloroethene							15	337	AS6BH072	Several detections however concentrations predominantly below maximum baseline concentration with the exception of a single well. Based on decrease in concentration hydraulically downgradient, no further consideration required
Trichlorofluoromethane							1	3	AS4BH034	Localised detection in a single well at a low concentration comparable with baseline monitoring, no further consideration required
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	7	371	AS4BH028	Number and magnitude of detections comparable with baseline monitoring, no further consideration required
Butalbarbital	ND	ND	18	ND	ND	350	17	107	AS7BH043	Number and magnitude of detections comparable with baseline monitoring, no further consideration required
Phenobarbital	ND	ND	1850	ND	ND	57170	78	375	AS7BH043	Detections in several locations (predominantly DRA18) however measured concentrations remain below mean environmental SSAC.
Sulphadiazine							127	1630	AS7BH043	Detections in several locations (predominantly DRA18) however measured concentrations remain below concentrations of selected target sulphonamide CoC. Therefore in line with the target compound approach set out in the Validation Plan, further consideration not required
Sulphamerazine							99	328	AS7BH045	Detections in several locations (predominantly DRA18) however measured concentrations remain below concentrations of selected target sulphonamide CoC. Therefore in line with the target compound approach set out in the Validation Plan, further consideration not required
Sulphanilamide							171	1200	AS8BH099	Detections in several locations (predominantly DRA18) however measured concentrations remain below concentrations of selected target sulphonamide CoC. Therefore in line with the target compound approach set out in the Validation Plan, further consideration not required
Thozalinone							2	442	AS8BH098A	Localised detections at low concentrations, no further consideration required

Notes	
1.23	Concentration greater than Method Detection Limit (MDL)
<	Concentration less than laboratory MDL
[1]	Area 1,2 and 3 targets taken from Site Wide Detailed Quantitative Risk Assessment, Report Ref: 92887104 March 2010.
No SSAC Derived	Compound not considered to be a contaminant of concern in relation to human health for this area of the site, based on pathway specific screening as detailed in the Site Wide Detailed Quantitative Risk Assessment, Report Ref: 92887104 March 2010.
	No SSAC calculated

Appendix I2

Concentrations of RP3 Target Compounds in Hydraulically Downgraident Locations within Back Plot B

Location ID	Area 1 Commercial/Light Industrial End Use Human Health SSAC [1]	Area 1 Neighbouring Residents Human Health SSAC [1]	Area 1 Mean Environmental SSAC [1]	AS4BH026				AS4BH032				AS4BH038			
Date				18/03/2015	17/06/2015	21/09/2015	15/12/2015	17/11/2014	16/06/2015	21/09/2015	16/12/2015	17/11/2014	16/06/2015	21/09/2015	16/12/2015
1,2-Dichlorobenzene	ND	142,000	72,710	< 3	21	< 3	< 3	40,200	63,100	51,500	49,100	<3	< 3	< 3	172
Acebutolol	ND	ND	4.6	< 5	< 5	< 5	< 5	< 5	< 5	< 5	27	< 5	< 5	< 5	< 5
Chlorobenzene	ND	260,000	9,470	< 2	< 2	< 2	< 2	<2	< 2	42	65	<2	< 2	< 2	< 2
Chloroform	1,100,000	12,000	3.5	< 2	< 2	< 2	< 2	<2	< 2	< 2	3	<2	< 2	< 2	< 2
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	16	969	18	31	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Toluene	ND	ND	440	< 0.5	< 0.5	< 0.5	< 0.5	19.6	25.1	17.4	24.6	<0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	140,000	1,780	9	< 3	< 3	< 3	< 3	82	139	74	136	<3	< 3	< 3	< 3

Notes

<	Concentration less than laboratory MDL
[1]	Area 1 targets taken from Site Wide Validation Plan (Ref 928875402_01) May 2012.
ND	Modelling results indicate that this contaminant does not a significant level of risk via this pathway.

ANNEX A

Back Plot B Validation Plan

SANOFI
May and Baker Ltd trading as Sanofi
Dagenham Facility
Rainham Road South
Dagenham
Essex
RM10 7XS

Back Plot B Validation Plan

Dagenham Facility
Rainham Road South
Dagenham
Essex
RM10 7XS

August 2015
2572312306_01

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Report Details

Client	May and Baker Ltd trading as Sanofi
Address	Dagenham Facility Rainham Road South Dagenham Essex RM10 7XS
Report Title	Back Plot B – Validation Plan
Report Number	2572312306_01
Report Date	August 2015

Quality Assurance

Issue Number /Status	Date	Prepared By	Technical Review	Authorised by
01 First Issue	August 2015			
		Elaine Moore Senior Consultant	Jon Coulson Principal, Environment	Helen Hayward Director, Environment

If you have any queries regarding this project, please contact Alastair Dunster.

ARCADIS EC HARRIS

Table of Contents

Tables

Figures

Appendices

List of Abbreviations that may be used in this report

ARCADIS	EC Harris (UK) Limited, an ARCADIS Group Company
SSAC	Site Specific Assessment Criteria
CoC	Contaminant of Concern
DNAPL	Dense Non Aqueous Phase Liquid
DRA	Defined Remediation Area
RPA	Remediation Priority Area
NAPL	Non Aqueous Phase Liquid

1 INTRODUCTION

1.1 Background Information

EC Harris (UK) Limited, an ARCADIS Group Company (ARCADIS) was instructed by May & Baker Limited trading as Sanofi (Sanofi) to develop a validation plan for remediation of groundwater within the development footprint known as Back Plot B (the "site") at the Dagenham Facility, Rainham Road South, Dagenham, Essex RM10 7XS (the facility).

Outline planning conditions are currently in place for the wider facility (Planning Application 11/01044/OUT) with specific conditions regarding ground contamination. Validation plans were previously issued and accepted by the Environment Agency leading to discharge of planning condition 8 for the facility; however the validation plans require updating now that development footprints have been determined so that planning condition 9 can be discharged for each footprint once remediation works are complete. Importantly, the validation approach has not changed from that previously accepted.

The work completed in this report was conducted in accordance with the agreed proposal, "Update of Verification Plans Based on Development Footprints" (ARCADIS reference RPO No 2 - 2015, January 2015) and conducted in line with the Consultancy Services Agreement (CSA) Contract 2015 (Sanofi Ref: CP/NXR/078907-7000004). The work was also completed with reference to English legislation and regulatory guidance for the assessment of contaminated land, a summary of which is presented as Appendix A.

1.2 Site Description

The site occupies the south eastern portion of the Dagenham Facility, located on Rainham Road South, Dagenham, Essex, at National Grid Coordinates (NGC) 550658, 185267 as shown on Figure 1.

The site comprises a former manufacturing area within the Dagenham Facility and is bound by other areas of the facility to the north, south and west. To the east lies a lagoon and green belt areas. The area to the south of Back Plot B comprises a strip of land which contains a permeable reactive barrier (PRB) that runs along the southern boundary of the Facility.

The site includes a number of remediation areas (known as Defined Remediation Areas [DRAs] and Remediation Priority Areas [RPAs]) that were originally defined following a site investigation and risk assessment of the wider facility. The area defined by Back Plot B is presented on Figures 1 and 2; and fully or partially incorporates the following remediation areas:

- DRA10, DRA13, DRA16 and DRA18 (fully incorporated); and,
- RPA2, DRA4, DRA6 and DRA15 (partially incorporated).

1.3 Remediation Objectives

The overall strategy for the Dagenham Facility is to remediate the site in order to facilitate redevelopment and use of the land for industrial purposes in view of the best available remediation technologies available and cost benefit considerations.

The remediation strategy for the facility includes the following steps:

- Permeable Reactive Barrier (PRB) - existing pollutant pathways breakage
- Source reduction remediation works (soil and groundwater treatment)
- Groundwater monitoring following remediation (validation monitoring and longer term monitoring)
- PRB decommissioning
- Off-site groundwater monitoring

As of 18th of May 2015, source reduction remediation works have been completed in Back Plot B.

1.3.1 Report Objectives

Validation plans were originally issued in 2011 and 2012 based on identified remediation areas as development plans were unknown at that time. To facilitate land transactions the validation plans are being updated to reflect the development footprints, of which, Back Plot B is one.

This updated validation plan has been prepared to enable a validation report for Back Plot B to be produced to demonstrate that the remediation criteria presented in this plan have been met (thereby assisting with the discharge of Planning Condition 9 for the development footprint).

1.4 Scope of Works

This validation plan describes how the success of the proposed remediation strategy for Back Plot B will be evaluated. The scope of works for the validation plan is as follows:

- Review ground conditions
- Identify pollutant linkages;
- Define Remediation Areas across the Site;
- Outline remediation scope;
- Definition of remediation assessment criteria;
- Definition of remediation verification plan; and,
- Outline quality assurance and control policy.

1.5 Regulatory Liaison

Both the Local Authority and the Environment Agency have been advised on the environmental strategy for the wider Dagenham Facility. Approval of the previous site wide investigation, detailed quantitative risk assessment, remediation implementation and original

validation plans has been obtained from the Environment Agency, leading to the discharge of Planning Condition 8.

The Environment Agency has advised that future reports will not be reviewed unless submitted to discharge planning applications, due to resourcing constraints.

2 REVIEW OF EXISTING GROUND CONDITIONS

The Dagenham Facility has been subject to a series of intrusive investigations, monitoring and risk assessments prior to the selection of appropriate methods of remediation. A review of existing ground conditions specifically within Back Plot B is presented in the following sections.

2.1 Previous Reports and Regulatory Liaison

Environmental reports associated with the Dagenham Facility as a whole, including Back Plot B, which have been used to inform this validation plan, are identified in Appendix B.

2.2 Geology

Regional

A review of the British Geological Survey (BGS) 1:50,000 Geological Map for the area (Sheet 257 Romford, Solid and Drift, 1996) indicates the majority of the facility to be directly underlain by Hackney Gravel (River Terrace Deposits), which is in turn underlain by London Clay.

The London Clay is indicated to be underlain by the Lambeth Group, which comprises the Woolwich and Reading Beds, (predominantly shelly clays and sands), and is in turn underlain by the Thanet Sand Formation. Upper Cretaceous Chalk underlies the Thanet Sand Formation.

Back Plot B Specific Geology

The ground conditions across Back Plot B were generally found to comprise Made Ground, overlying a mixture of sands, gravels and clays interpreted as River Terrace Deposits resting upon the London Clay. A localised depression on the London Clay was encountered within the northern part of Back Plot B as detailed within the Scour Hollow Investigation Report (ARCADIS Ref: 928871036_01, November 2009). In this area depths to London Clay are up to 10m deeper than on average across the remaining area. A detailed description of the ground conditions encountered during the previous investigations, including borehole logs, can be found in the relevant reports referenced in Appendix B.

2.3 Hydrology

The Dagenham Facility is located near to a number of surface water features and a summary of these features is given in the table below. A description of the relevant surface water features can be found within the Updated Site-Wide Detailed Quantitative Risk Assessment (ARCADIS Ref: 928873302, July 2011).

Feature	Details
Ponds and Lakes	Several lakes and ponds, the nearest of which is a small unnamed pond located approximately 80m south of the site. Boyers pond is also located to 30m to the south of the footprint.

Feature	Details
Wantz Stream	Located approximately 300m to the west of the site boundary. The stream is culverted in the vicinity of the site, issuing approximately 750m to the south of the site.
River Beam	Located approximately 800m to the southeast of the site at its closest point, and flows from northeast to southwest.
River Thames	Located approximately 3.6km to the southwest of the site.

2.4 Hydrogeology

Aquifer Classification

The Hackney Gravel (River Terrace Deposits) in which groundwater rests beneath the site are classified by the Environment Agency (EA) as a Secondary A Aquifer, defined as a formation which, although may not yield large quantities of water for abstraction, may be important for both local supplies and in supplying base flow to rivers.

A groundwater monitoring programme has been conducted prior to and during source reduction remediation works, with the relevant reports referenced in Appendix B. In the most recent facility wide groundwater monitoring visit conducted in October 2014 (ARCADIS, 2572312101_01, January 2015) groundwater elevations measured were found to vary from 7.9 to 10.3 m AOD across Back Plot B. Groundwater contours are presented on Figure 3.

The groundwater flow direction has been consistently observed to the south to south-east across Back Plot B during the groundwater monitoring programme undertaken at the site.

Source Protection Zones

The Landmark EnviroCheck® Report indicates that the site is not located within a groundwater Source Protection Zone (SPZ) as designated by the EA with respect to the protection of groundwater resources. The southern boundary of the site is adjacent to a SPZ II (outer protection zone). The groundwater abstraction, for which this SPZ is defined, is indicated to be from the Upper Chalk Major Aquifer at depth. The abstraction is located approximately 1,000m from the southern Site boundary. Based on the thickness of London Clay beneath the Site, the risk to the Upper Chalk Major Aquifer is not considered significant.

2.5 Soil and Groundwater Quality

The Contaminants of Concern (CoC) for the Dagenham Facility were previously determined from the findings of the ground investigations undertaken in 2009 and 2010. Due to the wide range of chemical compounds historically used and manufactured at the site, ARCADIS

undertook a screening process to determine representative CoC. An initial laboratory analytical screen was undertaken during site investigation phases followed by a review of identified contaminants in the DQRA undertaken for the Dagenham Facility as a whole (including the DQRA (ARCADIS Ref; 928871204, March 2010) and updated DQRA (ARCADIS Ref: 928873302_02, July 2011)) which determined a list of 'representative CoC'. Following the definition of CoC a dedicated quantified laboratory analytical method was developed.

The baseline distribution of volatile organic compounds (VOCs) and site specific compounds is presented for soil and groundwater on Figures 4 and 5, respectively. The results of the soil analysis for site specific compounds are semi-quantitative (from the initial analytical screen) however the groundwater quality data is quantitative.

2.5.1 Asbestos

Asbestos may be present within the gravel surfacing, which covers the majority of Back Plot B. Sampling and analysis to prove the presence / significance, or otherwise, of asbestos has not been undertaken. This should be borne in mind as redevelopment scenarios are considered, as the current remediation scope is not designed to specifically address the potential presence of asbestos.

3 POLLUTANT LINKAGES AND CONCEPTUAL SITE MODEL

Following assessment of the measured concentrations of the CoC based on an anticipated commercial future end use, the following exposure pathways are considered to be potentially active for Back Plot B:

On-Site Future Commercial Worker

- Inhalation of indoor air (soil and groundwater); and,
- Inhalation of outdoor air (soil and groundwater).

Neighbouring Resident

- Inhalation of indoor air (soil and groundwater source); and,
- Inhalation of outdoor air (soil and groundwater source).

Direct contact with impacted groundwater is not considered to be an active pathway given the general depth to groundwater (greater than 1 metre below ground level [m bgl]), which is considered sufficient to prevent direct contact with potential human health receptors.

Based on the anticipated redevelopment plans, direct contact with shallow soils is not considered to be an active pathway due to the presence of hardstanding.

Water Resource

- Off-site migration of contaminated groundwater to an environmental receptor; and,
- Leaching of contaminants in soil to groundwater and off-site migration to an environmental receptor.

A summary of the conceptual model is presented on Figure 6.

4 REMEDIATION SCOPE

Areas identified as requiring remediation/further assessment/monitoring are presented on Figure 2.

4.1 Determination of Remediation Areas

The RPA and DRA remediation areas located in Back Plot B include RPA2, DRA4, DRA6, DRA10, DRA13, DRA15, DRA16 and DRA18, and were originally defined during previous phases of work (Remediation Priority Areas Validation Plan, ARCADIS Ref: 92887324503_01, November 2011, Site Wide Remediation Areas Validation Plan,928875402_01, May 2012 and the Former D44 Landfill Groundwater Validation Plan ARCADIS Ref: 2572310203_03, October 2012. Details of the methodology used are presented in Appendix C.

Assessment criteria used for the definition of remediation areas were taken from the Updated Site Wide DQRA for the Dagenham Facility as a whole (ARCADIS Ref: 928873302_01, July 2011).

4.2 Remediation Technologies

A number of remediation technologies were selected for the treatment of groundwater contamination within Back Plot B. A detailed description of the remediation design and scope was presented in the RPA Remediation Implementation Plan (ARCADIS reference 928874502_01), the Site Wide Remediation Implementation Plan (ARCADIS reference 928875401, April 2012) and in the Former D44 Landfill Groundwater Remediation Implementation Plan (ARCADIS reference 2582310201, June 2013).

Remediation works have now been completed in the remediation areas within Back Plot B and the technologies employed are described below in the following sections.

4.2.1 RPA 2

The remediation strategy to manage the risks associated with the identified dense non-aqueous phase liquid (DNAPL) and dissolved phase contamination beneath RPA 2 involved a treatment train approach with multiple remediation technologies selected to achieve the remediation objectives. These are listed below and were employed in a phased approach.

- Groundwater Pumping; and,
- *In situ* Chemical Oxidation (ISCO).

Impacts identified beneath RPA 2 comprise significantly elevated dissolved phase VOC concentrations (>10mg/L) in groundwater with DNAPL also previously identified, therefore groundwater pumping should be employed initially in selected areas of RPA 2 (including areas both up and down gradient of the PRB) to abstract contaminated groundwater and DNAPL. Dissolved phase contaminants within groundwater will be treated using granular activated carbon (GAC). DNAPL recovered will be separated from the extracted groundwater for off-site disposal. The performance of the groundwater pumping will be assessed during the works through the measurement of abstracted groundwater concentrations.

Following groundwater pumping, ISCO was applied to further reduce residual dissolved phase contamination within selected areas of RPA 2.

4.2.2 Defined Remediation Areas

The Defined Remediation Areas were sub divided based upon the contaminant distribution and encountered geology and hydrogeology and a treatment train approach was designed to allow a pragmatic approach to reduce contaminant mass. At each stage of the treatment train, the remediation design and scope was modified based on treatment efficacy and timescale in relation to cost of implementation.

The selected remediation technologies for remediation of the DRAs are listed below with the remediation strategy employing these technologies in a phased approach.

Remediation Area	Remediation Works Detailed in Remediation Implementation Plan
DRA 4 and 6	Groundwater pumping
DRA 10	Groundwater pumping with SVE
DRA 13 and 15	Air sparging/SVE and ISCO
DRA 16	ISCO
DRA 18	Groundwater pumping

5 REMEDIATION ASSESSMENT CRITERIA

5.1 Target Compound(s)

Due to the wide range of chemical compounds historically used and manufactured at the site, ARCADIS undertook a screening process to determine representative CoC. An initial laboratory analytical screen was undertaken during site investigation phases followed by a review of identified contaminants in the DQRA undertaken for the Dagenham Facility as a whole (including the DQRA (ARCADIS Ref; 928871204, March 2010) and updated DQRA (ARCADIS Ref: 928873302_02, July 2011)) which determined a list of 'representative CoC'.

Based on the remediation objectives of each of the remediation areas and additional verification areas under the scope of this validation plan; remediation areas and specific target CoC lists were defined and these are detailed in the following sections.

5.1.1 Remediation Priority Area 2

Based on the risk to receptors and expected remediation performance, a "Target List" of CoCs was defined for soils and groundwater for RPA 2. This is presented below and a justification for their selection from the list of 'representative CoC' is presented in Appendix D.

Groundwater
N(1)-2-Pyridyl Sulfanilamide
Ketoprofen
3-Ethylbenzophenone
Carbofuran
Chloroform
Trichloroethene
1,2-Dichlorobenzene

5.1.2 Defined Remediation Areas 4, 6, 10, 13, 15 and 16

Based on the risk to receptors and expected remediation performance, a List of Target CoCs was defined for soils and groundwater for the DRAs across the Dagenham Facility. These are presented below and a detailed justification for their selection from the representative CoC is presented in Appendices E and F.

Groundwater	Unsaturated Soils
Sulphamethizole	Elemental Mercury*
Sulphathiazole	
N(1)-2-Pyridyl Sulfanilamide	
Butalbarbital	
Amphetamine	
Ketoprofen	
Acebutolol	
N-Ethyl-m-toluidine	
Diphenylguanidine	

Carbendazim	
Benzene	
O-Xylene	
p/m-Xylene	
Toluene	
Chloroform	
Trichloroethene	
Cis-1,2-Dichloroethene	
Vinyl Chloride	

*The identification of elemental mercury as a target CoC in the Site Wide Validation Plan was based on total mercury concentrations identified in this area which were assessed as elemental mercury until further mercury speciation was undertaken. Since the issue of the Site Wide Validation plan, speciated mercury analysis of soils in this area has been carried out and concentrations in soil were not identified in exceedance of human health SSAC and hence remediation action for mercury is not required. Hence, no remediation of unsaturated soils for elemental mercury has been undertaken. The results of the mercury investigation will be presented in the validation report.

Not all of the above target CoC will apply for every validation well within each DRA. The target CoCs are identified for each monitoring well based on their presence/magnitude established previously in the baseline and presented in Appendix G.

5.2 Defined Remediation Area 18

Based on a review of the most prevalent and / or concentrated CoC within DRA18, a list of "indicator compounds" was derived for groundwater beneath DRA18.. These indicator compounds, along with other sum compounds were selected as target compounds for DRA18. These are presented below and a detailed justification for their selection is presented in Appendix H.

Groundwater
N(1)-2-Pyridyl Sulfanilamide
Sulphathiazole
Diphenylguanidine
Pentobarbital
Carbendazim
Sum site specific pharmaceutical compounds
VOCs

The target CoCs are identified for each monitoring well based on their presence/magnitude established previously in the baseline and presented in Appendix G.

5.3 Performance and Assessment Criteria

Performance criteria have been defined considering both human health and environmental receptors and have taken into account achievability based on the best available technologies in the context of cost benefit considerations.

A review of the results of pilot test remediation trials, considered to represent the best available technologies, demonstrated that concentrations of the target compounds in

groundwater should be able to be reduced between 70% of starting (baseline) concentrations in the DRAs and between 75% and 90% in RPA2. Hence, the performance criteria for the remediation were based on these magnitudes of contaminant reduction and these are presented on Table 1.

RPA 2 and DRAs 4, 6, 10, 13, 15 and 16
The performance criteria will be considered to have been met when one or more of the following criteria have been achieved:

- 70 to 90% reduction in the concentrations of target compounds averaged over the network of validation monitoring wells and where achievable, meeting the specific defined target levels protective of human health receptors*;
- A revision of the risk assessment, justified by changes in the plume geometry or the conceptual understanding of the site, indicates that the reduced mass of contaminants does not present a risk to the identified receptors; or
- Contamination mass reduction reaches an asymptotic condition and/or cost benefit analysis indicates that additional remediation works cannot be justified considering likely improvement to the site condition that could be achieved vs. environmental and financial considerations.

*Trichloroethene is present in RPA 2 at particularly high concentrations and therefore a specific defined target level has been defined in addition to the average contaminant reduction.

The baseline concentration for each target CoC in each validation monitoring well. Verification will be demonstrated by a reduction in the average concentration of each target CoC for the locations identified in Appendix G. For example, the effectiveness of the proposed remediation of chloroform will be shown through the monitoring of validation monitoring well AS4BH044, AS4BH050 and HBH315BAE and averaging the concentrations in these wells post remediation and comparing to the average baseline concentration in these wells.

The locations of proposed validation monitoring wells within Back Plot B are shown on Figure 7.

DRA18
The performance criteria will be considered to have been met when one or more of the following criteria have been achieved:

- Contamination mass reduction (assessed through measurement of indicator compounds, sum site specific pharmaceutical compounds and VOCs) reaches an asymptotic condition and/or cost benefit analysis indicates that additional remediation works cannot be justified considering likely improvement to the site condition that could be achieved versus environmental and financial considerations; and,
- A revision of the risk assessment, justified by changes in the plume geometry or the conceptual understanding of The Site, indicates that the reduced residual mass of representative CoC does not present a potential risk to the identified receptors.

In the event that, prior to meeting either of the above criteria, groundwater monitoring undertaken demonstrates that measured concentrations are below the environmental SSAC, the remediation will also be considered to have been successful.

The baseline concentration for each target CoC in each validation monitoring well, along with the average concentration over those wells, is presented in Appendix G. Verification will be demonstrated by a reduction in the average concentration of each target CoC for the locations identified in Appendix G.

The locations of proposed validation monitoring wells present within DRA18 are shown on Figure 7.

5.4 Asbestos

As discussed in Section 2.5.1., management of asbestos is not covered by the remediation scope and is therefore not covered within this Validation Plan.

6 REMEDIATION VERIFICATION

The proposed remediation of groundwater within Back Plot A was designed to manage the relevant pollutant linkages as far as reasonably practicable using best available technologies and considering costs and benefits. This section describes the lines of evidence that will be used to verify the effectiveness of the remediation with respect to the project objectives and with respect to the remediation assessment criteria.

The remediation will be a staged iterative process; therefore the assessment progress will also be staged in order to verify the effectiveness of the remediation. The lines of evidence that will be used during verification are summarised below:

- System performance monitoring including calculations of contaminant mass removal via the treatment technologies employed.
- Groundwater sampling of specified on-site monitoring wells and laboratory analysis for target compounds;
- Groundwater sampling of specified on-site monitoring wells and analysis for sodium persulphate using field based test kits; and,
- Review of duty of care documentation / Site Waste Management Plan (SWMP).

6.1 System Performance monitoring

During the system monitoring visits, performance parameters will be measured to assess the contaminant mass removal of the remediation systems. These will include:

Groundwater Pumping

Groundwater samples will be taken pre and post Granular Activated Carbon (GAC) treatment. Pre GAC concentrations will be combined with groundwater extraction volumes to generate an estimation of contaminant mass removal rates.

In Situ Chemical Oxidation (ISCO)

The destruction of groundwater contaminants following ISCO will be assessed through comparison of groundwater target compound concentrations measured during the baseline monitoring visit with those measured upon completion of the remediation works. The percentage destruction of these contaminants will then be calculated.

Soil Vapour Extraction (SVE)

Airflow rates and off-gas concentrations (comprising soil gas concentrations and/or measurement of VOCs by Photo-ionisation Detector) are measured during monitoring and system maintenance visits to be carried out at the site. These values together with the total remedial system running time will be utilised to calculate the contaminant mass removal.

6.2 Groundwater Monitoring

Groundwater monitoring will be divided into two separate phases: performance monitoring and validation monitoring. Performance monitoring will be employed during the remediation works to assess remediation performance and validation monitoring will be commenced upon

the completion of the works, and need not preclude development of Back Plot B. Validation monitoring will be undertaken from the specified validation monitoring wells, as shown on Figure 7. If changes to the location of validation monitoring wells are required, the EA and EHO will be formally notified.

6.2.1 Performance Monitoring

Once system performance has been evaluated in terms of contaminant mass reduction sampling and analysis will initially be conducted from the specified validation monitoring wells to test for the presence and concentration of sodium persulphate (where applicable), injected as the oxidant during the ISCO remediation works. Sodium persulphate testing will be undertaken to evaluate the oxidant concentrations and their lateral distribution and will start immediately following the completion of ISCO remediation works and be undertaken on a fortnightly basis for a period of three months.

The sodium persulphate test method used will be applicable to the groundwater matrix after addition of the oxidant and activator. Use of a Chemetrics sodium persulphate field test kit is proposed. A low flow sampling method will be used to obtain groundwater samples.

Once sodium persulphate concentrations have reduced then further performance monitoring which will include the sampling of target compounds in groundwater will be undertaken.

6.2.2 Validation Monitoring

Validation sampling of groundwater for the target list of compounds will start following the completion of satisfactory performance monitoring.

Groundwater samples will be collected *via* low-flow sampling from the specified validation monitoring wells and analysed for the target compounds defined for each monitoring well location (see Figure 7 and Appendix G). Sampling and analysis will be undertaken on a quarterly basis for a period of 12 months, with the first monitoring event undertaken and after completion of persulphate testing if ISCO has been employed.

The following table summarises the analysis schedule for validation monitoring.

Sample Type	Number of Samples per event	Frequency of Monitoring Event	Duration (months following remediation)	Analyte(s)	Analytical Method
Groundwater	58	Quarterly (upon completion of Persulphate testing)	12	Target CoC by Validation Well	GC-MS, HPLC and LC-MS-MS

The proposed schedule of validation monitoring will provide 4 sets of groundwater data for the validation monitoring well network. Evidence of a stable or decreasing trend over the 4

monitoring visits in view of the performance criteria, cost benefit analysis, residual risks and absolute concentrations will be required to determine the effectiveness of the remediation works.

6.3 Materials Management Plan

A Materials Management Plan (MMP) will be devised and updated during the works. Appropriate documentation regarding material movements, including those offsite, will be retained.

6.4 Programme

Remediation works are currently being undertaken in Back Plot B and are presently at different stages of performance monitoring. As such, validation data will likely be asynchronous across the development footprint so that some areas will have been deemed to meet the verification criteria before other areas. Where possible, validation monitoring events will be combined.

7 QUALITY ASSURANCE AND CONTROL

A number of procedures and data management tools will be employed to ensure that site activities are recorded so that the effectiveness of the remediation strategy can be demonstrated. These are described in the following sections.

7.1 Documentation

The following field log sheets will be compiled and held:

- Groundwater monitoring data – including hydrogeochemical parameters and depths to water; and
- Daily log – record of general site activities.

7.2 Validation Sample Handling and Management

The following section details how samples will be collected, stored and submitted for analysis:

Nomenclature

Samples are to be labelled in the field immediately following collection. The site consultant completes the relevant details such as material type, date and time, and location sampled. Barcode labelling software is then subsequently utilised by the data Quality Assurance / Quality Control (QA / QC) manager to provide each sample with a full identifier that is compatible with the database to be used to store and analyse the data collected. The barcode will be used by the laboratory to book in samples with the aim of reducing potential transcription errors. The naming system adopted should be designed to provide a method of identifying the nature and location of the sampling points.

Collection and Preservation

Validation samples will be collected using low flow sampling techniques into the appropriate sampled as specified by the approved laboratory. As far as practicable the volume of air/headspace left in the container should be minimised.

If not dispatched immediately to the analytical laboratory, samples may be stored on site overnight in a refrigerated unit at 4 degrees Celsius or less.

Transport

Samples for laboratory analysis will be transported to the approved laboratory on either the day of collection (if possible) or alternatively on the following day. Samples should be transported in cool boxes with cooling aids to minimise the potential loss of VOCs or biodegradation of contaminants. With each cool box a completed chain of custody will be completed detailing:

- Date samples collected and date sent to laboratory;
- Number of samples and containers;
- Required analysis and turnaround of analysis; and,
- Who sent samples and who should receive confirmation of receipt.

Analysis

Following receipt the laboratory will issue a sample receipt to the Validation Project Manager which will confirm the number of samples, analysis required and completion date of analysis. The approved laboratory (Jones Environmental Forensics) is a United Kingdom Accreditation Service (UKAS) approved laboratory. However, due to the unique nature of the contaminants of concern, the analytical method for some of the target list compounds is not UKAS accredited. Further details are provided in the Site Wide Remediation Areas Validation Plan (ARCADIS Ref: 928875402_01, May 2012) and the Remediation Priority Areas Validation Plan (ARCADIS Ref: 928874503_01, November 2011).

7.3 Quality Assurance Sampling

During the monitoring duplicate samples will be taken to assess the quality of the laboratory analysis.

7.4 Data Management

ARCADIS will use the EQuIS data management system to handle environmental data for the project. EQuIS is a comprehensive geo-environmental data management database designed to store analytical test data and related data obtained during environmental site investigations, routine site monitoring, and hazardous waste remediation projects. EQuIS can be used for report and chart generation and is integrated with multiple statistical, numerical modelling and data visualisation tools.

7.5 Final Validation Report

Validation data collected during the course of the remediation works will be compiled in a Validation Report. Interim reports may also be produced during the works.

8 STUDY LIMITATIONS

IMPORTANT. This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report

1. This report has been prepared by EC HARRIS (UK) Ltd (ARCADIS), with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with Sanofi (the 'Client'). ARCADIS does not accept responsibility for any matters outside the agreed scope.

2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.

3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. ARCADIS are unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have unpublished, more stringent objectives. Further work may be required by these parties.

4. All work carried out in preparing this report has used, and is based on, ARCADIS' professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice, pending changes in legislation, of which ARCADIS is aware, have been considered. Following delivery of the report, ARCADIS have no obligation to advise the Client or any other party of such changes or their repercussions.

5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.

6. Whilst this report and the opinions made are correct to the best of ARCADIS' belief, ARCADIS cannot guarantee the accuracy or completeness of any information provided by third parties.

7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have been received.
8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.

9. The content of this report represents the professional opinion of experienced environmental consultants. ARCADIS does not provide specialist legal or other professional advice. The advice of other professionals may be required.

10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on site.

12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.

13. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes.

TABLES

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Table 1

Performance Criteria
(RPA 2, DRA 4, 6, 10, 13,15 and 16)

GROUNDWATER

Contaminant of Concern	Human Health Target Levels (µg/l)	Environmental	
		% Reduction in average baseline groundwater concentrations in selected validation wells*	
		DRA 4, 6, 10, 13, 15 and 16	RPA 2
Sulphonamides			
Sulphamethizole	ND	>70%	NTC
Sulphathiazole	ND	>70%	NTC
N(1)-2-Pyridyl Sulfanilamide	ND	>70%	80%
Barbiturates			
Butalbarbital	ND	>70%	NTC
Anti-psychotics			
Amphetamine	4,270,000	>70%	NTC
Miscellaneous Pharmaceuticals			
Ketoprofen	ND	>70%	90%
3-Ethylbenzophenone	ND		
Acebutolol	ND	>70%	NTC
Miscellaneous Chemicals			
N-Ethyl-m-toluidine	ND	>70%	NTC
Diphenylguanidine	ND	>70%	NTC
Pesticides			
Carbendazim	ND	>70%	NTC
Carbofuran	ND	NTC	80%
BTEX			
Benzene	110,000	>70%	NTC
O-Xylene	ND	>70%	NTC
p/m-Xylene			
Toluene	ND	>70%	NTC
Chlorinated Aliphatics			
Chloroform	1,100,000	>70%	85%
Trichloroethene	229,000	>70%	80%^
Cis-1,2-Dichloroethene	219,000	>70%	NTC
Vinyl Chloride	9,280	>70%	NTC
Chlorinated Aromatics			
1,2-Dichlorobenzene	ND	NTC	75%

UNSATURATED SOILS

Contaminant of Concern	Human Health Target Levels (mg/kg)
Elemental Mercury	30

Notes

ND	CoC not considered to pose a significant risk via the pathway considered
#	Human Health SSAC adoped from the Updated Site Wide DQRA (ARCADIS Ref: 928873302_01, July 2011)
*	Target % reduction varies between RPA2 and DRAs based on achievable reductions observe during remediation pilot trials
NTC	Not target compound in this area
^	Additional defined target level of 1,700 ug/l also applicable due to high concentrations identified

FIGURES

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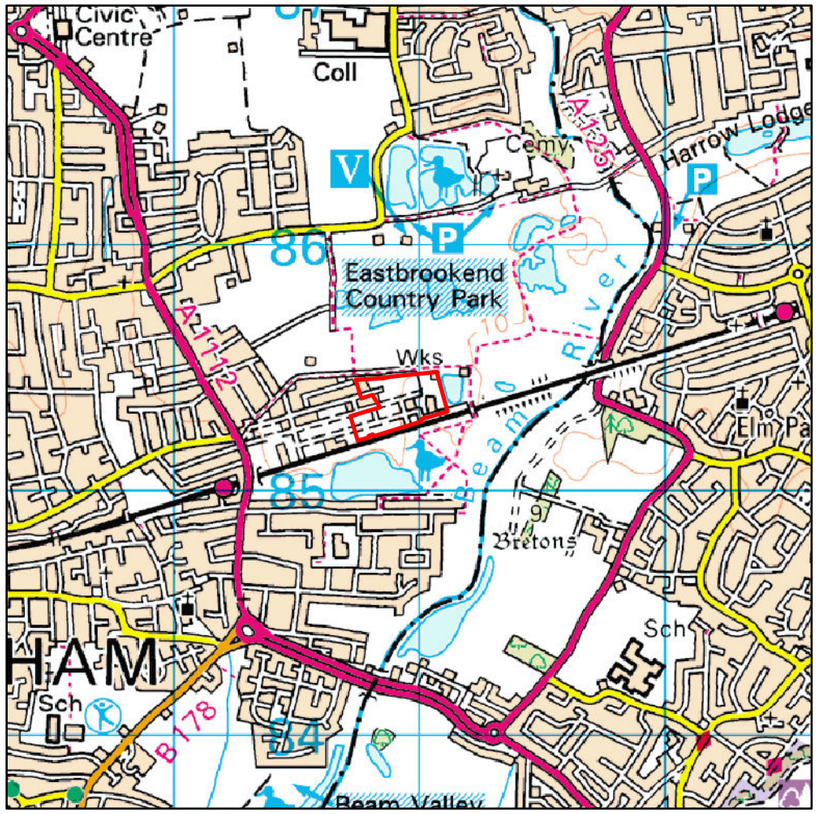
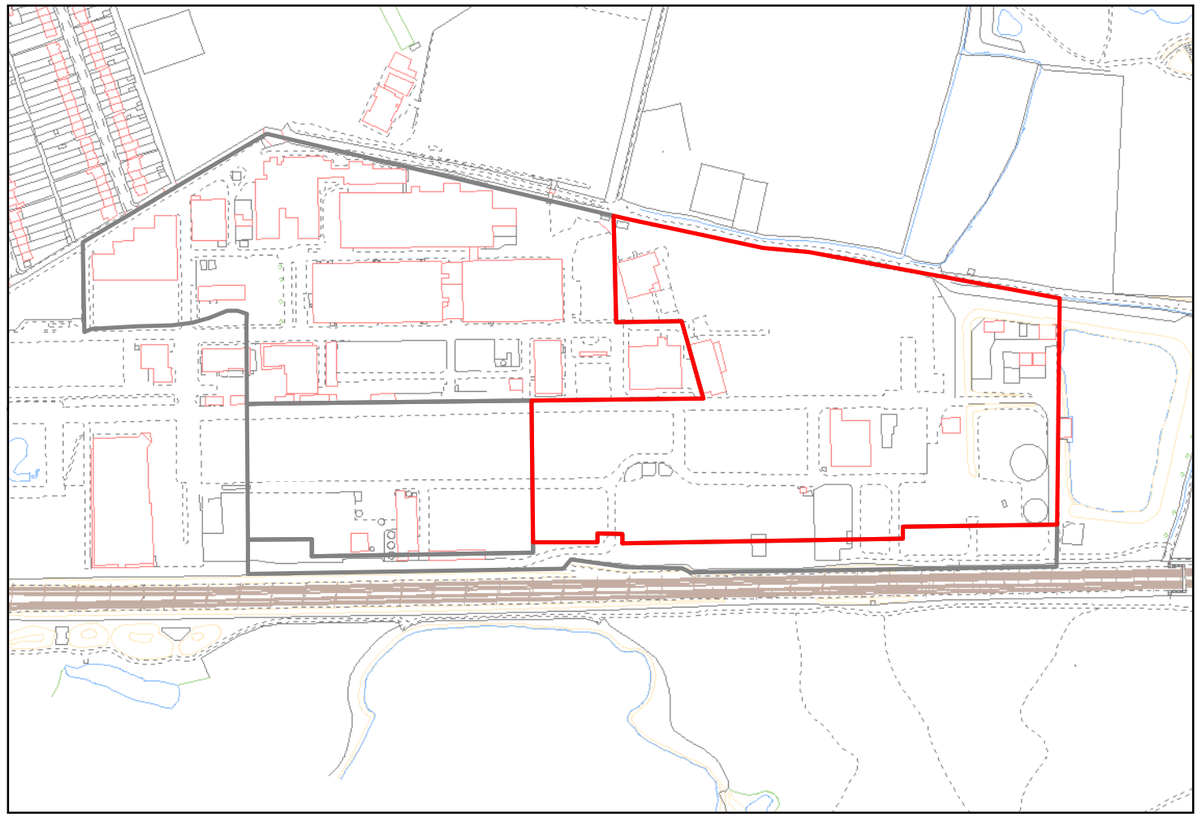
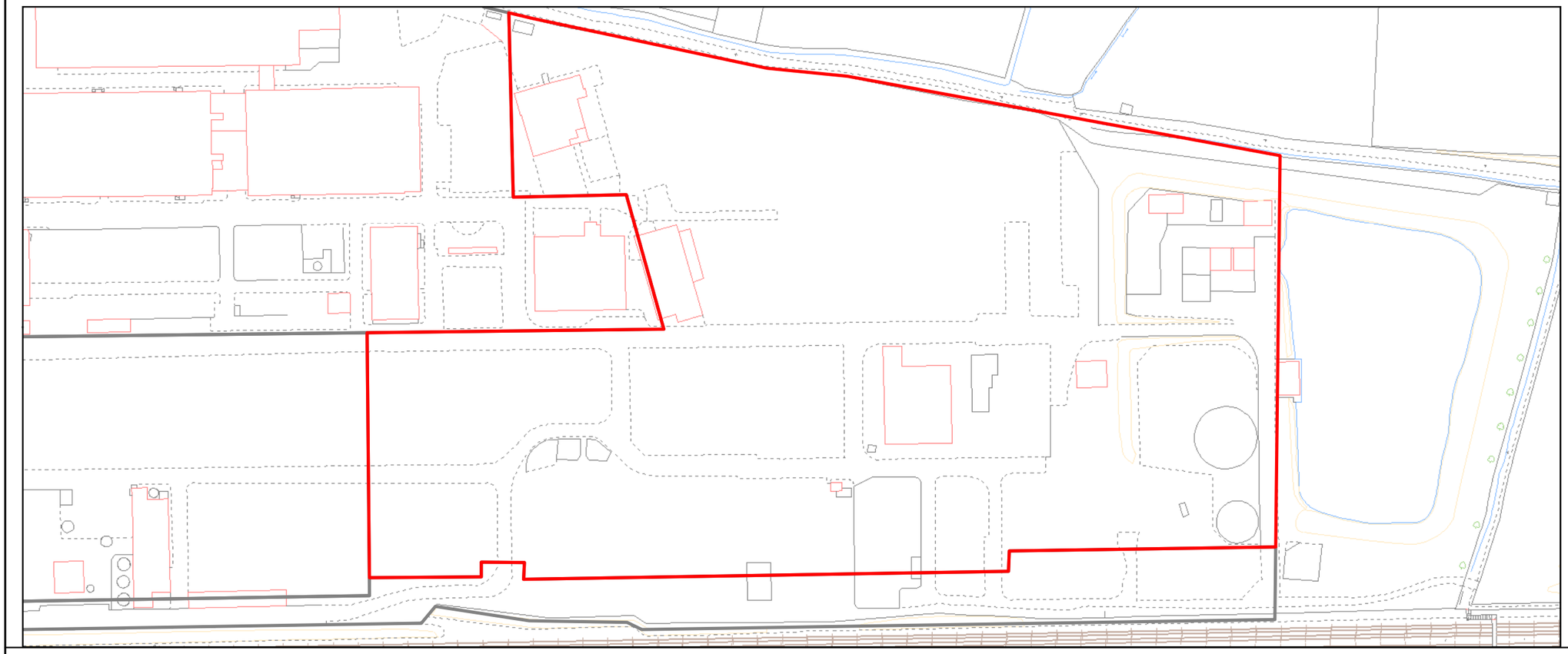






LEGEND

- OTHER DEVELOPMENT
- BACK PLOT B

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 5 10 20 30 40 50 Metres

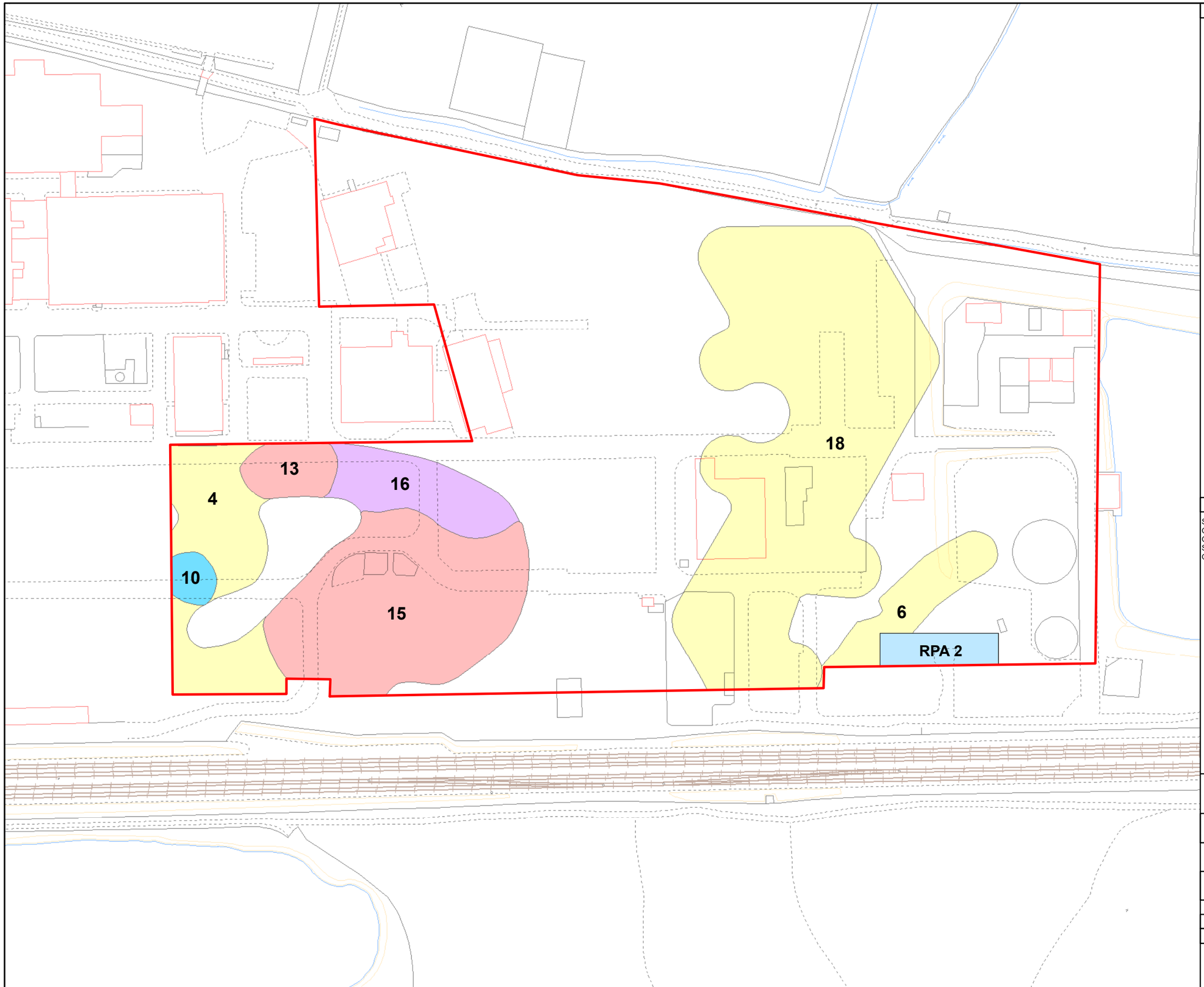
TITLE:
SITE LOCATION AND LAYOUT PLAN

SITE :
BACK PLOT B

CLIENT :
SANOFI

PROJECT :	25723123	FIGURE 1	
DATE :	15/04/15	DRAWN BY :	RJM
DRG No. :	92887012039 GIS		
SCALE :	1 : 2,000	PRINT :	A3

ARCADIS EC HARRIS



LEGEND

- BACK PLOT B
- RPA
- Air Sparging with SVE Followed by ISCO (DRA 12 - 15)
- Groundwater Pumping (DRA 1 - 6 and 18)
- RPA 2 (Groundwater pumping followed by ISCO (DRA 8 - 10)
- Groundwater Pumping with LNANPL Removal Followed by ISCO
- Groundwater Pumping with SVE (DRA 7)
- ISCO (DRA 16 - 17)

