



**Alice Springs Town Council
Regional Waste Management
Facility
Environmental Performance
Monitoring Report - March 2023**

Prepared for
Alice Springs Town Council

2 August 2023

Tierra Environment Pty Ltd
ABN 84 111 615 680

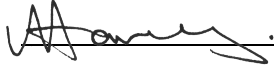
PO Box 360
Mitcham SA 5062
08 8373 2512
general@tierra.com.au

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Document Status

	Name	Signature	Date
Approved for Issue ☒	Prepared by <u>Lauren Harvey</u>		<u>02/08/2023</u>
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1 INTRODUCTION

1.1 General

This report has been prepared by Terra Environment Pty Ltd (Terra) for Alice Springs Town Council (Council). The purpose of this report is to give an account of the current condition of the Alice Springs Town Council Regional Waste Management Facility (RWMF) pertaining to environmental performance based on the environmental data generated by Terra and Council between March 2022 and March 2023.

1.2 Objectives

Council are required to undertake annual monitoring as per their licence conditions and the September 2021 Landfill Environmental Management Plan (LEMP).

The objectives of the environmental performance monitoring are as follows:

- to undertake monitoring of surface water, groundwater, leachate and landfill gas for comparison to licence conditions and previous performance
- to assess potential accumulation of landfill gas in several structures at the periphery of the landfill for landfill gas migration and potential explosive hazard
- to assess the environmental condition of the landfill (i.e. litter, erosion, dust)
- to prepare a report outlining the environmental performance of the landfill

1.3 Site Description

Site details are provided in the table below.

Description	Alice Springs Town Council Regional Waste Management Facility
Address	80 Commonage Road, Ilparpa, Northern Territory
Parcel	7902
Title	CUFT Volume 653 Folio 194
Plan	Survey Plan 88/059
Council	Alice Springs Town Council
Zoning	Community Purpose (CP)
Owner	Alice Springs Town Council

A site location plan is provided as Figure 1 in Appendix A.

1.4 Geological and Topographical Information

The RWMF is situated to the west of the Todd River. According to the geology of the Alice Springs region, 1:100,000 sheet, the landfill is situated on the border of Quaternary alluvial deposits and Late Proterozoic Gillen Member deposits consisting of dolomites and siltstones.

The south-eastern portion of the site is overlain by capped waste mounds between 10m and 15m in height. There are numerous natural ridges running diagonally along the northern edge of the landfill. The ridges represent the strike of the boundary between the alluvium and siltstone/dolomite, with the more resilient dolomite and siltstone forming the ridges.

1.5 Groundwater and Drainage Information

The direction of regional groundwater flow is expected to be east towards the Todd River. Regional surface flow is also expected to enter the river. A December 1999 landfill investigations report supports that the expected direction of groundwater flow is towards the Todd River. This report also identified a radial flow influence from the sewage ponds south of the landfill.

The directions of flows of deeper aquifers within the alluvium or Gillen Members are unknown, but are not necessarily in the same direction as the surface aquifer. It is also unknown if there are hydraulic connections between the upper and lower aquifers.

1.6 Previous Monitoring

Previous environmental monitoring and reporting has been undertaken at the site by Tierra since 2006 and others between 1999 and 2005. Selected historic data and general site information prepared by others previously has been reproduced in this document for reference and comparison purposes. Detailed historic data is presented in previous annual performance reports.

1.7 Scope of Work

The following activities were undertaken as part of the environmental monitoring by Tierra:

- Field monitoring of 17 landfill gas monitoring points for methane (CH₄), carbon dioxide (CO₂), oxygen (O₂), and volatile organic compounds (VOCs)
- Inspection of structures on or in close proximity to the landfill (e.g. outside toilet and office toilets) for potential for landfill gas accumulation and monitoring of any such structures for landfill gas
- Groundwater level gauging, purging and sampling of 13 groundwater wells
- Field analysis of 13 groundwater samples for temperature (°C), dissolved oxygen (% and mg/L), specific conductivity SPC (μS/cm), conductivity (μS/cm), total dissolved solids (ppm), pH and redox potential (mV)
- Laboratory analysis of 13 groundwater samples, 1 intra-laboratory and 1 inter-laboratory groundwater sample for turbidity, total alkalinity, hardness, chloride, Na, K, Mg, Ca, sulphate, ammonia, TKN, organic nitrogen, TOC, BOD, COD, Sb, As, Ba, Be, Cd, Cr, Cr 3+, Co, Cu, Pb, Mn, Hg, Ni, Se, Ag, Tl, V, Zn, Ferrous and Ferric Iron, Cr VI, PAH and PCB
- Laboratory analysis of 8 groundwater samples, 1 intra-laboratory and 1 inter-laboratory groundwater sample for TRH, VOC and SVOC
- Inspection of leachate well
- Inspection of 5 stormwater detention basins
- Collection and analysis of 1 stormwater sample for turbidity, total alkalinity, hardness, chloride, Na, K, Mg, Ca, sulphate, ammonia, TKN, organic nitrogen, TOC, BOD, COD, Sb, As, Ba, Be, Cd, Cr, Cr 3+, Co, Cu, Pb, Mn, Hg, Ni, Se, Ag, Tl, V, Zn, Ferrous and Ferric Iron, Cr VI, PCB, TRH, VOC and SVOC
- Collection and analysis of 1 rinsate and 1 field blank sample for metals and 1 trip blank sample for VOC
- Review of landfill conditions including; surface water, odour, litter, weeds, pest, landscaping and erosion
- Data review and assessment
- Preparation of performance report

2 INVESTIGATION METHODOLOGY

2.1 Landfill Gas

2.1.1 Gas well status

The following table details the current status of the gas wells at the landfill.

Gas Well	Status in March 2023	Comments
MW9	In service	-
MW10A (U, M, L)	In service (L, M) Out of service (U)	Former MW10A (U) has been renamed to MW10A (M). The new MW10A (U) was installed due to planned filling in the area however it is not currently surrounded by fill and hence connected to the atmosphere. This will be rectified in the future as fill is placed around it.
MW12 (U, M, L)	In service	-
MW17	In service	-
MW23 (U, L)	In service	-
MW24 (U, L)	In service (U) Out of service (L)	MW24 (L) is blocked at 3m.
MW25 (U, M, L)	In service (M) Out of service (U, L)	Former MW25 (U) has been renamed to MW25 (M). The new MW25 (U) was installed due to planned filling in the area however it is not currently surrounded by fill and hence connected to the atmosphere. This will be rectified in the future as fill is placed around it. MW25 (L) is blocked.
MW26	In service	-
MW27	In service	-
MW28	In service	-
MW29	Out of service	MW29 is blocked.
MW30	In service	-
MW31	In service	-
MW32	In service	-

Notes to table:

- "A" denotes a replacement well or bore.
- "U," "M" and "L" denote upper, middle and lower monitoring points respectively.

A site plan detailing locations of in service gas bores is presented as Figure 3 in Appendix A.

2.1.2 Landfill gas monitoring

Available gas wells were monitored for concentrations of methane, carbon dioxide, oxygen and volatile organic compounds (CH₄, CO₂, O₂ and VOCs respectively) on 14 to 16 March 2023. Monitoring data prior to March 2023, while not presented in this report, has been utilised to produce plots of gas levels and local moisture budgets over time.

A GA5000 landfill gas analyser with sampling pump was used to test for CH₄, CO₂ and O₂ concentrations. VOC concentrations were measured using an Ion Phocheck Tiger Photo Ionisation Detector (PID).

2.1.3 Landfill gas accumulation monitoring

The potential accumulation of landfill gas was investigated inside the outside toilet, the office toilets, the weighbridge toilet and the rediscovery centre toilet. A GA5000 landfill gas analyser with sampling pump was used to test for CH₄, CO₂ and O₂ concentrations and a PID was used to test for VOCs. The locations of the above toilets are shown on Figure 3 in Appendix A.

2.2 Landfill Leachate

2.2.1 Leachate well status

Leachate Well	Status in March 2023	Comments
MW38	Out of service	There is a kink in the pipe approximately 2m below the surface and is not possible to insert a bailer into the well to get a sample. Sample was attempted to be obtained by using tubing and a footvalve left in well from last monitoring event however the well is damaged 3m off the bottom and tubing cannot be removed (foot valve catches on kink at bottom not allowing removal of tube) and not enough liquid is in the well to pump to surface.

A plan detailing the location of the leachate well is presented as Figure 4 in Appendix A.

2.2.2 Leachate sampling

A leachate sample was not able to be collected as the well is no longer serviceable.

2.3 Surface Water

2.3.1 Detention basin status

The following table details the current status of the detention basins at the landfill.

Detention basin	Status in March 2023	Comments
SW1	Dry	-
SW2	Contained water	-
SW3	Dry	-
SW4	Dry	-
SW5	Dry	-

A plan detailing the locations of the detention basins is presented as Figure 5 in Appendix A.

2.3.2 Surface water sampling

Surface water samples were collected in March 2023 with a bailer which was cast into the water, allowed to sink and then recovered. Samples were collected from detention basin SW2 only as all other detention basins were dry.

2.4 Groundwater

2.4.1 Groundwater well status

The following table details the current status of the groundwater wells at the landfill.

Groundwater Well	Status at March 2023	Comments
MW1	In service	-
MW2	In service	-

Groundwater Well	Status at March 2023	Comments
MW3	In service	-
MW4A	In service	-
MW5A	In service	-
MW6A	In service	-
MW7A	In service	-
MW81	In service	-
MW82	In service	-
MW83	In service	-
MW84	In service	-
MW85	In service	-
MW86	In service	-

Notes to table: "A" denotes a replacement well or bore.

A site plan detailing locations of these groundwater wells is presented as Figure 2 in Appendix A.

The positions and purposes of the wells based on their location and the direction of groundwater flow are as follows:

- MW6A is situated within a filled area of the landfill and could display leachate contamination prior to other wells.
- MW1, MW5A, MW7A, MW85 and MW86 are located down gradient of the landfill and may display leachate contamination.
- MW3 is located up gradient of the landfill and is considered a background bore.
- MW81 is located to the west of the landfill beyond the likely influence of the landfill.
- MW2 and MW4A are situated between the landfill and the sewerage ponds and are considered to show background conditions influenced by the sewerage ponds.
- MW82, MW83 and MW84 were positioned to be located down gradient of the landfill, however based on groundwater level contours appear to be located on a convergence between groundwater flow directions and at this stage it is unclear if they represent background or down gradient landfill conditions.

2.4.2 Sampling preparation

Sample bottles were labelled prior to going on site. Sample bottles for individual wells were removed from the site vehicle immediately after purging and prior to sampling. Sample bottles were labelled with the groundwater well designation as only one sample was to be taken from each well.

2.4.3 Groundwater sampling

All groundwater wells were dipped on 12 March 2023 prior to sampling. Groundwater wells were purged and sampled on 12, 13 and 14 March 2023.

Wells were generally purged prior to sampling until dissolved oxygen, redox potential, conductivity, pH and temperature readings, measured in the field using a YSI Quatro Pro Plus multi parameter water meter, had stabilised. Stabilisation was not achieved in two wells (MW7 and MW81) which ran dry before stabilisation could occur. These wells were left to recover (water returned to well and back to a level similar to the starting level) prior to sampling. Groundwater well summary records for purging are provided in Appendix D.

After the completion of purging activities samples were taken from the well. One sample was collected from each well. Appropriate sampling bottles were used and all samples were stored in an esky with ice prior to

transportation to the laboratory to ensure that optimal storage conditions were achieved as relevant to the type of analyses to be undertaken.

For the purging and sampling of the wells a Waterra Power Pack was used to pump the dedicated tubing and foot valves located in each well.

2.5 Quality Control Sampling

Quality control sampling was undertaken at the rates indicated in the following table.

Quality Sampling	Number samples collected	Number samples analysed
Intra Laboratory Duplicate (groundwater)	1 sample	1 sample
Inter Laboratory Duplicate (groundwater)	1 sample	1 sample
Rinsate Sample	1 sample	1 sample
Field Blank Sample	1 sample	1 sample
Trip Blank Sample	1 sample	1 sample

The procedure for collecting quality samples was the same as for normal samples.

2.6 Tracking of Samples

Tracking of samples was undertaken using Chain of Custody (COC) documentation. COCs were sent to the laboratories with instructions for the analyses required. The laboratories checked the condition and number of samples and signed and returned copies of the COC to confirm the receipt of samples. Copies of COCs are provided in Appendix K.

