LEVIN LANDFILL APRIL 2019 QUARTERLY GROUNDWATER, SURFACE WATER AND LEACHATE MONITORING REPORT

PREPARED FOR HOROWHENUA DISTRICT COUNCIL

June 2019

Stantec

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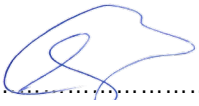
Matthew Chung		19/06/2019
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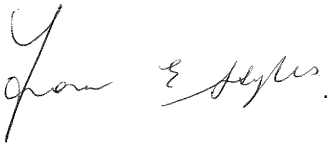
Fiona Styles (data entry check)		19/06/2019
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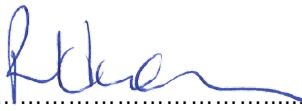
Roger Hulme		20/06/2019

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REVISION SCHEDULE

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01	17/06/2019	Draft for Comment	Matthew Chung	Fiona Styles (data entry)	Phil Landmark	Roger Hulme
02	20/06/2019	Final	Matthew Chung	Fiona Styles (data entry)	Phil Landmark	Roger Hulme

Executive Summary

Samples from 23 groundwater bores, the leachate effluent and 7 surface water sites were collected during April 2019 from around the Levin Landfill and were analysed for parameters as set out in Discharge Permit 6010. Stantec New Zealand, on behalf of Horowhenua District Council, reviewed the results of this monitoring.

Quality Control and Assurance

- Sampling records indicated that the April 2019 samples were collected progressively over a four-week period which may prevent realistic comparison between samples. It is recommended that sampling be completed within not more than a one-week period from the collection of the first sample.

Natural Background Groundwater

- Results from the background water samples appear to be showing impact from activities unrelated to the landfill operations.

Groundwater Quality Hydraulically Down-Gradient of the New Landfill

- Water quality from shallow bores located hydraulically down-gradient of the new landfill (D-series bores) were all below the ANZECC Livestock Drinking Water Trigger Values, and therefore comply with the resource consent conditions.
- Water quality from the deep bore located hydraulically down-gradient of new landfill (E1D) was below the DWSNZ, and therefore complies with the resource consent conditions.
- Leachate indicator parameters in samples from deep bore E1D is close to background concentrations.

Impact of Old Landfill on Groundwater

- There was one non-compliance with respect to the resource consent condition for the shallow bores located hydraulically down-gradient of the old landfill where faecal coliform levels at bore C2 exceeded the ANZECC Livestock Drinking Water Trigger Values. This result appears to be unusually high given that faecal coliform levels at this C2 have consistently been below the ANZECC values since monitoring begun in 1996. C2 is close to the Tatana Drain where very elevated faecal coliform counts were measured at SW1. The groundwater depth at C2 is very shallow and it is considered possible that surface water from Tatana property is affecting the C2 groundwater quality for faecal coliforms. Further review of the results during the next monitoring round is recommended.
- There was one non-compliance with respect to the resource consent condition for the deep-water quality where the manganese concentration at bore C2DD was marginally above the DWSNZ MAV. The concentration of manganese at this bore is consistent with historical results and is representative of ground water quality in the area.
- Bores located immediately down-gradient hydraulically to the old unlined landfill show elevated concentrations of leachate indicators above background concentrations.
- The leachate plume appears to have a confined northwards radius and is not extending to the north-west and the north-east. The estimate of plume width is 300-500m, which has been used since 2014.

Groundwater Quality Down-Gradient of the Irrigation Area

- Water quality from shallow bores located immediately down-gradient of the leachate irrigation area were below the ANZECC Livestock Drinking Water Trigger Values, and therefore comply with the resource consent conditions.

Leachate Effluent

- Results from the leachate effluent sample are within the range of data obtained from previous rounds and are generally well below that recorded at typical Class 1 landfills, with the exception of chromium which is high.

- An increasing trend is noted in nitrate nitrogen and conductivity levels in bores located hydraulically up- and down-gradient of the leachate pond. It is recommended that further investigations be carried out to identify the possible cause (or causes) of the elevated levels.

Tatana's Property Drain (surface water sampling locations)

- The results obtained from samples where the Tatana's drain discharges into Hokio Stream did not show any impact from the discharge of the drain.

Hokio Stream (surface water sampling locations)

- There were three non-compliances with respect to the resource consent condition for elevated faecal coliform levels at up-stream, mid-stream and down-stream of the old landfill which exceeded the ANZECC Livestock Drinking Water Trigger Values.
- Current observations indicate that leachate from the landfill is not having a detrimental effect on the Hokio Stream.

Horowhenua District Council

Levin Landfill April 2019 Quarterly Groundwater, Surface Water and Leachate Monitoring Report

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1. Introduction

Horowhenua District Council (HDC) commissioned Stantec New Zealand to carry out environmental reporting for the discharge consent monitoring undertaken at the Levin Landfill site. Monitoring is carried out every three months at 27 locations, as required under the resource consent conditions. There are 23 boreholes penetrating the sand and gravel aquifers, 3 surface water sampling locations and a leachate sampling point as shown in the Site Plan in Appendix A. In addition, HDC has agreed to undertake voluntary surface water monitoring at four locations along the Tatana's Property drain.

The Levin Landfill site is made up of two landfills, one old, closed and unlined landfill and the new, lined and active landfill. The new landfill footprint is being developed in stages. The most recent stage is Stage 3C which was developed in 2017, though landfill operations are now occurring over the top of Stages 1A, 2 and 3C.

The Levin Landfill site is located above two identified aquifers, a shallow sand aquifer and a deeper gravel aquifer. The shallow aquifer is unconfined, has a low to moderate permeability, and flows in a northerly direction. The deeper gravel aquifer is a confined to semi-confined aquifer. Horizons Regional Council hydrology staff advised that '*the general confined groundwater flow direction is towards the west*'. Groundwater quality in the area is highly variable because of interaction with peat deposits that are prevalent in the area, localised effects such as from grazing activities, droppings from scavenging birds and from nitrogen-fixing plants such as gorse.

Since July 2010 water from the boreholes has been tested for dissolved nutrients and metals rather than total concentrations. For simplicity, results from monitoring prior to July 2010 (which were tested for total metal and nutrient concentrations) have not been compared to the results from July 2010 onwards.

This report presents the results from the April 2019 monitoring round which have been compared with the Drinking Water Standards for New Zealand 2008 (DWSNZ), and the Australian and New Zealand Environment and Conservation Council (ANZECC) 2000 Livestock Drinking Water Trigger Values as per Discharge Consent 6010.

Note that the resource consent is currently under review and changes have been proposed to the consent conditions that define the environmental monitoring requirements. However, the outcome of the review hearing has been appealed and so the new consent conditions have not been finalised. Until this is done, the requirements of the existing consent conditions are being complied with.

2. Groundwater and Surface Water Monitoring

2.1 Sample Analysis

Samples were collected progressively by Downer between 4 April and 1 May 2019. Collected samples were couriered overnight and analysed by Eurofin ELS Ltd in Lower Hutt, Wellington, the following day.

The sampling programme for 2017-2020 is summarised in the schedule in Appendix B. Additional analysis for sodium and iron is undertaken on some groundwater samples for the monitoring requirements of the Stormwater Discharge Consent 102259. From April 2019, faecal coliform analysis will be undertaken on all samples during both the indicator and comprehensive analyses, as agreed by HDC with the Horizons Regional Council (HRC).

Groundwater samples taken from the boreholes, surface water samples from Hokio Stream and the leachate effluent were analysed for the comprehensive suite of parameters which are outlined in Table 2-1. HRC requested that the comprehensive suite be tested for in the April monitoring round, according to the resource consent conditions, instead of doing it in the January monitoring round, as had been the custom recently. The Tatana's Property samples were analysed based on a specific parameter list agreed to by Horizons Regional Council as detailed in Section 2.7.

Table 2-1: Comprehensive Parameters

Type	Parameters
Characteristics	pH Electrical Conductivity (EC) Alkalinity Total Hardness Suspended Solids
Oxygen demand	COD, BOD
Nutrients*	NO_3-N, NH_4-N, DRP, SO_4
Metals*	Al, As, Cd, Cr, Cu, Fe**, Mg, Mn, Ni, Pb, Zn
Other elements	B, Ca, Cl, K, Na**
Organics	Total Organic Carbon, Total Phenols, Volatile Acids
Biological+	Faecal coliforms

Note: *Analyses performed for nutrients and metals are for dissolved rather than total concentrations.
**Selected bores as per stormwater consent 102559
+Faecal coliform added from April 2019 onwards (see Appendix B)

2.2 Background Groundwater Quality

Water quality from the natural **background water up-gradient from the landfill site is not subjected to any consenting conditions**. However, for comparison purposes, both the ANZECC Livestock Drinking Water Trigger Values and the DWSNZ guidelines were used to benchmark the quality of water up-gradient from the landfill site.

Groundwater is collected from two background bores situated hydraulically up-gradient from both the new and old landfills to the southeast of the site (bores G1S and G1D, Site Plan, Appendix A). These two bores were constructed in late 2009 to sample background water quality from the two main hydrogeological units. The first sampling round from these two bores was in July 2010.

The results are presented in Table 2-2. Bore F3 is also included in the background table as it is near the south boundary of the landfill site but further west and is unlikely to be impacted by landfill activities. The full laboratory report is presented in Appendix C.

Table 2-2: Background Monitoring Results for April 2019

Determinant	Units	DWSNZ MAV	ANZECC STOCK	G1S	G1D	F3
Water level	m			14.53	15.85	5.44
pH		7 to 8.5*	6 to 9	**6.4**	7.6	7.3
Suspended Solids	mg/l			*3*	*3*	*2.5*
Phenol	mg/L			n/r	n/r	*0.025*
VFA	mg/L			n/r	n/r	*2.5*
TOC	mg/L			11.0	2.0	1.2
Alkalinity	mg CaCO3/L			40	63	45
Conductivity	mS/m			136	28.6	20.4
COD	mg/L			111	17	15
BOD5-Total	mg/L			*1.5*	*1.5*	*0.5*
Faecal coliforms	col/100ml	NIL	100	*2*	*2*	*2*
Chloride	mg/L	250*		**362**	32.7	21.9
Nitrate-N	mg/L	11.3	90.3	0.30	0.005	0.88
Sulphate	mg/L	250*	1000	60.9	20.2	11.8

Determinant	Units	DWSNZ MAV	ANZECC STOCK	G1S	G1D	F3
Ammonia-N	mg/L	1.17		0.08	0.10	*0.005*
Hardness	mg CaCO3/L	200*		**214**	49	37
Calcium	mg/L		1000	43.0	8.06	5.63
Magnesium	mg/L			25.9	6.97	5.45
Potassium	mg/L			10.1	5.58	4.62
Sodium	mg/L	200*		144	31.7	22.0
D.R. Phosphorus	mg/L			0.022	0.047	0.139
Aluminium	mg/L	0.1*	5	0.014	0.004	*0.001*
Arsenic	mg/L	0.01	0.1	0.001	0.003	0.001
Boron	mg/L	1.4	5	*0.015*	0.04	*0.015*
Cadmium	mg/L	0.004	0.01	*0.0001*	*0.0001*	*0.0001*
Chromium	mg/L	0.05	1	*0.0005*	*0.0005*	*0.0005*
Copper	mg/L	2	0.4#	0.0025	*0.00025*	*0.00025*
Iron	mg/L	0.2*		**14.8**	**0.647**	*0.0025*
Lead	mg/L	0.01	0.1	*0.00025*	*0.00025*	*0.00025*
Manganese	mg/L	0.4		0.269	0.0616	*0.00025*
Nickel	mg/L	0.08	1	0.0010	*0.00025*	*0.00025*
Zinc	mg/L	1.5*	20	0.002	*0.001*	*0.001*

Note: *denotes guideline values for aesthetic determinants (G.V.). **Bold** – denotes an exceedance of the relevant DWSNZ (2008) standard. Underlined – denotes an exceedance of the ANZECC Livestock Drinking Water Trigger Values. All `<' values have been reported as half the detection limit for statistical purposes and are expressed in italics. n/r – not required to be tested during this monitoring period.

The result in Table 2-2 indicate that all background bores (G1S, G1D and F3) are within the ANZECC guidelines. There were some exceedances of the DWSNZ limits during the April 2019 monitoring round:

- pH in bore G1S was below the DWSNZ GV
- Chloride concentration in bore G1S was above the DWSNZ GV
- Hardness concentration in bore G1S was above the DWSNZ GV
- Iron concentration in bores G1S and G1D were above the DWSNZ GV.

2.3 Groundwater Quality Hydraulically Down-Gradient of the New Landfill

Monitoring is carried out within the two main hydrogeological units for bores hydraulically up-gradient of the old landfill and hydraulically down-gradient of the new landfill.

2.3.1 Shallow Aquifer

Bores D1, D2, D3(r), D4, D5, D6 and E1S (Refer to Site Plan, Appendix A) are located hydraulically up-gradient of the old landfill, but down-gradient of the new one. This means they are uninfluenced by potential leaching from the old landfill and can act as a warning system for any leaching from the new landfill. Borehole D4 is likely to show any leaching from the new landfill, while borehole D5 is unlikely to be influenced by either landfill. It is unlikely that leachate from the new landfill will significantly affect groundwater quality due to a leachate collection system which is in place in the new landfill, but these

bores would give early warning of potential problems. Bore D5 is at the south western corner of the site so also indicates shallow background groundwater quality in that part of the site.

The results from the April 2019 monitoring round for these bores are presented in Table 2-3 along with the shallow background bore results (G1S). The results have been compared with the ANZECC Livestock Drinking Water Trigger Values as per the consent conditions. The full laboratory report is included in Appendix C.

There were no exceedances of the ANZECC Livestock Drinking Water Trigger Values during the April 2019 monitoring round and so the **results comply with the resource consent conditions**.

Table 2-3: D-Series and E1S Monitoring Bores for April 2019

Determinant	Units	ANZECC STOCK	D1	D2	D3(r)	D4	D5	D6	E1S	G1S
Water level	m		16.915	21.5	4.874	11	9.93	16.523	11.495	14.53
pH		6 to 9	6.8	6.7	6.9	7.1	7.1	7.0	7.6	6.4
Suspended Solids	mg/l		*3*	10	*3*	*3*	*3*	*3*	*3*	*3*
Phenol	mg/L		*0.025*	*0.025*	*0.025*	*0.025*	*0.025*	*0.025*	*0.025*	n/r
VFA	mg/L		*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	n/r
TOC	mg/L		1.1	11.9	2.9	2.1	1.9	0.9	3.7	11.0
Alkalinity	mg CaCO3/L		114	100	56	53	66	75	61	40
Conductivity	mS/m		52.4	34.9	53.6	27.1	31.2	43.4	26.7	136
COD	mg/L		*7.5*	21	*7.5*	*7.5*	*7.5*	*7.5*	*25.0*	111
BOD5-Total	mg/L		*1.5*	*1.5*	*1.5*	*1.5*	*0.5*	*1.5*	*1.5*	*1.5*
Faecal coliforms	col/100ml	100	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*
Chloride	mg/L		32.4	39.0	22.7	38.5	29.9	26.4	33.5	362
Nitrate-N	mg/L	90.3	14.7	*0.005*	0.21	*0.005*	1.03	21.7	*0.005*	0.30
Sulphate	mg/L	1000	6.27	1.99	8.48	11.2	24.2	4.82	11.2	60.9
Ammonia-N	mg/L		*0.005*	0.50	0.17	0.23	*0.005*	*0.005*	0.18	0.08
Hardness	mg CaCO3/L		135	87	35	48	67	104	52	214
Calcium	mg/L	1000	25.0	14.6	7.17	9.26	11.7	18.5	9.56	43.0
Magnesium	mg/L		17.5	12.3	4.24	5.96	9.03	13.1	6.76	25.9
Potassium	mg/L		9.30	7.32	4.53	4.64	6.55	7.31	5.02	10.1
Sodium	mg/L		41.1	27.6	26.1	29.1	32.1	37.9	28.1	144
D.R. Phosphorus	mg/L		0.092	0.039	0.016	0.021	0.100	0.093	0.054	0.022
Aluminium	mg/L	5	*0.001*	0.014	*0.001*	*0.001*	*0.001*	*0.001*	0.002	0.014
Arsenic	mg/L	0.1	0.001	0.001	0.004	0.002	0.001	0.001	0.002	0.001
Boron	mg/L	5	*0.015*	*0.015*	*0.015*	*0.015*	0.03	0.03	*0.015*	*0.015*
Cadmium	mg/L	0.01	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*
Chromium	mg/L	1	*0.0005*	0.001	*0.0005*	*0.0005*	*0.0005*	*0.0005*	*0.0005*	*0.0005*
Copper	mg/L	0.4#	*0.00025*	*0.00025*	*0.00025*	*0.00025*	0.0005	*0.00025*	*0.00050*	0.0025
Iron	mg/L		*0.0025*	11.9	0.830	0.151	0.043	*0.0025*	3.97	14.8

Determinant	Units	ANZECC STOCK	D1	D2	D3(r)	D4	D5	D6	E1S	G1S
Lead	mg/L	0.1	*0.00025*	*0.00025*	*0.00025*	*0.00025*	*0.00025*	*0.00025*	0.0009	*0.00025*
Manganese	mg/L		*0.00025*	0.338	0.171	0.151	0.0109	*0.00025*	0.209	0.269
Nickel	mg/L	1	*0.00025*	*0.00025*	*0.00025*	*0.00025*	*0.00025*	*0.00025*	*0.00025*	0.0010
Zinc	mg/L	20	*0.001*	0.006	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	0.002

Note: **Bold** – denotes an exceedance of the ANZECC Livestock Drinking Water Trigger Values. All `<' values have been reported as half the detection limit for statistical purposes and are expressed in italics. n/r – not required to be tested during this monitoring period.

2.3.2 Deep Aquifer

Bores E1D, C2DD, E2D and G1D all penetrate the deeper gravel aquifer. Boreholes E2D and C2DD are located to the north-northwest of both the landfills. Borehole E1D is located to the southwest of the old landfill. Borehole G1D is located hydraulically up-gradient from both landfills and is assumed to represent background water quality. Deep groundwater flow is assumed to be towards the northwest and therefore E1D should also not be affected by leachate from the old landfill (refer to Site Plan, Appendix A).

Results for the April 2019 consent monitoring round are presented in Table 2-4. The results have been compared with the DWSNZ as per the discharge consent 6010. The full laboratory report is included in Appendix C.

Table 2-4: Monitoring Bores within the Deep Aquifer for April 2019

Determinant	Units	DWSNZ MAV	E1D	C2DD	E2D	G1D
Water level	m		11.43	2.69	5.81	15.85
pH		7 to 8.5*	8.1	7.4	7.6	7.6
Suspended Solids	mg/l		*3*	27	*3*	*3*
Phenol	mg/L		*0.025*	*0.025*	*0.025*	n/r
VFA	mg/L		*2.5*	*2.5*	*2.5*	n/r
TOC	mg/L		2.8	3.9	1.9	2.0
Alkalinity	mg CaCO3/L		160	186	76	63
Conductivity	mS/m		45.7	50.6	34.9	28.6
COD	mg/L		*7.5*	*7.5*	*7.5*	17
BOD5-Total	mg/L		*2*	*0.5*	*1.5*	*1.5*
Faecal coliforms	col/100ml	NIL	*1.5*	*2*	*2*	*2*
Chloride	mg/L	250*	39.3	37.7	48.4	32.7
Nitrate-N	mg/L	11.3	*0.005*	*0.005*	*0.005*	0.005
Sulphate	mg/L	250*	*0.01*	0.02	10.0	20.2
Ammonia-N	mg/L	1.17	0.23	0.37	0.34	0.10
Hardness	mg CaCO3/L	200*	124	161	75	49
Calcium	mg/L		28.7	41.5	20.0	8.06
Magnesium	mg/L		12.6	13.9	5.97	6.97
Potassium	mg/L		5.03	5.54	5.40	5.58
Sodium	mg/L	200*	35.9	37.5	28.1	31.7
D.R. Phosphorus	mg/L		0.391	0.660	0.148	0.047
Aluminium	mg/L	0.1*	0.001	0.002	*0.001*	0.004
Arsenic	mg/L	0.01	0.007	0.003	0.002	0.003
Boron	mg/L	1.4	*0.015*	0.06	*0.015*	0.04
Cadmium	mg/L	0.004	*0.0001*	*0.0001*	*0.0001*	*0.0001*
Chromium	mg/L	0.05	*0.0005*	*0.0005*	*0.0005*	*0.0005*
Copper	mg/L	2	*0.00025*	*0.00025*	*0.00025*	*0.00025*
Iron	mg/L	0.2*	0.037	0.016	0.052	**0.647**
Lead	mg/L	0.01	*0.00025*	*0.00025*	*0.00025*	*0.00025*
Manganese	mg/L	0.4	0.241	**0.533**	0.230	0.0616
Nickel	mg/L	0.08	*0.00025*	*0.00025*	*0.00025*	*0.00025*
Zinc	mg/L	1.5*	*0.001*	*0.001*	*0.001*	*0.001*

Note: * denotes guideline values for aesthetic determinants (G.V.). **Bold** – denotes an exceedance of the relevant DWSNZ (2008) standard. All `<' values have been reported as half the detection limit for statistical purposes and are expressed in italics. n/r – not required to be tested during this monitoring period.

There was **one exceedance of the resource consent conditions** in samples from the deep gravel aquifer during the April 2019 sampling round:

- Manganese concentration in bore C2DD exceeded the DWSNZ MAV.

2.4 Impact of Old Unlined Landfill on Groundwater Quality

Water sampling is carried out to characterise the groundwater quality in a series of shallow bores situated hydraulically down-gradient from the old unlined landfill. The series B boreholes are located within 50m of the old landfill in a line along its northern edge. The series C boreholes are located further down the hydraulic gradient from the old landfill towards Hokio Beach Road to detect whether leachate is moving off site. Borehole E2S is located northwest of the old landfill to detect any leachate moving directly towards the nearest house down-stream of the site. Bore G2S was installed in late 2009 and is located to the north of the landfill site, hydraulically down-gradient of the old landfill by Hokio Road and the entrance road to the landfill (See Site Plan, Appendix A).

The results from the April 2019 consent monitoring round for these bores are presented in Table 2-5 and have been compared with the ANZECC Livestock Drinking Water Trigger Values as per the discharge consent 6010. The full laboratory report is included in Appendix C.

There was **one exceedance of the resource consent conditions** in samples from the shallow bores during the April 2019 sampling round:

- Faecal coliform levels in bore C2 exceeded the ANZECC Livestock Drinking Water Trigger Values.

Table 2-5: Results from Shallow Boreholes Down-Gradient from the Old Landfill for April 2019

Determinant	Units	ANZECC STOCK	E2S	B1	B2	B3	C1	C2	C2DS	G2S
Water level	m		4.965	1.33	1.61	0.27	0.22	0.44	2.435	2.51
pH		6 to 9	7.5	7.6	7.2	7.0	6.8	7.1	7.0	7.1
Suspended Solids	mg/l		*3*	*3*	*3*	111	21	21	104	*2.5*
Phenol	mg/L		*0.025*	*0.005*	*0.025*	*0.025*	*0.025*	*0.025*	*0.025*	n/r
VFA	mg/L		*2.5*	*2.5*	6	6	*2.5*	*2.5*	*2.5*	n/r
TOC	mg/L		2.7	17.2	25.6	72.7	13.8	47.2	28.8	14.6
Alkalinity	mg CaCO3/L		149	519	688	1290	262	968	662	523
Conductivity	mS/m		44.5	190	186	324	116	296	157	177
COD	mg/L		*7.5*	102	112	624	45	472	73	80
BOD5-Total	mg/L		*1.5*	1	*1.5*	*3*	*1.5*	*3*	*3*	*2.5*
Faecal coliforms	col/100ml	100	*2*	*2*	*2*	*2*	*2*	**1070**	*2*	*2*
Chloride	mg/L		41.8	297	125	213	193	292	110	246
Nitrate-N	mg/L	90.3	*0.005*	1.13	4.03	*0.05*	*0.005*	*0.05*	*0.05*	*0.005*
Sulphate	mg/L	1000	*0.01*	9.84	19.6	*0.01*	18.7	11.4	*0.01*	1.07
Ammonia-N	mg/L		0.27	18.1	55.2	170	0.59	141	1.77	*0.005*
Hardness	mg CaCO3/L		112	470	410	517	261	236	568	312
Calcium	mg/L	1000	25.4	90.8	90.6	105.0	49.4	51.4	132	66.5
Magnesium	mg/L		11.9	59.0	44.6	61.8	33.4	26.0	58.0	35.4
Potassium	mg/L		5.45	23.3	56.9	109	9.88	78.3	14.6	25.0
Sodium	mg/L		40.6	145	132	170	119	262	104	244
D.R. Phosphorus	mg/L		0.567	0.104	0.029	0.043	0.016	0.024	0.070	0.024
Aluminium	mg/L	5	*0.001*	0.004	0.012	0.007	0.005	0.013	*0.001*	*0.001*
Arsenic	mg/L	0.1	0.001	*0.0005*	0.003	0.020	*0.0005*	0.002	0.001	*0.0005*
Boron	mg/L	5	*0.015*	0.89	1.20	1.38	0.45	2.17	0.82	1.27
Cadmium	mg/L	0.01	*0.0001*	0.0003	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*	*0.0001*
Chromium	mg/L	1	*0.0005*	*0.0005*	0.001	0.005	*0.0005*	0.002	*0.0005*	*0.0005*
Copper	mg/L	0.4[#]	*0.00025*	0.0058	0.0018	0.0027	0.0012	0.0005	*0.00025*	0.0080
Iron	mg/L		0.055	0.047	0.264	1.37	0.577	0.994	3.75	0.048

Determinant	Units	ANZECC STOCK	E2S	B1	B2	B3	C1	C2	C2DS	G2S
Lead	mg/L	0.1	*0.00025*	*0.00025*	*0.00025*	*0.00025*	*0.00025*	*0.00025*	*0.00025*	*0.00025*
Manganese	mg/L	??	0.376	11.0	2.72	3.94	0.328	0.0558	2.40	0.133
Nickel	mg/L	1	*0.00025*	0.0033	0.0018	0.0117	0.0008	0.0060	0.0021	0.0043
Zinc	mg/L	20	*0.001*	0.007	0.003	0.003	0.003	0.002	*0.001*	*0.001*

Note: **Bold** – denotes an exceedance of the ANZECC Livestock Drinking Water Trigger Values. All `<' values have been reported as half the detection limit for statistical purposes and are expressed in italics. n/r – not required to be tested during this monitoring period. Cell in beige represent highest value recorded since monitoring began.

2.5 Groundwater Quality Down-Gradient of the Irrigation Area

The F-series boreholes sample from the shallow aquifer down-gradient to the leachate irrigation area. The F1 borehole is in the area where leachate from the new landfill was irrigated during the period 2004 to October 2008. F2 and F3 boreholes are in areas previously considered for future leachate irrigation. All leachate is now pumped to the Levin Wastewater Treatment Plant. The shallow groundwater at the irrigation area was also compared to that from the background bore (G1S).

The results from the F series boreholes are presented in Table 2-6 and have been compared with the ANZECC Livestock Drinking Water Trigger Values as per the discharge consent 6010. The full laboratory report is included in Appendix C.

Table 2-6: Results from the Irrigation Area for April 2019

Determinant	Units	ANZECC STOCK	F1	F2	F3	G1S
Water level	m		8.21	2.995	5.44	14.53
pH		6 to 9	7.6	7.0	7.3	6.4
Suspended Solids	mg/l		*2.5*	*2.5*	*2.5*	*3*
Phenol	mg/L		*0.025*	*0.025*	*0.025*	n/r
VFA	mg/L		*2.5*	*2.5*	*2.5*	n/r
TOC	mg/L		6.2	1.4	1.2	11.0
Alkalinity	mg CaCO3/L		144	52	45	40
Conductivity	mS/m		47.2	22.3	20.4	136
COD	mg/L		18	*7.5*	15	111
BOD5-Total	mg/L		*0.5*	*0.5*	*0.5*	*1.5*
Faecal coliforms	col/100ml	100	*2*	*2*	*2*	*2*
Chloride	mg/L		48.2	23.7	21.9	362
Nitrate-N	mg/L	90.3	0.78	0.57	0.88	0.30
Sulphate	mg/L	1000	2.90	10.1	11.8	60.9
Ammonia-N	mg/L		*0.005*	*0.005*	*0.005*	0.08
Hardness	mg CaCO3/L		121	39	37	214
Calcium	mg/L	1000	17.4	6.32	5.63	43.0
Magnesium	mg/L		18.8	5.55	5.45	25.9
Potassium	mg/L		7.78	4.47	4.62	10.1
Sodium	mg/L		39.5	25.6	22.0	144
D.R. Phosphorus	mg/L		0.171	0.146	0.139	0.022
Aluminium	mg/L	5	*0.001*	*0.001*	*0.001*	0.014
Arsenic	mg/L	0.1	0.002	0.001	0.001	0.001
Boron	mg/L	5	0.03	0.03	*0.015*	*0.015*
Cadmium	mg/L	0.01	*0.0001*	*0.0001*	*0.0001*	*0.0001*
Chromium	mg/L	1	*0.0005*	*0.0005*	*0.0005*	*0.0005*
Copper	mg/L	0.4#	0.0021	0.0009	*0.00025*	0.0025
Iron	mg/L		*0.0025*	0.014	*0.0025*	14.8
Lead	mg/L	0.1	*0.00025*	*0.00025*	*0.00025*	*0.00025*
Manganese	mg/L		0.0040	0.0088	*0.00025*	0.269
Nickel	mg/L	1	0.0006	*0.00025*	*0.00025*	0.0010
Zinc	mg/L	20	*0.001*	*0.001*	*0.001*	0.002

Note: **Bold** – denotes an exceedance of the ANZECC Livestock Drinking Water Trigger Values. All `<' values have been reported as half the detection limit for statistical purposes and are expressed in italics. n/r – not required to be tested during this monitoring period.