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

0 5 10 20 30 40 50 Metres

N

TITLE: **DEFINED REMEDIATION AREAS AND SELECTED REMEDIATION TECHNOLOGIES**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	25723123	FIGURE 2	
DATE :	08/05/15	DRAWN BY :	RJM
DRG No. :	92887012061 GIS		
SCALE :	1 : 1,500	PRINT :	A3

ARCADIS EC HARRIS

BH135
0.41

AR0BH119
10.31

AR0BH101
10.24

AS7BH046
8.78

AS6BH015
8.72

AS7BH043
8.73

AR0BH056
10.27

AR0BH038
9.64

AS6BH012
8.61

AS7BH030
8.76

AS4BH033
8.53

AS4BH036
8.49

AS4BH048
8.64

AS8BH108
7.90

AS4BH040A
8.20

AS4BH043
8.31

AS4BH049
7.90

AS8BH109
8.63

HBH519ERM
8.42

AS4BH025
8.53

HBH510ERM
7.77

AS8BH055
6.69

HBH329BAE
8.26

AC1BH006
7.19

AC1BH007
6.25

HBH404BAE
5.83

10.00
9.50
9.00
8.50
8.00

LEGEND

- BOREHOLE LOCATION
- GROUNDWATER CONTOURS (mAOD)
- PRB
- BACK PLOT B
- 7.0 GROUNDWATER ELEVATION (mAOD)

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

N

0 4.5 9 18 27 36 45 Metres

TITLE: **GROUNDWATER ELEVATION AND CONTOUR PLAN (m AOD)**

SITE : **DAGENHAM FACILITY**

CLIENT : **SANOFI**

PROJECT :	25723123	FIGURE 3	
DATE :	20/07/15	DRAWN BY :	RJM
DRG No. :	92887012049 GIS		
SCALE :	1 : 1,500	PRINT :	A3

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VOCs

HBH105ERM
200 (mg/kg)
5 (mbgl)

AS8BH005A
759.68(mg/kg)
3.0-3.5(mbgl)

SITE SPECIFIC COMPOUNDS (VIA LCMSMS)

AR0BH082
18.44 (mg/kg)
0.4-0.5 (mbgl)

AS8TP008
95.74 (mg/kg)
1.1-1.3 (mbgl)

AS4BH026
14.98(mg/kg)
0.5-1.0(mbgl)

AS5BH006
12.10 (mg/kg)

AS8BH002
22.35(mg/kg)
1.8-2.4(mbgl)

AS8BH006
10.10(mg/kg)
1.2-1.8(mbgl)

AS8BH005
41.87(mg/kg)
1.2-1.4(mbgl)

LEGEND

BACK PLOT B

DISTRIBUTION IN SOIL (mg/kg)

- < 1 mg/kg
- 1 - 10 mg/kg
- 10 - 50 mg/kg
- > 50 mg/kg

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

SITE LAYOUT BASED ON OS BASEPLAN AND MAY VARY FROM ACTUAL SITE LAYOUT

mbgl - METRES BELOW GROUND LEVEL

TITLE: **SOIL CONTAMINANT DISTRIBUTION**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT : **25723123** | **FIGURE 4**

DATE : 13/03/15 | DRAWN BY : AP

DRG No. : 928870112055 GIS

SCALE : 1:1,800 | PRINT : **A3**

ARCADIS EC HARRIS

VOCs

QUANTIFIED SITE SPECIFIC COMPOUNDS

AS4BH032
19,255

AS4BH044
57,111

AS6BH001
20,510

AS6BH003
14,586

HBH210ERM
22,061

AS4PT002
12,227

AS4BH036
14,572

AS4BH042
36,773

AS4PT003
10,094

AS4BH052
10,343

AS4BH043
10,200

AS4BH040
26,161

AS4BH040A
10,006

AS4BH027
16,357

AS4BH043
13,659

HBH509ERM
10,250

AS4BH040
12,834

AS4BH040A
13,968

LEGEND

BACK PLOT B

CONTAMINANT DISTRIBUTION IN GROUNDWATER (µg/l)

- < MDL
- MDL - 100 (µg/l)
- 100 - 1,000 (µg/l)
- 1,000 - 10,000 (µg/l)
- 10,000 - 100,000 (µg/l)
- > 100,000 (µg/l)

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

SITE LAYOUT BASED ON OS BASEPLAN AND MAY VARY FROM ACTUAL SITE LAYOUT

mbgl - METRES BELOW GROUND LEVEL

TITLE: **GROUNDWATER CONTAMINANT DISTRIBUTION**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

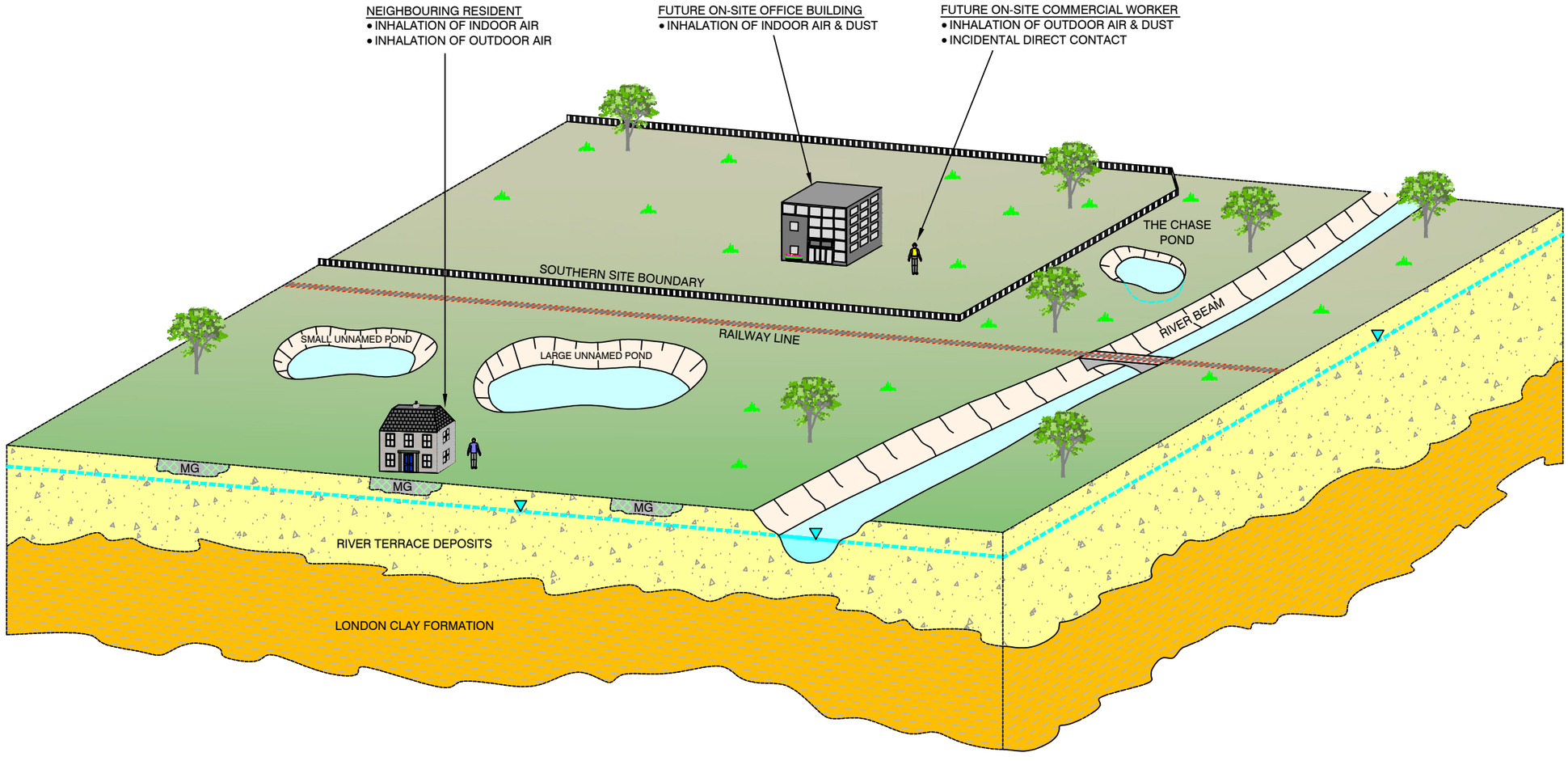
PROJECT : **25723123** | **FIGURE 5**

DATE : 18/03/15 | DRAWN BY : AP

DRG No. : 92887012069 GIS

SCALE : 1:1,800 | PRINT : **A3**

ARCADIS EC HARRIS



KEY

MG = MADE GROUND

NOTES

NOT TO SCALE - SCHEMATIC ONLY

REV	DATE	COMMENT	CAD

TITLE: CONCEPTUAL SITE MODEL

SITE: DAGENHAM

CLIENT: SANOFI

PROJECT: 25723123 | FIGURE 6

DATE: 11/03/15 | DRAWN: AP | REV: -

DRG.No.: 92887012052-CAD | PRINT: A3

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LEGEND

- BACK PLOT B
- VALIDATION MONITORING WELLS
- RPA
- Air Sparging with SVE Followed by ISCO (DRA 12 - 15)
- Groundwater Pumping (DRA 1 - 6 and 18)
- RPA 2 (Groundwater pumping followed by ISCO (DRA 8 - 10)
- Groundwater Pumping with LNANPL Removal Followed by ISCO
- Groundwater Pumping with SVE (DRA 7)
- ISCO (DRA 16 - 17)

NOTES

SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

0 5 10 20 30 40 50 Metres

N

TITLE: **VALIDATION MONITORING WELLS**

SITE : **BACK PLOT B**

CLIENT : **SANOFI**

PROJECT :	25723123	FIGURE 7	
DATE :	08/05/15	DRAWN BY :	RJM
DRG No. :	92887012065 GIS		
SCALE :	1 : 1,300	PRINT :	A3

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APPENDICES

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Appendix A
Regulatory Framework

APPENDIX A
Legislative Context and Regulatory Guidance

Land contamination is generally dealt with by the following types of regulation:

- Acts of Parliament to investigate and remedy harm caused by land contamination;
- Conditions placed upon Planning Permissions for the redevelopment of land; and,
- Acts of Parliament and Regulations for the control of waste.

In England land contamination is identified and dealt with through Acts / Regulations including:

- The Contaminated Land (England) (Amended) Regulations (2012);
- Part IIA of the Environmental Protection Act (1990);
- The Environment Act 1995;
- The Town and Country Planning Act (1990);
- The Environmental Permitting (England and Wales) (Amended) Regulations (2011);
- The Water Resources Act (1991);
- The Water Act (2003);
- The Environmental Damage (Prevention and Remediation) Regulations 2009; and,
- The Groundwater (England and Wales) Regulations (2009).

Part IIA of the Environmental Protection Act 1990

Part IIA of the Environmental Protection Act 1990 (which was inserted by Section 57 of the Environment Act 1995) created a regime for the identification and remediation of contaminated land. Section 78A(2) of the Environmental Protection Act 1990 defines contaminated land for the purposes of Part IIA as:

'*any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that;*
(a) significant harm is being caused or there is a significant possibility of such harm being caused; or
(b) significant pollution of controlled waters is being caused or there is a significant possibility of such pollution being caused.'[1]

Harm is defined under section 78A of the Environmental Protection Act as meaning 'harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property'. Types of harm are related to specific receptors in order to determine whether they can be regarded as "significant", as defined in the DEFRA (2012)[2] statutory guidance.

Part IIA sets the definition of contaminated land within the context of the 'suitable for use' approach. The 'suitable for use' approach underlies these objectives, and is based on the principles of risk assessment, including the concept of the 'pollutant linkage'.

In the event that there are unacceptable levels of risk posed by a site, a remediation notice can be served under the contaminated land regime introduced under Part IIA of the Environmental Protection Act 1990.

Regulation of Development on Land Affected by Contamination

Management of risks from contamination in development of land is also regulated in the England under the Town and Country Planning Act 1990. Land contamination is a material planning consideration within this planning regime. The Local Planning Authority may impose conditions on the

-

[1] Definition amended by the Water Act 2003, and came into force on 6th April 2012
[2] Contaminated Land Statutory Guidance. DEFRA 2012, which came into force on 6th April 2012

development during planning that include preliminary risk assessment, site investigation, risk assessment and remediation. The Environment Agency may use its role as a statutory consultee to provide the Local Planning Authority with advice.

Assessment of risk is again based on the pollutant linkage concept. The aim of risk management in the development should be to render the land suitable for the proposed use and, therefore, to prevent consideration of the site under Part IIA.

The National Planning Policy Framework (NPPF) (2012) provides high level guidance on the relationship between development and the management of risks from land contamination caused by historical use. The interpretation of the NPPF is left to local decision-makers, but with the expectation that good practice developed using the pre-existing Planning Policy Statements will be maintained. The Building Regulations 2000, made under the Building Act 1984, also require measures to be taken to protect new buildings and their occupants from the effects of contamination. Guidance on the requirements is provided in Approved Document C - Site preparation and resistance to contaminants and moisture, published by ODPM in 2004.

Voluntary Remediation Action

Voluntary remediation action on contamination resulting from historical activities can often anticipate future remediation requirements, such as through the Planning regime, and is encouraged, especially where the site is not being assessed under Part IIA.

Environmental Damage

The Environmental Damage (Prevention and Remediation) Regulations 2009 came into force on 1st March 2009 to implement EC Directive 2004/35 on environmental liability with regard to the prevention and remedying of environmental damage.

These Regulations do not apply retrospectively; environmental damage that took place before the Regulations came into force (1st March 2009), or damage that takes place (or is likely to take place) after that date but is caused by an incident, event or emission that occurred before that date are exempt from the requirements of the Regulations.

The Regulation is concerned with preventing environmental damage. It requires that all operators of activities that cause an imminent threat of environmental damage to take all reasonably practical steps to prevent the damage. Where damage has already been caused, the operator must take all reasonably practical steps to prevent further damage from occurring.

Non-statutory regulatory technical guidance documents

The non-statutory regulatory technical guidance for England on the assessment of land contamination, primarily released as part of the Contaminated Land Exposure Assessment (CLEA) methodology (DEFRA and EA) has recently been updated. The following documents currently present guiding principles in investigating and assessing potentially contaminated land, which are generally adopted in considering sites within any of the legal frameworks discussed above, or when considering voluntary remediation action:

- *Investigation of potentially contaminated sites – Code of Practice* (British Standard 10175: 2011).
- Contaminated Land Report CLR11 *Model Procedures for the Management of Land Contamination.* (DEFRA and EA, 2004).
- *Human health toxicological assessment of contaminants in soil* Environment Agency Science Report SC050021/SR2 (EA, 2009)
- *Updated technical background to the CLEA model* Environment Agency Science Report SC050021/SR3 (EA, 2009)
- *Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values* Environment Agency Science Report SC050021/SR7 (EA, 2008)
- *An ecological risk assessment framework for contaminants in soil.* Environment Agency Science Report SC070009/SR1 and related reports S2a-e
- *Groundwater Protection: Policy and Practice*, Environment Agency GP3 Parts 1-4
- *Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination* (EA of England and Wales, 2006) developed in consultation with the Scottish Environment Protection Agency (SEPA) and the Northern Ireland Heritage and Environment Service.
- *Assessing risks posed by hazardous ground gases to buildings* Report C665 (CIRIA, 2007)
- *BS 8485:2007 Code of practice for the characterization and remediation from ground gas in affected developments (*British Standards Institution, 2007)
- *Risk Based Corrective Action (RBCA) Methodology* (ASTM designation E1739-95, E2081-00).
- *DoE Industry Profiles*

Appendix B
Previous Report List

APPENDIX B
Previous Report List

- Historical Data Review, (ARCADIS Ref: 928870001_01, December 2008);
- Baseline Groundwater Monitoring Report, (ARCADIS Ref: 928870803_01, May 2009);
- Site-Wide Investigation Report (ARCADIS Ref: 928871027_01, November 2009);
- Scour Hollow Investigation Report (ARCADIS Ref: 928871036_01, November 2009);
- Site-Wide Detailed Quantitative Risk Assessment (ARCADIS Ref: 928871204, March 2010);
- Site-Wide Quantitative Groundwater Analysis Report (ARCADIS Ref: 928872110_01, November 2010);
- Remedial Options Appraisal – Surplus Land 2 – 4, Dagenham Facility (ARCADIS Ref: 928872106_01 / November 2010);
- Remediation Options Appraisal – Surplus Land 5 – 8, Dagenham Facility (ARCADIS ref: 928872105_01);
- Site-Wide Quantitative Groundwater Analysis Report – April / May 2011 (ARCADIS Ref: 928873702, May 2011);
- Remediation Priority Areas – Pilot Test Report (ARCADIS Ref: 928873106_01, June2011);
- Updated Site Wide Detailed Quantitative Risk Assessment (ARCADIS Ref: 928873302_01, July 2011);
- Remediation Priority Areas – Remediation Implementation Plan (ARCADIS Ref: 928874502_01, November 2011);
- Remediation Priority Areas – Remediation Validation Plan (ARCADIS Ref: 928874503_02, November 2011);
- Site-Wide Quantitative Groundwater Analysis Report – October 2011 (ARCADIS Ref: 928874604_02, November 2011);
- Site Wide Remediation Implementation Plan (ARCADIS Ref: 928875401_01, April 2012);
- Site Wide Remediation Areas Validation Plan (ARCADIS Ref: 92885402_03, May 2012);

- Former D44 Landfill Groundwater Validation Plan (ARCADIS Ref: 2572310203_03, October 2012); and,

- Former D44 Landfill Groundwater Remediation Implementation Plan (ARCADIS reference 2582310201_02, June 2013).

Appendix C
Background to the Definition of Remediation Areas

Appendix C
Background to the Definition of Remediation Areas

The remediation areas detailed in this validation plan were defined as outlined below.

Remediation Priority Area 2

Remediation Priority Area 2 is one of three identified three RPA within the Dagenham Facility. The RPA are defined as areas that may require longer remediation timeframes and therefore require remediation to commence earlier than in other areas of the site, due to the presence of very high concentrations of dissolved phase contaminants and/or the presence of Non Aqueous Phase Liquid (NAPL).

Remediation Priority Area 2 was identified based on the presence of Dense Non Aqueous Phase (DNAPL) liquid down-gradient of the PRB and where elevated concentrations of trichloroethene and chloroform were measured in groundwater up and down gradient of the PRB.

In addition to trichloroethene and chloroform, other contaminants of concern (CoC) are present in RPA 2 and are also considered in the remediation design detailed in the Remediation Implementation Plan (ARCADIS reference 928874502, November 2011).

Defined Remediation Areas 4, 6, 10, 13, 15 and 16

Following on from the prioritisation of the three RPA, a strategy was required for the remaining soil and groundwater concentrations measured above the relevant site specific assessment criteria (SSAC), as derived in the updated DQRA (ARCADIS Ref: 928873302_02, July 2011).

The area represented by soil and groundwater beneath the Dagenham Facility with contaminant concentrations measured above SSAC meant that, in many cases it is not achievable or cost effective to remediate in order to meet the derived target levels. Although a full cost benefit analysis has not been completed to date, a methodology was defined to identify remediation areas based on the highest concentrations measured in soils and groundwater. By targeting a high mass reduction in these areas the overall contaminant mass within soil and groundwater be reduced more significantly than by targeting a lower mass reduction across the wider Dagenham Facility.

Multiple sources and multiple environmental receptor points have been defined for the Dagenham Facility, with different source areas potentially contributing to the predicted concentrations at several of the environmental receptor points. As a result, the environmental risk assessment indicated ranges for Site Specific Assessment Criteria (SSAC), and for some of the target CoC the derived SSAC were very low, and sometimes below laboratory MDL. To achieve such low SSAC across the Dagenham Facility would be beyond the technical capability of available remediation techniques within a reasonable timeframe, and not entailing excessive cost.

An alternative approach was developed to guide the remediation across the Dagenham Facility. A practical approach was developed within the Remediation Option Appraisal (ROA)

reports conducted for Surplus Land Zones 2 and 3, whereby the Remediation Areas were defined based on the presence of an individual CoC in groundwater at concentrations requiring more than 70% concentration reduction to achieve the average environmental SSAC.

The DRA either fully or partially located within Back Plot A are presented on Figure 2 and were defined based on both locations that have specific contaminant concentrations present requiring more than 70% reduction in concentration to meet the applicable environmental SSAC and locations which would require remediation to remove the potential risk posed to human health receptors. A detailed description of how the areas were defined is presented in the Site Wide Remediation Validation Report (ARCADIS Ref: 928875402_01, May 2012).

The Remediation Areas have been further sub divided, based upon the contaminant distribution and encountered geology and hydrogeology, into DRA 4, 6, 10, 13, 15 and 16.

DRA 18

Based on a review of the most prevalent and / or concentrated CoC within DRA18, a list of "indicator compounds" was derived for groundwater beneath DRA18 (see Appendix H). In brief the selection method involved reviewing the number of detections, average concentrations and maximum concentrations measured. Due to the size of DRA18 and the complex arrangement of contaminant plumes present, ranges of SSAC were derived. The frequency and magnitude of compound concentrations was assessed and considered in view of the available SSAC ranges, and a justification for CoC selection presented. These indicator compounds, along with other sum compounds were selected as target compounds for DRA18.

In order to achieve the most effective reduction in contaminant mass, the distribution of the indicator compounds was used to define DRA18. Groundwater monitoring data from October 2012 and August 2013 were used to identify areas where the concentrations of individual indicator compounds were greater than 250µg/l. As an additional line of evidence to confirm the majority of contaminant mass has been considered, areas where the sum concentration of site specific pharmaceutical compounds is greater than 1000µg/l were also identified and included within DRA18.

The value of 250µg/l, used as screening criteria helping to inform the determination of DRA18, is discussed below in relation to the indicator compounds selected.

The environmental SSAC for the selected indicator compounds are presented in the table below:

Indicator Compound	Environmental SSAC
N(1)-2-Pyridyl Sulfanilamide	1-10µg/l
Sulphathiazole	1-10µg/l
Diphenylguanidine	1-12µg/l
Pentobarbital	60-630µg/l
Carbendazim	1-19 µg/l

The screening concentration of 250µg/l selected was approximately one order of magnitude higher than the high-end SSAC derived for the majority of indicator CoC. For pentobarbital, it lies within the range of SSAC derived.

During the derivation of SSAC, a number of assumptions were made due to the lack of environmental data available on the above compounds. As environmental compliance criteria were not available, compliance concentrations were generally consider at the laboratory method detection limit.

Works undertaken on behalf of Sanofi (Quantitative Risk Assessment for Boyers Pond, ARCADIS Ref: 928874902_02, March 2012) provided predicted no effect concentrations (PNEC) for some of the selected indicator compounds. The PNEC derived are presented in the table below:

Indicator Compound	NOEC / EC_{50}	Assessment Factor (AF)	PNEC
N(1)-2-Pyridyl Sulfanilamide	21,600µg/l (*EC_{50} Hydra attenuata)*	3000	7.2µg/l
Sulphathiazole	11,000µg/l (*NOEC Daphnia magna)*	100	110µg/l
Diphenylguanidine	300µg/l (*NOEC Selenastrum capricornutum)*	50	6µg/l

The PNEC above have been derived from the no observed effects concentration (NOEC) or maximal effective concentration (EC_{50}) stated above by applying the assessment factor (AF) stated. The assessment factor is usually dependent upon the quality and quantity of data available.

It can be seen that all the NOEC or EC_{50} are greater than 250µg/l. The attenuation factors selected are high, particularly for N(1)-2-pyridyl sulphanilamide, due to the lack of experimental data available.

The information provided in the PNEC derivation has been considered alongside some of the potential conservatisms applied in the site-wide DQRA (ARCADIS Report Ref: 928871204_01). The conservatisms were applied due to the lack of measured environmental data available in literature and/or site data and include:

- Modelling of no or limited groundwater degradation;
- Modelling of degradation in the dissolved phase only;
- Modelling of a compliance point at the aquifer. It is noted that the River Beam is over 300m from the site boundary.

Considering the information provided above, the use of a screening concentration of 250µg/l for individual indicator compounds is considered to provide a pragmatic approach in the definition of remediation areas.

Appendix D
RPA2 Target Derivation

Appendix D

RPA 2 Target COC Derivation

Due to the wide range of chemical compounds historically used and manufactured at the site, laboratory analysis *via* Orbitrap Liquid Chromatography Mass Spectrometry – Mass Spectrometry (LCMS-MS) was used to enable qualitative determination of the potential site-specific Contaminants of Concern (CoC). The accurate mass LCMS-MS screening analysis is semi-quantitative, as the analysis is designed to identify compounds present and not compare to a matching standard. Although this approach meant that accurate measured concentrations could not be determined, it facilitated an understanding of which compounds and what type of compounds are present within soils and groundwater across the site including the RPAs.

Over 800 compounds were identified by the Orbitrap LCMS-MS analysis undertaken on soil and groundwater samples collected during the investigations (site wide) and these were allocated into eight groups, which are presented below:

- Sulphonamides;
- Barbiturates;
- Anti-psychotic compounds;
- Anti-histamine compounds;
- Miscellaneous pharmaceuticals;
- Pesticides (herbicides, insecticides and fungicides);
- Miscellaneous chemicals; and,
- Unidentified compounds (where the chemical structure of the compound could not be determined by the accurate mass LC-MS-MS screen).

In 2010, a Site Wide Detailed Quantitative Risk Assessment (DQRA) was carried out for the whole site. In the DQRA report, the compounds in the eight groups were assessed based on their magnitude, distribution and general physical characteristics of each group so that a target list of representative CoC could be developed. A total of 55 site wide representative compounds were identified and a dedicated quantitative analytical method for their analysis was produced.

Based on the risk to receptors, magnitude and extent, and expected remediation performance, a “Target List” of CoCs was defined for soils and groundwater for RPA2 and a justification for their selection from the list of 55 presented in Appendix Tables D1A-D1C.

Table D1A

Selected Target CoC in Groundwater - RPA 2

					Semi - Quantified Analysis - 2009				Quantified Analysis - 2010				Quantified Analysis - 2011				Volatility			Mobility					
CoC	Human Health SSAC (µg/l)	Environmental SSAC Ranges (µg/l)	Mid range SSAC Treatment Area 2 (µg/l) - Defined in Site Wide DQRA	Score	Maximum Concentration (Quantified Monitoring) (µg/l)	Score	90% Reduction of Average Concentration (µg/l) -	Score	Maximum Concentration (Quantified Monitoring) (µg/l)	Score	90% Reduction of Average Concentration (µg/l)	Score	Maximum Concentration (Quantified Monitoring) (µg/l)	Score	90% Reduction of Average Concentration (µg/l)	Score	Kaw (10C)	Vapour Pressure (Pa)	Score	Solubility (mg/l)	Log Koc (cm3/g)	Score	Overall Rank	Selected as Remediation CoC?	Justification
35.2 Suite																									
Sulphonamides																									
Sulphamethizole	No SSAC	1 - 10	5	1	4,297	3	**94**	3	309	3	**22**	3	96	2	3.43	2	1.07E-12	2.75E-07	3	1,050	1.24	1	21		Lowest overall rank, highest concentrations, potentially hardest to treat
Sulphathiazole	No SSAC	1 - 10	5	1	6,353	2	**220**	2	964	2	**26**	2	82	3	3.40	2	1.64E-09	5.63E-06	2	1,050	0.932	1	17		
N(1)-2-Pyridyl Sulfanilamide	No SSAC	1 - 10	5	1	37,931	1	**717**	1	41,217	1	**792**	1	1104	1	**31.6**	1	3.30E-09	8.36E-06	1	268	1.12	2	10	**Yes**	
Barbiturates																									
Phenobarbital	No SSAC	10,400 - 104,000	57,170	3	1	3		1	22	3	2	1		3		1	2.35E-14	2.64E-10	3	1,110	1.78	1	19		Only relativel low level concentrations were measured in groundwater.
Amylo/pentabarb	No SSAC	60 - 630	340	1	150	1	5.2	1	3,098	1	108	1	999	1	16	1	5.70E-12	4.03E-08	2	679	2.11	2	11		
Butalbarbital	No SSAC	60 - 640	350	2	3	2	0.25	1	26	2	2	1	12	2	1.20	1	ND	4.48E-08	1	550	2.04	3	15		
Anti-psychotics																									
Chlorpromazine	No SSAC	No SSAC	No SSAC	1		1		1		2		1		1		1	1.61E-09	2.36E-05	2	2.55	4.48	2	12		Only relativel low level concentrations were measured in groundwater.
Amphetamine	4,270,000	No SSAC	No SSAC	1		1		1	31	1	3	1		1		1	4.41E-05	320	1	28,000	1.53	1	9		It was recognised within the DQRA that the CoC did not pose a
Molindone	No SSAC	Not considered in the Environmental Risk		1		1		1		2		1		1		1	3.14E-04	1.27E-06	3	4.74E-04	1.97	3	14		significant risk therefore no SSAC were derived.
Anti-histamines																									
Promethazine	No SSAC	No SSAC	No SSAC	1		1		1		1		1		1		1	2.04E-08	1.83E-04	1	15.6	4.00	2	10		Only relativel low level concentrations were measured in groundwater.
Mepyramine	No SSAC	No SSAC	No SSAC	1		1		1		1		1		1		1	1.44E-11	2.33E-04	2	245	2.75	1	10		It was recognised within the DQRA that the CoC did not pose a significant risk therefore no SSAC were derived.
Miscellaneous Pharmaceuticals																									
Isometheptene	No SSAC	1 - 13	7.3	2		5		5		3		3		3		1	Insufficient data	Insufficient data	4	10,000#	2.60	2	28		Lowest overall rank, highest concentrations, potentially hardest to treat. 3-Ethylbenzophenone selected as it is a breakdown product of Ketoprofen.
Diisopropylamine	No SSAC	1 - 13	7.3	2	649	2	**43.6**	2		3		3		3		1	3.10E-05	ND	1	110,000	1.23	1	18		
Ketoprofen	No SSAC	1 - 13	7.3	2	3986	1	**121.4**	1	1204	1	**41**	1		3		1	1.05E-07	4.96E-05	2	51	2.64	4	16	**Yes**	
Acebutolol	No SSAC	1 - 13	7.3	2	163	4	**8.8**	3	271	2	**16**	2	71	2	7.10	1	9.86E-14	ND	3	259	1.49	3	22		
3-Ethylbenzophenone	No SSAC	No SSAC	No SSAC	1	177	3	17.7	4		3		3	412	1	21.55	1							16	**Yes**	
Miscellaneous Chemicals																									
Hexamine	No SSAC	3 - 25	6.8	1	26	1	2.6	1		2		1		2		1	4.64E-08	0.35	3	449,000	-1.14	1	13		Only relativel low level concentrations were measured in groundwater.
N-Ethyl-m-toluidine	No SSAC	1 - 20	14	3	20	2	2	1		2		1		2		1	2.11E-03	17.3	1	470	2.25	3	16		
Diphenylguanidine	No SSAC	1 - 12	8.94	2		3		1	162	1	5	1	40	1	1.87	1	1.01E-07	ND	2	1,000	2.44	2	14		
Pesticides																									
Atrazine	No SSAC	1.1	11	3		4		3		3		3		2		1	1.22E-07	4.00E-05	2	30	2.38	3	24		Lowest overall rank, highest concentrations, potentially hardest to treat
Carbofuran	No SSAC	50 - 80	60	4	14,980	1	**750**	2	2435	1	**220**	1		2		1	3.59E-07	2.67E-03	1	700	2.18	1	14	**Yes**	
Diuron	No SSAC	0.2	0.2	1	47	2	**3.1**	1		3		3		2		1	5.69E-10	2.30E-07	3	40	2.35	2	18		
Carbendazim	No SSAC	1 - 19	9	2	20	3	2	3	101	2	**10**	2	7	1	0.70	1	6.60E-10	6.50E-08	4	8	1.80	4	22		
BTEX																									
Benzene	110,000	No SSAC	No SSAC	1	11	2	0.76	1	68	2	3	1	24	2	1.38	1	0.12	6,238	1	1,780	1.83	1	12		Only relativel low level concentrations were measured in groundwater.
Ethylbenzene	No SSAC	No SSAC	No SSAC	1		3		1	2	3	0.2	1	4	3	0.40	1	0.14	553	3	180	2.65	4	20		
O-Xylene	No SSAC	No SSAC	No SSAC	1		3		1		4		1		4		1	0.10	452	4	191	2.66	3	22		It was recognised within the DQRA that the CoC did not pose a significant risk therefore no SSAC were derived.
p/m-Xylene																							0		
Toluene	No SSAC	No SSAC	No SSAC	1	14	1	1.4	1	77	1	3	1	103	1	4.50	1	0.11	1,731	2	590	2.31	2	11		
Chlorinated Aliphatics																									
Chloroform	1,100,000	3 - 340	118	1	1,079	3	33	1	22,011	2	**600**	2	14,486	3	**231**	2	0.08	13,513	2	8,950	1.70	1	17	**Yes**	Lowest overall rank, highest concentrations, potentially hardest to treat
Tetrachloroethene	No SSAC	9 - 1,070	539	3	9	5	0.9	1	20	5	1	3		5		3	0.32	1,009	5	225	2.43	5	35		
Trichloroethene	229,000	7 - 700	354	2	14,083	1	262	1	335,452	1	**8,654**	1	350,736	1	**10,505**	1	0.19	4,580	4	1,370	2.15	4	16	**Yes**	Lowest overall rank. Relatively high concentrations in groundwater, resulting in the average concentrations in exceedance of average environmnetal SSAC.
Cis-1,2-Dichloroethene	219,000	32 - 3,080	1,554	5	4,606	2	146	1	3,432	3	102	3	40,638	2	1,063	3	0.145	12,333	3	3,500 (298.15)	1.61	2	24		
Vinyl Chloride	9,280	10 - 2,460	1,234	4	983	4	13	1	382	4	12	3	1,718	4	33	3	0.75	220,106	1	2,760 (25ºC)	1.22	3	27		
Chlorinated Aromatics																									
Chlorobenzene	No SSAC	700 - 5,400	3,100	1	41	3	4.1	1		3		1	83	3	3.98	1	0.08	673	1	387	2.40	1	15		Although only relativel low level concentrations were measured in
1,2-Dichlorobenzene	No SSAC	6,100 - 41,000	23,600	3	51	2	1.8	1	4,334	1	97	1	6034	1	167	1	0.03	72.1	2.0	133	2.84	2	14	**Yes**	groundwater. Analysis of DNAPL fromthis part of the Site indicated
1,4-Dichlorobenzene	No SSAC	1,900 - 12,000	7,000	2	63	1	6.3	1	663	2	18	1	982	2	39	1	0.005	38.5	3.0	51.2	2.85	3	16		that it contained 65% 1,2-dichlorobenzene.

Ranking	Compounds are ranked within each group from highest to lowest within each group. Select lowest score - balance of lowest target levels (worst case - more treatment likely) highest concentrations (worst case - more treatment likely), hardest to treat (worst case - more likely to treat compounds which are easier to treat)
Overall Score	Overall score is the sum of the dervied scores
Target Levels	Lowest target level = 1, Highest = number of compounds in group (equal rank where concentrations very similar)
1.2	Concentration at 90% contaminant mass reduction exceeds the average SSAC
	CoC Selected as Target Compound

Table D1B

Target Levels in Groundwater - RPA2

					Semi - Quantified Analysis - 2009		Quantified Analysis - 2010			Quantified Analysis - 2011		Pilot Test - Contamiant Reduction Data		Performance Criteria	
CoC	**MDL (µg/l)**	**Environmental SSAC Ranges (µg/l)**	**Mid range SSAC Treatment Area 1 (µg/l) - Defined in Site Wide DQRA**	**Human Health SSAC (µg/l)**	**Maximum Concentration (Quantified Monitoring) (µg/l)**	**90% Reduction of Average Concentration (µg/l) -**	**Maximum Concentration (Quantified Monitoring) (µg/l)**	**Average Concentration (Quantified Monitoring - 2010) (µg/l)**	**90% Reduction of Average Concentration (µg/l)**	**Maximum Concentration (Quantified Monitoring) (µg/l)**	**90% Reduction of Average Concentration (µg/l)**	**% Contaminant destruction (based on RPA Pilot Test**	**Average concentration remaining after % reduction esimated from pilot test (based on 2011 dataset) (µg/l)**	**Defined Target Level (µg/l)**	**% Reduction in average baseline groundwater concentrations in validation wells**
Sulphonamides															
N(1)-2-Pyridyl Sulfanilamide	<5	1 - 10	5	No SSAC	37,931	717	41,217	7,919	792	1104	31.6	84%	52	N.D.	80%
Miscellaneous Pharmaceuticals															
Ketoprofen	<10	1 - 13	7.3	No SSAC	3986	121.4	1204	408	41	NI	NI	90%	-	N.D.	90%
3-Ethylbenzophenone	<10	No SSAC	No SSAC	No SSAC	177	17.7	NI	NI	NI	412	22	90%	21		
Pesticides															
Carbofuran	<10	50 - 80	60	No SSAC	14,980	750	2435	2,203	220	NI	NI	84%	-	N.D.	80%
Chlorinated Aliphatics															
Chloroform	<2	3 - 340	118	1,100,000	1,079	33	22,011	6,000	600	14,486	231	89%	250	N.D.	85%
Trichloroethene	<2	7 - 700	354	229,000	14,083	262	335,452	86,538	8,654	350,736	10,505	83%	17,754	1,700	80%
Chlorinated Aromatics															
1,2-Dichlorobenzene	<2	6,100 - 41,000	23,600	ND	51	1.8	4,334	970	97	6,034	167	75%	413	N.D.	75%

Ranking	Compounds are ranked within each group from highest to lowest within each group. Select lowest score - balance of lowest target levels (worst case - more treatment likely) highest concentrations (worst case - more treatment likely), hardest to treat (worst case - more likely to treat compounds which are easier to treat)
Target Levels	Lowest target level = 1, Highest = number of compounds in group (equal rank where concentrations very similar)
1.2	Concentration at 90% contaminant mass reduction exceeds the average SSAC
ND	Not defined - specified contamiant reduction is the performance criteria

Table D1C

Selected Target CoC in Soil - RPA 2

CoC	Human Health SSAC (mg/kg)	Score	Environmental SSAC Ranges (mg/kg)	Mid range SSAC Treatment Area 2 (mg/kg) - Defined in Site Wide DQRA	Score	Number of Samples Detected	Score	Maximum Concentration (mg/kg)	Score	Average Concentration (mg/kg)	Score	Present in Groundwater (Y/N) - Quantified Analysis	Overall Score	Selected as Remediation CoC?	Justification
Metals&Inorganic															
Aluminium	408000	17	No SSAC	No SSAC	2	5	2	16360	1	6800.40	1		23		
Antimony	851	5	No SSAC	No SSAC	2	1	4	2	14	2.00	12		37		
Arsenic	635	4	No SSAC	No SSAC	2	6	1	13.1	10	7.50	11		28		
Barium	19300	14	No SSAC	No SSAC	2	6	1	93	5	42.67	5		27		
Beryllium	1390	6	No SSAC	No SSAC	2	5	2	1	15	0.74	15		40		
Boron	124000	16	No SSAC	No SSAC	2	4	3	2	14	1.43	13		48		
Cadmium	233	3	No SSAC	No SSAC	2	1	4	0.2	16	0.20	16		41		
Chromium	6250	12	No SSAC	No SSAC	2	6	1	38	8	21.82	8		31		
Copper	70900	15	No SSAC	No SSAC	2	6	1	13	11	8.83	10		39		
Lead	6160	11	No SSAC	No SSAC	2	4	3	30	9	13.50	9		34		
Manganese	2490	8	No SSAC	No SSAC	2	5	2	371	2	179.20	3		17		
Mercury (inorganic)	3660	9	No SSAC	No SSAC	2	4	3	9.8	12	3.55	12		38		
Mercury (elemental)	30	2	No SSAC	No SSAC	2	NA	3	NA	12	NA	12		31		
Molybdenum	5540	10	No SSAC	No SSAC	2	5	2	4.7	13	1.32	14		41		
Nickel	1830	7	No SSAC	No SSAC	2	6	1	61	6	22.08	7		23		
Phosphorus (assessed as White Phosphorus)	2.12	1	1,567-17,111	9,339	1	5	2	367	3	203.6	2		9	**N**	Presence of white phosphorus allotrope unlikely
Vanadium	12900	13	No SSAC	No SSAC	2	6	1	52	7	31.17	6		29		
Zinc	NR	18	No SSAC	No SSAC	2	6	1	162	4	55.67	4		29		
Chlorinated Aliphatics															
Chloroform	0.377	2	0.04	0.04	1	1	2	0.013	2	0.013	2	Y	9		
Cis-1,2-Dichloroethene	12.3	3	0.24-1.1	0.67	3	1	2	0.01	3	0.01	3	Y	14		
Tetrachloroethene	245	5	0.72-2.28	1.5	5	0	3	0	4	na	4	Y	21		
Trichloroethene	17	4	0.19-0.69	0.215	2	2	1	0.075	1	0.05	1	Y	9		
Vinyl Chloride	0.0545	1	0.68-1.92	1.3	4	0	3	0	4	na	4	Y	16		
Chlorinated Aromatics															
1,2-Dichlorobenzene	14,200	2	1,277-18,304	9,791	3	1	1	8.54	1	8.54	1	Y	8		
1,4-Dichlorobenzene	70,100	3	423-2915	1,669	2	0	2	0	2	na	2	Y	11		
Chlorobenzene	163	1	72.4-509	291	1	0	2	0	2	na	2	Y	8		
BTEX															
Benzene	35	1	5.5-1050	522	1	1	1	0.005	2	0.005	2	Y	7		
Toluene	425,000	4	314-35,300	17,807	3	1	1	0.016	1	0.016	1	Y	10		
Ethlybenzene	25,100	3	268-33,000	16,634	2	0	2	0	4	na	4	N	15		
Xylenes	10,200	2	417-50,100	25,259	4	1	1	0.003	3	0.003	3	N	13		
Other Compounds															
Free cyanide	0.0801	1	No SSAC	No SSAC	2	0	2	0	2	0.00	2	N	9		
Total Cyanide	NR	3	0.066-0.43	0.248	1	0	2	0	2	0.00	2	N	10		
Total PCB 7 Congeners	9.02	2	No SSAC	No SSAC	2	1	1	0.044	1	0.04	1	N	7		
Sulphonamides															
N(1)-2-Pyridyl Sulfanilamide	37,900	1	0.0012-0.012	0.0066	3	2	1	0.535	1	0.38	1	Y	7	**N**	Concentrations are not considered to represent a signficant soil source which poses a signficant risk to water resrouce receptors.
Sulphamethizole	37,900	1	0.0014-0.014	0.0049	1	1	2	0.024	3	0.02	3	Y	10		
Sulphathizole	37,900	1	0.001-0.01	0.0055	2	1	2	0.075	2	0.08	2	Y	9		
Barbiturates															
Pentobarbital	3,790	2	0.08-0.8	0.44	2	2	1	0.014	1	0.01	1	Y	7		
Phenobarbital	1,900	1	2198-21,978	12,088	3	0	3	0	3	na	3	Y	13		
Butalbarbital	3,790	2	0.07-0.7	0.385	1	1	2	0.001	2	0.00	2	Y	9		
Anti-psychotics															
Amphetamine	8.11	1	0.02-1.64	0.83	2	0	1	0	1	na	1	N	6		
Molindone	550	2	No SSAC	No SSAC	3	0	1	0	1	na	1	N	8		
Chlorpromazine	1,080	3	0.02-0.95	0.485	1	0	1	0	1	na	1	N	7		
Anti-histamines															
Promethazine	341	2	4-116	60	1	0	1	0	1	na	1	N	6		
Mepyramine	26.6	1	0.23-2.44	1.335	2	0	1	0	1	na	1	N	6		
Misc Pharmaceuticals															
Acebutolol	5,420	3	0.03-0.99	0.51	2	1	3	3.754	1	3.75	1	N	10	**N**	Concentrations not considered to present a risk to water resource receptors as not identified in groundwater.
Diisopropylamine	NO SSAC	4	0.002-0.38	0.191	1	2	2	0.168	4	0.16	3	N	14		
Isometheptene Hydroxy	1,630	1	0.24-2.41	1.325	3	1	3	0.201	3	0.20	2	Y	12		
Ketoprofen	2,710	2	0.03-0.99	0.51	2	3	1	0.429	2	0.20	2	N	9		
Misc Chemicals-CoC															
Diphenylquanidine	9,480	1	0.06-1	0.53	2	0	2	0	2	na	2	N	9		
Hexamine	55,000	2	No SSAC	No SSAC	3	2	1	0.137	1	0.08	1	Y	8		
N-Ethyl-m-toluidine	NR	3	0.04-0.63	0.335	1	0	2	0	2	na	2	Y	10		
Pesticides-CoC															
Carbofuran	3,790	1	1.2-2.36	1.78	4	2	1	0.121	1	0.06	1	Y	8		
Diuron	3,790	1	0.005-0.009	0.007	1	1	2	0.06	2	0.06	1	N	7	**N**	Concentrations not considered to present a risk to water resource receptors as not identified in groundwater.
Atrazine	9,480	2	0.027-0.056	0.0415	2	1	2	0.024	3	0.02	2	N	11		
Carbendazim	37,900	3	0.015-0.18	0.0975	3	0	3	0	4	na	3	Y	16		

na	not applicable
NA	not anlaysed
ND	not detected
1.23	Exceeds SSAC protective of water resource receptors
1.23	Exceeds SSAC protective of human health receptors

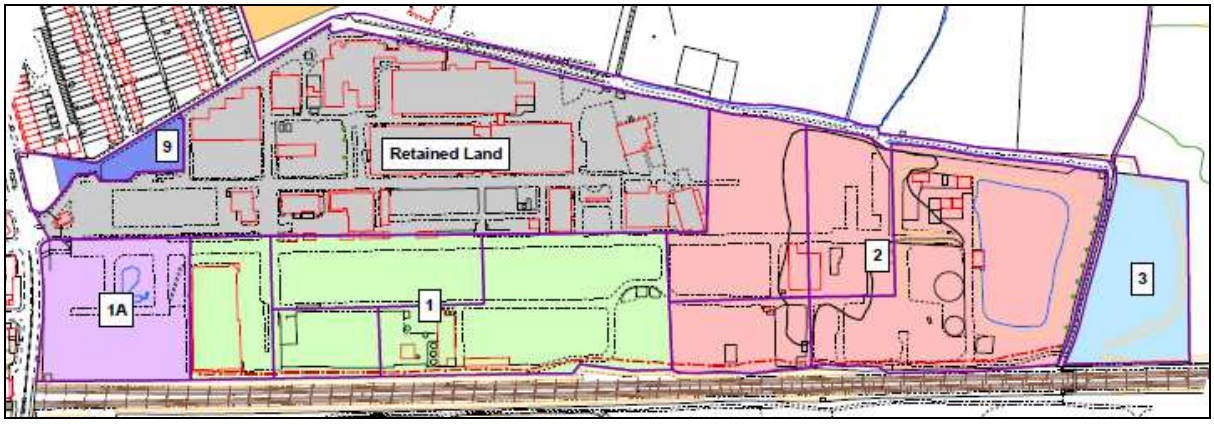
Appendix E
DRA Derivation – Groundwater

Appendix E

Defined Remediation Areas (groundwater)

The majority of soil and groundwater beneath the site has measured concentrations of contaminants above the target levels protective of environmental receptors. In many cases it is not achievable or cost effective to remediate the site to meet the derived target levels. Although a full cost benefit analysis has not been completed to date a methodology has been defined to identify remediation areas based on the highest concentrations measured in soils and groundwater. By targeting a high mass reduction in these areas the overall contaminant mass within soil and groundwater be reduced more significantly than by targeting a lower mass reduction across the wider site.