2.7 Analytical Testing

Analysis of groundwater and surface water samples, intra-laboratory duplicates, rinsate, field blank and trip blank samples were conducted by Eurofins. Inter-laboratory duplicates were analysed by Envirolab Services. Both laboratories hold National Association of Testing Authorities (NATA) registration for the parameters listed in the following table:

Parameter	Analytical Method	Limits of Reporting	Total Number of Samples Tested
Turbidity	Eurofins: APHA 2130B (LTM-INO-4140)	1 (NTU)	14+ (1+0+0+0) quality
Alkalinity	Eurofins: LTM-INO-4250	20	14+ (1+0+0+0) quality
Hardness	Eurofins: APHA 2340B	5	14+ (1+0+0+0) quality
Chloride	Eurofins: LTM-INO-4090	1	14+ (1+0+0+0) quality
Alkali Metals	Eurofins: LTM-MET-3010	0.5	14+ (1+0+0+0) quality
Sulphate	Eurofins: LTM-INO-4110	5	14+ (1+0+0+0) quality
Organic N	Eurofins: APHA 4500	0.2	14+ (1+0+0+0) quality
Ammonia	Eurofins: APHA 4500	0.01	14+ (1+0+0+0) quality
Total Kjeldahl Nitrogen	Eurofins: APHA 4500	0.2	14+ (1+0+0+0) quality
TOC	Eurofins: LTM-INO-4060	5	14+ (1+0+0+0) quality
BOD 5 Day	Eurofins: LTM-INO-4010	5	14+ (1+0+0+0) quality
COD	Eurofins: LTM-INO-4220	25	14+ (1+0+0+0) quality
Metals	Eurofins: LTM-MET-3040	various	14+ (1+1+1+0) quality
	Envirolab: USEPA 6010/6020 & 7470/71	Various	(1) quality
Ferrous/Ferric Fe	Eurofins: LTM-INO-4190	0.05	14+ (1+0+0+0) quality

Parameter	Analytical Method	Limits of Reporting	Total Number of Samples Tested
Cr VI	Eurofins: LTM-INO-4100	0.001	14+ (1+0+0+0) quality
TRH	Eurofins: LTM-ORG-2010 TRH C6-C40	0.02, 0.05, 0.1	9+ (1+0+0+0) quality
VOC	Eurofins: LTM-ORG-2150	0.001 – 0.003, 0.005	9+ (1+0+0+1) quality
SVOC	Eurofins: USEPA SW 846 8270	various	9+ (1+0+0+0) quality
PCB	Eurofins: LTM-ORG-2220	0.0001	14+ (1+0+0+0) quality
PAH	Eurofins: LTM-ORG-2130	0.001	14+ (1+0+0+0) quality

Notes to table:

- Units are in mg/L unless otherwise stated
- Quality in the brackets refers to Eurofins intra-laboratory sample, rinsate, field blank and trip blank samples respectively and Envirolab inter-laboratory samples

3 QUALITY ASSESSMENT

Tierra Environment conducts investigations in accordance with the principles of quality assurance and quality control (QA/QC). The Tierra QA/QC principles include:

- use of established procedures and suitably qualified field personnel for environmental sampling
- documentation of chain-of-custody and sample handling and storage
- use of NATA registered laboratories (where possible)
- use of intra and inter laboratory field duplicates samples and rinsate, field blank, trip blank or trip spike samples

Quality of investigation outputs is maintained by ensuring:

- all staff are appropriately trained
- safety standards are defined and implemented
- good housekeeping practices are adopted during all phases of the investigation
- complete records of fieldwork, samples and data are maintained

Specific quality control procedures conducted for this investigation include:

- the use of appropriate sample collection and handling procedures
- the use of appropriately skilled and experienced personnel
- the application of decontamination procedures where appropriate to minimise cross contamination
- the extraction and analysis within appropriate handling times
- the use of an independent, NATA accredited laboratory for analysis (where possible)
- the collection and analysis of quality samples, e.g. blind duplicates, split duplicates, and internal laboratory duplicates, rinsate, field blank and matrix spike/matrix spike duplicates

Based on the QA/QC information listed in Appendix H, the results are considered to be of an appropriate standard and it is concluded that:

- field investigation and sample preservation methods are appropriate for the investigations reported
- the analytical methods used for site assessment are of appropriate precision and accuracy, and that the sensitivity and selectivity of the analytical methods are appropriate for the assessment of risks
- the precision and accuracy criteria set out in the QA/QC plan, for a given method and matrix, meet the performance expected of the reference method
- the quality of data supplied by the analytical laboratory meets the objectives of the testing laboratory's quality plan for blanks, spikes, control samples, laboratory duplicates and holding times

4 ASSESSMENT CRITERIA

As per the landfill's licence requirements groundwater, surface water and leachate results (where available) are to be assessed against the following criteria:

- ANZG (2018)¹ toxicant default guideline values for 95% level of species protection in freshwater
- ANZECC (2000) water quality trigger values (low risk) for heavy metals and metalloids in livestock drinking water, presented in Table 4.3.2
- ADWG (2011)² Table 10.6 – Guideline values for physical and chemical characteristics

Selected assessment criteria are listed in the summary table of analytical results provided in Appendix E.

As per the LEMP, the acceptance criteria for landfill gas are as follows:

- methane should be less than 1% by volume in perimeter wells
- CO₂ should be less than 1.5% by volume in perimeter wells

¹ Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2018 online revision

² Health and aesthetic criteria from The Australian Drinking Water Guidelines (ADWG) 6, 2011, updated 2018 was used in lieu of Guidelines for Managing Risks in Recreational Water (GMRRW), 2008 as the criteria in the GMRRW is taken from an old version of the ADWG.

5 INVESTIGATION RESULTS

5.1 Landfill Gas Monitoring

In March 2023, methane, carbon dioxide and oxygen concentrations were measured in 17 landfill gas monitoring points³.

Monitoring results for the 11 serviceable wells situated within the filled landfill area were as follows⁴:

	March 2023	
	Min	Max
Methane	26.5%	58.2%
Carbon dioxide	30%	45.5%
Oxygen	0.0%	0.0%
VOC (PID)	2ppm	13.5ppm

Serviceable wells within the active landfill area were MW9, MW10-M/L, MW12-U/M/L, MW17, MW23-U/L, MW24-U and MW25-M.

The low oxygen and high carbon dioxide levels are consistent with an anoxic methane-producing environment, such as landfills. Methane concentrations measured in wells were above the upper explosive limit (UEL) of 15%.

Monitoring results for the 6 serviceable perimeter wells were as follows:

	March 2023	
	Min	Max
Methane	0%	0%
Carbon dioxide	0.2%	2.4%
Oxygen	13.4%	19.2%
VOC (PID)	1ppm	4.5ppm

Serviceable wells around the perimeter of the landfill were MW26, MW27, MW28, MW30, MW31 and MW32.

Carbon dioxide levels measured in MW26 (2.4%) and MW30 (1.6%) in March 2023 were above the 1.5% criterion stipulated in the LEMP. These levels can occur in natural soils and in the absence of any methane are unlikely to be associated with the landfill.

Landfill gas monitoring results are presented in Appendix B.

5.2 Landfill Gas Trends

Landfill gas generation is related to the moisture content within the fill for the majority of the life of a landfill. Generally an increase in moisture content results in an increase in landfill gas generation. The moisture content of the fill in the landfill is unknown. Meteorological records (pan evaporation and precipitation) logged at the Alice Springs airport between 1967 and June 2017⁵ serve as useful proxy records to determine landfill moisture budgets. Surplus moisture budgets may facilitate increased water infiltration resulting in rising fill moisture content.

³ As discussed in Section 2.1.1 landfill gas monitoring point MW24 was not serviceable during this monitoring event.

⁴ Monitoring results for MW24(L) and MW25(U) were not used as it appears that the well may have a leak.

⁵ The Bureau of Meteorology stopped recoding pan evaporation measurements at the Alice Springs airport in July 2017. Pan evaporation measurements from this date onwards is based on the average pan evaporation between the years 2007 and 2017 for each month.

From the pan evaporation and precipitation records a continuous moisture budget since 1967 has been calculated. The moisture budget has been conservatively corrected for pan effects⁶ and soil effects⁷. A moisture budget figure is presented in Appendix C.

A graphical comparison between rainfall data and methane concentrations in monitoring wells since 2013⁸ has been prepared and is also provided in Appendix C

In general LFG monitoring since 2013 indicate a general trend to lower methane concentrations as would be expected during sustained periods of moisture budget deficits however there are noticeable increases in the methane levels in wells following moisture surpluses as recently observed following the November 2021 moisture surplus.

5.3 Landfill Gas Accumulation Monitoring

There is the potential for landfill gas to accumulate inside structures on the landfill. Hence concentrations of methane, carbon dioxide and oxygen were measured inside the outside toilet, the office toilets, the weighbridge toilet and the rediscovery centre toilet. Measured levels were consistent with outside atmospheric conditions, i.e. an accumulation of landfill gases in these structures was not detectable at the time of monitoring. Landfill gas accumulation monitoring records are provided in Appendix B.

5.4 Leachate Analytical Results

A leachate sample was not able to be collected as the well is no longer serviceable.

5.5 Surface Water Field Observations

A water quality meter was used to record parameters in sampled water from SW2. In summary the following parameters were obtained:

	pH	Specific Conductivity (µS/cm)	Dissolved Oxygen (%)	Redox Potential (mV)	Odour	Dis-colouration	LNAPL
SW2	8.0	1481	21	92	No	Yes (green)	No

5.6 Surface Water Analytical Results

Surface water was present in detention basin SW2 in March 2023. Results from the surface water sample exceeded assessment criteria for turbidity, ammonia, chloride, arsenic, copper, iron and manganese. Toluene was also reported at the laboratory's limits of reporting (1ug/L reported and limit of reporting is also 1ug/L) which is less than the Australian Drinking Water Guideline for health and aesthetic criteria. Results for other chemical substances complied with assessment criteria where available.

Detention basins SW1, SW3, SW4 and SW5 were dry.

5.7 Groundwater Survey Results

Groundwater level surveys have been conducted at the site since November 1999. Groundwater level survey results for the last ten years are presented Appendix F.

Between March 2022 and March 2023 water levels in observation wells fluctuated with increases between 0.06m (MW84) to 1.27m (MW81) and decreases between 0.21m (MW83) and 1.02m (MW2).

Groundwater at the landfill appears to be influenced by artificial recharge associated with the effluent treatment ponds to the south of the landfill which are inferred to create a groundwater mound below the southern portion of the landfill. The influence of the sewage ponds in dry periods may become more

⁶ Raw pan evaporation data has been multiplied by 0.75 to conservatively account for the pan effect in an arid environment as Alice Springs.

⁷ The raw pan evaporation data after accounting for the pan effect has been multiplied by 0.5 to conservatively account for the effect of evaporation from an alluvium as opposed to the pan itself.

⁸ Methane data from the August 2015 and 2016 monitoring events was omitted from the graph to reduce the effect of seasonal variation on the methane trends.

pronounced and this may be reducing the influence of the regional flow which is expected to be from the north-west to the southeast. Groundwater levels in wells between the landfill and the sewage ponds are more likely to be influenced by seepage losses from the sewage ponds than the levels in wells further away from the ponds.

A contour map of the groundwater levels⁹ for March 2023 is presented as Figure 6 in Appendix F. The contour map is similar to previous years with little change in the overall inferred groundwater flow patterns.

5.8 Groundwater Conductivity Monitoring

Field conductivity measurements were collected from all groundwater wells during purging.

Current conductivity levels continue to reflect the trend of elevated groundwater conductivity in wells within the vicinity of the sewage ponds compared to the groundwater conductivity in wells located on the northern side of the landfill.

A plot of the March 2023 TDS contours is provided as Figure 7 in Appendix F.

5.9 Groundwater Field Observations

Records of groundwater gauging and purging are presented in Appendix D. In summary the following purging results were obtained:

	pH	Specific Conductivity (µS/cm)	Dissolved Oxygen (%)	Redox Potential (mV)	Odour	Dis-colouration	LNAPL
MW1	6.6	4438	1.7	73	No	No	No
MW2	6.5	7040	0.3	138	No	No	No
MW3	7.0	1394	0.2	-263	No	No	No
MW4A	6.6	6428	0.4	-49	No	No	No
MW5A	6.6	5504	2.6	45	No	No	No
MW6A	6.6	3610	1.9	-20	No	No	No
MW7A	6.8	3620	42	-14	No	No	No
MW81	6.7	6004	8.6	-103	No	No	No
MW82	6.6	4569	0.7	12	No	No	No
MW83	6.7	2267	0.7	-116	No	No	No
MW84	6.6	2193	27	81	No	No	No
MW85	6.9	1117	69	99	No	No	No
MW86	6.7	3315	10	45	No	No	No

5.10 Groundwater Analytical Findings

Results for the analytes described in this section are presented in Appendix E. Original laboratory certificates are presented in Appendix K.

Groundwater results generally complied with assessment criteria with the following exceptions:

⁹ Groundwater contours are based on all wells except MW86 as no elevation data has been provided for this well.

	Background between ponds and landfill		Background wells		Indicator Wells						Other Wells		
	MW2	MW4A	MW3	MW81	MW1	MW5A	MW6A	MW7A	MW85	MW86	MW82	MW83	MW84
Ammonia			✗										
Chloride	✗	✗		✗	✗	✗	✗	✗		✗	✗		✗
Sodium	✗	✗		✗	✗	✗	✗	✗		✗	✗		
Sulphate	✗	✗	✗	✗	✗	✗	✗	✗		✗	✗	✗	✗
Hardness	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Copper	✗	✗		✗	✗	✗		✗	✗	✗	✗	✗	✗
Manganese		✗									✗		
Nickel	✗												
Selenium			✗										
TRH C6-C10	✗	✗									✗	✗	

The observed exceedances in the above table for chloride, sodium, sulphate, hardness, copper, manganese and nickel are likely attributed to background conditions as exceeded concentrations are also present in background wells.

Ammonia and selenium concentrations were elevated in MW3 compared to the other wells and recent monitoring events. However this well is considered a background well and therefore the higher concentrations are unlikely to be attributed to the landfill. It should also be noted that the elevated concentrations are consistent with the levels recorded in March 2018.

Concentrations of TRH C₆-C₁₀ were detected in MW2, MW4A, MW82 and MW83 above the laboratory's limits of reporting however no criterion exists for TRH. Analysis for TRH after silica gel clean up was not performed as the analysis can not be performed on the volatile C₆-C₁₀ chain.

MW2 and MW4A are background wells as they are located up hydraulic gradient from the landfill and therefore the reported TRH concentrations in these wells is unlikely to be attributable to the landfill. Due to their location between the sewage ponds and the landfill it is more likely the TRH is from the unlined sewage ponds. MW82 is located on the western boundary of the waste facility and while likely representative of background conditions given its proximity to MW83 the reported concentration of TRH may be attributable to the landfill in particular the liquid waste ponds.

Given the proximity of MW83 to the liquid waste ponds and the previous practice of decanting water (from below the oils) from the liquid waste ponds on to piles of wood chip on the adjacent ground surface (this practice ceased in 2020) it is likely that groundwater in this area was impacted. As this practice is ceased it is expected that the concentrations in the groundwater should improve. A review of the last four years of monitoring can confirm this. MW83 was installed prior to the 2020 round and TRH was detected at that point. At approximately the same time the practice of discharge on wood chips was stopped and TRH has generally been decreasing since however a slight increase was noticed this monitoring event. It should be noted though that the 2023 concentration is still an order of magnitude less than the 2020 concentration. TRH concentrations in MW83 are summarised in the following table.