There were no exceedances of the ANZECC Livestock Drinking Water Trigger Values during the April 2019 monitoring round and so the **results comply with the resource consent conditions**.

2.6 Leachate Effluent Results

The sampling result for leachate effluent is **not subjected to any water quality consenting conditions**. However, for comparison purposes, typical leachate characteristics for landfills published by the Waste Management Institute New Zealand (*Technical Guidelines for Disposal to Land*, August 2018, WasteMINZ) have been compared against the leachate quality (Table 2-7). The full laboratory report is included in Appendix C.

Table 2-7: Results from Leachate Effluent for April 2019

Determinant	Units	Typical Leachate Characteristics*	Leachate
		(range)	Effluent
pH		5.9 - 8.5	8.0
Suspended Solids	mg/l		136
Phenol	mg/L		*0.025*
VFA	mg/L		45
TOC	mg/L	17.2 - 822	820
Alkalinity	mg CaCO3/L	300 – 11500*	7260
Conductivity	mS/m	264 - 27900	1.7
COD	mg/L	84 - 5090	3680
BOD5-Total	mg/L	12 - 3867	146
Faecal coliforms	col/100ml		1000
Chloride	mg/L	100 – 5000*	1290
Nitrate-N	mg/L	0.1 - 50*	*0.05*
Sulphate	mg/L	1 - 780	137
Ammonia-N	mg/L	30 – 3000*	1620
Hardness	mg CaCO3/L		607
Calcium	mg/L		119
Magnesium	mg/L	50 - 1150*	74.7
Potassium	mg/L	10 - 2500*	750
Sodium	mg/L	50 - 4000*	1140
D.R. Phosphorus	mg/L		11.9
Aluminium	mg/L		0.683
Arsenic	mg/L	45 - 2584	0.399
Boron	mg/L		8.03
Cadmium	mg/L	0.5 - 140*	0.0002
Chromium	mg/L	0.006 – 0.191	0.628
Copper	mg/L	0.005 - 50.4	0.0080
Iron	mg/L	1.6 – 220	6.18
Lead	mg/L	0.001 - 0.42	0.0020
Manganese	mg/L	0.03 - 45*	1.11
Nickel	mg/L	20 - 2050*	0.126

Determinant	Units	Typical Leachate Characteristics*	Leachate
Zinc	mg/L	0.009-24.2	0.049

Note: Data taken from Table 5-5, p82 for Class 1-type landfills, Technical Guidelines for Disposal to Land, WasteMINZ August 2018. *Data taken from Table 5-4, p81 of the same guideline.

The April 2019 monitoring round results for the leachate effluent were with the typical leachate composition range for Class 1 landfills published in the WasteMINZ 2018 Technical Guidelines for Disposal to Land, except for chromium which is high.

2.7 Tatana's Property Drain

Four sampling points were selected to represent upstream (SW1), midstream (SW2 and SW3) and downstream (SW4) flows at the Tatana property (see Site Plan in Appendix A). Results from the April 2019 sampling round are presented in Table 2-8 and have been compared with the ANZECC Livestock Drinking Water Trigger Values because the water is most reflective of shallow groundwater. **Results from the Tatana's Property drain sampling points are presently not subjected to any consenting conditions.**

Table 2-8: Tatana's Drain Results for April 2019

Determinant	Units	ANZECC STOCK	SW1	SW2	SW3	SW4
pH		6 to 9	6.9	74.0	7.3	7.3
Faecal coliforms	col/100ml	100	**23000**	**2500**	**2000**	**4800**
Total Suspended Solids	mg/L		225	49	6	21
Conductivity	mS/m		283	168	93.2	84.6
COD	mg/L		748	230	271	138
Total Kjeldahl Nitrogen	mg/L		91.9	23.3	7.2	9.6
BOD5-Total	mg/L		64	23	*3*	11
Chloride	mg/L		463	281	172	98.4
Nitrite-N	mg/L		0.20	0.12	0.07	0.10
Nitrate-N	mg/L	90.3	0.65	1.65	0.57	0.21
Ammonia-N	mg/L		82.0	18.2	4.2	6.7
Total-N	mg/L		88.9	24.8	7.49	10.3
Iron	mg/L		0.89	1.05	0.57	0.43
Manganese	mg/L		0.409	0.373	0.0295	0.639

Note: **Bold** – denotes an exceedance of the ANZECC Livestock Drinking Water Trigger Values. All `<' values have been reported as half the detection limit for statistical purposes and are expressed in italics.

For comparison purposes, faecal coliform levels at all four sampling locations exceeded the ANZECC Livestock Drinking Water Trigger Values.

2.8 Hokio Stream

Stream monitoring is carried out by grab sampling at sites HS1, HS2 and HS3 (refer to Appendix A) to investigate if groundwater containing leachate is having an adverse environmental impact on the stream. Site HS1 is situated up-stream of the old landfill, HS2 is situated alongside the old landfill and up-stream of the Tatana's Property Drain discharge, and HS3 is located approximately 50m down-stream of the landfill site property boundary and the Tatana's Property Drain discharge. Indicator parameter analysis, as required in the monitoring schedule, is done every six months.

Results from the April 2019 sampling round are presented in Table 2-9 and have been compared with the ANZECC Livestock Drinking Water Trigger Values as per the discharge consent 6010.

Table 2-9: Hokio Stream Results for April 2019

Determinant	Units	ANZECC STOCK	HS1	HS2	HS3
pH		6 to 9	8.2	7.9	7.9
Suspended Solids	mg/l		70	66	67
Phenol	mg/L		*0.025*	*0.025*	*0.025*
VFA	mg/L		6	6	9
TOC	mg/L		9.7	9.5	9.0
Alkalinity	mg CaCO3/L		77	79	78
Conductivity	mS/m		26.4	28.1	27.8
COD	mg/L		77	86	107
BOD5-Total	mg/L		7	8	9
Faecal coliforms	col/100ml	100	**550**	**450**	**310**
Chloride	mg/L		27.4	28.8	29.1
Nitrate-N	mg/L	90.3	*0.005*	*0.005*	*0.005*
Sulphate	mg/L	1000	8.5	8.42	8.53
Ammonia-N	mg/L		*0.005*	0.01	*0.005*
Hardness	mg CaCO3/L		72	75	72
Calcium	mg/L	1000	15.0	15.8	15.4
Magnesium	mg/L		8.30	8.58	8.23
Potassium	mg/L		3.17	3.40	3.53
Sodium	mg/L		24.5	25.4	24.8
D.R. Phosphorus	mg/L		0.275	0.266	0.268
Aluminium	mg/L	5	0.005	0.003	0.012
Arsenic	mg/L	0.1	0.003	0.003	0.003
Boron	mg/L	5	0.06	0.06	0.06
Cadmium	mg/L	0.01	*0.0001*	*0.0001*	*0.0001*
Chromium	mg/L	1	*0.0005*	*0.0005*	*0.0005*
Copper	mg/L	0.4[#]	*0.00025*	*0.00025*	*0.00025*
Iron	mg/L		0.107	0.051	0.044
Lead	mg/L	0.1	*0.00025*	*0.00025*	*0.00025*
Manganese	mg/L		0.0915	0.105	0.0921
Nickel	mg/L	1	*0.00025*	*0.00025*	*0.00025*
Zinc	mg/L	20	*0.001*	*0.001*	*0.001*

Note: **Bold** – denotes an exceedance of the ANZECC Livestock Drinking Water Trigger Values. All `<' values have been reported as half the detection limit for statistical purposes and are expressed in italics.

There were **three exceedances of the resource consent conditions** in samples from the Hokio Stream during the April 2019 sampling round:

- Faecal coliform levels in HS1, HS2 and HS3 exceeded the ANZECC Livestock Drinking Water Trigger Values.

3. Discussion

3.1 Sampling Quality Control and Assurance

It was noted that samples were collected progressively over a 4-week period between 3 April and 1 May 2019. Whilst it is reasonable to understand that the landfill site is a large area and sample collection may require multiple trips to complete, a sampling interval that is too long may prevent realistic comparison between samples. It is recommended that sampling be completed within not more than a one-week period from the collection of the first sample.

3.2 Background Groundwater Quality

Water quality from the natural background water up-gradient from the landfill site is not subjected to any consenting conditions.

Results since 2010 from the background bores indicate that low pH values are representative of background water quality in the shallow sand aquifer (G1S). The deeper gravel aquifer (G1D) has pH levels that are slightly higher but occasionally dip below the DWSNZ lower guideline of 7.

Chloride concentrations have also fluctuated considerably at the G1S bore and are occasionally above the DWSNZ GV. During the April 2019 sampling round, chloride concentration at G1S was 362mg/L, higher than the DWSNZ GV of 250 mg/L but within the historical result range recorded at this bore.

Hardness concentration at G1S (214 mg CaCO3/L) was above the DWSNZ GV but consistent with historical results and representative of ground water quality in the area.

Iron concentrations have fluctuated considerably at both the G1S and G1D bores since monitoring began and is occasionally above the DWSNZ GV. During the April 2019 sampling round, iron concentrations at G1S and G1D were 14.8mg/L and 0.65mg/L respectively, higher than the DWSNZ GV of 0.2mg/L but within the historical result ranges recorded at these bores. Elevated iron concentrations in groundwater is likely to be related to hydrogeological conditions found at the site and are common in groundwater in this area.

The recent monitoring result suggests that the background groundwater is being impacted by local ground conditions and/or activities up-gradient of the landfill.

3.3 Shallow Aquifer Groundwater Quality

3.3.1 Hydraulically Up-gradient from the Old landfill

Sampling results from the April 2019 monitoring round show that water quality from the shallow monitoring bores hydraulically up-gradient from the old landfill complies with the discharge consent conditions

In general, historical trends of leachate indicators chloride, boron and ammoniacal nitrogen in the D-series and E1S bores are like the concentrations in the background bore G1S. However, nitrate nitrogen is elevated in bores D1 and D6 when compared to background (G1S) as shown in

Figure 3-1 though it has appeared to be slightly decreasing in recent sampling rounds. These bores are both located down gradient of the new landfill, with bore D1 located hydraulically up-gradient of the leachate effluent pond and bore D6 located down gradient of the leachate pond. Other leachate indicators such as boron, chloride and ammoniacal nitrogen are all consistent with background concentrations and historical record.

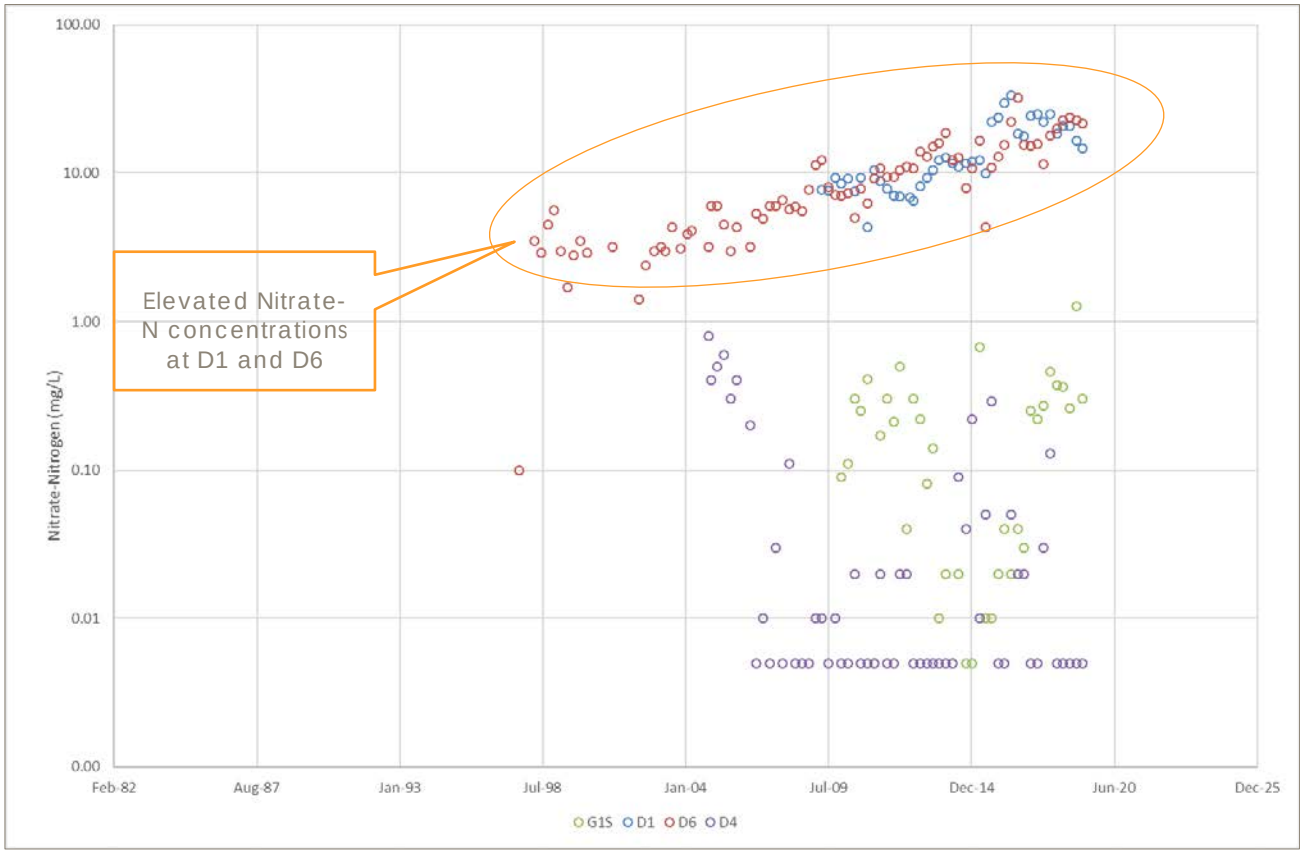


Figure 3-1: Nitrate Nitrogen Concentration in the D-Series Bores

Ammoniacal nitrogen is not elevated in either of these bores; however, conductivity also shows an increasing trend in recent sampling rounds. In previous quarterly reports, it was recommended that further investigations be carried out to identify the possible cause (or causes) of the elevated levels of nitrate nitrogen and conductivity in bores D1 and D6.

Such investigations should include for regular monitoring of groundwater levels to be undertaken in all the bores monitored for the 2019-2020 monitoring period so that groundwater flow and the depth of the unsaturated zone can be assessed. This will enable more conclusions to be drawn as to the source of the elevated nitrate nitrogen and conductivity values.

3.3.2 Irrigation area

Sampling results from all shallow bores located hydraulically down-gradient of the irrigation area (F series bores) is consistent with historical results and complies with the discharge consent conditions.

Historical trends of leachate indicators chloride, boron and ammoniacal nitrogen in the F-series bores are generally stable and did not show any indication of an increasing trend.

3.3.3 Hydraulically Down-gradient from the Old landfill

During the April 2019 sampling round, there was one exceedance of the resource consent conditions in samples from the shallow bores where faecal coliform levels in bore C2 (1070 col/100ml) exceeded the ANZECC Livestock Drinking Water Trigger Values. This sampling result is out of the ordinary since coliform counts at C2 have consistently complied with consenting conditions since1996. C2 is in close proximity to the Tatana Drain and monitoring point SW1 which had a very elevated faecal count of 23,000 col/100ml. The groundwater level at C2 is very close to the surface and so it is possible that the results in C2 are being affected by the surface water around SW1. Boron concentration at C2 recorded the highest concentration (2.17mg/L) since monitoring began in 1996. Further review of the results during the next monitoring round is recommended.

Bores C1 and G2S are located down gradient of the old landfill to the east. These bores have consistently recorded low concentrations of ammoniacal nitrogen, with G2S often recording concentrations below detection limit. These bores are likely to be located beyond the eastern edge of the leachate plume.

Bores B1, B2, B3 and C2 all appear to be located and screened within the leachate plume and have significantly elevated concentrations of ammoniacal nitrogen. All four bores are plotted in Figure 3-2 below, along with the background bore, G1S. It is noted that the concentration of ammoniacal nitrogen in bore C2 has been elevated since 2009. It is possible that the leachate plume has shifted resulting in the different spatial pattern from five years ago. The regular monitoring of the groundwater levels in the bores over the 2019-2020 monitoring period will allow further conclusions to be drawn in the next annual report.

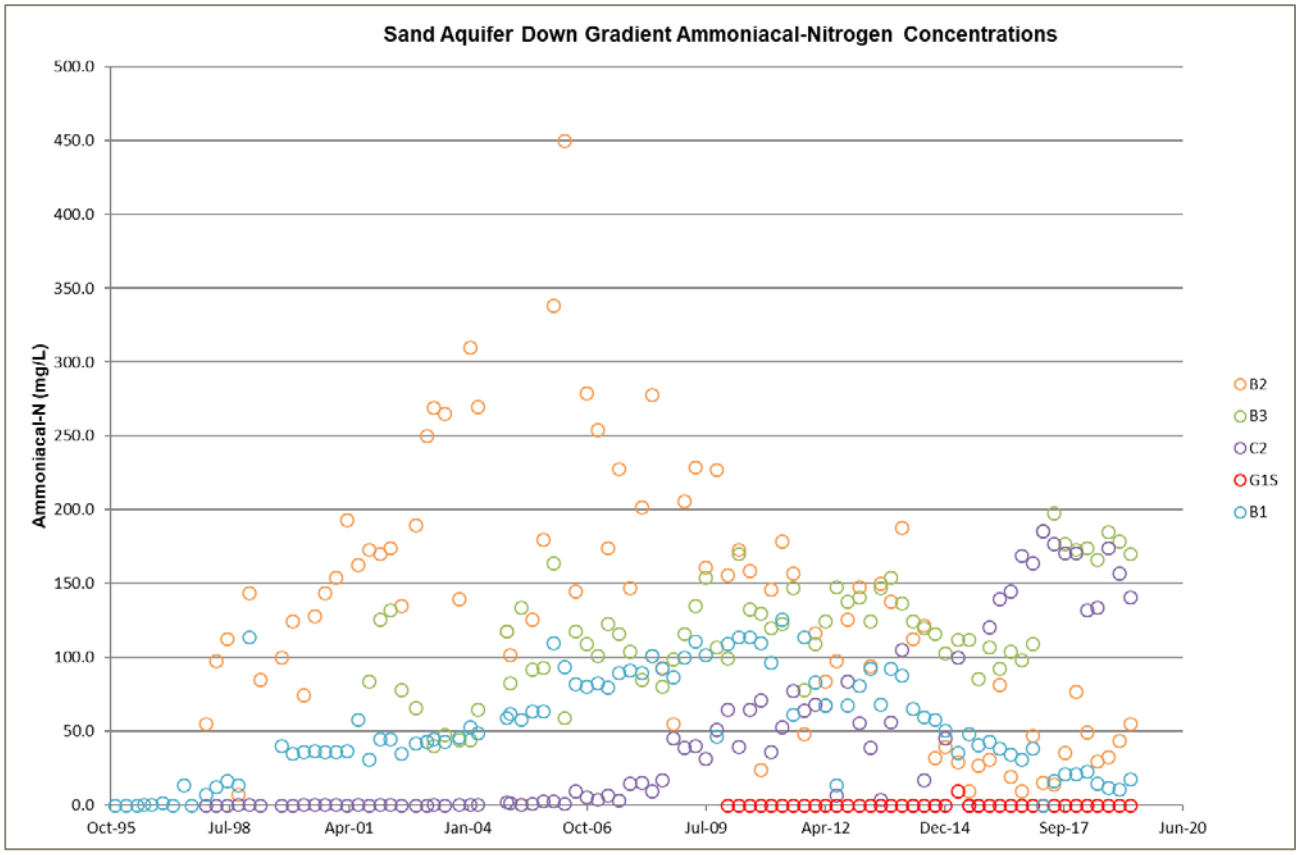


Figure 3-2: Shallow Bores Screened in the Leachate Plume

Given the apparent shift in the leachate plume, it is appropriate to assess the overall trend for all bores located and screened in the leachate plume. The overall trend indicates that the concentration of ammoniacal nitrogen have been declining over time since 2006, except for bores B3 and C2. Other key leachate indicators, boron, conductivity and chloride are also all elevated within the bores that are located and screened in the leachate plume as would be expected.

The leachate plume appears to have a confined radius northward and is not extending to the north-west and the north-east. The estimate of plume width is 300-500m, which has been used since 2014.

3.4 Deep Aquifer Groundwater Quality

There was one exceedance to the resource consent condition for the deep gravel aquifer during the April 2019 sampling round where the manganese concentration at C2DD exceeded the DWSNZ MAV. Manganese concentration at C2DD (0.533mg/L) was however consistent with historical results and representative of ground water quality in the area.

3.5 Leachate Effluent

Monitoring results from the leachate effluent samples are not required to meet either the ANZECC or DWSNZ standards. Results from the April 2019 monitoring round were all within the typical leachate composition range for Class 1 landfills published in the WasteMINZ 2018 Technical Guidelines for Disposal to Land, except for chromium, which is high in concentration, and has been elevated since 2015.

3.6 Tatana's Property Drain

Monitoring results from the Tatana's Property drain samples are not required to meet either the ANZECC or DWSNZ standards.

Historical results indicate concentrations of COD, TKN, chloride, ammonia-N, nitrate and Total-N to fluctuate significantly, particularly at the upstream end of Tatana's drain. This implies localised impact upstream of the drain, possibly from farming activities, but also from the shallow groundwater.

As requested by HDC, the faecal coliform test was added to the analytical parameter list from the April 2019 sampling period onwards. During the April 2019 sampling period faecal coliform counts at all four sampling locations exceeded the ANZECC Livestock Drinking Water Trigger Values.

The results obtained from samples where the Tatana's drain discharges into Hokio Stream did not show any impact from the discharge of the drain.

3.7 Hokio Stream

There were three exceedances to the resource consent condition for the Hokio Stream during the April 2019 sampling round where the HS1, Hs2 and HS3 all exceeded ANZECC Livestock Drinking Water Trigger Values.

Site HS1 (faecal coliform 550 col/100ml) is situated up-stream of the old landfill, HS2 (450 col/100ml) is situated alongside the old landfill and up-stream of the Tatana's Property Drain discharge, and HS3 (310 col/100ml) is located approximately 50m down-stream of the landfill site property boundary and the Tatana's Property Drain discharge. The coliform counts at HS1, HS2 and HS3 indicate upstream activities impacting the water quality at Hokio Stream.

Current observations indicate that leachate from the landfill is not having an adverse environmental effect on the Hokio Stream.

3.8 Consent Compliance

Discharge permit 6010 states that quarterly and annual monitoring results should comply with the ANZECC Livestock Drinking Water Trigger Values in the shallow groundwater aquifer (sand aquifer) and surface water bodies. Samples from the deep groundwater (gravel aquifer) should comply with DWSNZ. Should any parameters be more than these guidelines, the permit holder shall report to the Regional Council as soon as practicable on the significance of the results and, where the change can be attributed to landfill leachate, consult with the Regional Council to determine if further investigation or remedial measures are required.

Shallow sand aquifer

There was **one exceedance** of the resource consent conditions during the April 2019 sampling round:

- Faecal coliform levels in bore C2 exceeded the ANZECC Livestock Drinking Water Trigger Values.

Deeper gravel aquifer

There was **one exceedance** of the resource consent conditions in samples from the deep gravel aquifer during the April 2019 sampling round:

- Manganese concentration in bore C2DD exceeded the DWSNZ MAV.

Hokio stream

There were **three exceedances** of the resource consent conditions during the April 2019 sampling round monitoring the Hokio Stream:

- Faecal coliform levels in HS1, HS2 and HS3 exceeded the ANZECC Livestock Drinking Water Trigger Values.

4. Conclusions

Current monitoring results suggests that the background groundwater is being impacted by local ground conditions, the old unlined landfill and/or activities up-gradient of the landfill.

During the April 2019 monitoring period there were five exceedances of the resource consent conditions. The deep-water bore C2DD located immediately down-gradient hydraulically of the old unlined landfill showed a manganese concentration marginally above the DWSNZ MAV.

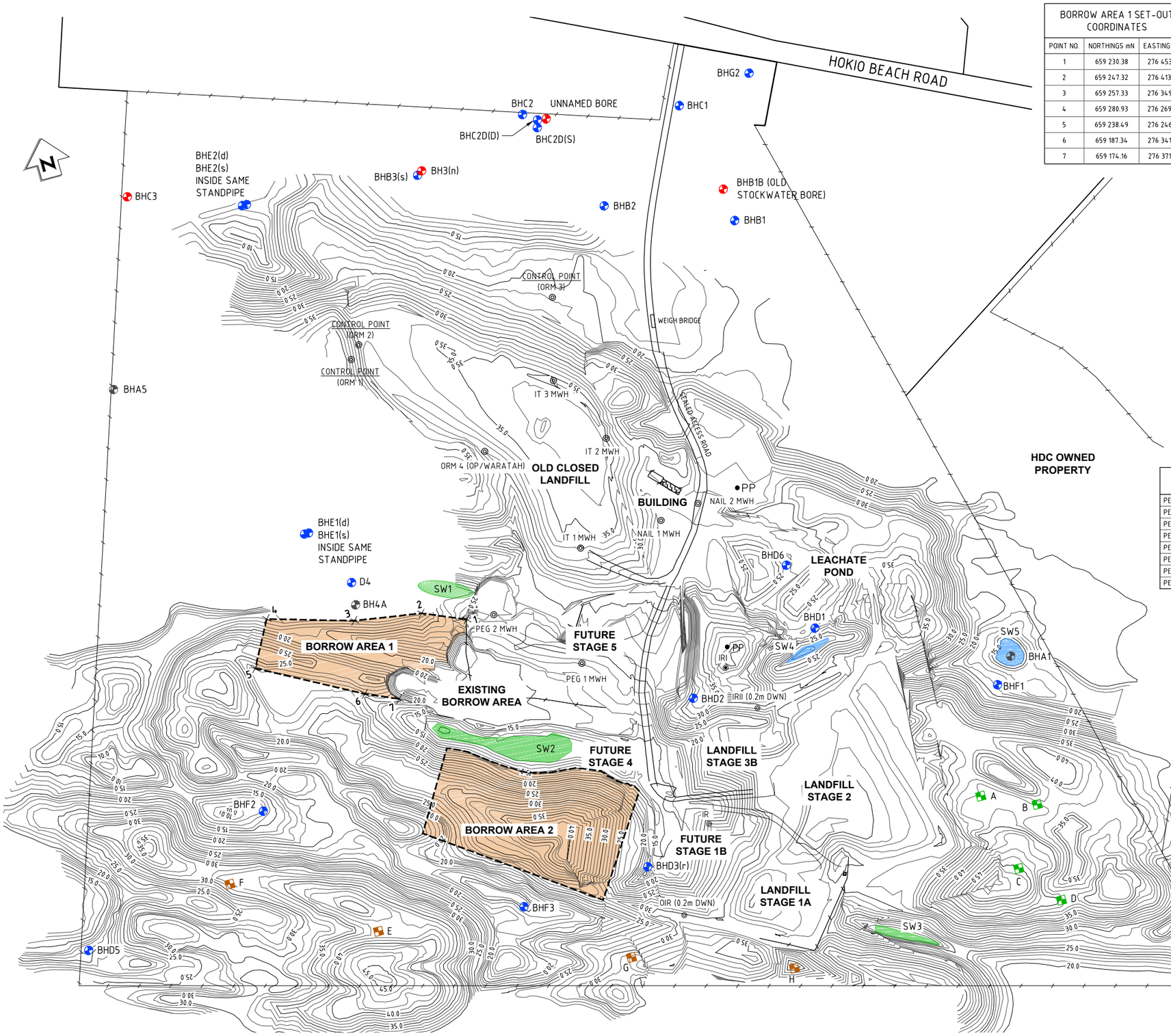
The concentration of manganese at this bore is consistent with historical results and is representative of ground water quality in the area. There were three exceedances from surface monitoring at the Hokio Stream; faecal coliform upstream of the old landfill (HS1), mid-stream (HS2) and downstream (HS3) of the old landfill were all above the ANZECC Livestock Drinking Water Trigger Values. Exceedances in faecal coliform may be related to activities upstream of the landfill.

Faecal coliform levels in bore C2 (1070 col/100ml) exceeded the ANZECC Livestock Drinking Water Trigger Values and is unusually high given that coliform counts at C2 have consistently complied with consenting conditions since1996. C2, however, is in close proximity to the Tatana Drain and monitoring location SW1 which had a very elevated coliform count. The groundwater depth at C2 is very close to the surface and it is possible that surface water from Tatana property has impacted the groundwater at C2. It is recommended faecal coliform counts at this bore be revisited during the July 2019 sampling round.

Bore C2 had elevated concentration of boron, which was also at its highest recorded level. It is recommended boron concentration at this bore be revisited during the July 2019 sampling round.