Site Specific Assessment Criteria (SSAC) derived during the Updated Site Wide Detailed Quantitative Risk Assessment (ARCADIS Reference: 928873302_01, July 2011) were used to assess measured concentrations of contaminants of concern (CoC) such that locations could be identified where >70% reduction in contaminant mass would be required to meet the applicable environmental SSAC and also identify locations exceeding applicable human health SSAC. Due to the size of the site and the number of potential sources and receptors involved, a number of average SSAC were derived for different areas of the site which are shown below.

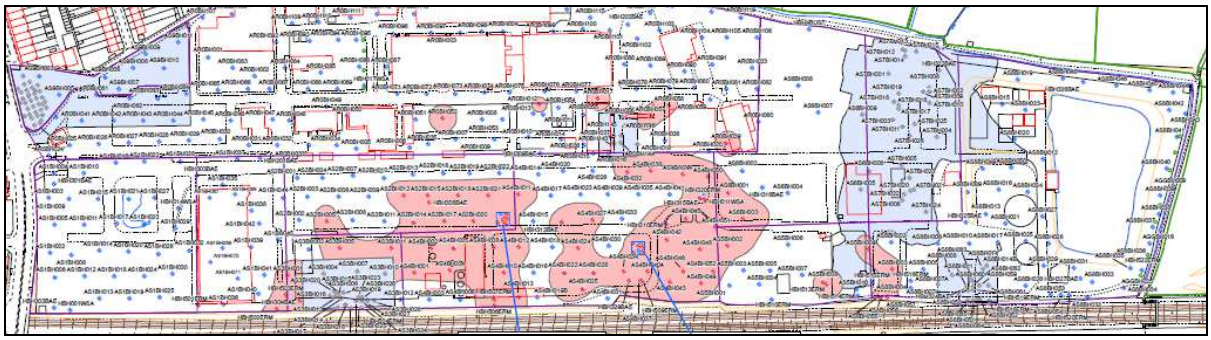


Due to limited groundwater datasets the wider trends in contaminant concentrations is not fully established. In view of this, the comparison of groundwater concentrations to SSAC was completed based on the most recent measured concentrations for each of the locations investigated as this was deemed to be the most representative of current groundwater conditions. However, an additional assessment was conducted to compare the SSAC against the average concentrations measured in each of the locations such that any potentially unrepresentative CoC concentrations in the most recent data set could be identified such that any significant areas of groundwater contamination would not be excluded from the source reduction remediation works.

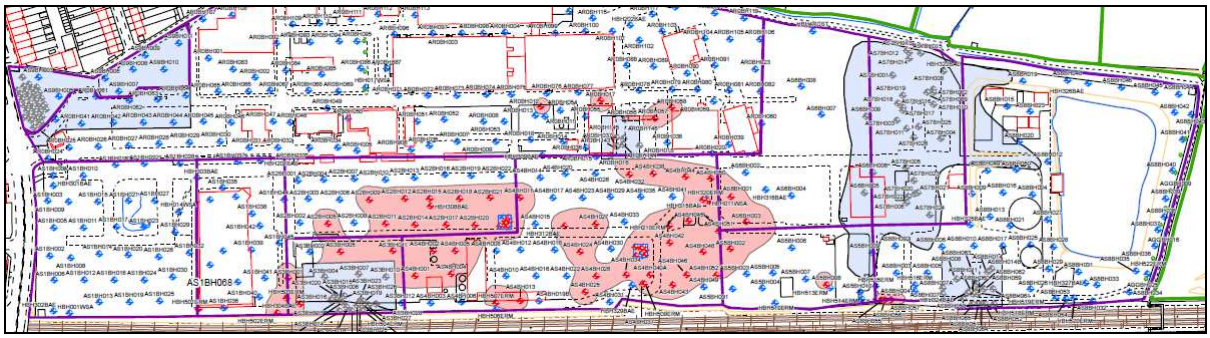
The results of the SSAC assessment for both most recent and average data is presented in Appendix Table E-1 and shown on the figures overleaf for the defined CoC (Volatile Organic Compounds and site specific pharmaceutical compounds). The areas indicated in red and

green are those areas in which concentrations are sufficiently high enough to be included in the remediation areas. Areas in blue are areas considered under separate phases of work.

VOCs – Average

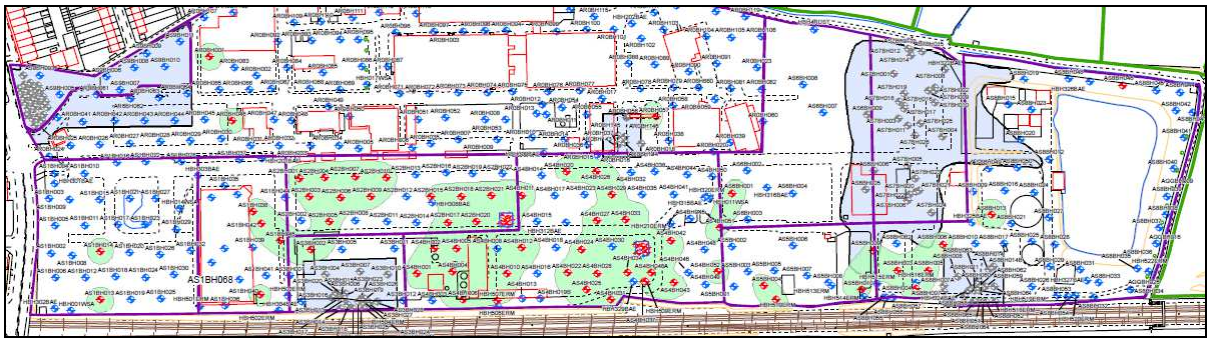


VOCs – Most Recent Data



Site Specific Pharmaceutical Compounds – Average

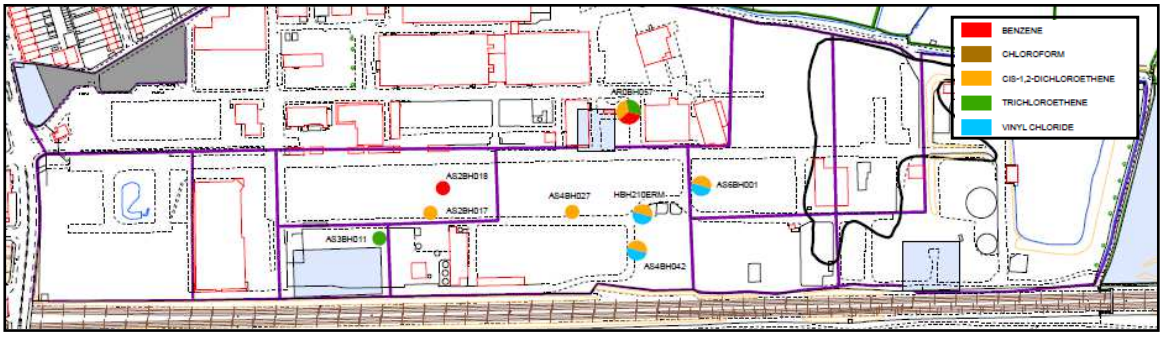
Site Specific Pharmaceutical Compounds – Most Recent Data



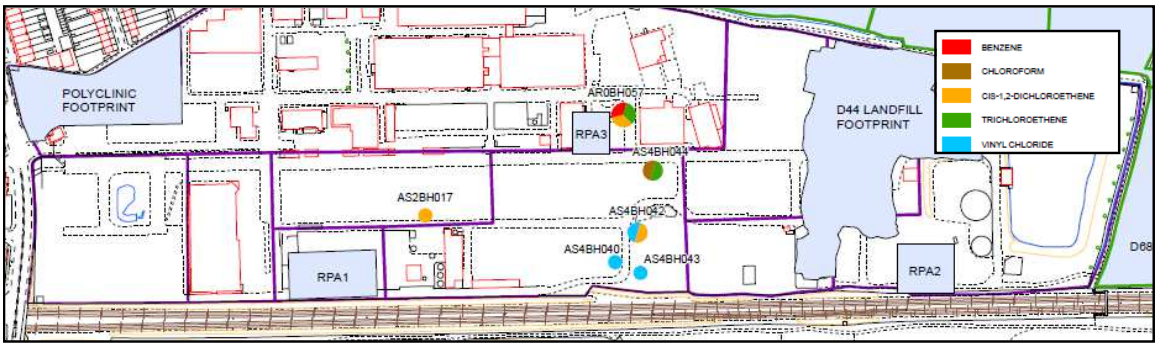
Remediation areas based on the risk posed to human health receptors

The results of the SSAC assessment for both most recent and average data is presented in Appendix Table E-1 and the locations shown on the figures below for the defined CoC based on the risk posed to both commercial workers and neighbouring residents.

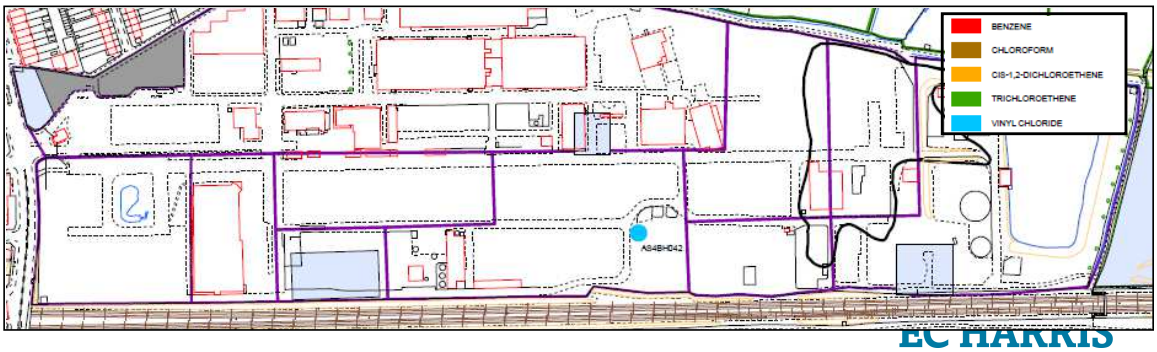
Neighbouring Residents (most recent data)



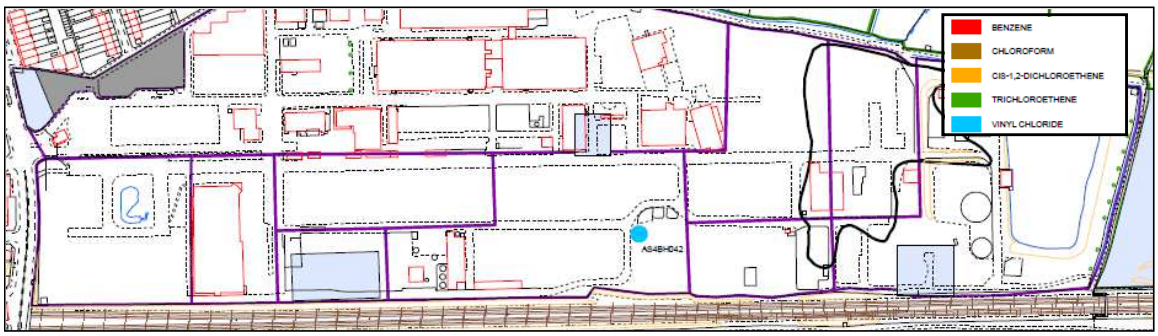
Neighbouring Residents (average data)



Commercial Worker (most recent data)

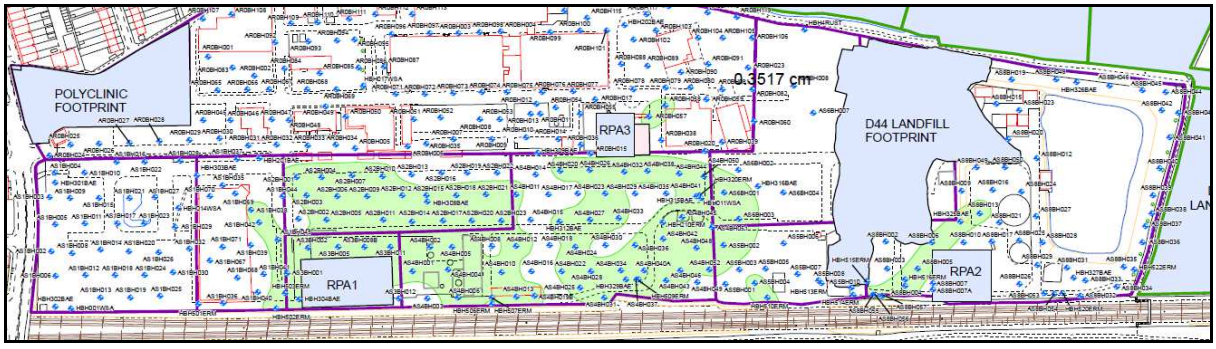


Commercial Worker (average data)



Defined Groundwater Remediation Areas

Locations which were not found to be included in both the most recent and average data assessment were assessed further. This included a trend analysis and consideration based on the area impacted (i.e. how localised the concentrations were). This assessment is presented in Appendix Table E-2 and the final locations selected to be included in the Defined Groundwater Remediation Areas presented in Appendix Table E-3 and shown as green areas below.



The selected CoC and performance criteria for each of the previously defined Treatment Areas are presented in Appendix Table E-4. Performance criteria are based on a >70% reduction in CoC concentrations and meeting the applicable human health SSAC.

Appendix E-1

Site Specific Assessment Criteria

GROUNDWATER

Target Contaminant of Concern	Site Specific Assessment Criteria												Data Assessment				Toxicity			Water Quality Data	
	Area 1 (excluding RPA1)			Area 2 (excluding D44 and RPA2)			Retained Land (excluding RPA3)			Zone 1A			Assessment of Average Data (2009-2011)		Assessment of Most Recent Data		Oral HCV	Inh HCV	Source	Value	Source
	Human Health SSAC (µg/l)			Human Health SSAC (µg/l)			Human Health SSAC (µg/l)			Human Health SSAC (µg/l)											
	Commercial Worker	Neighbouring Resident	Average Environmental SSAC (µg/l)	Commercial Worker	Neighbouring Resident	Average Environmental SSAC (µg/l)	Commercial Worker	Neighbouring Resident	Average Environmental SSAC (µg/l)	Commercial Worker	Neighbouring Resident	Calculated Environmental SSAC (µg/l)	No. Locations requiring >70% reduction in concentrations to meet applicable environmental SSAC*	No. Locations exceeding applicable human health SSAC*	No. Locations requiring >70% reduction in concentrations to meet applicable environmental SSAC*	No. Locations exceeding applicable human health SSAC*	µg/kg.day	µg/kg.day		µg/l	
35.2 Suite																					
Sulphonamides																					
Sulphamethizole	ND	ND	6	ND	ND	5	ND	ND	ND	ND	ND	ND	25	0	19	0	20	20	Calculated based on the available data for sulphadiazine. Data For sulphadiazine adopted from NRA (2000).	1-10	Estimated laboratory MDL
Sulphathiazole	ND	ND	6	ND	ND	4	ND	ND	ND	ND	ND	ND	39	0	31	0	20	20		1-10	
Sulphadiazine (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	6	0	0	0	0	20	20		1-10	
Sulphamerazine (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	ND	0	0	0	0	20	20		1-10	
Sulphanilamide (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	8.4	2	0	2	0	20	20		1-10	
N(1)-2-Pyridyl Sulfanilamide	ND	ND	6	ND	ND	6	ND	ND	1	ND	ND	6	60	0	48	0	20	20		1-10	
Barbiturates																					
Phenobarbital	ND	ND	1850	ND	ND	57170	ND	ND	ND	ND	ND	ND	0	0	0	0	1	1	Calculated based on the approach outlined in the DWI	1-10	Estimated laboratory MDL
Amylo/pentabarb	ND	ND	13070	ND	ND	340	ND	ND	ND	ND	ND	ND	0	0	0	0	2	2		1-10	
Butalbarbital	ND	ND	18	ND	ND	350	ND	ND	ND	ND	ND	ND	1	0	1	0	2	2		1-10	
Anti-psychotics																					
Chlorpromazine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0.57	0.57	Calculated based on the approach outlined in the DWI	1-10	Estimated laboratory MDL
Amphetamine	14,600,000	66,900	120	4,270,000	ND	107	14,600,000	66,900	ND	ND	ND	ND	3	0	3	0	0.036	0.036		1-10	
Molindone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0.29	0.29		1-10	
Methcathinone (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	ND	0	0	0	0	0.014	0.014		1-10	
Anti-histamines																					
Promethazine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0.18	0.18	Calculated based on the approach outlined in the DWI	1-10	Estimated laboratory MDL
Mepyramine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0	0	0.014	0.014		1-10	
Miscellaneous Pharmaceuticals																					
Isomethептene	ND	ND	6.41	ND	ND	7.32	ND	ND	1	ND	ND	ND	0	0	0	0	0.86	0.86	Calculated based on the approach outlined in the DWI	1-10	Estimated laboratory MDL
Diisopropylamine	ND	ND	5.5	ND	ND	7.32	ND	ND	5.5	ND	ND	ND	0	0	0	0	5,700	5,700	Occupational Screening Level	1-10	
Ketoprofen	ND	ND	6.41	ND	ND	5	ND	ND	4.88	ND	ND	1	70	0	18	0	1.43	1.43	Calculated based on the approach outlined in the CalIEPA	1-10	
Acebutolol	ND	ND	4.6	ND	ND	7.32	ND	ND	ND	ND	ND	ND	10	0	6	0	2.86	2.86		1-10	
Acetophenetidin (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	ND	0	0	0	0	2.2	0.63		1-10	
Caffeine (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	14.4	0	0	0	0	143	143	Calculated based on BMJ study	1-10	
Cyclandelate (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	ND	0	0	0	0	0.014	0.014	Calculated based on the approach outlined in the DWI	1-10	
Thozalinone (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	6	0	0	0	0	0.014	0.014		1-10	
Ethotoin (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	6.05	0	0	0	0	7.14	7.14		1-10	
Phenazone (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	6	0	0	0	0	0.014	0.014		1-10	
Fentbufen (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	1	0	0	0	0	8.57	8.57		600	DWI
Miscellaneous Chemicals																					
Hexamine	ND	ND	10	ND	ND	14	ND	ND	ND	ND	ND	6	0	0	0	0	29	29	Michigan's Air Toxics Program under the Michigan Department	1-10	Estimated laboratory MDL
N-Ethyl-m-toluidine	ND	ND	7.51	ND	ND	8.94	ND	ND	ND	ND	ND	ND	2	0	2	0	0.05	ND	In absence of other data, data for m/p-Toluidine adopted	1-10	
Diphenylguanidine	ND	ND	6.72	ND	ND	6.82	ND	ND	ND	ND	ND	ND	16	0	9	0	5	5	Derived based on studies from EPA	1-10	
Brucine (Zone 1A CoC)	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	Zone 1A CoC	ND	ND	ND	0	0	0	0	0.3	ND		1-10	
Pesticides																					
Atrazine	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND	ND	ND	0	0	0	0	5	5	RIVM	0.6	Directive 2008/105/EC
Carbofuran	ND	ND	320	ND	ND	320	ND	ND	ND	ND	ND	ND	0	0	0	0	2	2	RIVM	40	US EPA Drinking Water Limit
Diuron	ND	ND	1	ND	ND	1	ND	ND	ND	ND	ND	ND	3	0	0	0	2	2	USEPA	0.2	Directive 2008/105/EC
Carbendazim	ND	ND	7.2	ND	ND	9	ND	ND	ND	ND	ND	ND	5	0	3	0	20	20	PPDB (2009)	1-10	Estimated laboratory MDL
VOCs																					
BTEX																					
Benzene	249,000	6,000	40	110,000	ND	ND	249,000	6,000	57.1	ND	ND	ND	48	1	41	2	0.29	1.40	UK Tox	10	Directive 2008/105/EC
Ethylbenzene	ND	180,000	180	ND	ND	ND	ND	180,000	1401	ND	ND	ND	3	0	0	0	100	220	UK Tox	20	EA R&D Technical Report
O-Xylene	ND	ND	250	ND	ND	ND	ND	ND	465	ND	ND	ND	2	0	0	0	180	60.0	UK Tox	30	Directive 76/464/EEC
p/m-Xylene																			UK Tox		
Toluene	ND	ND	440	ND	ND	ND	ND	ND	780.5	ND	ND	ND	9	0	0	0	223	1,400	UK Tox	50	Directive 76/464/EEC
Chlorinated Aliphatics																					
Chloroform	1,100,000	12,000	3.5	1,100,000	ND	118	1,100,000	12,000	3.7	860,000	1,400,000	64	24	1	17	0	10.0	0.12	USEPA	2.5	Directive 2008/105/EC
Tetrachloroethene	ND	24,500	14	ND	ND	539	ND	24,500	ND	ND	ND	ND	0	0	0	0	14.0	71.0	UK Tox	5	Water Supply (Water Quality) 2000
Trichloroethene	140,000	1,780	9	229,000	ND	354	140,000	1,780	7.6	ND	ND	ND	19	2	20	2	5.20	5.20	UK Tox		
Cis-1,2-Dichloroethene	209,000	2,170	37	219,000	ND	1554	209,000	2,170	32800	ND	ND	ND	27	3	23	6	6.00	8.57	RIVM	25	WHO Drinking Water Limits (3 rd Ed)
Vinyl Chloride	2,390	1,470	28	9,280	ND	1234	2,390	1,470	50.8	ND	ND	ND	20	3	17	3	0.014	0.30	UK Tox	0.5	Water Supply (Water Quality) 2000
Chlorinated Aromatics																					
Chlorobenzene	ND	260,000	9470	ND	ND	3100	ND	260,000	1485	ND	ND	ND	0	0	0	0	20.0	14.3	USEPA	100	US EPA Drinking Water Limit
1,2-Dichlorobenzene	ND	142,000	72710	ND	ND	23600	ND	142,000	95600	ND	ND	ND	0	0	0	0	430	171	WHO / RIVM	1,000	WHO Drinking Water Limits (3rd Ed)
1,4-Dichlorobenzene	ND	196,000	23150	ND	ND	7000	ND	196,000	28700	ND	ND	ND	0	0	0	0	100	191	WHO / RIVM	300	WHO Drinking Water Limits (3rd Ed)

Notes:
- CoC not applicable to area
* Applicable SSAC in that different SSAC are compared to depending on the location of the sample taken

ND	Contaminant not considered to present a significant level of risk via this pathway.
UK Tox	UK Toxicity Reports.
RIVM	Jansen, PJCM, Van Apeldoom, ME, Van Koten-Vermeulen & Mennes, WC. 1995. Human Toxicological Criteria for Serious Soil Contamination: Compounds evaluated in 1993& 1994. RIVM no: 715810009
WHO	World Health Organisation.
USEPA	US Environmental Agency.
PPDB (2009)	The Pesticide Properties Database (PPDB) developed by the Agriculture & Environment Research Unit (AERU), University of Hertfordshire, funded by UK national sources and the EU-funded FOOTPRINT project (FP6-SSP-022704).
DWI	Drinking Water Inspectorate (Watts et al. 2007). Desk Based Review of Current Knowledge on Pharmaceuticals in Drinking Water and Estimation of Potential Levels. Drinking Water Inspectorate. (Defra Project Code: CSA7184/WT02046/DWI70/2/213). The method for derivation of toxicity data was presented in Zone 1A DQRA (ARCADIS Ref: 928871203, February 2010) and the Site Wide DQRA (ARCADIS Ref: 928871204, March 2010).
CalIEPA	California Environmental Protection Agency
BMJ	Maternal caffeine intake during pregnancy: a large prospective observational study. 337a2332. Do:10.1136/bmj/a2332
NRA (2000)	The NRA Review of Sulphonamides Final Report. National Registration Authority for Agricultural and Veterinary Chemicals (NRA), August 2000.

Appendix E-2

Average Vs. Most Recent Data Assessment

VOCs (Environmental SSAC Comparison)

Location	AS4BH008	AS4BH008	AS4BH008	AS4BH008	AS4BH010	AS4BH010	AS4BH010	AS4BH010	AS4BH012	AS4BH012	AS4BH022	AS4BH022	AS4BH022	AS4BH022	HBH329BAE	HBH329BAE	HBH329BAE	HBH329BAE	HBH329BAE	HBH329BAE	AR0BH052	AR0BH052
Date Sampled	12/08/2009	20/09/2010	14/04/2011	14/10/2011	12/08/2009	21/09/2010	14/04/2011	14/10/2011	18/08/2009	21/09/2010	26/08/2009	21/09/2010	14/04/2011	14/10/2011	04/03/2009	17/09/2009	08/12/2009	21/09/2010	13/04/2011	14/10/2011	24/08/2010	13/10/2011
Analyte	Unit																					
Benzene	ug/l	180	1240	700	4	666	121	206	78	394	1	9	542	1	1	1164	1088	3	321	1	39	80	116
Toluene	ug/l	< 3	< 2	< 2	< 2	< 3	< 2	< 2	< 2	< 3	< 2	16	< 2	< 2	< 2	10	< 3	< 3	< 2	< 2	< 2	8133	142
Data Assessment		Evidence of downward trend over last 3 visits				Trend shows overall downward trend				Insuffient data for trend		Last 2 visits <SSAC				Trend shows downward trend with fluctuation. Current concentration <SSAC.					Isolated location. No significant concentrations downgradient	
Included in Defined Remediation Area?		Not included				Included				Included		Not included				Not included					Not included	

Location	HBH506ERM	HBH506ERM	HBH506ERM	HBH506ERM	AR0BH039	AR0BH039	AS8BH003	AS8BH003	AS8BH003	AR0BH012	AR0BH017
Date Sampled	03/03/2009	27/07/2009	17/09/2009	08/12/2009	23/06/2010	22/09/2010	11/08/2009	16/09/2010	11/04/2011	14/09/2009	14/09/2009
Analyte	Unit										
Chloroform	ug/l	45	41	24	3	37	2	< 3	< 2	< 2	26	108
Cis-1,2-Dichloroethene	ug/l	< 3	< 3	< 3	< 3	< 3	37	9150	8239	664	22	99
Trichloroethene	ug/l	< 3	< 3	< 3	< 3	< 3	6	12	< 3	< 3	12	74
Vinyl Chloride	ug/l	< 2	< 2	< 2	< 2	< 2	3	3340	3633	< 2	< 2	23
Data Assessment		Trend shows downward trend. Concentrations are of low magnitude				Insuffient data for trend though generally low concentrations. Location is isolated		Trend shows downward trend.			Isolated low concentration	Isolated low concentration
Included in Defined Remediation Area?		Not included				Not included		Not included			Not included	Not included

VOCs (Human Health SSAC Comparison)

Location	AS4BH043	AS4BH043	AS4BH043	AS4BH044	AS4BH044	AS4BH044
Date Sampled	21/09/2010	12/04/2011	13/10/2011	23/09/2010	20/04/2011	13/10/2011
Analyte	Unit					
Chloroform	ug/l	<2	<2	<2	209309	119733	<2
Trichloroethene	ug/l	<3	<3	<3	6354	7696	<2
Vinyl Chloride	ug/l	2218	3939	177	60	9	<2
Data Assessment		Fluctuating trend			Inconsistent trend		
Included in Defined Remediation Area?		Included			Included		

Site Specific Compounds (Environmental SSAC Comparison)

Location	Location	AR0BH001	AR0BH038	AR0BH038	AR0BH038	AR0BH046	AR0BH073	AR0BH073	AR0BH093	AR0BH093	AS1BH013	AS1BH014	AS1BH014	AS1BH014	AS1BH039	AS1BH039	AS1BH039	AS1BH040	AS1BH040	AS1BH040	AS1BH041	AS1BH041	AS1BH041
Date Sampled		13/09/2010	21/09/2010	19/04/2011	12/10/2011	13/09/2010	21/09/2010	20/04/2011	21/09/2010	12/10/2011	04/08/2010	04/08/2010	19/04/2011	18/10/2011	18/04/2011	15/09/2010	11/10/2011	14/09/2010	19/04/2011	17/10/2011	14/09/2010	18/04/2011	17/10/2011
Analyte	Unit																						
Ketoprofen*	ug/l	224	1488	10	10	182	725	10	1467	10	< 10	< 10	< 10	< 10	759	189	10	868	411	150	1549	156	120
N(1)-2-Pyridyl Sulfanilamide	ug/l	122	< 5	< 5	< 5	46	< 5	8	< 5	< 5	< 10	< 10	13	23	7	16	13	12	16	22	11	7	13
Sulphanilamide	ug/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	54	99	64	127	<5	10	9	10	8	11	9	< 5	6
Data Assessment		Isolated	Trend shows downward trend			Isolated	Insuffient data for trend. Location is isolated		Insuffient data for trend however location is isolated		Isolated low concentration	Fluctuating trend but isolated concentration			Trend shows downward trend			Trend shows downward tend for ketoprofen. N(1)-2 concentrations are low magnitude			Trend shows attenuation		
Included in Defined Remediation Area?		Not included	Not included			Not included	Not included		Not included		Not included	Not included			Not included			Not included			Not included		

Location	AS2BH014	AS2BH014	AS2BH014	AS3BH001	AS3BH001	AS3BH001	AS4BH041	AS4BH041	AS4BH041	AS4BH044	AS4BH044	AS4BH044	AS4BH045	AS4BH045	AS4BH045	AS4BH048	AS4BH048	AS4BH048	AS4BH049	AS4BH049	AS4BH049
Date Sampled	15/09/2010	14/04/2011	11/10/2011	14/09/2010	18/04/2011	11/10/2011	22/09/2010	12/04/2011	13/10/2011	23/09/2010	20/04/2011	13/10/2011	22/09/2010	12/04/2011	13/10/2011	22/09/2010	12/04/2011	13/10/2011	22/09/2010	12/04/2011	13/10/2011
Analyte	Unit																				
Diphenylguanidine	ug/l	31	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	16	6	< 5	< 5	< 5	< 5	< 5	< 5	< 5	5	< 5	< 5
Ketoprofen	ug/l	163	10	10	742	10	10	1549	156	120	< 10	< 10	< 10	10	192	10	10	117	10	< 10	109	83
N(1)-2-Pyridyl Sulfanilamide	ug/l	19	29	10	21	35	19	11	7	13	84	74	5	28	102	5	15	10	19	470	20	17
Sulphamethizole	ug/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	23	< 5	< 5	12	< 5	< 5	5	< 5	< 5	114	5	5
Sulphathiazole	ug/l										< 5	< 5	< 5	8	5	< 5	< 5	< 5	< 5	176	5	5
Data Assessment		Trend shows downward trend			Trend shows downward trend			Concentrations are low. Locations in proximity to active remediation works.			Trend shows downward trend			Trend shows downward trend			Inconsistent trend			Trend shows downward trend		
Included in Defined Remediation Area?		Not included			Not included			Included as a Validation Monitoring Well only.			Not included			Not included			Included			Not included		

Location	AS8BH013	AS8BH031	AS8BH031	AS8BH046	AS8BH046	HBH503ERM	HBH503ERM	HBH503ERM	HBH325BAE	HBH325BAE
Date Sampled	17/09/2010	20/09/2010	17/10/2011	20/09/2010	17/10/2011	11/10/2011	14/09/2010	19/04/2011	20/09/2010	11/04/2011
Analyte	Unit									
Diphenylguanidine	ug/l	< 5	< 5	< 5	< 5	< 5	< 5	13	< 5	53	5
Ketoprofen	ug/l	152	70	10	70	10	10	1154	10	12858	10
N(1)-2-Pyridyl Sulfanilamide	ug/l	6	< 5	< 5	< 5	< 5	19	18	24	7	6
Sulphamethizole	ug/l	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Sulphathiazole	ug/l	< 5	< 5	< 5	< 5	< 5	5	7	6	< 5	< 5
Data Assessment		Isolated	Insuffient data for trend though concentrations are low. Location is isolated		Insuffient data for trend though concentrations are low. Location is isolated		Fluctuating trend for ketoprofen though concentrations were low for all potential CoC in most recent visit			Most recent concentrartions were low and no signficant concentrations immediately downgradient	
Included in Defined Remediation Area?		Not included	Not included		Not included		Not included			Not included	

Notes:

Concentrations would require >70% reduction to meet applicable SSAC

*

Appendix E-3

Defined Groundwater Remediation Areas - Included Locations and Target CoC

AREA 1

AS1BH038	AS1BH042	AS1BH045	AS2BH001	AS2BH003	AS2BH004	AS2BH005	AS2BH006	AS2BH007	AS2BH009	AS2BH010	AS2BH011	AS2BH012	AS2BH014	AS2BH015	AS2BH017	AS2BH018	AS2BH020	AS2BH021	AS2BH023
Ketoprofen	Ketoprofen	Ketoprofen	Ketoprofen	N(1)-2-pyridyl sulphanilamide Ketoprofen	N(1)-2-pyridyl sulphanilamide Ketoprofen	N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole Chloroform Trichloroethene Benzene Ketoprofen	N(1)-2-pyridyl sulphanilamide Ketoprofen	Ketoprofen	Acebutolol Trichloroethene Ketoprofen	Ketoprofen	Benzene Ketoprofen	Chloroform	Chloroform Trichloroethene cis-1,2-dichloroethene Vinyl Chloride	Acebutolol N(1)-2-pyridyl sulphanilamide N-ethyl-m-toluidine Sulphathiazole Trichloroethene Benzene	N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole Chloroform Trichloroethene cis-1,2-dichloroethene Benzene Ketoprofen	N(1)-2-pyridyl sulphanilamide Sulphathiazole Benzene Toluene Ketoprofen	N(1)-2-pyridyl sulphanilamide Sulphathiazole Benzene Ketoprofen	N(1)-2-pyridyl sulphanilamide Sulphathiazole Chloroform Trichloroethene cis-1,2-dichloroethene Vinyl Chloride	Amphetamine Butalbarbital N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole Benzene Ketoprofen

AS3BH001	AS3BH002	AS3BH005	AS3BH011	AS4BH001	AS4BH002	AS4BH004	AS4BH005	AS4BH006	AS4BH010	AS4BH011	AS4BH012	AS4BH013	AS4BH020	AS4BH022	AS4BH024	AS4BH025	AS4BH026	AS4BH027	AS4BH028
cis-1,2-dichloroethene Vinyl Chloride Benzene Ketoprofen	N(1)-2-pyridyl sulphanilamide	Chloroform Trichloroethene cis-1,2-dichloroethene	Toluene Benzene cis-1,2-dichloroethene Chloroform Trichloroethene	Acebutolol N(1)-2-pyridyl sulphanilamide Sulphathiazole Benzene Ketoprofen	N(1)-2-pyridyl sulphanilamide Vinyl Chloride Benzene Ketoprofen	N(1)-2-pyridyl sulphanilamide Sulphathiazole Benzene Ketoprofen	Acebutolol Carbendazim N(1)-2-pyridyl sulphanilamide N-ethyl-m-toluidine Sulphathiazole Benzene Ketoprofen	N(1)-2-pyridyl sulphanilamide Sulphathiazole Ketoprofen	N(1)-2-pyridyl sulphanilamide	Amphetamine N(1)-2-pyridyl sulphanilamide Sulphamethizole Benzene Ketoprofen	Ketoprofen N(1)-2-pyridyl sulphanilamide	Chloroform Trichloroethene	Ketoprofen N(1)-2-pyridyl sulphanilamide Sulphathiazole	N(1)-2-pyridyl sulphanilamide Sulphathiazole	N(1)-2-pyridyl sulphanilamide Sulphamethizole Trichloroethene Benzene Ketoprofen	Amphetamine Diphenylguanidine N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole Benzene Ketoprofen	Ketoprofen N(1)-2-pyridyl sulphanilamide Sulphathiazole	Carbendazim N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole cis-1,2-dichloroethene Vinyl Chloride Benzene Ketoprofen	N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole Benzene Ketoprofen

AS4BH029	AS4BH031	AS4BH032	AS4BH033	AS4BH034	AS4BH036	AS4BH037	AS4BH038	AS4BH040A	AS4BH042	AS4BH043	AS4BH044	AS4BH045	AS4BH046	AS4BH048	AS4BH050	AS4BH051	AS4BH052	AS5BH002	AS5BH004
Diphenylguanidine N(1)-2-pyridyl sulphanilamide Sulphathiazole	N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole	Trichloroethene	N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole	N(1)-2-pyridyl sulphanilamide Sulphamethizole Trichloroethene cis-1,2-dichloroethene	cis-1,2-dichloroethene Benzene Ketoprofen	Carbendazim Diphenylguanidine N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole Vinyl Chloride Benzene Ketoprofen	Toluene	Diphenylguanidine Ketoprofen N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole Vinyl Chloride Benzene	Diphenylguanidine N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole cis-1,2-dichloroethene Benzene Vinyl Chloride Ketoprofen	N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole Vinyl Chloride Benzene Ketoprofen	Toluene Chloroform Trichloroethene	Benzene Ketoprofen	Benzene	Benzene Ketoprofen	Chloroform Benzene	N(1)-2-pyridyl sulphanilamide cis-1,2-dichloroethene Vinyl Chloride Benzene Ketoprofen	N(1)-2-pyridyl sulphanilamide Vinyl Chloride Benzene Ketoprofen	Benzene Ketoprofen	N(1)-2-pyridyl sulphanilamide Sulphamethizole

AS6BH001	AS6BH003	HBH011WSA	HBH210ERM	HBH304BAE	HBH308BAE	HBH312BAE	HBH315BAE	HBH502ERM	HBH503ERM	HBH507ERM	HBH509ERM
Benzene Sulphathiazole cis-1,2-dichloroethene	Benzene	Ethylbenzene Xylenes	cis-1,2-dichloroethene Vinyl Chloride Benzene Toluene Ethylbenzene	Chloroform Trichloroethene cis-1,2-dichloroethene	Chloroform Trichloroethene cis-1,2-dichloroethene Benzene	Benzene	Chloroform	Chloroform	cis-1,2-dichloroethene Benzene Ketoprofen	Acebutolol Sulphathiazole Benzene Ketoprofen	Diphenylguanidine Ketoprofen Sulphamethizole Sulphathiazole Vinyl Chloride Benzene

AREA 2

AS5BH008	AS8BH003	AS8BH004	AS8BH005	AS8BH006	AS8BH007	AS8BH013	AS8BH055	AS8BH056	AS8BH057	HBH325BAE	HBH510ERM
cis-1,2-dichloroethene	N(1)-2-pyridyl sulphanilamide	Ketoprofen N(1)-2-pyridyl sulphanilamide Sulphathiazole Diphenylguanidine	Acebutolol N(1)-2-pyridyl sulphanilamide Sulphathiazole Diphenylguanidine	Diphenylguanidine N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole	Ketoprofen N(1)-2-pyridyl sulphanilamide	Ketoprofen	Trichloroethene cis-1,2-dichloroethene Vinyl Chloride	Trichloroethene cis-1,2-dichloroethene	Trichloroethene cis-1,2-dichloroethene Vinyl Chloride	Ketoprofen	N(1)-2-pyridyl sulphanilamide Sulphamethizole Sulphathiazole

RETAINED LAND

AR0BH057	AR0BH058
Ketoprofen N(1)-2-pyridyl sulphanilamide Chloroform Trichloroethene cis-1,2-dichloroethene Vinyl Chloride Benzene Toluene	cis-1,2-dichloroethene Vinyl Chloride Benzene Ketoprofen

Appendix E-4

Selected CoC and Performance Criteria

GROUNDWATER

Contaminant of Concern	Selected as Remediation CoC?					Pilot Tests - Potential for Contaminant Reduction	Performance Criteria			
	Y/N	Area					Human Health Target Levels (µg/l)			Environmental
		Area 1	Area 2	Retained Land	Zone 1A	% Contaminant destruction (based on Pilot Tests)	Area 1	Area 2	Retained Land	% Reduction in average baseline groundwater concentrations in selected validation wells
35.2 Suite										
Sulphonamides										
Sulphamethizole	**Y**	Y	Y	N	N	21-99%	ND	ND	ND	>70%
Sulphathiazole	**Y**	Y	Y	N	N	21-99%	ND	ND	ND	>70%
Sulphadiazine (Zone 1A CoC)	N									
Sulphamerazine (Zone 1A CoC)	N									
Sulphanilamide (Zone 1A CoC)	N									
N(1)-2-Pyridyl Sulfanilamide	**Y**	Y	Y	Y	N	21-99%	ND	ND	ND	>70%
Barbiturates										
Phenobarbital	N									
Amylo/pentabarb	N									
Butalbarbital	**Y**	Y	N	N	N	21-99%	ND	ND	ND	>70%
Anti-psychotics										
Chlorpromazine	N									
Amphetamine	**Y**	Y	N	N	N	21-99%	66,900	4,270,000	66,900	>70%
Molindone	N									
Methcathinone (Zone 1A CoC)	N									
Anti-histamines										
Promethazine	N									
Mepyramine	N									
Miscellaneous Pharmaceuticals										
Isometheptene	N									
Diisopropylamine	N									
Ketoprofen	**Y**	Y	Y	Y	N	21-99%	ND	ND	ND	>70%
Acebutolol	**Y**	Y	Y	N	N	21-99%	ND	ND	ND	>70%
3-Ethylbenzophenone	N									
Acetophenetidin (Zone 1A CoC)	N									
Caffeine (Zone 1A CoC)	N									
Cyclandelate (Zone 1A CoC)	N									
Thozalinone (Zone 1A CoC)	N									
Ethotoin (Zone 1A CoC)	N									
Phenazone (Zone 1A CoC)	N									
Fenbufen (Zone 1A CoC)	N									
Miscellaneous Chemicals										
Hexamine	N									
N-Ethyl-m-toluidine	**Y**	Y	N	N	N	21-99%	ND	ND	ND	>70%
Diphenylguanidine	**Y**	Y	Y	N	N	21-99%	ND	ND	ND	>70%
Brucine (Zone 1A CoC)	N									
Pesticides										
Atrazine	N									
Carbofuran	N									
Diuron	N									
Carbendazim	**Y**	Y	N	N	N	21-99%	ND	ND	ND	>70%
VOCs										
BTEX										
Benzene	**Y**	Y	N	Y	N	23-85%	6,000	110,000	6,000	>70%
Ethylbenzene	N									
O-Xylene	**Y**	Y	N	N	N	23-85%	ND	ND	ND	>70%
p/m-Xylene						23-85%				
Toluene	**Y**	Y	N	Y	N	23-85%	ND	ND	ND	>70%
Chlorinated Aliphatics										
Chloroform	**Y**	Y	N	Y	N	78%	12,000	1,100,000	12,000	>70%
Tetrachloroethene	N									
Trichloroethene	**Y**	Y	Y	Y	N	88%	1,780	229,000	1,780	>70%
Cis-1,2-Dichloroethene	**Y**	Y	Y	Y	N	23-85%	2,170	219,000	2,170	>70%
Vinyl Chloride	**Y**	Y	Y	Y	N	23-85%	1,470	9,280	1,470	>70%
Chlorinated Aromatics										
Chlorobenzene	N									
1,2-Dichlorobenzene	N									
1,4-Dichlorobenzene	N									

Appendix F
DRA Derivation – Soil

Appendix F

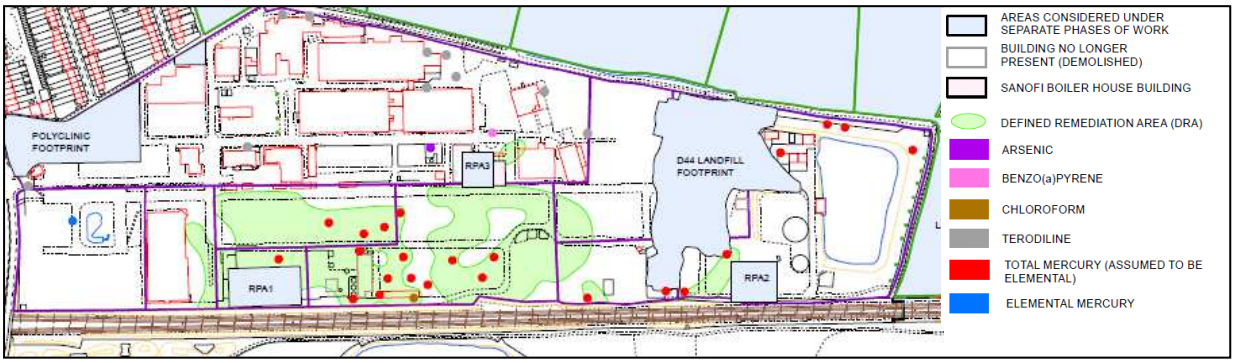
Defined Remediation Areas (soil)

The Remediation Areas are currently defined based on the measured concentrations of representative CoC in the dissolved phase. The Remediation Options Appraisal reports, for Surplus Land Zones 2 to 4 and 5 to 8 completed in November 2010, completed a review of the vertical distribution of measured concentrations of representative CoC. This review of the vertical distribution indicated that the majority of the contaminant mass was present in groundwater and saturated soils.