TRH Fraction	2020 Concentration mg/L	2021 Concentration mg/L	2022 Concentration mg/L	2023 Concentration mg/L
C ₆ -C ₁₀	0.25	0.12	0.03	0.06
C ₁₀ -C ₁₆	<LOR	<LOR	<LOR	<LOR
C ₁₆ -C ₃₄	<LOR	0.2	<LOR	<LOR
C ₃₄ -C ₄₀	<LOR	0.5	<LOR	<LOR

5.11 Groundwater Trend Analysis

The concentration of selected analytes (listed below) detected in groundwater at each monitoring point has been plotted over time since February 2006 (where data is available). A graphical representation of this is provided in Appendix G. A review of the graphs identified the following:

- Alkalinity – Concentrations of total alkalinity have been measured since February 2014. Concentrations have varied between monitoring events. There was a slight downwards trend observed this year compared to no trend last year however concentrations are relatively consistent with historical levels.
- Ammonia – Concentrations have generally been consistent since 2006 with the occasional outlier. The outlier this year was MW3 which reported higher concentrations but still in line with historical high levels. It should also be noted that MW3 is a background well and that the absolute values of ammonia for a landfill setting are low.
- BOD – BOD levels have been measured since February 2006. Historically there has been some variance in BOD levels however concentrations have generally been consistent since February 2014 with the exception of a slight increase in two wells in August 2016 and an increase in three wells (MW3, MW1 and MW4A) and very slight increase in two wells MW82 and MW7A this monitoring event. It should be noted that MW3 and MW4A are considered background wells.
- Calcium – Concentrations have generally been consistent since February 2006.
- Chloride – Concentrations have generally been consistent since February 2014.
- Chromium – Concentrations have generally been consistent since February 2008.
- COD – Concentrations measured since 2011 have varied between monitoring events however there is no trend that would appear associated with impacts with the landfill.
- Conductivity – Results have been generally consistent since February 2006. It is noted that MW3 had a significant increase in concentration compared to its historical levels.
- Copper – Concentrations varied between February 2006 and February 2012. Since 2012 concentrations have been generally consistent with the exception of 2019 where concentrations increased in five wells, two of which were background wells. Copper concentrations in 2023 were generally consistent with long term levels with the exception of MW2 (a background well) which showed an increase in concentration. This increase however was consistent with levels reported in February 2011.
- Iron – Concentrations varied between February 2006 and February 2009. Since 2009 concentrations have been low and generally consistent.
- Lead – Concentrations have been generally consistent since February 2006 with a slight increase in four wells in 2019 and one well in 2022. This monitoring event concentrations were similar to the long term averages.
- Manganese – Concentrations have generally been consistent since February 2014 with exception of MW5A which increased up to August 2016 and has decreased since. Concentrations in MW2 have also been decreasing since February 2017. A slight increase in MW4A was observed in 2022 higher

than the historical concentrations and has increased again this year. It should be noted that MW4A is considered a background well.

- Mercury – Concentrations have generally been consistent since February 2006, with the exception of MW1 and MW2 in 2018 and 2019 and MW2 this monitoring event when concentrations were reported slightly higher. It should be noted that MW2 is considered a background well.
- Nickel – Concentrations have generally been consistent since February 2014.
- pH – pH values have generally been consistent since February 2006, with the exception of MW3 which generally decreased until March 2018 and in 2021 when there was a slight increase in some of the wells. This monitoring event pH values are consistent with last years and also historical levels. A plot of pH contours is provided as Figure 8 Appendix F.
- Selenium – Concentrations have generally been consistent with long term concentrations however an increase in concentration in MW3 was observed this monitoring event. A similar spike in concentration was observed in MW3 in 2018.
- Sodium – Concentrations have generally been consistent with long term concentrations.
- Sulphate – Concentrations have generally been consistent with long term concentrations.
- Temperature – Observed temperatures are generally consistent with long term levels.
- TKN – Concentrations have generally been consistent since 2006 with the occasional outlier (MW7A and MW2 in March 2019 and May 2021 respectively). Concentrations were generally in line with historical levels with the exception of MW7A which experienced a large increase in concentration albeit still lower than the 2019 spike.
- TOC – Concentrations in 2023 have all increased and are generally higher than long term concentrations but still in the same order of magnitude. This trend will need to be confirmed and tracked in future rounds however as the trend is observed in all wells (background and indicator) it is unlikely associated with the landfill.
- Zinc – There have been some notable historical variations in concentrations. Results in 2023 were generally consistent across all the wells and relatively low compared to the historic concentration ranges.

While there have been minor increases in some analytes, there does not appear to be a consistent increase (i.e. the concentration of analytes increasing in the same wells each time) or the presence of key landfill leachate analytes in these wells. In addition increases are generally within the range or similar to long term trends.

6 ENVIRONMENTAL MONITORING RECORD RESULTS

6.1 General

As part of the requirements of the LEMP for the landfill, Terra monitored the following aspects of the landfill during the annual site visit:

- surface water
- odour
- litter
- weeds
- pests
- landscaping
- erosion

In addition Low Ecological Services (on behalf of Council) monitored the following at regular intervals throughout the year:

- particulate matter less than 10 microns (PM₁₀)
- odour
- litter
- noise

Records of the monitoring activities are presented in Appendix J. A plan showing the locations where dust and noise monitoring activities were undertaken is provided as Figure 9 in Appendix A.

6.2 Surface Water

Stormwater pond SW2 contained water and ponds SW1, SW3, SW4 and SW5 were dry. The water in pond SW2 was slightly turbid but was not discoloured, did not have any sheens and was not odorous. The water appears to have been receding as there was evidence of a higher water level. The water in the pond was sampled as part of the investigation works.

Drainage lines appeared to be in relatively good condition.

6.3 Odour

During Terra's site visits no landfill odours were noticed at the monitoring locations. There were odours in the vicinity of the sewage ponds but this was not related to the landfill.

Throughout the year Low Ecological Services undertook odour monitoring at monitoring locations around the landfill and near the offsite effluent ponds on 47 occasions. Landfill odour was observed on 13 of the 47 occasions and odour from the effluent ponds was observed on 8 of the 47 occasions.

6.4 Litter

During Terra's site visit the active filling area was small and material was compacted as it was placed. Recently filled areas were well covered. The recycling area to the west of the filling area (where metals, concrete and timber are recycled) are larger than previous years however they are well stockpiled, marked and the surrounding areas are neat. There was minor litter observed on the landfill slopes, however it was not considered significant. No excessive litter caused by landfill activities was observed on adjacent properties.

In general the landfill is in neat and tidy condition and access roads are well maintained.

During the course of the year Low Ecological Services undertook monitoring of litter at either one or more locations (e.g. the landfill or dust monitoring locations) on 47 occasions. Litter was observed on 8 of the 47 occasions. It is unknown where the litter was observed or how much litter was observed.

6.5 Weeds and Landscaping

Weeds are generally quite wide spread likely due to the recent extensive rains. Side slopes and the top of the landfill are well vegetated with the top having mainly weeds. While weeds are dominant in some areas this does not seem to be an issue as it has stabilised the surface well.

6.6 Pests

Bird numbers (eagles and crows) were as in previous years low which is consistent with the fact that the active filling area is small and compacting and covering is continuous throughout the day.

6.7 Erosion

Erosion control appeared good. A healthy spread of vegetation on the side slopes appeared to be assisting the slope stability. There has been some placement of mulch on the southern slope which has covered erosion gullies and should be adequate for light to moderate rain events. Heavier rains may remove this material as it is not stabilised with plantings or matting and this should be monitored and repaired if need be.

6.8 Particulate Matter

Throughout the year Low Ecological Services undertook monitoring of dust levels at three locations, i.e. West of Little Sisters Camp, East of Little Sisters Camp and on the landfill. Based on the information received the average particulate levels from March 2022 to March 2023 ranged from 0.003mg/m³ to 0.11mg/m³ and which is slightly lower than the 2021 to 2022 levels of 0.002mg/m³ to 0.337mg/m³. Average dust levels were observed to be below 0.05mg/m³ on the majority of occasions throughout the year with the exception of four events where levels exceeded 0.05mg/m³, thereby complying with the conformance criterion of no more than 5 exceedances per year. It should be noted that these were measured on average over a 6hr period and not a 24hr period. Typically results over a 24hr period are lower as the contribution from overnight (when works on site are not occurring) are included in the average concentration.

Particulate matter monitoring records are presented in Appendix J.

6.9 Noise

Low Ecological Services monitored noise levels from locations situated around the landfill throughout the year on 47 occasions. For each monitoring event multiple readings were taken over an approximate 6hr period and then the percentage of the readings that were recorded to be above either 65dB, 80dB and 95dB was noted. Based on data provided the following was observed:

- On no occasions were any of the readings found to exceed 95dB or 80dB.
- Noise levels were observed to be over 65dB on all occasions. The percentage of readings recorded above 65dB ranged from 8% to 13%.

Noise monitoring records are presented in Appendix J.

7 SUMMARY AND RECOMMENDATIONS

7.1 Summary

On the basis of information contained in this report (i.e. observations made during site presence, field and analytical testing), the following conditions are summarised:

- On average methane levels measured in wells were generally consistent with the previous year, however slight decreases were noted in MW12(M), MW12(L) and MW23(L) and slight increases were noted in MW12(U) and MW25(M).
- The highest concentration of methane was measured in well MW25(M) located within the filled area.
- Concentrations of methane were not detected in perimeter bores MW26, MW27, MW28, MW29, MW30, MW31 and MW32.
- The concentration of CO₂ in perimeter bores MW26 and MW30 was above the criterion of 1.5%. This can occur in natural soils and in the absence of any methane are unlikely to be associated with the landfill.
- Monitoring of potential accumulation points during this monitoring visit did not find levels of methane above the instrument's limit of detection.
- Surface water samples from detention basin SW2 were collected and analysed. Results from the surface water samples exceeded assessment criteria for turbidity, ammonia, chloride, arsenic, copper, iron and manganese. Toluene was also reported at the laboratory's limits of reporting but below the ADWG criteria for health and aesthetic criteria. Results for other chemical substances complied with assessment criteria where available.
- The presence of leachate in MW38 was unable to be assessed due to damage to the well.
- Groundwater level survey results indicated that the effluent ponds to the south of the site affect groundwater levels with a groundwater mound being created and natural groundwater gradients being altered in the vicinity of the effluent ponds.
- Analytical results for groundwater samples generally complied with assessment criteria. Of the exceedances (TRH, ammonia, chloride, sodium, sulphate, hardness, copper, manganese nickel and selenium) all except TRH are likely attributed to background conditions as exceeded concentrations are present in both background wells and indicator wells/wells more likely to be influenced by the landfill.
- Concentrations of TRH C₆-C₁₀ in MW2, MW4A, MW82 and MW83 were above the laboratory's limits of reporting, however no criteria were specified for TRH C₆-C₁₀. As MW2 and MW4A are background wells located downgradient of the sewage ponds and upgradient of the landfill the observed TRH concentration is unlikely to be attributable to the landfill. Given the proximity of MW82 and MW83 to the liquid waste ponds and the previous practice of decanting water (from below the oils) from the liquid waste ponds on to piles of wood chip on the adjacent ground surface (this practice ceased in 2020) it is likely that groundwater in this area was impacted. A review of the last four years of monitoring confirm that concentrations of TRH are decreasing and concentrations in 2023 were an order of magnitude less than the 2020 monitoring event.
- From the trend analysis of the groundwater data base - while there have been minor increases in some analytes, there does not appear to be any consistent increases (i.e. the concentration of analytes increasing in the same wells each time) or the presence of key landfill leachate analytes in these wells. In addition increases are generally within the range or similar to long term trends.
- Drainage lines appeared to be in relatively good condition. Surface water in SW2 was turbid but not discoloured and did not have any sheens or odours.
- During Tierra's site visit no landfill odours were noticed however odours were observed in the vicinity of the offsite sewage ponds. Low Ecological's monitoring throughout the year identified landfill odours on 28% of the occasions and sewage pond odours on 17% of the occasions.

- In general the landfill is in neat and tidy condition and access roads are well maintained.
- Bird numbers (eagles and crows) were low, consistent with previous years likely due to the active filling area being small and compacting and covering being continuous throughout the day.
- Vegetation while lush this round due to recent rains and containing a high percentage of weeds appears to be stabilising the landfill and until such time as final capping and revegetation is proposed the current vegetation should not be disturbed.
- Particulate matter was observed to be below 0.05mg/m^3 on the majority of occasions throughout the year with the exception of four events where levels exceeded 0.05mg/m^3 , thereby complying with the conformance criterion of no more than 5 exceedances per year.
- Noise monitoring results complied with the assessment criteria for the year.

7.2 Recommendations

Environmental monitoring conducted at the landfill provided sufficient data to allow a reasonably thorough assessment of the landfill's environmental performance in terms of groundwater, landfill gas and general environmental issues.

On the basis of monitoring results available to date the following is recommended:

- Landfill gas accumulation in enclosed spaces on and adjacent to the landfill should continue to be monitored to ensure that safety limits of methane concentrations are not exceeded.
- Monitoring of landfill gas within the landfill should be continued as described in the Landfill Environmental Management Plan.
- MW24(L), MW25(L) and MW29 should be repaired or replaced prior to the next monitoring event to allow the collection of reliable LFG data in this location.
- Groundwater monitoring should be continued as described in the Landfill Environmental Management Plan.
- Well MW83 and MW82 should be monitored in the future to further investigate the presence of elevated concentrations of TRH.
- The TOC trend should be tracked in upcoming rounds of investigation. However at present it does not appear to be associated with the landfill.
- As there are no longer any available leachate wells Council should consider installing new wells within filled areas of the landfill.
- The active face of the landfill should continue to be kept small to minimise litter, odour and pests.
- The recent erosion gully repair along the southern face (placement of mulch) should be inspected after heavy rains and repair works undertaken if required.

8 LIMITATIONS OF USE

Site contamination is generally a product of man-made processes and therefore exhibits characteristics and properties that vary from place to place and can change with time. Contamination assessments involve gathering and assimilating limited facts about these characteristics and properties in order to better understand or predict the status of contamination on a particular site under certain conditions.

The facts reported and utilised in this document were obtained by inspection, excavation, sampling, testing, and other means of investigation or from the client. They are directly relevant only to the ground at the place where and time when an investigation was carried out.

Any interpretation or recommendation given in this report is based on judgment and experience and not on greater knowledge of the facts than the sources of information indicate. The interpretations and recommendations are opinions provided for the sole use by Alice Springs Town Council and in accordance with a specific brief.