Appendices

Appendix A Site Plans



DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

BORROW AREA 1 SET-OUT COORDINATES		
POINT NO.	NORTHINGS mN	EASTINGS mE
1	659 230.38	276 453.28
2	659 247.32	276 413.49
3	659 257.33	276 349.62
4	659 280.93	276 269.42
5	659 238.49	276 246.50
6	659 187.34	276 341.04
7	659 174.16	276 371.33

BORE LOCATIONS AND DETAILS						
BORE HOLE NO	NORTHING mN	EASTING mE	R.L. (m)	DEPTH OF WELL (m)	PIEZOMETER DIAMETER (mm)	FUNCTION
A1	659 060.15	276 944.89	12.95			SHALLOW AQUIFER
A2 (DESTROYED)						SHALLOW AQUIFER
A3 (DESTROYED)						SHALLOW AQUIFER
A4	659 271.67	276 354.72	10.10			SHALLOW AQUIFER
A5	659 530.47	276 185.91	9.62			SHALLOW AQUIFER
B1	659 561.81	276 797.35	9.04	4.3	40	SHALLOW AQUIFER
B1B (STOCK BORE)	659 530.08	276 799.91	9.28	10		
B2	659 576.32	276 683.50	9.42	3.5	50	SHALLOW AQUIFER
B3(s)	659 651.19	276 519.52	7.76	2.83	50	SHALLOW AQUIFER
B3(n)	659 654.26	276 524.38	7.49	2.33	32	DEEP AQUIFER
C1	659 649.64	276 777.83	7.47	3.60	50	SHALLOW AQUIFER
C2	659 680.80	276 631.22	7.50	2.81	32	SHALLOW AQUIFER
C2D(s)	659 671.19	276 641.63	10.13	12.88	32	SHALLOW AQUIFER
C2D(d)	659 671.19	276 641.63	10.11	18.85	32	DEEP AQUIFER
C3	659 704.29	276.246.89	7.22	2.8	32	SHALLOW AQUIFER
D1	659 134.97	276 771.65	27.46	23.69	50	EARLY DETECTION
D2	659 101.02	276 642.06	32.12	29.46	50	EARLY DETECTION
D3-DESTROYED						
D4	659 293.20	276 022.4	20.50	17.0		SHALLOW AQUIFER
D5	659 020.80	276 356.60	17.8	18		SHALLOW AQUIFER BACKGROUND
D6	659 200.31	276 761.08	26.41	16.07	50	EARLY DETECTION
E1(d)	659 349.54	276 329.48	20.91	37.80	32	SHALLOW AQUIFER
E1(s)	659 349.54	276 329.48	20.91	20.05	32	DEEP AQUIFER
E2(s)	659 667.30	276 354.69	13.15	15.24	32	SHALLOW AQUIFER
E2(d)	659 667.30	276 354.69	13.15	28.66	32	DEEP AQUIFER
F1	659 037.10	276 925.50	18.90	15.0	50	SHALLOW AQUIFER LEACHATE IRRIGATION
F2	659 105.00	276 218.00	13.50	10.2	50	SHALLOW AQUIFER LEACHATE IRRIGATION
F3	658 951.7	276 434.0	16.70	10.5	50	SHALLOW AQUIFER LEACHATE IRRIGATION
G1(s) [4]	658 786	277 046	24	15	50	SHALLOW AQUIFER BACKGROUND
G1(d) [4]	658 786	277 046	24	31.5	50	DEEP AQUIFER BACKGROUND
G2 [4]	659 673	276 835	8	4	50	SHALLOW AQUIFER
D3(r) REINSTATED [4]	658 953	276 552	18	10	50	EARLY DETECTION
COORDINATES ARE IN TERMS OF NEW ZEALAND GEODETIC DATUM 1949: WANGANUI CIRCUIT						

SOIL MONITORING LOCATIONS	CO-ORDINATES		LEVEL (m)
	NORTHING mN	EASTING mE	
PEG A	658 938.80	276 882.30	39.2
PEG B	658 917.00	276 932.10	39.5
PEG C	658 862.70	276 899.00	46.1
PEG D	658 822.90	276 930.40	40.4
PEG E	658 965.50	276 294.00	36.6
PEG F	659 046.20	276 169.10	32.9
PEG G	658 878.00	276 520.20	32.6
PEG H	658 827.40	276 667.60	23.5

COORDINATES OF SURVEY CONTROL MARKS			
PT	NORTHING mN	EASTING mE	RL
ORM 1	659 498.38	276 412.21	38.94
ORM 2	659 510.09	276 422.72	34.98
ORM 3	659 505.14	276 612.86	21.10
ORM 4(OP/W)	659 380.16	276 511.94	30.92
MWH NAIL 1	659 272.67	276 656.87	27.61
MWH NAIL 2	659 278.98	276 695.22	28.40
MWH IT 1	659 267.33	276 576.02	30.03
MWH IT	659 361.94	276 627.00	33.70
MWH IT 3	659 428.24	276 593.00	32.74
MWH PEG 1	659 160.94	276 548.30	32.99
MWH PEG 2	659 227.86	276 479.35	30.49

NOTES:

1. LEVELS ARE TOP OF STANDPIPE. WHERE THERE IS NO STANDPIPE, LEVELS ARE TOP OF PVC PIPE.
2. BHA2, BHA3 AND BHD3 HAVE BEEN LOST DUE TO SITE WORKS.
3. "A" SERIES BORE HOLES ARE AUGER HOLES ONLY AND MAY NOT BE ABLE TO BE LOCATED.
4. BORES INSTALLED IN AUG 2009. DETAILS ARE APPROXIMATE.
5. CONTOUR INTERVALS: 5m MAJOR, 1m MINOR

LEGEND

- MONITOR BORES CURRENTLY SAMPLED (FROM JAN 2010)
- BORES NOT SAMPLED
- SHALLOW HANDAUGER STANDPIPES NOT ABLE TO BE LOCATED
- SOIL SAMPLING LOCATION PEG - MONITORED
- SOIL SAMPLING LOCATION PEG - NOT MONITORED
- EXISTING STORMWATER SOAKAGE AREA
- PROPOSED STORMWATER SOAKAGE AREA
- PROPOSED BORROW AREAS

FOR INFORMATION ONLY

REV	REVISIONS	DRN	CHK	APP	DATE
A	FOR INFORMATION	BCJ	PSL	PEL	17.10.17

SURVEYED	MWH	
DESIGNED	N/A	-
DRAWN	Brent James	10.2017
CAD REVIEW	Brent James	16.10.17
DESIGN CHECK	Matthew Chung	16.10.17
DESIGN REVIEW	Phil Landmark	16.10.17
APPROVED	Phil Landmark	16.10.17
PROF REGISTRATION:		

MWH

Client:

HOROWHENUA DISTRICT COUNCIL
LEVIN LANDFILL

MONITORING BORES, SOIL SAMPLING LOCATIONS & BORROW AREAS
SITE PLAN, LOCATION AND DETAILS

Status Stamp: FOR INFORMATION ONLY
Date Stamp: 17.10.17
Scales:
Drawing No.: 80500724-17-001-G001
Rev.: A

pw:\\asiavpwint04.mwhglobal.com:AP_PROJECTS\Documents\New Zealand Clients\Horowhenua District Council\80500724 - Levin Landfill Volumes\2017\General\80500724-17-001-G001

Hokio Stream (“HS”) and Tatana’s Property Drain (“SW”) Monitoring Locations

Appendix B Sampling Schedule

LEVIN LANDFILL - SUMMARY OF SURFACE AND GROUNDWATER MONITORING REQUIREMENTS (July 2017 - April 2019).

(The testing regime is based on Consent Conditions following the May 2010 Resource Consent Review. It takes no account of changes proposed for the 2016/2017 Review, or of the additional testing done by HDC on adjoining Tatana Property).

Reports Due		Sampling Month	Table A (Condition 3, DP 6010)	Table B (Condition 3, DP 6010)																	Table C (Condition 3, DP 6010)							
			Deep Aquifer Bores*	Shallow Aquifer Bores*																	Irrigation Bores*				Hokio Stream			Leachate Pond
Annual	Quarterly		C2dd	E1d	E2d	G1d	C1	C2	C2ds	D4	B1	B2	B3s	E1s	E2s	D1#	D2#	D3r#	D6#	G1s	G2s	D5@	F1@	F2@	F3@	HS1	HS2	HS3	
Aug-17	**Aug-17**	**Jul-17**	I	I + SW	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	I	I	I	I + SW	I	I	I	I
	Nov-17	**Oct-17**	C	C	C	C	C	C + A	C + A	C	C + A	C + A	C + A	C	C	C	C	C	C	C	C + A	C	C	C	C	C	C	C	C + A
	Feb-18	**Jan-18**	I	I + SW	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	I	I	I	I + SW	I	I	I	I
	May-18	**Apr-18**	I	I + SW	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	I	I	I	I + SW	C	C	C	C
Aug-18	**Aug-18**	**Jul-18**	I	I + SW	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	I	I	I	I + SW	I	I	I	I
	Nov-18	**Oct-18**	C	C	C	C	C	C + A	C + A	C	C + A	C + A	C + A	C	C	C	C	C	C	C	C + A	C	C	C	C	C	C	C	C + A
	Feb-19	**Jan-19**	I	I + SW	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	I	I	I	I + SW	I	I	I	I
	May-19	**Apr-19**	I	I + SW	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	I	I	I	I + SW	C	C	C	C

Measure groundwater level and sample all bores for CH_4, CO_2 and O_2 each time that groundwater is sampled (Condition 3a of DP 6011)

Notes:

C	Comprehensive list see below
I	Indicator list see below
A	Additional VOC and SVOC analysis
SW	Add sodium and iron analysis (for stormwater consent 102559)
FC	Add faecal coliform test
*	Additional parameters (pesticides and semi-VOC) to be analysed for if any leachate indicator parameters show leachate influence over 3 consecutive sampling rounds (Table B, Condition 3 of DP 6010).
@	If irrigation re-commences then the annual sampling is to change from comprehensive + 3 times indicator to bi-annual comprehensive + indicator (Clause D of Condition 3, DP 6010) .

A reduction in sampling frequency at any **groundwater monitoring point** is conditional on (Clauses A - D of Condition 3, DP 6010):

A. Completion of the initial monitoring program;
B. Good consistency of groundwater sample analysis results, or a clearly identified reason for inconsistent results that excludes the contaminant source being landfill operations, stored waste or leachate;
C. No decline in groundwater quality as determined from indicator parameter trends over a period of four consecutive sampling rounds;
D. If a well being monitored on a conditional frequency becomes non-compliant with condition C, the monitoring frequency for that well should return to the initial monitoring frequency until conditions B and C are again being fulfilled.

If site management planning indicates any **early detection monitoring well** is likely to become buried or otherwise destroyed within the following year as a result of normal operations (Clauses E - F, Condition 3, DP 6010):

E. This must be communicated to the regional council;
F. A replacement well is to be constructed in a position agreed upon with Horizons Regional Council
G. The replacement well should be installed in a position suitable to act as a early detection well and be classed as an early detection well;
H. The replacement well should be constructed as a nested well (or two separate wells) with screens positioned in both shallow and deep aquifers.

A reduction in sampling frequency at the **Hokio Stream monitoring locations** is conditional on (Clauses I - L, Condition 3 of DP 6010):

I. Completion of the initial 2 year monitoring program;
J. Good consistency of water sample analysis results, or a clearly identified reason for inconsistent results that excludes the contaminant source being landfill operations, stored waste or leachate;
K. No decline in water quality between monitoring sites HS1 and HS3 as determined from indicator parameter trends over a period of four consecutive sampling rounds;
L. If the Hokio Stream monitoring locations are being sampled on a conditional frequency and become non-compliant with condition K, the monitoring frequency for all three monitoring locations should return to the base case intensive monitoring until conditions J and K are again being fulfilled.

A reduction in sampling frequency at the **leachate pond outlet** is conditional on (Clauses M - P, Condition 3, DP 6010):

M. Completion of the initial 2 year monitoring program;
N. Good consistency of water sample analysis results, or a clearly identified reason for inconsistent results;
O. No decline in water quality over a period of four consecutive sampling rounds;
P. If the leachate pond outlet is being sampled on a conditional frequency and becomes non-compliant with condition O, the monitoring frequency should return to the base case intensive monitoring until conditions N and O are again being fulfilled.

COMPREHENSIVE PARAMETER LIST (Table E of Condition 3, DP 6010)

Characterising parameters	pH
	electrical conductivity (EC)
	alkalinity
	total hardness
	suspended solids
Oxygen demand	COD and BOD
Nutrients*	NO3-N, NH4-N, DRP and SO_4
Metals*	Al, As, Cd, Cr, Cu, Fe, Mg, Mn, Ni, Pb and Zn
Other elements	B, Ca, Cl, K and Na
Organics	Total organic carbon, total phenols, volatile acids
Biological	Faecal coliforms

* Analyses performed for nutrients and metals are for dissolved rather than total concentrations

INDICATOR PARAMETER LIST (Table F, Condition 3, DP 6010)

Characterising parameters	pH
	electrical conductivity (EC)
Oxygen demand	COD
Nutrients*	NO3-N and NH4-N
Metals*	AL, Mn, Ni and Pb
Other elements	B and Cl
Biological+	Faecal coliforms

* Analyses performed for nutrients and metals are for dissolved rather than total concentrations

+ faecal coliform added from April 2019 sampling onwards

LEVIN LANDFILL - SUMMARY OF SURFACE AND GROUNDWATER MONITORING REQUIREMENTS (July 2019 - April 2022).

(The testing regime is based on Consent Conditions following the completion of the 2015 Resource Consent Review process).

Reports Due		Sampling Month	Table A (Condition 3, DP 6010)					Table B (Condition 3, DP 6010)																		Table C (Condition 3, DP 6010)						
			Deep Aquifer Bores					Shallow Aquifer Bores																		Irrigation Bores				Hokio Stream[4]				Tatana Drain	Leachate Pond[5]	
Annual	Quarterly		C2dd	E1d	E2d	G1d	Xd1[1]	C1	C2	C2ds	D4	B1	B2	B3s	E1s	E2s	D1[2]	D2[2]	D3r[2]	D6[2]	G1s	G2s	Xs1[1]	Xs2[1]	D5[3]	F1[3]	F2[3]	F3[3]	HS1	HS1A	HS2	HS3	TD1		
Sep-19	**Aug-19**	**Jul-19**	I	I + SW	I	I	C + A	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	C + A	C + A	I	I	I	I + SW	Monthly Comprehensive for 2 Years	Monthly Comprehensive for 2 Years	Monthly Comprehensive for 2 Years	Monthly Comprehensive for 2 Years	I	Monthly Comprehensive for 2	
	Nov-19	**Oct-19**	I	I + SW	I	I	C + A	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	C + A	C + A	I	I	I	I + SW					C		A
	Feb-20	**Jan-20**	I	I + SW	I	I	C + A	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	C + A	C + A	I	I	I	I + SW					I		
	May-20	**Apr-20**	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A					C		A
Sep-20	**Aug-20**	**Jul-20**	I	I + SW	I	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	C + A	C + A	I	I	I	I + SW					I		
	Nov-20	**Oct-20**	I	I + SW	I	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	C + A	C + A	I	I	I	I + SW					C		A
	Feb-21	**Jan-21**	I	I + SW	I	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	C + A	C + A	I	I	I	I + SW					I		
	May-21	**Apr-21**	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A					C		A
Sep-21	**Aug-21**	**Jul-21**	I	I + SW	I	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	I	I	I	I	I	I + SW	Discontinue after 2 years	I	I	I	I	I	
	Nov-21	**Oct-21**	I	I + SW	I	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	I	I	I	I	I	I + SW		C	C	C	C	C	
	Feb-22	**Jan-22**	I	I + SW	I	I	I	I	I	I	I + SW	I	I	I	I + SW	I + SW	I	I + SW	I + SW	I	I + SW	I	I	I	I	I	I	I + SW		I	I	I	I	I	
	May-22	**Apr-22**	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A	C + A		C	C	C	C	C + A	

Measure groundwater level and sample all bores for CH_4, CO_2 and O_2 each time that groundwater is sampled (Condition 4a of DP 6011)

Notes:

(1) Bores to be developed by Consent Holder
(2) See table below
(3) If irrigation re-commences then the annual sampling is to change from comprehensive + 3 times indicator to bi-annual comprehensive + indicator (Clause D of Condition 3, DP 6010) .
(4) See table below
(5) See table below
C Comprehensive list (see below)
I Indicator list (see below)
A Annual Pesticide and SVOC analysis
SW Add sodium and iron analysis (for stormwater consent 102559)

A reduction in sampling frequency at any **groundwater monitoring point** is conditional on (Clauses A - D of Condition 3, DP 6010):

A. Completion of the initial monitoring program;
B. Good consistency of groundwater sample analysis results, or a clearly identified reason for inconsistent results that excludes the contaminant source being landfill operations, stored waste or leachate;
C. No decline in groundwater quality as determined from indicator parameter trends over a period of four consecutive sampling rounds;
D. If a well being monitored on a conditional frequency becomes non-compliant with condition C, the monitoring frequency for that well should return to the base case intensive monitoring until conditions B and C are again being fulfilled.

(2) If site management planning indicates any **early detection monitoring well** is likely to become buried or otherwise destroyed within the following year as a result of normal operations (Clauses E - H, Condition 3, DP 6010):

E. This must be communicated to the regional council;
F. A replacement well is to be constructed in a position agreed upon with Horizons Regional Council
G. The replacement well should be installed in a position suitable to act as a early detection well and be classed as an early detection well;
H. The replacement well should be constructed as a nested well (or two separate wells) with screens positioned in both shallow and deep aquifers.

(4) A reduction in sampling frequency at the **Hokio Stream monitoring locations (HS1A, HS2 and HS3)** is conditional on (Clauses I - L, Condition 3 of DP 6010):

I. No signficant increases in the concentrations between monitoring sites HS1A and HS3, for parameters exceeding the trigger values contained in Table C1 at Site HS3.
J. A statistical analysis approach is to be used to determine if there is a significant increase in contaminant levels between HS1A and HS3.
K. Following the 24 month monitoring period, there shall be no significant increases in concentrations between monitoring sites HS1A and HS3.
L. If the Hokio Stream monitoring locations are being sampled on a conditional frequency and do not meet condition K, the monitoring frequency for all three monitoring locations (HS1A, HS2 and HS3) shall return to the base case intensive monitoring until conditions J and K are again being fulfilled.

(5) A reduction in sampling frequency at the **leachate pond outlet** is conditional on (Clauses M - P, Condition 3, DP 6010):

M. Completion of the initial 2 year monitoring program;
N. Good consistency of water sample analysis results, or a clearly identified reason for inconsistent results;
O. No decline in water quality over a period of four consecutive sampling rounds;
P. If the leachate pond outlet is being sampled on a conditional frequency and becomes non-compliant with condition O, the monitoring frequency should return to the base case intensive monitoring until conditions N and O are again being fulfilled.

COMPREHENSIVE PARAMETER LIST (Table E of Condition 3, DP 6010)

Characterising parameters	pH
	electrical conductivity (EC)
	alkalinity
	total hardness
	suspended solids
Oxygen demand	COD and $scBOD_5$
Nutrients*	NO3-N, NH4-N, DRP and SO_4
Metals*	Al, As, Cd, Cr, Cu, Fe, Mg, Mn, Ni, Pb, Zn and Hg
Other elements	B, Ca, Cl, K and Na
Organics	Total organic carbon, total phenols, volatile acids
Biological	E. coli

* Analyses performed for nutrients and metals are for dissolved rather than total concentrations

INDICATOR PARAMETER LIST (Table F, Condition 3, DP 6010)

Characterising parameters	pH
	electrical conductivity (EC)
Oxygen demand	COD and $scBOD_5$
Nutrients*	NO3-N and NH4-N
Metals*	AL, Mn, Ni, Pb and Hg
Other elements	B and Cl
Biological+	E. coli

* Analyses performed for nutrients and metals are for dissolved rather than total concentrations

+ E. coli added from April 2019 sampling onwards

Appendix C Analytical Results

Eurofins ELS Limited

Analytical Report

Interim

Downer EDI Levin - Landfill

Report Number: 19/4399

P O Box 642
LEVIN 5540
Attention: Bruce Marshall

Issue: 1
11 May 2019

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-01	Foxton Landfill - F1		04/04/2019 00:00	26/03/2019 14:12	0

Notes: 116097-0 Foxton Landfill Foxton Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	
6618	Lead - Total	Not Available	g/m³	
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-02	Foxton Landfill - F2		04/04/2019 00:00	26/03/2019 14:12	0

Notes: 116098-0 Foxton Landfill Foxton Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	
6618	Lead - Total	Not Available	g/m³	
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-03	Foxton Landfill - F5		04/04/2019 00:00	26/03/2019 14:12	0

Notes: 116099-0 Foxton Landfill Foxton Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-03	Foxton Landfill - F5		04/04/2019 00:00	26/03/2019 14:12	0

Notes: 116099-0 Foxton Landfill Foxton Landfill

	Test	Result	Units	Signatory
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	
6618	Lead - Total	Not Available	g/m³	
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-04	Foxton Landfill - F6		04/04/2019 00:00	26/03/2019 14:12	0

Notes: 116100-0 Foxton Landfill Foxton Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	
6618	Lead - Total	Not Available	g/m³	
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-05	Foxton Beach Landfill 2A		11/04/2019 00:00	26/03/2019 14:12	0

Notes: 116101-0 Foxton Beach Landfill Foxton Beach Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	
6618	Lead - Total	Not Available	g/m³	

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-05	Foxton Beach Landfill 2A		11/04/2019 00:00	26/03/2019 14:12	0

Notes: 116101-0 Foxton Beach Landfill Foxton Beach Landfill

	Test	Result	Units	Signatory
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-06	Foxton Beach Landfill 3A		11/04/2019 00:00	26/03/2019 14:12	0

Notes: 116102-0 Foxton Beach Landfill Foxton Beach Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	
6618	Lead - Total	Not Available	g/m³	
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-07	Foxton Beach Landfill AA		11/04/2019 00:00	26/03/2019 14:12	0

Notes: 116103-0 Foxton Beach Landfill Foxton Beach Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	
6618	Lead - Total	Not Available	g/m³	
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-08	Foxton Beach Landfill		11/04/2019 00:00	26/03/2019 14:12	0

Notes: 116104-0 Foxton Beach Landfill Foxton Beach Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	
6618	Lead - Total	Not Available	g/m³	
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-09	Shannon Landfill - S1		02/04/2019 00:00	26/03/2019	0

Notes: 116105-0 Shannon Landfill Shannon Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	
6618	Lead - Total	Not Available	g/m³	
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-10	Shannon Landfill - S2		02/04/2019 00:00	26/03/2019	0

Notes: 116106-0 Shannon Landfill Shannon Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-10	Shannon Landfill - S2		02/04/2019 00:00	26/03/2019	0

Notes: 116106-0 Shannon Landfill Shannon Landfill

	Test	Result	Units	Signatory
6618	Lead - Total	Not Available	g/m³	
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-11	Shannon Landfill - S3		02/04/2019 00:00	03/04/2019 15:50	0

Notes: 116107-0 Shannon Landfill Shannon Landfill

	Test	Result	Units	Signatory
0001	pH	Not Available		
0055	Conductivity at 25°C	Not Available	mS/m	
0602	Chloride	Not Available	g/m³	
0605	Nitrate - Nitrogen	Not Available	g/m³	
0607	Sulphate	Not Available	g/m³	
0760	Ammonia Nitrogen	Not Available	g/m³	
6608	Cadmium - Total	Not Available	g/m³	
6611	Chromium - Total	Not Available	g/m³	
6613	Copper - Total	Not Available	g/m³	
6617	Iron - Total	Not Available	g/m³	
6618	Lead - Total	Not Available	g/m³	
6621	Manganese - Total	Not Available	g/m³	
6624	Nickel - Total	Not Available	g/m³	
6631	Sodium - Total	Not Available	g/m³	
6638	Zinc - Total	Not Available	g/m³	
M0102	Faecal Coliforms	Not Available	cfu/100ml	
P1855	Aqueous Total Metal Digestion	Not Available		

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-12	Levin Landfill quarterly SW1		30/04/2019 00:00	03/04/2019 15:50	0

Notes: 116141-0 Levin Landfill

	Test	Result	Units	Signatory
0001	pH	6.9		Marylou Cabral KTP
0002	Suspended Solids - Total	225	g/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	283	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	748	g/m³	Marylou Cabral KTP
0083	Total Kjeldahl Nitrogen	91.9	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	64	g/m³	Gordon McArthur KTP
0602	Chloride	463	g/m³	Amit Kumar KTP
0603	Nitrite - Nitrogen	0.20	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	0.65	g/m³	Shanel Kumar KTP
0719	Ammonia Nitrogen	82.0	g/m³	Divina Lagazon KTP
2127	Total Nitrogen	88.9	g/m³	Divina Lagazon KTP
6717	Iron - Dissolved	0.89	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.409	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	23,000	cfu/100ml	Juana Tamayo KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-13	Levin Landfill quarterly SW2		30/04/2019 00:00	03/04/2019 15:50	0

Notes: 116142-0 Levin Landfill

	Test	Result	Units	Signatory
0001	pH	7.4		Marylou Cabral KTP
0002	Suspended Solids - Total	49	g/m³	Marylou Cabral KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-13	Levin Landfill quarterly SW2		30/04/2019 00:00	03/04/2019 15:50	0

Notes: 116142-0 Levin Landfill

	Test	Result	Units	Signatory
0055	Conductivity at 25°C	168	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	230	g/m³	Marylou Cabral KTP
0083	Total Kjeldahl Nitrogen	23.3	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	23	g/m³	Gordon McArthur KTP
0602	Chloride	281	g/m³	Amit Kumar KTP
0603	Nitrite - Nitrogen	0.12	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	1.65	g/m³	Shanel Kumar KTP
0719	Ammonia Nitrogen	18.2	g/m³	Divina Lagazon KTP
2127	Total Nitrogen	24.8	g/m³	Divina Lagazon KTP
6717	Iron - Dissolved	1.05	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.373	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	2,500	cfu/100ml	Juana Tamayo KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-14	Levin Landfill quarterly SW3		30/04/2019 00:00	01/05/2019 09:13	0

Notes: 116143-0 Levin Landfill

	Test	Result	Units	Signatory
0001	pH	7.3		Marylou Cabral KTP
0002	Suspended Solids - Total	6	g/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	93.2	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	271	g/m³	Marylou Cabral KTP
0083	Total Kjeldahl Nitrogen	7.2	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	< 6	g/m³	Gordon McArthur KTP
0602	Chloride	172	g/m³	Shanel Kumar KTP
0603	Nitrite - Nitrogen	0.07	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	0.57	g/m³	Shanel Kumar KTP
0719	Ammonia Nitrogen	4.2	g/m³	Divina Lagazon KTP
2127	Total Nitrogen	7.49	g/m³	Divina Lagazon KTP
6717	Iron - Dissolved	0.57	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.0295	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	2,000	cfu/100ml	Juana Tamayo KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-15	Levin Landfill quarterly SW4		30/04/2019 00:00	01/05/2019 09:13	0

Notes: 116144-0 Levin Landfill

	Test	Result	Units	Signatory
0001	pH	7.3		Marylou Cabral KTP
0002	Suspended Solids - Total	21	g/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	84.6	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	138	g/m³	Marylou Cabral KTP
0083	Total Kjeldahl Nitrogen	9.6	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	11	g/m³	Gordon McArthur KTP
0602	Chloride	98.4	g/m³	Shanel Kumar KTP
0603	Nitrite - Nitrogen	0.10	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	0.21	g/m³	Shanel Kumar KTP
0719	Ammonia Nitrogen	6.7	g/m³	Divina Lagazon KTP
2127	Total Nitrogen	10.3	g/m³	Divina Lagazon KTP
6717	Iron - Dissolved	0.43	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.639	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	4,800	cfu/100ml	Juana Tamayo KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-16	Levin Landfill quarterly SW5		30/04/2019 00:00	01/05/2019 09:13	0

Notes: 116145-0 Levin Landfill

	Test	Result	Units	Signatory
0001	pH	7.3		Marylou Cabral KTP
0002	Suspended Solids - Total	21	g/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	83.9	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	322	g/m³	Marylou Cabral KTP
0083	Total Kjeldahl Nitrogen	10.3	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	11	g/m³	Gordon McArthur KTP
0602	Chloride	91.7	g/m³	Shanel Kumar KTP
0603	Nitrite - Nitrogen	0.09	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	0.25	g/m³	Shanel Kumar KTP
0719	Ammonia Nitrogen	7.4	g/m³	Divina Lagazon KTP
2127	Total Nitrogen	10.3	g/m³	Divina Lagazon KTP
6717	Iron - Dissolved	0.26	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.722	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	5,500	cfu/100ml	Juana Tamayo KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-17	Levin B1		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120603-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.6		Marylou Cabral KTP
0002	Suspended Solids - Total	< 6	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	17.2	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	519	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	190	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	102	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	1	g/m³	Marylou Cabral KTP
0602	Chloride	297	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	1.13	g/m³	Amit Kumar KTP
0607	Sulphate	9.84	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	18.1	g/m³	Divina Lagazon KTP
1642	Total Hardness	470	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	90.8	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	0.047	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	59.0	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	145	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.104	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.004	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.89	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	0.0003	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0058	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	11.0	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	0.0033	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	23.3	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	0.007	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Juana Tamayo KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.01	g/m³	Prashilla Singh (Transcribed)
SVOC-001	2,3-Diuron	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-002	a-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-003	a-chlordane	<0.0001	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-17	Levin B1		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120603-0 Levin Landfill Sample