During this phase of works additional review of the representative CoC concentrations in soils was undertaken, and it was concluded that where representative CoC concentrations in soils were found to require 70% reduction to achieve the average SSAC based on their location, these soils were generally saturated.

Remediation of the unsaturated soil impacts based on potential risk to environmental receptors were not considered to be required due to the measured concentrations of the representative CoC in groundwater. However should significant hot-spots causing an ongoing source be identified during the remediation works assessment and additional remediation may be required.

Samples of unsaturated soils with measured concentrations of representative CoC which present a potential risk to human health receptors are presented below and require further assessment.



Location	Target CoC
Retained Land	Terodiline, Benzo(a)pyrene, arsenic
Surplus Zone 4 – Southern boundary	Chloroform
Surplus Zone 1A	Elemental mercury
Surplus Zones 2, 3, 4, 5 and 8	Total mercury (as proxy for elemental mercury)

ARCADIS considers that the SSAC defined for the protection of human health receptors associated with the Dagenham Facility are achievable by remediation, and in the updated site wide DQRA proposed either:

1. a reduction of concentrations of representative CoC to applicable human health SSAC or to a specified confidence level via appropriate statistical analysis; or,
2. management of active pathways to break source-pathway receptor linkages..

In view of this, the exceedances identified are discussed further below:

- The measured concentrations of arsenic benzo(a)pyrene and terodiline potentially present a risk to on-site human health receptors based on a pathway of direct contact. Depending on the future redevelopment in these areas this pathway may or may not be active.
- A measured concentration of chloroform identified towards the southern boundary of the site does potentially present a risk via a pathway of inhalation and require remediation.
- A number of measured concentrations of total mercury have been identified across the site wide remediation area, which if comprised solely of elemental mercury would present a potentially unacceptable risk via a pathway of inhalation. Therefore, further investigation of the total mercury impacts is required to determine the requirement for remediation.
- Previously delineation of elemental mercury has been carried out in Surplus Zone 1A and identified that in a single location elemental mercury was identified to be in exceedance of the SSAC protective of human health for a generic commercial end use. Based on the potential end use for this area this may or may not be deemed to be significant.

Based on the above discussion the following works will be included in the site wide remediation:

- Remediation of an area of chloroform in unsaturated soils at the southern boundary of Surplus Zone 4 via groundwater pumping with Soil Vacuum Extraction (SVE); and,
- Additional assessment of concentrations of total mercury measured across the site wide remediation area (Surplus Zones 2-5 and 8) *via* the investigation of shallow soils and dedicated speciated analysis for elemental mercury.

Appendix G
Baseline Concentrations and Target CoC

Appendix G

Baseline Concentrations and Target CoC (DRAs)

		Quantified Site Specific Compounds											Volatile Organic Compounds							
		Sulphonamides			Barbiturates		Anti-psychotics	Miscellaneous Pharmaceuticals		Miscellaneous Chemicals		Pesticides	BTEX				Chlorinated Aliphatics			
		Sulphamethizole	Sulphathiazole	N(1)-2-Pyridyl Sulfanilamide	Butalbarbital	Pentobarbital	Amphetamine	Ketoprofen*	Acebutolol	N-Ethyl-m-toluidine	Diphenylguanidine	Carbendazim	Benzene	Ethylbenzene	Xylenes	Toluene	Chloroform	Trichloroethene	Cis-1,2-Dichloroethene	Vinyl Chloride
DRA4	AS4BH026		29	58				49												
DRA10	AS4BH027	213	264	14390				43				63	1256						2738	1238
DRA4	AS4BH028	80	47	142				55					410							
DRA4	AS4BH029		79	579							28									
DRA13	AS4BH032																	80		
DRA4	AS4BH033	33	684	2155																
DRA4	AS4BH034																		264	
DRA15	AS4BH036							76					283						174	
DRA4	AS4BH037	913	1395	3682				106			456	26	770							146
DRA13	AS4BH038															5721				
DRA15	AS4BH040A	1017	2487	8013				613			79		1498							444
DRA15	AS4BH042	303	362	5276				77			71		5719						3041	6769
DRA15	AS4BH043	820	1640	8522				113					1192							177
DRA16	AS4BH044															57059	119733	7696		
DRA15	AS4BH045							313					1488							
DRA15	AS4BH046												660							
DRA15	AS4BH048							264					803							
DRA16	AS4BH050												176				59			
DRA15	AS4BH051			124				146					817						504	636
DRA15	AS4BH052			27				268					1134							137
DRA15	AS5BH002							30					206							
DRA18	AS5BH012		627	1,945		87					52	10								54
DRA18	AS5BH014		304	771		57					48	11								321
DRA16	AS6BH001		17										1696						17058	
DRA15	AS6BH003												3190							
DRA18	AS6BH010		495	946		77					34	6								2
DRA18	AS6BH012		1,616	1,501		136					43	5								3
DRA18	AS6BH014		92	1,005		49					29	5								2
DRA18	AS6BH016		441	288		86					44	5								2
DRA18	AS7BH027		240	905		93					36	5								2
DRA18	AS7BH028		1,661	1,154		500					306	5								2
DRA18	AS7BH029		554	932		80					45	5								2
DRA18	AS7BH030		212	355		50					35	7								2
DRA18	AS7BH033		353	812		65					46	10								2
DRA18	AS7BH034		802	1,421		171					58	10								2
DRA18	AS7BH036		110	948		245					77	5								2
DRA18	AS7BH037		445	786		20					5	6								2
DRA18	AS7BH038		376	990		94					30	5								2
DRA18	AS7BH039		616	1,231		187					74	5								2
DRA18	AS7BH040		74	190		92					67	5								2
DRA18	AS7BH041		254	462		50					24	5								2
DRA18	AS7BH042		803	191		41					31	5								2
DRA18	AS7BH043		581	553		11					15	5								2
DRA18	AS7BH045		1,292	997		689					100	100								2
DRA18	AS7BH046		355	1,065		209					27	5								2
DRA18	AS7BH047		192	206		46					27	5								2
DRA6	AS8BH006	291	637	785							50									
DRA6	AS8BH107	44	552		147					28	5								2326	
DRA18	AS8BH108	6	11,976		49					5	22								2	
DRA6	AS8BH013																			
DRA15	HBH011WSA													949	1109					
DRA15	HBH210ERM												2638	601		3216			2346	2122
DRA15	HBH315BAE																40			
DRA6	HBH325BAE							276												
DRA4	HBH509ERM	1159	2386					610			54		811							108

Notes:

No Reduction in Target CoC required

Most recent data considered to be potentially unrepresentative of contaminant concentrations. Value shown is measured concentration taken prior to most recent monitoring visit

* Ketoprofen baseline concentration presented is the sum of measured ketoprofen and 3-ethyl benzophenone (daughter product) concentrations

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Appendix H
DRA18 Target CoC Derivation

Appendix H

DRA18 Target COC Derivation

Due to the wide range of chemical compounds historically used and manufactured at the site, ARCADIS previously undertook a screening process to determine representative Contaminants of Concern. An initial laboratory analytical screen was undertaken during site investigation phases followed by a review of identified contaminants in the DQRA undertaken for the Dagenham Facility as a whole (including the DQRA - ARCADIS Ref; 928871204, March 2010) and updated DQRA (ARCADIS Ref: 928873302_02, July 2011), which determined a list of 'representative CoC'. Following the definition of CoC a dedicated quantified laboratory analytical method was developed.

Assessment of the groundwater data obtained in October 2012 (ARCADIS Report Ref: 9288776101_02) indicated that the majority of more elevated contaminant concentrations within the former D44 landfill were associated with a number of site-specific pharmaceutical compounds. A number of volatile organic compounds (VOC) and metals were also detected at concentrations above the laboratory MDL.

Concentrations of metals in groundwater are not considered to present a risk to environmental receptors. Previous assessments of arsenic concentrations have demonstrated that significant attenuation is occurring within close proximity to the site boundary which indicates that there is not a significant risk to nearby surface water features (ARCADIS Ref: 928873227_01, September 2012).

Assessment of the groundwater data obtained in August 2013 (ARCADIS Ref: 2572310801_01, September 2013) indicated that measured concentrations of VOCs and site specific compounds shown a slight decrease compared with those measured in October 2012 while measured concentrations of sulphonamide, carbendazim, diphenylguanadine, sulphathiazole, miscellaneous chemicals and pesticide compounds increased.

A detailed review process has subsequently been undertaken in order refine a list of 'indicator compounds' which are considered to represent the majority of contaminant mass and will be used to define the proposed remediation area and assessment criteria. This review process is presented in Table H-1 and discussed below.

Method

The list of site specific pharmaceutical compounds and VOCs are presented in Table H-1 along with the number of detections, average concentrations and maximum concentrations measured. Due to the size of the former D44 landfill and the complex ament of contaminant plumes present, ranges of SSAC were derived. The frequency and magnitude was assessed and considered in view of the available SSAC ranges, and a justification for CoC selection presented.

Results

Based on this assessment, five site-specific pharmaceutical compounds were considered as suitable indicator compounds representative of the contaminant mass which presents a risk to environmental receptors. These compounds are presented in the table below:

Indicator Compounds
N(1)-2-Pyridyl Sulfanilamide
Sulphathiazole
Diphenylguanidine
Pentobarbital
Carbendazim

For a number of CoC, including chloroform, no measured concentrations exceeded the high end environmental SSAC and the majority of the measured concentrations were closer to, or below, the low end SSAC, therefore they have not been considered as Indicator Compounds.

Table H-1
Indicator CoC Selection

Analyte	Environmental Site Specifc Assessment Criteria for Groundwater (ug/l)	Number of samples		Maximum Concentration Measured in Groundwater (µg/l)		Average Concentration Measured in Groundwater (µg/l)		Number of detections		Compound Selected?	Justification
		Visit 1	Visit 2	Visit 1	Visit 2	Visit 1	Visit 2	Visit 1	Visit 2		
Site Specific Pharmecutical Compounds											
Mepyramine	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Promethazine	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Amphetamine	n/a	39	25	275	733	163	531	3	2	N	Low number of detections.
Chlorpromazine	n/a	39	25	-	-		-	-	-	N	CoC not detected.
Molindone	n/a	39	25	-	-		-	-	-	N	CoC not detected.
Butalbarbital	60-640	39	25	176	107	48	49	28	21	N	Maximum concentrations exceed low end environmental SSAC only. No measured concentrations exceed high end environmental SSAC and majority of measured concentrations below low end.
Phenobarbital	10400-104000	39	25	331	254	101	79	18	18	N	Measured concentrations do not exceed environmental SSAC
Pentobarbital	60-630	39	25	689	440	111	112	37	24	**Y**	Relatively high number of detections. Measured concentrations above environmental SSAC.
Diphenylguanidine	1-12	39	25	306	394	44	91	29	16	**Y**	Relatively high number of detections. Measured concentrations above environmental SSAC.
Hexamine	3-25	39	25	-	-		-	-	-	-	CoC not detected.
N-Ethyl-m-toluidine	1-20	39	25	-	-		-	-	-	-	CoC not detected.
Acebutolol	1-13	39	25	16	29	16	19	1	2	N	Single detection only marginally above environmental SSAC.
Diisopropylamine	1-13	39	25	-	-	-	-	-	-	N	CoC not detected.
Isometheptene	1-13	39	25	-	-	-	-	-	-	N	CoC not detected.
Ketoprofen	1-13	39	25	-	-	-	-	-	-	N	CoC not detected.
Carbendazim	1-19	39	25	26	308	11	36	11	17	**Y**	Relatively high number of detections. Maximum concentrations above environmental SSAC.
Atrazine	1.1	39	25	-	-	-	-	-	-	N	CoC not detected
Carbofuran	50-80	39	25	-	-	-	-	-	-	N	CoC not detected
Diuron	0.2	39	25	-	-	-	-	-	-	N	CoC not detected
Sulphamethizole	1-10	39	25	11	28	11	16	1	5	N	Single detection only marginally above environmental SSAC.
N(1)-2-Pyridyl Sulfanilamide	1-10	39	25	11976	6033	907	914	37	25	**Y**	Relatively high number of detections. Measured concentrations above environmental SSAC.
Sulphathiazole	1-10	39	25	1661	3616	386	583	34	23	**Y**	Relatively high number of detections. Measured concentrations above environmental SSAC.
Volatile Organic Compounds											
1,1,1,2-Tetrachloroethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,1,1-Trichloroethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,1,2,2-Tetrachloroethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,1,2-Trichloroethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,1-Dichloroethane	n/a	39	25	-	4	-	4	-	1	-	CoC not detected.
1,1-Dichloroethene	n/a	39	25	5	-	5	-	1	-	N	Single low level detection only.
1,1-Dichloropropene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,2,3-Trichlorobenzene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,2,3-Trichloropropane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,2,4-Trichlorobenzene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,2,4-Trimethylbenzene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,2-Dibromo-3-chloropropane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,2-Dibromoethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,2-Dichlorobenzene	6100-41000	39	25	2628	20	681	15	9	2	N	Measured concentrations do not exceed environmental SSAC
1,2-Dichloroethane	n/a	39	25	5	-	5	-	1	-	N	Single low level detection only.
1,2-Dichloropropane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,3,5-Trimethylbenzene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,3-Dichlorobenzene	n/a	39	25	440	7	256	6	4	2	N	Low number of detections. Measured concentration low compared to comparitive SSAC for 1,2-Dichlorobenzene.
1,3-Dichloropropane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
1,4-Dichlorobenzene	1900-12000	39	25	11	97	8	97	3	1	N	Low number of detections. Measured concentration low compared to comparitive SSAC for 1,2-Dichlorobenzene.
2,2-Dichloropropane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
2-Chlorotoluene	n/a	39	25	6	-	6	-	1	-	N	Single low level detection only.
4-Chlorotoluene	n/a	39	25	3	-	3	-	1	-	N	Single low level detection only.
4-Isopropyltoluene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Benzene	n/a	39	25	21	67.6	6	9	27	12	N	Measured concentrations relatively low (EQS 10ug/l)
Bromobenzene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Bromochloromethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Bromodichloromethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Bromoform	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Bromomethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Carbon Tetrachloride	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Chlorobenzene	700-5400	39	25	1341	998	119	67	20	19	N	Maximum concentrations exceed low end environmental SSAC only. No measured concentrations exceed high end environmental SSAC and all further measured concentrations below low end.
Chloroethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Chloroform	3-340	39	25	294	13	18	7	24	13	N	Maximum concentrations exceed low end environmental SSAC only. No measured concentrations exceed high end environmental SSAC and majority of measured concentrations below low end (22 out of 39).
Chloromethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Cis-1,2-Dichloroethene	32-3080	39	25	4007	375	224	45	24	14	N	Single maximum concentration exceeds high end environmental SSAC. Majority of measured concentrations below low end.
Cis-1,3-Dichloropropene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Dibromochloromethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Dibromomethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Dichlorodifluoromethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Dichloromethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Ethylbenzene	n/a	39	25	-	1	-	0.85	-	1	-	Single low level detection only.
Hexachlorobutadiene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Isopropylbenzene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Methyl Tertiary Butyl Ether	n/a	39	25	-	0.8	-	0.8	-	1	-	Single low level detection only.
Naphthalene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
n-Butylbenzene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
O-Xylene	n/a	39	25	-	3.1	-	2.4	-	3	-	Low level detections in one visit
p/m-Xylene	n/a	39	25	-	4	-	2.1	-	8	-	Low level detections in one visit
Propylbenzene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
sec-Butylbenzene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Styrene	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
tert-Butylbenzene	n/a	39	25	-		-	-	-	-	-	CoC not detected.
Tetrachloroethene	9-1070	39	25	48	37	16	16	21	18	N	Maximum concentrations exceed low end environmental SSAC only. No measured concentrations exceed high end environmental SSAC and majority are below low end (24 out of 39).
Toluene	n/a	39	25	17	11	6	3	15	10	N	Moderate number of detections. Measured concentrations relatively low (EQS 50ug/l).
Trans-1,2-Dichloroethene	n/a	39	25	8	0	8	-	1	0	N	Single low level detection only.
Trans-1,3-Dichloropropene	n/a	39	25	-	0	-	-	-	0	-	CoC not detected.
Trichloroethene	7-700	39	25	51	14	10	8	27	21	N	Maximum concentrations exceed low end environmental SSAC only. No measured concentrations exceed high end environmental SSAC and majority are below low end (28 out of 39).
Trichlorofluoromethane	n/a	39	25	-	-	-	-	-	-	-	CoC not detected.
Vinyl Chloride	10-2460	39	25	2326	443.5	452	36	6	12	N	Maximum concentrations exceed low end environmental SSAC only. No measured concentrations exceed high end environmental SSAC and majority are below low end (36 out of 39).

Notes:

n/a	Not Applicable. No SSAC derived, not considered as CoC for Treatment Area 2
-	CoC not detected
Visit 1	Groundwater sampling undertaken in October 2012
Visit 2	Groundwater sampling undertaken in August 2013

ANNEX B

Laboratory Certificates

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	1st July, 2015
Your reference :	27127103
Our reference :	Test Report 15/103 Batch 1
Location :	Dagenham
Date samples received :	25th June, 2015
Status :	Final report
Issue :	1

Four samples were received for analysis on 25th June, 2015 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/103

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20							LOD/LOR	Units	Method No.
Sample ID	01AS7BH0462 40615WG1512	02AS7BH0162 40615WG1512	03AS4BH0452 40615WG1551	04AS7BH0412 40615WG1603									
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G									
Sample Date	24/06/2015 15:12	24/06/2015 15:13	24/06/2015 15:51	24/06/2015 16:03									
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1	1									
Date of Receipt	25/06/2015	25/06/2015	25/06/2015	25/06/2015									
Dissolved Arsenic #	581	997	779	456							<2.5	ug/l	TM30/PM14
Dissolved Cadmium #	6.5	11.1	8.3	5.1							<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	4.8	<1.5	6.3	<1.5							<1.5	ug/l	TM30/PM14
Dissolved Copper #	26	74	80	22							<7	ug/l	TM30/PM14
Dissolved Lead #	5	7	<5	24							<5	ug/l	TM30/PM14
Dissolved Nickel #	35	53	24	8							<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3							<3	ug/l	TM30/PM14
Dissolved Zinc #	46	74	<3	<3							<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	2.20	473$_{AB}$	0.42	1.00							<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50							<50	ug/l	TM15/PM10
Amphetamine	12	<10	<10	<10							<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Pentobarbital	99	44	288	22							<10	ug/l	TM114/PM0
Phenobarbital	92	83	52	<10							<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10							<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	<100	<100							<100	ug/l	TM16/PM49
Sulphanilamide	203	306	632	106							<5	ug/l	TM87/PM0
Sulphadiazine	77	158	1430$_{AA}$	85							<5	ug/l	TM87/PM0
Sulphathiazole	48	6	979	133							<5	ug/l	TM87/PM0
Carbendazim	<5	<5	86	<5							<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/103

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20							LOD/LOR	Units	Method No.
Sample ID	01AS7BH0462 40615WG1512	02AS7BH0162 40615WG1512	03AS4BH0452 40615WG1551	04AS7BH0412 40615WG1603									
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G									
Sample Date	24/06/2015 15:12	24/06/2015 15:13	24/06/2015 15:51	24/06/2015 16:03									
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1	1									
Date of Receipt	25/06/2015	25/06/2015	25/06/2015	25/06/2015									
Sulphamerazine	12	16	328	18							<5	ug/l	TM87/PM0
Diphenylguanidine	5	<5	6	<5							<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	9	<5							<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5							<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	183	119	888	353							<5	ug/l	TM87/PM0
pH #	7.39	7.96	9.72	10.4							<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/103

VOC Report : **Liquid**

J E Sample No.	1-5	6-10	11-15	16-20							LOD/LOR	Units	Method No.
Sample ID	01AS7BH0462 40615WG1512	02AS7BH0162 40615WG1512	03AS4BH0452 40615WG1551	04AS7BH0412 40615WG1603									
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G									
Sample Date	24/06/2015 15:12	24/06/2015 15:13	24/06/2015 15:51	24/06/2015 16:03									
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1	1									
Date of Receipt	25/06/2015	25/06/2015	25/06/2015	25/06/2015									
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1							<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1							<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1							<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	4	<3	<3	<3							<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1							<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	3							<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	3	<2							<2	ug/l	TM15/PM10
Benzene #	4.5	<0.5	<0.5	<0.5							<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	5	<3	12	4							<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	<0.5							<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	3	<3	9	<3							<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Chlorobenzene #	305	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5							<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1							<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5							<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4							<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	100	103	106	100							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	103	103	106	103							<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/103						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/103

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x1000 Dilution

JE Job No: 15/103

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	26th June, 2015
Your reference :	27127103
Our reference :	Test Report 15/95 Batch 1
Location :	Dagenham
Date samples received :	19th June, 2015
Status :	Final report
Issue :	1

Fifteen samples were received for analysis on 19th June, 2015 of which fifteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/95

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	10AS4BH0341 70615WG1515	11AS4BH0371 70615WG1535	12AS4BH0311 70615WG1556	13AS4BH0251 70615WG1610	01HBH315BA E180615WG1 116	02AS6BH0031 80615WG1133	03AS4BH0511 80615WG1157	04AS5BH0021 80615WG1212	05AS4BH0481 80615WG1219	06AS4BH0521 80615WG1240			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V G			
Sample Date	17/06/2015 15:15	17/06/2015 15:35	17/06/2015 15:56	17/06/2015 16:10	18/06/2015 11:16	18/06/2015 11:33	18/06/2015 11:57	18/06/2015 12:12	18/06/2015 12:19	18/06/2015 12:40			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015			
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	390	<10	<10	<10	11	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	55	169	<10	71	25	33	<10	152	66	105	<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	17	66	<10	21	161	186	<10	280	31	136	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	750	3170	<100	520	2020	20400	<100	1780	113	642	<100	ug/l	TM16/PM49
Sulphanilamide	47	200	<5	31	14	25	<5	96	11	36	<5	ug/l	TM87/PM0
Sulphadiazine	9	14	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphathiazole	125	833	10	22	<5	14	<5	16	<5	8	<5	ug/l	TM87/PM0
Carbendazim	<5	21	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	8	35	<5	7	<5	<5	<5	<5	25	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	7	<5	<5	ug/l	TM87/PM0
Sulphamethizole	67	531	21	31	<5	7	<5	9	17	7	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	470	1990$_{AA}$	17	92	<5	11	<5	194	36	105	<5	ug/l	TM87/PM0
pH #	6.73	6.83	6.83	6.59	7.35	6.74	6.71	7.24	6.81	6.67	<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/95

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	41-44	45-48	49-52	53-56	57-60						LOD/LOR	Units	Method No.
Sample ID	07HBH210ERM180615WG1403	08AS4BH045180615WG1359	10AS4BH036180615WG1435	11AS4BH040A180615WG1457	12AS4BH043180615WG1533								
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G								
Sample Date	18/06/2015 14:03	18/06/2015 13:59	18/06/2015 14:35	18/06/2015 14:57	18/06/2015 15:33								
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water								
Batch Number	1	1	1	1	1								
Date of Receipt	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015								
Diisopropylamine	<50	<50	<50	<50	<50						<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10						<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10						<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10						<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10						<10	ug/l	TM114/PM0
Pentobarbital	80	20	134	106	187						<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10						<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
3-Ethylbenzophenone	42	<10	63	74	58						<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	2330	409	318	2710	1920						<100	ug/l	TM16/PM49
Sulphanilamide	37	<5	454	266	259						<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	78	5	20						<5	ug/l	TM87/PM0
Sulphathiazole	7	<5	317	492	119						<5	ug/l	TM87/PM0
Carbendazim	<5	<5	25	23	9						<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	7	17	<5						<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	14	12	7						<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	116	176	92						<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5						<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	91	<5	1760$_{AA}$	1880$_{AA}$	1100$_{AA}$						<5	ug/l	TM87/PM0
pH #	6.54	6.47	6.85	6.75	6.68						<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/95

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	10AS4BH0341 70615WG1515	11AS4BH0371 70615WG1535	12AS4BH0311 70615WG1556	13AS4BH0251 70615WG1610	01HBH315BA E180615WG1 116	02AS6BH0031 80615WG1133	03AS4BH0511 80615WG1157	04AS5BH0021 80615WG1212	05AS4BH0481 80615WG1219	06AS4BH0521 80615WG1240			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V G			
Sample Date	17/06/2015 15:15	17/06/2015 15:35	17/06/2015 15:56	17/06/2015 16:10	18/06/2015 11:16	18/06/2015 11:33	18/06/2015 11:57	18/06/2015 12:12	18/06/2015 12:19	18/06/2015 12:40			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	3.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	93.1	51.2	<0.1	2.2	170	<0.1	<0.1	<0.1	<0.1	2.0	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	5	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	231	15	<3	<3	949	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	14	<2	<2	79	83	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	44.3	402	<0.5	216	126	1810$_{AB}$	<0.5	617	<0.5	48.7	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	12	<3	<3	<3	16	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	7.5	<0.5	<0.5	<0.5	4050$_{AB}$	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	15	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	60	1790$_{AB}$	<2	535	531	2340$_{AB}$	<2	2330$_{AB}$	<2	706	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	3.0	<0.5	3.7	16.1	2770$_{AB}$	<0.5	39.1	<0.5	2.8	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	2	<1	<1	<1	5640$_{AB}$	<1	<1	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	2.1	<0.5	<0.5	1.9	678	<0.5	1.9	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	32	<3	43	<3	12	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	5	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	22	429	<3	7	<3	5	<3	3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	87	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	8	<3	<3	6	<3	<3	6	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	401	<3	<3	217	297	<3	258	<3	97	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	132	1330$_{AB}$	<3	11	1480$_{AB}$	1270$_{AB}$	<3	890	<3	254	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	96	98	101	96	92	96	96	96	97	95	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	96	97	98	97	95	97	94	101	94	96	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/95

VOC Report : **Liquid**

J E Sample No.	41-44	45-48	49-52	53-56	57-60							
Sample ID	07HBH210ERM180615WG1403	08AS4BH045180615WG1359	10AS4BH036180615WG1435	11AS4BH040A180615WG1457	12AS4BH043180615WG1533							
Depth										Please see attached notes for all abbreviations and acronyms		
COC No / misc												
Containers	V G	V G	V G	V G	V G							
Sample Date	18/06/2015 14:03	18/06/2015 13:59	18/06/2015 14:35	18/06/2015 14:57	18/06/2015 15:33							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	1	1	1	1	1							
Date of Receipt	19/06/2015	19/06/2015	19/06/2015	19/06/2015	19/06/2015							
VOC MS												
Dichlorodifluoromethane	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1						<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
Vinyl Chloride #	6.6	5.9	620	211	576						<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1						<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
1,1-Dichloroethane #	6	<3	<3	<3	<3						<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	8	212	56	151						<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1						<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Chloroform #	<2	<2	13	4	<2						<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Benzene #	245	53.8	245	335	495						<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	11	<3	<3	<3						<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	8.6	<0.5						<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Chlorobenzene #	1820 AB	552	136	1550 AB	1630 AB						<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Ethylbenzene #	23.5	6.1	<0.5	3.8	<0.5						<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	<1						<1	ug/l	TM15/PM10
o-Xylene #	1.5	<0.5	<0.5	1.2	<0.5						<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
Isopropylbenzene #	37	6	<3	<3	<3						<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4						<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	4	363	19						<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	38	<3						<3	ug/l	TM15/PM10
tert-Butylbenzene #	4	<3	<3	<3	<3						<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	11	<3	3	7	6						<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	392	26	66	257	309						<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	1410 AB	93	319	710	1340 AB						<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3						<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	94	95	93	93	90						<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	98	95	93	93	93						<0	%	TM15/PM10

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/95

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution

JE Job No: 15/95

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	24th June, 2015
Your reference :	27127103
Our reference :	Test Report 15/94 Batch 1 Schedule A 15/94 Batch 1 Schedule B
Location :	Dagenham
Date samples received :	18th June, 2015
Status :	Final report
Issue :	1

Ten samples were received for analysis on 18th June, 2015 of which eight were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/94

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32			LOD/LOR	Units	Method No.
Sample ID	01AS4BH0261 70615WG1041	02AS4BH0201 70615WG1053	03AS4BH0291 70615WG1124	04AS4BH0331 70615WG1145	05AS4BH0271 70615WG1205	06HBH312BA E170615WG1 220	07AS4BH0241 70615WG1345	08AS4BH0221 70615WG1357					
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G					
Sample Date	17/06/2015 10:41	17/06/2015 10:53	17/06/2015 11:24	17/06/2015 11:45	17/06/2015 12:05	17/06/2015 12:20	17/06/2015 13:45	17/06/2015 13:57					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015					
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50			<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	92	176			<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
Pentobarbital	50	15	52	112	100	57	72	48			<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	1210	<100	5510	<100	351	<100			<100	ug/l	TM16/PM49
Sulphanilamide	61	24	72	54	439	<5	233	<5			<5	ug/l	TM87/PM0
Sulphadiazine	<5	5	15	<5	<5	<5	<5	5			<5	ug/l	TM87/PM0
Sulphathiazole	<5	13	42	205	152	<5	181	11			<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	35	<5	<5	<5	<5			<5	ug/l	TM87/PM0
Sulphamerazine	17	<5	9	17	35	<5	6	<5			<5	ug/l	TM87/PM0
Diphenylguanidine	14	<5	<5	<5	12	<5	<5	<5			<5	ug/l	TM87/PM0
Sulphamethizole	14	<5	22	10	88	<5	62	<5			<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	969	11	349	416	5380$_{AA}$	<5	1260$_{AA}$	43			<5	ug/l	TM87/PM0
pH #	9.71	7.45	10.7	7.26	6.51	6.16	6.80	10.1			<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/94

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32			LOD/LOR	Units	Method No.
Sample ID	01AS4BH0261 70615WG1041	02AS4BH0201 70615WG1053	03AS4BH0291 70615WG1124	04AS4BH0331 70615WG1145	05AS4BH0271 70615WG1205	06HBH312BA E170615WG1 220	07AS4BH0241 70615WG1345	08AS4BH0221 70615WG1357					
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G					
Sample Date	17/06/2015 10:41	17/06/2015 10:53	17/06/2015 11:24	17/06/2015 11:45	17/06/2015 12:05	17/06/2015 12:20	17/06/2015 13:45	17/06/2015 13:57					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015					
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	6.6	7.1	<0.1	211	3.5	415	<0.1			<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	3	<3	<3	<3			<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	5	<3	27	<3	<3	14			<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	5	<3	3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	46	42	<3	614	8	318	<3			<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	34	<2	6	751			<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Benzene #	4.0	1.9	350	4.5	506	8.5	224	37.2			<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	4	197	<3	737	11	10	<3			<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	221	<0.5	269	<0.5	6.1	<0.5			<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	1440$_{AA}$	<3	12	<3			<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	1330$_{AA}$	289	924	<2	810	115			<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	20.9	<0.5	1.8	<0.5			<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	181	<1	<1	<1			<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	48.7	<0.5	<0.5	<0.5			<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4			<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	59	985	<3	30	<3			<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	11	613	<3	4	<3			<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	23	4	40	<3	8	<3			<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	713	87	1000	<3	121	<3			<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	21	4	2370$_{AA}$	166	6030$_{AA}$	24	711	9			<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	106	104	103	103	103	107	105	105			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	105	105	105	103	103	103	107	101			<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/94						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/94

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

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All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution

JE Job No: 15/94

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	24th June, 2015
Your reference :	27127102
Our reference :	Test Report 15/93 Batch 1
Location :	Dagenham
Date samples received :	18th June, 2015
Status :	Final report
Issue :	1

Two samples were received for analysis on 18th June, 2015 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/93

VOC Report : **Liquid**

J E Sample No.	1-3	4-6											
Sample ID	11AS6BH0291 60615WG1625	12AS6BH0271 60615WG1655											
Depth													
COC No / misc													
Containers	V	V											
Sample Date	16/06/2015 16:25	16/06/2015 16:55											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	18/06/2015	18/06/2015											

Please see attached notes for all abbreviations and acronyms

			LOD/LOR	Units	Method No.
VOC MS					
Dichlorodifluoromethane	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	67	<3	ug/l	TM15/PM10
Vinyl Chloride #	40.3	41.9	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	10	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	6	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	289	29	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	ug/l	TM15/PM10
Benzene #	19.1	17.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	92	7	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	37	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	51	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	93	93	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	99	98	<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/93						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/93

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

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% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

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As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

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Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

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Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
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ABBREVIATIONS and ACRONYMS USED

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B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 15/93

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	23rd June, 2015
Your reference :	27127103
Our reference :	Test Report 15/90 Batch 1
Location :	DAGENHAM
Date samples received :	17th June, 2015
Status :	Final report
Issue :	1

Three samples were received for analysis on 17th June, 2015 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: DAGENHAM
Contact: Joseph Kaye
JE Job No.: 15/90

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-4	5-8	9-12								LOD/LOR	Units	Method No.
Sample ID	01AS4BH0321 60615WG1134	02AS4BH0381 60615WG1149	99DUPA16061 5WG1200										
Depth													
COC No / misc													
Containers	V G	V G	V G										
Sample Date	06/06/2015 11:34	06/06/2015 11:49	06/06/2015 12:00										
Sample Type	Ground Water	Ground Water	Ground Water										
Batch Number	1	1	1										
Date of Receipt	17/06/2015	17/06/2015	17/06/2015										
Diisopropylamine	<50	<50	<50								<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10								<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10								<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10								<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10								<10	ug/l	TM114/PM0
Pentobarbital	<10	<10	<10								<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10								<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	-	<10	<10								<10	ug/l	TM84/PM49
Hexamine	-	<10	<10								<10	ug/l	TM84/PM49
Acetophenetidin	-	<10	<10								<10	ug/l	TM84/PM49
Carbofuran	-	<10	<10								<10	ug/l	TM84/PM49
Atrazine	-	<10	<10								<10	ug/l	TM84/PM49
Caffeine	-	<10	<10								<10	ug/l	TM84/PM49
Ethotoin	-	<10	<10								<10	ug/l	TM84/PM49
Phenazone	-	<10	<10								<10	ug/l	TM84/PM49
Cyclandelate	-	<10	<10								<10	ug/l	TM84/PM49
Thozalinone	-	<10	<10								<10	ug/l	TM84/PM49
Diuron	-	<10	<10								<10	ug/l	TM84/PM49
Ketoprofen	-	<10	<10								<10	ug/l	TM84/PM49
3-Ethylbenzophenone	-	<10	<10								<10	ug/l	TM84/PM49
Mepyramine	-	<10	<10								<10	ug/l	TM84/PM49
Promethazine	-	<10	<10								<10	ug/l	TM84/PM49
Molindone	-	<10	<10								<10	ug/l	TM84/PM49
Chlorpromazine	-	<10	<10								<10	ug/l	TM84/PM49
Brucine	-	<10	<10								<10	ug/l	TM84/PM49
Isometheptene	-	<10	<10								<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	-	<100	<100								<100	ug/l	TM16/PM49
Sulphanilamide	117	<5	<5								<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	<5								<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5								<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphamethizole	6	<5	<5								<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5								<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	<5	<5								<5	ug/l	TM87/PM0
pH #	7.04	9.39	9.45								<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: DAGENHAM
Contact: Joseph Kaye
JE Job No.: 15/90

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12									
Sample ID	01AS4BH0321 60615WG1134	02AS4BH0381 60615WG1149	99DUPA16061 5WG1200									
Depth										Please see attached notes for all abbreviations and acronyms		
COC No / misc												
Containers	V G	V G	V G									
Sample Date	06/06/2015 11:34	06/06/2015 11:49	06/06/2015 12:00									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1									
Date of Receipt	17/06/2015	17/06/2015	17/06/2015									
VOC MS										LOD/LOR	Units	Method No.
Dichlorodifluoromethane	<2	<2	<2							<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1							<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3							<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1							<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1							<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3							<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3							<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3							<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3							<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3							<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	9	<3	<3							<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1							<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2							<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2							<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3							<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2							<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2							<2	ug/l	TM15/PM10
Benzene #	1.5	<0.5	<0.5							<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	139	<3	<3							<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2							<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3							<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2							<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2							<2	ug/l	TM15/PM10
Toluene #	25.1	<0.5	<0.5							<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2							<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3							<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2							<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2							<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2							<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2							<2	ug/l	TM15/PM10
Ethylbenzene #	6.2	<0.5	<0.5							<0.5	ug/l	TM15/PM10
p/m-Xylene #	22	<1	<1							<1	ug/l	TM15/PM10
o-Xylene #	2.1	<0.5	<0.5							<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2							<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2							<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4							<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3							<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3							<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	52	<3	<3							<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	4090$_{AA}$	<3	<3							<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	63100$_{AA}$	<3	<3							<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3							<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3							<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3							<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	97	101	95							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	90	103	98							<0	%	TM15/PM10

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/90

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Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
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ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x100 Dilution

JE Job No: 15/90

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

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Unit 3 Deeside Point
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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	22nd June, 2015
Your reference :	27127102
Our reference :	Test Report 15/89 Batch 1
Location :	DAGENHAM
Date samples received :	17th June, 2015
Status :	Final report
Issue :	1

Eight samples were received for analysis on 17th June, 2015 of which eight were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127102
Location: DAGENHAM
Contact: Joseph Kaye
JE Job No.: 15/89

VOC Report : **Liquid**

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24			LOD/LOR	Units	Method No.
Sample ID	03AS4BH0441 60615WG1355	04AS4BH1031 60615WG1405	05AS4BH1041 60615WG1426	06AS4BH1060 60615WG1435	07AS4BH0501 60615WG1557	08AS6BH0721 60615WG1521	09AS6BH0351 60615WG1542	10AS6BH0331 60615WG1550					
Depth													
COC No / misc													
Containers	V	V	V	V	V	V	V	V					
Sample Date	16/06/2015 13:55	16/06/2015 14:05	16/06/2015 14:26	16/06/2015 14:35	16/06/2015 15:57	16/06/2015 15:21	16/06/2015 15:42	16/06/2015 15:50					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	17/06/2015	17/06/2015	17/06/2015	17/06/2015	17/06/2015	17/06/2015	17/06/2015	17/06/2015					
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Vinyl Chloride #	2.4	<0.1	<0.1	18.5	23.7	1110 AA	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	101	<3	<3			<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	706	<3	<3	<3	66	<3	<3	<3			<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	290	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	12	<3			<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	77	<3	<3	38	143	56900 AD	<3	<3			<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chloroform #	15600 AC	<2	<2	<2	159	321	<2	<2			<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	30	<2	<2			<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Benzene #	74.8	2.3	3.6	402	<0.5	1320 AA	1800 AB	<0.5			<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	1900 AC	<3	<3	12	39	112000 AD	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Toluene #	586	<0.5	<0.5	7.3	<0.5	138	51.7	<0.5			<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	650	<2	<2	5380 AB	<2			<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Ethylbenzene #	1.5	<0.5	<0.5	8.0	<0.5	36.6	423	<0.5			<0.5	ug/l	TM15/PM10
p/m-Xylene #	3	<1	<1	14	<1	18	146	11			<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	7.5	<0.5	2.9	22.6	1.4			<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	168	<3			<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4			<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	15	<3	<3	10	<3			<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	6	<3	<3	<3	<3			<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	7	<3			<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	6	<3	<3	4	<3			<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	6	<3	<3	7	<3	<3	72	<3			<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	223	<3	<3	267	23	14	2670 AB	24			<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	545	<3	5	1700 AA	18	79	15700 AB	57			<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
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Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	87	93	92	93	89	88	91	99			<0	%	TM15/PM10
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ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution
AB	x20 Dilution
AC	x100 Dilution
AD	x200 Dilution

JE Job No: 15/89

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	20th May, 2015
Your reference :	27127103
Our reference :	Test Report 15/74 Batch 1
Location :	Dagenham
Date samples received :	14th May, 2015
Status :	Final report
Issue :	1

Ten samples were received for analysis on 14th May, 2015 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/74

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-8	21-24								LOD/LOR	Units	Method No.
Sample ID	01AS4BH0441 20515WG0900	05AS4BH0501 20515WG1055	06AS6BH0721 20515WG1015										
Depth													
COC No / misc													
Containers	V G	V G	V G										
Sample Date	12/05/2015 09:00	12/05/2015 10:55	12/05/2015 10:15										
Sample Type	Ground Water	Ground Water	Ground Water										
Batch Number	1	1	1										
Date of Receipt	14/05/2015	14/05/2015	14/05/2015										
Diisopropylamine	<50	<50	<50								<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10								<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10								<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10								<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10								<10	ug/l	TM114/PM0
Pentobarbital	16	<10	16								<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10								<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10								<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10								<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10								<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10								<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10								<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10								<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10								<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10								<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10								<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10								<10	ug/l	TM84/PM49
Diuron	<10	<10	<10								<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10								<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10								<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10								<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10								<10	ug/l	TM84/PM49
Molindone	<10	<10	<10								<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10								<10	ug/l	TM84/PM49
Brucine	<10	<10	<10								<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10								<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	507								<100	ug/l	TM16/PM49
Sulphanilamide	47	54	43								<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	13								<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	37								<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	10								<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5								<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5								<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	<5	41								<5	ug/l	TM87/PM0
pH #	7.47	12.3	8.48								<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/74

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-11	12-14	15-17	18-20	21-24	25-27	28-30	31-33	LOD/LOR	Units	Method No.
Sample ID	01AS4BH0441 20515WG0900	05AS4BH0501 20515WG1055	10AS6BH0351 20515WG1225	02AS4BH1031 20515WG0904	03AS4BH1041 20515WG0939	04AS4BH1061 20515WG0935	06AS6BH0721 20515WG1015	07AS6BH0271 20515WG1125	08AS6BH0291 20515WG1200	09AS6BH0331 20515WG1205			
Depth													
COC No / misc													
Containers	V G	V G	V	V	V	V	V G	V	V	V			
Sample Date	12/05/2015 09:00	12/05/2015 10:55	12/05/2015 12:25	12/05/2015 09:04	12/05/2015 09:39	12/05/2015 09:35	12/05/2015 10:15	12/05/2015 11:25	12/05/2015 12:00	12/05/2015 12:05			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.5	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	6	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	2.6	12.0	0.8	0.4	<0.1	64.7	1080$_{AC}$	81.1	16.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	109	<3	5	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	1050$_{AB}$	38	<3	<3	<3	<3	9	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	310	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	10	<3	7	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	48	88	<3	<3	<3	179	62700$_{AC}$	87	154	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	24600$_{AB}$	95	6	5	<2	<2	272	<2	4	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	143	2.0	2100$_{AA}$	<0.5	61.6	1280$_{AA}$	1270$_{AC}$	67.5	13.8	77.0	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	2550$_{AB}$	32	4	4	<3	23	116000$_{AC}$	22	63	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	683	6.3	16.4	<0.5	<0.5	14.3	135	1.7	<0.5	10.6	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	10	2070$_{AA}$	<2	28	959	68	80	<2	107	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	0.8	0.9	118	<0.5	<0.5	10.7	41.9	<0.5	<0.5	46.9	<0.5	ug/l	TM15/PM10
p/m-Xylene #	3	<1	30	<1	<1	19	23	<1	<1	20	<1	ug/l	TM15/PM10
o-Xylene #	0.8	1.2	11.0	<0.5	<0.5	12.5	4.1	<0.5	<0.5	2.1	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	45	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	15	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	7	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	7	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	9	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	5	<3	27	<3	<3	14	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	104	30	663	<3	<3	414	14	58	<3	20	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	538	7	3930$_{AA}$	<3	<3	3110$_{AA}$	92	367	<3	40	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	96	96	94	97	100	95	93	99	95	96	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	103	99	104	101	102	99	101	98	103	102	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/74						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/74

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution
AB	x100 Dilution
AC	x200 Dilution

JE Job No: 15/74

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	10th April, 2015
Your reference :	27127102
Our reference :	Test Report 15/50
Location :	Dagenham
Date samples received :	3rd April, 2015
Status :	Final report
Issue :	1

Ten samples were received for analysis on 3rd April, 2015 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Belinda Lewsley BA
Project Co-ordinator