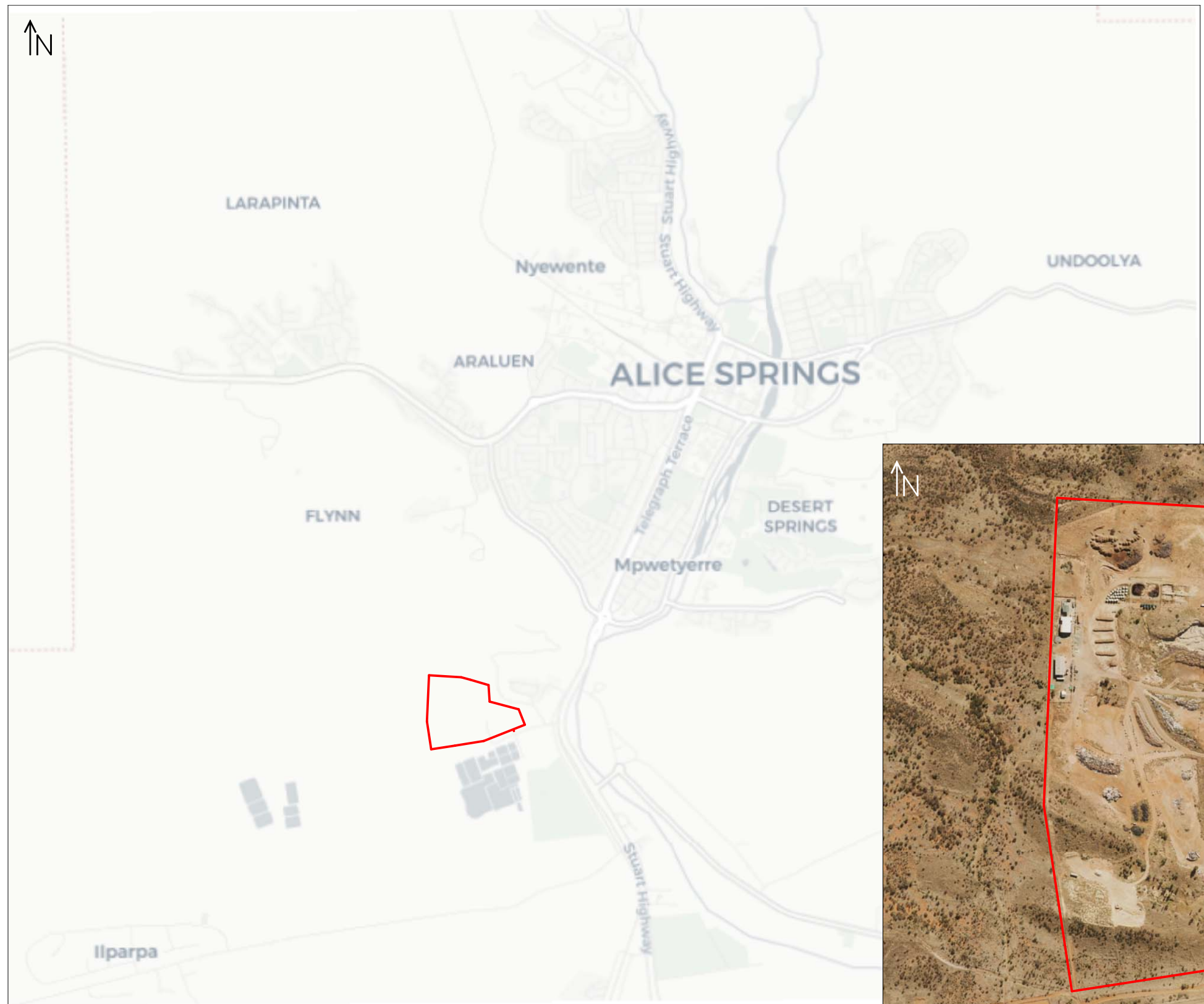
Tierra Environment does not represent that the information or interpretation contained in this document addresses completely existing features such as surface and subsurface contamination, groundwater and geotechnical conditions or ground or contamination behaviour on a subject site or of particular materials.

The responsibility of Tierra Environment Pty Ltd is solely to Alice Springs Town Council. It is not intended that this document be relied upon by any third party. Tierra Environment does not undertake any duty or accept any responsibility to any other parties who may rely upon this document.

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APPENDIX A
SITE PLANS



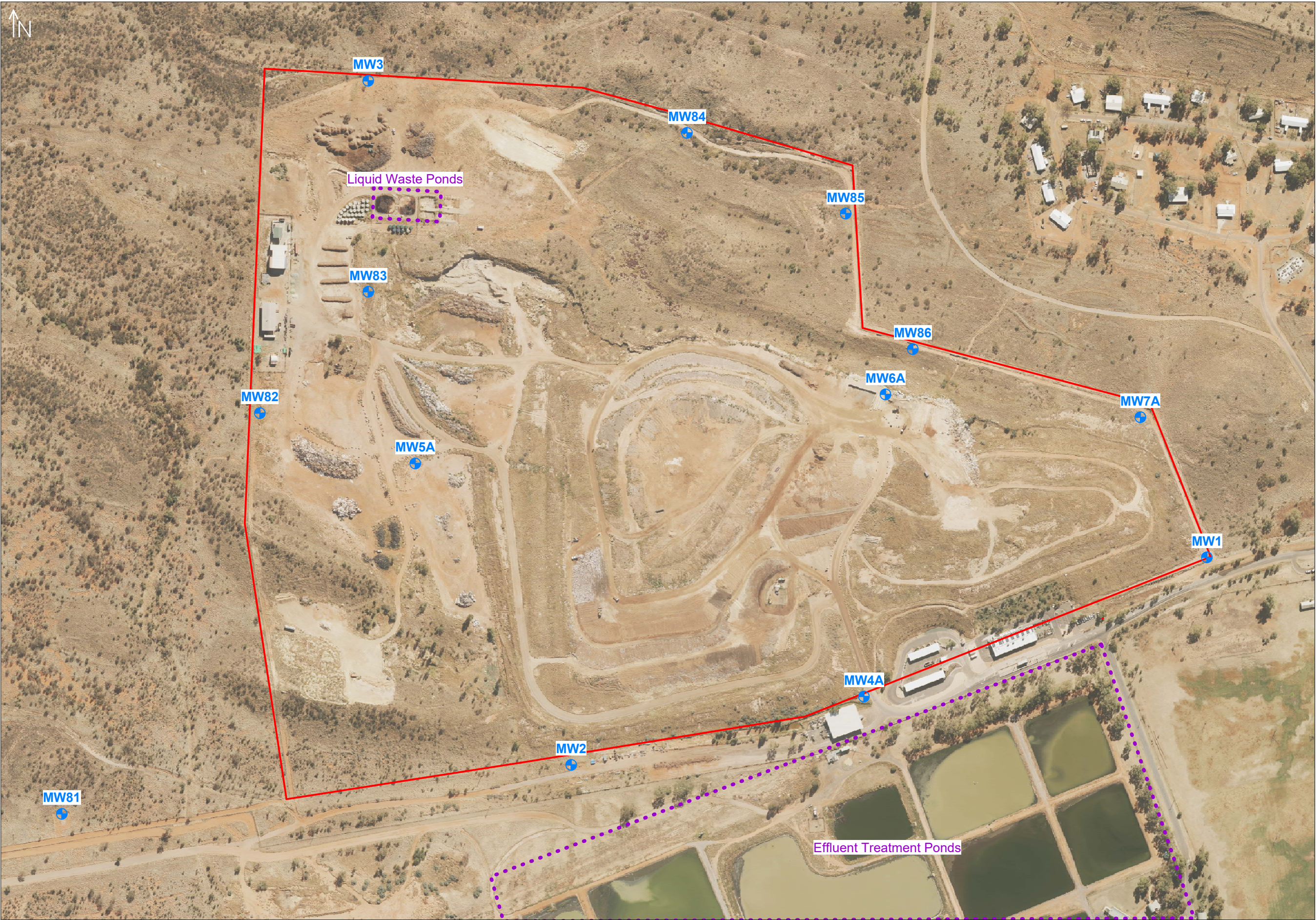
Scale (km)
0 0.5 1



Scale (m)
0 75 150

Notes:

1. Base aerial photo from Aerometrex dated June 2023.
2. Landfill boundary is based on a client provided survey.



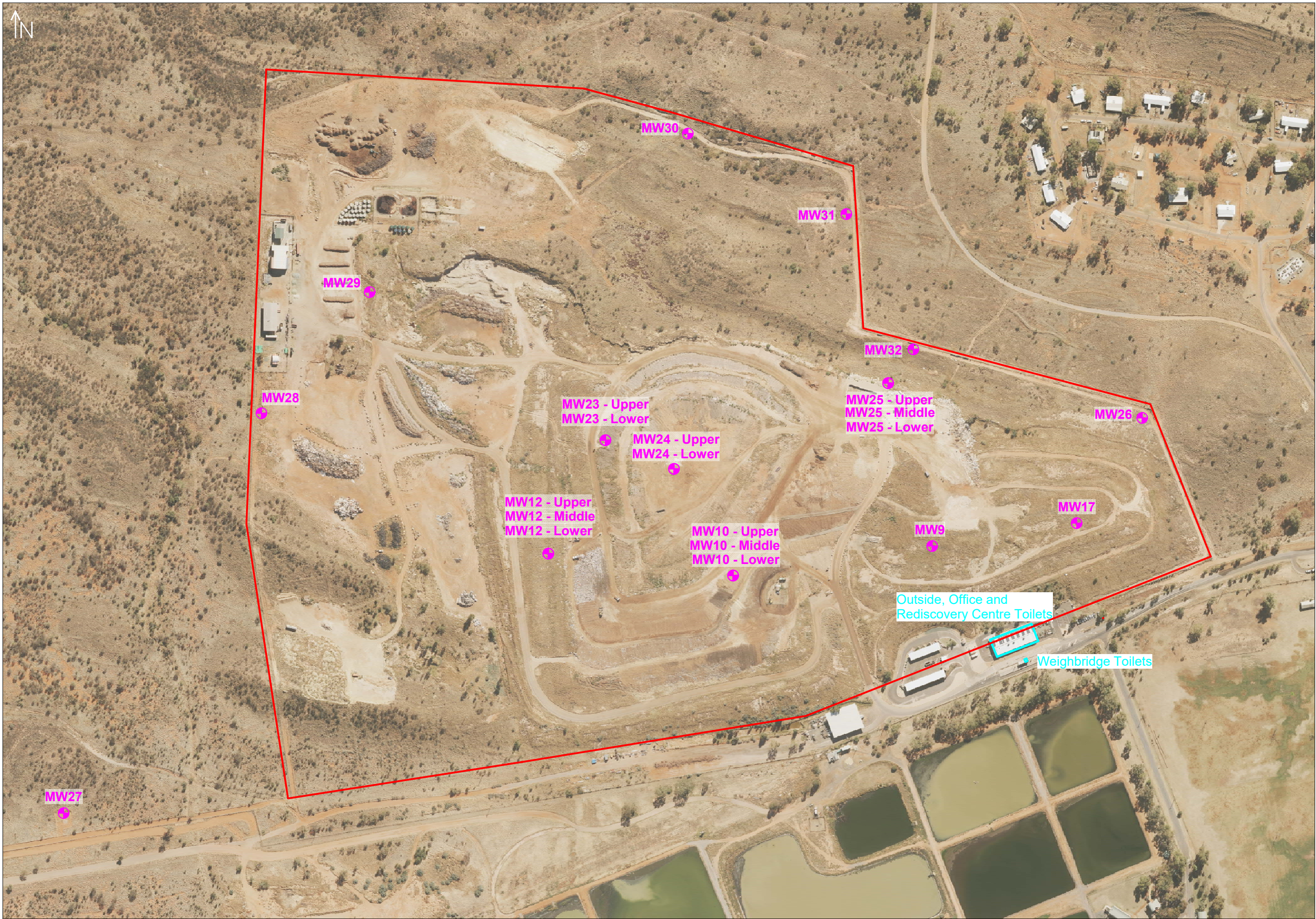
Notes:

1. Base aerial photo from Aerometrex dated June 2023.

Legend

- MW2  Groundwater monitoring well
- Landfill boundary

Figure 2 - Groundwater Monitoring Well Locations
Alice Springs Town Council Regional Waste Management Facility
Monitoring Report - March 2023
Revision A, AAQ06023.25, 2 August 2023



Notes:

1. Base aerial photo from Aerometrex dated June 2023.

Legend

- MW2 Gas monitoring bore
- Landfill boundary

Scale (m)
0 40 80

Figure 3 - Gas Monitoring Bore Locations
Alice Springs Town Council Regional Waste Management Facility
Monitoring Report - March 2023

Rev A, AAQ06023.25, 2 August 2023



Scale(m)
0 40 80

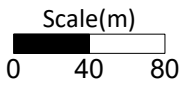
Notes:

1. Base aerial photo from Aerometrex dated June 2023.

Legend

- MW38 Leachate monitoring bore
- Landfill boundary

Figure 4 - Leachate Bore Monitoring Location
Alice Springs Town Council Regional Waste Management Facility
Monitoring Report - March 2023



Notes:

- 1. Base aerial photo from Aerometrex dated June 2023.

Legend

-  **SW2** Surface water monitoring location
-  Landfill boundary

Figure 5 - Surface Water Monitoring Locations
Alice Springs Town Council Regional Waste Management Facility
Monitoring Report - March 2023



Notes:

1. Base aerial photo from Nearmap dated May 2020.
2. Noise and dust monitoring locations are approximate and based on locations shown in the 2011 LEMP and 2000 LEMP.