	Test	Result	Units	Signatory
SVOC-004	Aldrin	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-005	b-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-006	cis-Permethrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-007	Dieldrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-008	Endosulfan II	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-009	Endosulfan Sulfate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-010	Endrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-011	Endrin Aldehyde	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-013	Gamma-Chlordane	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-014	Heptachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-015	Heptachlor Epoxide	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-016	Hexachlorobenzene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-017	Lindane (g-BHC)	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-018	Methoxychlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-019	p,p'-DDD	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-020	p,p'DDE	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-021	p,p'-DDT	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-022	Procymidone	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-023	Propanil	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-024	Endosulfan I	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-025	Alachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-026	Aldicarb	<0.1	mg/L	Dr Alan Stanley KTP
SVOC-027	Atrazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-028	Bromacil	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-029	Carbofuran	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-030	Cyanazine	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-031	d-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-032	Metalaxyl-M	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-033	Metolachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-034	Metribuzin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-035	Molinate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-037	Oxadiazon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-038	Pendimethalin	<0.002	mg/L	Dr Alan Stanley KTP
SVOC-039	Propazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-040	Pyriproxyfen	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-041	Simazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-042	Terbuthylazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-043	Trifluralin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-044	Hexazinone	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-045	Chlorpyrifos	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-046	Diazinon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-047	Dimethoate	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-048	Pirimiphos methyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-049	Acenapthene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-050	Acenaphthylene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-051	Anthracene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-052	benz(a)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-053	Benzo(a)pyrene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-054	Total Benzo(b) and Benzo(k) fluoranthrene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-055	Benzo(g,h,i)perylene	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-057	Chrysene	< 0.0001	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-17	Levin B1		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120603-0 Levin Landfill Sample

	Test	Result	Units	Signatory
SVOC-058	Dibenz(a,h)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-059	Fluoranthene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-060	Fluorene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-061	Indeno(1,2,3-cd)pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-062	Naphthalene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-063	Phenanthrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-064	Pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-066	2,2',3,4,4',5'-Hexachlorobiphenyl	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-067	2,2',4,5,5'-Pentachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-068	2,4,4'-Trichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-069	2,4-Dichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-070	2,2',3,4,4',5',6-Heptachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-072	Bis(2-ethylhexyl)adipate	<0.0001	mg/L	Dr Alan Stanley KTP
VOC-001	1,2,4-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-002	1,3,5-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-003	Benzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-005	Isopropylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-007	Naphthalene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-008	n-Butylbenezene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-009	n-Propylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-010	o-Xylene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-011	p-Isopropyltoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-013	sec-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-014	Styrene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-015	tert-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-016	Toluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-017	Total p,m Xylene, Ethylbenzene	<0.0015	mg/L	Dr Alan Stanley KTP
VOC-018	1,1,1,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-019	1,1,1-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-020	1,1,2,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-021	1,1,2-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-022	1,1-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-023	1,1-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-024	1,1-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-025	1,2,3-Trichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-026	1,2-Dibromo-3-chloropropane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-027	1,2-Dibromoethane	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-028	1,2-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-029	1,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-030	1,3-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-031	2,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-032	Allyl chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-033	Bromochloromethane	<0.0012	mg/L	Dr Alan Stanley KTP
VOC-034	Bromomethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-035	Carbon tetrachloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-036	Chloroethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-037	Chloromethane	<0.006	mg/L	Dr Alan Stanley KTP
VOC-038	cis-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-039	cis-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-040	Dibromomethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-041	Dichlorodifluoromethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-042	Dichloromethane	<0.005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-17	Levin B1		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120603-0 Levin Landfill Sample

	Test	Result	Units	Signatory
VOC-043	Hexachlorobutadiene	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-044	Tetrachloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-045	trans-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-046	trans-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-047	Trichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-048	Trichlorofluoromethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-049	Vinyl Chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-050	1,2,3-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-051	1,2,4-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-052	1,2-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-053	1,3-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-054	1,4-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-055	2-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-056	4-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-057	Bromobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-058	Chlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-059	1,3,5-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-060	4-Methyl-2-Pentanone	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-061	Carbon disulphide	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-062	Bromodichloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-063	Bromoform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-064	Chloroform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-065	Dibromochloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-18	Levin B2		24/04/2019 00:00	24/04/2019 17:20	0

Notes: 120604-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.2		Marylou Cabral KTP
0002	Suspended Solids - Total	< 6	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	25.6	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	688	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	186	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	112	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	125	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	4.03	g/m³	Amit Kumar KTP
0607	Sulphate	19.6	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	55.2	g/m³	Divina Lagazon KTP
1642	Total Hardness	410	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	90.6	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	0.264	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	44.6	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	132	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.029	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.012	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.003	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	1.20	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0018	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	2.72	g/m³	Shanel Kumar KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-18	Levin B2		24/04/2019 00:00	24/04/2019 17:20	0

Notes: 120604-0 Levin Landfill Sample

	Test	Result	Units	Signatory
6724	Nickel - Dissolved	0.0018	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	56.9	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	0.003	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Juana Tamayo KTP
MO-5001	Volatile Fatty Acids	6 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)
SVOC-001	2,3-Diuron	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-002	a-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-003	a-chlordane	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-004	Aldrin	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-005	b-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-006	cis-Permethrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-007	Dieldrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-008	Endosulfan II	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-009	Endosulfan Sulfate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-010	Endrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-011	Endrin Aldehyde	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-013	Gamma-Chlordane	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-014	Heptachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-015	Heptachlor Epoxide	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-016	Hexachlorobenzene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-017	Lindane (g-BHC)	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-018	Methoxychlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-019	p,p'-DDD	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-020	p,p'DDE	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-021	p,p'-DDT	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-022	Procymidone	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-023	Propanil	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-024	Endosulfan I	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-025	Alachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-026	Aldicarb	<0.1	mg/L	Dr Alan Stanley KTP
SVOC-027	Atrazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-028	Bromacil	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-029	Carbofuran	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-030	Cyanazine	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-031	d-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-032	Metalaxyl-M	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-033	Metolachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-034	Metribuzin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-035	Molinate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-037	Oxadiazon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-038	Pendimethalin	<0.002	mg/L	Dr Alan Stanley KTP
SVOC-039	Propazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-040	Pyriproxyfen	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-041	Simazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-042	Terbuthylazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-043	Trifluralin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-044	Hexazinone	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-045	Chlorpyrifos	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-046	Diazinon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-047	Dimethoate	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-048	Pirimiphos methyl	<0.0001	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-18	Levin B2		24/04/2019 00:00	24/04/2019 17:20	0

Notes: 120604-0 Levin Landfill Sample

	Test	Result	Units	Signatory
SVOC-049	Acenapthene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-050	Acenaphthylene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-051	Anthracene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-052	benz(a)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-053	Benzo(a)pyrene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-054	Total Benzo(b) and Benzo(k) fluoranthrene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-055	Benzo(g,h,i)perylene	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-057	Chrysene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-058	Dibenz(a,h)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-059	Fluoranthene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-060	Fluorene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-061	Indeno(1,2,3-cd)pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-062	Naphthalene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-063	Phenanthrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-064	Pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-066	2,2',3,4,4',5'-Hexachlorobiphenyl	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-067	2,2',4,5,5'-Pentachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-068	2,4,4'-Trichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-069	2,4-Dichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-070	2,2',3,4,4',5',6-Heptachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-072	Bis(2-ethylhexyl)adipate	<0.0001	mg/L	Dr Alan Stanley KTP
VOC-001	1,2,4-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-002	1,3,5-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-003	Benzene	0.0008	mg/L	Dr Alan Stanley KTP
VOC-005	Isopropylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-007	Naphthalene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-008	n-Butylbenezene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-009	n-Propylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-010	o-Xylene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-011	p-Isopropyltoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-013	sec-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-014	Styrene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-015	tert-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-016	Toluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-017	Total p,m Xylene, Ethylbenzene	<0.0015	mg/L	Dr Alan Stanley KTP
VOC-018	1,1,1,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-019	1,1,1-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-020	1,1,2,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-021	1,1,2-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-022	1,1-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-023	1,1-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-024	1,1-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-025	1,2,3-Trichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-026	1,2-Dibromo-3-chloropropane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-027	1,2-Dibromoethane	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-028	1,2-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-029	1,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-030	1,3-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-031	2,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-032	Allyl chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-033	Bromochloromethane	<0.0012	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-18	Levin B2		24/04/2019 00:00	24/04/2019 17:20	0

Notes: 120604-0 Levin Landfill Sample

	Test	Result	Units	Signatory
VOC-034	Bromomethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-035	Carbon tetrachloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-036	Chloroethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-037	Chloromethane	<0.006	mg/L	Dr Alan Stanley KTP
VOC-038	cis-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-039	cis-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-040	Dibromomethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-041	Dichlorodifluoromethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-042	Dichloromethane	<0.005	mg/L	Dr Alan Stanley KTP
VOC-043	Hexachlorobutadiene	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-044	Tetrachloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-045	trans-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-046	trans-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-047	Trichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-048	Trichlorofluoromethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-049	Vinyl Chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-050	1,2,3-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-051	1,2,4-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-052	1,2-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-053	1,3-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-054	1,4-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-055	2-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-056	4-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-057	Bromobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-058	Chlorobenzene	0.0061	mg/L	Dr Alan Stanley KTP
VOC-059	1,3,5-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-060	4-Methyl-2-Pentanone	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-061	Carbon disulphide	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-062	Bromodichloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-063	Bromoform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-064	Chloroform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-065	Dibromochloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-19	Levin B3s		24/04/2019 00:00	24/04/2019 17:20	0

Notes: 120605-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.0		Marylou Cabral KTP
0002	Suspended Solids - Total	111	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	72.7	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	1,290	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	324	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	624	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	< 6	g/m³	Marylou Cabral KTP
0602	Chloride	213	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	< 0.10	g/m³	Amit Kumar KTP
0607	Sulphate	< 0.02	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	170	g/m³	Divina Lagazon KTP
1642	Total Hardness	517	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	105	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	1.37	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	61.8	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	170	g/m³	Richard Zhao KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-19	Levin B3s		24/04/2019 00:00	24/04/2019 17:20	0

Notes: 120605-0 Levin Landfill Sample

	Test	Result	Units	Signatory
2088	Dissolved Reactive Phosphorus	0.043	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.007	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.020	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	1.38	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	0.005	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0027	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	3.94	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	0.0117	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	109	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	0.003	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Juana Tamayo KTP
MO-5001	Volatile Fatty Acids	6 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)
SVOC-001	2,3-Diuron	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-002	a-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-003	a-chlordane	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-004	Aldrin	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-005	b-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-006	cis-Permethrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-007	Dieldrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-008	Endosulfan II	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-009	Endosulfan Sulfate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-010	Endrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-011	Endrin Aldehyde	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-013	Gamma-Chlordane	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-014	Heptachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-015	Heptachlor Epoxide	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-016	Hexachlorobenzene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-017	Lindane (g-BHC)	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-018	Methoxychlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-019	p,p'-DDD	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-020	p,p'DDE	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-021	p,p'-DDT	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-022	Procymidone	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-023	Propanil	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-024	Endosulfan I	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-025	Alachlor	0.0003	mg/L	Dr Alan Stanley KTP
SVOC-026	Aldicarb	<0.1	mg/L	Dr Alan Stanley KTP
SVOC-027	Atrazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-028	Bromacil	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-029	Carbofuran	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-030	Cyanazine	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-031	d-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-032	Metalaxyl-M	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-033	Metolachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-034	Metribuzin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-035	Molinate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-037	Oxadiazon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-038	Pendimethalin	<0.002	mg/L	Dr Alan Stanley KTP
SVOC-039	Propazine	<0.0001	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-19	Levin B3s		24/04/2019 00:00	24/04/2019 17:20	0

Notes: 120605-0 Levin Landfill Sample

	Test	Result	Units	Signatory
SVOC-040	Pyriproxyfen	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-041	Simazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-042	Terbuthylazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-043	Trifluralin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-044	Hexazinone	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-045	Chlorpyrifos	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-046	Diazinon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-047	Dimethoate	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-048	Pirimiphos methyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-049	Acenapthene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-050	Acenaphthylene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-051	Anthracene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-052	benz(a)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-053	Benzo(a)pyrene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-054	Total Benzo(b) and Benzo(k) fluoranthrene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-055	Benzo(g,h,i)perylene	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-057	Chrysene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-058	Dibenz(a,h)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-059	Fluoranthene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-060	Fluorene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-061	Indeno(1,2,3-cd)pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-062	Naphthalene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-063	Phenanthrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-064	Pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-066	2,2',3,4,4',5'-Hexachlorobiphenyl	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-067	2,2',4,5,5'-Pentachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-068	2,4,4'-Trichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-069	2,4-Dichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-070	2,2',3,4,4',5',6-Heptachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-072	Bis(2-ethylhexyl)adipate	<0.0001	mg/L	Dr Alan Stanley KTP
VOC-001	1,2,4-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-002	1,3,5-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-003	Benzene	0.0013	mg/L	Dr Alan Stanley KTP
VOC-005	Isopropylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-007	Naphthalene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-008	n-Butylbenezene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-009	n-Propylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-010	o-Xylene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-011	p-Isopropyltoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-013	sec-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-014	Styrene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-015	tert-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-016	Toluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-017	Total p,m Xylene, Ethylbenzene	<0.0015	mg/L	Dr Alan Stanley KTP
VOC-018	1,1,1,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-019	1,1,1-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-020	1,1,2,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-021	1,1,2-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-022	1,1-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-023	1,1-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-024	1,1-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-19	Levin B3s		24/04/2019 00:00	24/04/2019 17:20	0

Notes: 120605-0 Levin Landfill Sample

	Test	Result	Units	Signatory
VOC-025	1,2,3-Trichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-026	1,2-Dibromo-3-chloropropane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-027	1,2-Dibromoethane	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-028	1,2-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-029	1,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-030	1,3-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-031	2,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-032	Allyl chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-033	Bromochloromethane	<0.0012	mg/L	Dr Alan Stanley KTP
VOC-034	Bromomethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-035	Carbon tetrachloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-036	Chloroethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-037	Chloromethane	<0.006	mg/L	Dr Alan Stanley KTP
VOC-038	cis-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-039	cis-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-040	Dibromomethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-041	Dichlorodifluoromethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-042	Dichloromethane	<0.005	mg/L	Dr Alan Stanley KTP
VOC-043	Hexachlorobutadiene	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-044	Tetrachloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-045	trans-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-046	trans-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-047	Trichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-048	Trichlorofluoromethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-049	Vinyl Chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-050	1,2,3-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-051	1,2,4-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-052	1,2-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-053	1,3-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-054	1,4-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-055	2-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-056	4-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-057	Bromobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-058	Chlorobenzene	0.0011	mg/L	Dr Alan Stanley KTP
VOC-059	1,3,5-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-060	4-Methyl-2-Pentanone	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-061	Carbon disulphide	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-062	Bromodichloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-063	Bromoform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-064	Chloroform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-065	Dibromochloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-20	Levin C1		17/04/2019 00:00	17/04/2019 16:59	0

Notes: 120606-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	6.8		Gordon McArthur KTP
0002	Suspended Solids - Total	21	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	13.8	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	262	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	116	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	45	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-20	Levin C1		17/04/2019 00:00	17/04/2019 16:59	0

Notes: 120606-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0602	Chloride	193	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Shanel Kumar KTP
0607	Sulphate	18.7	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	0.59	g/m³	Divina Lagazon KTP
1642	Total Hardness	261	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	49.4	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	0.577	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	33.4	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	119	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.016	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.005	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.45	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0012	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.328	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	0.0008	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	9.88	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	0.003	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Sunita Raju KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-21	Levin C2		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120607-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.1		Marylou Cabral KTP
0002	Suspended Solids - Total	21	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	47.2	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	968	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	296	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	472	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	< 6	g/m³	Marylou Cabral KTP
0602	Chloride	292	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	< 0.10	g/m³	Amit Kumar KTP
0607	Sulphate	11.4	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	141	g/m³	Divina Lagazon KTP
1642	Total Hardness	236	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	51.4	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	0.994	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	26.0	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	262	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.024	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.013	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.002	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	2.17	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	0.002	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-21	Levin C2		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120607-0 Levin Landfill Sample

	Test	Result	Units	Signatory
6721	Manganese - Dissolved	0.0558	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	0.0060	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	78.3	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	1,070	cfu/100ml	Juana Tamayo KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)
SVOC-001	2,3-Diuron	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-002	a-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-003	a-chlordane	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-004	Aldrin	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-005	b-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-006	cis-Permethrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-007	Dieldrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-008	Endosulfan II	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-009	Endosulfan Sulfate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-010	Endrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-011	Endrin Aldehyde	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-013	Gamma-Chlordane	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-014	Heptachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-015	Heptachlor Epoxide	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-016	Hexachlorobenzene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-017	Lindane (g-BHC)	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-018	Methoxychlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-019	p,p'-DDD	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-020	p,p'DDE	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-021	p,p'-DDT	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-022	Procymidone	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-023	Propanil	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-024	Endosulfan I	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-025	Alachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-026	Aldicarb	<0.1	mg/L	Dr Alan Stanley KTP
SVOC-027	Atrazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-028	Bromacil	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-029	Carbofuran	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-030	Cyanazine	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-031	d-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-032	Metalaxyl-M	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-033	Metolachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-034	Metribuzin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-035	Molinate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-037	Oxadiazon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-038	Pendimethalin	<0.002	mg/L	Dr Alan Stanley KTP
SVOC-039	Propazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-040	Pyriproxyfen	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-041	Simazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-042	Terbuthylazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-043	Trifluralin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-044	Hexazinone	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-045	Chlorpyrifos	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-046	Diazinon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-047	Dimethoate	<0.001	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-21	Levin C2		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120607-0 Levin Landfill Sample

	Test	Result	Units	Signatory
SVOC-048	Pirimiphos methyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-049	Acenapthene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-050	Acenaphthylene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-051	Anthracene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-052	benz(a)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-053	Benzo(a)pyrene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-054	Total Benzo(b) and Benzo(k) fluoranthrene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-055	Benzo(g,h,i)perylene	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-057	Chrysene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-058	Dibenz(a,h)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-059	Fluoranthene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-060	Fluorene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-061	Indeno(1,2,3-cd)pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-062	Naphthalene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-063	Phenanthrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-064	Pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-066	2,2',3,4,4',5'-Hexachlorobiphenyl	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-067	2,2',4,5,5'-Pentachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-068	2,4,4'-Trichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-069	2,4-Dichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-070	2,2',3,4,4',5',6-Heptachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-072	Bis(2-ethylhexyl)adipate	<0.0001	mg/L	Dr Alan Stanley KTP
VOC-001	1,2,4-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-002	1,3,5-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-003	Benzene	0.0011	mg/L	Dr Alan Stanley KTP
VOC-005	Isopropylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-007	Naphthalene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-008	n-Butylbenezene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-009	n-Propylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-010	o-Xylene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-011	p-Isopropyltoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-013	sec-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-014	Styrene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-015	tert-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-016	Toluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-017	Total p,m Xylene, Ethylbenzene	<0.0015	mg/L	Dr Alan Stanley KTP
VOC-018	1,1,1,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-019	1,1,1-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-020	1,1,2,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-021	1,1,2-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-022	1,1-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-023	1,1-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-024	1,1-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-025	1,2,3-Trichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-026	1,2-Dibromo-3-chloropropane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-027	1,2-Dibromoethane	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-028	1,2-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-029	1,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-030	1,3-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-031	2,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-032	Allyl chloride	<0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-21	Levin C2		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120607-0 Levin Landfill Sample

	Test	Result	Units	Signatory
VOC-033	Bromochloromethane	<0.0012	mg/L	Dr Alan Stanley KTP
VOC-034	Bromomethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-035	Carbon tetrachloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-036	Chloroethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-037	Chloromethane	<0.006	mg/L	Dr Alan Stanley KTP
VOC-038	cis-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-039	cis-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-040	Dibromomethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-041	Dichlorodifluoromethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-042	Dichloromethane	<0.005	mg/L	Dr Alan Stanley KTP
VOC-043	Hexachlorobutadiene	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-044	Tetrachloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-045	trans-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-046	trans-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-047	Trichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-048	Trichlorofluoromethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-049	Vinyl Chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-050	1,2,3-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-051	1,2,4-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-052	1,2-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-053	1,3-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-054	1,4-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-055	2-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-056	4-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-057	Bromobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-058	Chlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-059	1,3,5-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-060	4-Methyl-2-Pentanone	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-061	Carbon disulphide	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-062	Bromodichloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-063	Bromoform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-064	Chloroform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-065	Dibromochloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-22	Levin C2dd		15/04/2019 00:00	15/04/2019 16:32	0

Notes: 120608-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.4		Marylou Cabral KTP
0002	Suspended Solids - Total	27	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	3.9	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	186	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	50.6	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	< 15	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 1	g/m³	Marylou Cabral KTP
0602	Chloride	37.7	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Shanel Kumar KTP
0607	Sulphate	0.02	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	0.37	g/m³	Divina Lagazon KTP
1642	Total Hardness	161	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	41.5	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	0.016	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	13.9	g/m³	Richard Zhao KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-22	Levin C2dd		15/04/2019 00:00	15/04/2019 16:32	0

Notes: 120608-0 Levin Landfill Sample

	Test	Result	Units	Signatory
1834	Sodium - Dissolved	37.5	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.660	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.003	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.06	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.533	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	5.54	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Deb Bottrill (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Deb Bottrill (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-23	Levin C2ds		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120609-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.0		Marylou Cabral KTP
0002	Suspended Solids - Total	104	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	28.8	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	662	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	157	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	73	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	< 6	g/m³	Marylou Cabral KTP
0602	Chloride	110	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	< 0.10	g/m³	Amit Kumar KTP
0607	Sulphate	< 0.02	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	1.77	g/m³	Divina Lagazon KTP
1642	Total Hardness	568	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	132	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	3.75	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	58.0	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	104	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.070	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.82	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	2.40	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	0.0021	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	14.6	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Juana Tamayo KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)
SVOC-001	2,3-Diuron	<0.001	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-23	Levin C2ds		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120609-0 Levin Landfill Sample

	Test	Result	Units	Signatory
SVOC-002	a-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-003	a-chlordane	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-004	Aldrin	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-005	b-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-006	cis-Permethrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-007	Dieldrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-008	Endosulfan II	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-009	Endosulfan Sulfate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-010	Endrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-011	Endrin Aldehyde	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-013	Gamma-Chlordane	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-014	Heptachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-015	Heptachlor Epoxide	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-016	Hexachlorobenzene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-017	Lindane (g-BHC)	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-018	Methoxychlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-019	p,p'-DDD	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-020	p,p'DDE	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-021	p,p'-DDT	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-022	Procymidone	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-023	Propanil	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-024	Endosulfan I	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-025	Alachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-026	Aldicarb	<0.1	mg/L	Dr Alan Stanley KTP
SVOC-027	Atrazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-028	Bromacil	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-029	Carbofuran	0.004	mg/L	Dr Alan Stanley KTP
SVOC-030	Cyanazine	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-031	d-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-032	Metalaxyl-M	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-033	Metolachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-034	Metribuzin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-035	Molinate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-037	Oxadiazon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-038	Pendimethalin	<0.002	mg/L	Dr Alan Stanley KTP
SVOC-039	Propazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-040	Pyriproxyfen	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-041	Simazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-042	Terbuthylazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-043	Trifluralin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-044	Hexazinone	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-045	Chlorpyrifos	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-046	Diazinon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-047	Dimethoate	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-048	Pirimiphos methyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-049	Acenapthene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-050	Acenaphthylene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-051	Anthracene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-052	benz(a)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-053	Benzo(a)pyrene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-054	Total Benzo(b) and Benzo(k) fluoranthrene	< 0.0010	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-23	Levin C2ds		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120609-0 Levin Landfill Sample

	Test	Result	Units	Signatory
SVOC-055	Benzo(g,h,i)perylene	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-057	Chrysene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-058	Dibenz(a,h)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-059	Fluoranthene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-060	Fluorene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-061	Indeno(1,2,3-cd)pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-062	Naphthalene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-063	Phenanthrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-064	Pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-066	2,2',3,4,4',5'-Hexachlorobiphenyl	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-067	2,2',4,5,5'-Pentachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-068	2,4,4'-Trichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-069	2,4-Dichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-070	2,2',3,4,4',5',6-Heptachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-072	Bis(2-ethylhexyl)adipate	<0.0001	mg/L	Dr Alan Stanley KTP
VOC-001	1,2,4-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-002	1,3,5-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-003	Benzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-005	Isopropylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-007	Naphthalene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-008	n-Butylbenezene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-009	n-Propylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-010	o-Xylene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-011	p-Isopropyltoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-013	sec-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-014	Styrene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-015	tert-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-016	Toluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-017	Total p,m Xylene, Ethylbenzene	<0.0015	mg/L	Dr Alan Stanley KTP
VOC-018	1,1,1,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-019	1,1,1-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-020	1,1,2,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-021	1,1,2-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-022	1,1-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-023	1,1-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-024	1,1-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-025	1,2,3-Trichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-026	1,2-Dibromo-3-chloropropane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-027	1,2-Dibromoethane	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-028	1,2-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-029	1,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-030	1,3-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-031	2,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-032	Allyl chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-033	Bromochloromethane	<0.0012	mg/L	Dr Alan Stanley KTP
VOC-034	Bromomethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-035	Carbon tetrachloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-036	Chloroethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-037	Chloromethane	<0.006	mg/L	Dr Alan Stanley KTP
VOC-038	cis-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-039	cis-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-040	Dibromomethane	<0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-23	Levin C2ds		23/04/2019 00:00	23/04/2019 15:50	0

Notes: 120609-0 Levin Landfill Sample

	Test	Result	Units	Signatory
VOC-041	Dichlorodifluoromethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-042	Dichloromethane	<0.005	mg/L	Dr Alan Stanley KTP
VOC-043	Hexachlorobutadiene	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-044	Tetrachloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-045	trans-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-046	trans-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-047	Trichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-048	Trichlorofluoromethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-049	Vinyl Chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-050	1,2,3-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-051	1,2,4-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-052	1,2-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-053	1,3-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-054	1,4-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-055	2-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-056	4-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-057	Bromobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-058	Chlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-059	1,3,5-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-060	4-Methyl-2-Pentanone	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-061	Carbon disulphide	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-062	Bromodichloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-063	Bromoform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-064	Chloroform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-065	Dibromochloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-24	Levin D1		16/04/2019 00:00	16/04/2019 16:09	0

Notes: 120610-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	6.8		Gordon McArthur KTP
0002	Suspended Solids - Total	< 6	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	1.1	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	114	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	52.4	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	< 15	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	32.4	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	14.7	g/m³	Shanel Kumar KTP
0607	Sulphate	6.27	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	< 0.01	g/m³	Divina Lagazon KTP
1642	Total Hardness	135	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	25.0	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	< 0.005	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	17.5	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	41.1	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.092	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	< 0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-24	Levin D1		16/04/2019 00:00	16/04/2019 16:09	0

Notes: 120610-0 Levin Landfill Sample

	Test	Result	Units	Signatory
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	9.30	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Chen Lin (Transcription)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Chen Lin (Transcription)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-25	Levin D2		16/04/2019 00:00	16/04/2019 16:08	0

Notes: 120611-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	6.7		Gordon McArthur KTP
0002	Suspended Solids - Total	10	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	11.9	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	100	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	34.9	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	21	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	39.0	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Shanel Kumar KTP
0607	Sulphate	1.99	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	0.50	g/m³	Divina Lagazon KTP
1642	Total Hardness	87	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	14.6	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	11.9	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	12.3	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	27.6	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.039	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.014	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	< 0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.338	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	7.32	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	0.006	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Chen Lin (Transcription)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Chen Lin (Transcription)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-26	Levin D4		17/04/2019 00:00	17/04/2019 16:59	0

Notes: 120612-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.1		Gordon McArthur KTP
0002	Suspended Solids - Total	< 6	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	2.1	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	53	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	27.1	mS/m	Gordon McArthur KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-26	Levin D4		17/04/2019 00:00	17/04/2019 16:59	0

Notes: 120612-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0081	Chemical Oxygen Demand	< 15	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	38.5	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Shanel Kumar KTP
0607	Sulphate	11.2	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	0.23	g/m³	Divina Lagazon KTP
1642	Total Hardness	48	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	9.26	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	0.151	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	5.96	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	29.1	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.021	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.002	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	< 0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.151	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	4.64	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Sunita Raju KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-27	Levin D3r		17/04/2019 00:00	17/04/2019 16:34	0

Notes: 120613-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	6.9		Gordon McArthur KTP
0002	Suspended Solids - Total	< 6	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	2.9	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	56	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	53.6	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	< 15	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	22.7	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	0.21	g/m³	Shanel Kumar KTP
0607	Sulphate	8.48	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	0.17	g/m³	Divina Lagazon KTP
1642	Total Hardness	35	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	7.17	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	0.830	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	4.24	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	26.1	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.016	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.004	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	< 0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-27	Levin D3r		17/04/2019 00:00	17/04/2019 16:34	0