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/50

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-11	12-14	15-17	18-21	22-24	25-27	28-30	31-33	LOD/LOR	Units	Method No.
Sample ID	01AS4BH0500 10415WG1223	02AS4BH0440 10415WG1227	03AS4BH1030 10415WG1303	04AS4BH1060 10415WG1302	05AS4BH1040 10415WG1334	06AS6BH0720 10415WG1341	07AS6BH0290 10415WG1406	08AS6BH0330 10415WG1414	09AS6BH0350 10415WG1438	10AS6BH0270 20415WG1130			
Depth													
COC No / misc										ASCORBIC ACID			
Containers	V G	V G	V	V	V	V G	V	V	V	V			
Sample Date	01/04/2015 12:23	01/04/2015 12:27	01/04/2015 13:03	01/04/2015 13:02	01/04/2015 13:34	01/04/2015 13:41	01/04/2015 14:06	01/04/2015 14:14	01/04/2015 14:38	02/04/2015 11:30			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/04/2015	03/04/2015	03/04/2015	03/04/2015	03/04/2015	03/04/2015	03/04/2015	03/04/2015	03/04/2015	03/04/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	43	<3	ug/l	TM15/PM10
Vinyl Chloride #	13.1	<0.1	1.4	7.7	<0.1	1080	19.0	4.9	<0.1	4.6	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	127	6	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	37	8	<3	<3	<3	7	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	337	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	6	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	110	12	5	29	<3	67300$_E$	141	174	<3	22	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	89	12300$_D$	<2	4	<2	190	5	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	4.5	<0.5	<0.5	192	<0.5	1010	16.3	115	1080	6.9	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	34	1510$_D$	<3	13	<3	161000$_E$	162	2430$_A$	13	28	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	15	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	16.4	<0.5	<0.5	14.3	<0.5	177	<0.5	8.8	9.0	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	341	<2	92	<2	85	973	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	4.8	<0.5	57.6	<0.5	1.2	2.7	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	10	<1	31	<1	13	16	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	6.4	<0.5	5.3	<0.5	1.6	8.8	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	13	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	11	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	4	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	8	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	5	<3	<3	<3	<3	19	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	34	<3	<3	147	<3	<3	<3	<3	444	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	879	8	112	<3	24	2720$_A$	49	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	84	95	95	101	97	97	97	99	99	105	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	88	102	102	110	106	100	103	102	106	115	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/50						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/50

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x10 Dilution
D	x50 Dilution
E	x200 Dilution

JE Job No: 15/50

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	26th March, 2015
Your reference :	27127103
Our reference :	Test Report 15/43 Batch 1
Location :	Dagenham
Date samples received :	19th March, 2015
Status :	Final report
Issue :	1

Eight samples were received for analysis on 19th March, 2015 of which eight were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/43

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32			LOD/LOR	Units	Method No.
Sample ID	51AS4BH0251 80315WG0830	52AS4BH0311 80315WG0907	53AS4BH0371 80315WG0938	54AS4BH0341 80315WG1031	55AS4BH0281 80315WG1006	56AS4BH0221 80315WG1104	57AS4BH0241 80315WG1145	58AS4BH0271 80315WG1222					
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G					
Sample Date	18/03/2015 08:30	18/03/2015 09:07	18/03/2015 09:38	18/03/2015 10:31	18/03/2015 10:06	18/03/2015 11:04	18/03/2015 11:45	18/03/2015 12:22					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015					
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50			<50	ug/l	TM15/PM10
Amphetamine	404	<10	<10	<10	243	<10	53	<10			<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
Pentobarbital	81	<10	123	45	70	28	72	85			<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	367	<100	1660	245	505	<100	414	2470			<100	ug/l	TM16/PM49
Sulphanilamide	26	<5	184	22	28	16	233	56			<5	ug/l	TM87/PM0
Sulphadiazine	7	<5	15	<5	5	<5	17	10			<5	ug/l	TM87/PM0
Sulphathiazole	20	<5	759	62	32	7	154	109			<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	17	<5	<5	<5	<5	<5			<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM87/PM0
Sulphamethizole	29	<5	479	38	68	<5	78	50			<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	99	<5	1960$_A$	275	158	27	1130$_A$	1680$_A$			<5	ug/l	TM87/PM0
pH #	6.72	7.12	6.89	6.92	6.53	10.9	6.77	6.25			<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/43

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32			LOD/LOR	Units	Method No.
Sample ID	51AS4BH0251 80315WG0830	52AS4BH0311 80315WG0907	53AS4BH0371 80315WG0938	54AS4BH0341 80315WG1031	55AS4BH0281 80315WG1006	56AS4BH0221 80315WG1104	57AS4BH0241 80315WG1145	58AS4BH0271 80315WG1222					
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G					
Sample Date	18/03/2015 08:30	18/03/2015 09:07	18/03/2015 09:38	18/03/2015 10:31	18/03/2015 10:06	18/03/2015 11:04	18/03/2015 11:45	18/03/2015 12:22					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015					
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	6.3	<0.1	<0.1	<0.1	6.7	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Vinyl Chloride #	3.6	<0.1	86.8	70.2	3.2	<0.1	628	210			<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	3	<3			<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	10	17	<3			<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	5	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	16	265	<3	<3	622	42			<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chloroform #	71	<2	<2	14	<2	411	73	<2			<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Benzene #	258	<0.5	413	57.2	468	<0.5	278	283			<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	13	<3	<3	62	49			<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	11.2	<0.5	<0.5	<0.5	20.1	22.1			<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	18	<3	<3	48	141			<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chlorobenzene #	715	<2	1880$_A$	294	1410$_A$	<2	730	844			<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Ethylbenzene #	5.7	<0.5	2.9	<0.5	13.0	<0.5	<0.5	2.9			<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	3	<1	<1	<1	<1	16			<1	ug/l	TM15/PM10
o-Xylene #	1.7	<0.5	3.6	<0.5	3.5	<0.5	<0.5	4.7			<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4			<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2-Chlorotoluene #	9	<3	392	58	15	<3	37	81			<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Chlorotoluene #	5	<3	100	6	6	<3	8	74			<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	20	5	6	<3	9	17			<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	441	103	20	<3	113	706			<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	16	<3	1320$_A$	339	58	<3	719	3330$_D$			<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	102	100	102	102	99	97	100	100			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	110	108	113	109	109	107	111	111			<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/43						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/43

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x10 Dilution
D	x20 Dilution

JE Job No: 15/43

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Zone 3
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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	26th March, 2015
Your reference :	27127103
Our reference :	Test Report 15/41 Batch 1
Location :	Dagenham
Date samples received :	19th March, 2015
Status :	Final report
Issue :	1

Seven samples were received for analysis on 19th March, 2015 of which seven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/41

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28				LOD/LOR	Units	Method No.
Sample ID	AS4BH026180 315WG0910	AS4BH029180 315WG0950	AS4BH033180 315WG1040	AS4BH020180 315WG1135	AS4BH045170 315WG1510	HBH210ERM1 70315WG1550	HBH312BAE1 80315WG1230						
Depth	2.2	4.0	3.5	2.8	3.1	3.0	3.5						
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G						
Sample Date	18/03/2015 09:10	18/03/2015 09:50	18/03/2015 10:40	18/03/2015 11:35	17/03/2015 15:10	17/03/2015 15:50	18/03/2015 12:30						
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015						
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50				<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM114/PM0
Pentobarbital	<10	19	141	48	<10	<10	105				<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	113	162	<100	<100	162	<100				<100	ug/l	TM16/PM49
Sulphanilamide	20	50	35	37	<5	<5	<5				<5	ug/l	TM87/PM0
Sulphadiazine	<5	17	<5	<5	<5	<5	<5				<5	ug/l	TM87/PM0
Sulphathiazole	8	21	113	138	<5	<5	<5				<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	6	7	<5	<5	<5				<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM87/PM0
Sulphamethizole	<5	11	6	<5	<5	<5	<5				<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	16	204	444	441	<5	<5	8				<5	ug/l	TM87/PM0
pH #	10.6	11.2	7.07	7.49	6.56	7.01	6.11				<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/41

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28					
Sample ID	AS4BH026180 315WG0910	AS4BH029180 315WG0950	AS4BH033180 315WG1040	AS4BH020180 315WG1135	AS4BH045170 315WG1510	HBH210ERM1 70315WG1550	HBH312BAE1 80315WG1230					
Depth	2.2	4.0	3.5	2.8	3.1	3.0	3.5					
COC No / misc												
Containers	V G	V G	V G	V G	V G	V G	V G					
Sample Date	18/03/2015 09:10	18/03/2015 09:50	18/03/2015 10:40	18/03/2015 11:35	17/03/2015 15:10	17/03/2015 15:50	18/03/2015 12:30					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1					
Date of Receipt	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015					

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	32.2	<0.1	9.0	4.5	3.3	1.4				<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	4	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	67	<3	68	<3	<3	4				<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Benzene #	<0.5	88.6	6.3	<0.5	14.0	37.8	10.9				<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	115	<3	7	8	<3	8				<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Toluene #	<0.5	119	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chlorobenzene #	<2	568	290	<2	256	369	<2				<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	3.7	<0.5				<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	<0.5				<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	16	<3				<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4				<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	36	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	5	<3	<3	<3	<3				<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	16	4	<3	<3	6	<3				<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	467	63	<3	<3	166	<3				<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	1100	155	<3	7	531	17				<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	100	99	98	100	101	100	101				<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	109	107	108	110	110	110	109				<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/41						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/41

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range

JE Job No: 15/41

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

Attention :	Joseph Kaye
Date :	25th March, 2015
Your reference :	27127103
Our reference :	Test Report 15/40 Batch 1
Location :	Sanofi Dagenham
Date samples received :	18th March, 2015
Status :	Final report
Issue :	1

Ten samples were received for analysis on 18th March, 2015 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/40

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	AS4BH042160 315WG1210	AS4BH036160 315WG1242	AS4BH040A16 0315WG1440	AS4BH043160 315WG1500	AS4BH052160 315WG1556	AS5BH002160 315WG1623	AS6BH003170 315WG1010	AS4BH051170 315WG1110	AS4BH048170 315WG1200	HBH315BAE1 70315WG1350			
Depth	2.40	2.90	4.00	4.00	2.90	3.00	2.80	3.20	2.40	2.60			
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V G			
Sample Date	16/03/2015 12:10	16/03/2015 12:42	16/03/2015 14:40	16/03/2015 15:00	16/03/2015 15:56	16/03/2015 16:23	17/03/2015 10:10	17/03/2015 11:10	17/03/2015 12:00	17/03/2015 13:50			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015			
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	<10	159	81	139	193	70	21	<10	12	20	<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	3240	1860	1390	920	<100	6410	<100	<100	<100	<100	ug/l	TM16/PM49
Sulphanilamide	<5	213	175	151	78	33	12	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphadiazine	<5	8	6	<5	<5	22	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphathiazole	<5	35	303	69	14	5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	7	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	17	140	52	11	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	685	1490$_A$	800	286	133	10	<5	5	<5	<5	ug/l	TM87/PM0
pH #	7.12	6.85	6.98	6.89	6.82	10.9	6.86	6.95	6.96	7.69	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/40

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	AS4BH042160 315WG1210	AS4BH036160 315WG1242	AS4BH040A16 0315WG1440	AS4BH043160 315WG1500	AS4BH052160 315WG1556	AS5BH002160 315WG1623	AS6BH003170 315WG1010	AS4BH051170 315WG1110	AS4BH048170 315WG1200	HBH315BAE1 70315WG1350			
Depth	2.40	2.90	4.00	4.00	2.90	3.00	2.80	3.20	2.40	2.60			
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V G			
Sample Date	16/03/2015 12:10	16/03/2015 12:42	16/03/2015 14:40	16/03/2015 15:00	16/03/2015 15:56	16/03/2015 16:23	17/03/2015 10:10	17/03/2015 11:10	17/03/2015 12:00	17/03/2015 13:50			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015	18/03/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	1090$_A$	104	449	11.2	<0.1	3.7	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	8	<3	<3	3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	144	39	118	4	<3	11	<3	<3	19	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	<0.5	959	242	515	482	54.2	1840$_D$	3.4	<0.5	5.8	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	5	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	19.8	5.8	3.1	<0.5	<0.5	4870$_D$	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	9	4220$_A$	1120$_A$	1160$_A$	2210$_A$	<2	1900$_D$	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	1.3	174	1.9	<0.5	21.9	1.1	3320$_D$	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	5	4	<1	<1	<1	<1	7770$_D$	<1	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	2.9	4.2	1.7	<0.5	2.1	<0.5	948	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	184	<3	<3	48	<3	28	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	11	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	236	10	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	34	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	17	<3	<3	5	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	4	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	26	8	7	7	<3	8	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	630	229	232	183	<3	302	<3	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	16	2330$_A$	669	928	562	103	1370$_D$	<3	<3	31	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	106	107	108	106	104	105	105	105	105	102	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	112	113	114	112	109	111	112	108	111	106	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/40						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/40

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x10 Dilution
D	x20 Dilution

JE Job No: 15/40

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Zone 3
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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	12th March, 2015
Your reference :	27127102
Our reference :	Test Report 15/33 Batch 1
Location :	Sanofi Dagenham
Date samples received :	6th March, 2015
Status :	Final report
Issue :	1

Eleven samples were received for analysis on 6th March, 2015 of which eleven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127102
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/33

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-29	30-34	35-39	40-44	LOD/LOR	Units	Method No.
Sample ID	01HBH518ERM050315WG1042	02AS8BH0510 50315WG1051	03AS8BH0110 50315WG1115	04HBH519ERM050315WG1127	05AS8BH1100 50315WG1147	06AS8BH1090 50315WG1207	10AS8BH1000 50315WG1305	11AS8BH0990 50315WG1312	12AS8BH098A 050315WG1338	13AS8BH0970 50315WG1356			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V HN G	V HN G	V HN G	V HN G			
Sample Date	05/03/2015 10:42	05/03/2015 10:51	05/03/2015 11:15	05/03/2015 11:27	05/03/2015 11:47	05/03/2015 12:07	05/03/2015 13:05	05/03/2015 13:12	05/03/2015 13:38	05/03/2015 13:56			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015			
Dissolved Arsenic #	-	-	-	-	-	-	16.1	31.2	76.7	265	<2.5	ug/l	TM30/PM14
Dissolved Barium #	-	-	-	-	-	-	46	67	11	21	<3	ug/l	TM30/PM14
Dissolved Beryllium	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Boron	-	-	-	-	-	-	128	253	21	73	<12	ug/l	TM30/PM14
Dissolved Cadmium #	-	-	-	-	-	-	<0.5	1.0	<0.5	2.0	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	-	-	-	-	-	-	<1.5	4.2	2.9	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper #	-	-	-	-	-	-	<7	9	8	<7	<7	ug/l	TM30/PM14
Dissolved Lead #	-	-	-	-	-	-	<5	<5	12	<5	<5	ug/l	TM30/PM14
Dissolved Nickel #	-	-	-	-	-	-	2	99	23	14	<2	ug/l	TM30/PM14
Dissolved Selenium #	-	-	-	-	-	-	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Vanadium #	-	-	-	-	-	-	<1.5	<1.5	11.9	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	-	-	-	-	-	-	6	58	<3	<3	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	-	-	-	-	-	-	0.07	0.06	0.36	0.52	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	35	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	12	<10	<10	<10	<10	43	12	2090$_A$	49	59	<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	132	<10	<10	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	71	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	1430	274	156	<100	<100	104	<100	225	<100	<100	<100	ug/l	TM16/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127102
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/33

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-29	30-34	35-39	40-44	LOD/LOR	Units	Method No.
Sample ID	01HBH518ERM050315WG1042	02AS8BH0510 50315WG1051	03AS8BH0110 50315WG1115	04HBH519ERM050315WG1127	05AS8BH1100 50315WG1147	06AS8BH1090 50315WG1207	10AS8BH1000 50315WG1305	11AS8BH0990 50315WG1312	12AS8BH098A 050315WG1338	13AS8BH0970 50315WG1356			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V HN G	V HN G	V HN G	V HN G			
Sample Date	05/03/2015 10:42	05/03/2015 10:51	05/03/2015 11:15	05/03/2015 11:27	05/03/2015 11:47	05/03/2015 12:07	05/03/2015 13:05	05/03/2015 13:12	05/03/2015 13:38	05/03/2015 13:56			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015			
Sulphanilamide	<5	<5	<5	<5	<5	<5	16	961	37	42	<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	<5	<5	<5	<5	8	392	<5	16	<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	<5	<5	<5	<5	14	998	20	17	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5	58	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5	<5	<5	<5	132	<5	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	<5	14	<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	<5	<5	<5	587	11	8	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	25	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	<5	<5	<5	<5	11	22	5120$_D$	106	121	<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127102
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/33

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	45-49												
Sample ID	14AS8BH0960 50315WG1511												
Depth													
COC No / misc													
Containers	V HN G												
Sample Date	05/03/2015 15:11												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	06/03/2015												
												LOD/LOR	Units	Method No.
Dissolved Arsenic #	132											<2.5	ug/l	TM30/PM14
Dissolved Barium #	7											<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5											<0.5	ug/l	TM30/PM14
Dissolved Boron	93											<12	ug/l	TM30/PM14
Dissolved Cadmium #	1.0											<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	9.6											<1.5	ug/l	TM30/PM14
Dissolved Copper #	14											<7	ug/l	TM30/PM14
Dissolved Lead #	5											<5	ug/l	TM30/PM14
Dissolved Nickel #	<2											<2	ug/l	TM30/PM14
Dissolved Selenium #	<3											<3	ug/l	TM30/PM14
Dissolved Vanadium #	29.0											<1.5	ug/l	TM30/PM14
Dissolved Zinc #	<3											<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.70											<0.01	ug/l	TM61/PM38
Diisopropylamine	<50											<50	ug/l	TM15/PM10
Amphetamine	<10											<10	ug/l	TM114/PM0
Butalbarbital	<10											<10	ug/l	TM114/PM0
Fenbufen	<10											<10	ug/l	TM114/PM0
Methcathinone	<10											<10	ug/l	TM114/PM0
Pentobarbital	<10											<10	ug/l	TM114/PM0
Phenobarbital	<10											<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10											<10	ug/l	TM84/PM49
Hexamine	<10											<10	ug/l	TM84/PM49
Acetophenetidin	<10											<10	ug/l	TM84/PM49
Carbofuran	<10											<10	ug/l	TM84/PM49
Atrazine	<10											<10	ug/l	TM84/PM49
Caffeine	<10											<10	ug/l	TM84/PM49
Ethotoin	<10											<10	ug/l	TM84/PM49
Phenazone	<10											<10	ug/l	TM84/PM49
Cyclandelate	<10											<10	ug/l	TM84/PM49
Thozalinone	<10											<10	ug/l	TM84/PM49
Diuron	<10											<10	ug/l	TM84/PM49
Ketoprofen	<10											<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10											<10	ug/l	TM84/PM49
Mepyramine	<10											<10	ug/l	TM84/PM49
Promethazine	<10											<10	ug/l	TM84/PM49
Molindone	<10											<10	ug/l	TM84/PM49
Chlorpromazine	<10											<10	ug/l	TM84/PM49
Brucine	<10											<10	ug/l	TM84/PM49
Isometheptene	<10											<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100											<100	ug/l	TM16/PM49

Client Name: Arcadis
Reference: 27127102
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/33

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	45-49												
Sample ID	14AS8BH096050315WG1511												
Depth													
COC No / misc													
Containers	V HN G												
Sample Date	05/03/2015 15:11												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	06/03/2015												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Sulphanilamide	<5										<5	ug/l	TM87/PM0
Sulphadiazine	<5										<5	ug/l	TM87/PM0
Sulphathiazole	<5										<5	ug/l	TM87/PM0
Carbendazim	<5										<5	ug/l	TM87/PM0
Sulphamerazine	<5										<5	ug/l	TM87/PM0
Diphenylguanidine	<5										<5	ug/l	TM87/PM0
Sulphamethizole	<5										<5	ug/l	TM87/PM0
Acebutolol	<5										<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5										<5	ug/l	TM87/PM0

Client Name: Arcadis
Reference: 27127102
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/33

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-29	30-34	35-39	40-44	LOD/LOR	Units	Method No.
Sample ID	01HBH518ERM050315WG1042	02AS8BH0510 50315WG1051	03AS8BH0110 50315WG1115	04HBH519ERM050315WG1127	05AS8BH1100 50315WG1147	06AS8BH1090 50315WG1207	10AS8BH1000 50315WG1305	11AS8BH0990 50315WG1312	12AS8BH098A 050315WG1338	13AS8BH0970 50315WG1356			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V HN G	V HN G	V HN G	V HN G			
Sample Date	05/03/2015 10:42	05/03/2015 10:51	05/03/2015 11:15	05/03/2015 11:27	05/03/2015 11:47	05/03/2015 12:07	05/03/2015 13:05	05/03/2015 13:12	05/03/2015 13:38	05/03/2015 13:56			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015	06/03/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	13.8	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	21	6	<3	<3	<3	172	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	5.6	10.6	118	<0.1	<0.1	2.2	2.3	1180$_D$	3.0	3.9	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	22	16	<3	<3	<3	<3	<3	6	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	7	10	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	359	27	7	<3	<3	<3	<3	4	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	140	24	<3	<3	<3	<3	<3	3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	3110$_E$	532	45	9	10	29	<3	1700$_D$	15	12	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	227	371	4	258	<2	4	<2	247	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	5160$_E$	2890$_E$	<2	4	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	1.4	<0.5	1.5	<0.5	<0.5	4.9	3.2	783	2.0	5.3	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	16600$_E$	10100$_E$	424	132	15	133	4	659	23	11	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	1.7	1.4	<0.5	<0.5	<0.5	<0.5	<0.5	6.9	5.2	6.9	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	24	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	6	5	<3	<3	<3	<3	<3	12	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	4	35	476	3	6	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.1	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	7710$_E$	302	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	6	4	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	250	78	<3	<3	<3	<3	7	36	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	1740$_E$	507	3	<3	<3	3	6	220	6	11	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	100	102	102	100	100	101	102	102	102	100	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	107	108	109	106	105	109	107	110	109	108	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127102
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/33

VOC Report : **Liquid**

J E Sample No.	45-49												
Sample ID	14AS8BH0960 50315WG1511												
Depth													
COC No / misc													
Containers	V HN G												
Sample Date	05/03/2015 15:11												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	06/03/2015												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2										<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1										<0.1	ug/l	TM15/PM10
Chloromethane #	<3										<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1										<0.1	ug/l	TM15/PM10
Bromomethane	<1										<1	ug/l	TM15/PM10
Chloroethane #	<3										<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3										<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3										<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3										<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1										<1	ug/l	TM15/PM10
Bromochloromethane #	<2										<2	ug/l	TM15/PM10
Chloroform #	12										<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2										<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3										<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2										<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2										<2	ug/l	TM15/PM10
Benzene #	<0.5										<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	27										<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromomethane #	<3										<3	ug/l	TM15/PM10
Bromodichloromethane #	<2										<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
Toluene #	<0.5										<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2										<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3										<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromochloromethane #	<2										<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2										<2	ug/l	TM15/PM10
Chlorobenzene #	<2										<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2										<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5										<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1										<1	ug/l	TM15/PM10
o-Xylene #	<0.5										<0.5	ug/l	TM15/PM10
Styrene	<2										<2	ug/l	TM15/PM10
Bromoform #	<2										<2	ug/l	TM15/PM10
Isopropylbenzene #	<3										<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4										<4	ug/l	TM15/PM10
Bromobenzene #	<2										<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3										<3	ug/l	TM15/PM10
Propylbenzene #	<3										<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3										<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3										<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
n-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2										<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3										<3	ug/l	TM15/PM10
Naphthalene	<2										<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	101										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	109										<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127102
Location: Sanofi Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/33						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/33

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x5 Dilution
D	x10 Dilution
E	x20 Dilution

JE Job No: 15/33

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	11th March, 2015
Your reference :	
Our reference :	Test Report 15/32 Batch 1
Location :	Dagenham
Date samples received :	5th March, 2015
Status :	Final report
Issue :	1

Twenty one samples were received for analysis on 5th March, 2015 of which twenty were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference:
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/32

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11	12-16	17-21	22-26	27-31	32-36	37-41	42-46	LOD/LOR	Units	Method No.
Sample ID	01AS8BH1070 30315WG1031	03AS5BH0140 30315WG1035	05AS5BH0130 30315WG1118	07AS5BH0120 30315WG1131	06AS7BH0270 30315WG1224	09AS8BH1080 30315WG1158	08AS7BH0300 30315WG1207	12AS6BH0120 30315WG1510	15AS7BH0360 30315WG1545	20AS7BH0470 30315WG1601			
Depth													
COC No / misc													
Containers	V HN G	V HN G	HN	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	03/03/2015 10:31	03/03/2015 10:35	03/03/2015 11:18	03/03/2015 11:31	03/03/2015 12:24	03/03/2015 11:58	03/03/2015 12:07	03/03/2015 15:10	03/03/2015 15:45	03/03/2015 16:01			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015			
Dissolved Arsenic #	645	140	126	1650	290	16.1	504	1890	751	902	<2.5	ug/l	TM30/PM14
Dissolved Cadmium #	6.2	1.5	1.3	15.8	2.9	<0.5	4.6	17.4	6.8	8.8	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	78.9	72.8	<1.5	60.5	1.5	51.0	3.1	15.8	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	59	59	<7	62	<7	61	<7	38	<7	<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM30/PM14
Dissolved Nickel #	30	8	8	20	9	4	7	15	12	24	<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Zinc #	16	<3	<3	<3	<3	7	<3	<3	<3	5	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.02	0.08	0.05	0.11	0.33	0.11	0.35	0.12	0.62	<0.01	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	-	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	129	<10	-	109	18	<10	<10	66	18	44	<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	-	<10	<10	<10	<10	31	<10	64	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	-	329	<100	<100	<100	200	<100	<100	<100	ug/l	TM16/PM49
Sulphanilamide	92	55	-	368	79	20	80	189	55	186	<5	ug/l	TM87/PM0
Sulphadiazine	32	<5	-	305	41	<5	32	163	51	68	<5	ug/l	TM87/PM0
Sulphathiazole	54	24	-	374	61	<5	48	242	34	171	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference:
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/32

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	1-5	6-10	11	12-16	17-21	22-26	27-31	32-36	37-41	42-46	LOD/LOR	Units	Method No.
Sample ID	01AS8BH1070 30315WG1031	03AS5BH0140 30315WG1035	05AS5BH0130 30315WG1118	07AS5BH0120 30315WG1131	06AS7BH0270 30315WG1224	09AS8BH1080 30315WG1158	08AS7BH0300 30315WG1207	12AS6BH0120 30315WG1510	15AS7BH0360 30315WG1545	20AS7BH0470 30315WG1601			
Depth													
COC No / misc													
Containers	V HN G	V HN G	HN	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	03/03/2015 10:31	03/03/2015 10:35	03/03/2015 11:18	03/03/2015 11:31	03/03/2015 12:24	03/03/2015 11:58	03/03/2015 12:07	03/03/2015 15:10	03/03/2015 15:45	03/03/2015 16:01			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015			
Sulphamerazine	6	<5	-	38	7	<5	6	19	13	5	<5	ug/l	TM87/PM0
Diphenylguanidine	24	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	22	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	30	<5	-	6	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	344	76	-	964	127	1260_D	96	396	108	415	<5	ug/l	TM87/PM0
pH #	7.12	11.9	-	10.1	11.3	7.76	11.3	9.60	9.02	7.02	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference:
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/32

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	47-51	52	53-57	58-62	63-67	68-72	73-77	78-82	83-87	88-92	LOD/LOR	Units	Method No.
Sample ID	17AS7BH0390 30315WG1659	02AS8BH1060 30315WG1012	04AS7BH0280 30315WG1130	11AS6BH0100 30315WG1245	10AS7BH0290 30315WG1507	13AS7BH0340 30315WG1539	14AS7BH0330 30315WG1559	01AS8BH0550 20315WG1535	02AS8BH0560 20315WG1530	03AS8BH0570 20315WG1647			
Depth													
COC No / misc													
Containers	V HN G	HN	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	03/03/2015 16:59	03/03/2015 10:12	03/03/2015 11:30	03/03/2015 12:45	03/03/2015 15:07	03/03/2015 15:39	03/03/2015 15:59	03/03/2015 15:35	02/03/2015 15:30	02/03/2015 16:47			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015			
Dissolved Arsenic #	808	41.8	3330$_A$	1870	721	1290	871	16.3	22.0	28.6	<2.5	ug/l	TM30/PM14
Dissolved Cadmium #	8.0	0.8	30.4	16.6	7.1	13.0	8.1	0.7	<0.5	0.8	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	1.9	<1.5	<1.5	6.9	5.0	10.3	<1.5	<1.5	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	21	15	10	12	34	35	<7	26	<7	<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	<5	<5	<5	<5	11	<5	<5	ug/l	TM30/PM14
Dissolved Nickel #	22	15	56	24	14	30	7	8	82	11	<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Zinc #	9	130	16	22	<3	32	<3	9	60	54	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.12	1.88	0.39	0.23	0.10	0.27	1.03	<0.01	<0.01	0.03	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	53	-	236	82	54	200	13	<10	<10	<10	<10	ug/l	TM114/PM0
Phenobarbital	86	-	28	27	21	102	<10	<10	<10	<10	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	-	450	147	113	143	<100	<100	<100	<100	<100	ug/l	TM16/PM49
Sulphanilamide	46	-	302	330	161	371	11	<5	12	<5	<5	ug/l	TM87/PM0
Sulphadiazine	196	-	643	233	151	528	28	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphathiazole	19	-	785	460	156	96	34	<5	<5	<5	<5	ug/l	TM87/PM0
Carbendazim	<5	-	<5	<5	<5	5	<5	<5	<5	<5	<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference:
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/32

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	47-51	52	53-57	58-62	63-67	68-72	73-77	78-82	83-87	88-92	LOD/LOR	Units	Method No.
Sample ID	17AS7BH0390 30315WG1659	02AS8BH1060 30315WG1012	04AS7BH0280 30315WG1130	11AS6BH0100 30315WG1245	10AS7BH0290 30315WG1507	13AS7BH0340 30315WG1539	14AS7BH0330 30315WG1559	01AS8BH0550 20315WG1535	02AS8BH0560 20315WG1530	03AS8BH0570 20315WG1647			
Depth													
COC No / misc													
Containers	V HN G	HN	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	03/03/2015 16:59	03/03/2015 10:12	03/03/2015 11:30	03/03/2015 12:45	03/03/2015 15:07	03/03/2015 15:39	03/03/2015 15:59	03/03/2015 15:35	02/03/2015 15:30	02/03/2015 16:47			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015			
Sulphamerazine	9	-	122	27	18	41	8	<5	<5	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	282	-	1110_D	1010_D	447	763	62	8	<5	<5	<5	ug/l	TM87/PM0
pH #	7.19	-	7.37	8.08	10.6	7.56	9.52	7.20	6.11	7.64	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis **VOC Report :** **Liquid**
Reference:
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/32

J E Sample No.	1-5	6-10	12-16	17-21	22-26	27-31	32-36	37-41	42-46	47-51	LOD/LOR	Units	Method No.
Sample ID	01AS8BH1070 30315WG1031	03AS5BH0140 30315WG1035	07AS5BH0120 30315WG1131	06AS7BH0270 30315WG1224	09AS8BH1080 30315WG1158	08AS7BH0300 30315WG1207	12AS6BH0120 30315WG1510	15AS7BH0360 30315WG1545	20AS7BH0470 30315WG1601	17AS7BH0390 30315WG1659			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	03/03/2015 10:31	03/03/2015 10:35	03/03/2015 11:31	03/03/2015 12:24	03/03/2015 11:58	03/03/2015 12:07	03/03/2015 15:10	03/03/2015 15:45	03/03/2015 16:01	03/03/2015 16:59			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	2.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	3900$_D$	5.0	108	1.3	<0.1	8.1	12.7	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	4	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	13	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	2780$_D$	12	122	12	<3	50	16	<3	5	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	<2	3	4	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	27.8	<0.5	10.4	<0.5	1.0	<0.5	7.4	<0.5	1.5	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	69	4	12	<3	<3	10	8	<3	<3	4	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	14.8	1.1	9.7	<0.5	<0.5	<0.5	6.3	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	29	32	20	5	103	26	7	8	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	88	<2	48	<2	<2	<2	21	<2	16	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	4.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	2	<1	3	<1	<1	<1	3	<1	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	8	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	29	<3	<3	<3	<3	5	<3	<3	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	202	<3	<3	<3	<3	<3	4	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	96	99	97	95	103	88	96	95	95	95	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	100	103	101	100	109	101	102	100	100	100	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis **VOC Report :** **Liquid**
Reference:
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/32

J E Sample No.	53-57	58-62	63-67	68-72	73-77	78-82	83-87	88-92			LOD/LOR	Units	Method No.
Sample ID	04AS7BH0280 30315WG1130	11AS6BH0100 30315WG1245	10AS7BH0290 30315WG1507	13AS7BH0340 30315WG1539	14AS7BH0330 30315WG1559	01AS8BH0550 20315WG1535	02AS8BH0560 20315WG1530	03AS8BH0570 20315WG1647					
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G					
Sample Date	03/03/2015 11:30	03/03/2015 12:45	03/03/2015 15:07	03/03/2015 15:39	03/03/2015 15:59	03/03/2015 15:35	02/03/2015 15:30	02/03/2015 16:47					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015					
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	1.1	4.9	<0.1	<0.1	1490$_D$	2600$_E$	8.2			<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	17	24	<3			<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	6	195	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	5	3	17	<3	<3	4550$_D$	10700$_E$	114			<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chloroform #	7	3	<2	<2	3	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Benzene #	4.4	2.8	7.0	<0.5	<0.5	1.4	1.8	<0.5			<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	6	7	8	4	<3	61	583	4			<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	4.4	<0.5	<0.5	<0.5	2.7	<0.5			<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	13	<2			<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	9	<3	26	13	6	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chlorobenzene #	<2	9	31	<2	<2	5	<2	<2			<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	202	<4			<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	89	96	96	109	88	100	93	95			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	92	101	102	117	86	107	100	102			<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference:
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/32						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/32

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x5 Dilution
D	x10 Dilution
E	x50 Dilution

JE Job No: 15/32

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	11th March, 2015
Your reference :	27127103
Our reference :	Test Report 15/31 Batch 1
Location :	Dagenham
Date samples received :	5th March, 2015
Status :	Final report
Issue :	1

Fifteen samples were received for analysis on 5th March, 2015 of which fifteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/31

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	01AS7BH0380 40315WG1026	05AS7BH0410 40315WG1133	03AS7BH0430 40315WG1100	07AS7BH0460 40315WG1210	09AS7BH0400 40315WG1222	10AS6BH0140 40315WG1259	02AS7BH0370 40315WG0951	04AS7BH0420 40315WG1038	99DUPA04031 5WG	06AS7BH0450 40315WG1156			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	04/03/2015 10:26	04/03/2015 11:33	04/03/2015 11:00	04/03/2015 12:10	04/03/2015 12:22	04/03/2015 12:59	04/03/2015 09:51	04/03/2015 10:38	04/03/2015	04/03/2015 11:56			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015			
Dissolved Arsenic #	414	351	968	864	521	159	1430	419	419	379	<2.5	ug/l	TM30/PM14
Dissolved Barium #	17	32	141	32	18	36	30	12	11	54	<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Boron	192	135	72	389	190	202	154	61	62	76	<12	ug/l	TM30/PM14
Dissolved Cadmium #	3.9	3.3	8.9	8.3	4.9	1.9	12.9	3.8	3.7	3.6	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	23.1	6.3	11.2	6.5	19.0	12.6	<1.5	24.7	24.8	19.9	<1.5	ug/l	TM30/PM14
Dissolved Copper #	43	30	69	30	39	27	8	23	22	39	<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM30/PM14
Dissolved Nickel #	20	9	9	38	13	11	18	5	5	12	<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Vanadium #	15.6	15.9	21.2	3.1	11.5	2.6	5.0	30.1	30.2	31.4	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	27	20	<3	38	23	20	6	4	4	<3	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	2.44	2.24	1.74	0.85	18.9_A	37.3_D	0.33	0.51	0.50	0.14	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	27	<10	41	61	<10	18	31	<10	<10	41	<10	ug/l	TM114/PM0
Phenobarbital	16	<10	68	75	11	10	43	<10	<10	76	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	113	<100	<100	<100	<100	<100	<100	<100	<100	ug/l	TM16/PM49

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/31

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	01AS7BH0380 40315WG1026	05AS7BH0410 40315WG1133	03AS7BH0430 40315WG1100	07AS7BH0460 40315WG1210	09AS7BH0400 40315WG1222	10AS6BH0140 40315WG1259	02AS7BH0370 40315WG0951	04AS7BH0420 40315WG1038	99DUPA04031 5WG	06AS7BH0450 40315WG1156			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	04/03/2015 10:26	04/03/2015 11:33	04/03/2015 11:00	04/03/2015 12:10	04/03/2015 12:22	04/03/2015 12:59	04/03/2015 09:51	04/03/2015 10:38	04/03/2015	04/03/2015 11:56			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015			
Sulphanilamide	86	47	172	135	29	71	198	18	15	218	<5	ug/l	TM87/PM0
Sulphadiazine	113	46	352	73	50	29	134	19	13	174	<5	ug/l	TM87/PM0
Sulphathiazole	15	31	208	19	9	<5	192	16	18	185	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	6	10	12	9	<5	<5	9	<5	<5	14	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	52	32	<5	<5	39	<5	<5	22	<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	147	131	114	61	87	91	539	23	10	112	<5	ug/l	TM87/PM0
pH #	7.90	8.66	11.1	7.96	8.51	7.52	8.46	10.7	10.7	10.9	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/31

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	51-55	56	57	58	59						LOD/LOR	Units	Method No.
Sample ID	08AS6BH016040315WG1237	20HBH404BAE040315WG1450	22ACIBH007040315WG1525	21ACIBH008040315WG1527	23HBH407BAE040315WG1608								
Depth													
COC No / misc													
Containers	V HN G	HN	HN	HN	HN								
Sample Date	04/03/2015 12:37	04/03/2015 14:50	04/03/2015 15:25	04/03/2015 15:27	04/03/2015 16:08								
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water								
Batch Number	1	1	1	1	1								
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015								
Dissolved Arsenic #	945	6.2	<2.5	6.2	8.5						<2.5	ug/l	TM30/PM14
Dissolved Barium #	40	40	28	52	46						<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5						<0.5	ug/l	TM30/PM14
Dissolved Boron	538	304	176	510	214						<12	ug/l	TM30/PM14
Dissolved Cadmium #	9.2	<0.5	<0.5	0.7	0.6						<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	5.8	<1.5	<1.5	<1.5	<1.5						<1.5	ug/l	TM30/PM14
Dissolved Copper #	56	<7	<7	<7	<7						<7	ug/l	TM30/PM14
Dissolved Lead #	5	<5	<5	<5	<5						<5	ug/l	TM30/PM14
Dissolved Nickel #	63	<2	16	2	18						<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3						<3	ug/l	TM30/PM14
Dissolved Vanadium #	3.6	<1.5	<1.5	4.9	<1.5						<1.5	ug/l	TM30/PM14
Dissolved Zinc #	184	<3	16	18	<3						<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	102$_E$	<0.01	0.05	<0.01	<0.01						<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	-	-	-	-						<50	ug/l	TM15/PM10
Amphetamine	<10	-	-	-	-						<10	ug/l	TM114/PM0
Butalbarbital	<10	-	-	-	-						<10	ug/l	TM114/PM0
Fenbufen	<10	-	-	-	-						<10	ug/l	TM114/PM0
Methcathinone	<10	-	-	-	-						<10	ug/l	TM114/PM0
Pentobarbital	140	-	-	-	-						<10	ug/l	TM114/PM0
Phenobarbital	22	-	-	-	-						<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	-	-	-	-						<10	ug/l	TM84/PM49
Hexamine	<10	-	-	-	-						<10	ug/l	TM84/PM49
Acetophenetidin	<10	-	-	-	-						<10	ug/l	TM84/PM49
Carbofuran	<10	-	-	-	-						<10	ug/l	TM84/PM49
Atrazine	<10	-	-	-	-						<10	ug/l	TM84/PM49
Caffeine	<10	-	-	-	-						<10	ug/l	TM84/PM49
Ethotoin	<10	-	-	-	-						<10	ug/l	TM84/PM49
Phenazone	<10	-	-	-	-						<10	ug/l	TM84/PM49
Cyclandelate	<10	-	-	-	-						<10	ug/l	TM84/PM49
Thozalinone	<10	-	-	-	-						<10	ug/l	TM84/PM49
Diuron	<10	-	-	-	-						<10	ug/l	TM84/PM49
Ketoprofen	<10	-	-	-	-						<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	-	-	-	-						<10	ug/l	TM84/PM49
Mepyramine	<10	-	-	-	-						<10	ug/l	TM84/PM49
Promethazine	<10	-	-	-	-						<10	ug/l	TM84/PM49
Molindone	<10	-	-	-	-						<10	ug/l	TM84/PM49
Chlorpromazine	<10	-	-	-	-						<10	ug/l	TM84/PM49
Brucine	<10	-	-	-	-						<10	ug/l	TM84/PM49
Isometheptene	<10	-	-	-	-						<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	-	-	-	-						<100	ug/l	TM16/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/31

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	51-55	56	57	58	59						LOD/LOR	Units	Method No.
Sample ID	08AS6BH0160 40315WG1237	20HBH404BA E040315WG1 450	22ACIBH0070 40315WG1525	21ACIBH0080 40315WG1527	23HBH407BA E040315WG1 608								
Depth													
COC No / misc													
Containers	V HN G	HN	HN	HN	HN								
Sample Date	04/03/2015 12:37	04/03/2015 14:50	04/03/2015 15:25	04/03/2015 15:27	04/03/2015 16:08								
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water								
Batch Number	1	1	1	1	1								
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015								
Sulphanilamide	228	-	-	-	-						<5	ug/l	TM87/PM0
Sulphadiazine	701	-	-	-	-						<5	ug/l	TM87/PM0
Sulphathiazole	448	-	-	-	-						<5	ug/l	TM87/PM0
Carbendazim	<5	-	-	-	-						<5	ug/l	TM87/PM0
Sulphamerazine	149	-	-	-	-						<5	ug/l	TM87/PM0
Diphenylguanidine	13	-	-	-	-						<5	ug/l	TM87/PM0
Sulphamethizole	<5	-	-	-	-						<5	ug/l	TM87/PM0
Acebutolol	<5	-	-	-	-						<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	497	-	-	-	-						<5	ug/l	TM87/PM0
pH #	8.04	-	-	-	-						<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/31

VOC Report : **Liquid**

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50			
Sample ID	01AS7BH0380 40315WG1026	05AS7BH0410 40315WG1133	03AS7BH0430 40315WG1100	07AS7BH0460 40315WG1210	09AS7BH0400 40315WG1222	10AS6BH0140 40315WG1259	02AS7BH0370 40315WG0951	04AS7BH0420 40315WG1038	99DUPA04031 5WG	06AS7BH0450 40315WG1156			
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	04/03/2015 10:26	04/03/2015 11:33	04/03/2015 11:00	04/03/2015 12:10	04/03/2015 12:22	04/03/2015 12:59	04/03/2015 09:51	04/03/2015 10:38	04/03/2015	04/03/2015 11:56			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	05/03/2015	LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	4	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	3	<3	9	<3	<3	4	6	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	2	<1	2	1	<1	<1	1	<1	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	5	3	<3	<3	3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	92	92	90	91	91	90	93	91	92	91	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	98	99	98	99	96	97	100	97	98	96	<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/31

VOC Report : **Liquid**

J E Sample No.	51-55												
Sample ID	08AS6BH0160 40315WG1237												
Depth													
COC No / misc													
Containers	V HN G												
Sample Date	04/03/2015 12:37												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	05/03/2015												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2										<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1										<0.1	ug/l	TM15/PM10
Chloromethane #	<3										<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1										<0.1	ug/l	TM15/PM10
Bromomethane	<1										<1	ug/l	TM15/PM10
Chloroethane #	<3										<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3										<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3										<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3										<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1										<1	ug/l	TM15/PM10
Bromochloromethane #	<2										<2	ug/l	TM15/PM10
Chloroform #	<2										<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2										<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3										<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2										<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2										<2	ug/l	TM15/PM10
Benzene #	2.2										<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3										<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromomethane #	<3										<3	ug/l	TM15/PM10
Bromodichloromethane #	<2										<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
Toluene #	<0.5										<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2										<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3										<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromochloromethane #	<2										<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2										<2	ug/l	TM15/PM10
Chlorobenzene #	<2										<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2										<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5										<0.5	ug/l	TM15/PM10
p/m-Xylene #	1										<1	ug/l	TM15/PM10
o-Xylene #	<0.5										<0.5	ug/l	TM15/PM10
Styrene	<2										<2	ug/l	TM15/PM10
Bromoform #	<2										<2	ug/l	TM15/PM10
Isopropylbenzene #	<3										<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4										<4	ug/l	TM15/PM10
Bromobenzene #	<2										<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3										<3	ug/l	TM15/PM10
Propylbenzene #	<3										<3	ug/l	TM15/PM10
2-Chlorotoluene #	3										<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3										<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3										<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	3										<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
n-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2										<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3										<3	ug/l	TM15/PM10
Naphthalene	<2										<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	89										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	97										<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/31						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/31

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x10 Dilution
D	x20 Dilution
E	x50 Dilution

JE Job No: 15/31

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
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CH5 2UA

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	3rd March, 2015
Your reference :	27127103
Our reference :	Test Report 15/28 Batch 1
Location :	Dagenham
Date samples received :	25th February, 2015
Status :	Final report
Issue :	1

Seven samples were received for analysis on 25th February, 2015 of which seven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/28

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	9-12	13-16	17-20	21-24							LOD/LOR	Units	Method No.
Sample ID	03AS5BH004240215WG1100	04HBH510ERM240215WG1105	05AS4BH019B240215WG1158	99DUPA240215WG									
Depth													
COC No / misc													
Containers	V G	V G	V G	V G									
Sample Date	24/02/2015 11:00	24/02/2015 11:05	24/02/2015 11:58	24/02/2015									
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1	1									
Date of Receipt	25/02/2015	25/02/2015	25/02/2015	25/02/2015									
Diisopropylamine	<50	<50	<50	<50							<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Pentobarbital	23	<10	<10	21							<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10							<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10							<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	<100	<100							<100	ug/l	TM16/PM49
Sulphanilamide	19	11	<5	19							<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Sulphathiazole	<5	11	<5	<5							<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Sulphamethizole	<5	11	<5	<5							<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5							<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	74	<5	<5							<5	ug/l	TM87/PM0
pH #	7.08	7.32	8.81	7.05							<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/28