Legend

- N2/D2  Noise or Dust Monitoring Location
- Landfill boundary

Figure 9 - Noise & Dust Monitoring Locations
Alice Springs Town Council Regional Waste Management Facility
Monitoring Report - March 2023
Revision A, AAQ06023.25, 2 August 2023

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APPENDIX B
GAS MONITORING RECORDS



Landfill Gas Monitoring Point MW17 (previously referred as MW7)

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	24.4	35	42.1	24.8	26.2	30.4	2.5	3.1	0.8	955	945	951	3.3	3.9	18.1
1	36.3	37.9	42.5	26.5	8.3	30.8	0.9	0.2	0.2	955	945	951	5.1	5.0	20.8
2	36.4	37.8	42.1	26.7	28.5	30.7	0.5	0.1	0	955	945	951	6.0	5.3	20.3
3	36.5	37.6	42.1	26.7	28.6	30.8	0.4	0	0	955	945	951	6.4	5.5	18.5
4	36.6	37.8	42.1	26.7	28.1	30.7	0	0	0	955	945	951	6.6	5.6	16.5
5	36.7	38.1	42.1	26.7	28.4	30.7	0	0	0	955	945	951	6.7	5.8	16
7	36.7	38.4	42.1	26.7	28.7	30.9	0	0	0	955	945	951	6.8	5.8	14.8
9	36.7	37.9	42.1	26.7	28.5	30.7	0	0	0	955	945	951	6.8	5.9	14.4
11	36.7	38.1	42.1	26.7	28.5	30.7	0	0	0	955	945	951	6.9	5.9	13.7
13	36.6	38.2	-	26.7	28.6	-	0	0	-	955	945	-	6.9	5.9	-
15	36.7	38.2	42.1	26.7	28.6	30.6	0	0	0	955	945	951	6.9	5.9	13.5

Landfill Gas Monitoring Point MW9

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	29.3	35.1	47.5	24.3	26.2	30.5	0.7	1.9	5.9	953	946	951	2.7	2.7	5.2
1	30.1	35.6	47.9	25.1	26.7	31	0.2	0.4	0.4	953	946	951	2.9	2.8	6.4
2	30	35.8	48	25	26.7	32.2	0.1	0.2	0.2	953	946	951	3.0	2.8	6.8
3	30	35.9	48.1	25.1	26.7	31.3	0	0	0.2	953	946	951	3.1	2.9	6.9
4	30	35.9	48.1	25.1	26.7	31.2	0	0	0	953	946	951	3.2	2.9	6.7
5	30	35.9	48.1	25	26.7	31.2	0	0	0	953	946	951	3.3	2.9	6.6
7	30	35.9	48.1	25	26.7	31.2	0	0	0	953	946	951	3.3	3.0	6.6
9	30	35.9	48.1	25	26.7	31.2	0	0	0	953	946	951	3.3	3.0	6.6
11	30	35.9	48.1	25	26.7	31.3	0	0	0	953	946	951	3.3	3.0	6.6
13	30.1	35.9	-	25.1	26.8	-	0	0	-	953	946	-	3.4	3.0	-
15	30	35.9	48.1	25.1	26.8	31.2	0	0	0	953	946	951	3.4	3.0	6.6

Landfill Gas Monitoring Point MW10 (lower)

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	46.3	29.5	13.4	29.7	25.5	20.4	1.6	9.9	7.2	953	945	951	1.7	2.3	0.5
1	46.3	30.5	18	30	27.3	28.4	0.7	3.4	2.9	953	945	951	1.7	1.8	0.7
2	46.5	32.5	29.6	30	29.8	39.1	0.6	2.2	0.2	953	945	951	1.8	1.4	3
3	46.6	31.5	32.3	30.1	31.1	40.2	0	0.8	0	953	945	951	2	1	3.2
4	46.8	35.7	34.2	29.5	33.2	41.1	0	0	0	953	945	951	2.2	1.6	3.3
5	46.7	43.1	40.5	30	33.6	40.8	0	0	0	953	945	951	2.3	1.8	5.1
7	47.1	50.2	53.1	30.3	34.3	39.4	0	0	0	953	945	951	2.4	2.4	10.3
9	47.3	51.7	55	30.5	34.9	40.3	0	0	0	953	945	951	2.6	2.5	11.1
11	47.4	51.8	55.2	30.8	34.9	40.5	0	0	0	953	945	951	2.8	2.5	11.1
13	47.7	51.9	-	30.7	34.9	-	0	0	-	953	945	-	2.9	2.6	-
15	47.5	51.9	55.2	30.7	34.9	40.3	0	0	0	953	945	951	2.9	2.6	11.2



Landfill Gas Monitoring Point MW10 (middle - formerly upper)

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	47.5	55	53.7	31.1	36.7	42	1	7.5	4.3	953	944	951	1.2	1.8	0.6
1	47.8	53.3	53.4	31.5	36	42.8	0.2	0.1	0.4	953	944	951	1.9	2.3	0.2
2	48	53.4	53.4	34.5	36.1	43.6	0	0	0	953	944	951	2.5	2.3	0.7
3	48.3	53.5	53.3	31.4	36.1	44	0	0	0	953	944	951	3	2.3	4.7
4	48.3	53.2	53.1	31.4	35.9	44.3	0	0	0	953	944	951	3.1	2.3	5.1
5	48.4	53.1	52.9	31.4	35.9	44.5	0	0	0	953	944	951	3.3	2.4	5.5
7	48.4	53.1	52.5	31.4	35.9	45.1	0	0	0	953	944	951	3.3	2.4	6.8
9	49.1	53.1	52.3	32.8	35.9	45.5	0	0	0	953	944	951	3.3	2.4	7
11	48.5	53.1	52.2	31.6	35.9	45.6	0	0	0	953	944	951	3.4	2.4	6.7
13	48.4	53.1	-	31.4	35.9	-	0	0	-	953	944	-	3.5	2.4	-
15	48.5	53.1	52.2	31.4	35.9	45.5	0	0	0	953	944	951	3.5	2.4	6.1

Landfill Gas Monitoring Point MW12 (lower)

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	19.5	39.4	33.7	23.8	38.5	32.1	6.8	3.1	0.2	952	947	949	4.2	1.2	9
1	18.9	43.9	33.2	24.4	34.9	32	0	0.1	0.1	952	947	949	4.1	2.4	9.3
2	19.5	42.5	33.2	24.6	34.8	32	0	0	0	952	947	949	4	2.8	9.5
3	20	42.5	33	24.8	34.8	32	0	0	0	952	947	949	4	2.9	9.9
4	20.4	42.5	33	24.9	34.8	31.9	0	0	0	952	947	949	4	2.9	10
5	20.4	42.4	33	24.9	34.8	31.9	0	0	0	952	947	949	3.9	2.8	10.3
7	20.4	42.4	32.8	25	34.8	31.8	0	0	0	952	947	949	3.9	2.9	10.9
9	21	42.5	32.9	25	34.9	31.9	0	0	0	952	947	949	3.8	2.9	11
11	21	42.4	32.9	25.1	34.8	31.8	0	0	0	952	947	949	3.8	2.8	11
13	21.1	42.5	-	25.1	34.8	-	0	0	-	952	947	-	3.8	3	-
15	21.1	42.4	33	25	34.8	31.9	0	0	0	952	947	949	3.6	3	10.9

Landfill Gas Monitoring Point MW12 (middle) (previously upper)

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	15.9	41.7	28.1	23.3	33.9	29.6	0.4	9.4	3.3	952	947	949	5.1	2.1	13.3
1	17.1	41.4	27.9	23.8	34.2	29.9	0	0.2	0.2	952	947	949	5.2	2.5	14
2	17.2	41.2	27.8	23.9	34.2	29.9	0	0	0	952	947	949	5.2	2.6	16
3	17.7	41.2	27.8	24.1	34.3	29.9	0	0	0	952	947	949	5	2.6	14.1
4	17.7	41.2	27.9	24.1	34.3	30	0	0	0	952	947	949	5	2.6	12.6
5	17.8	41.3	27.9	24.1	34.3	30	0	0	0	952	947	949	5	2.7	9.1
7	17.8	41.2	28.2	24	34.2	30	0	0	0	952	947	949	4.9	2.6	6.1
9	17.8	41	28.2	24	34.2	30	0	0	0	952	947	949	4.7	2.7	4.4
11	18	39.5	28.1	24.2	32.8	30	0	0	0	952	947	949	4.9	2.6	4.8
13	18.1	41.5	-	24.2	34.4	-	0	0	-	952	947	-	4.9	2.6	-
15	18.1	41.5	28	24.2	34.5	30	0	0	0	952	947	949	4.9	2.6	4.2



Landfill Gas Monitoring Point MW12 (upper)

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	29.6	53.8	49.5	28.5	39.3	34.5	0.1	9.3	8.6	952	947	949	1.7	0.8	1.8
1	29.5	51.7	49.8	28.6	36.3	35.5	0	0.1	0.5	952	947	949	1.9	1	2
2	29	50.6	49.1	28.5	36.1	35.8	0	0	0.2	952	947	949	2.1	1	2.5
3	27.7	50.7	49.3	28.1	36.1	35.7	0	0	0	952	947	949	2.3	1	3
4	28.5	50.8	49.4	28.3	36.1	35.7	0	0	0	952	947	949	2.1	1	3.5
5	30.1	50.9	19.4	28.8	36.1	35.7	0	0	0	952	947	949	2.1	1	3.6
7	30.4	50.9	49.3	28.8	36.1	35.6	0	0	0	952	947	949	2.1	1	2.1
9	30.7	50.8	49.3	28.9	36.1	35.7	0	0	0	952	947	949	2.1	1	1.9
11	31.1	50.8	49.2	29.1	36.1	35.8	0	0	0	952	947	949	2.1	1	1.9
13	31.2	50.9	-	29.1	36.2	-	0	0	-	952	947	-	2.1	1	-
15	31.3	50.8	49.1	29.2	36.2	35.8	0	0	0	952	947	949	2.1	1	2

Landfill Gas Monitoring Point MW23 (Upper)

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	21.7	43	56.5	23.9	38.1	40.5	12.2	2.7	1.6	952	946	950	2.8	0.2	3.2
1	22	45.1	56.8	25	41.4	41.3	2.3	0.7	0.1	952	946	950	2.9	0.6	1.6
2	22.5	44.9	57.1	25.6	41.3	41.6	1.8	0	0	952	946	950	3.2	1.1	1.7
3	22.1	44.7	57.3	26	41.2	41.8	1.4	0	0	952	946	950	3.4	1.3	2.1
4	21.3	44.6	57.4	25.8	41.2	41.9	1.2	0	0	952	946	950	3.4	1.6	2.5
5	20.8	44.7	57.4	25.6	41.1	42	1.2	0	0	952	946	950	3.4	1.7	2.6
7	20.6	44.6	57.6	25.5	41.1	42.1	1.2	0	0	952	946	950	3.4	1.8	2.6
9	20.2	44.7	57.7	25.3	41.1	42.2	1.3	0	0	952	946	950	3.4	1.8	2.6
11	20	44.6	57.8	25.3	41.1	42.1	1.3	0	0	952	946	950	3.4	1.8	2.5
13	20	44.7	-	25.2	41.1	-	1.3	0	-	952	946	-	3.4	1.8	-
15	19.9	44.7	57.8	25.2	41.1	42.2	1.4	0	0	952	946	950	3.4	1.8	2.6

Landfill Gas Monitoring Point MW23 (Lower)

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	62.5	56.4	57.4	40.1	42.4	39	2	0.6	6.7	952	947	950	0.3	0	1.7
1	62.3	56.9	30.9	40.6	43.1	35.5	0.2	0	0.8	952	947	950	0.3	0.6	1.6
2	62.1	57.4	30.5	39.1	43.4	36.1	0.2	0	0	952	947	950	0.5	0.8	3.5
3	62.1	57.7	28.7	40.9	43	36	0.1	0	0	952	947	950	1	0.9	4.1
4	62.2	57.8	28.1	41	43.4	35.7	0.1	0	0	952	947	950	1.3	1	4.6
5	62.2	57.9	27.3	41.1	43.4	35.5	0.1	0	0	952	947	950	1.5	1	4.5
7	62.4	57.6	27	41.3	43.5	35.4	0	0	0	952	947	950	1.8	1	4.4
9	62.5	57.9	26.7	41.2	43.5	35.1	0	0	0	952	947	950	1.9	1	4.5
11	62.7	57.8	26.6	41.3	43.5	35	0	0	0	952	947	950	2	1	4.5
13	62.6	58	-	41.2	43.5	-	0	0	-	952	947	-	2	1	-
15	62.7	57.9	26.5	41.2	43.5	35	0	0	0	952	947	950	2	1	4.5



Landfill Gas Monitoring Point MW24 (upper)															
Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	-	54.5	56.7	-	44.8	41.9	-	0.3	5.7	-	943	950	-	4.2	5.8
1	-	54.7	57.2	-	45.1	42.7	-	0.1	0.2	-	943	950	-	4.5	6.2
2	-	54.9	57.2	-	45	42.8	-	0	0	-	943	950	-	4.7	6.3
3	-	55	57.5	-	45.1	42.9	-	0	0	-	943	950	-	4.9	6.3
4	-	55.2	57.7	-	45.1	43.1	-	0	0	-	943	950	-	5.1	6.2
5	-	55.3	57.8	-	45.1	43	-	0	0	-	943	950	-	5.2	6.1
7	-	59	57.7	-	44.9	43.1	-	0	0	-	943	950	-	5	6
9	-	55.1	57.8	-	45	43	-	0	0	-	943	950	-	5	5.9
11	-	55.1	57.8	-	45	43.1	-	0	0	-	943	950	-	4.9	5.9
13	-	55.1	-	-	45	-	-	0	-	-	943	-	-	4.9	-
15	-	55.2	57.9	-	45	43.1	-	0	0	-	943	950	-	4.5	5.8

Landfill Gas Monitoring Point MW24 (lower)															
Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable	Not serviceable
1															
2															
3															
4															
5															
7															
9															
11															
13															
15															

Landfill Gas Monitoring Point MW25 (lower)															
Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	33.4	44.2	Not serviceable	26.9	29.8	Not serviceable	1.2	9.5	Not serviceable	955	945	Not serviceable	1	1.2	Not serviceable
1	33.6	46.3		27.1	30.3		0.1	1.7		955	945		1	1.2	
2	33.2	52.2		27.1	34.3		0	0.3		955	945		1	1.3	
3	33.1	52.8		27.2	34.5		0	0.2		955	945		1.1	1.4	
4	33.1	53.1		27.2	34.6		0	0.1		955	945		1.1	1.4	
5	33.3	53.2		27.3	34.5		0	0		955	945		1.1	1.4	
7	33.4	53.5		27.4	34.7		0	0		955	945		1.1	1.5	
9	33.4	53.6		27.4	34.7		0	0		955	945		1.1	1.5	
11	33.4	53.7		27.5	34.7		0	0		955	945		1.1	1.5	
13	33.4	54.3		27.5	34.9		0	0		955	945		1.1	1.5	
15	33.6	54.3		27.7	34.7		0	0		955	945		1.1	1.5	