Notes: 120613-0 Levin Landfill Sample

	Test	Result	Units	Signatory
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.171	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	4.53	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Sunita Raju KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-28	Levin D6		17/04/2019 00:00	17/04/2019 16:34	0

Notes: 120614-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.0		Gordon McArthur KTP
0002	Suspended Solids - Total	< 6	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	0.9	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	75	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	43.4	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	< 15	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	26.4	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	21.7	g/m³	Shanel Kumar KTP
0607	Sulphate	4.82	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	< 0.01	g/m³	Divina Lagazon KTP
1642	Total Hardness	104	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	18.5	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	< 0.005	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	13.1	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	37.9	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.093	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	7.31	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Sunita Raju KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-29	Levin D5		12/04/2019 00:00	12/04/2019 15:58	0

Notes: 120615-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.1		Gordon McArthur KTP
0002	Suspended Solids - Total	< 6	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	1.9	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	66	g CaCO3/m³	Gordon McArthur KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-29	Levin D5		12/04/2019 00:00	12/04/2019 15:58	0

Notes: 120615-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0055	Conductivity at 25°C	31.2	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	< 15	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	< 1	g/m³	Marylou Cabral KTP
0602	Chloride	29.9	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	1.03	g/m³	Amit Kumar KTP
0607	Sulphate	24.2	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	< 0.01	g/m³	Divina Lagazon KTP
1642	Total Hardness	67	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	11.7	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	0.043	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	9.03	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	32.1	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.100	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.0109	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	6.55	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Lizzie Addis (Transcription)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Lizzie Addis (Transcription)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-30	Levin Leachate Pond		12/04/2019 00:00	12/04/2019 15:58	0

Notes: 120616-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	8.0		Gordon McArthur KTP
0002	Suspended Solids - Total	136	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	820	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	7,260	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	1.7	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	3,680	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	146	g/m³	Marylou Cabral KTP
0602	Chloride	1,290	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	< 0.10	g/m³	Amit Kumar KTP
0607	Sulphate	137	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	1,620	g/m³	Divina Lagazon KTP
1642	Total Hardness	607	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	119	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	6.18	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	74.7	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	1,140	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	11.9	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.683	g/m³	Wayne Edgerley KTP
6703	Arsenic - Dissolved	0.399	g/m³	Wayne Edgerley KTP
6707	Boron - Dissolved	8.03	g/m³	Wayne Edgerley KTP
6708	Cadmium - Dissolved	0.0002	g/m³	Wayne Edgerley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-30	Levin Leachate Pond		12/04/2019 00:00	12/04/2019 15:58	0

Notes: 120616-0 Levin Landfill Sample

	Test	Result	Units	Signatory
6711	Chromium - Dissolved	0.628	g/m³	Wayne Edgerley KTP
6713	Copper - Dissolved	0.0080	g/m³	Wayne Edgerley KTP
6718	Lead - Dissolved	0.0020	g/m³	Wayne Edgerley KTP
6721	Manganese - Dissolved	1.11	g/m³	Wayne Edgerley KTP
6724	Nickel - Dissolved	0.126	g/m³	Wayne Edgerley KTP
6726	Potassium - Dissolved	750	g/m³	Wayne Edgerley KTP
6738	Zinc - Dissolved	0.049	g/m³	Wayne Edgerley KTP
M0102	Faecal Coliforms	1,000	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	45 *	g/m³	Lizzie Addis (Transcription)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Lizzie Addis (Transcription)
SVOC-001	2,3-Diuron	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-002	a-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-003	a-chlordane	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-004	Aldrin	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-005	b-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-006	cis-Permethrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-007	Dieldrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-008	Endosulfan II	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-009	Endosulfan Sulfate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-010	Endrin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-011	Endrin Aldehyde	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-013	Gamma-Chlordane	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-014	Heptachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-015	Heptachlor Epoxide	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-016	Hexachlorobenzene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-017	Lindane (g-BHC)	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-018	Methoxychlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-019	p,p'-DDD	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-020	p,p'DDE	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-021	p,p'-DDT	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-022	Procymidone	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-023	Propanil	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-024	Endosulfan I	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-025	Alachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-026	Aldicarb	<0.1	mg/L	Dr Alan Stanley KTP
SVOC-027	Atrazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-028	Bromacil	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-029	Carbofuran	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-030	Cyanazine	<0.005	mg/L	Dr Alan Stanley KTP
SVOC-031	d-BHC	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-032	Metalaxyl-M	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-033	Metolachlor	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-034	Metribuzin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-035	Molinate	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-037	Oxadiazon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-038	Pendimethalin	<0.002	mg/L	Dr Alan Stanley KTP
SVOC-039	Propazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-040	Pyriproxyfen	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-041	Simazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-042	Terbuthylazine	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-043	Trifluralin	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-044	Hexazinone	<0.001	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-30	Levin Leachate Pond		12/04/2019 00:00	12/04/2019 15:58	0

Notes: 120616-0 Levin Landfill Sample

	Test	Result	Units	Signatory
SVOC-045	Chlorpyrifos	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-046	Diazinon	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-047	Dimethoate	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-048	Pirimiphos methyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-049	Acenapthene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-050	Acenaphthylene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-051	Anthracene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-052	benz(a)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-053	Benzo(a)pyrene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-054	Total Benzo(b) and Benzo(k) fluoranthrene	< 0.0010	mg/L	Dr Alan Stanley KTP
SVOC-055	Benzo(g,h,i)perylene	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-057	Chrysene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-058	Dibenz(a,h)anthracene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-059	Fluoranthene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-060	Fluorene	< 0.0001	mg/L	Dr Alan Stanley KTP
SVOC-061	Indeno(1,2,3-cd)pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-062	Naphthalene	0.0011	mg/L	Dr Alan Stanley KTP
SVOC-063	Phenanthrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-064	Pyrene	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-066	2,2',3,4,4',5'-Hexachlorobiphenyl	<0.001	mg/L	Dr Alan Stanley KTP
SVOC-067	2,2',4,5,5'-Pentachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-068	2,4,4'-Trichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-069	2,4-Dichlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-070	2,2',3,4,4',5',6-Heptachlorobiphenyl	<0.0001	mg/L	Dr Alan Stanley KTP
SVOC-072	Bis(2-ethylhexyl)adipate	<0.0001	mg/L	Dr Alan Stanley KTP
VOC-001	1,2,4-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-002	1,3,5-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-003	Benzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-005	Isopropylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-007	Naphthalene	0.0012	mg/L	Dr Alan Stanley KTP
VOC-008	n-Butylbenezene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-009	n-Propylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-010	o-Xylene	0.0131	mg/L	Dr Alan Stanley KTP
VOC-011	p-Isopropyltoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-013	sec-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-014	Styrene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-015	tert-Butylbenzene	0.0046	mg/L	Dr Alan Stanley KTP
VOC-016	Toluene	0.0062	mg/L	Dr Alan Stanley KTP
VOC-017	Total p,m Xylene, Ethylbenzene	0.0099	mg/L	Dr Alan Stanley KTP
VOC-018	1,1,1,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-019	1,1,1-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-020	1,1,2,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-021	1,1,2-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-022	1,1-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-023	1,1-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-024	1,1-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-025	1,2,3-Trichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-026	1,2-Dibromo-3-chloropropane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-027	1,2-Dibromoethane	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-028	1,2-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-029	1,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-30	Levin Leachate Pond		12/04/2019 00:00	12/04/2019 15:58	0

Notes: 120616-0 Levin Landfill Sample

	Test	Result	Units	Signatory
VOC-030	1,3-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-031	2,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-032	Allyl chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-033	Bromochloromethane	<0.0012	mg/L	Dr Alan Stanley KTP
VOC-034	Bromomethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-035	Carbon tetrachloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-036	Chloroethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-037	Chloromethane	<0.006	mg/L	Dr Alan Stanley KTP
VOC-038	cis-1,2-Dichloroethene	0.0010	mg/L	Dr Alan Stanley KTP
VOC-039	cis-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-040	Dibromomethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-041	Dichlorodifluoromethane	< 0.005	mg/L	Dr Alan Stanley KTP
VOC-042	Dichloromethane	< 0.005	mg/L	Dr Alan Stanley KTP
VOC-043	Hexachlorobutadiene	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-044	Tetrachloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-045	trans-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-046	trans-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-047	Trichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-048	Trichlorofluoromethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-049	Vinyl Chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-050	1,2,3-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-051	1,2,4-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-052	1,2-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-053	1,3-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-054	1,4-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-055	2-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-056	4-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-057	Bromobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-058	Chlorobenzene	0.0007	mg/L	Dr Alan Stanley KTP
VOC-059	1,3,5-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-060	4-Methyl-2-Pentanone	< 0.0050	mg/L	Dr Alan Stanley KTP
VOC-061	Carbon disulphide	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-062	Bromodichloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-063	Bromoform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-064	Chloroform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-065	Dibromochloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-31	Levin G2s		10/04/2019 00:00	10/04/2019 16:51	0

Notes: 120617-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.1		Gordon McArthur KTP
0002	Suspended Solids - Total	< 5	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	14.6	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	523	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	177	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	80	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	246	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Amit Kumar KTP
0607	Sulphate	1.07	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	< 0.01	g/m³	Divina Lagazon KTP
1642	Total Hardness	312	g CaCO3/m³	Richard Zhao KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-31	Levin G2s		10/04/2019 00:00	10/04/2019 16:51	0

Notes: 120617-0 Levin Landfill Sample

	Test	Result	Units	Signatory
1810	Calcium - Dissolved	66.5	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	0.048	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	35.4	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	244	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.024	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	1.27	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0080	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.133	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	0.0043	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	25.0	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	Not Available *	g/m³	
MO-5002	Total Halogenated Phenolics	Not Available	g/m³	
SVOC-001	2,3-Diuron	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-002	a-BHC	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-003	a-chlordane	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-004	Aldrin	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-005	b-BHC	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-006	cis-Permethrin	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-007	Dieldrin	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-008	Endosulfan II	<0.005	mg/L	Ganesh Ilancko KTP
SVOC-009	Endosulfan Sulfate	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-010	Endrin	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-011	Endrin Aldehyde	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-013	Gamma-Chlordane	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-014	Heptachlor	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-015	Heptachlor Epoxide	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-016	Hexachlorobenzene	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-017	Lindane (g-BHC)	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-018	Methoxychlor	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-019	p,p'-DDD	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-020	p,p'DDE	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-021	p,p'-DDT	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-022	Procymidone	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-023	Propanil	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-024	Endosulfan I	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-025	Alachlor	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-026	Aldicarb	<0.1	mg/L	Ganesh Ilancko KTP
SVOC-027	Atrazine	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-028	Bromacil	<0.005	mg/L	Ganesh Ilancko KTP
SVOC-029	Carbofuran	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-030	Cyanazine	<0.005	mg/L	Ganesh Ilancko KTP
SVOC-031	d-BHC	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-032	Metalaxyl-M	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-033	Metolachlor	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-034	Metribuzin	<0.0001	mg/L	Ganesh Ilancko KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-31	Levin G2s		10/04/2019 00:00	10/04/2019 16:51	0

Notes: 120617-0 Levin Landfill Sample

	Test	Result	Units	Signatory
SVOC-035	Molinate	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-037	Oxadiazon	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-038	Pendimethalin	<0.002	mg/L	Ganesh Ilancko KTP
SVOC-039	Propazine	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-040	Pyriproxyfen	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-041	Simazine	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-042	Terbuthylazine	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-043	Trifluralin	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-044	Hexazinone	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-045	Chlorpyrifos	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-046	Diazinon	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-047	Dimethoate	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-048	Pirimiphos methyl	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-049	Acenapthene	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-050	Acenaphthylene	< 0.0010	mg/L	Ganesh Ilancko KTP
SVOC-051	Anthracene	< 0.0010	mg/L	Ganesh Ilancko KTP
SVOC-052	benz(a)anthracene	< 0.0001	mg/L	Ganesh Ilancko KTP
SVOC-053	Benzo(a)pyrene	< 0.0001	mg/L	Ganesh Ilancko KTP
SVOC-054	Total Benzo(b) and Benzo(k) fluoranthrene	< 0.0010	mg/L	Ganesh Ilancko KTP
SVOC-055	Benzo(g,h,i)perylene	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-057	Chrysene	< 0.0001	mg/L	Ganesh Ilancko KTP
SVOC-058	Dibenz(a,h)anthracene	< 0.0001	mg/L	Ganesh Ilancko KTP
SVOC-059	Fluoranthene	< 0.0001	mg/L	Ganesh Ilancko KTP
SVOC-060	Fluorene	< 0.0001	mg/L	Ganesh Ilancko KTP
SVOC-061	Indeno(1,2,3-cd)pyrene	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-062	Naphthalene	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-063	Phenanthrene	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-064	Pyrene	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-066	2,2',3,4,4',5'-Hexachlorobiphenyl	<0.001	mg/L	Ganesh Ilancko KTP
SVOC-067	2,2',4,5,5'-Pentachlorobiphenyl	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-068	2,4,4'-Trichlorobiphenyl	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-069	2,4-Dichlorobiphenyl	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-070	2,2',3,4,4',5',6-Heptachlorobiphenyl	<0.0001	mg/L	Ganesh Ilancko KTP
SVOC-072	Bis(2-ethylhexyl)adipate	<0.0001	mg/L	Ganesh Ilancko KTP
VOC-001	1,2,4-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-002	1,3,5-Trimethylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-003	Benzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-005	Isopropylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-007	Naphthalene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-008	n-Butylbenezene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-009	n-Propylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-010	o-Xylene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-011	p-Isopropyltoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-013	sec-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-014	Styrene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-015	tert-Butylbenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-016	Toluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-017	Total p,m Xylene, Ethylbenzene	<0.0015	mg/L	Dr Alan Stanley KTP
VOC-018	1,1,1,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-019	1,1,1-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-020	1,1,2,2-Tetrachloroethane	<0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-31	Levin G2s		10/04/2019 00:00	10/04/2019 16:51	0

Notes: 120617-0 Levin Landfill Sample

	Test	Result	Units	Signatory
VOC-021	1,1,2-Trichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-022	1,1-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-023	1,1-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-024	1,1-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-025	1,2,3-Trichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-026	1,2-Dibromo-3-chloropropane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-027	1,2-Dibromoethane	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-028	1,2-Dichloroethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-029	1,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-030	1,3-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-031	2,2-Dichloropropane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-032	Allyl chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-033	Bromochloromethane	<0.0012	mg/L	Dr Alan Stanley KTP
VOC-034	Bromomethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-035	Carbon tetrachloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-036	Chloroethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-037	Chloromethane	<0.006	mg/L	Dr Alan Stanley KTP
VOC-038	cis-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-039	cis-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-040	Dibromomethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-041	Dichlorodifluoromethane	<0.001	mg/L	Dr Alan Stanley KTP
VOC-042	Dichloromethane	<0.005	mg/L	Dr Alan Stanley KTP
VOC-043	Hexachlorobutadiene	<0.0002	mg/L	Dr Alan Stanley KTP
VOC-044	Tetrachloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-045	trans-1,2-Dichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-046	trans-1,3-Dichloropropene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-047	Trichloroethene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-048	Trichlorofluoromethane	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-049	Vinyl Chloride	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-050	1,2,3-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-051	1,2,4-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-052	1,2-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-053	1,3-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-054	1,4-Dichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-055	2-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-056	4-Chlorotoluene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-057	Bromobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-058	Chlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-059	1,3,5-Trichlorobenzene	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-060	4-Methyl-2-Pentanone	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-061	Carbon disulphide	<0.0005	mg/L	Dr Alan Stanley KTP
VOC-062	Bromodichloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-063	Bromoform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-064	Chloroform	< 0.0005	mg/L	Dr Alan Stanley KTP
VOC-065	Dibromochloromethane	< 0.0005	mg/L	Dr Alan Stanley KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-32	Levin G1S		10/04/2019 00:00	10/04/2019 16:51	0

Notes: 120618-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	6.4		Gordon McArthur KTP
0002	Suspended Solids - Total	< 6	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	11.0	g/m³	Tracy Morrison KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-32	Levin G1S		10/04/2019 00:00	10/04/2019 16:51	0

Notes: 120618-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0052	Alkalinity - Total	40	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	136	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	111	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	362	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	0.30	g/m³	Amit Kumar KTP
0607	Sulphate	60.9	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	0.08	g/m³	Divina Lagazon KTP
1642	Total Hardness	214	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	43.0	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	14.8	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	25.9	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	144	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.022	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.014	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	< 0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0025	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.269	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	0.0010	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	10.1	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	Not Available *	g/m³	
MO-5002	Total Halogenated Phenolics	Not Available	g/m³	

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-33	Levin G1D		10/04/2019 00:00	10/04/2019 16:51	0

Notes: 120620-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.6		Gordon McArthur KTP
0002	Suspended Solids - Total	< 6	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	2.0	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	63	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	28.6	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	17	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	32.7	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Amit Kumar KTP
0607	Sulphate	20.2	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	0.10	g/m³	Divina Lagazon KTP
1642	Total Hardness	49	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	8.06	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	0.647	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	6.97	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	31.7	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.047	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.004	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.003	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.04	g/m³	Shanel Kumar KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-33	Levin G1D		10/04/2019 00:00	10/04/2019 16:51	0

Notes: 120620-0 Levin Landfill Sample

	Test	Result	Units	Signatory
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.0616	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	5.58	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	Not Available *	g/m³	
MO-5002	Total Halogenated Phenolics	Not Available	g/m³	

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-34	Levin F3		15/04/2019 00:00	15/04/2019 16:32	0

Notes: 120621-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.3		Marylou Cabral KTP
0002	Suspended Solids - Total	< 5	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	1.2	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	45	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	20.4	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	15	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 1	g/m³	Marylou Cabral KTP
0602	Chloride	21.9	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	0.88	g/m³	Shanel Kumar KTP
0607	Sulphate	11.8	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	< 0.01	g/m³	Divina Lagazon KTP
1642	Total Hardness	37	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	5.63	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	< 0.005	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	5.45	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	22.0	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.139	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	< 0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	4.62	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Deb Bottrill (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Deb Bottrill (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-35	Levin F2		15/04/2019 00:00	15/04/2019 16:32	0

Notes: 120622-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.0		Marylou Cabral KTP
0002	Suspended Solids - Total	< 5	g/m³	Marylou Cabral KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-35	Levin F2		15/04/2019 00:00	15/04/2019 16:32	0

Notes: 120622-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0040	Total (NP) Organic Carbon	1.4	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	52	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	22.3	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	< 15	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 1	g/m³	Marylou Cabral KTP
0602	Chloride	23.7	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	0.57	g/m³	Shanel Kumar KTP
0607	Sulphate	10.1	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	< 0.01	g/m³	Divina Lagazon KTP
1642	Total Hardness	39	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	6.32	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	0.014	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	5.55	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	25.6	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.146	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0009	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.0088	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	4.47	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Deb Bottrill (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Deb Bottrill (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-36	Levin F1		15/04/2019 00:00	15/04/2019 16:32	0

Notes: 120623-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.6		Marylou Cabral KTP
0002	Suspended Solids - Total	< 5	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	6.2	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	144	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	47.2	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	18	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 1	g/m³	Marylou Cabral KTP
0602	Chloride	48.2	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	0.78	g/m³	Shanel Kumar KTP
0607	Sulphate	2.90	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	< 0.01	g/m³	Divina Lagazon KTP
1642	Total Hardness	121	g CaCO3/m³	Richard Zhao KTP
1810	Calcium - Dissolved	17.4	g/m³	Richard Zhao KTP
1819	Iron - Dissolved	< 0.005	g/m³	Richard Zhao KTP
1822	Magnesium - Dissolved	18.8	g/m³	Richard Zhao KTP
1834	Sodium - Dissolved	39.5	g/m³	Richard Zhao KTP
2088	Dissolved Reactive Phosphorus	0.171	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.002	g/m³	Shanel Kumar KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-36	Levin F1		15/04/2019 00:00	15/04/2019 16:32	0

Notes: 120623-0 Levin Landfill Sample

	Test	Result	Units	Signatory
6707	Boron - Dissolved	0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0021	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.0040	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	0.0006	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	7.78	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Deb Bottrill (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Deb Bottrill (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-37	Levin E2s		17/04/2019 00:00	17/04/2019 16:59	0

Notes: 120624-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.5		Gordon McArthur KTP
0002	Suspended Solids - Total	< 6	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	2.7	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	149	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	44.5	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	< 15	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	41.8	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Shanel Kumar KTP
0607	Sulphate	< 0.02	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	0.27	g/m³	Divina Lagazon KTP
1642	Total Hardness	112	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	25.4	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	0.055	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	11.9	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	40.6	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.567	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.001	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	< 0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.376	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	5.45	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Sunita Raju KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-38	Levin E2d		16/04/2019 00:00	16/04/2019 16:09	0

Notes: 120625-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.6		Gordon McArthur KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-38	Levin E2d		16/04/2019 00:00	16/04/2019 16:09	0

Notes: 120625-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0002	Suspended Solids - Total	< 6	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	1.9	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	76	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	34.9	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	< 15	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	48.4	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Shanel Kumar KTP
0607	Sulphate	10.0	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	0.34	g/m³	Divina Lagazon KTP
1642	Total Hardness	75	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	20.0	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	0.052	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	5.97	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	28.1	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.148	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.002	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	< 0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.230	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	5.40	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Chen Lin (Transcription)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Chen Lin (Transcription)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-39	Levin E1s		17/04/2019 00:00	17/04/2019 16:34	0

Notes: 120626-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.6		Gordon McArthur KTP
0002	Suspended Solids - Total	< 6	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	3.7	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	61	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	26.7	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	25	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	33.5	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Shanel Kumar KTP
0607	Sulphate	11.2	g/m³	Shanel Kumar KTP
0760	Ammonia Nitrogen	0.18	g/m³	Divina Lagazon KTP
1642	Total Hardness	52	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	9.56	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	3.97	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	6.76	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	28.1	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.054	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.002	g/m³	Shanel Kumar KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-39	Levin E1s		17/04/2019 00:00	17/04/2019 16:34	0

Notes: 120626-0 Levin Landfill Sample

	Test	Result	Units	Signatory
6703	Arsenic - Dissolved	0.002	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	< 0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	0.0009	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.209	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	5.02	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Sunita Raju KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-40	Levin E1d		16/04/2019 00:00	16/04/2019 16:09	0

Notes: 120627-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	8.1		Gordon McArthur KTP
0002	Suspended Solids - Total	< 6	g/m³	Gordon McArthur KTP
0040	Total (NP) Organic Carbon	2.8	g/m³	Tracy Morrison KTP
0052	Alkalinity - Total	160	g CaCO3/m³	Gordon McArthur KTP
0055	Conductivity at 25°C	45.7	mS/m	Gordon McArthur KTP
0081	Chemical Oxygen Demand	< 15	g/m³	Gordon McArthur KTP
0085	BOD5 - Total	< 3	g/m³	Marylou Cabral KTP
0602	Chloride	39.3	g/m³	Shanel Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Shanel Kumar KTP
0607	Sulphate	< 0.02	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	0.23	g/m³	Divina Lagazon KTP
1642	Total Hardness	124	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	28.7	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	0.037	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	12.6	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	35.9	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.391	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.007	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	< 0.03	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.241	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	5.03	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	< 4	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	< 5 *	g/m³	Chen Lin (Transcription)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Chen Lin (Transcription)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-41	Levin HS1		03/04/2019 00:00	03/04/2019 16:00	0

Notes: 120902-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	8.2		Marylou Cabral KTP
0002	Suspended Solids - Total	70	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	9.7	g/m³	Sharon van Soest KTP
0052	Alkalinity - Total	77	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	26.4	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	77	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	7	g/m³	Marylou Cabral KTP
0602	Chloride	27.4	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Amit Kumar KTP
0607	Sulphate	8.54	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	< 0.01	g/m³	Divina Lagazon KTP
1642	Total Hardness	72	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	15.0	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	0.107	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	8.30	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	24.5	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.275	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.005	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.003	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.06	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.0915	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	3.17	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	550	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	6 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-42	Levin HS2		03/04/2019 00:00	03/04/2019 16:00	0

Notes: 120903-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.9		Marylou Cabral KTP
0002	Suspended Solids - Total	66	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	9.5	g/m³	Sharon van Soest KTP
0052	Alkalinity - Total	79	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	28.1	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	86	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	8	g/m³	Marylou Cabral KTP
0602	Chloride	28.8	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Amit Kumar KTP
0607	Sulphate	8.42	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	0.01	g/m³	Divina Lagazon KTP
1642	Total Hardness	75	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	15.8	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	0.051	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	8.58	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	25.4	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.266	g/m³	Divina Lagazon KTP

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-42	Levin HS2		03/04/2019 00:00	03/04/2019 16:00	0

Notes: 120903-0 Levin Landfill Sample

	Test	Result	Units	Signatory
6701	Aluminium - Dissolved	0.003	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.003	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.06	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.105	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	3.40	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	450	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	6 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)

Sample	Site	Map Ref.	Date Sampled	Date Received	Order No.
19/4399-43	Levin HS3		03/04/2019 00:00	03/04/2019 16:00	0

Notes: 120904-0 Levin Landfill Sample

	Test	Result	Units	Signatory
0001	pH	7.9		Marylou Cabral KTP
0002	Suspended Solids - Total	67	g/m³	Marylou Cabral KTP
0040	Total (NP) Organic Carbon	9.0	g/m³	Sharon van Soest KTP
0052	Alkalinity - Total	78	g CaCO3/m³	Marylou Cabral KTP
0055	Conductivity at 25°C	27.8	mS/m	Marylou Cabral KTP
0081	Chemical Oxygen Demand	107	g/m³	Marylou Cabral KTP
0085	BOD5 - Total	9	g/m³	Marylou Cabral KTP
0602	Chloride	29.1	g/m³	Amit Kumar KTP
0605	Nitrate - Nitrogen	< 0.01	g/m³	Amit Kumar KTP
0607	Sulphate	8.53	g/m³	Amit Kumar KTP
0760	Ammonia Nitrogen	< 0.01	g/m³	Divina Lagazon KTP
1642	Total Hardness	72	g CaCO3/m³	Shanel Kumar KTP
1810	Calcium - Dissolved	15.4	g/m³	Shanel Kumar KTP
1819	Iron - Dissolved	0.044	g/m³	Shanel Kumar KTP
1822	Magnesium - Dissolved	8.23	g/m³	Shanel Kumar KTP
1834	Sodium - Dissolved	24.8	g/m³	Shanel Kumar KTP
2088	Dissolved Reactive Phosphorus	0.268	g/m³	Divina Lagazon KTP
6701	Aluminium - Dissolved	0.012	g/m³	Shanel Kumar KTP
6703	Arsenic - Dissolved	0.003	g/m³	Shanel Kumar KTP
6707	Boron - Dissolved	0.06	g/m³	Shanel Kumar KTP
6708	Cadmium - Dissolved	< 0.0002	g/m³	Shanel Kumar KTP
6711	Chromium - Dissolved	< 0.001	g/m³	Shanel Kumar KTP
6713	Copper - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6718	Lead - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6721	Manganese - Dissolved	0.0921	g/m³	Shanel Kumar KTP
6724	Nickel - Dissolved	< 0.0005	g/m³	Shanel Kumar KTP
6726	Potassium - Dissolved	3.53	g/m³	Shanel Kumar KTP
6738	Zinc - Dissolved	< 0.002	g/m³	Shanel Kumar KTP
M0102	Faecal Coliforms	310	cfu/100ml	Maria Norris KTP
MO-5001	Volatile Fatty Acids	9 *	g/m³	Prashilla Singh (Transcribed)
MO-5002	Total Halogenated Phenolics	< 0.05	g/m³	Prashilla Singh (Transcribed)

Comments:

* Not an accredited test.

Sampled by customer using ELS approved containers.