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25				LOD/LOR	Units	Method No.
Sample ID	01AS4BH0382 40215WG1005	02AS4BH0322 40215WG1014	03AS5BH0042 40215WG1100	04HBH510ER M240215WG1 105	05AS4BH019B 240215WG115 8	99DUPA24021 5WG	TRIPBLANK24 0215WO						
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V						
Sample Date	24/02/2015 10:05	24/02/2015 10:14	24/02/2015 11:00	24/02/2015 11:05	24/02/2015 11:58	24/02/2015	24/02/2015						
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Trip Blank						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	25/02/2015	25/02/2015	25/02/2015	25/02/2015	25/02/2015	25/02/2015	25/02/2015						
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	4	<3	<3				<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	3730_A	<2	<2				<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	2.1	<0.5	<0.5	2.2	<0.5				<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	57	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Toluene #	<0.5	14.3	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chlorobenzene #	<2	36	235	<2	<2	241	<2				<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	4.0	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	15	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
o-Xylene #	<0.5	1.8	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4				<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	34	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	2640_D	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	31800_D	<3	<3	<3	13	<3				<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	77	75	72	75	74	74	74				<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	85	79	85	86	87	83	87				<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/28						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/28

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
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ABBREVIATIONS and ACRONYMS USED

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SS	Calibrated against a single substance
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AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x10 Dilution
D	x50 Dilution

JE Job No: 15/28

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
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TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Charlene Knox
Date :	5th February, 2015
Your reference :	27127104
Our reference :	Test Report 15/15 Batch 1
Location :	Dagenham
Date samples received :	30th January, 2015
Status :	Final report
Issue :	1

Seven samples were received for analysis on 30th January, 2015 of which seven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127104
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 15/15

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	4-7	8-11	12-15	16-19	20-23	24-27					LOD/LOR	Units	Method No.
Sample ID	10AS8BH1092 90115WG1230	11AS8BH1102 90115WG1302	12AS8BH0112 90115WG1313	13HBH519ER M290115WG1 356	14AS8BH0512 90115WG1351	15HBH518ER M290115WG1 445							
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G							
Sample Date	29/01/2015	29/01/2015	29/01/2015	29/01/2015	29/01/2015	29/01/2015							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	1	1	1	1	1	1							
Date of Receipt	30/01/2015	30/01/2015	30/01/2015	30/01/2015	30/01/2015	30/01/2015							
Diisopropylamine	<50	<50	<50	<50	<50	<50					<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Pentobarbital	37	<10	<10	<10	<10	10					<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	421	<100	<100	<100	729	1920					<100	ug/l	TM16/PM49
Sulphanilamide	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Acebutolol	32	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0

Client Name: Arcadis
Reference: 27127104
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 15/15

VOC Report : **Liquid**

J E Sample No.	1-3	4-7	8-11	12-15	16-19	20-23	24-27				LOD/LOR	Units	Method No.
Sample ID	02RPA1GWRS290115WG1030	10AS8BH109290115WG1230	11AS8BH110290115WG1302	12AS8BH011290115WG1313	13HBH519ERM290115WG1356	14AS8BH051290115WG1351	15HBH518ERM290115WG1445						
Depth													
COC No / misc													
Containers	V	V G	V G	V G	V G	V G	V G						
Sample Date	29/01/2015	29/01/2015	29/01/2015	29/01/2015	29/01/2015	29/01/2015	29/01/2015						
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	30/01/2015	30/01/2015	30/01/2015	30/01/2015	30/01/2015	30/01/2015	30/01/2015						
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Chloromethane #	14	291	<3	<3	<3	8	29				<3	ug/l	TM15/PM10
Vinyl Chloride #	22.6	1.8	<0.1	378	<0.1	13.5	6.3				<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	8	<3	24	33				<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	1460$_{D}$	<3	<3	<3	<3	28	7				<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	19	<3	<3	15	<3	45	443				<3	ug/l	TM15/PM10
1,1-Dichloroethane #	1030$_{D}$	<3	<3	<3	<3	70	182				<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	1030$_{D}$	36	24	77	17	787	4830$_{A}$				<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Bromochloromethane #	2650$_{D}$	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chloroform #	1270000$^{++}_{E}$	<2	<2	<2	378	494	332				<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	4150$_{A}$	7570$_{A}$				<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Carbon tetrachloride #	574	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Benzene #	337	5.7	<0.5	2.0	<0.5	1.3	1.5				<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	1100$_{D}$	124	10	623	205	20300$_{A}$	27800$_{A}$				<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Bromodichloromethane #	701	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Toluene #	43800$_{D}$	<0.5	<0.5	<0.5	<0.5	3.7	3.5				<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	34				<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	947	<3	<3	<3	<3	7	<3				<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chlorobenzene #	24900$_{D}$	23	4	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Ethylbenzene #	257	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
p/m-Xylene #	605	2	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
o-Xylene #	86.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	164	26500$_{A}$				<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Isopropyltoluene #	3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	3	<3	<3	<3	<3	7	9				<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	8	<3	<3	<3	<3	165	335				<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	4	<3	<3	<3	<3	995	2310$_{A}$				<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	141	65	67	65	62	64	62				<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	92	69	67	69	63	68	63				<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127104
Location: Dagenham
Contact: Charlene Knox

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/15						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/15

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x50 Dilution
D	x100 Dilution
E	x1000 Dilution

JE Job No: 15/15

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Charlene Knox
Date :	22nd January, 2015
Your reference :	27127103
Our reference :	Test Report 15/5 Batch 1
Location :	Dagenham
Date samples received :	16th January, 2015
Status :	Final report
Issue :	1

One sample were received for analysis on 16th January, 2015 of which one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 15/5

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-4												
Sample ID	10AS8BH1081 50115WG1130												
Depth													
COC No / misc													
Containers	V G												
Sample Date	15/01/2015												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	16/01/2015												
												LOD/LOR	Units	Method No.
Diisopropylamine	<50											<50	ug/l	TM15/PM10
Amphetamine	<10											<10	ug/l	TM114/PM0
Butalbarbital	<10											<10	ug/l	TM114/PM0
Fenbufen	<10											<10	ug/l	TM114/PM0
Methcathinone	<10											<10	ug/l	TM114/PM0
Pentobarbital	<10											<10	ug/l	TM114/PM0
Phenobarbital	<10											<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10											<10	ug/l	TM84/PM49
Hexamine	<10											<10	ug/l	TM84/PM49
Acetophenetidin	<10											<10	ug/l	TM84/PM49
Carbofuran	<10											<10	ug/l	TM84/PM49
Atrazine	<10											<10	ug/l	TM84/PM49
Caffeine	<10											<10	ug/l	TM84/PM49
Ethotoin	<10											<10	ug/l	TM84/PM49
Phenazone	<10											<10	ug/l	TM84/PM49
Cyclandelate	<10											<10	ug/l	TM84/PM49
Thozalinone	<10											<10	ug/l	TM84/PM49
Diuron	<10											<10	ug/l	TM84/PM49
Ketoprofen	<10											<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10											<10	ug/l	TM84/PM49
Mepyramine	<10											<10	ug/l	TM84/PM49
Promethazine	<10											<10	ug/l	TM84/PM49
Molindone	<10											<10	ug/l	TM84/PM49
Chlorpromazine	<10											<10	ug/l	TM84/PM49
Brucine	<10											<10	ug/l	TM84/PM49
Isometheptene	<10											<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100											<100	ug/l	TM16/PM49
Sulphanilamide	24											<5	ug/l	TM87/PM0
Sulphadiazine	<5											<5	ug/l	TM87/PM0
Sulphathiazole	<5											<5	ug/l	TM87/PM0
Carbendazim	<5											<5	ug/l	TM87/PM0
Sulphamerazine	<5											<5	ug/l	TM87/PM0
Diphenylguanidine	6											<5	ug/l	TM87/PM0
Sulphamethizole	<5											<5	ug/l	TM87/PM0
Acebutolol	<5											<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	2350_A											<5	ug/l	TM87/PM0

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 15/5

VOC Report : **Liquid**

J E Sample No.	1-4												
Sample ID	10AS8BH1081 50115WG1130												
Depth													
COC No / misc													
Containers	V G												
Sample Date	15/01/2015												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	16/01/2015												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2										<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1										<0.1	ug/l	TM15/PM10
Chloromethane #	<3										<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1										<0.1	ug/l	TM15/PM10
Bromomethane	<1										<1	ug/l	TM15/PM10
Chloroethane #	<3										<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3										<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3										<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3										<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1										<1	ug/l	TM15/PM10
Bromochloromethane #	<2										<2	ug/l	TM15/PM10
Chloroform #	<2										<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2										<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3										<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2										<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2										<2	ug/l	TM15/PM10
Benzene #	3.2										<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3										<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromomethane #	<3										<3	ug/l	TM15/PM10
Bromodichloromethane #	<2										<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
Toluene #	<0.5										<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2										<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	9										<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromochloromethane #	<2										<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2										<2	ug/l	TM15/PM10
Chlorobenzene #	<2										<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2										<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5										<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1										<1	ug/l	TM15/PM10
o-Xylene #	<0.5										<0.5	ug/l	TM15/PM10
Styrene	<2										<2	ug/l	TM15/PM10
Bromoform #	<2										<2	ug/l	TM15/PM10
Isopropylbenzene #	<3										<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4										<4	ug/l	TM15/PM10
Bromobenzene #	<2										<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3										<3	ug/l	TM15/PM10
Propylbenzene #	<3										<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3										<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3										<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
n-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2										<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3										<3	ug/l	TM15/PM10
Naphthalene	<2										<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	112										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	147										<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/5						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/5

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x10 Dilution

JE Job No: 15/5

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Charlene Knox
Date :	5th January, 2015
Your reference :	27127103
Our reference :	Test Report 14/186 Batch 1
Location :	Dagenham
Date samples received :	20th December, 2014
Status :	Final report
Issue :	1

Eleven samples were received for analysis on 20th December, 2014 of which eleven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/186

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-8	9-12	13-16							LOD/LOR	Units	Method No.
Sample ID	01AS8BH051171214WG1556	02HBH519ERM171214WG1525	02HBH518ERM191214WG1019	03AS8BH011191214WG1215									
Depth													
COC No / misc													
Containers	V G	V G	V G	V G									
Sample Date	17/12/2014	17/12/2014	19/12/2014	19/12/2014									
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1	1									
Date of Receipt	20/12/2014	20/12/2014	20/12/2014	20/12/2014									
Diisopropylamine	<50	<50	<50	<50							<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Pentobarbital	<10	<10	<10	<10							<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10							<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10							<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10							<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	404	<100	10800	<100							<100	ug/l	TM16/PM49
Sulphanilamide	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5							<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5							<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	<5	<5	<5							<5	ug/l	TM87/PM0
pH #	3.37	2.46	6.83	11.2							<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/186

SVOC Report : **Liquid**

J E Sample No.	9-12	13-16											
Sample ID	02HBH518ERM191214WG1019	03AS8BH011191214WG1215											
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V G	V G											
Sample Date	19/12/2014	19/12/2014											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	20/12/2014	20/12/2014									LOD/LOR	Units	Method No.
SVOC MS													
Phenols													
2-Chlorophenol #	<20$_D$	<1									<1	ug/l	TM16/PM30
2-Methylphenol #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
2-Nitrophenol	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<20$_D$	<1									<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<20$_D$	<1									<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
4-Methylphenol	34$_D$	<1									<1	ug/l	TM16/PM30
4-Nitrophenol	<200$_D$	<10									<10	ug/l	TM16/PM30
Pentachlorophenol	<20$_D$	<1									<1	ug/l	TM16/PM30
Phenol	<20$_D$	<1									<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene #	<20$_D$	<1									<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<20$_D$	<1									<1	ug/l	TM16/PM30
Naphthalene #	<20$_D$	<1									<1	ug/l	TM16/PM30
Acenaphthylene #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Acenaphthene #	<20$_D$	<1									<1	ug/l	TM16/PM30
Fluorene #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Phenanthrene #	<10.0$_D$	0.9									<0.5	ug/l	TM16/PM30
Anthracene #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Fluoranthene #	<10.0$_D$	0.7									<0.5	ug/l	TM16/PM30
Pyrene #	<10.0$_D$	0.6									<0.5	ug/l	TM16/PM30
Benzo(a)anthracene #	<10.0$_D$	0.7									<0.5	ug/l	TM16/PM30
Chrysene #	<10.0$_D$	0.9									<0.5	ug/l	TM16/PM30
Benzo(bk)fluoranthene #	<20$_D$	<1									<1	ug/l	TM16/PM30
Benzo(a)pyrene	<20$_D$	<1									<1	ug/l	TM16/PM30
Indeno(123cd)pyrene	<20$_D$	<1									<1	ug/l	TM16/PM30
Dibenzo(ah)anthracene #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Benzo(ghi)perylene #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	163$_D$	<5									<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<20$_D$	<1									<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<30.0$_D$	<1.5									<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<20$_D$	<1									<1	ug/l	TM16/PM30
Diethyl phthalate #	<20$_D$	<1									<1	ug/l	TM16/PM30
Dimethyl phthalate	<20$_D$	<1									<1	ug/l	TM16/PM30

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/186

SVOC Report : **Liquid**

J E Sample No.	9-12	13-16											
Sample ID	02HBH518ERM191214WG1019	03AS8BH011191214WG1215											
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V G	V G											
Sample Date	19/12/2014	19/12/2014											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	20/12/2014	20/12/2014											
SVOC MS											LOD/LOR	Units	Method No.
Other SVOCs													
1,2-Dichlorobenzene #	144$_D$	<1									<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<20$_D$	<1									<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<20$_D$	<1									<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<20$_D$	<1									<1	ug/l	TM16/PM30
2-Nitroaniline	<20$_D$	<1									<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<20$_D$	<1									<1	ug/l	TM16/PM30
3-Nitroaniline	<20$_D$	<1									<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<20$_D$	<1									<1	ug/l	TM16/PM30
4-Chloroaniline	<20$_D$	<1									<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<20$_D$	<1									<1	ug/l	TM16/PM30
4-Nitroaniline	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Azobenzene #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<20$_D$	<1									<1	ug/l	TM16/PM30
Carbazole #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Dibenzofuran #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<20$_D$	<1									<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<20$_D$	<1									<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<20$_D$	<1									<1	ug/l	TM16/PM30
Hexachloroethane #	<20$_D$	<1									<1	ug/l	TM16/PM30
Isophorone #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<10.0$_D$	<0.5									<0.5	ug/l	TM16/PM30
Nitrobenzene #	<20$_D$	<1									<1	ug/l	TM16/PM30

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/186

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-18	19-20	21-22	23-24	25-26	27-28	LOD/LOR	Units	Method No.
Sample ID	01AS8BH0511 71214WG1556	02HBH519ERM171214WG1525	02HBH518ERM191214WG1019	03AS8BH0111 91214WG1215	05AS6BH0221 71214WG1530	06AS6BH0231 71214WG	07AS6BH0241 71214WG1604	08AS4BH0501 81214WG1528	02AS6BH0011 81214WG1542	01AS4BH0441 91214WG0857			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V	V	V	V	V	V			
Sample Date	17/12/2014	17/12/2014	19/12/2014	19/12/2014	17/12/2014	17/12/2014	17/12/2014	18/12/2014	18/12/2014	19/12/2014			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	20/12/2014	20/12/2014	20/12/2014	20/12/2014	20/12/2014	20/12/2014	20/12/2014	20/12/2014	20/12/2014	20/12/2014			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	8	51	<3	<3	5	83	6	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	13.4	3.9	1.9	57.9	66.5	216	90.5	10.6	668	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	30	<3	3	<3	<3	4	9	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	11	<3	<3	<3	<3	26	<3	27	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	26	8	47	9	27	2160$_{E}$	97	<3	4	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	33	<3	51	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	579	82	931	51	1870$_{A}$	17800$_{E}$	7930$_{E}$	111	1180$_{A}$	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	493	107	44	3	6	61	20	78	4	12500$_{E}$	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	8240$_{E}$	<2	669	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	1.8	6.5	139	36.2	17.1	100	15.9	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	43300$_{E}$	182	2520$_{A}$	401	2080$_{A}$	29200$_{E}$	21900$_{E}$	49	214	1600$_{E}$	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	<0.5	3.5	22.9	39.9	44.7	7.6	19.4	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	158	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	7	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	126	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	1.1	2.8	8.3	8.2	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	<1	<1	11	12	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.6	1.7	1.7	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	774	<4	<4	16700$_{E}$	944	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	5	<3	<3	<3	<3	<3	<3	29	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	182	<3	25	<3	<3	61	<3	37	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	1710$_{E}$	<3	158	<3	7	244	22	100	12	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	98	96	100	100	99	98	96	101	83	94	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	101	102	101	105	100	103	96	102	84	95	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/186

VOC Report : **Liquid**

J E Sample No.	29-32												
Sample ID	100GWRSRPA1191214WG1400												
Depth													
COC No / misc													
Containers	V G												
Sample Date	19/12/2014												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	20/12/2014												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2										<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1										<0.1	ug/l	TM15/PM10
Chloromethane #	52										<3	ug/l	TM15/PM10
Vinyl Chloride #	24.0										<0.1	ug/l	TM15/PM10
Bromomethane	<1										<1	ug/l	TM15/PM10
Chloroethane #	35										<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3										<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	1070										<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	29										<3	ug/l	TM15/PM10
1,1-Dichloroethane #	767										<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	442										<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1										<1	ug/l	TM15/PM10
Bromochloromethane #	<2										<2	ug/l	TM15/PM10
Chloroform #	1730000$_F$										<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2										<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3										<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2										<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2										<2	ug/l	TM15/PM10
Benzene #	63.8										<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	345										<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromomethane #	<3										<3	ug/l	TM15/PM10
Bromodichloromethane #	250										<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
Toluene #	9580$_F$										<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2										<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	238										<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromochloromethane #	<2										<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2										<2	ug/l	TM15/PM10
Chlorobenzene #	6960$_F$										<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2										<2	ug/l	TM15/PM10
Ethylbenzene #	103										<0.5	ug/l	TM15/PM10
p/m-Xylene #	250										<1	ug/l	TM15/PM10
o-Xylene #	37.2										<0.5	ug/l	TM15/PM10
Styrene	<2										<2	ug/l	TM15/PM10
Bromoform #	<2										<2	ug/l	TM15/PM10
Isopropylbenzene #	<3										<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4										<4	ug/l	TM15/PM10
Bromobenzene #	<2										<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3										<3	ug/l	TM15/PM10
Propylbenzene #	<3										<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	6										<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3										<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3										<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
n-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2										<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3										<3	ug/l	TM15/PM10
Naphthalene	<2										<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	102										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	95										<0	%	TM15/PM10

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 14/186

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x10 Dilution
D	x20 Dilution
E	x100 Dilution
F	x2000 Dilution

JE Job No: 14/186

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Charlene Knox
Date :	16th December, 2014
Your reference :	27127103
Our reference :	Test Report 14/180 Batch 1
Location :	Dagenham
Date samples received :	5th December, 2014
Status :	Final report
Issue :	1

Twenty nine samples were received for analysis on 5th December, 2014 of which twenty nine were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/180

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	05AS7BH0430 31214WG1130	07AS7BH0380 31214WG1210	01AS7BH0460 31214WG0957	03AS7BH0450 31214WG1046	16AS6BH0120 31214WG1533	22AS7BH0300 31214WG1700	09AS7BH0390 31214WG1254	13AS7BH0370 31214WG1540	10AS6BH0140 31214WG1202	12AS7BH0360 31214WG1442			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	02/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014			
Dissolved Arsenic #	228	132	945	1020	2280	626	827	351	89.8	507	<2.5	ug/l	TM30/PM14
Dissolved Barium #	106	26	32	26	29	23	26	75	78	83	<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Boron	18	446	381	109	162	101	415	55	412	315	<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	52.5	2.8	<1.5	10.3	<1.5	56.1	<1.5	27.0	3.4	1.7	<1.5	ug/l	TM30/PM14
Dissolved Copper #	141	27	44	36	<7	68	8	49	17	43	<7	ug/l	TM30/PM14
Dissolved Lead #	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM30/PM14
Dissolved Nickel #	29	28	42	16	20	11	26	13	15	27	<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Vanadium #	13.9	3.9	3.0	24.3	5.5	38.4	7.9	33.5	2.5	5.6	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	5	41	42	8	3	<3	22	6	17	18	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.64	0.78	1.37	0.17	0.09	0.89	0.15	0.07	10.8_D	0.22	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	<10	72	49	114	77	17	55	32	18	109	<10	ug/l	TM114/PM0
Phenobarbital	<10	32	65	13	37	<10	83	27	13	67	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	231	1050	<100	353	<100	165	<100	379	<100	<100	ug/l	TM16/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/180

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	05AS7BH0430 31214WG1130	07AS7BH0380 31214WG1210	01AS7BH0460 31214WG0957	03AS7BH0450 31214WG1046	16AS6BH0120 31214WG1533	22AS7BH0300 31214WG1700	09AS7BH0390 31214WG1254	13AS7BH0370 31214WG1540	10AS6BH0140 31214WG1202	12AS7BH0360 31214WG1442			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	02/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014			
Sulphanilamide	178	141	154	230	293	130	94	180	73	226	<5	ug/l	TM87/PM0
Sulphadiazine	130	248	74	734	278	70	165	139	22	345	<5	ug/l	TM87/PM0
Sulphathiazole	140	8	<5	456	427	78	43	195	<5	90	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	6	52	7	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	19	12	9	144	30	6	5	15	<5	27	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	141	105	66	638	631	172	270	581	60	334	<5	ug/l	TM87/PM0
pH #	11.9	9.19	7.87	8.21	9.68	9.44	7.68	7.14	9.40	8.22	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/180

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-94	95-99	LOD/LOR	Units	Method No.
Sample ID	02AS6BH0160 31214WG0922	04AS7BH0410 31214WG1004	11AS7BH0470 31214WG1446	14AS7BH0340 31214WG1455	06AS7BH0420 31214WG1046	08AS7BH0400 31214WG1122	18AS7BH0330 31214WG1552	20AS7BH0290 31214WG1610	02AS7BH0270 41214WG0835	04AS7BH0280 41214WG0915			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V G	V HN G			
Sample Date	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	04/12/2014	04/12/2014			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014			
Dissolved Arsenic #	940	425	819	1470	747	410	792	724	-	3520_A	<2.5	ug/l	TM30/PM14
Dissolved Barium #	49	29	76	39	15	34	15	30	-	58	<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Boron	665	150	343	312	83	246	114	168	-	259	<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	<1.5	<1.5	20.8	13.3	3.4	<1.5	-	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper #	69	22	<7	34	40	42	40	13	-	16	<7	ug/l	TM30/PM14
Dissolved Lead #	6	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	ug/l	TM30/PM14
Dissolved Nickel #	71	9	25	35	8	14	9	15	-	53	<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	ug/l	TM30/PM14
Dissolved Vanadium #	1.7	16.4	<1.5	6.0	35.9	7.0	22.6	26.0	-	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	191	12	5	45	9	16	3	<3	-	27	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	231_G	1.53	<0.01	0.30	0.85	28.3_D	1.43	0.11	0.50	0.43	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	39	<10	41	172	<10	14	14	56	71	194	<10	ug/l	TM114/PM0
Phenobarbital	69	<10	56	93	<10	21	<10	20	42	27	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	<100	<100	<100	<100	<100	142	<100	115	<100	ug/l	TM16/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/180

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-94	95-99	LOD/LOR	Units	Method No.
Sample ID	02AS6BH0160 31214WG0922	04AS7BH0410 31214WG1004	11AS7BH0470 31214WG1446	14AS7BH0340 31214WG1455	06AS7BH0420 31214WG1046	08AS7BH0400 31214WG1122	18AS7BH0330 31214WG1552	20AS7BH0290 31214WG1610	02AS7BH0270 41214WG0835	04AS7BH0280 41214WG0915			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V G	V HN G			
Sample Date	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	04/12/2014	04/12/2014			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014			
Sulphanilamide	274	52	176	496	26	57	15	198	218	314	<5	ug/l	TM87/PM0
Sulphadiazine	216	42	76	637	33	74	26	172	163	523	<5	ug/l	TM87/PM0
Sulphathiazole	207	40	158	25	33	<5	29	183	89	614	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	6	<5	<5	<5	<5	<5	15	<5	ug/l	TM87/PM0
Sulphamerazine	15	10	5	41	<5	<5	<5	17	10	52	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	5	25	<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	135	104	386	999	19	121	68	490	487	1010	<5	ug/l	TM87/PM0
pH #	7.97	8.79	7.14	7.83	10.7	7.21	7.42	11.1	10.9	7.87	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/180

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	100-104	105-109	110-114	115-119	120-124	125-128	129-131,133	132	134-137		LOD/LOR	Units	Method No.
Sample ID	06AS6BH0100 41214WG1040	08AS8BH1080 41214WG0956	01AS5BH0120 41214WG0910	03AS5BH0140 41214WG0955	05AS8BH1070 41214WG1040	07AS8BH0550 41214WG1125	04AS8BH0560 21214WG1606	02AS7BH0270 41214WG0835	05AS8BH0570 21214WG1645				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V G	V G	HN	V G				
Sample Date	04/12/2014	04/12/2014	04/12/2014	04/12/2014	04/12/2014	04/12/2014	02/12/2014	02/12/2014	02/12/2014				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014				
Dissolved Arsenic #	1330	18.3	1050	195	759	-	-	437	-		<2.5	ug/l	TM30/PM14
Dissolved Barium #	56	40	26	54	86	-	-	63	-		<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-		<0.5	ug/l	TM30/PM14
Dissolved Boron	322	172	147	13	314	-	-	174	-		<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5	<0.5	<0.5	1.2	-	-	<0.5	-		<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	<1.5	54.5	<1.5	-	-	10.5	-		<1.5	ug/l	TM30/PM14
Dissolved Copper #	20	<7	7	64	12	-	-	45	-		<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	<5	-	-	<5	-		<5	ug/l	TM30/PM14
Dissolved Nickel #	24	5	21	17	35	-	-	18	-		<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	-	-	<3	-		<3	ug/l	TM30/PM14
Dissolved Vanadium #	4.4	<1.5	11.1	19.8	1.7	-	-	7.2	-		<1.5	ug/l	TM30/PM14
Dissolved Zinc #	19	13	<3	4	31	-	-	<3	-		<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.26	0.18	0.28	0.08	0.08	-	-	-	-		<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	-	<50		<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM114/PM0
Pentobarbital	70	<10	78	<10	112	12	<10	-	<10		<10	ug/l	TM114/PM0
Phenobarbital	24	<10	13	<10	<10	<10	<10	-	<10		<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	-	<10		<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	<100	<100	<100	<100	<100	-	<100		<100	ug/l	TM16/PM49

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/180

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	100-104	105-109	110-114	115-119	120-124	125-128	129-131,133	132	134-137				
Sample ID	06AS6BH0100 41214WG1040	08AS8BH1080 41214WG0956	01AS5BH0120 41214WG0910	03AS5BH0140 41214WG0955	05AS8BH1070 41214WG1040	07AS8BH0550 41214WG1125	04AS8BH0560 21214WG1606	02AS7BH0270 41214WG0835	05AS8BH0570 21214WG1645				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V G	V G	HN	V G				
Sample Date	04/12/2014	04/12/2014	04/12/2014	04/12/2014	04/12/2014	04/12/2014	02/12/2014	02/12/2014	02/12/2014				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014				
Sulphanilamide	302	9	286	94	83	9	13	-	<5		<5	ug/l	TM87/PM0
Sulphadiazine	228	<5	245	39	29	<5	<5	-	<5		<5	ug/l	TM87/PM0
Sulphathiazole	361	<5	249	49	36	<5	<5	-	<5		<5	ug/l	TM87/PM0
Carbendazim	<5	<5	5	<5	<5	<5	<5	-	<5		<5	ug/l	TM87/PM0
Sulphamerazine	22	<5	26	7	<5	<5	<5	-	<5		<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	9	<5	<5	<5	<5	-	<5		<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	9	<5	11	<5	<5	-	<5		<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	28	<5	<5	-	<5		<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	945	734	849	128	382	14	<5	-	10		<5	ug/l	TM87/PM0
pH #	8.69	7.83	11.1	12.2	10.1	7.09	6.26	-	7.33		<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/180

VOC Report : **Liquid**

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	05AS7BH0430 31214WG1130	07AS7BH0380 31214WG1210	01AS7BH0460 31214WG0957	03AS7BH0450 31214WG1046	16AS6BH0120 31214WG1533	22AS7BH0300 31214WG1700	09AS7BH0390 31214WG1254	13AS7BH0370 31214WG1540	10AS6BH0140 31214WG1202	12AS7BH0360 31214WG1442			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	02/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	15.7	5.4	<0.1	<0.1	<0.1	3.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	18	58	<3	4	<3	16	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	7	4	<2	3	3	3	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	10.7	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	4	5	<3	10	11	5	4	<3	6	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	<0.5	7.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	7	<3	<3	<3	23	82	8	8	4	15	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	4	<1	<1	2	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	1.9	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	4	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	4	<3	6	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	14	<3	<3	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	7	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	138	88	87	87	88	85	91	91	92	98	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	125	103	102	103	104	100	106	108	108	115	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/180

VOC Report : **Liquid**

J E Sample No.	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-94	95-99	LOD/LOR	Units	Method No.
Sample ID	02AS6BH0160 31214WG0922	04AS7BH0410 31214WG1004	11AS7BH0470 31214WG1446	14AS7BH0340 31214WG1455	06AS7BH0420 31214WG1046	08AS7BH0400 31214WG1122	18AS7BH0330 31214WG1552	20AS7BH0290 31214WG1610	02AS7BH0270 41214WG0835	04AS7BH0280 41214WG0915			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V G	V HN G			
Sample Date	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	03/12/2014	04/12/2014	04/12/2014			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.4	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	5	5	<3	<3	<3	21	7	7	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	3	<2	4	<2	3	4	3	2	8	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	3.2	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	10.5	1.3	2.4	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	4	5	<3	7	<3	4	3	11	4	6	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	10	22	<3	6	6	29	15	9	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	4	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	4	<3	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	82	93	94	95	94	94	86	90	89	92	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	99	109	105	106	106	104	95	101	104	106	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/180

VOC Report : **Liquid**

J E Sample No.	100-104	105-109	110-114	115-119	120-124	125-128	129-131,133	134-137			LOD/LOR	Units	Method No.
Sample ID	06AS6BH0100 41214WG1040	08AS8BH1080 41214WG0956	01AS5BH0120 41214WG0910	03AS5BH0140 41214WG0955	05AS8BH1070 41214WG1040	07AS8BH0550 41214WG1125	04AS8BH0560 21214WG1606	05AS8BH0570 21214WG1645					
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V G	V G	V G					
Sample Date	04/12/2014	04/12/2014	04/12/2014	04/12/2014	04/12/2014	04/12/2014	02/12/2014	02/12/2014					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014	05/12/2014					
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	3.2	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Vinyl Chloride #	1.1	<0.1	61.8	11.6	2920$_E$	5140$_F$	2960$_F$	41.9			<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	4	31	17	<3			<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	11	14	227	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	5	<3	86	26	2320$_E$	15900$_F$	15700$_F$	57			<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chloroform #	4	<2	3	3	<2	<2	<2	9			<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Benzene #	2.7	<0.5	7.6	<0.5	20.9	2.3	1.7	<0.5			<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	8	<3	11	5	109	63	215	10			<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Toluene #	1.1	<0.5	6.1	<0.5	6.1	<0.5	2.5	<0.5			<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	17	<2			<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	5	5	19	33	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5			<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	3	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	321	<4			<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	5	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	16	<3	<3	<3			<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	3	<3	123	<3	<3	5			<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Naphthalene	<2	<2	3	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	94	95	88	95	96	96	98	85			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	107	107	98	108	110	107	112	95			<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Charlene Knox

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 14/180						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 14/180

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x5 Dilution
D	x10 Dilution
E	x20 Dilution
F	x50 Dilution
G	x200 Dilution

JE Job No: 14/180

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
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Deeside
CH5 2UA

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

Attention :	Charlene Knox
Date :	15th December, 2014
Your reference :	271277103
Our reference :	Test Report 14/178 Batch 1
Location :	Dagenham
Date samples received :	4th December, 2014
Status :	Final report
Issue :	1

Three samples were received for analysis on 4th December, 2014 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 271277103
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/178

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-8	9-12								LOD/LOR	Units	Method No.
Sample ID	02AS4BH038021214WG1437	03AS4BH032021214WG11515	01AS4BH019B021214WG1408										
Depth													
COC No / misc													
Containers	V G	V G	V G										
Sample Date	02/12/2014	02/12/2014	02/12/2014										
Sample Type	Ground Water	Ground Water	Ground Water										
Batch Number	1	1	1										
Date of Receipt	04/12/2014	04/12/2014	04/12/2014										
Diisopropylamine	<50	<50	<50								<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10								<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10								<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10								<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10								<10	ug/l	TM114/PM0
Pentobarbital	<10	<10	<10								<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10								<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10								<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10								<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10								<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10								<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10								<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10								<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10								<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10								<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10								<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10								<10	ug/l	TM84/PM49
Diuron	<10	<10	<10								<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10								<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10								<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10								<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10								<10	ug/l	TM84/PM49
Molindone	<10	<10	<10								<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10								<10	ug/l	TM84/PM49
Brucine	<10	<10	<10								<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10								<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	6590	<100								<100	ug/l	TM16/PM49
Sulphanilamide	<5	24	<5								<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	<5								<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5								<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5								<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5								<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	<5	<5								<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 271277103
Location: Dagenham
Contact: Charlene Knox

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 14/178						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 14/178

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range

JE Job No: 14/178

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Charlene Knox
Date :	26th November, 2014
Your reference :	27127102
Our reference :	Test Report 14/173 Batch 1
Location :	Dagenham
Date samples received :	19th November, 2014
Status :	Final report
Issue :	1

Eighteen samples were received for analysis on 19th November, 2014 of which eighteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/173

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-8	12-15	16-19	20-23	24-27	28-31	32-35	36-39	40-43	LOD/LOR	Units	Method No.
Sample ID	23DRA3+9GW RS181114WG 1330	24DRA4+10G WRS181114W G1340	01AS4BH0431 81114WG1015	13HBH210ER M171114WG1 526	14AS4BH0451 71114WG1552	11AS4BH0361 71114WG1442	10AS4BH040A 171114WG142 5	08AS4BH0481 71114WG1335	07AS5BH0021 71114WG1311	09AS4BH0521 71114WG1357			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V G			
Sample Date	18/11/2014	18/11/2014	18/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014			
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	3710$_A$	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	65	113	23	<10	16	<10	54	<10	<10	<10	<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	2830	2050	<100	<100	543	<100	1270	<100	<100	<100	<100	ug/l	TM16/PM49
Sulphanilamide	65	523	23	<5	<5	<5	211	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphadiazine	24	7	<5	<5	<5	<5	6	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphathiazole	227	924	12	<5	<5	<5	314	<5	<5	<5	<5	ug/l	TM87/PM0
Carbendazim	<5	53	<5	<5	<5	<5	19	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	21	28	<5	<5	<5	<5	9	<5	<5	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	280	<5	<5	<5	<5	146	<5	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	242	4750$_A$	85	<5	<5	20	1630$_A$	<5	<5	<5	<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/173

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	44-47	48-51	52-55	56-59	60-63						LOD/LOR	Units	Method No.
Sample ID	06AS4BH0511 71114WG1242	05AS6BH0031 71114WG1227	03HBH315BA E171114WG1 150	04HBH011WS A171114WG1 205	12AS4BH0421 71114WG1505								
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G								
Sample Date	17/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014								
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water								
Batch Number	1	1	1	1	1								
Date of Receipt	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014								
Diisopropylamine	<50	<50	<50	<50	<50						<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10						<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10						<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10						<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10						<10	ug/l	TM114/PM0
Pentobarbital	<10	14	<10	<10	<10						<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10						<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10						<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	8090	<100	<100	<100						<100	ug/l	TM16/PM49
Sulphanilamide	<5	10	<5	<5	<5						<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	<5	<5	<5						<5	ug/l	TM87/PM0
Sulphathiazole	<5	7	<5	<5	<5						<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5						<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5	<5						<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5						<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	<5						<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5						<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	13	<5	<5	<5						<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/173

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-11	12-15	16-19	20-23	24-27	28-31	32-35	36-39			
Sample ID	23DRA3+9GWRS181114WG1330	24DRA4+10GWRS181114WG1340	02AS4BH019B181114WG1030	01AS4BH043181114WG1015	13HBH210ERM171114WG1526	14AS4BH045171114WG1552	11AS4BH036171114WG1442	10AS4BH040A171114WG1425	08AS4BH048171114WG1335	07AS5BH002171114WG1311			
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V G	V G	V	V G	V G	V G	V G	V G	V G	V G			
Sample Date	18/11/2014	18/11/2014	18/11/2014	18/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	54.3	892	<0.1	28.8	<0.1	4.8	<0.1	187	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	144	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	46	502	<3	7	<3	5	<3	77	<3	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	50	16	4070$_A$	<2	<2	<2	5	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	794	702	<0.5	19.6	4.9	113	<0.5	314	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	18	37	<3	<3	<3	8	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	26.5	79.8	<0.5	<0.5	<0.5	<0.5	<0.5	6.3	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	51	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	5520$_A$	2730$_A$	<2	<2	<2	956	<2	1270$_A$	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	39.7	9.1	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	14	9	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	3.8	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	6	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	65	305	<3	<3	<3	<3	<3	155	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	53	191	<3	<3	<3	<3	<3	47	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	10	15	<3	<3	<3	<3	<3	6	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	27	653	<3	<3	41	<3	<3	252	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	42	1260$_A$	<3	36	91	12	<3	779	<3	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	11	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	9	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	104	101	108	109	108	105	110	106	110	106	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	104	102	105	106	107	106	107	105	102	106	<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Charlene Knox
JE Job No.: 14/173

VOC Report : **Liquid**

J E Sample No.	40-43	44-47	48-51	52-55	56-59	60-63	64-66	67-69			LOD/LOR	Units	Method No.
Sample ID	09AS4BH0521 71114WG1357	06AS4BH0511 71114WG1242	05AS6BH0031 71114WG1227	03HBH315BA E171114WG1 150	04HBH011WS A171114WG1 205	12AS4BH0421 71114WG1505	01AS4BH0321 71114WG1115	02AS4BH0381 71114WG1124					
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V	V					
Sample Date	17/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014	17/11/2014					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014	19/11/2014					
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	4.2	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	12	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	2180$_D$	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	<3	<3	82	<3			<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	4820$_D$	<0.5	<0.5	<0.5	19.6	<0.5			<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	1860$_D$	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	4130$_D$	<0.5	<0.5	<0.5	4.8	<0.5			<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	7800$_D$	<1	<1	<1	14	<1			<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	787	<0.5	<0.5	<0.5	1.5	<0.5			<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	17	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4			<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	7	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	2150$_D$	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	62	<3			<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	264	<3	<3	<3	3400$_E$	<3			<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	1470$_D$	<3	<3	<3	40200$_E$	<3			<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	109	109	103	107	104	107	124	106			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	108	107	106	105	105	99	98	106			<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Charlene Knox

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 14/173						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 14/173

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x10 Dilution
D	x20 Dilution
E	x50 Dilution

JE Job No: 14/173

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	5th January, 2016
Your reference :	27127103
Our reference :	Test Report 15/169 Batch 1
Location :	Dagenham
Date samples received :	17th December, 2015
Status :	Final report
Issue :	1

Twenty samples were received for analysis on 17th December, 2015 of which twenty were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/169

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	51AS4BH0251 51215WG0941	52AS4BH0311 51215WG0942	53AS4BH0371 51215WG0950	54AS4BH0341 51215WG1028	55AS4BH0281 51215WG1049	56AS4BH0221 51215WG1039	57AS4BH0241 51215WG1117	58HBH312BA E151215WG1 338	59AS4BH0271 51215WG1342	60AS4BH0331 51215WG1424			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V G			
Sample Date	15/12/2015 09:41	15/12/2015 09:42	15/12/2015 09:50	15/12/2015 10:28	15/12/2015 10:49	15/12/2015 10:39	15/12/2015 11:17	15/12/2015 13:38	15/12/2015 13:42	15/12/2015 14:24			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015			
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	498	<10	<10	<10	229	<10	33	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	68	<10	122	<10	70	29	36	128	56	12	<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	374	<100	1280	197	533	<100	320	<100	8370	<100	<100	ug/l	TM16/PM49
Sulphanilamide	34	<5	143	<5	79	8	66	8	526	30	<5	ug/l	TM87/PM0
Sulphadiazine	6	<5	<5	<5	7	9	<5	<5	53	<5	<5	ug/l	TM87/PM0
Sulphathiazole	22	<5	521	<5	59	9	37	<5	131	126	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5	5	<5	49	<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	8	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	40	<5	376	<5	62	5	15	6	102	<5	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	152	<5	2300$_{AB}$	23	367	40	538	16	8410$_{AC}$	126	<5	ug/l	TM87/PM0

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/169

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	41-44	45-48	49-52	53-56	57-60	61-64	65-68	69-72	73-76		LOD/LOR	Units	Method No.
Sample ID	61AS4BH0291 51215WG1515	62AS4BH0201 51215WG1453	63AS4BH0261 51215WG1529	99DUPA15121 5WG1200	01AS4BH0321 61215WG1107	02AS4BH0381 61215WG0949	03AS4BH0441 61215WG1033	04AS4BH0501 61215WG1039	05AS6BH0721 61215WG1129				
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G				
Sample Date	15/12/2015 15:15	15/12/2015 14:53	15/12/2015 15:29	15/12/2015 12:00	16/12/2015 11:07	16/12/2015 09:49	16/12/2015 10:33	16/12/2015 10:39	16/12/2015 11:29				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015				
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50		<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Pentobarbital	36	40	<10	54	<10	<10	13	<10	<10		<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	<100	7670	31800	<100	171	<100	125		<100	ug/l	TM16/PM49
Sulphanilamide	39	130	37	533	66	<5	19	61	17		<5	ug/l	TM87/PM0
Sulphadiazine	19	16	6	52	17	<5	<5	<5	6		<5	ug/l	TM87/PM0
Sulphathiazole	23	72	12	136	<5	<5	<5	<5	10		<5	ug/l	TM87/PM0
Carbendazim	8	28	7	<5	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	10	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Sulphamethizole	10	21	<5	112	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Acebutolol	11	44	<5	147	27	<5	<5	<5	<5		<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	206	2670$_{AB}$	31	8410	<5	<5	<5	<5	25		<5	ug/l	TM87/PM0

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/169

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	LOD/LOR	Units	Method No.
Sample ID	51AS4BH0251 51215WG0941	52AS4BH0311 51215WG0942	53AS4BH0371 51215WG0950	54AS4BH0341 51215WG1028	55AS4BH0281 51215WG1049	56AS4BH0221 51215WG1039	57AS4BH0241 51215WG1117	58HBH312BA E151215WG1 338	59AS4BH0271 51215WG1342	60AS4BH0331 51215WG1424			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V G			
Sample Date	15/12/2015 09:41	15/12/2015 09:42	15/12/2015 09:50	15/12/2015 10:28	15/12/2015 10:49	15/12/2015 10:39	15/12/2015 11:17	15/12/2015 13:38	15/12/2015 13:42	15/12/2015 14:24			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	5.1	<0.1	<0.1	<0.1	1.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	25.6	<0.1	78.9	3.3	138	<0.1	135	<0.1	334	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	4	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	14	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	6	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	5	<3	44	51	53	<3	96	20	1130$_{AB}$	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	61	<2	<2	7	<2	339	35	<2	54	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	338	<0.5	385	<0.5	340	<0.5	87.8	12.4	825	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	4	<3	<3	4	<3	<3	17	10	841	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	1.9	<0.5	6.4	<0.5	6.3	<0.5	<0.5	<0.5	354	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	6	<3	<3	12	<3	1500$_{AB}$	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	708	<2	1440$_{AA}$	<2	949	<2	215	9	929	20	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	5.2	<0.5	3.2	<0.5	6.4	<0.5	1.1	<0.5	19.2	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	1	<1	2	<1	1	<1	<1	<1	157	<1	<1	ug/l	TM15/PM10
o-Xylene #	1.6	<0.5	2.1	<0.5	1.3	<0.5	<0.5	<0.5	42.8	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	9	<3	239	<3	9	<3	6	<3	910	62	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	5	<3	62	<3	<3	<3	<3	<3	601	16	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	6	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	4	<3	6	<3	<3	<3	<3	<3	27	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	8	<3	310	<3	25	<3	36	<3	874	13	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	18	<3	1110$_{AA}$	<3	98	<3	75	9	5500$_{AB}$	8	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	106	116	117	114	117	114	115	115	123	114	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	88	95	95	95	98	97	96	93	93	95	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/169

VOC Report : **Liquid**

J E Sample No.	41-44	45-48	49-52	53-56	57-60	61-64	65-68	69-72	73-76	77	LOD/LOR	Units	Method No.
Sample ID	61AS4BH0291 51215WG1515	62AS4BH0201 51215WG1453	63AS4BH0261 51215WG1529	99DUPA15121 5WG1200	01AS4BH0321 61215WG1107	02AS4BH0381 61215WG0949	03AS4BH0441 61215WG1033	04AS4BH0501 61215WG1039	05AS6BH0721 61215WG1129	TRIPBLANK			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V			
Sample Date	15/12/2015 15:15	15/12/2015 14:53	15/12/2015 15:29	15/12/2015 12:00	16/12/2015 11:07	16/12/2015 09:49	16/12/2015 10:33	16/12/2015 10:39	16/12/2015 11:29	<>			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Trip Blank			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.7	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	288	<0.1	<0.1	1.1	8.9	443	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	5	<3	<3	<3	<3	58	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	15	<3	<3	64	24	8	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	7	<3	<3	<3	<3	220	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	37	<3	1170$_{AB}$	7	<3	27	62	32400$_{AE}$	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	55	3	<2	13800$_{AD}$	82	169	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	708	1.3	<0.5	56.1	<0.5	746	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	13	<3	706	136	<3	1890$_{AD}$	26	61400$_{AE}$	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	334	24.6	<0.5	182	<0.5	86.7	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	10	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	1470$_{AB}$	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	876	65	<2	<2	<2	32	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	17.3	6.4	<0.5	<0.5	<0.5	23.0	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	136	23	<1	<1	<1	13	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	37.5	2.6	<0.5	<0.5	<0.5	2.1	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	819	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	547	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	5	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	27	55	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	810	3510$_{AD}$	12	32	<3	7	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	5390$_{AB}$	49100$_{AD}$	172	27	<3	40	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	115	113	114	112	110	115	105	115	110	114	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	95	95	95	93	83	94	94	97	95	95	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/169