Landfill Gas Monitoring Point MW25 (middle) (previously upper)															
Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	4	2.3	57.8	2.6	3.1	35.3	18.5	14.9	6.5	955	945	950	0.9	4	1.2
1	4.2	0.4	57.8	2.7	0.4	36.1	18.7	19.4	0.5	955	945	950	0.9	4	1.3
2	4.2	0.3	58.3	2.7	0.2	36.4	18.5	19.7	0.3	955	945	950	0.8	3.6	2.5
3	4.2	0.7	58.2	2.7	0.5	36.6	18.6	19.5	0	955	945	950	0.8	3.8	2.4
4	4.2	0.6	58.3	2.7	0.4	36.5	18.5	19.5	0	955	945	950	0.9	3.9	2.5
5	4.2	0.6	58.3	2.7	0.5	36.6	18.6	19.4	0	955	945	950	0.9	4	2.6
7	4.2	-	58.2	2.7	-	36.5	18.5	-	0	955	-	950	0.9	-	2.6
9	4.2	-	58.3	2.6	-	36.6	18.6	-	0	955	-	950	0.8	-	2.6
11	4.2	-	58.3	2.7	-	36.5	18.6	-	0	955	-	950	0.8	-	2.5
13	4.2	-	58.2	2.7	-	36.5	18.6	-	0	955	-	950	0.8	-	2.5
15	4.2	-	58.2	2.7	-	36.5	18.6	-	0	955	-	950	0.8	-	2.4



Landfill Gas Monitoring Point MW26

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	2	2.4	2.2	19.1	16.8	17.7	950	948	950	0	0	2.4
1	0	0	0	2	2.5	2.3	18.9	16.7	18	950	948	950	0	0	2.2
2	0	0	0	2.1	2.5	2.3	18.8	16.6	18	950	948	950	0	0	2.1
3	0	0	0	2.1	2.5	2.4	18.8	16.6	17.9	950	948	950	0	0	2
4	0	0	0	2.1	2.5	2.4	18.8	16.6	17.9	950	948	950	0	0	21
5	0	0	0	2.1	2.5	2.4	18.8	16.6	17.8	950	948	950	0	0	2
7	0	0	0	2.1	2.5	2.4	18.8	16.6	17.8	950	948	950	0	0	2
9	0	0	0	2.1	2.5	2.4	18.8	16.7	17.9	950	948	950	0	0	2
11	0	0	0	2.1	2.5	2.4	18.8	16.7	17.9	950	948	950	0	0	2
13	0	0	-	2.1	2.5	-	18.8	16.7	-	950	948	950	0	0	-
15	0	0	0	2.1	2.5	2.4	18.8	16.7	17.9	950	948	950	0	0	2

Landfill Gas Monitoring Point MW27

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	0.2	0.6	0.8	21.1	18.8	19	950	948	949	0.1	0	0.8
1	0	0	0	0.2	0.7	0.8	21	18.5	18.9	950	948	949	0.2	0	0.7
2	0	0	0	0.2	0.7	0.8	21	18.4	18.9	950	948	949	0.1	0	0.6
3	0	0	0	0.2	0.7	0.8	21	18.2	18.9	950	948	949	0.1	0	0.6
4	0	0	0	0.2	0.8	0.8	21	18.2	18.9	950	948	949	0.1	0	1
5	0	0	0	0.2	0.8	0.8	21	18.3	18.9	950	948	949	0	0	1.3
7	0	0	0	0.2	0.8	0.9	21	18.3	19	950	948	949	0	0	1.6
9	0	0	0	0.2	0.8	0.9	21	18.4	19.2	950	948	949	0	0	1.6
11	0	0	0	0.2	0.8	0.9	21	18.4	19.2	950	948	949	0	0	1.6
13	0	0	-	0.2	0.8	-	21	18.4	-	950	948	-	0	0	-
15	0	0	0	0.2	0.8	0.9	21	18.4	19.2	950	948	949	0	0	1.6



Landfill Gas Monitoring Point MW28

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	0	0.2	0.3	16.8	16.5	12.2	953	948	951	0	0.5	7.3
1	0	0	0	0	0.2	0.1	16.7	17.3	13.4	953	948	951	0	0.5	8.1
2	0	0	0	0	0.2	0.1	16.9	17.5	14	953	948	951	0.1	0.5	6.6
3	0	0	0	0	0.2	0.2	17	18	14.2	953	948	951	0	0.4	6.2
4	0	0	0	0	0.2	0.2	17.2	18	14.2	953	948	951	0	0.4	5.6
5	0	0	0	0	0.2	0.2	17.4	18.1	14.3	953	948	951	0	0.4	5.1
7	0	0	0	0	0.2	0.3	17.6	18.4	14.2	953	948	951	0	0.4	5.3
9	0	0	0	0	0.2	0.3	17.8	18.6	14.2	953	948	951	0	0.4	4.9
11	0	0	0	0	0.2	0.4	18.2	18.7	14.2	953	948	951	0	0.4	4.8
13	0	0	-	0	0.2	-	18.4	18.8	-	953	948	-	0	0.4	-
15	0	0	0	0	0.2	0.4	18.5	18.8	14.3	953	948	951	0	0.5	4.5

Landfill Gas Monitoring Point MW29

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	Not serviceable	0	0.1	Not serviceable	17	18.2	Not serviceable	953	948	Not serviceable	0	0	Not serviceable
1	0	0		0	0		16.7	18.2		953	948		0	0	
2	0	0		0	0		16.6	18.3		953	948		0	0	
3	0	0		0	0		16.6	18.4		953	948		0	0	
4	0	0		0	0		16.6	18.6		953	948		0	0	
5	0	0		0	0		16.6	18.6		953	948		0	0	
7	0	0		0	0		16.6	18.7		953	948		0.2	0	
9	0	0		0	0		16.6	18.7		953	948		0	0	
11	0	0		0	0		16.6	18.8		953	948		0	0	
13	0	0		0	0		16.6	18.9		953	948		0	0	
15	0	0		0	0		16.6	18.9		953	948		0	0	

Landfill Gas Monitoring Point MW30

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	0.5	1	0.9	18.6	15.5	17.2	952	947	950	0	0.5	2.2
1	0	0	0	0.5	1	1	18.5	15.7	17.3	952	947	950	0	0.4	1.9
2	0	0	0	0.6	1.1	1.3	18.4	15.6	17.5	952	947	950	0	0.4	1.6
3	0	0	0	1	1.3	1.5	18.3	15.7	17.6	952	947	950	0	0.3	1.1
4	0	0	0	1	1.5	1.6	18.3	15.9	17.6	952	947	950	0	0.2	1
5	0	0	0	1.1	1.5	1.6	18.2	15.9	17.6	952	947	950	0	0.4	1
7	0	0	0	1.1	1.6	1.6	18.2	16	17.7	952	947	950	0	0.5	1
9	0	0	0	1.1	1.6	1.6	18.2	16.1	17.7	952	947	950	0	0.5	1
11	0	0	0	1.1	1.6	1.6	18.2	16.1	17.7	952	947	950	0	0.5	1
13	0	0	-	1.2	1.6	-	18.2	16.1	-	952	947	-	0	0.4	-
15	0	0	0	1.2	1.6	1.6	18.2	16.1	17.7	952	947	950	0	0.4	1



Landfill Gas Monitoring Point MW31

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	0	0.8	0.1	19.9	17.8	13.6	952	947	950	0	0.5	5
1	0	0	0	0	0.8	0.1	19.9	17.8	11.6	952	947	950	0	0.5	3.6
2	0	0	0	0	0.8	0.1	19.9	17.8	12.3	952	947	950	0	0.5	3.3
3	0	0	0	0	0.8	0.2	19.9	17.9	12.8	952	947	950	0	0.6	3.2
4	0	0	0	0	0.8	0.2	19.9	17.9	13.1	952	947	950	0	0.6	3.2
5	0	0	0	0	0.8	0.2	19.9	17.9	13.1	952	947	950	0	0.7	3.1
7	0	0	0	0	0.8	0.2	19.9	17.9	13.3	952	947	950	0	0.7	3.1
9	0	0	0	0	0.7	0.2	19.9	17.9	13.3	952	947	950	0	0.7	3
11	0	0	0	0	0.7	0.2	19.9	18.3	13.4	952	947	950	0	0.7	3
13	0	0	-	0	0.7	-	19.9	18.5	-	952	947	-	0	0.8	-
15	0	0	0	0	0.7	0.2	19.9	18.5	13.4	952	947	950	0	0.8	2.9

Landfill Gas Monitoring Point MW32

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	0	0.5	0.3	18.3	16.8	18.3	951	948	950	0	0.5	1.8
1	0	0	0	0	0.5	0.4	18.2	16.4	16	951	948	950	0	0.5	1.6
2	0	0	0	0	0.5	0.4	18.2	16.4	15.8	951	948	950	0	0.5	1.3
3	0	0	0	0	0.5	0.4	18.2	16.4	15.7	951	948	950	0	0.6	1.2
4	0	0	0	0	0.5	0.4	18.2	16.4	15.7	951	948	950	0	0.6	1.2
5	0	0	0	0	0.5	0.4	18.2	16.4	15.7	951	948	950	0	0.7	1.2
7	0	0	0	0	0.5	0.4	18.2	16.9	15.9	951	948	950	0	0.7	1.1
9	0	0	0	0	0.6	0.4	18.2	18	15.9	951	948	950	0	0.4	1.1
11	0	0	0	0	0.6	0.4	18.2	18.2	16	951	948	950	0	0.4	1.1
13	0	0	-	0	0.6	-	18.2	18.2	-	951	948	-	0	0.4	-
15	0	0	0	0	0.6	0.4	18.2	18.3	16.1	951	948	950	0	0.4	1.1

Landfill Gas Accumulation Point Outside Toilet (west)

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	0	0	0	21.3	19.1	20.4	955	944	-	0	0	0

Landfill Gas Accumulation Point Female Toilets

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	0	0	0	21.3	19.1	20.4	955	944	-	0	0	0

Landfill Gas Accumulation Point Male Toilets

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	0	0	0	21.3	19.1	20.4	955	944	-	0	0	0

Landfill Gas Accumulation Point Weighbridge Toilet

Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	0	0	0	21.3	19.1	20.4	955	0	-	0	0	0

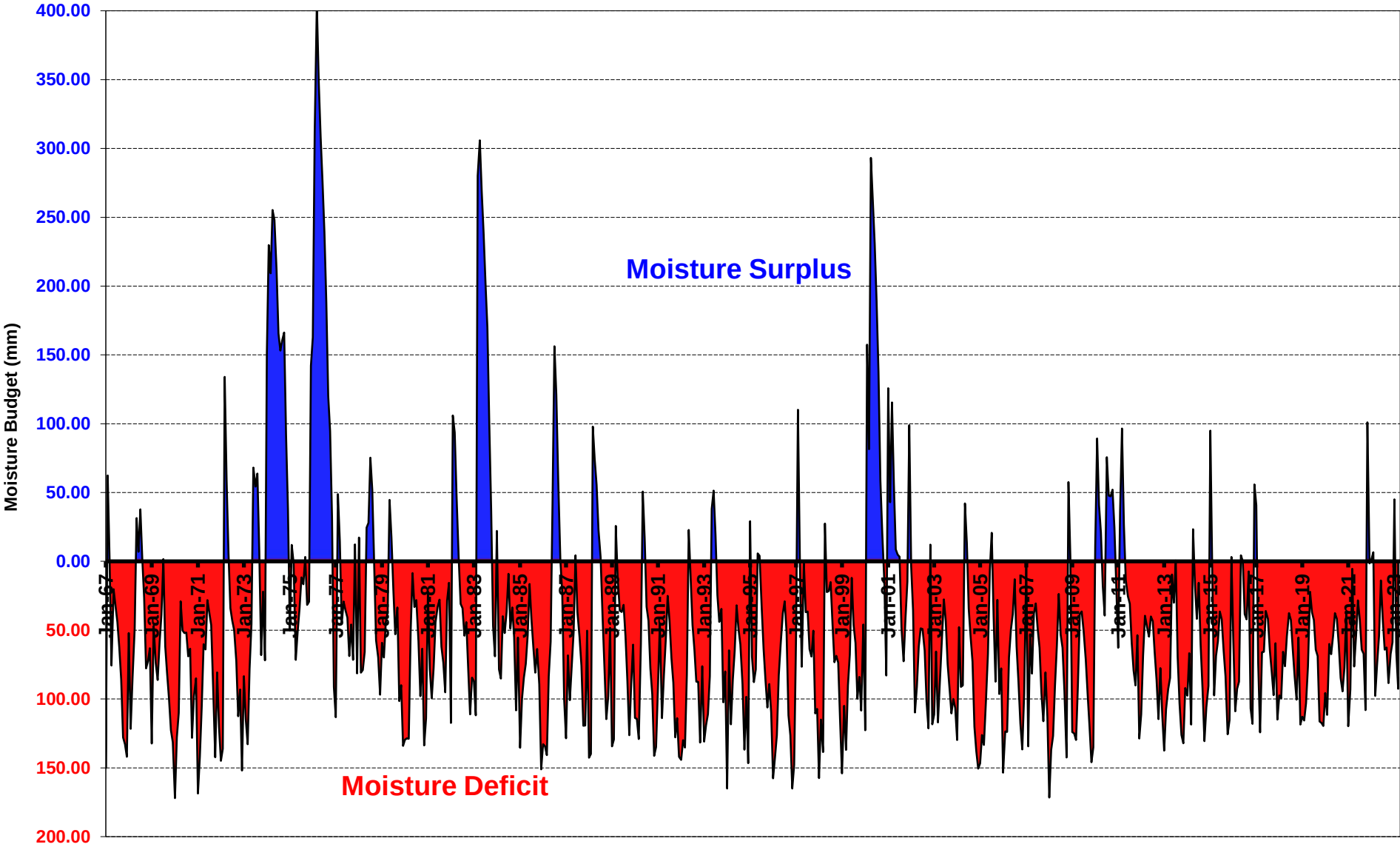
Landfill Gas Accumulation Point Rediscovery Centre Toilet