Test Methodology:

Test	Methodology	Detection Limit
pH	Dedicated pH meter following APHA Online Edition Method 4500 H.	0.1
Suspended Solids - Total	APHA Online Edition Method 2540 D	3 g/m³
Total (NP) Organic Carbon	Total Non-Purgeable Organic Carbon using TOC analyser. APHA Online Edition 5310B,C, ASTM D2579, D4839.	0.1 g/m³
Alkalinity - Total	APHA Online Edition Method 2320 B	1 g CaCO3/m³
Conductivity at 25°C	APHA Online Edition Method 2510 B.	0.1 mS/m
Chemical Oxygen Demand	APHA Online Edition Method 5220 D.	15 g/m³
Total Kjeldahl Nitrogen	APHA Online Edition 4500-N(org) B	0.8 g/m³
BOD5 - Total	APHA Online Edition Method 5210 B.	1 g/m³
Chloride	Ion Chromatography following APHA 4110B.	0.02 g/m³
Nitrite - Nitrogen	Ion Chromatography following APHA 4110B.	0.01 g/m³
Nitrate - Nitrogen	Ion Chromatography following APHA 4110B.	0.01 g/m³
Sulphate	Ion Chromatography following APHA 4110B.	0.02 g/m³
Ammonia Nitrogen	Discrete Analyser. In House method based on ISBN 0117516139.	0.01 g/m³
Ammonia Nitrogen	Flow Injection Autoanalyser following APHA Online Edition Method 4500 NH3-H.	0.01 g/m³
Total Hardness	ICP-OES following APHA Online Edition Method 3120 B (modified).	1 g CaCO3/m³
Calcium - Dissolved	ICP-OES following APHA Online Edition Method 3120 B (modified).	0.01 g/m³
Iron - Dissolved	ICP-OES following APHA Online Edition Method 3120 B (modified).	0.005 g/m³
Magnesium - Dissolved	ICP-OES following APHA Online Edition Method 3120 B (modified).	0.01 g/m³
Sodium - Dissolved	ICP-OES following APHA Online Edition Method 3120 B (modified).	0.02 g/m³
Dissolved Reactive Phosphorus	Flow Injection Autoanalyser following APHA Online Edition Method 4500-P G.	0.005 g/m³
Total Nitrogen	Flow Injection Autoanalyser following APHA Online Edition Method 4500-NO3 I. Persulphate digestion follows APHA Online Edition 4500-N C.	0.05 g/m³
Cadmium - Total	ICP-MS following APHA Online Edition method 3125 (modified)	0.001 g/m³
Chromium - Total	ICP-MS following APHA Online Edition method 3125 (modified)	0.001 g/m³
Copper - Total	ICP-MS following APHA Online Edition method 3125 (modified)	0.002 g/m³
Iron - Total	ICP-MS following APHA Online Edition method 3125 (modified)	0.1 g/m³
Lead - Total	ICP-MS following APHA Online Edition method 3125 (modified)	0.001 g/m³
Manganese - Total	ICP-MS following APHA Online Edition method 3125 (modified)	0.001 g/m³
Nickel - Total	ICP-MS following APHA Online Edition method 3125 (modified)	0.001 g/m³
Sodium - Total	ICP-MS following APHA Online Edition method 3125 (modified)	0.1 g/m³
Zinc - Total	ICP-MS following APHA Online Edition method 3125 (modified)	0.005 g/m³
Aluminium - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.002 g/m³
Arsenic - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.001 g/m³
Boron - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.03 g/m³
Cadmium - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.0002 g/m³
Chromium - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.001 g/m³
Copper - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.0005 g/m³
Iron - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.01 g/m³
Lead - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.0005 g/m³
Manganese - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.0005 g/m³
Nickel - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.0005 g/m³
Potassium - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified)	0.01 g/m³
Zinc - Dissolved	ICP-MS following APHA Online Edition method 3125 (modified).	0.002 g/m³
Faecal Coliforms	APHA 9222D:Online Edition	1 cfu/100ml
Volatile Fatty Acids	Performed by Eurofins Melbourne following APHA 22nd Edition Method 5560C. Results are reported as acetic acid equivalent.	5 g/m³
Total Halogenated Phenolics	Analyses at Eurofins Melbourne following Method USEPA 8270 Phenols.	0.01 g/m³

Test	Methodology	Detection Limit
Aqueous Total Metal Digestion	Follows APHA Online Edition Method 3030E (modified) using nitric acid.	n/a
2,3-Diuron	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
a-BHC	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
a-chlordane	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Aldrin	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
b-BHC	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
cis-Permethrin	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Dieldrin	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Endosulfan II	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.005 mg/L
Endosulfan Sulfate	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Endrin	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Endrin Aldehyde	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
Endrin Ketone	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Gamma-Chlordane	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
Heptachlor	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Heptachlor Epoxide	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Hexachlorobenzene	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Lindane (g-BHC)	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Methoxychlor	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
p,p'-DDD	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
p,p'DDE	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
p,p'-DDT	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
Procymidone	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Propanil	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
Endosulfan I	Organochlorine Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
Alachlor	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Aldicarb	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.1 mg/L
Atrazine	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Bromacil	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.005 mg/L
Carbofuran	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
Cyanazine	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.005 mg/L
d-BHC	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Metalaxyl-M	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
Metolachlor	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Metribuzin	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Molinate	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Oxadiazon	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Pendimethalin	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.002 mg/L
Propazine	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Pyriproxyfen	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Simazine	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Terbuthylazine	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Trifluralin	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Hexazinone	Organonitrogen Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
Chlorpyrifos	Organophosphorous Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Diazinon	Organophosphorous Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Dimethoate	Organophosphorous Pesticide compound analysed by in-house method using GC-MS	0.001 mg/L
Pirimiphos methyl	Organophosphorous Pesticide compound analysed by in-house method using GC-MS	0.0001 mg/L
Acenapthene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
Acenaphthylene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.001 mg/L
Anthracene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.001 mg/L

Test	Methodology	Detection Limit
benz(a)anthracene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
Benzo(a)pyrene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
Total Benzo(b) and Benzo(k) fluoranthrene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.001 mg/L
Benzo(g,h,i)perylene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.001 mg/L
Chrysene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
Dibenz(a,h)anthracene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
Fluoranthene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
Fluorene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
Indeno(1,2,3-cd)pyrene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
Naphthalene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
Phenanthrene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
Pyrene	Polyaromatic Hydrocarbon compound analysed by in-house method using GC-MS	0.0001 mg/L
2,2',3,4,4',5'-Hexachlorobiphenyl	Polychlorinated biphenyl compound analysed by in-house method using GC-MS. Also known as PCB 138.	0.001 mg/L
2,2',4,5,5'-Pentachlorobiphenyl	Polychlorinated biphenyl compound analysed by in-house method using GC-MS. Also known as PCB 101.	0.0001 mg/L
2,4,4'-Trichlorobiphenyl	Polychlorinated biphenyl compound analysed by in-house method using GC-MS. Also known as PCB 28.	0.0001 mg/L
2,4-Dichlorobiphenyl	Polychlorinated biphenyl compound analysed by in-house method using GC-MS. Also known as PCB 7.	0.0001 mg/L
2,2',3,4,4',5',6-Heptachlorobiphenyl	Polychlorinated biphenyl compound analysed by in-house method using GC-MS. Also known as PCB 183.	0.0001 mg/L
Bis(2-ethylhexyl)adipate	Phthalate Plasticiser compound analysed by in-house method using GC-MS	0.0001 mg/L
1,2,4-Trimethylbenzene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,3,5-Trimethylbenzene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Benzene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Isopropylbenzene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Naphthalene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
n-Butylbenezene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
n-Propylbenzene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
o-Xylene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
p-Isopropyltoluene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
sec-Butylbenzene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Styrene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
tert-Butylbenzene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Toluene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Total p,m Xylene, Ethylbenzene	VOC Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0015 mg/L
1,1,1,2-Tetrachloroethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,1,1-Trichloroethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,1,2,2-Tetrachloroethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,1,2-Trichloroethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,1-Dichloroethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,1-Dichloroethene	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,1-Dichloropropene	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,2,3-Trichloropropane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,2-Dibromo-3-chloropropane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.001 mg/L
1,2-Dibromoethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0002 mg/L

Test	Methodology	Detection Limit
1,2-Dichloroethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,2-Dichloropropane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,3-Dichloropropane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
2,2-Dichloropropane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Allyl chloride	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Bromochloromethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0012 mg/L
Bromomethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.001 mg/L
Carbon tetrachloride	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260. Also known as Tetrachloromethane.	0.0005 mg/L
Chloroethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.001 mg/L
Chloromethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.006 mg/L
cis-1,2-Dichloroethene	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
cis-1,3-Dichloropropene	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Dibromomethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Dichlorodifluoromethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.001 mg/L
Dichloromethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.005 mg/L
Hexachlorobutadiene	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0002 mg/L
Tetrachloroethene	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
trans-1,2-Dichloroethene	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
trans-1,3-Dichloropropene	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Trichloroethene	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Trichlorofluoromethane	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Vinyl Chloride	VOC Halogenated Alkanes and Alkenes Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,2,3-Trichlorobenzene	VOC Halogenated Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,2,4-Trichlorobenzene	VOC Halogenated Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,2-Dichlorobenzene	VOC Halogenated Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,3-Dichlorobenzene	VOC Halogenated Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,4-Dichlorobenzene	VOC Halogenated Aromatic Compound analysed by GCMS following an in house method based on USEPA	0.0005 mg/L

Test	Methodology	Detection Limit
	Method 8260.	
2-Chlorotoluene	VOC Halogenated Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
4-Chlorotoluene	VOC Halogenated Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Bromobenzene	VOC Halogenated Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Chlorobenzene	VOC Halogenated Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
1,3,5-Trichlorobenzene	VOC Halogenated Aromatic Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
4-Methyl-2-Pentanone	VOC Other Volatile Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Carbon disulphide	VOC Other Volatile Compound analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Bromodichloromethane	VOC Trihalomethane analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Bromoform	VOC Trihalomethane analysed by GCMS following an in house method based on USEPA Method 8260. Also known as Tribromomethane.	0.0005 mg/L
Chloroform	VOC Trihalomethane analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L
Dibromochloromethane	VOC Trihalomethane analysed by GCMS following an in house method based on USEPA Method 8260.	0.0005 mg/L

Unless otherwise stated, all tests are performed in Wellington.

"<" means that no analyte was found in the sample at the level of detection shown. Detection limits are based on a clean matrix and may vary according to individual sample.

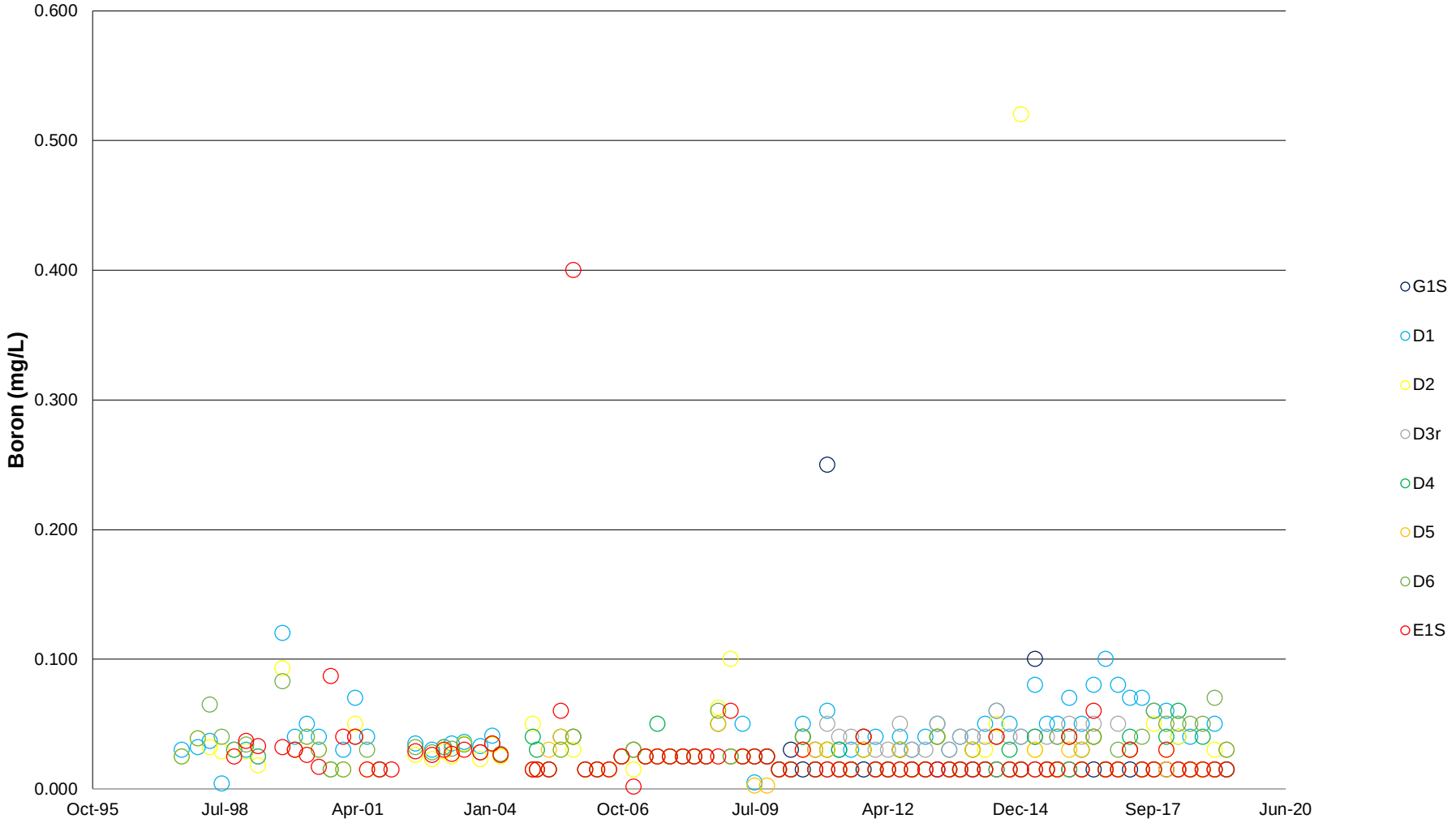
g/m3 is the equivalent to mg/L and ppm.

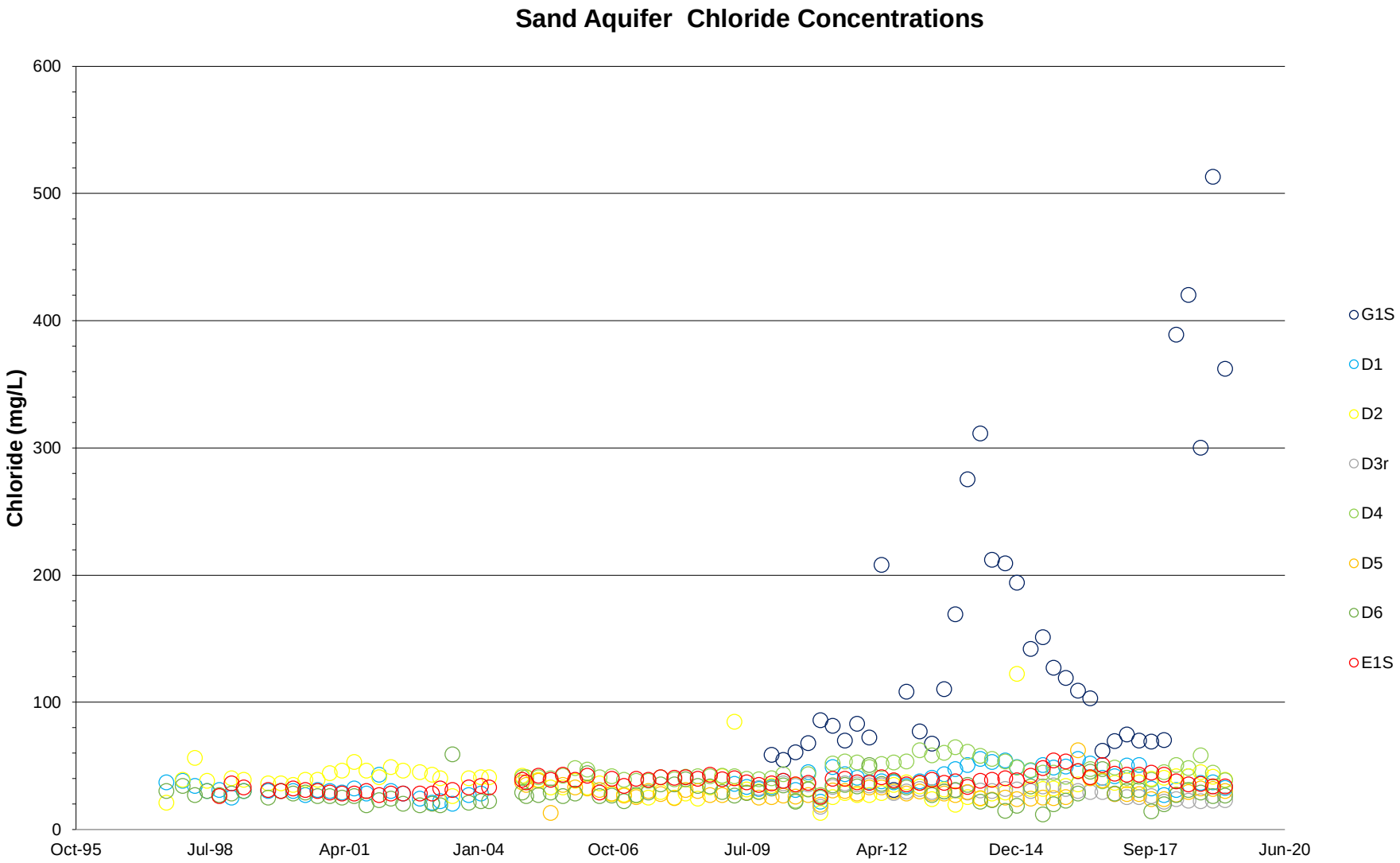
Samples will be retained for a period of time, in suitable conditions appropriate to the analyses requested.

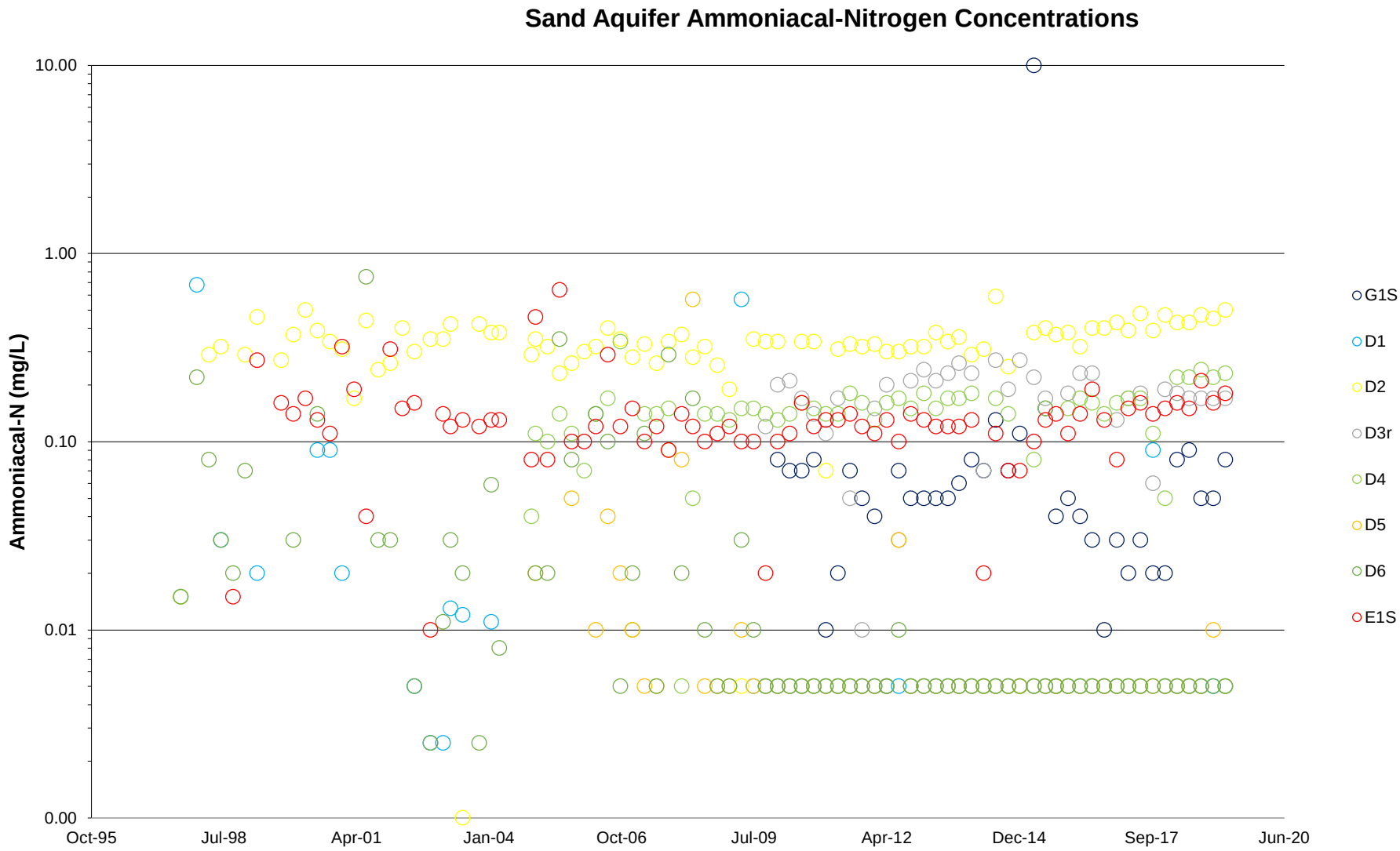
Report Released By
Rob Deacon

Appendix D Historical Result Graphs

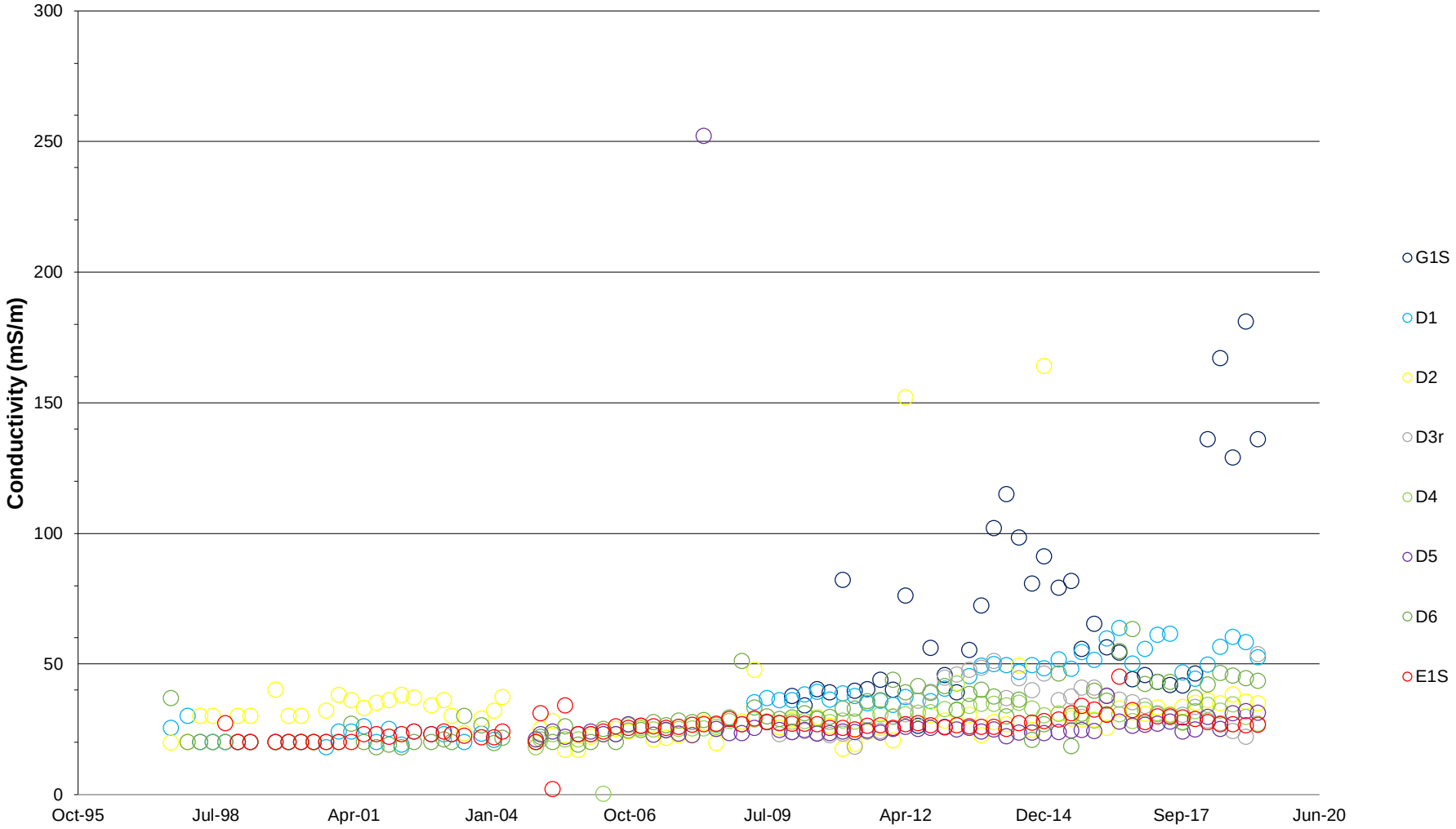
Sand Aquifer Boron Concentrations

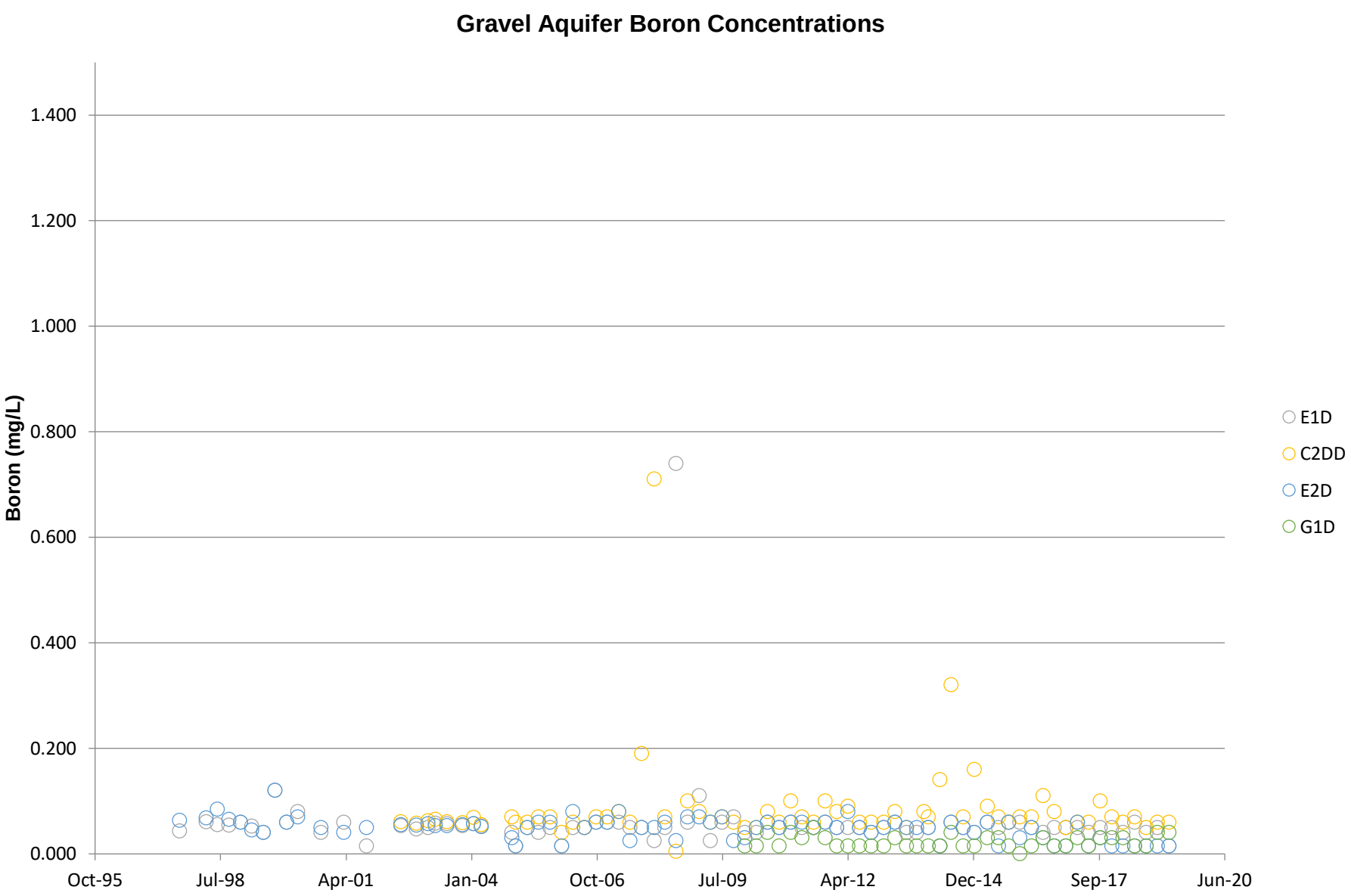


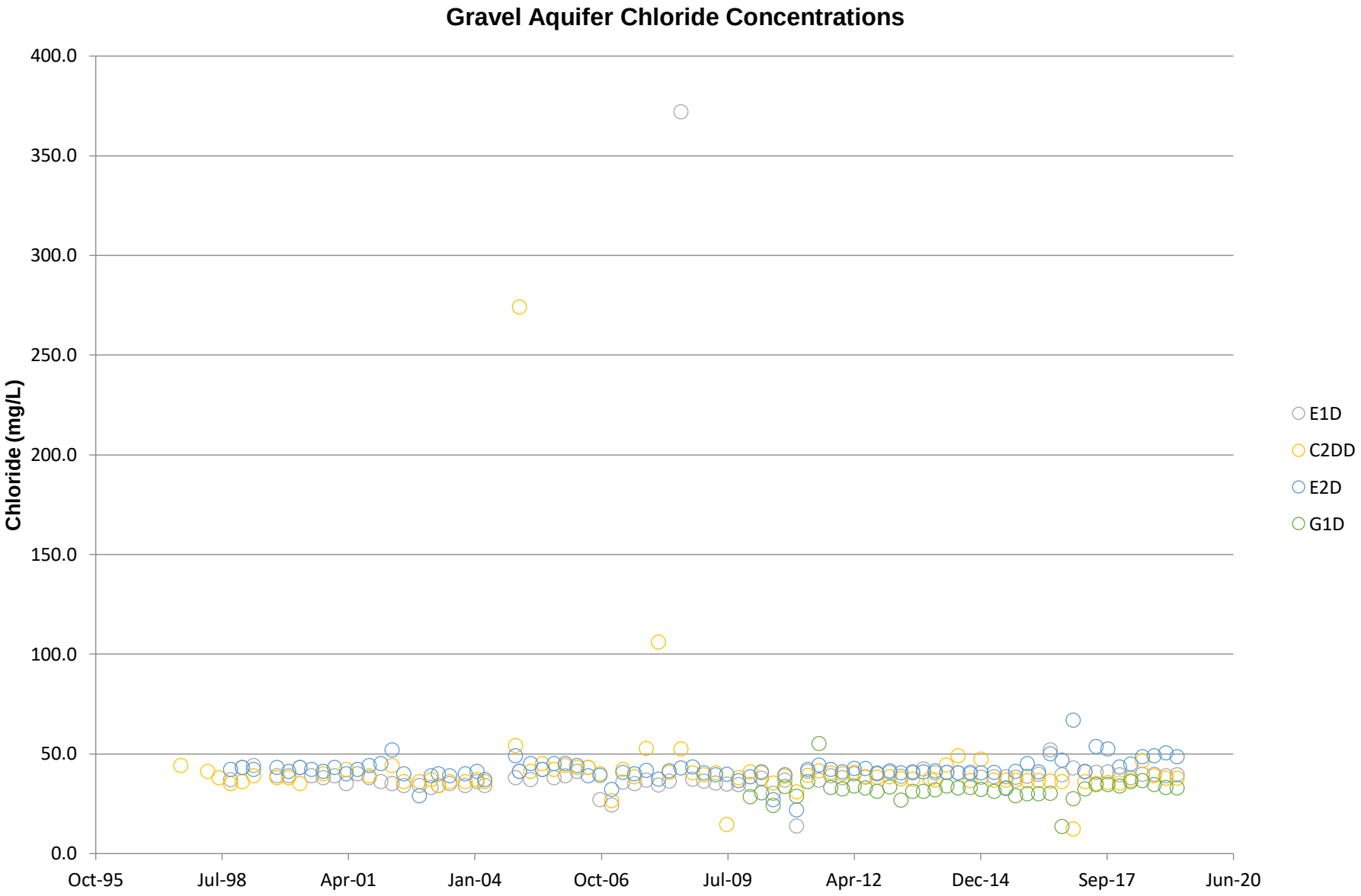

Sand Aquifer Chloride Concentrations
Chloride (mg/L)
600
500
400
300
200
100
0
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
G1S
D1
D2
D3r
D4
D5
D6
E1S