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution
AC	x20 Dilution
AD	x100 Dilution
AE	x500 Dilution

JE Job No: 15/169

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

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2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	5th January, 2016
Your reference :	27127103
Our reference :	Test Report 15/168 Batch 1
Location :	Dagenham
Date samples received :	17th December, 2015
Status :	Final report
Issue :	2

Eighteen samples were received for analysis on 17th December, 2015 of which seventeen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/168

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	LOD/LOR	Units	Method No.
Sample ID	02HBH315BAE141215WG1005	03AS6BH0031 41215WG1023	04AS6BH0451 41215WG1038	05AS4BH0511 41215WG1058	06HBH210ERM141215WG1117	07AS5BH0021 41215WG1107	08AS4BH0421 41215WG1154	09AS4BH0481 41215WG1140	10AS4BH0361 41215WG1319	11AS4BH0521 41215WG1151			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V G			
Sample Date	14/12/2015 10:05	14/12/2015 10:23	14/12/2015 10:38	14/12/2015 10:58	14/12/2015 11:17	14/12/2015 11:07	14/12/2015 11:54	14/12/2015 11:40	14/12/2015 13:19	14/12/2015 11:51			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015			
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	<10	26	19	<10	24	<10	30	<10	107	164	<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	10900	257	<100	639	<100	<100	<100	911	1480	<100	ug/l	TM16/PM49
Sulphanilamide	<5	40	<5	<5	11	<5	<5	<5	396	114	<5	ug/l	TM87/PM0
Sulphadiazine	<5	8	<5	<5	<5	<5	<5	<5	14	<5	<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	<5	<5	<5	<5	<5	<5	530	18	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5	<5	47	<5	<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5	<5	<5	<5	<5	7	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	13	<5	<5	<5	<5	<5	<5	203	17	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	13	<5	<5	40	<5	10	<5	3550	498	<5	ug/l	TM87/PM0
pH #	7.67	6.79	6.75	7.02	7.21	11.2	7.10	6.97	7.22	6.86	<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/168

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	45-48	49-52	53-56	57-60	61-64	65-68					LOD/LOR	Units	Method No.
Sample ID	12AS4BH040A 141215WG1227	13AS3BH0101 41215WG1451	14AS4BH0431 41215WG1236	15AS3BH1771 41215WG1457	16AS3BH1761 41215WG1426	17AS3BH0071 41215WG1533 1426							
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G							
Sample Date	14/12/2015 12:27	14/12/2015 14:51	14/12/2015 12:36	14/12/2015 14:57	14/12/2015 14:26	14/12/2015 15:33							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	1	1	1	1	1	1							
Date of Receipt	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015							
Diisopropylamine	<50	<50	<50	<50	<50	<50					<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Pentobarbital	101	<10	131	<10	<10	<10					<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	1150	<100	745	829	569	<100					<100	ug/l	TM16/PM49
Sulphanilamide	908	<5	171	8	<5	<5					<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	8	<5	<5	5					<5	ug/l	TM87/PM0
Sulphathiazole	524	<5	50	7	<5	<5					<5	ug/l	TM87/PM0
Carbendazim	78	<5	<5	<5	6	<5					<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Sulphamethizole	190	<5	53	<5	<5	<5					<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	3110	<5	970	9	<5	62					<5	ug/l	TM87/PM0
pH #	6.99	7.92	6.47	5.11	9.53	7.94					<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/168

VOC Report : **Liquid**

J E Sample No.	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	LOD/LOR	Units	Method No.
Sample ID	02HBH315BAE141215WG1005	03AS6BH0031 41215WG1023	04AS6BH0451 41215WG1038	05AS4BH0511 41215WG1058	06HBH210ERM141215WG1117	07AS5BH0021 41215WG1107	08AS4BH0421 41215WG1154	09AS4BH0481 41215WG1140	10AS4BH0361 41215WG1319	11AS4BH0521 41215WG1151			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V G			
Sample Date	14/12/2015 10:05	14/12/2015 10:23	14/12/2015 10:38	14/12/2015 10:58	14/12/2015 11:17	14/12/2015 11:07	14/12/2015 11:54	14/12/2015 11:40	14/12/2015 13:19	14/12/2015 11:51			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	2.3	4.7	<0.1	93.3	<0.1	6.9	<0.1	386	1.5	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	4	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	7	6	<3	40	<3	<3	<3	140	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	<2	<2	<2	<2	9	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	<0.5	2110$_{AB}$	104	<0.5	104	<0.5	<0.5	<0.5	456	465	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	1780$_{AB}$	1.4	<0.5	1.2	<0.5	<0.5	<0.5	10.9	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	2950$_{AB}$	995	<2	666	<2	<2	<2	1870$_{AA}$	2380$_{AA}$	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	3230$_{AB}$	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	3.4	17.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	6030$_{AB}$	3	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	673	1.0	<0.5	1.3	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	99	<3	<3	<3	<3	<3	<3	<3	34	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	8	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	8	<3	<3	<3	<3	<3	<3	31	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	4	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	7	<3	<3	4	<3	<3	<3	<3	4	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	1590$_{AB}$	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	16	<3	<3	9	<3	<3	<3	5	5	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	399	11	<3	200	<3	31	<3	174	208	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	1520$_{AB}$	10	<3	434	<3	<3	<3	741	420	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	118	117	117	116	117	117	116	116	115	115	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	96	100	97	94	94	96	95	95	94	97	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/168

VOC Report : **Liquid**

J E Sample No.	45-48	49-52	53-56	57-60	61-64	65-68	69				LOD/LOR	Units	Method No.
Sample ID	12AS4BH040A 141215WG1227	13AS3BH0101 41215WG1451	14AS4BH0431 41215WG1236	15AS3BH1771 41215WG1457	16AS3BH1761 41215WG1426	17AS3BH0071 41215WG1533 1426	TRIPBLANK						
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V						
Sample Date	14/12/2015 12:27	14/12/2015 14:51	14/12/2015 12:36	14/12/2015 14:57	14/12/2015 14:26	14/12/2015 15:33	<>						
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Trip Blank						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015	17/12/2015						
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Vinyl Chloride #	166	<0.1	336	9.0	16.8	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	4	24	<3	<3				<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	80	<3	107	183	194	<3	<3				<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chloroform #	11	<2	<2	38	32	<2	<2				<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Benzene #	298	<0.5	326	54.5	19.6	<0.5	<0.5				<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	279	197	34	<3				<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Toluene #	14.3	<0.5	1.7	20.5	103	<0.5	<0.5				<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	6	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chlorobenzene #	1370$_{AA}$	<2	864	300	77	<2	<2				<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Ethylbenzene #	3.8	<0.5	<0.5	2.7	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
p/m-Xylene #	2	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
o-Xylene #	2.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4				<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2-Chlorotoluene #	327	<3	7	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Chlorotoluene #	34	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	6	<3	6	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	227	<3	192	92	42	<3	<3				<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	540	<3	787	1070	493	<3	<3				<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	114	116	113	114	113	112	117				<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	94	94	91	95	93	90	96				<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/168

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution

JE Job No: 15/168

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	9th October, 2015
Your reference :	27127103
Our reference :	Test Report 15/148 Batch 1
Location :	Sanofi Dagenham
Date samples received :	3rd October, 2015
Status :	Final report
Issue :	1

Eleven samples were received for analysis on 3rd October, 2015 of which eleven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/148

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	01AS7BH0470 11015WG0919	02AS7BH0360 11015WG0923	03AS7BH0370 11015WG1003	04AS7BH0330 11015WG1003	05AS7BH0340 11015WG1052	06AS6BH0120 11015WG1047	07AS7BH0300 11015WG1137	08AS7BH0290 11015WG1141	09HBH407BA E011015WG1 526	10AC1BH0070 11015WG1530			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	01/10/2015 09:19	01/10/2015 09:23	01/10/2015 10:03	01/10/2015 10:03	01/10/2015 10:52	01/10/2015 10:47	01/10/2015 11:37	01/10/2015 11:41	01/10/2015 15:26	01/10/2015 15:30			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015			
Dissolved Arsenic #	883	1000	1850	2390	1560	1920	741	863	16.2	<2.5	<2.5	ug/l	TM30/PM14
Dissolved Barium #	73	75	6	41	45	33	27	43	67	63	<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Boron	324	523	177	179	337	212	162	253	197	180	<12	ug/l	TM30/PM14
Dissolved Cadmium #	2.0	3.1	3.5	4.3	4.2	3.7	1.4	1.7	0.6	0.6	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	2.0	5.9	<1.5	<1.5	31.9	<1.5	<1.5	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	<7	<7	36	45	<7	84	<7	<7	<7	<7	ug/l	TM30/PM14
Dissolved Lead #	<5	7	9	9	8	11	9	11	10	14	<5	ug/l	TM30/PM14
Dissolved Nickel #	23	52	14	19	36	17	12	13	19	13	<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Vanadium #	2.3	5.5	10.9	16.5	8.8	8.8	45.3	11.9	<1.5	2.0	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	5	52	4	6	48	5	<3	<3	5	52	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.02	0.13	0.28	2.86_{AA}	3.06_{AA}	0.44	2.18_{AA}	0.17	<0.01	0.06	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	46	62	20	111	190	87	25	93	<10	<10	<10	ug/l	TM114/PM0
Phenobarbital	76	56	46	54	126	45	11	28	<10	<10	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	108	<100	237	187	382	101	526	<100	<100	<100	ug/l	TM16/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/148

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	01AS7BH0470 11015WG0919	02AS7BH0360 11015WG0923	03AS7BH0370 11015WG1003	04AS7BH0330 11015WG1003	05AS7BH0340 11015WG1052	06AS6BH0120 11015WG1047	07AS7BH0300 11015WG1137	08AS7BH0290 11015WG1141	09HBH407BA E011015WG1 526	10AC1BH0070 11015WG1530			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	01/10/2015 09:19	01/10/2015 09:23	01/10/2015 10:03	01/10/2015 10:03	01/10/2015 10:52	01/10/2015 10:47	01/10/2015 11:37	01/10/2015 11:41	01/10/2015 15:26	01/10/2015 15:30			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015			
Sulphanilamide	180	315	220	181	605	262	156	294	6	<5	<5	ug/l	TM87/PM0
Sulphadiazine	77	107	103	330	694	263	112	270	<5	<5	<5	ug/l	TM87/PM0
Sulphathiazole	167	150	186	421	40	326	117	270	<5	<5	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	5	9	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	6	9	12	40	58	31	16	31	<5	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	19	14	77	49	36	15	24	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	7	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	<5	23	13	40	277	37	18	31	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	347	360	426	418	891	406	221	699	5	<5	<5	ug/l	TM87/PM0
pH #	6.73	7.12	8.07	9.20	7.58	9.56	10.4	11.0	7.38	7.07	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/148

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	51-55										LOD/LOR	Units	Method No.
Sample ID	11HBH404BAE011015WG1612												
Depth													
COC No / misc													
Containers	V HN G												
Sample Date	01/10/2015 16:12												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	03/10/2015												
Dissolved Arsenic #	9.5										<2.5	ug/l	TM30/PM14
Dissolved Barium #	22										<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5										<0.5	ug/l	TM30/PM14
Dissolved Boron	301										<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5										<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5										<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7										<7	ug/l	TM30/PM14
Dissolved Lead #	9										<5	ug/l	TM30/PM14
Dissolved Nickel #	2										<2	ug/l	TM30/PM14
Dissolved Selenium #	<3										<3	ug/l	TM30/PM14
Dissolved Vanadium #	<1.5										<1.5	ug/l	TM30/PM14
Dissolved Zinc #	4										<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	<0.01										<0.01	ug/l	TM61/PM38
Diisopropylamine	<50										<50	ug/l	TM15/PM10
Amphetamine	<10										<10	ug/l	TM114/PM0
Butalbarbital	<10										<10	ug/l	TM114/PM0
Fenbufen	<10										<10	ug/l	TM114/PM0
Methcathinone	<10										<10	ug/l	TM114/PM0
Pentobarbital	<10										<10	ug/l	TM114/PM0
Phenobarbital	<10										<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10										<10	ug/l	TM84/PM49
Hexamine	<10										<10	ug/l	TM84/PM49
Acetophenetidin	<10										<10	ug/l	TM84/PM49
Carbofuran	<10										<10	ug/l	TM84/PM49
Atrazine	<10										<10	ug/l	TM84/PM49
Caffeine	<10										<10	ug/l	TM84/PM49
Ethotoin	<10										<10	ug/l	TM84/PM49
Phenazone	<10										<10	ug/l	TM84/PM49
Cyclandelate	<10										<10	ug/l	TM84/PM49
Thozalinone	<10										<10	ug/l	TM84/PM49
Diuron	<10										<10	ug/l	TM84/PM49
Ketoprofen	<10										<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10										<10	ug/l	TM84/PM49
Mepyramine	<10										<10	ug/l	TM84/PM49
Promethazine	<10										<10	ug/l	TM84/PM49
Molindone	<10										<10	ug/l	TM84/PM49
Chlorpromazine	<10										<10	ug/l	TM84/PM49
Brucine	<10										<10	ug/l	TM84/PM49
Isometheptene	<10										<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100										<100	ug/l	TM16/PM49

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/148

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	51-55												
Sample ID	11HBH404BAE011015WG1612												
Depth													
COC No / misc													
Containers	V HN G												
Sample Date	01/10/2015 16:12												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	03/10/2015												
											LOD/LOR	Units	Method No.
Sulphanilamide	<5										<5	ug/l	TM87/PM0
Sulphadiazine	<5										<5	ug/l	TM87/PM0
Sulphathiazole	<5										<5	ug/l	TM87/PM0
Carbendazim	<5										<5	ug/l	TM87/PM0
Sulphamerazine	<5										<5	ug/l	TM87/PM0
Diphenylguanidine	<5										<5	ug/l	TM87/PM0
Sulphamethizole	<5										<5	ug/l	TM87/PM0
Acebutolol	<5										<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5										<5	ug/l	TM87/PM0
pH #	7.39										<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/148

VOC Report : **Liquid**

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	01AS7BH0470 11015WG0919	02AS7BH0360 11015WG0923	03AS7BH0370 11015WG1003	04AS7BH0330 11015WG1003	05AS7BH0340 11015WG1052	06AS6BH0120 11015WG1047	07AS7BH0300 11015WG1137	08AS7BH0290 11015WG1141	09HBH407BA E011015WG1 526	10AC1BH0070 11015WG1530			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	01/10/2015 09:19	01/10/2015 09:23	01/10/2015 10:03	01/10/2015 10:03	01/10/2015 10:52	01/10/2015 10:47	01/10/2015 11:37	01/10/2015 11:41	01/10/2015 15:26	01/10/2015 15:30			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	13.6	10.7	2.9	28.0	0.6	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	7	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	14	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	6	10	<3	4	5	22	92	23	14	367	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	5	4	6	5	<2	<2	87	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	112	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	1.6	2.2	4.0	<0.5	<0.5	9.5	<0.5	19.3	3.6	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	3	4	6	8	12	17	13	<3	300	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	1.3	<0.5	<0.5	6.3	<0.5	7.9	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	9	8	5	9	22	27	120	27	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	16	10	7	3	<2	27	5	52	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	1	1	<1	3	<1	2	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	0.8	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	11	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	4	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	20	<3	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	<3	5	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	4	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	3	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	97	96	97	98	96	97	97	96	96	97	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	111	112	112	113	110	112	112	111	112	112	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/148

VOC Report : **Liquid**

J E Sample No.	51-55												
Sample ID	11HBH404BAE011015WG1612												
Depth													
COC No / misc													
Containers	V HN G												
Sample Date	01/10/2015 16:12												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	03/10/2015												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2										<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1										<0.1	ug/l	TM15/PM10
Chloromethane #	<3										<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1										<0.1	ug/l	TM15/PM10
Bromomethane	<1										<1	ug/l	TM15/PM10
Chloroethane #	<3										<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3										<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3										<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3										<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1										<1	ug/l	TM15/PM10
Bromochloromethane #	<2										<2	ug/l	TM15/PM10
Chloroform #	<2										<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2										<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3										<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2										<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2										<2	ug/l	TM15/PM10
Benzene #	<0.5										<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3										<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromomethane #	<3										<3	ug/l	TM15/PM10
Bromodichloromethane #	<2										<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
Toluene #	<0.5										<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2										<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3										<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromochloromethane #	<2										<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2										<2	ug/l	TM15/PM10
Chlorobenzene #	<2										<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2										<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5										<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1										<1	ug/l	TM15/PM10
o-Xylene #	<0.5										<0.5	ug/l	TM15/PM10
Styrene	<2										<2	ug/l	TM15/PM10
Bromoform #	<2										<2	ug/l	TM15/PM10
Isopropylbenzene #	<3										<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4										<4	ug/l	TM15/PM10
Bromobenzene #	<2										<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3										<3	ug/l	TM15/PM10
Propylbenzene #	<3										<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3										<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3										<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
n-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2										<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3										<3	ug/l	TM15/PM10
Naphthalene	<2										<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	95										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	111										<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/148						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/148

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

JE Job No: 15/148

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	9th October, 2015
Your reference :	27127103
Our reference :	Test Report 15/147 Batch 1
Location :	Sanofi Dagenham
Date samples received :	3rd October, 2015
Status :	Final report
Issue :	1

Eleven samples were received for analysis on 3rd October, 2015 of which eleven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/147

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16	17-21	22-26	27	28-32	33-37	38-42	LOD/LOR	Units	Method No.
Sample ID	01AS6BH0100 21015WG0914	02AS7BH0270 21015WG0918	03AS7BH0280 21015WG0957	04AS8BH1060 21015WG1004	05AS8BH1080 21015WG1049	06AS5BH0120 21015WG1041	07AS5BH0130 21015WG1124	08AS5BH0140 21015WG1137	09AS8BH1070 21015WG1204	10AR0BH0570 21015WG1339			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	HN	V HN G	V HN G	HN	V HN G	V HN G	V HN G			
Sample Date	02/10/2015 09:14	02/10/2015 09:18	02/10/2015 09:57	02/10/2015 10:04	02/10/2015 10:49	02/10/2015 10:41	02/10/2015 11:24	02/10/2015 11:37	02/10/2015 12:04	02/10/2015 13:39			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015			
Dissolved Arsenic #	1260	521	3890$_{AC}$	133	118	1610	180	278	1230	<2.5	<2.5	ug/l	TM30/PM14
Dissolved Barium #	68	70	67	69	72	29	29	49	60	27	<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Boron	419	202	300	443	284	153	54	25	409	87	<12	ug/l	TM30/PM14
Dissolved Cadmium #	2.7	1.3	6.8	0.6	<0.5	3.2	<0.5	<0.5	2.3	<0.5	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	9.0	<1.5	<1.5	<1.5	<1.5	48.9	16.3	<1.5	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper #	8	47	16	<7	<7	<7	66	70	<7	<7	<7	ug/l	TM30/PM14
Dissolved Lead #	7	<5	<5	7	<5	12	<5	7	7	18	<5	ug/l	TM30/PM14
Dissolved Mercury #	-	-	-	<1	-	-	<1	-	-	-	<1	ug/l	TM30/PM14
Dissolved Nickel #	25	19	52	28	11	14	11	22	14	51	<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Vanadium #	<1.5	6.9	2.9	<1.5	<1.5	13.7	42.7	25.4	<1.5	2.5	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	22	<3	34	20	8	<3	<3	<3	7	49	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	2.69$_{AB}$	0.44	3.90$_{AB}$	-	0.11	0.71	-	0.11	0.04	0.03	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	-	<50	<50	-	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	89	83	236	-	19	102	-	<10	30	<10	<10	ug/l	TM114/PM0
Phenobarbital	38	69	33	-	<10	20	-	<10	<10	<10	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	-	<10	<10	-	<10	<10	902	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	-	<10	<10	-	<10	<10	418	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	119	<100	430	-	<100	279	-	<100	<100	3610	<100	ug/l	TM16/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/147

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16	17-21	22-26	27	28-32	33-37	38-42	LOD/LOR	Units	Method No.
Sample ID	01AS6BH0100 21015WG0914	02AS7BH0270 21015WG0918	03AS7BH0280 21015WG0957	04AS8BH1060 21015WG1004	05AS8BH1080 21015WG1049	06AS5BH0120 21015WG1041	07AS5BH0130 21015WG1124	08AS5BH0140 21015WG1137	09AS8BH1070 21015WG1204	10AR0BH0570 21015WG1339			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	HN	V HN G	V HN G	HN	V HN G	V HN G	V HN G			
Sample Date	02/10/2015 09:14	02/10/2015 09:18	02/10/2015 09:57	02/10/2015 10:04	02/10/2015 10:49	02/10/2015 10:41	02/10/2015 11:24	02/10/2015 11:37	02/10/2015 12:04	02/10/2015 13:39			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015			
Sulphanilamide	364	339	417	-	64	358	-	157	42	<5	<5	ug/l	TM87/PM0
Sulphadiazine	239	257	749	-	<5	388	-	69	5	<5	<5	ug/l	TM87/PM0
Sulphathiazole	424	201	842	-	<5	330	-	84	6	<5	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	24	-	<5	<5	-	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	26	21	89	-	<5	46	-	13	<5	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	53	110	-	<5	38	-	11	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	-	<5	<5	-	<5	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	25	34	125	-	<5	76	-	15	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	941	615	1670_{AA}	-	4260_{AC}	862	-	179	491	<5	<5	ug/l	TM87/PM0
pH #	8.10	9.05	7.88	-	7.64	10.4	-	11.7	7.15	6.24	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/147

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	43-47										LOD/LOR	Units	Method No.
Sample ID	11AR0BH0580 21015WG1319												
Depth													
COC No / misc													
Containers	V HN G												
Sample Date	02/10/2015 13:19												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	03/10/2015												
Dissolved Arsenic #	<2.5										<2.5	ug/l	TM30/PM14
Dissolved Barium #	31										<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5										<0.5	ug/l	TM30/PM14
Dissolved Boron	146										<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5										<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5										<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7										<7	ug/l	TM30/PM14
Dissolved Lead #	<5										<5	ug/l	TM30/PM14
Dissolved Mercury #	-										<1	ug/l	TM30/PM14
Dissolved Nickel #	3										<2	ug/l	TM30/PM14
Dissolved Selenium #	<3										<3	ug/l	TM30/PM14
Dissolved Vanadium #	<1.5										<1.5	ug/l	TM30/PM14
Dissolved Zinc #	4										<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	<0.01										<0.01	ug/l	TM61/PM38
Diisopropylamine	<50										<50	ug/l	TM15/PM10
Amphetamine	<10										<10	ug/l	TM114/PM0
Butalbarbital	<10										<10	ug/l	TM114/PM0
Fenbufen	<10										<10	ug/l	TM114/PM0
Methcathinone	<10										<10	ug/l	TM114/PM0
Pentobarbital	<10										<10	ug/l	TM114/PM0
Phenobarbital	<10										<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10										<10	ug/l	TM84/PM49
Hexamine	<10										<10	ug/l	TM84/PM49
Acetophenetidin	<10										<10	ug/l	TM84/PM49
Carbofuran	<10										<10	ug/l	TM84/PM49
Atrazine	<10										<10	ug/l	TM84/PM49
Caffeine	<10										<10	ug/l	TM84/PM49
Ethotoin	<10										<10	ug/l	TM84/PM49
Phenazone	<10										<10	ug/l	TM84/PM49
Cyclandelate	<10										<10	ug/l	TM84/PM49
Thozalinone	<10										<10	ug/l	TM84/PM49
Diuron	<10										<10	ug/l	TM84/PM49
Ketoprofen	43										<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10										<10	ug/l	TM84/PM49
Mepyramine	<10										<10	ug/l	TM84/PM49
Promethazine	<10										<10	ug/l	TM84/PM49
Molindone	<10										<10	ug/l	TM84/PM49
Chlorpromazine	<10										<10	ug/l	TM84/PM49
Brucine	<10										<10	ug/l	TM84/PM49
Isometheptene	<10										<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100										<100	ug/l	TM16/PM49

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/147

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	43-47												
Sample ID	11AR0BH0580 21015WG1319												
Depth													
COC No / misc													
Containers	V HN G												
Sample Date	02/10/2015 13:19												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	03/10/2015												
											LOD/LOR	Units	Method No.
Sulphanilamide	<5										<5	ug/l	TM87/PM0
Sulphadiazine	<5										<5	ug/l	TM87/PM0
Sulphathiazole	<5										<5	ug/l	TM87/PM0
Carbendazim	<5										<5	ug/l	TM87/PM0
Sulphamerazine	<5										<5	ug/l	TM87/PM0
Diphenylguanidine	<5										<5	ug/l	TM87/PM0
Sulphamethizole	<5										<5	ug/l	TM87/PM0
Acebutolol	<5										<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5										<5	ug/l	TM87/PM0
pH #	6.92										<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/147

VOC Report : **Liquid**

J E Sample No.	1-5	6-10	11-15	17-21	22-26	28-32	33-37	38-42	43-47		LOD/LOR	Units	Method No.
Sample ID	01AS6BH0100 21015WG0914	02AS7BH0270 21015WG0918	03AS7BH0280 21015WG0957	05AS8BH1080 21015WG1049	06AS5BH0120 21015WG1041	08AS5BH0140 21015WG1137	09AS8BH1070 21015WG1204	10AR0BH0570 21015WG1339	11AR0BH0580 21015WG1319				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G				
Sample Date	02/10/2015 09:14	02/10/2015 09:18	02/10/2015 09:57	02/10/2015 10:49	02/10/2015 10:41	02/10/2015 11:37	02/10/2015 12:04	02/10/2015 13:39	02/10/2015 13:19				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015	03/10/2015				
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Vinyl Chloride #	1.1	<0.1	<0.1	<0.1	26.9	13.9	209	80.6	<0.1		<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	4	<3		<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	316	<3		<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	5	7	6	<3	56	33	167	3920$_{AD}$	<3		<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Chloroform #	3	2	7	<2	<2	3	<2	338	<2		<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Benzene #	3.0	1.9	3.5	<0.5	6.9	<0.5	3.2	11300$_{AD}$	<0.5		<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	10	6	9	<3	15	10	7	4760$_{AD}$	<3		<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Toluene #	1.3	<0.5	0.9	<0.5	7.0	<0.5	<0.5	8880$_{AD}$	<0.5		<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	3	17	11	4	30	56	4	<3	<3		<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Chlorobenzene #	10	7	7	3	39	3	19	192	<2		<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	20.6	<0.5		<0.5	ug/l	TM15/PM10
p/m-Xylene #	2	<1	1	<1	2	<1	<1	51	<1		<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<0.5	6.4	<0.5		<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4		<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	6	<3	5	<3	<3		<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	10	<3		<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	35	<3		<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	3	<3	4	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	8	17	<3		<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	3	<3	39	97	<3		<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	3	<2	<2	3	<2		<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	82	82	80	81	81	81	81	80	80		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	132	131	132	131	132	132	131	132	130		<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/147						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/147

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x2 Dilution
AB	x5 Dilution
AC	x10 Dilution
AD	x20 Dilution

JE Job No: 15/147

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	9th October, 2015
Your reference :	27127103
Our reference :	Test Report 15/146 Batch 1
Location :	Sanofi Dagenham
Date samples received :	2nd October, 2015
Status :	Final report
Issue :	1

Ten samples were received for analysis on 2nd October, 2015 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/146

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	01AS6BH0163 00915WG0959	02AS7BH0463 00915WG1003	03AS7BH0453 00915WG1046	04AS7BH0433 00915WG1059	05AS7BH0423 00915WG1137	06AS7BH0413 00915WG1154	20AS6BH0143 00915WG1454	21AS7BH0403 00915WG1458	22AS7BH0393 00915WG1531	23AS7BH0383 00915WG1542			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	30/09/2015 09:59	30/09/2015 10:03	30/09/2015 10:46	30/09/2015 10:59	30/09/2015 11:37	30/09/2015 11:54	30/09/2015 14:54	30/09/2015 14:58	30/09/2015 15:31	30/09/2015 15:42			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015			
Dissolved Arsenic #	1050	682	981	1270	507	413	74.1	287	995	86.8	<2.5	ug/l	TM30/PM14
Dissolved Barium #	55	35	83	82	45	32	63	34	29	27	<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Boron	756	460	224	354	129	199	371	402	582	626	<12	ug/l	TM30/PM14
Dissolved Cadmium #	2.6	1.4	2.3	2.3	0.8	0.9	0.6	0.9	2.1	0.9	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	2.7	<1.5	22.3	32.8	<1.5	1.8	7.2	<1.5	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper #	50	27	42	126	26	29	21	55	8	17	<7	ug/l	TM30/PM14
Dissolved Lead #	13	7	<5	<5	9	16	6	10	7	8	<5	ug/l	TM30/PM14
Dissolved Nickel #	58	37	29	39	10	11	19	22	38	34	<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Vanadium #	2.7	4.4	16.6	10.2	20.5	28.8	1.9	6.6	3.4	2.7	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	80	40	<3	<3	4	9	16	48	23	6	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	197_{AD}	1.86_{AB}	0.28	21.9_{AC}	2.08_{AB}	1.42	11.7_{AC}	79.8_{AD}	2.93_{AB}	33.2_{AC}	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	50	52	380	95	<10	16	34	20	119	104	<10	ug/l	TM114/PM0
Phenobarbital	104	53	85	241	22	<10	24	39	220	56	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	<100	<100	<100	<100	<100	<100	226	<100	<100	ug/l	TM16/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/146

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	01AS6BH0163 00915WG0959	02AS7BH0463 00915WG1003	03AS7BH0453 00915WG1046	04AS7BH0433 00915WG1059	05AS7BH0423 00915WG1137	06AS7BH0413 00915WG1154	20AS6BH0143 00915WG1454	21AS7BH0403 00915WG1458	22AS7BH0393 00915WG1531	23AS7BH0383 00915WG1542			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	30/09/2015 09:59	30/09/2015 10:03	30/09/2015 10:46	30/09/2015 10:59	30/09/2015 11:37	30/09/2015 11:54	30/09/2015 14:54	30/09/2015 14:58	30/09/2015 15:31	30/09/2015 15:42			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015			
Sulphanilamide	83	87	8	396	<5	92	52	92	24	<5	<5	ug/l	TM87/PM0
Sulphadiazine	36	<5	15	1110	<5	112	12	146	40	<5	<5	ug/l	TM87/PM0
Sulphathiazole	33	<5	9	410	<5	65	61	<5	9	<5	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	38	<5	27	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	30	<5	11	202	<5	142	<5	77	45	<5	<5	ug/l	TM87/PM0
pH #	7.93	7.45	9.01	10.0	9.37	9.32	7.26	7.72	7.71	7.37	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/146

VOC Report : **Liquid**

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	01AS6BH0163 00915WG0959	02AS7BH0463 00915WG1003	03AS7BH0453 00915WG1046	04AS7BH0433 00915WG1059	05AS7BH0423 00915WG1137	06AS7BH0413 00915WG1154	20AS6BH0143 00915WG1454	21AS7BH0403 00915WG1458	22AS7BH0393 00915WG1531	23AS7BH0383 00915WG1542			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	30/09/2015 09:59	30/09/2015 10:03	30/09/2015 10:46	30/09/2015 10:59	30/09/2015 11:37	30/09/2015 11:54	30/09/2015 14:54	30/09/2015 14:58	30/09/2015 15:31	30/09/2015 15:42			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	5	5	<3	<3	<3	3	<3	6	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	4	<2	<2	2	3	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	3	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	4	7	12	5	<3	4	<3	4	6	4	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	1.6	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	3	8	13	<3	<3	4	5	7	4	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	35	6	5	<2	<2	2	<2	3	9	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	2	<1	<1	<1	<1	2	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	5	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	106	107	106	109	108	112	112	105	111	114	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	102	101	101	101	102	102	107	100	101	101	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/146						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/146

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x2 Dilution
AB	x5 Dilution
AC	x50 Dilution
AD	x100 Dilution

JE Job No: 15/146

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	9th October, 2015
Your reference :	27127103
Our reference :	Test Report 15/144 Batch 1
Location :	Sanofi Dagenham
Date samples received :	2nd October, 2015
Status :	Final report
Issue :	1

Nine samples were received for analysis on 2nd October, 2015 of which nine were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/144

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-24	25-29	30-34	35-38	39-42		LOD/LOR	Units	Method No.
Sample ID	01AS8BH0572 90915WG1046	02AS8BH0562 90915WG1039	03AS8BH0552 90915WG1136	04AS8BH1092 90915WG1127	05AS8BH1102 90915WG1212	06AS8BH0112 90915WG1255	07HBH519ER M290915WG1 315	08HBH518ER M290915WG1 408	09AS8BH0512 90915WG1352				
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V G	V HN G	V HN G	V G	V G				
Sample Date	29/09/2015 10:46	29/09/2015 10:39	29/09/2015 11:36	29/09/2015 11:27	29/09/2015 12:12	29/09/2015 12:55	29/09/2015 13:15	29/09/2015 14:08	29/09/2015 13:52				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015				
Dissolved Arsenic #	111	12.8	29.5	799	-	39.1	345	-	-		<2.5	ug/l	TM30/PM14
Dissolved Barium #	32	26	103	82	-	55	76	-	-		<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	1.2	<0.5	<0.5	-	<0.5	<0.5	-	-		<0.5	ug/l	TM30/PM14
Dissolved Boron	246	267	382	92	-	121	594	-	-		<12	ug/l	TM30/PM14
Dissolved Cadmium #	0.7	<0.5	0.7	2.3	-	<0.5	1.3	-	-		<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	<1.5	<1.5	-	4.7	1420	-	-		<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	34	<7	28	-	204	21	-	-		<7	ug/l	TM30/PM14
Dissolved Lead #	8	16	10	6	-	10	24	-	-		<5	ug/l	TM30/PM14
Dissolved Nickel #	25	59	13	29	-	59	10	-	-		<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	-	<3	49	-	-		<3	ug/l	TM30/PM14
Dissolved Vanadium #	<1.5	6.2	<1.5	2.9	-	33.0	558	-	-		<1.5	ug/l	TM30/PM14
Dissolved Zinc #	3	64	4	46	-	10	4	-	-		<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.01	0.03	0.01	3.65_{AA}	-	21.5_{AC}	16.9_{AC}	-	-		<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50		<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Pentobarbital	<10	<10	17	141	11	<10	<10	<10	12		<10	ug/l	TM114/PM0
Phenobarbital	12	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	<100	<100	<100	<100	<100	<100	<100		<100	ug/l	TM16/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/144

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-24	25-29	30-34	35-38	39-42		LOD/LOR	Units	Method No.
Sample ID	01AS8BH0572 90915WG1046	02AS8BH0562 90915WG1039	03AS8BH0552 90915WG1136	04AS8BH1092 90915WG1127	05AS8BH1102 90915WG1212	06AS8BH0112 90915WG1255	07HBH519ER M290915WG1 315	08HBH518ER M290915WG1 408	09AS8BH0512 90915WG1352				
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V G	V HN G	V HN G	V G	V G				
Sample Date	29/09/2015 10:46	29/09/2015 10:39	29/09/2015 11:36	29/09/2015 11:27	29/09/2015 12:12	29/09/2015 12:55	29/09/2015 13:15	29/09/2015 14:08	29/09/2015 13:52				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015				
Sulphanilamide	<5	<5	<5	48	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	<5	25	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	<5	8	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	6	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	24	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	22	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	<5	<5	160	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
pH #	6.81	6.29	7.00	6.70	6.73	8.84	8.64	7.07	7.48		<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/144

VOC Report : **Liquid**

J E Sample No.	1-5	6-10	11-15	16-20	21-24	25-29	30-34	35-38	39-42		LOD/LOR	Units	Method No.
Sample ID	01AS8BH0572 90915WG1046	02AS8BH0562 90915WG1039	03AS8BH0552 90915WG1136	04AS8BH1092 90915WG1127	05AS8BH1102 90915WG1212	06AS8BH0112 90915WG1255	07HBH519ERM290915WG1315	08HBH518ERM290915WG1408	09AS8BH0512 90915WG1352				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V G	V HN G	V HN G	V G	V G				
Sample Date	29/09/2015 10:46	29/09/2015 10:39	29/09/2015 11:36	29/09/2015 11:27	29/09/2015 12:12	29/09/2015 12:55	29/09/2015 13:15	29/09/2015 14:08	29/09/2015 13:52				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015	02/10/2015				
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	82	<3	<3		<3	ug/l	TM15/PM10
Vinyl Chloride #	8540AD	4090AD	4380AD	26.7	6.3	707	6.3	15.8	30.7		<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	35	46	49	<3	<3	24	<3	<3	<3		<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	11	<3	<3	<3		<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	117	310	16	7	12	19	12	<3	<3		<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	18300AD	17100AD	13500AD	176	150	227	88	143	187		<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	<2	34	225	17	16		<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	17	9	4		<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Benzene #	11.7	2.7	3.8	13.9	5.6	1.7	1.4	<0.5	2.8		<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	6	97	<3	29	21	8100AB	176	391	452		<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Toluene #	30.3	4.3	1.6	2.0	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	7	<2	<2		<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Chlorobenzene #	<2	4	9	7	<2	<2	<2	<2	19		<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	57	<2	<2		<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	230	622	<4	13	8	14	16	232	80		<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	6		<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	4	<3	<3	4	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	114	115	114	115	117	120	118	116	119		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	92	94	93	92	94	94	95	94	95		<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/144						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/144

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x20 Dilution
AC	x50 Dilution
AD	x100 Dilution

JE Job No: 15/144

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	5th October, 2015
Your reference :	27127103
Our reference :	Test Report 15/143 Batch 1
Location :	Sanofi Dagenham
Date samples received :	26th September, 2015
Status :	Final report
Issue :	1

Ten samples were received for analysis on 26th September, 2015 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/143

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-9	10-14	15-19	20-23	24-28	29-33	34-38	39-43	44-48	LOD/LOR	Units	Method No.
Sample ID	01AS6BH0032 50915WG0933	02AS5BH0022 50915WG0938	03AS4BH0522 50915WG1039	04AS4BH0372 50915WG1043	05AS4BH0312 50915WG1134	06AS4BH0252 50915WG1149	07AS4BH0242 50915WG1231	08AS4BH0282 50915WG1243	09AS4BH0222 50915WG1323	10AS4BH0342 50915WG1334			
Depth													
COC No / misc													
Containers	V G	V HN G	V HN G	V HN G	V G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	25/09/2015 09:33	25/09/2015 09:38	25/09/2015 10:39	25/09/2015 10:43	25/09/2015 11:34	25/09/2015 11:49	25/09/2015 12:31	25/09/2015 12:43	25/09/2015 13:23	25/09/2015 13:34			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015			
Dissolved Arsenic #	-	6.5	<2.5	27.9	-	19.3	17.1	8.7	27.8	<2.5	<2.5	ug/l	TM30/PM14
Dissolved Barium #	-	15	113	70	-	45	107	59	8	91	<3	ug/l	TM30/PM14
Dissolved Beryllium	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Boron	-	75	214	87	-	105	132	88	66	174	<12	ug/l	TM30/PM14
Dissolved Cadmium #	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	-	27.8	<1.5	<1.5	-	<1.5	<1.5	1.9	2.2	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper #	-	11	<7	<7	-	<7	<7	<7	10	<7	<7	ug/l	TM30/PM14
Dissolved Lead #	-	6	<5	<5	-	<5	<5	<5	6	<5	<5	ug/l	TM30/PM14
Dissolved Nickel #	-	<2	6	6	-	8	4	5	7	4	<2	ug/l	TM30/PM14
Dissolved Selenium #	-	<3	<3	<3	-	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Vanadium #	-	82.4	<1.5	2.1	-	<1.5	2.6	3.8	88.2	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	-	5	4	39	-	6	11	9	<3	4	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	-	0.02	<0.01	<0.01	-	<0.01	0.34	<0.01	0.21	5.56_{AA}	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	376	64	236	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	45	<10	113	127	<10	62	44	80	37	<10	<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Sulphate #	-	96.4	300	254	-	299	1560	696	844	405	<0.05	mg/l	TM38/PM0
Nitrate as NO3 #	-	8.4	6.1	<0.2	-	1.0	0.3	<0.2	2.4	166	<0.2	mg/l	TM38/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	143	<10	22	40	<10	16	20	17	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/143

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	1-4	5-9	10-14	15-19	20-23	24-28	29-33	34-38	39-43	44-48	LOD/LOR	Units	Method No.
Sample ID	01AS6BH0032 50915WG0933	02AS5BH0022 50915WG0938	03AS4BH0522 50915WG1039	04AS4BH0372 50915WG1043	05AS4BH0312 50915WG1134	06AS4BH0252 50915WG1149	07AS4BH0242 50915WG1231	08AS4BH0282 50915WG1243	09AS4BH0222 50915WG1323	10AS4BH0342 50915WG1334			
Depth													
COC No / misc													
Containers	V G	V HN G	V HN G	V HN G	V G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	25/09/2015 09:33	25/09/2015 09:38	25/09/2015 10:39	25/09/2015 10:43	25/09/2015 11:34	25/09/2015 11:49	25/09/2015 12:31	25/09/2015 12:43	25/09/2015 13:23	25/09/2015 13:34			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015			
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	5140	<100	168	869	<100	180	220	311	<100	<100	<100	ug/l	TM16/PM49
Sulphanilamide	36	<5	45	125	<5	31	106	52	9	<5	<5	ug/l	TM87/PM0
Sulphadiazine	7	<5	<5	<5	<5	<5	7	5	7	<5	<5	ug/l	TM87/PM0
Sulphathiazole	8	<5	9	<5	<5	32	106	85	13	<5	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5	<5	11	<5	16	<5	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	<5	28	23	62	<5	<5	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	9	<5	140	<5	<5	99	810	259	32	<5	<5	ug/l	TM87/PM0
pH #	6.82	10.7	6.79	7.00	7.17	6.80	7.14	6.52	10.6	6.77	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/143

VOC Report : **Liquid**

J E Sample No.	1-4	5-9	10-14	15-19	20-23	24-28	29-33	34-38	39-43	44-48	LOD/LOR	Units	Method No.
Sample ID	01AS6BH0032 50915WG0933	02AS5BH0022 50915WG0938	03AS4BH0522 50915WG1039	04AS4BH0372 50915WG1043	05AS4BH0312 50915WG1134	06AS4BH0252 50915WG1149	07AS4BH0242 50915WG1231	08AS4BH0282 50915WG1243	09AS4BH0222 50915WG1323	10AS4BH0342 50915WG1334			
Depth													
COC No / misc													
Containers	V G	V HN G	V HN G	V HN G	V G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	25/09/2015 09:33	25/09/2015 09:38	25/09/2015 10:39	25/09/2015 10:43	25/09/2015 11:34	25/09/2015 11:49	25/09/2015 12:31	25/09/2015 12:43	25/09/2015 13:23	25/09/2015 13:34			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015	26/09/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	4.4	<0.1	2.4	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	1.4	74.0	<0.1	20.3	379	93.2	<0.1	9.4	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	12	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	34	<3	<3	151	44	<3	131	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	<2	55	2	<2	568	12	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	2340 AC	<0.5	25.0	337	<0.5	227	141	364	<0.5	5.0	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	<3	<3	6	3	<3	10	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	2780 AC	<0.5	1.1	8.4	<0.5	1.9	4.5	7.2	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	8	<3	<3	13	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	2860 AC	<2	415	1700 AB	<2	650	513	1400 AB	<2	21	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	2840 AC	<0.5	3.0	3.8	<0.5	4.7	1.7	11.6	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	5340 AC	<1	<1	4	<1	1	1	3	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	656	<0.5	<0.5	3.6	<0.5	1.9	<0.5	2.9	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	82	<3	10	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	9	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	10	<3	<3	370	<3	10	26	17	<3	4	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	85	<3	4	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	6	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	1120 AC	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	16	<3	4	12	<3	4	5	6	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	378	<3	70	380	<3	7	106	39	<3	7	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	1470 AC	9	175	1230 AB	<3	17	467	127	<3	22	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	83	82	83	83	83	83	82	83	82	82	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	116	116	118	119	118	119	118	121	120	119	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/143

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution
AC	x20 Dilution

JE Job No: 15/143

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				

JE Job No: 15/143

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Zone 3
Deeside Industrial Park
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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	2nd October, 2015
Your reference :	27127103
Our reference :	Test Report 15/141 Batch 1
Location :	Dagenham
Date samples received :	25th September, 2015
Status :	Final report
Issue :	1

Thirteen samples were received for analysis on 25th September, 2015 of which thirteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/141

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-9	10-13	14-17	18-21	22-26	27-31	32-36	37-41	42-45	LOD/LOR	Units	Method No.
Sample ID	20AS4BH044230915WG1543	22AS6BH072230915WG1629	21AS4BH050230915WG1541	99DUPA230915WG	23HBH315BAE230915WG1629	01AS4BH036240915WG1014	02AS4BH040A240915WG1052	03AS4BH043240915WG1137	04AS4BH042240915WG1220	05HBH210ERM240915WG1354			
Depth													
COC No / misc													
Containers	V HN G	V G	V G	V G	V G	V HN G	V HN G	V HN G	V HN G	V G			
Sample Date	23/09/2015 15:43	23/09/2015 16:29	23/09/2015 15:41	23/09/2015	23/09/2015 16:29	24/09/2015 10:14	24/09/2015 10:52	24/09/2015 11:37	24/09/2015 12:20	24/09/2015 13:54			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015			
Dissolved Arsenic #	11.2	-	-	-	-	10.8	17.0	<2.5	9.5	-	<2.5	ug/l	TM30/PM14
Dissolved Barium #	40	-	-	-	-	86	51	63	41	-	<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	ug/l	TM30/PM14
Dissolved Boron	151	-	-	-	-	92	88	123	385	-	<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	-	-	-	-	<1.5	<1.5	<1.5	<1.5	-	<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	-	-	-	-	<7	<7	<7	<7	-	<7	ug/l	TM30/PM14
Dissolved Lead #	6	-	-	-	-	<5	<5	<5	<5	-	<5	ug/l	TM30/PM14
Dissolved Nickel #	6	-	-	-	-	11	<2	11	10	-	<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	-	-	-	-	<3	<3	<3	<3	-	<3	ug/l	TM30/PM14
Dissolved Vanadium #	3.6	-	-	-	-	<1.5	1.6	<1.5	<1.5	-	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	<3	-	-	-	-	7	4	<3	8	-	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.02	-	-	-	-	0.05	0.01	0.14	0.08	-	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	22	<10	<10	<10	<10	113	71	105	104	67	<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	34	65	14	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	228	517	<100	<100	<100	243	559	339	469	829	<100	ug/l	TM16/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/141