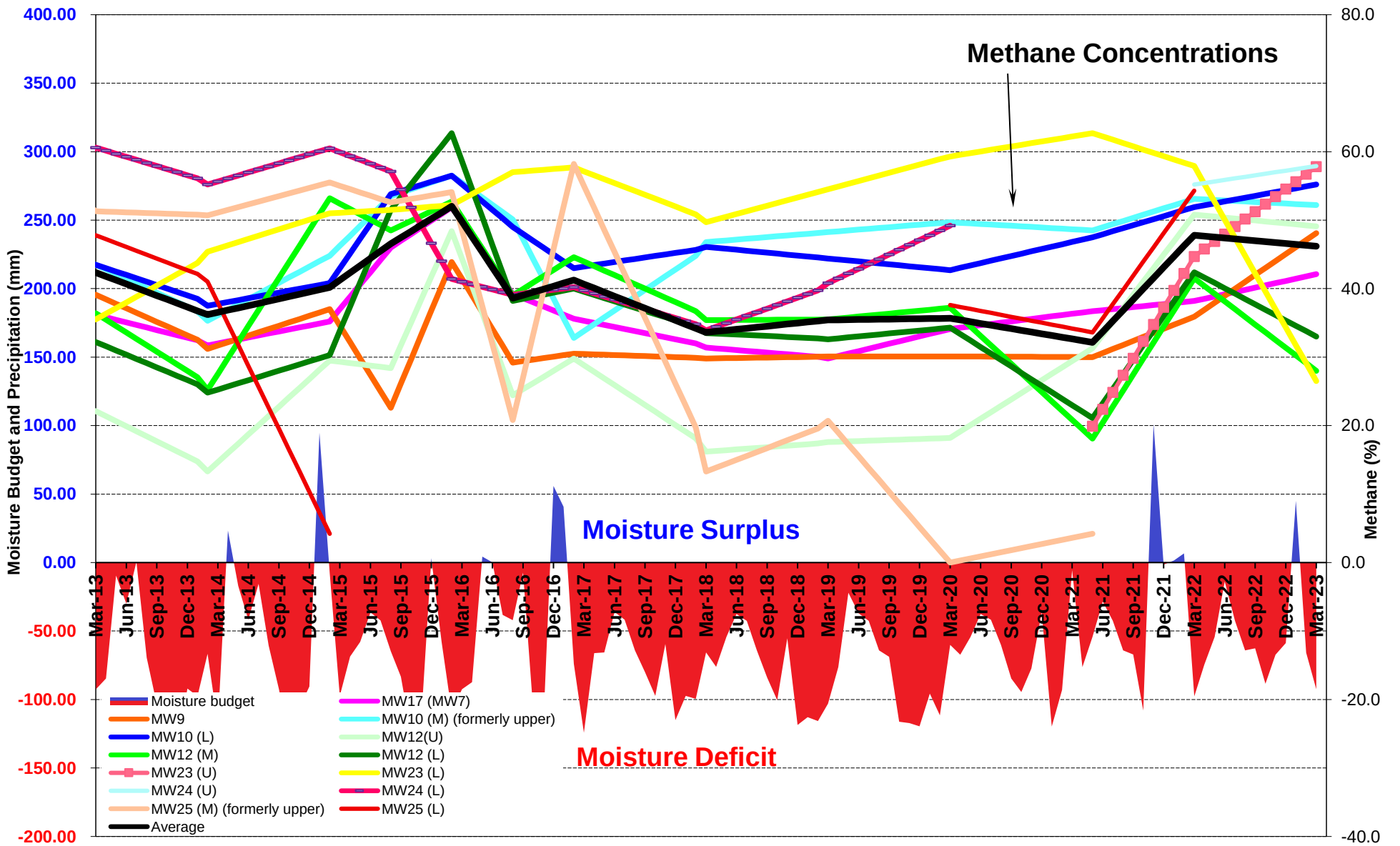
Time Pumping (minutes)	CH ₄			CO ₂			O ₂			Pressure			PID		
	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23	May-21	Mar-22	Mar-23
0	0	0	0	0	0	0	21.3	19.1	20.4	955	0	-	0	0	0

Consulting Engineers and Scientists



APPENDIX C
MOISTURE AND METHANE CHARTS





APPENDIX D
GROUNDWATER GAUGING AND PURGING RECORDS

Groundwater Purging Record Sheet



Client: Alice Springs Town Council Project: ASTC Landfill Monitoring - March 2023 Location: SE Corner	Job no: AAQ 06 023.25 Date: 12/03/2023 Logged: DPB	Well No. MW1
Depth to Groundwater: 6.440m Weather: Fine & 22°C Purging Method: Waterra Tube & Footvalve Purging Equipment: Pump Start Time: 8:07am Finish Time: 9am	Comments:	

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
8:08	-	0	26	17.3	1.41	4413	4538	-	6.72	-156.7	colourless, clear, no odour, no sheen
8:15	-	10	25.9	3.3	0.25	4473	4554	-	6.62	-102	colourless, clear, no odour, no sheen
8:20	-	20	26.2	3.5	0.26	4429	4534	-	6.62	-51.7	colourless, clear, no odour, no sheen
8:25	-	30	26.3	2	0.19	4423	4531	-	6.61	-17	colourless, clear, no odour, no sheen
8:30	-	40	26.4	1.6	0.12	4427	4544	-	6.61	10.9	colourless, clear, no odour, no sheen
8:35	-	50	26.3	2.1	0.17	4431	4545	-	6.61	29.4	colourless, clear, no odour, no sheen
8:40	-	60	26.4	1.8	0.15	4437	4554	-	6.61	46.3	colourless, clear, no odour, no sheen
8:45	-	70	26.4	1.7	0.14	4440	4562	-	6.6	68.7	colourless, clear, no odour, no sheen
8:50	-	80	26.4	1.7	0.14	4438	4561	-	6.6	72.5	colourless, clear, no odour, no sheen
Sampled											

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client: Alice Springs Town Council	Job no: AAQ 06 023.25	Well No. MW2XY
Project: ASTC Landfill Monitoring - March 2023	Date: 13/03/2023	
Location: Road between ponds and landfill south	Logged: DPB	
Depth to Groundwater: 2.952m	Comments: 	
Weather: Fine & 25°C		
Purging Method: Waterra Tube & Footvalve		
Purging Equipment: Pump		
Start Time: 7:23am		
Finish Time: 7:55am		

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
7:24	-	0	25.9	9.1	0.66	7045	7163	-	6.54	-22.9	colourless, clear, no odour, no sheen
7:28	-	10	25.7	1.7	0.13	7061	7152	-	6.47	81.6	colourless, clear, no odour, no sheen
7:32	-	20	25.7	0.6	0.05	7050	7145	-	6.47	114.6	colourless, clear, no odour, no sheen
7:36	-	30	25.7	0.3	0.03	7049	7147	-	6.47	131.5	colourless, clear, no odour, no sheen
7:40	-	40	25.7	0.3	0.02	7044	7145	-	6.47	134.5	colourless, clear, no odour, no sheen
7:44	-	50	25.8	0.3	0.03	7042	7145	-	6.47	136.3	colourless, clear, no odour, no sheen
7:48	-	60	25.8	0.3	0.03	7042	7147	-	6.47	136.7	colourless, clear, no odour, no sheen
7:52	-	70	25.8	0.3	0.03	7040	7146	-	6.47	138.2	colourless, clear, no odour, no sheen
Sampled											

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client: Alice Springs Town Council	Job no: AAQ 06 023.25	Well No. MW3
Project: ASTC Landfill Monitoring - March 2023	Date: 12/03/2023	
Location: North west corner	Logged: DPB	
Depth to Groundwater: 20.602m	Comments:	
Weather: Fine & 37°C		
Purging Method: Waterra Tube & Footvalve		
Purging Equipment: Pump		
Start Time: 1:11pm		
Finish Time: 2pm		

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
1:13	-	0	29.3	7.5	0.58	1273	1240	-	7.07	-224.3	colourless, clear, no odour, no sheen
1:18	-	10	27.4	0.8	0.06	1346	1411	-	7.24	-289.6	colourless, clear, no odour, no sheen
1:23	-	20	27.6	0.4	0.03	1352	1418	-	7.1	-287.2	colourless, clear, no odour, no sheen
1:28	-	30	27.6	0.4	0.03	1368	1439	-	7.01	-268.2	colourless, clear, no odour, no sheen
1:33	-	40	27.9	0.3	0.02	1377	1452	-	7.01	-268.4	colourless, clear, no odour, no sheen
1:38	-	50	28	0.3	0.02	1384	1460	-	7.02	-266.8	colourless, clear, no odour, no sheen
1:44	-	60	28	0.2	0.02	1389	1471	-	7.02	-265.7	colourless, clear, no odour, no sheen
1:49	-	70	28.2	0.2	0.02	1390	1478	-	7.02	-264.5	colourless, clear, no odour, no sheen
1:54	-	80	28.2	0.2	0.02	1391	1479	-	7.02	-264.3	colourless, clear, no odour, no sheen
1:59	-	90	28.2	0.2	0.02	1394	1480	-	7.02	-262.7	colourless, clear, no odour, no sheen
Sampled											

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client: Alice Springs Town Council	Job no: AAQ 06 023.25	Well No. MW4A
Project: ASTC Landfill Monitoring - March 2023	Date: 13/03/2023	
Location: Near front gate	Logged: DPB	
Depth to Groundwater: 2.762m	Comments: 	
Weather: Fine & 20°C		
Purging Method: Waterra Tube & Footvalve		
Purging Equipment: Pump		
Start Time: 6:12am		
Finish Time: 6:55am		

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
6:13	-	0	25.1	17.3	1.3	6695	6730	-	6.82	-155.1	colourless, clear, no odour, no sheen
6:17	-	10	25.4	2.1	0.17	7007	7060	-	6.69	-128.1	colourless, clear, no odour, no sheen
6:22	-	20	25.5	1	0.08	6750	6812	-	6.64	-104.5	colourless, clear, no odour, no sheen
6:26	-	30	25.5	0.7	0.05	6677	6736	-	6.63	-88.8	colourless, clear, no odour, no sheen
6:30	-	40	25.6	0.6	0.05	6526	6692	-	6.62	-81.6	colourless, clear, no odour, no sheen
6:34	-	50	25.5	0.5	0.04	6549	6612	-	6.61	-71.9	colourless, clear, no odour, no sheen
6:38	-	60	25.6	0.4	0.03	6452	6519	-	6.61	-64.5	colourless, clear, no odour, no sheen
6:42	-	70	25.6	0.4	0.03	6433	6495	-	6.61	-58.3	colourless, clear, no odour, no sheen
6:46	-	80	25.6	0.4	0.03	6434	6497	-	6.61	-51.8	colourless, clear, no odour, no sheen
6:50	-	90	25.6	0.4	0.03	6428	6492	-	6.61	-49.3	colourless, clear, no odour, no sheen
Sampled											
Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements											

Groundwater Purging Record Sheet



Client: Alice Springs Town Council	Job no: AAQ 06 023.25	Well No. MW5A
Project: ASTC Landfill Monitoring - March 2023	Date: 13/03/2023	
Location: West side amongst recycling	Logged: DPB	
Depth to Groundwater: 11.553m	Comments: 	
Weather: Fine & 30°C		
Purging Method: Waterra Tube & Footvalve		
Purging Equipment: Pump		
Start Time: 8:59am		
Finish Time: 9:35am		

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
9:05	-	0	26.8	80.3	6.39	5503	5647	-	6.7	-3	colourless, very slightly cloudy, no odour, no sheen
9:09	-	10	26.1	1.3	0.11	5507	5614	-	6.62	-15.4	colourless, very slightly cloudy, no odour, no sheen
9:13	-	20	26.1	1.8	0.14	5506	5615	-	6.61	2.8	colourless, clear, no odour, no sheen
9:17	-	30	26.1	2.1	0.17	5504	5620	-	6.6	19	colourless, clear, no odour, no sheen
9:21	-	40	26.1	2.2	0.17	5503	5621	-	6.6	28.2	colourless, clear, no odour, no sheen
9:25	-	50	26.1	2.3	0.18	5500	5620	-	6.6	37.3	colourless, clear, no odour, no sheen
9:29	-	60	26.1	2.5	0.2	5504	5620	-	6.6	43.3	colourless, clear, no odour, no sheen
9:33	-	70	26.1	2.6	0.21	5504	5622	-	6.6	45.1	colourless, clear, no odour, no sheen
Sampled											

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client: Alice Springs Town Council Project: ASTC Landfill Monitoring - March 2023 Location: In fill	Job no: AAQ 06 023.25 Date: 13/03/2023 Logged: DPB	Well No. MW6A
Depth to Groundwater: 25.948m Weather: Fine & 37°C Purging Method: Waterra Tube & Footvalve Purging Equipment: Pump Start Time: 1:00pm Finish Time: 2:10pm	Comments: Temperature may be slightly higher than normal as had to run a longer tube to water quality meter due to access restrictions. Stopped pump after 10L to fix the pipe.	