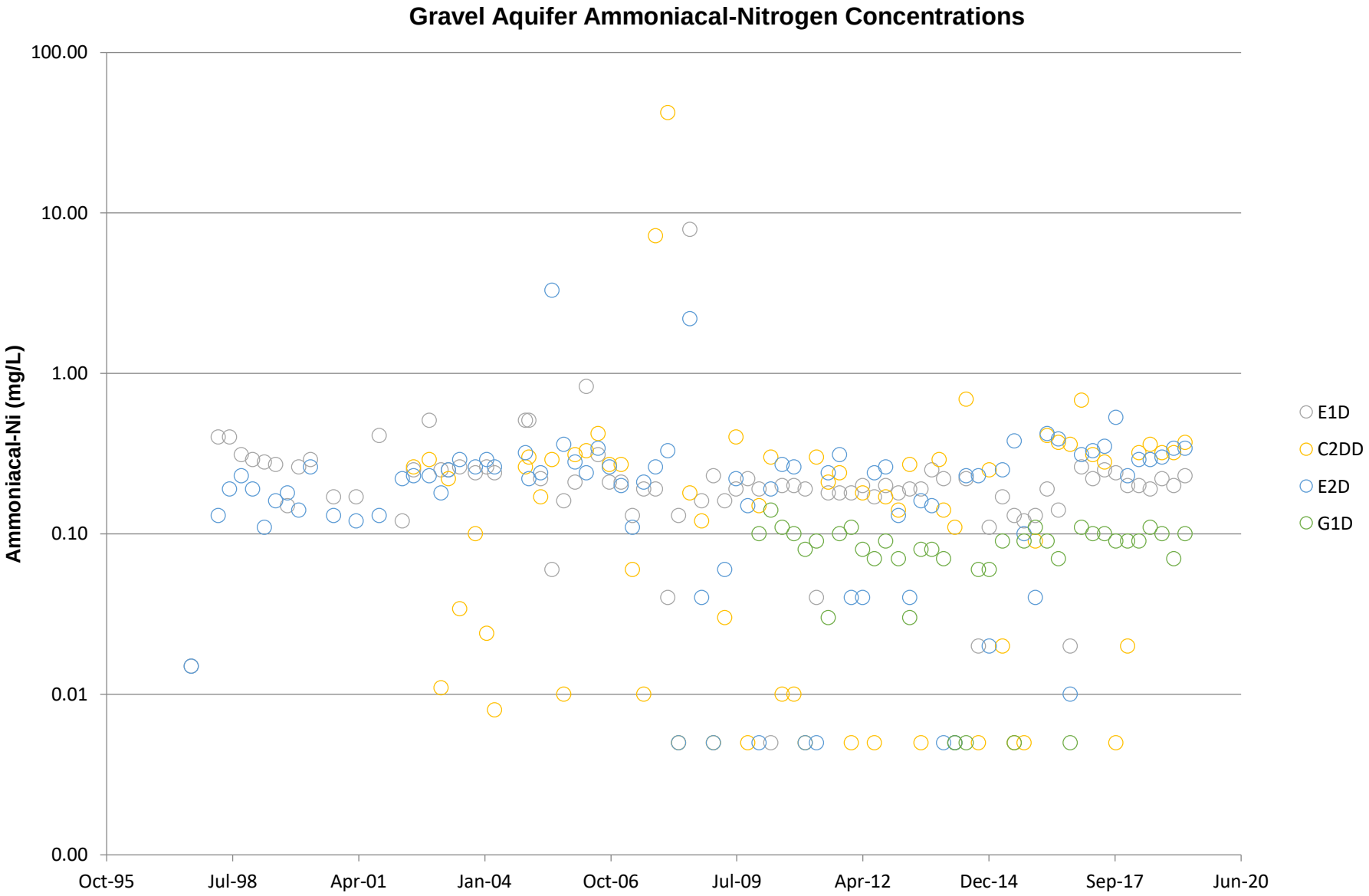

Sand Aquifer Ammoniacal-Nitrogen Concentrations
Ammoniacal-N (mg/L)
10.00
1.00
0.10
0.01
0.00
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
G1S
D1
D2
D3r
D4
D5
D6
E1S

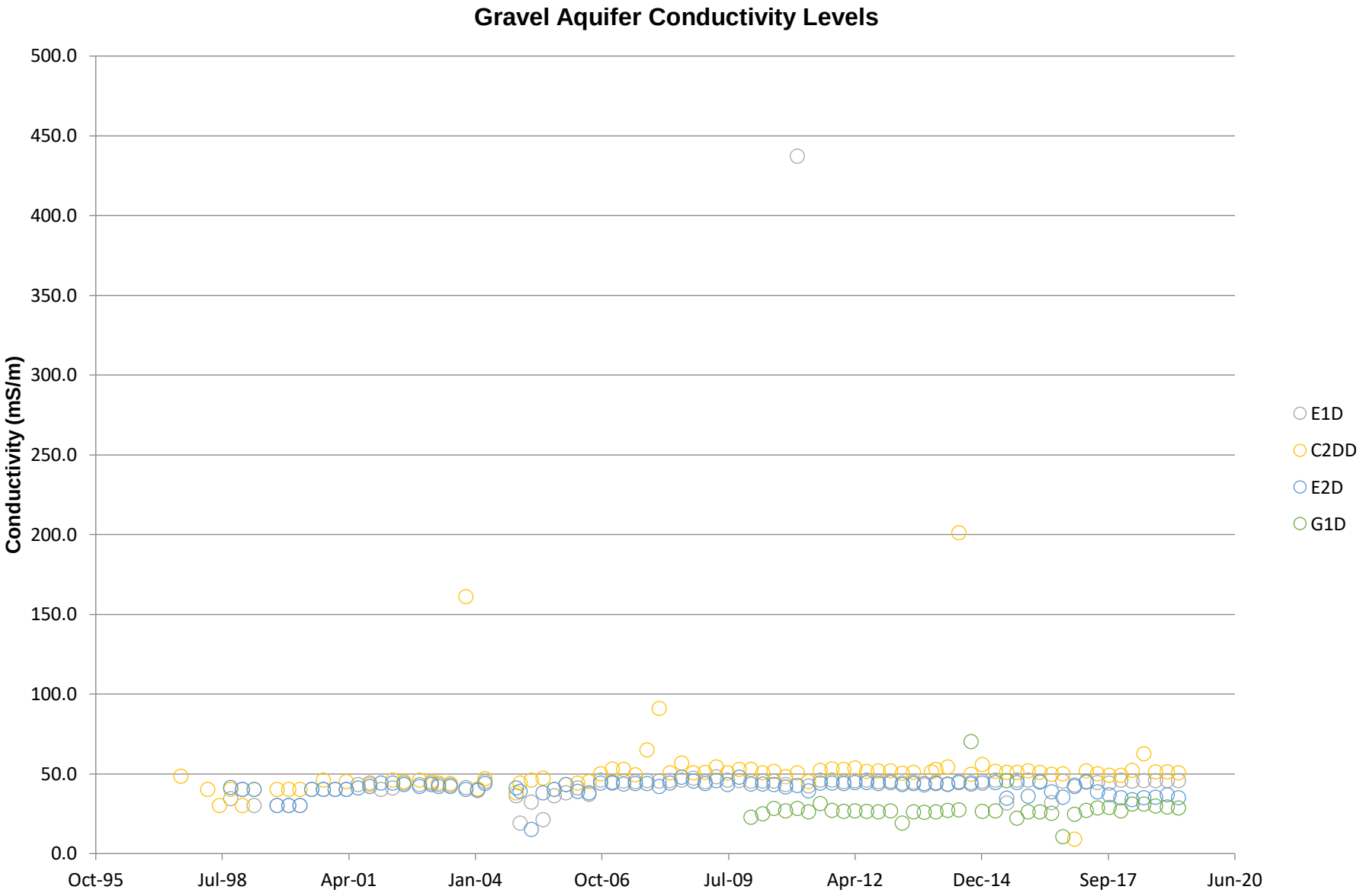
Sand Aquifer Conductivity Levels

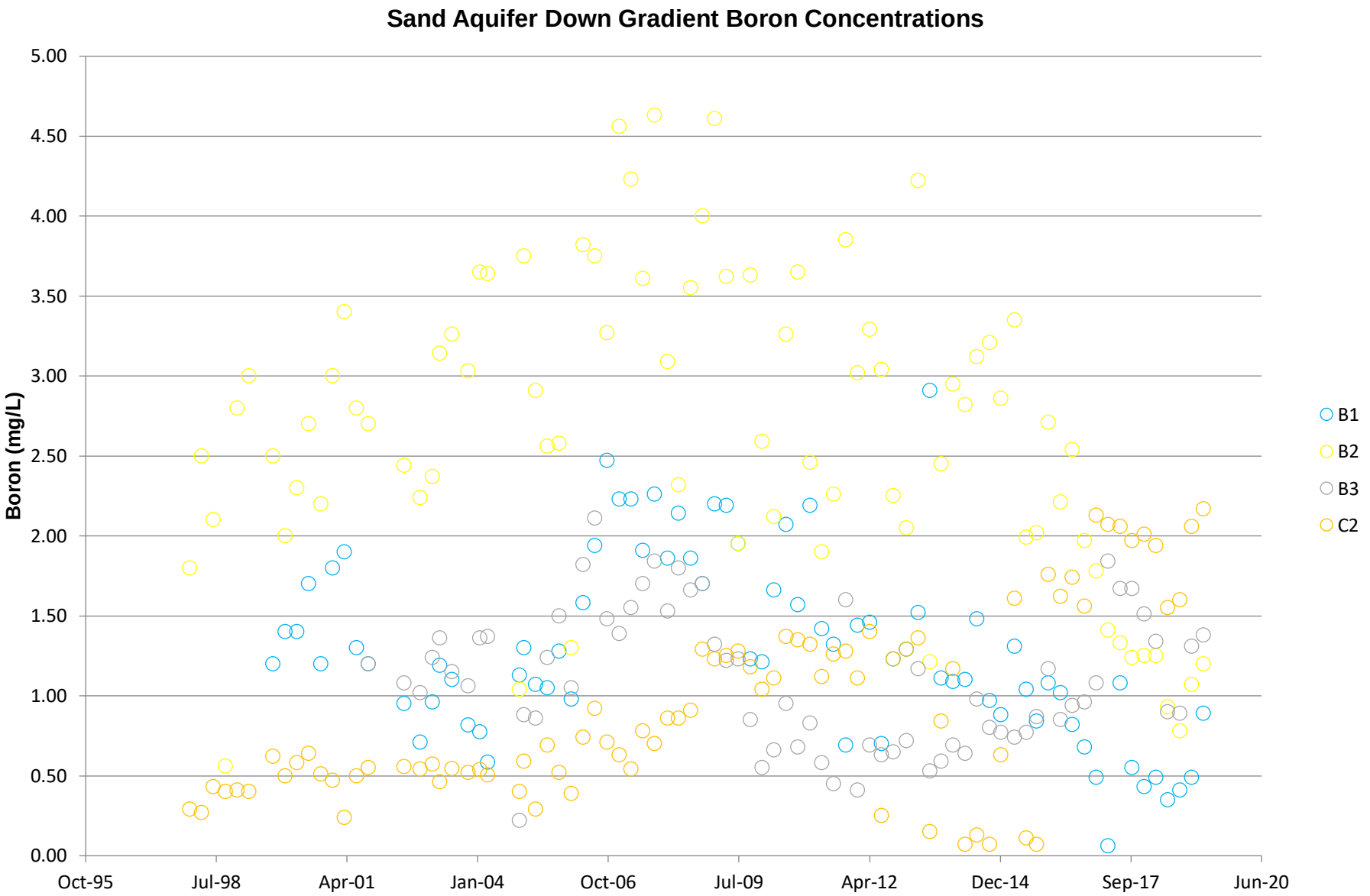


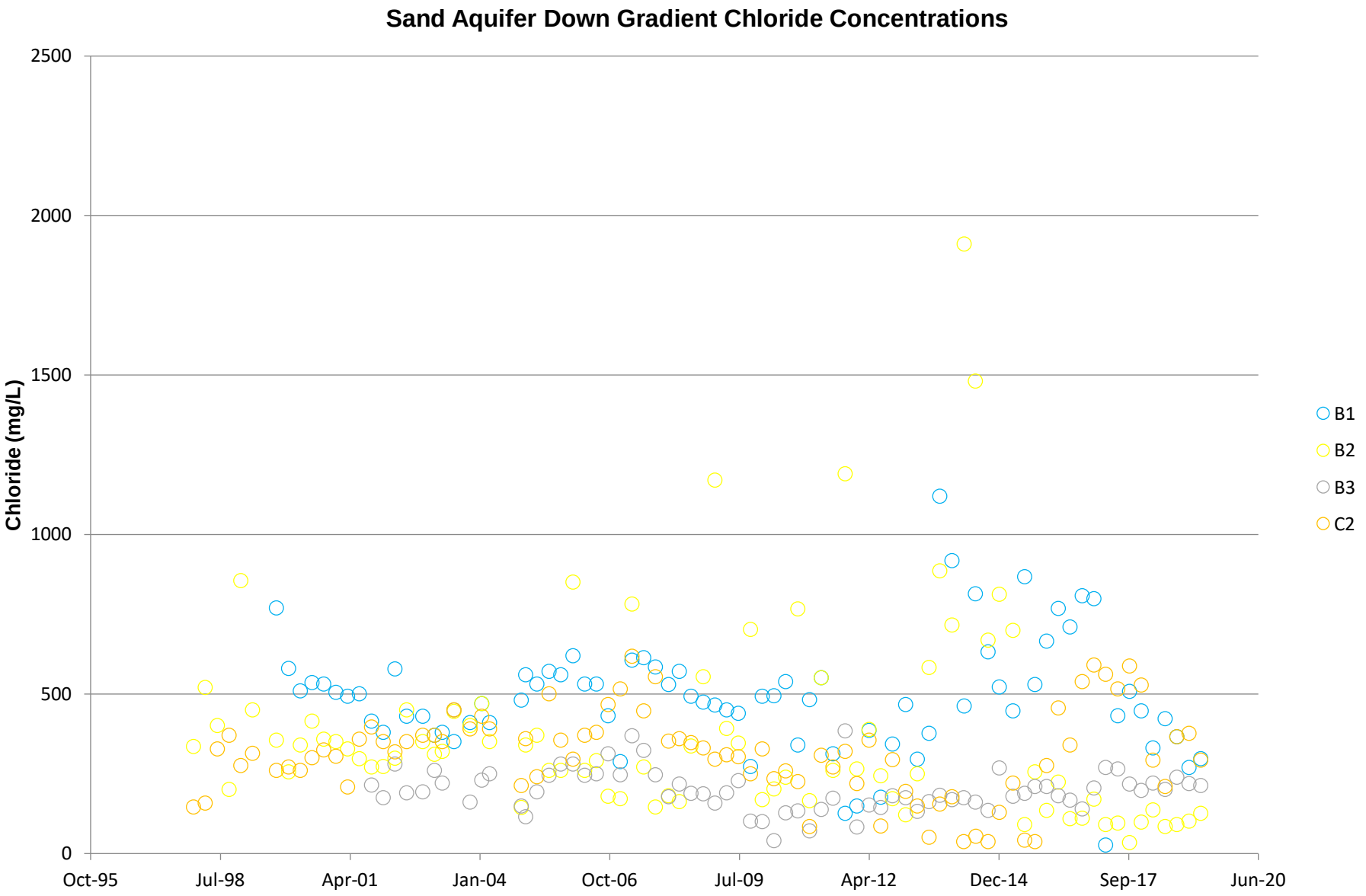

Gravel Aquifer Boron Concentrations
Boron (mg/L)
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
E1D
C2DD
E2D
G1D

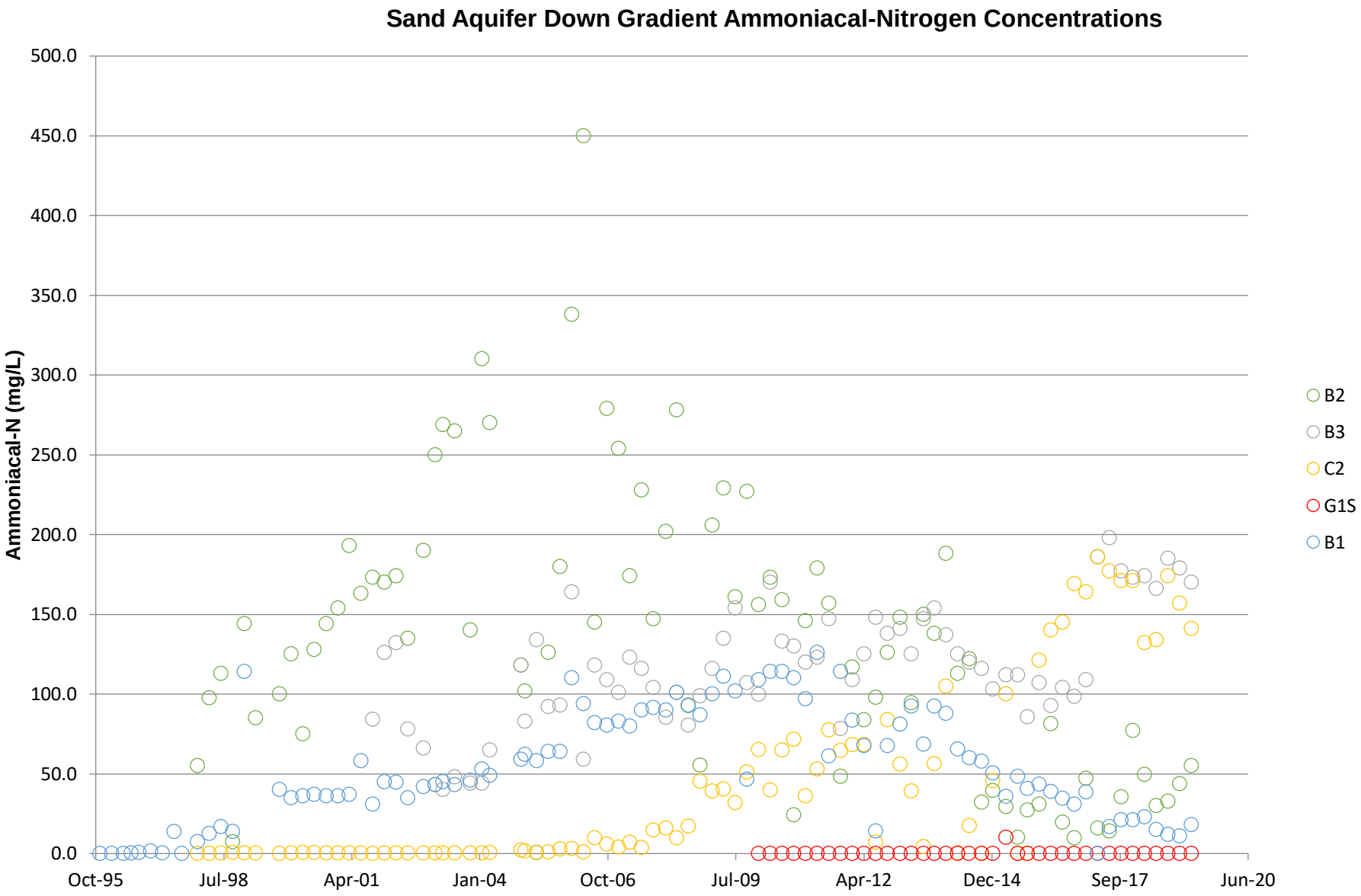

Gravel Aquifer Chloride Concentrations
Chloride (mg/L)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
E1D
C2DD
E2D
G1D

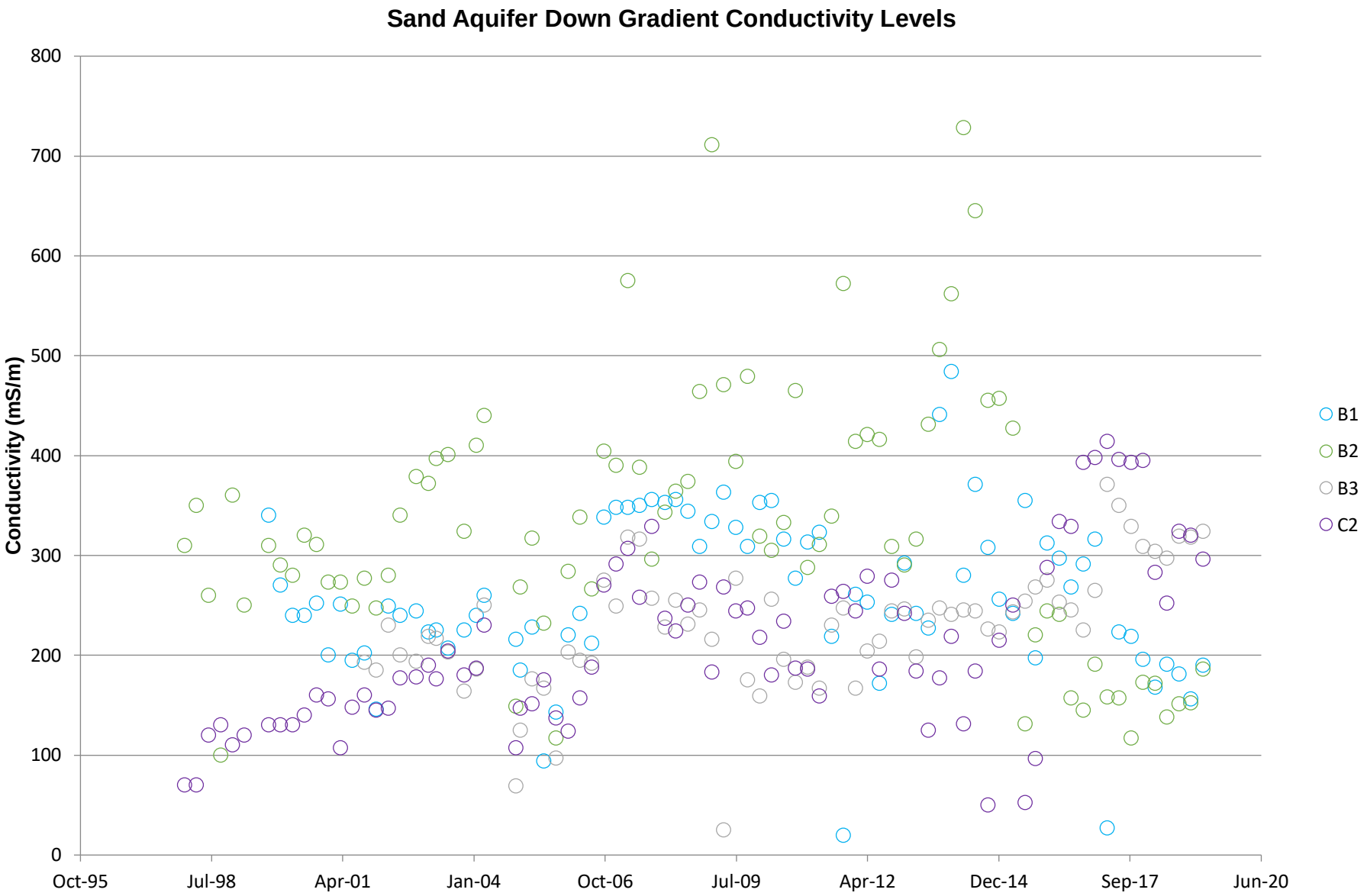

Gravel Aquifer Ammoniacal-Nitrogen Concentrations
Ammoniacal-Ni (mg/L)
100.00
10.00
1.00
0.10
0.01
0.00
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
E1D
C2DD
E2D
G1D

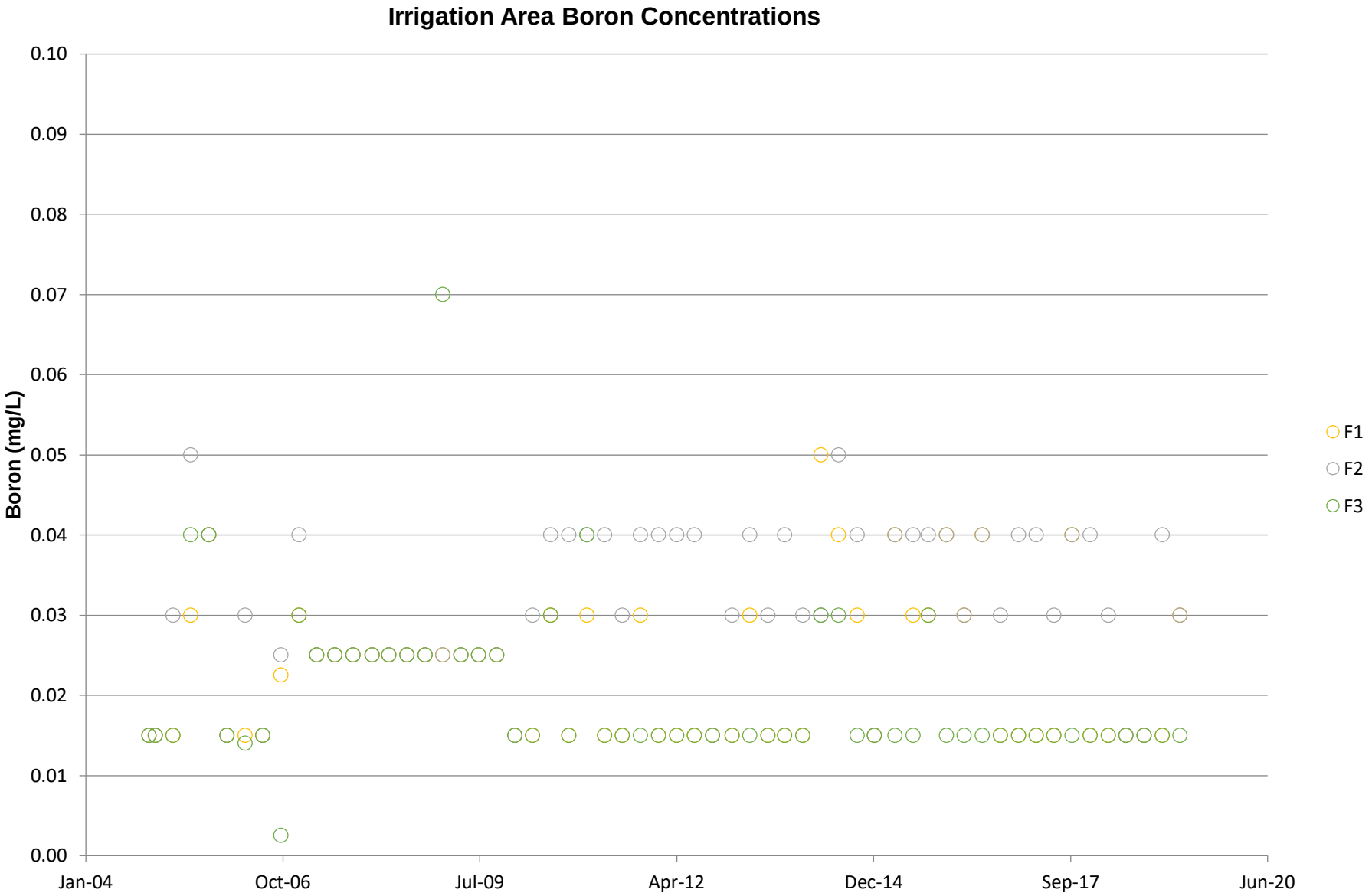

Gravel Aquifer Conductivity Levels
Conductivity (mS/m)
500.0
450.0
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
E1D
C2DD
E2D
G1D