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	1-5	6-9	10-13	14-17	18-21	22-26	27-31	32-36	37-41	42-45	LOD/LOR	Units	Method No.
Sample ID	20AS4BH044230915WG1543	22AS6BH072230915WG1629	21AS4BH050230915WG1541	99DUPA230915WG	23HBH315BAE230915WG1629	01AS4BH036240915WG1014	02AS4BH040A240915WG1052	03AS4BH043240915WG1137	04AS4BH042240915WG1220	05HBH210ERM240915WG1354			
Depth													
COC No / misc													
Containers	V HN G	V G	V G	V G	V G	V HN G	V HN G	V HN G	V HN G	V G			
Sample Date	23/09/2015 15:43	23/09/2015 16:29	23/09/2015 15:41	23/09/2015	23/09/2015 16:29	24/09/2015 10:14	24/09/2015 10:52	24/09/2015 11:37	24/09/2015 12:20	24/09/2015 13:54			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015			
Sulphanilamide	<5	17	48	48	<5	679	132	111	84	63	<5	ug/l	TM87/PM0
Sulphadiazine	<5	9	<5	<5	<5	<5	<5	9	<5	<5	<5	ug/l	TM87/PM0
Sulphathiazole	<5	14	<5	<5	<5	481	316	35	22	9	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	30	10	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	<5	166	92	25	9	5	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	22	<5	<5	<5	2910_{AA}	1570_{AA}	489	363	143	<5	ug/l	TM87/PM0
pH #	6.94	-	-	-	-	6.55	6.51	6.42	6.59	-	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/141

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	46-50	51-55	56-60								LOD/LOR	Units	Method No.
Sample ID	06AS4BH0452 40915WG1405	07AS4BH0482 40915WG1445	08AS4BH0512 40915WG1451										
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G										
Sample Date	24/09/2015 14:05	24/09/2015 14:45	24/09/2015 14:51										
Sample Type	Ground Water	Ground Water	Ground Water										
Batch Number	1	1	1										
Date of Receipt	25/09/2015	25/09/2015	25/09/2015										
Dissolved Arsenic #	12.8	8.7	9.0								<2.5	ug/l	TM30/PM14
Dissolved Barium #	100	45	59								<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5								<0.5	ug/l	TM30/PM14
Dissolved Boron	201	159	105								<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5	<0.5								<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	<1.5								<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	<7	<7								<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5								<5	ug/l	TM30/PM14
Dissolved Nickel #	2	3	8								<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3								<3	ug/l	TM30/PM14
Dissolved Vanadium #	<1.5	1.6	<1.5								<1.5	ug/l	TM30/PM14
Dissolved Zinc #	6	<3	<3								<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	<0.01	<0.01	<0.01								<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50								<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10								<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10								<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10								<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10								<10	ug/l	TM114/PM0
Pentobarbital	22	16	<10								<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10								<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10								<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10								<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10								<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10								<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10								<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10								<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10								<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10								<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10								<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10								<10	ug/l	TM84/PM49
Diuron	<10	<10	<10								<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10								<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10								<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10								<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10								<10	ug/l	TM84/PM49
Molindone	<10	<10	<10								<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10								<10	ug/l	TM84/PM49
Brucine	<10	<10	<10								<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10								<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	295	2130	<100								<100	ug/l	TM16/PM49

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/141

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	46-50	51-55	56-60									
Sample ID	06AS4BH0452 40915WG1405	07AS4BH0482 40915WG1445	08AS4BH0512 40915WG1451									
Depth												
COC No / misc												
Containers	V HN G	V HN G	V HN G									
Sample Date	24/09/2015 14:05	24/09/2015 14:45	24/09/2015 14:51									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1									
Date of Receipt	25/09/2015	25/09/2015	25/09/2015									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Sulphanilamide	<5	19	<5								<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	<5								<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5								<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5								<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5								<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5								<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	<5	<5								<5	ug/l	TM87/PM0
pH #	6.42	6.79	6.53								<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/141

VOC Report : **Liquid**

J E Sample No.	1-5	6-9	10-13	14-17	18-21	22-26	27-31	32-36	37-41	42-45	LOD/LOR	Units	Method No.
Sample ID	20AS4BH044230915WG1543	22AS6BH072230915WG1629	21AS4BH050230915WG1541	99DUPA230915WG	23HBH315BAE230915WG1629	01AS4BH036240915WG1014	02AS4BH040A240915WG1052	03AS4BH043240915WG1137	04AS4BH042240915WG1220	05HBH210ERM240915WG1354			
Depth													
COC No / misc													
Containers	V HN G	V G	V G	V G	V G	V HN G	V HN G	V HN G	V HN G	V G			
Sample Date	23/09/2015 15:43	23/09/2015 16:29	23/09/2015 15:41	23/09/2015	23/09/2015 16:29	24/09/2015 10:14	24/09/2015 10:52	24/09/2015 11:37	24/09/2015 12:20	24/09/2015 13:54			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015	25/09/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	2.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	334	7.8	8.0	<0.1	326	43.5	171	42.7	112	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	61	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	15	7	31	31	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	218	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	196	36900$_{AC}$	60	52	<3	153	13	53	10	79	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	435	176	71	71	<2	12	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	3.3	742	<0.5	<0.5	<0.5	401	146	219	275	202	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	47	87100$_{AC}$	72	48	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	36.9	106	<0.5	<0.5	<0.5	9.3	5.9	<0.5	3.8	3.8	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	46	<2	<2	<2	1680$_{AB}$	963	768	1350$_{AB}$	1680$_{AB}$	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	30.8	2.2	2.3	<0.5	3.2	2.3	<0.5	14.6	52.3	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	18	<1	<1	<1	<1	1	<1	<1	2	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	3.3	<0.5	0.9	<0.5	<0.5	1.4	<0.5	<0.5	2.2	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	16	82	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	12	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	10	273	6	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	27	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	9	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	4	6	6	7	16	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	21	12	21	22	<3	129	206	205	243	437	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	91	58	4	4	<3	602	355	654	847	1480$_{AB}$	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	94	93	94	94	89	87	90	89	89	90	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	123	123	122	123	121	118	122	122	121	124	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/141

VOC Report : **Liquid**

J E Sample No.	46-50	51-55	56-60									
Sample ID	06AS4BH0452 40915WG1405	07AS4BH0482 40915WG1445	08AS4BH0512 40915WG1451									
Depth												
COC No / misc												
Containers	V HN G	V HN G	V HN G									
Sample Date	24/09/2015 14:05	24/09/2015 14:45	24/09/2015 14:51									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	1	1	1									
Date of Receipt	25/09/2015	25/09/2015	25/09/2015									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2	<2	<2								<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1								<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3								<3	ug/l	TM15/PM10
Vinyl Chloride #	6.2	<0.1	<0.1								<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1								<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3								<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3								<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3								<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3								<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3								<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3								<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	8	<3	<3								<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1								<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2								<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2								<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2								<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3								<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2								<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2								<2	ug/l	TM15/PM10
Benzene #	101	14.6	2.6								<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	8	<3	<3								<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2								<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3								<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2								<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2								<2	ug/l	TM15/PM10
Toluene #	4.8	<0.5	<0.5								<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2								<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2								<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3								<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2								<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2								<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2								<2	ug/l	TM15/PM10
Chlorobenzene #	1540 AB	86	37								<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2								<2	ug/l	TM15/PM10
Ethylbenzene #	7.1	<0.5	<0.5								<0.5	ug/l	TM15/PM10
p/m-Xylene #	2	<1	<1								<1	ug/l	TM15/PM10
o-Xylene #	2.2	<0.5	<0.5								<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2								<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2								<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3								<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4								<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2								<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3								<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3								<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3								<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3								<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3								<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3								<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3								<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3								<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3								<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3								<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	19	6	6								<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3								<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	18	12	5								<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2								<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3								<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3								<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2								<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3								<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	89	89	90								<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	123	120	120								<0	%	TM15/PM10

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/141

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution
AC	x500 Dilution

JE Job No: 15/141

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Zone 3
Deeside Industrial Park
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Fax: +44 (0) 1244 833781

Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	2nd October, 2015
Your reference :	27127103
Our reference :	Test Report 15/139 Batch 1
Location :	Dagenham
Date samples received :	24th September, 2015
Status :	Final report
Issue :	1

Eight samples were received for analysis on 24th September, 2015 of which eight were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/139

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-25	26-30	31-34			LOD/LOR	Units	Method No.
Sample ID	01AS4BH0202 10915WG1147	02AS4BH0262 10915WG1154	03AS4BH0322 10915WG1233	04AS4BH0382 10915WG1254	05AS4BH0292 10915WG1318	06AS4BH0272 10915WG1346	07AS4BH0332 10915WG1413	08HBH312BA E210915WG1 435					
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V HN G	V HN G	V G					
Sample Date	21/09/2015 11:47	21/09/2015 11:54	21/09/2015 12:33	21/09/2015 12:54	21/09/2015 13:18	21/09/2015 13:46	21/09/2015 14:13	21/09/2015 14:35					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015					
Dissolved Arsenic #	-	-	-	-	-	11.8	2.6	-			<2.5	ug/l	TM30/PM14
Dissolved Barium #	-	-	-	-	-	40	38	-			<3	ug/l	TM30/PM14
Dissolved Beryllium	-	-	-	-	-	1.8	<0.5	-			<0.5	ug/l	TM30/PM14
Dissolved Boron	-	-	-	-	-	73	109	-			<12	ug/l	TM30/PM14
Dissolved Cadmium #	-	-	-	-	-	<0.5	<0.5	-			<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	-	-	-	-	-	3.0	<1.5	-			<1.5	ug/l	TM30/PM14
Dissolved Copper #	-	-	-	-	-	20	<7	-			<7	ug/l	TM30/PM14
Dissolved Lead #	-	-	-	-	-	6	<5	-			<5	ug/l	TM30/PM14
Dissolved Nickel #	-	-	-	-	-	10	9	-			<2	ug/l	TM30/PM14
Dissolved Selenium #	-	-	-	-	-	<3	<3	-			<3	ug/l	TM30/PM14
Dissolved Vanadium #	-	-	-	-	-	6.6	<1.5	-			<1.5	ug/l	TM30/PM14
Dissolved Zinc #	-	-	-	-	-	18	12	-			<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	-	-	-	-	-	0.21	<0.01	-			<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50			<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
Pentobarbital	47	13	<10	<10	21	71	26	60			<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	3160	<100	<100	2360	<100	<100			<100	ug/l	TM16/PM49

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/139

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-25	26-30	31-34			LOD/LOR	Units	Method No.
Sample ID	01AS4BH0202 10915WG1147	02AS4BH0262 10915WG1154	03AS4BH0322 10915WG1233	04AS4BH0382 10915WG1254	05AS4BH0292 10915WG1318	06AS4BH0272 10915WG1346	07AS4BH0332 10915WG1413	08HBH312BA E210915WG1 435					
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V HN G	V HN G	V G					
Sample Date	21/09/2015 11:47	21/09/2015 11:54	21/09/2015 12:33	21/09/2015 12:54	21/09/2015 13:18	21/09/2015 13:46	21/09/2015 14:13	21/09/2015 14:35					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015					
Sulphanilamide	114	<5	104	<5	52	110	26	7			<5	ug/l	TM87/PM0
Sulphadiazine	27	7	<5	<5	20	<5	<5	<5			<5	ug/l	TM87/PM0
Sulphathiazole	71	14	<5	<5	23	102	109	<5			<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	18	<5			<5	ug/l	TM87/PM0
Sulphamerazine	29	<5	<5	<5	8	15	17	5			<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5	<5	11			<5	ug/l	TM87/PM0
Sulphamethizole	25	<5	<5	<5	13	40	6	<5			<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	11	<5	<5	24			<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	1830$_{AA}$	18	<5	<5	218	2160$_{AA}$	389	16			<5	ug/l	TM87/PM0
pH #	7.27	11.2	6.11	7.20	11.4	6.04	6.80	6.06			<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/139

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-25	26-30	31-34			LOD/LOR	Units	Method No.
Sample ID	01AS4BH0202 10915WG1147	02AS4BH0262 10915WG1154	03AS4BH0322 10915WG1233	04AS4BH0382 10915WG1254	05AS4BH0292 10915WG1318	06AS4BH0272 10915WG1346	07AS4BH0332 10915WG1413	08HBH312BA E210915WG1 435					
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V HN G	V HN G	V G					
Sample Date	21/09/2015 11:47	21/09/2015 11:54	21/09/2015 12:33	21/09/2015 12:54	21/09/2015 13:18	21/09/2015 13:46	21/09/2015 14:13	21/09/2015 14:35					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015	24/09/2015					
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Vinyl Chloride #	4.3	<0.1	<0.1	<0.1	<0.1	267	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	27	<3	<3	<3	<3	206	<3	13			<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	<2	8	<2	<2			<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Benzene #	11.1	<0.5	<0.5	<0.5	<0.5	311	<0.5	10.8			<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	6	<3	74	<3	9	197	<3	10			<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	17.4	<0.5	<0.5	94.8	<0.5	<0.5			<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	676	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chlorobenzene #	5	<2	42	<2	<2	952	5	13			<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	4.0	<0.5	<0.5	9.6	<0.5	<0.5			<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	15	<1	<1	71	<1	<1			<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	1.9	<0.5	<0.5	21.4	<0.5	<0.5			<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4			<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	463	21	<3			<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	340	3	<3			<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	58	<3	<3	31	<3	<3			<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	4	3680$_{AC}$	<3	<3	978	32	6			<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	5	<3	51500$_{AC}$	<3	<3	5870$_{AB}$	36	<3			<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	92	89	89	89	92	92	92	93			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	120	119	110	118	119	121	121	119			<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/139						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/139

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution
AC	x100 Dilution

JE Job No: 15/139

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
Zone 3
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Fax: +44 (0) 1244 833781

Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	24th July, 2015
Your reference :	27127102
Our reference :	Test Report 15/119 Batch 1
Location :	Dagenham
Date samples received :	22nd July, 2015
Status :	Final report
Issue :	1

Ten samples were received for analysis on 22nd July, 2015 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/119

VOC Report : **Liquid**

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	LOD/LOR	Units	Method No.
Sample ID	01AS4BH0442 10715WG1046	02AS4BH1032 10715WG1056	03AS4BH1042 10715WG1122	04AS4BH1062 10715WG1131	05AS4BH0502 10715WG1244	06AS6BH0272 10715WG1255	07AS6BH0722 10715WG1330	08AS6BH0292 10715WG1320	09AS6BH0332 10715WG1430	10AS6BH0352 10715WG1415			
Depth													
COC No / misc													
Containers	V	V	V	V	V	V	V	V	V	V			
Sample Date	21/07/2015 10:46	21/07/2015 10:56	21/07/2015 11:22	21/07/2015 11:31	21/07/2015 12:44	21/07/2015 12:55	21/07/2015 13:30	21/07/2015 13:20	21/07/2015 14:30	21/07/2015 14:15			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	22/07/2015	22/07/2015	22/07/2015	22/07/2015	22/07/2015	22/07/2015	22/07/2015	22/07/2015	22/07/2015	22/07/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.5	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	57	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	3.7	1.4	<0.1	1.6	26.7	66.3	1100$_{AC}$	89.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	100	27	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	538	<3	<3	<3	64	<3	9	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	7	304	9	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	5	<3	<3	<3	<3	<3	<3	3	<3	11	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	148	5	<3	<3	149	45	62600$_{AC}$	774	7	8	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	13500$_{AB}$	<2	<2	<2	133	<2	258	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	56.2	6.9	4.4	46.9	<0.5	22.4	1110$_{AC}$	32.0	149	2180$_{AA}$	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	1450$_{AB}$	6	<3	6	36	10	112000$_{AC}$	191	12	14	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	167	<0.5	<0.5	4.3	<0.5	<0.5	128	<0.5	3.8	25.0	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	362	<2	<2	61	<2	184	<100$_{AA}$	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	5.2	3.9	<0.5	39.6	<0.5	43.3	236	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	10	<1	<1	22	<1	10	74	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	7.4	1.1	<0.5	3.5	<0.5	1.3	17.1	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	20	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	73	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	12	<3	<3	<3	<3	<3	5	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	6	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	4	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	7	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	4	<3	<3	5	<3	<3	<3	<3	<3	43	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	92	<3	<3	112	36	18	14	<3	28	1260$_{AA}$	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	401	20	6	561	41	64	82	<3	41	7380$_{AA}$	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	90	92	93	96	96	93	94	94	97	97	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	100	98	100	101	99	100	101	102	100	109	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127102
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/119						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
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NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/119

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If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

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Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x50 Dilution
AB	x100 Dilution
AC	x200 Dilution

JE Job No: 15/119

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			

Jones Environmental Laboratory

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	9th July, 2015
Your reference :	27127103
Our reference :	Test Report 15/113 Batch 1
Location :	Sanofi Dagenham
Date samples received :	3rd July, 2015
Status :	Final report
Issue :	1

Nine samples were received for analysis on 3rd July, 2015 of which nine were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/113

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45		LOD/LOR	Units	Method No.
Sample ID	01AS7BH0290 20715WG0925	03AS6BH0100 20715WG1048	05AS7BH0270 20715WG1003	07AS5BH0120 20715WG1125	09AS5BH0140 20715WG1200	06AS8BH1080 20715WG1122	08AS8BH1070 20715WG1208	02AS7BH0300 20715WG1000	04AS7BH0280 20715WG1039				
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G				
Sample Date	02/07/2015 09:25	02/07/2015 10:48	02/07/2015 10:03	02/07/2015 11:25	02/07/2015 12:00	02/07/2015 11:22	02/07/2015 12:08	02/07/2015 10:00	02/07/2015 10:39				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015				
Dissolved Arsenic #	842	951	644	1410	383	143	715	839	4330$_{AB}$		<2.5	ug/l	TM30/PM14
Dissolved Cadmium #	8.3	9.3	6.6	13.7	3.8	1.6	7.2	8.1	36.8		<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	<1.5	<1.5	4.4	<1.5	<1.5	1.9	<1.5		<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	48	23	<7	100	<7	<7	49	13		<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM30/PM14
Dissolved Nickel #	14	20	27	17	42	8	36	8	60		<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM30/PM14
Dissolved Zinc #	<3	9	4	<3	3	4	21	<3	29		<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.08	10.9$_{AA}$	0.26	0.19	0.11	0.03	0.01	0.29	0.86		<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50		<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	108	<10		<10	ug/l	TM114/PM0
Butalbarbital	<10	10	34	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Pentobarbital	92	97	107	119	22	22	71	52	329		<10	ug/l	TM114/PM0
Phenobarbital	30	35	89	17	<10	<10	<10	23	43		<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	<100	124	<100	<100	<100	<100	<100		<100	ug/l	TM16/PM49
Sulphanilamide	333	76	239	373	269	44	84	19	546		<5	ug/l	TM87/PM0
Sulphadiazine	286	113	286	364	113	<5	17	137	1050$_{AA}$		<5	ug/l	TM87/PM0
Sulphathiazole	277	<5	272	343	165	<5	15	98	1020$_{AA}$		<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	7	<5	<5	<5	<5	23		<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/113

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45		LOD/LOR	Units	Method No.
Sample ID	01AS7BH0290 20715WG0925	03AS6BH0100 20715WG1048	05AS7BH0270 20715WG1003	07AS5BH0120 20715WG1125	09AS5BH0140 20715WG1200	06AS8BH1080 20715WG1122	08AS8BH1070 20715WG1208	02AS7BH0300 20715WG1000	04AS7BH0280 20715WG1039				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G				
Sample Date	02/07/2015 09:25	02/07/2015 10:48	02/07/2015 10:03	02/07/2015 11:25	02/07/2015 12:00	02/07/2015 11:22	02/07/2015 12:08	02/07/2015 10:00	02/07/2015 10:39				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015				
Sulphamerazine	33	13	25	45	27	<5	<5	17	125		<5	ug/l	TM87/PM0
Diphenylguanidine	<5	13	<5	12	<5	<5	<5	<5	123		<5	ug/l	TM87/PM0
Sulphamethizole	8	<5	8	6	<5	<5	6	<5	11		<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	15	<5	<5		<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	807	188	718	682	284	3700_{AA}	599	250	1610_{AA}		<5	ug/l	TM87/PM0
pH #	10.8	7.78	8.13	10.1	11.6	7.58	7.21	9.66	7.65		<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/113

VOC Report : **Liquid**

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45		LOD/LOR	Units	Method No.
Sample ID	01AS7BH0290 20715WG0925	03AS6BH0100 20715WG1048	05AS7BH0270 20715WG1003	07AS5BH0120 20715WG1125	09AS5BH0140 20715WG1200	06AS8BH1080 20715WG1122	08AS8BH1070 20715WG1208	02AS7BH0300 20715WG1000	04AS7BH0280 20715WG1039				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G				
Sample Date	02/07/2015 09:25	02/07/2015 10:48	02/07/2015 10:03	02/07/2015 11:25	02/07/2015 12:00	02/07/2015 11:22	02/07/2015 12:08	02/07/2015 10:00	02/07/2015 10:39				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015				
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Vinyl Chloride #	2.5	<0.1	<0.1	31.4	24.5	<0.1	1690$_{AB}$	3.3	<0.1		<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	6	<3	<3		<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	15	8	8	50	58	<3	1270$_{AB}$	37	8		<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Chloroform #	<2	4	11	<2	<2	<2	<2	<2	8		<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Benzene #	14.6	<0.5	3.8	5.3	<0.5	9.9	8.4	<0.5	2.9		<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	11	6	20	11	10	<3	36	9	7		<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Toluene #	6.2	<0.5	3.1	5.8	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	24	18	11	27	52	<3	<3	66	9		<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Chlorobenzene #	44	<2	<2	35	<2	<2	31	<2	<2		<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4		<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	5	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	28	<3		<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	3	<3	<3	<3	15	<3	<3		<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	101	102	96	96	101	99	94	88	89		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	107	108	106	105	105	107	105	94	93		<0	%	TM15/PM10

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/113

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution

JE Job No: 15/113

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	9th July, 2015
Your reference :	27127103
Our reference :	Test Report 15/111 Batch 1
Location :	Sanofi Dagenham
Date samples received :	3rd July, 2015
Status :	Final report
Issue :	1

Twelve samples were received for analysis on 3rd July, 2015 of which twelve were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/111

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	01AS7BH0420 10715WG1130	02AS7BH0430 10715WG1128	03AS7BH0390 10715WG1215	04AS7BH0380 10715WG1230	10AS7BH0330 10715WG1627	12AS6BH0120 10715WG1711	06AS7BH0400 10715WG1502	08AS7BH0360 10715WG1545	09AS7BH0370 10715WG1547	11AS7BH0340 10715WG1630			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	01/07/2015 11:30	01/07/2015 11:28	01/07/2015 12:15	01/07/2015 12:30	01/07/2015 16:27	01/07/2015 17:11	01/07/2015 15:02	01/07/2015 15:45	01/07/2015 15:47	01/07/2015 16:30			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015			
Dissolved Arsenic #	1960	1450	882	169	4440$_{AB}$	2590	228	762	2560	584	<2.5	ug/l	TM30/PM14
Dissolved Cadmium #	18.4	14.1	9.0	2.4	36.9	24.8	3.2	8.4	25.1	7.0	<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	<1.5	3.2	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper #	13	56	13	52	22	<7	74	24	<7	39	<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM30/PM14
Dissolved Nickel #	9	17	39	37	32	19	50	51	38	34	<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Zinc #	4	<3	30	41	6	<3	64	47	30	35	<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.37	9.79$_{AA}$	0.22	44.0$_{AC}$	0.49	0.26	105$_{AC}$	0.06	0.20	13.9$_{AB}$	<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Butalbarbital	66	107	58	33	62	38	71	55	50	44	<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM114/PM0
Pentobarbital	33	159	127	95	167	100	42	103	64	239	<10	ug/l	TM114/PM0
Phenobarbital	154	375	230	42	88	41	118	79	110	153	<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	152	202	269	<100	265	321	<100	330	190	113	<100	ug/l	TM16/PM49
Sulphanilamide	269	405	320	64	368	349	219	345	263	403	<5	ug/l	TM87/PM0
Sulphadiazine	341	1630$_{AA}$	585	56	622	381	407	200	263	427	<5	ug/l	TM87/PM0
Sulphathiazole	659	583	<5	<5	874	561	6	70	248	<5	<5	ug/l	TM87/PM0
Carbendazim	<5	<5	5	<5	11	8	<5	<5	6	5	<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/111

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	LOD/LOR	Units	Method No.
Sample ID	01AS7BH0420 10715WG1130	02AS7BH0430 10715WG1128	03AS7BH0390 10715WG1215	04AS7BH0380 10715WG1230	10AS7BH0330 10715WG1627	12AS6BH0120 10715WG1711	06AS7BH0400 10715WG1502	08AS7BH0360 10715WG1545	09AS7BH0370 10715WG1547	11AS7BH0340 10715WG1630			
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	01/07/2015 11:30	01/07/2015 11:28	01/07/2015 12:15	01/07/2015 12:30	01/07/2015 16:27	01/07/2015 17:11	01/07/2015 15:02	01/07/2015 15:45	01/07/2015 15:47	01/07/2015 16:30			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015			
Sulphamerazine	22	24	12	6	76	46	12	15	18	31	<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	6	6	<5	<5	<5	<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	6	<5	<5	<5	<5	6	<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	24	<5	<5	<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	138	199	688	13	798	754	58	313	933	499	<5	ug/l	TM87/PM0
pH #	9.17	9.62	7.37	7.52	8.89	9.78	7.57	7.44	7.79	7.45	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/111

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	51-55	56-60									LOD/LOR	Units	Method No.
Sample ID	05AS6BH0140 10715WG1431	07AS7BH0470 10715WG1508											
Depth													
COC No / misc													
Containers	V HN G	V HN G											
Sample Date	01/07/2015 14:31	01/07/2015 15:08											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	03/07/2015	03/07/2015											
Dissolved Arsenic #	71.2	894									<2.5	ug/l	TM30/PM14
Dissolved Cadmium #	1.6	9.3									<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5									<1.5	ug/l	TM30/PM14
Dissolved Copper #	19	<7									<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5									<5	ug/l	TM30/PM14
Dissolved Nickel #	35	23									<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3									<3	ug/l	TM30/PM14
Dissolved Zinc #	30	6									<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	11.8 AB	<0.01									<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50									<50	ug/l	TM15/PM10
Amphetamine	<10	<10									<10	ug/l	TM114/PM0
Butalbarbital	31	35									<10	ug/l	TM114/PM0
Fenbufen	<10	<10									<10	ug/l	TM114/PM0
Methcathinone	<10	<10									<10	ug/l	TM114/PM0
Pentobarbital	45	40									<10	ug/l	TM114/PM0
Phenobarbital	49	74									<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10									<10	ug/l	TM84/PM49
Hexamine	<10	<10									<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10									<10	ug/l	TM84/PM49
Carbofuran	<10	<10									<10	ug/l	TM84/PM49
Atrazine	<10	<10									<10	ug/l	TM84/PM49
Caffeine	<10	<10									<10	ug/l	TM84/PM49
Ethotoin	<10	<10									<10	ug/l	TM84/PM49
Phenazone	<10	<10									<10	ug/l	TM84/PM49
Cyclandelate	<10	<10									<10	ug/l	TM84/PM49
Thozalinone	<10	<10									<10	ug/l	TM84/PM49
Diuron	<10	<10									<10	ug/l	TM84/PM49
Ketoprofen	<10	<10									<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10									<10	ug/l	TM84/PM49
Mepyramine	<10	<10									<10	ug/l	TM84/PM49
Promethazine	<10	<10									<10	ug/l	TM84/PM49
Molindone	<10	<10									<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10									<10	ug/l	TM84/PM49
Brucine	<10	<10									<10	ug/l	TM84/PM49
Isometheptene	<10	<10									<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	105									<100	ug/l	TM16/PM49
Sulphanilamide	122	197									<5	ug/l	TM87/PM0
Sulphadiazine	33	71									<5	ug/l	TM87/PM0
Sulphathiazole	<5	168									<5	ug/l	TM87/PM0
Carbendazim	<5	<5									<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/111

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	51-55	56-60											
Sample ID	05AS6BH0140 10715WG1431	07AS7BH0470 10715WG1508											
Depth													
COC No / misc													
Containers	V HN G	V HN G											
Sample Date	01/07/2015 14:31	01/07/2015 15:08											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	03/07/2015	03/07/2015											

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Sulphamerazine	<5	6									<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5									<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5									<5	ug/l	TM87/PM0
Acebutolol	<5	<5									<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	146	332									<5	ug/l	TM87/PM0
pH #	6.97	6.96									<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/111

VOC Report : **Liquid**

J E Sample No.	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50			
Sample ID	01AS7BH0420 10715WG1130	02AS7BH0430 10715WG1128	03AS7BH0390 10715WG1215	04AS7BH0380 10715WG1230	10AS7BH0330 10715WG1627	12AS6BH0120 10715WG1711	06AS7BH0400 10715WG1502	08AS7BH0360 10715WG1545	09AS7BH0370 10715WG1547	11AS7BH0340 10715WG1630			
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G	V HN G			
Sample Date	01/07/2015 11:30	01/07/2015 11:28	01/07/2015 12:15	01/07/2015 12:30	01/07/2015 16:27	01/07/2015 17:11	01/07/2015 15:02	01/07/2015 15:45	01/07/2015 15:47	01/07/2015 16:30			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	03/07/2015	LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	4.0	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	4	<3	6	12	<3	13	<3	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	6	4	<2	7	7	3	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	1.5	<0.5	<0.5	<0.5	1.9	2.3	<0.5	<0.5	3.5	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	6	6	3	8	11	5	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	4	14	9	5	9	21	6	8	<3	16	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	22	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	3	5	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	<3	7	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	97	98	97	100	98	100	95	101	99	101	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	106	110	105	109	106	106	105	104	104	105	<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/111

VOC Report : **Liquid**

J E Sample No.	51-55	56-60											
Sample ID	05AS6BH0140 10715WG1431	07AS7BH0470 10715WG1508											
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V HN G	V HN G											
Sample Date	01/07/2015 14:31	01/07/2015 15:08											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	03/07/2015	03/07/2015											
											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2	<2									<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1									<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3									<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1									<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1									<1	ug/l	TM15/PM10
Chloroethane #	<3	<3									<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3									<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3									<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3									<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3									<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3									<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3									<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1									<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2									<2	ug/l	TM15/PM10
Chloroform #	<2	<2									<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2									<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3									<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2									<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2									<2	ug/l	TM15/PM10
Benzene #	<0.5	1.5									<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3									<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2									<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3									<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2									<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2									<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5									<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2									<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2									<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	8									<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2									<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2									<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2									<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2									<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2									<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5									<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1									<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5									<0.5	ug/l	TM15/PM10
Styrene	<2	<2									<2	ug/l	TM15/PM10
Bromoform #	<2	<2									<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3									<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4									<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2									<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3									<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3									<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3									<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3									<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3									<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3									<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3									<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3									<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3									<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3									<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3									<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3									<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3									<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2									<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3									<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3									<3	ug/l	TM15/PM10
Naphthalene	<2	<2									<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3									<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	99	104									<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	109	108									<0	%	TM15/PM10

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/111

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution
AC	x50 Dilution

JE Job No: 15/111

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Zone 3
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Fax: +44 (0) 1244 833781

Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

Attention :	Joseph Kaye
Date :	8th July, 2015
Your reference :	27127103
Our reference :	Test Report 15/110 Batch 1
Location :	Sanofi Dagenham
Date samples received :	3rd July, 2015
Status :	Final report
Issue :	1

One sample were received for analysis on 3rd July, 2015 of which one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/110

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	1												
Sample ID	SOAS4BH032 290615WG123 0												
Depth													
COC No / misc													
Containers	G												
Sample Date	29/06/2015 12:30												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	03/07/2015												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
N-ethyl-m-toluidine	<10										<10	ug/l	TM84/PM49
Hexamine	<10										<10	ug/l	TM84/PM49
Acetophenetidin	<10										<10	ug/l	TM84/PM49
Carbofuran	<10										<10	ug/l	TM84/PM49
Atrazine	<10										<10	ug/l	TM84/PM49
Caffeine	<10										<10	ug/l	TM84/PM49
Ethotoin	<10										<10	ug/l	TM84/PM49
Phenazone	<10										<10	ug/l	TM84/PM49
Cyclandelate	<10										<10	ug/l	TM84/PM49
Thozalinone	<10										<10	ug/l	TM84/PM49
Diuron	<10										<10	ug/l	TM84/PM49
Ketoprofen	<10										<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10										<10	ug/l	TM84/PM49
Mepyramine	<10										<10	ug/l	TM84/PM49
Promethazine	<10										<10	ug/l	TM84/PM49
Molindone	<10										<10	ug/l	TM84/PM49
Chlorpromazine	<10										<10	ug/l	TM84/PM49
Brucine	<10										<10	ug/l	TM84/PM49
Isometheptene	<10										<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	9070										<100	ug/l	TM16/PM49

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/110						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/110

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 15/110

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
Zone 3
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CH5 2UA

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	8th July, 2015
Your reference :	27127103
Our reference :	Test Report 15/109 Batch 1
Location :	Sanofi Dagenham
Date samples received :	2nd July, 2015
Status :	Final report
Issue :	1

Twelve samples were received for analysis on 2nd July, 2015 of which eleven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/109

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36		LOD/LOR	Units	Method No.
Sample ID	01AS8BH1103 00615WG0922	02AS8BH1093 00615WG0953	03HBH519ER M300615WG1 012	04AS8BH0113 00615WG1039	05HBH518ER M300615WG1 058	06AS8BH0513 00615WG1134	07HBH510ER M300615WG1 240	08AS5BH0043 00615WG1317	09AS4BH019B 300615WG155 1				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G				
Sample Date	30/06/2015 09:22	30/06/2015 09:53	30/06/2015 10:12	30/06/2015 10:39	30/06/2015 10:58	30/06/2015 11:34	30/06/2015 12:40	30/06/2015 13:17	30/06/2015 15:51				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015				
Diisopropylamine	<50	<50	<50	<50	<50	<50	<50	<50	<50		<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
Pentobarbital	<10	99	<10	<10	<10	18	15	14	<10		<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	<100	<100	<100	<100	<100	<100	<100		<100	ug/l	TM16/PM49
Sulphanilamide	<5	22	<5	<5	<5	8	22	7	<5		<5	ug/l	TM87/PM0
Sulphadiazine	<5	10	<5	<5	10	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	<5	<5	<5	<5	47	<5	<5		<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Sulphamerazine	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Diphenylguanidine	<5	6	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
Sulphamethizole	<5	6	<5	<5	<5	<5	23	<5	<5		<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	38	<5	7	<5	12	138	23	<5		<5	ug/l	TM87/PM0
pH #	6.72	5.76	7.93	9.36	6.60	7.86	7.36	6.86	9.20		<0.01	pH units	TM73/PM0

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/109

VOC Report : **Liquid**

J E Sample No.	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-39	LOD/LOR	Units	Method No.
Sample ID	01AS8BH1103 00615WG0922	02AS8BH1093 00615WG0953	03HBH519ER M300615WG1 012	04AS8BH0113 00615WG1039	05HBH518ER M300615WG1 058	06AS8BH0513 00615WG1134	07HBH510ER M300615WG1 240	08AS5BH0043 00615WG1317	09AS4BH019B 300615WG155 1	10AS4BH0573 00615WG1559			
Depth													
COC No / misc													
Containers	V G	V G	V G	V G	V G	V G	V G	V G	V G	V			
Sample Date	30/06/2015 09:22	30/06/2015 09:53	30/06/2015 10:12	30/06/2015 10:39	30/06/2015 10:58	30/06/2015 11:34	30/06/2015 12:40	30/06/2015 13:17	30/06/2015 15:51	30/06/2015 15:59			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015	02/07/2015			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	66	86	17	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	16.2	<0.1	66.4	19.8	41.5	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	6	4	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	46	<3	<3	<3	<3	91	<3	<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	4	5	20	52	5	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	14	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	79	93	41	86	648	395	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	4	220	174	113	196	<2	7	8350 AC	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	421	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	<0.5	8.1	<0.5	1.9	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	16	64	134	13900 AB	2520 AA	643	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	9	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	3	6	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	39	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	219	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	1360 AA	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	5	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	3	<3	5	<3	<3	18	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	110	108	109	109	107	104	106	107	102	105	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	103	105	106	105	105	105	105	106	106	105	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye
JE Job No.: 15/109

VOC Report : **Liquid**

J E Sample No.	40-42												
Sample ID	11AS4BH0593 00615WG1640												
Depth													
COC No / misc													
Containers	V												
Sample Date	30/06/2015 16:40												
Sample Type	Ground Water												
Batch Number	1												
Date of Receipt	02/07/2015												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2										<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1										<0.1	ug/l	TM15/PM10
Chloromethane #	<3										<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1										<0.1	ug/l	TM15/PM10
Bromomethane	<1										<1	ug/l	TM15/PM10
Chloroethane #	<3										<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3										<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	4										<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3										<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1										<1	ug/l	TM15/PM10
Bromochloromethane #	<2										<2	ug/l	TM15/PM10
Chloroform #	551										<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2										<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3										<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2										<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2										<2	ug/l	TM15/PM10
Benzene #	3.7										<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3										<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromomethane #	<3										<3	ug/l	TM15/PM10
Bromodichloromethane #	<2										<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
Toluene #	<0.5										<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2										<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3										<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromochloromethane #	<2										<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2										<2	ug/l	TM15/PM10
Chlorobenzene #	18										<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2										<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5										<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1										<1	ug/l	TM15/PM10
o-Xylene #	<0.5										<0.5	ug/l	TM15/PM10
Styrene	<2										<2	ug/l	TM15/PM10
Bromoform #	<2										<2	ug/l	TM15/PM10
Isopropylbenzene #	<3										<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4										<4	ug/l	TM15/PM10
Bromobenzene #	<2										<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3										<3	ug/l	TM15/PM10
Propylbenzene #	<3										<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3										<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3										<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
n-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2										<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3										<3	ug/l	TM15/PM10
Naphthalene	<2										<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	105										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	107										<0	%	TM15/PM10

Client Name: Arcadis
Reference: 27127103
Location: Sanofi Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/109						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/109

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution
AB	x20 Dilution
AC	x100 Dilution

JE Job No: 15/109

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

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Arcadis
2 Craven Court
Newmarket
Cambridgeshire
CB8 7FA

4225

Attention :	Joseph Kaye
Date :	2nd July, 2015
Your reference :	
Our reference :	Test Report 15/104 Batch 1
Location :	Dagenham
Date samples received :	27th June, 2015
Status :	Final report
Issue :	1

Six samples were received for analysis on 27th June, 2015 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Client Name: Arcadis
Reference:
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/104

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-5	6-10	11-15	16-19	20-23	24-27					LOD/LOR	Units	Method No.
Sample ID	01AC1BH007260615WG1202	02HBH404BAE260615WG1217	03HBH407BAE260615WG1247	04HBH507ERM260615WG1342	05AS4BH006260615WG1335	06AS4BH013260615WG1421							
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V G	V G	V G							
Sample Date	26/06/2015 12:02	26/06/2015 12:17	26/06/2015 12:47	26/06/2015 13:42	26/06/2015 13:35	26/06/2015 14:21							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	1	1	1	1	1	1							
Date of Receipt	27/06/2015	27/06/2015	27/06/2015	27/06/2015	27/06/2015	27/06/2015							
Dissolved Arsenic #	<2.5	8.3	10.0	-	-	-					<2.5	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	0.6	0.6	-	-	-					<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	<1.5	-	-	-					<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	<7	<7	-	-	-					<7	ug/l	TM30/PM14
Dissolved Lead #	<5	6	6	-	-	-					<5	ug/l	TM30/PM14
Dissolved Nickel #	9	<2	23	-	-	-					<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	-	-	-					<3	ug/l	TM30/PM14
Dissolved Zinc #	4	<3	4	-	-	-					<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.12	<0.01	<0.01	-	-	-					<0.01	ug/l	TM61/PM38
Diisopropylamine	<50	<50	<50	<50	<50	<50					<50	ug/l	TM15/PM10
Amphetamine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Butalbarbital	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Fenbufen	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Methcathinone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
Pentobarbital	<10	<10	<10	66	59	<10					<10	ug/l	TM114/PM0
Phenobarbital	<10	<10	<10	<10	<10	<10					<10	ug/l	TM114/PM0
N-ethyl-m-toluidine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Hexamine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Acetophenetidin	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Carbofuran	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Atrazine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Caffeine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Ethotoin	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Phenazone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Cyclandelate	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Thozalinone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Diuron	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Ketoprofen	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
3-Ethylbenzophenone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Mepyramine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Promethazine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Molindone	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Chlorpromazine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Brucine	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Isometheptene	<10	<10	<10	<10	<10	<10					<10	ug/l	TM84/PM49
Total Hydrocarbons (ABN)	<100	<100	<100	608	421	<100					<100	ug/l	TM16/PM49
Sulphanilamide	<5	<5	<5	69	72	<5					<5	ug/l	TM87/PM0
Sulphadiazine	<5	<5	<5	19	5	<5					<5	ug/l	TM87/PM0
Sulphathiazole	<5	<5	<5	387	137	<5					<5	ug/l	TM87/PM0
Carbendazim	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference:
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/104

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	1-5	6-10	11-15	16-19	20-23	24-27					LOD/LOR	Units	Method No.
Sample ID	01AC1BH007260615WG1202	02HBH404BAE260615WG1217	03HBH407BAE260615WG1247	04HBH507ERM260615WG1342	05AS4BH006260615WG1335	06AS4BH013260615WG1421							
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V G	V G	V G							
Sample Date	26/06/2015 12:02	26/06/2015 12:17	26/06/2015 12:47	26/06/2015 13:42	26/06/2015 13:35	26/06/2015 14:21							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	1	1	1	1	1	1							
Date of Receipt	27/06/2015	27/06/2015	27/06/2015	27/06/2015	27/06/2015	27/06/2015							
Sulphamerazine	<5	<5	<5	15	5	<5					<5	ug/l	TM87/PM0
Diphenylguanidine	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Sulphamethizole	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
Acebutolol	<5	<5	<5	<5	<5	<5					<5	ug/l	TM87/PM0
N(1)-2-Pyridyl Sulfanilamide	<5	<5	<5	161	190	<5					<5	ug/l	TM87/PM0
pH #	6.52	7.59	7.47	7.34	7.20	7.31					<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference:
Location: Dagenham
Contact: Joseph Kaye
JE Job No.: 15/104

VOC Report : **Liquid**

J E Sample No.	1-5	6-10	11-15	16-19	20-23	24-27					LOD/LOR	Units	Method No.
Sample ID	01AC1BH0072 60615WG1202	02HBH404BA E260615WG1 217	03HBH407BA E260615WG1 247	04HBH507ER M260615WG1 342	05AS4BH0062 60615WG1335	06AS4BH0132 60615WG1421							
Depth													
COC No / misc													
Containers	V HN G	V HN G	V HN G	V G	V G	V G							
Sample Date	26/06/2015 12:02	26/06/2015 12:17	26/06/2015 12:47	26/06/2015 13:42	26/06/2015 13:35	26/06/2015 14:21							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	1	1	1	1	1	1							
Date of Receipt	27/06/2015	27/06/2015	27/06/2015	27/06/2015	27/06/2015	27/06/2015							
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	20.9	<0.1	<0.1	<0.1					<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1					<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	19	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
1,1-Dichloroethane #	14	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	168	<3	20	<3	<3	<3					<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1					<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Chloroform #	234	<2	<2	<2	<2	68					<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	236	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	1.9	12.9	144	<0.5					<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	891	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Toluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	680	1090	<2					<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Ethylbenzene #	<0.5	<0.5	<0.5	5.4	5.3	<0.5					<0.5	ug/l	TM15/PM10
p/m-Xylene #	<1	<1	<1	3	<1	<1					<1	ug/l	TM15/PM10
o-Xylene #	<0.5	<0.5	<0.5	4.1	2.7	<0.5					<0.5	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4					<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	198	101	<3					<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	52	30	<3					<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	32	80	<3					<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	42	17	<3					<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3					<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	97	100	99	98	97	95					<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	99	100	98	101	98	97					<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference:
Location: Dagenham
Contact: Joseph Kaye

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/104						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/104

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 15/104

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM14	Analysis of waters and leachates for metals by ICP OES. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM84	Modified USEPA 8270. Site specific Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM49	Liquid samples are pH adjusted to 11 and extracted with solvent. The original aliquot is then acidified to pH 2 and extracted with a separate aliquot of solvent. The two extracts are combined before analysis.				
TM87	Determination of specific pharmaceutical compounds using Reversed Phase High Performance Liquid Chromatography with Ultra-Violet spectroscopy.	PM0	No preparation is required.				
TM114	Determination of specific Controlled Pharmaceutical Substances with Liquid Chromatography and Mass Spectroscopy detection.	PM0	No preparation is required.				

REFERENCES

Site-Wide Detailed Quantitative Risk Assessment (ARCADIS Ref: 928871204, March 2010)

Updated Site Wide Detailed Quantitative Risk Assessment (ARCADIS Ref: 928873302_01, July 2011).

Remediation Priority Areas – Remediation Implementation Plan (ARCADIS Ref: 928874502_01, November 2011).

Site Wide Remediation Implementation Plan (ARCADIS Ref: 928875401_01, April 2012).

Former D44 Landfill Groundwater Remediation Implementation Plan (Arcadis Ref: 2572310201_01, February 2013)

Back Plot B Validation Plan (ARCADIS Ref: 2572312306_01, August 2015)

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