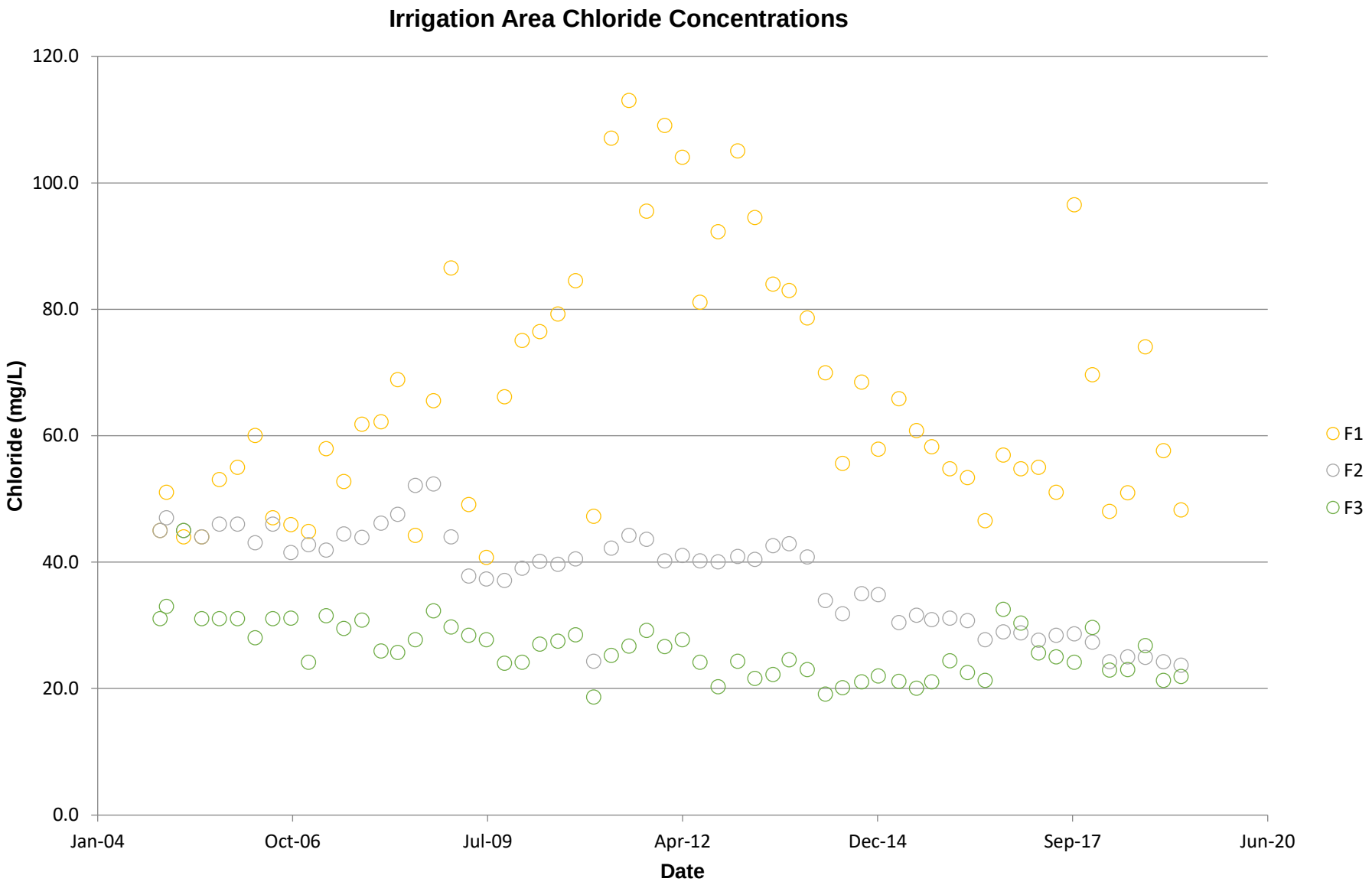

Sand Aquifer Down Gradient Boron Concentrations
Boron (mg/L)
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
B1
B2
B3
C2

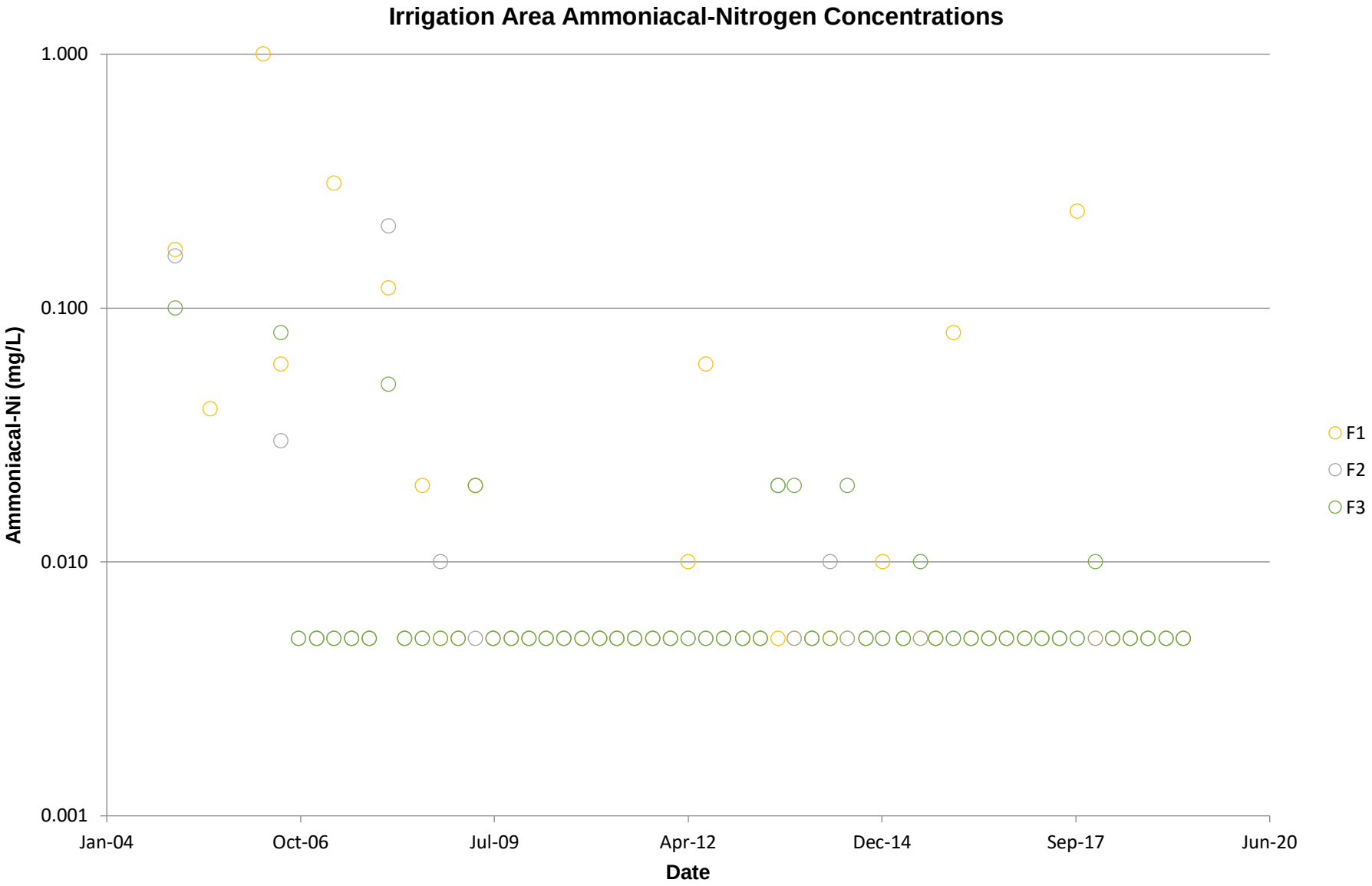

Sand Aquifer Down Gradient Chloride Concentrations
Chloride (mg/L)
2500
2000
1500
1000
500
0
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
B1
B2
B3
C2

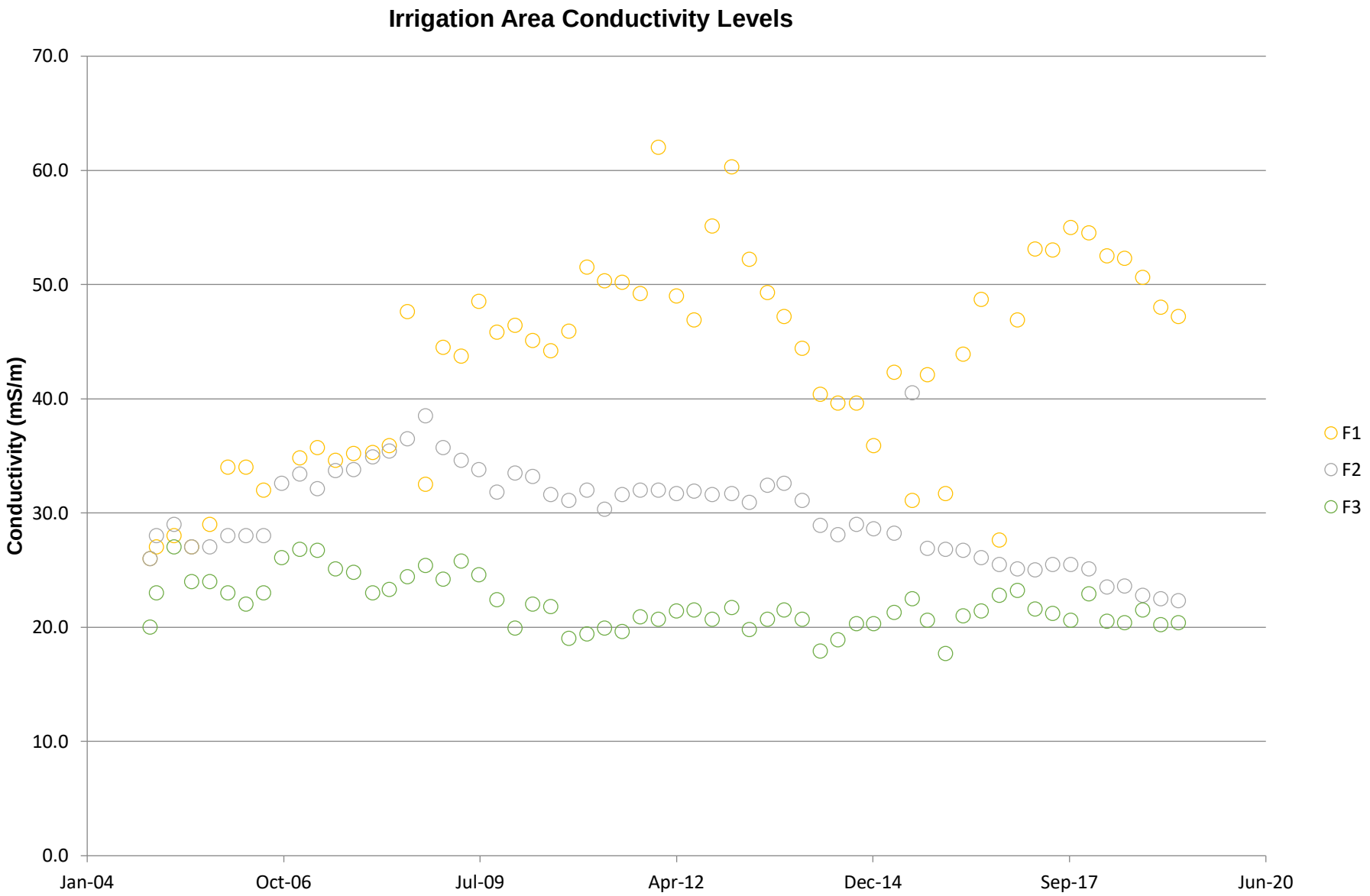

Sand Aquifer Down Gradient Ammoniacal-Nitrogen Concentrations
Ammoniacal-N (mg/L)
500.0
450.0
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
B2
B3
C2
G1S
B1

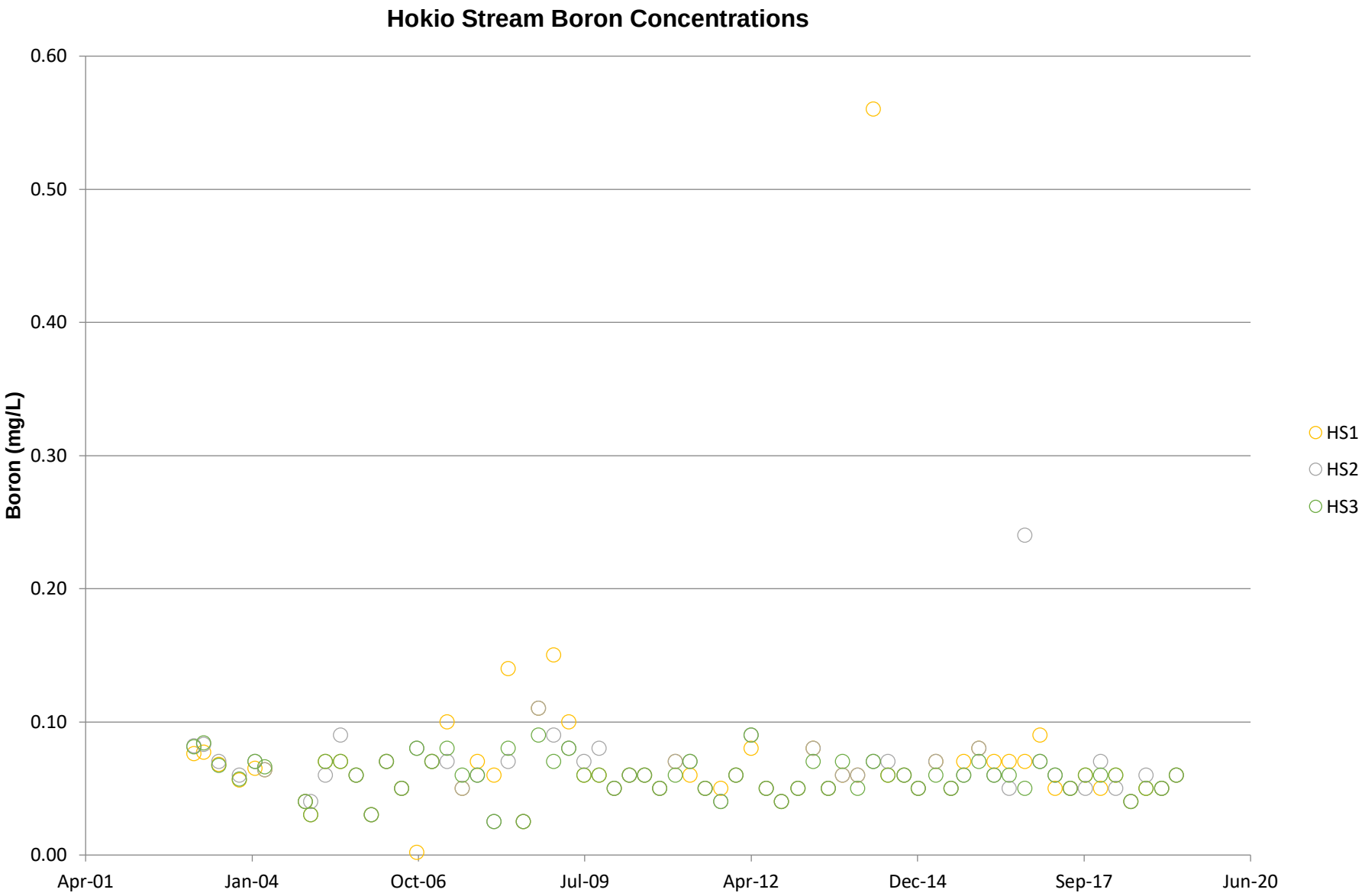

Sand Aquifer Down Gradient Conductivity Levels
Conductivity (mS/m)
800
700
600
500
400
300
200
100
0
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
B1
B2
B3
C2

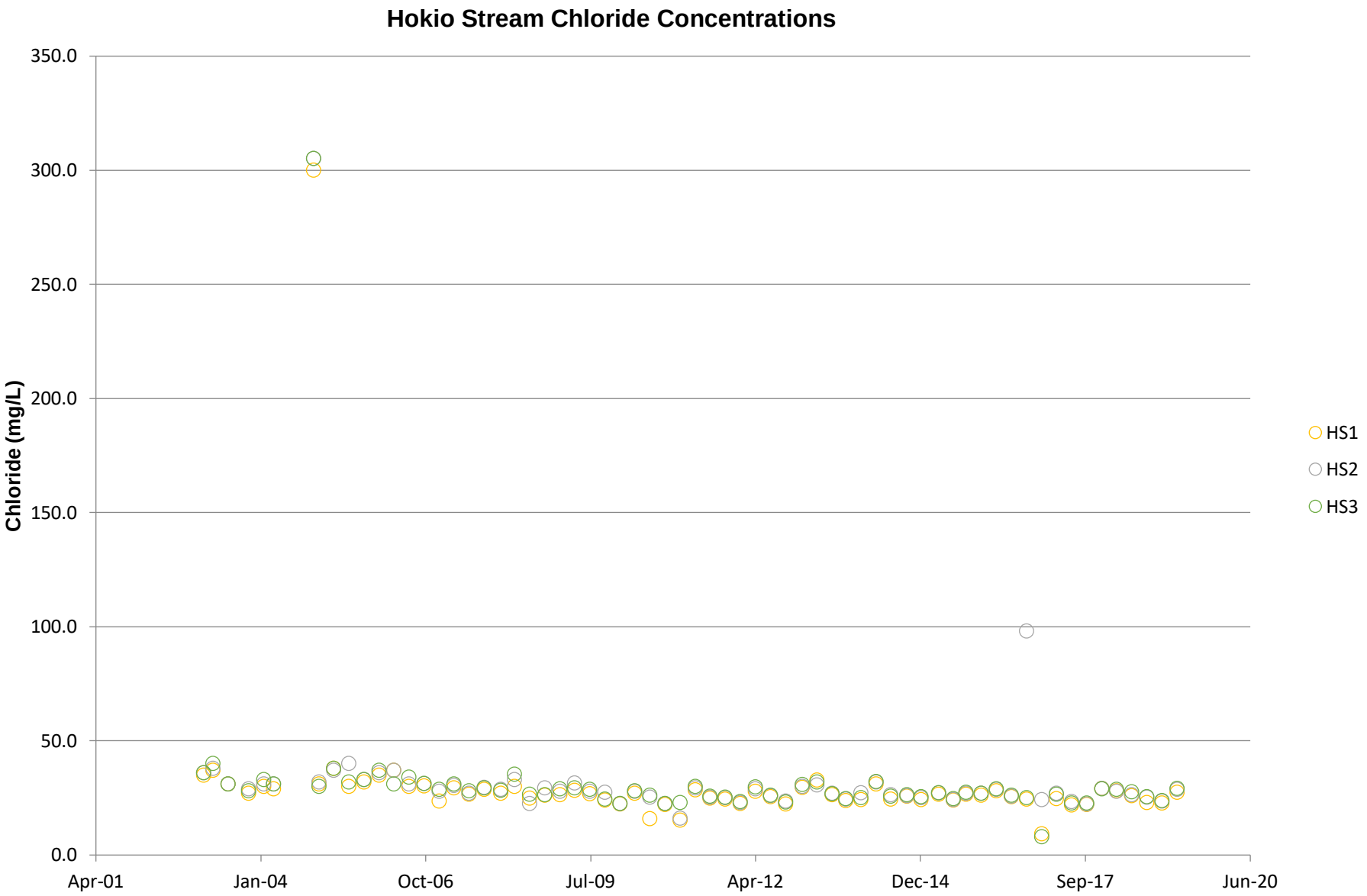

Irrigation Area Boron Concentrations
Boron (mg/L)
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
F1
F2
F3

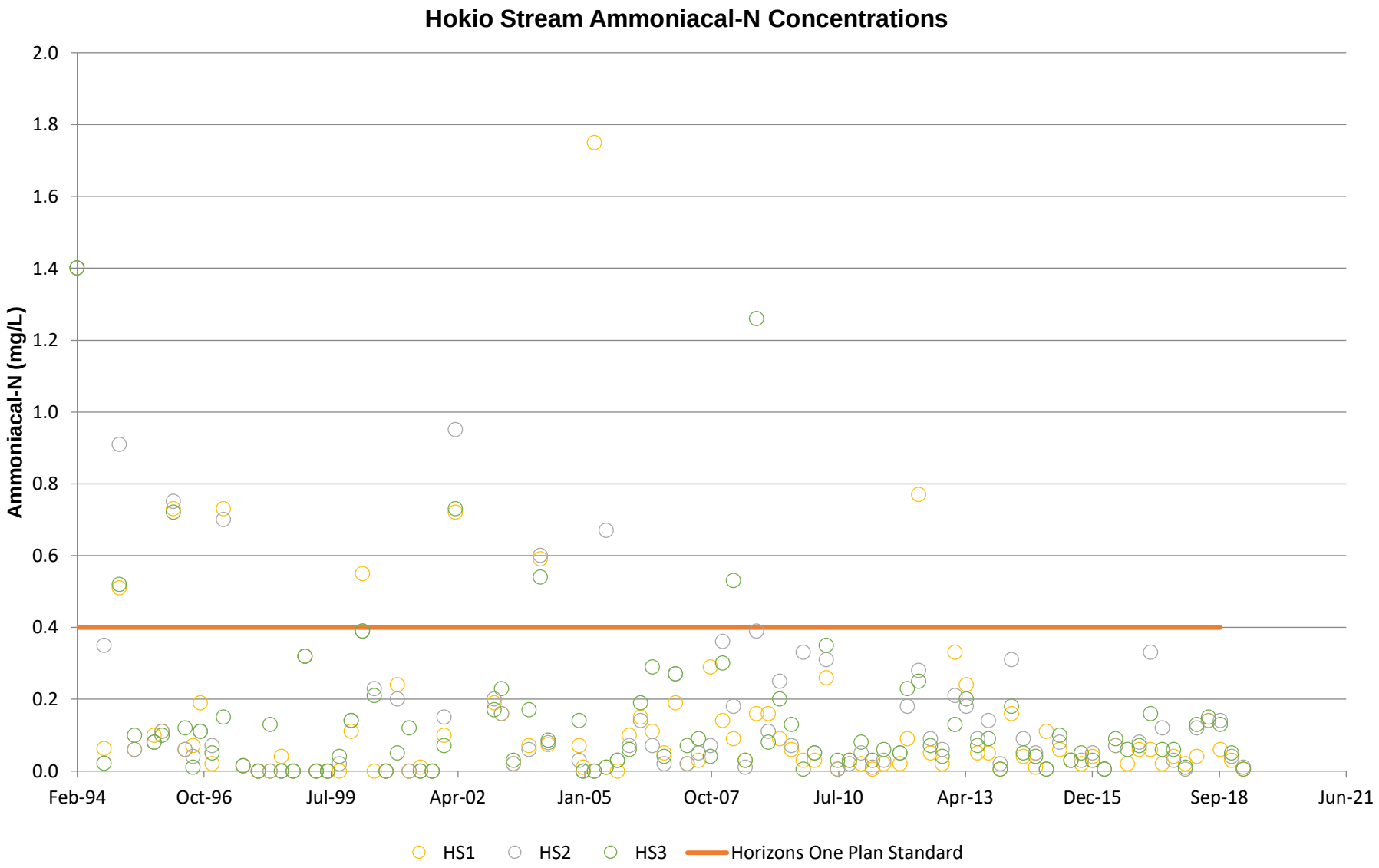

Irrigation Area Chloride Concentrations
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Chloride (mg/L)
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Date
F1
F2
F3

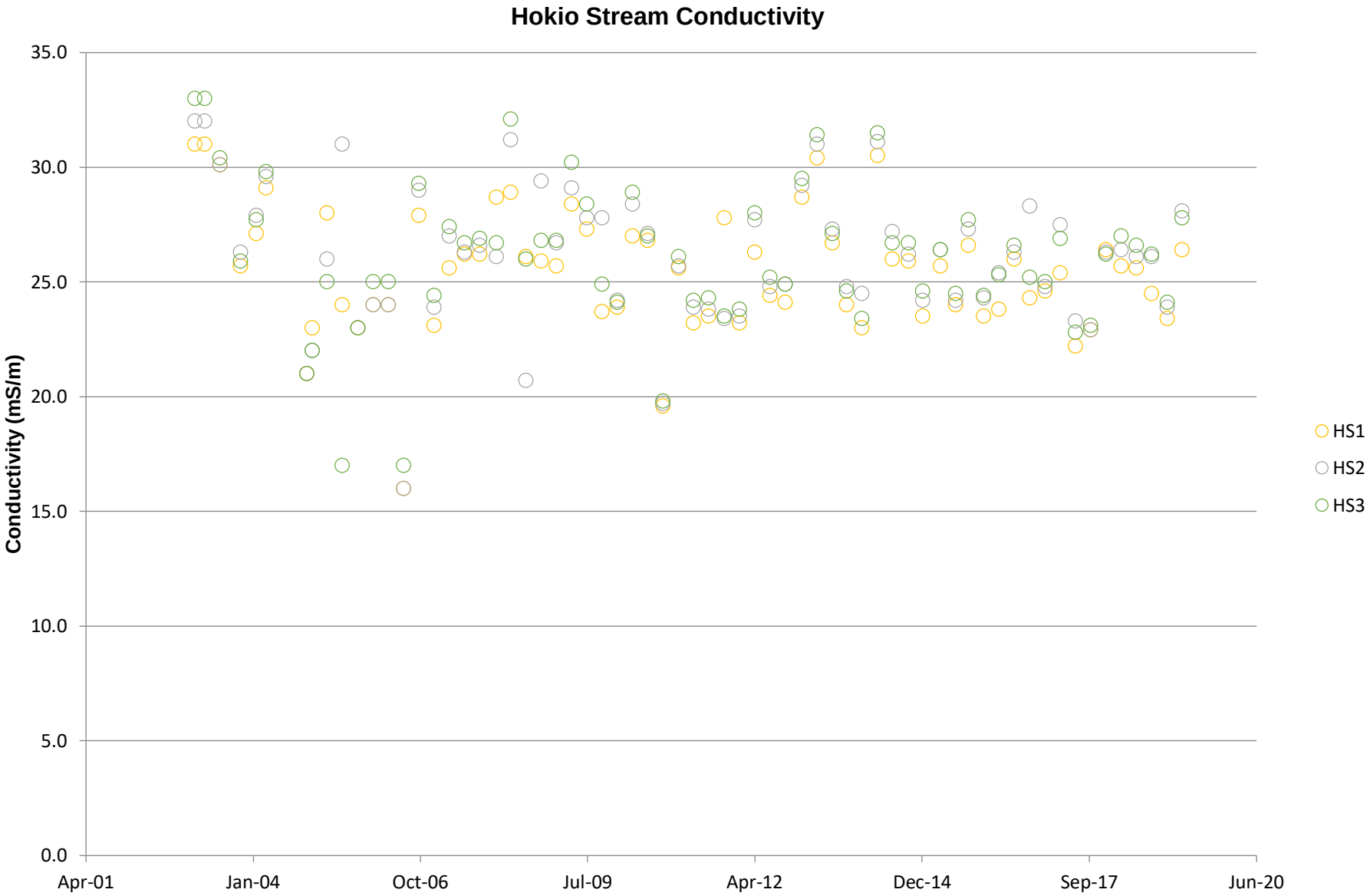

Irrigation Area Ammoniacal-Nitrogen Concentrations
1.000
0.100
0.010
0.001
Ammoniacal-Ni (mg/L)
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
Date
F1
F2
F3


Irrigation Area Conductivity Levels
Conductivity (mS/m)
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
F1
F2
F3


Hokio Stream Boron Concentrations
Boron (mg/L)
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
HS1
HS2
HS3


Hokio Stream Chloride Concentrations
Chloride (mg/L)
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
HS1
HS2
HS3


Hokio Stream Ammoniacal-N Concentrations
Ammoniacal-N (mg/L)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Feb-94
Oct-96
Jul-99
Apr-02
Jan-05
Oct-07
Jul-10
Apr-13
Dec-15
Sep-18
Jun-21
HS1
HS2
HS3
Horizons One Plan Standard


Hokio Stream Conductivity
Conductivity (mS/m)
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Apr-01
Jan-04
Oct-06
Jul-09
Apr-12
Dec-14
Sep-17
Jun-20
HS1
HS2
HS3

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