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
1.03	-	0	32.5	40.3	2.82	3790	4270	-	6.76	-214.4	slightly grey, slightly cloudy, no odour, no sheen
1.08	-	10	30.1	0.9	0.06	3684	4044	-	6.63	-200.4	slightly grey, slightly cloudy, no odour, no sheen
1.28	-	20	29.8	0.4	0.03	3647	3989	-	6.57	-143.3	slightly grey, slightly cloudy, no odour, no sheen
1.31	-	30	30	0.4	0.03	3615	3970	-	6.53	-127.1	very slightly grey, very slightly cloudy, no odour, no sheen
1.36	-	40	30	0.8	0.06	3615	3963	-	6.53	-102.7	very slightly grey, very slightly cloudy, no odour, no sheen
1:41	-	50	29.8	1.2	0.09	3611	3942	-	6.54	-69.7	very slightly grey, very slightly cloudy, no odour, no sheen
1:46	-	60	29.9	1.4	0.1	3605	3942	-	6.54	-53.3	very slightly grey, very slightly cloudy, no odour, no sheen
1:51	-	70	30	1.6	0.12	3611	3966	-	6.55	-40.5	colourless, clear, no odour, no sheen
1:56	-	80	30.2	1.7	0.13	3612	3968	-	6.56	-34.4	colourless, clear, no odour, no sheen
2:01	-	90	30.1	1.8	0.14	3614	3964	-	6.56	-24.2	colourless, clear, no odour, no sheen
2:06	-	100	30.1	1.9	0.14	3610	3962	-	6.56	-19.8	colourless, clear, no odour, no sheen
Sampled											

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client: Alice Springs Town Council	Job no: AAQ 06 023.25	Well No. MW7A
Project: ASTC Landfill Monitoring - March 2023	Date: 12/03/2023	
Location: North east corner	Logged: DPB	
Depth to Groundwater: 9.580m	Comments: 	
Weather: Fine & 20°C		
Purging Method: Waterra Tube & Footvalve		
Purging Equipment: Pump		
Start Time: 6:33am		
Finish Time: 7:25am		

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
6:35	-	0	25.8	10.6	0.83	3475	3534	-	6.91	-194.5	colourless, slightly cloudy, no odour, no sheen
6:39	-	10	25.7	1.7	0.14	3469	3513	-	6.79	-172.1	colourless, clear, no odour, no sheen
6:43	-	20	25.6	1.7	0.13	3463	3504	-	6.79	-169.4	colourless, clear, no odour, no sheen
6:47	-	30	25.6	1.7	0.14	3477	3517	-	6.76	-148.5	colourless, clear, no odour, no sheen
6:51	-	40	25.5	2.5	0.21	3482	3520	-	6.76	-138.3	colourless, clear, no odour, no sheen
6:55	-	50	25.6	3.4	0.28	3492	3531	-	6.76	-132.9	colourless, clear, no odour, no sheen
7:00	-	60	25.5	4.1	0.33	3521	3559	-	6.76	-128.2	colourless, clear, no odour, no sheen
7:05	-	70	25.4	3.4	0.27	3569	3596	-	6.76	-124	colourless, clear, no odour, no sheen
7:09	-	80	25.3	4.4	0.36	3595	3607	-	6.76	-103	colourless, clear, no odour, no sheen
7:13	-	90	25.6	41.6	3.38	3620	3621	-	6.76	-13.5	colourless, clear, no odour, no sheen
Dry at 96L, left to recover											
7:25	Sampled										

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client: Alice Springs Town Council	Job no: AAQ 06 023.25	Well No. MW81
Project: ASTC Landfill Monitoring - March 2023	Date: 14/03/2023	
Location: Western well	Logged: DPB	
Depth to Groundwater: 7.822m	Comments: Well starting to run dry between 100L and 110L. Dry at approximately 115L left for 30min then sampled	
Weather: Fine & 28°C		
Purging Method: Waterra Tube & Footvalve		
Purging Equipment: Pump		
Start Time: 8:01am		
Finish Time: 10:00am		

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
9:34	-	0	26.2	13.1	1.01	6124	6260	-	6.87	-258.3	light cream, cloudy, no odour, no sheen
9:38	-	10	26.4	1	0.08	6085	6251	-	6.76	-252.4	light cream, cloudy, no odour, no sheen
9:41	-	20	26.6	0.7	0.06	6083	6254	-	6.77	-245.7	light cream, slightly cloudy, no odour, no sheen
9:45	-	30	26.8	0.5	0.04	6069	6265	-	6.77	-242.5	light cream, slightly cloudy, no odour, no sheen
9:50	-	40	26.7	0.4	0.03	6064	6261	-	6.77	-243.7	light cream, slightly cloudy, no odour, no sheen
9:54	-	50	26.7	0.3	0.02	6065	6249	-	6.76	-242	light cream, slightly cloudy, no odour, no sheen
9:58	-	60	26.8	0.4	0.03	6012	6233	-	6.75	-238.4	light cream, slightly cloudy, no odour, no sheen
10:03	-	70	26.9	0.3	0.02	6001	6245	-	6.75	-237.6	light cream, slightly cloudy, no odour, no sheen
10:09	-	80	27.2	0.2	0.02	6001	6257	-	6.74	-236.7	light cream, slightly cloudy, no odour, no sheen
10:11	-	90	27.2	0.4	0.03	6002	6221	-	6.74	-226	light cream, slightly cloudy, no odour, no sheen
10:15	-	100	27.2	1.8	0.14	6003	6224	-	6.74	-202.7	light cream, slightly cloudy, no odour, no sheen
10:19	-	110	27.2	2.7	0.22	6001	6219	-	6.74	-189.6	light cream, slightly cloudy, no odour, no sheen
Well ran dry at 115L, left to recover											
9:45am	Sampled		27.2	8.6	0.68	6004	6231	-	6.74	-102.5	light cream, slightly cloudy, no odour, no sheen

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client:	Alice Springs Town Council	Job no:	AAQ 06 023.25	Well No. MW82
Project:	ASTC Landfill Monitoring - March 2023	Date:	12/03/2023	
Location:	West boundary west of MW5	Logged:	DPB	
Depth to Groundwater:	12.304m	Comments: 		
Weather:	Hot & 38°C			
Purging Method:	Waterra Tube & Footvalve			
Purging Equipment:	Pump			
Start Time:	3:20pm			
Finish Time:	4:05pm			

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
3:22	-	0	31.3	12.1	0.89	4828	5343	-	6.73	-125.1	Tan, cloudy, no odour, no sheen
3:27	-	10	29.9	2.4	0.18	4723	5149	-	6.62	-65.6	Tan, cloudy, no odour, no sheen
3:32	-	20	29.1	1	0.08	4652	5011	-	6.59	-24.3	Slightly tan, slightly cloudy, no odour, no sheen
3:37	-	30	29.2	1	0.08	4641	5012	-	6.59	-19.9	Slightly tan, slightly cloudy, no odour, no sheen
3:42	-	40	29.1	0.9	0.07	4617	4973	-	6.59	-9.2	Slightly tan, slightly cloudy, no odour, no sheen
3:47	-	50	29.1	0.7	0.06	4595	4953	-	6.6	-1.3	Slightly tan, slightly cloudy, no odour, no sheen
3:52	-	60	29.1	0.7	0.05	4582	4936	-	6.6	4.5	Slightly tan, slightly cloudy, no odour, no sheen
3:57	-	70	29.1	0.8	0.06	4573	4918	-	6.6	9.9	Slightly tan, slightly cloudy, no odour, no sheen
4:02	-	80	29.1	0.7	0.06	4569	4916	-	6.6	11.8	Slightly tan, slightly cloudy, no odour, no sheen
Sampled											

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client: Alice Springs Town Council	Job no: AAQ 06 023.25	Well No. MW83
Project: ASTC Landfill Monitoring - March 2023	Date: 12/03/2023	
Location: In rows of mulch	Logged: DPB	
Depth to Groundwater: 15.154m	Comments: 	
Weather: Hot & 38°C		
Purging Method: Waterra Tube & Footvalve		
Purging Equipment: Pump		
Start Time: 2:20pm		
Finish Time: 3:00pm		

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
2:22	-	0	28.7	8.3	0.59	2175	2294	-	6.89	-228.6	Slightly grey, cloudy, no odour, no sheen
2:26	-	10	27.7	0.8	0.06	2289	2409	-	6.67	-176.9	Slightly grey, slightly cloudy, no odour, no sheen
2:30	-	20	27.7	0.7	0.06	2277	2393	-	6.63	-167.8	Slightly grey, slightly cloudy, no odour, no sheen
2:34	-	30	27.9	0.5	0.04	2280	2400	-	6.63	-166.1	Slightly grey, slightly cloudy, no odour, no sheen
2:38	-	40	27.9	0.4	0.03	2278	2409	-	6.64	-160.6	Slightly grey, slightly cloudy, no odour, no sheen
2:42	-	50	28.1	0.5	0.04	2282	2416	-	6.65	-146.3	Slightly grey, slightly cloudy, no odour, no sheen
2:46	-	60	27.9	0.6	0.05	2280	2410	-	6.65	-137.3	Slightly grey, slightly cloudy, no odour, no sheen
2:50	-	70	28.1	0.7	0.06	2272	2403	-	6.66	-125	Slightly grey, slightly cloudy, no odour, no sheen
2:55	-	80	28.1	0.7	0.06	2269	2401	-	6.66	-120.7	Slightly grey, slightly cloudy, no odour, no sheen
2:59	-	90	28.1	0.7	0.06	2267	2400	-	6.66	-116.3	Slightly grey, slightly cloudy, no odour, no sheen
Sampled											

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client: Alice Springs Town Council	Job no: AAQ 06 023.25	Well No. MW84
Project: ASTC Landfill Monitoring - March 2023	Date: 12/03/2023	
Location: 1st east of MW3	Logged: DPB	
Depth to Groundwater: 20.250m	Comments:	
Weather: Fine & 35°C		
Purging Method: Waterra Tube & Footvalve		
Purging Equipment: Pump		
Start Time: 12:09pm		
Finish Time: 1pm		

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
12:11	-	0	27.2	8.1	0.63	2209	2244	-	6.61	-87	colourless, clear, no odour, no sheen
12:15	-	10	27	5.8	0.46	2195	2277	-	6.48	-23.7	colourless, clear, no odour, no sheen
12:19	-	20	26.9	4.2	0.33	2190	2270	-	6.49	6.8	colourless, clear, no odour, no sheen
12:23	-	30	27	5.5	0.43	2191	2274	-	6.5	19.5	colourless, clear, no odour, no sheen
12:27	-	40	26.8	9.5	0.76	2192	2268	-	6.52	35.6	colourless, clear, no odour, no sheen
12:31	-	50	26.9	15.6	1.24	2191	2270	-	6.54	51.4	colourless, clear, no odour, no sheen
12:35	-	60	26.9	19.8	1.58	2188	2765	-	6.56	62.6	colourless, clear, no odour, no sheen
12:39	-	70	26.9	22.8	1.82	2191	2269	-	6.57	68.9	colourless, clear, no odour, no sheen
12:43	-	80	27	24.9	1.97	2192	2276	-	6.57	74.3	colourless, clear, no odour, no sheen
12:47	-	90	27	26.4	2.13	2192	2277	-	6.57	77.9	colourless, clear, no odour, no sheen
12:51	-	100	27	26.9	2.15	2193	2274	-	6.57	80.9	colourless, clear, no odour, no sheen
Sampled											

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client: Alice Springs Town Council Project: ASTC Landfill Monitoring - March 2023 Location: Fence east side	Job no: AAQ 06 023.25 Date: 12/03/2023 Logged: DPB	Well No. MW85
Depth to Groundwater: 14.577m Weather: Fine & 30°C Purging Method: Waterra Tube & Footvalve Purging Equipment: Pump Start Time: 10:24am Finish Time: 11:30am	Comments:	

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
10:25	-	0	26.7	8.6	0.56	2149	2540	-	6.83	-145.2	colourless, slightly cloudy, no odour, no sheen
10:30	-	10	26.5	32.9	2.67	1908	1947	-	6.83	-18.6	colourless, slightly cloudy, no odour, no sheen
10:35	-	20	26.3	51.4	4.1	1465	1495	-	6.86	41	colourless, slightly cloudy, no odour, no sheen
10:40	-	30	26.2	60	4.87	1279	1309	-	6.86	67.2	colourless, slightly cloudy, no odour, no sheen
10:45	-	40	26.2	62.2	5	1244	1271	-	6.89	79.6	colourless, slightly cloudy, no odour, no sheen
10:50	-	50	26.3	63.7	5.16	1216	1245	-	6.9	84.6	colourless, clear, no odour, no sheen
10:55	-	60	26.3	65.9	6.38	1164	1192	-	6.93	92.6	colourless, clear, no odour, no sheen
11:00	-	70	26.3	66.5	5.41	1150	1179	-	6.93	93.8	colourless, clear, no odour, no sheen
11:05	-	80	26.3	68.2	5.45	1138	1164	-	6.94	95.4	colourless, clear, no odour, no sheen
11:10	-	90	26.3	68.2	5.51	1124	1154	-	6.94	97.1	colourless, clear, no odour, no sheen
11:15	-	100	26.3	68.5	5.52	1119	1150	-	6.94	98.4	colourless, clear, no odour, no sheen
11:20	-	110	26.3	68.6	5.54	1117	1149	-	6.94	98.9	colourless, clear, no odour, no sheen
Sampled											

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client: Alice Springs Town Council	Job no: AAQ 06 023.25	Well No. MW86
Project: ASTC Landfill Monitoring - March 2023	Date: 12/03/2023	
Location: North of MW6A	Logged: DPB	
Depth to Groundwater: 20.874m	Comments:	
Weather: Fine & 28°C		
Purging Method: Waterra Tube & Footvalve		
Purging Equipment: Pump		
Start Time: 9:19am		
Finish Time: 10:20am		

Time	Depth (m)	Purged (L)	Temp (°C)	DO (%)	DO (mg/L)	SPC (µs/cm)	Cond (µs/cm)	TDS (ppm)	pH	Redox (mV)	Appearance (colour, turbidity, odour, sheen)
9:22	-	0	26.9	3.2	0.29	3570	3684	-	6.82	-130.8	Slightly tan, slightly cloudy, no odour, no sheen
9:26	-	10	26.7	1	0.08	3510	3621	-	6.7	-83.8	Slightly tan, slightly cloudy, no odour, no sheen
9:30	-	20	26.7	0.8	0.06	3484	3595	-	6.68	-70.9	Slightly tan, slightly cloudy, no odour, no sheen
9:35	-	30	26.6	0.7	0.06	3455	3562	-	6.66	-56.6	Slightly tan, slightly cloudy, no odour, no sheen
9:40	-	40	26.7	2.1	0.17	3426	3535	-	6.65	-40.9	Slightly tan, slightly cloudy, no odour, no sheen
9:45	-	50	26.7	4	0.32	3399	3504	-	6.65	-19.8	Slightly tan, slightly cloudy, no odour, no sheen
9:50	-	60	26.7	6	0.48	3367	3476	-	6.65	2.9	Slightly tan, slightly cloudy, no odour, no sheen
9:55	-	70	26.7	7.5	0.6	3347	3453	-	6.65	19	Slightly tan, slightly cloudy, no odour, no sheen
10:00	-	80	26.7	8.7	0.7	3327	3439	-	6.65	30.1	Slightly tan, slightly cloudy, no odour, no sheen
10:05	-	90	26.7	9.3	0.74	3318	3423	-	6.65	36.5	Slightly tan, slightly cloudy, no odour, no sheen
10:10	-	100	26.7	10	0.79	3316	3421	-	6.65	42.5	Slightly tan, slightly cloudy, no odour, no sheen
10:15	-	110	26.7	10.2	0.81	3315	3421	-	6.65	44.8	Slightly tan, slightly cloudy, no odour, no sheen
Sampled											

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%; DO within 10%; Redox within 10mV and Temperature within 0.5°C over three successive measurements

Groundwater Purging Record Sheet



Client:	Alice Springs Town Council	Job no:	AAQ 06 023.25	Well No. SW2
Project:	ASTC Landfill Monitoring - March 2023	Date:	13/03/2023	
Location:	Pond next to hazardous waste shelter	Logged:	DPB	
Depth to Groundwater:	NA	Comments: 		
Weather:	Fine & 30°C			
Purging Method:	NA			
Purging Equipment:	NA			
Start Time:	8:20am			
Finish Time:	8:45am			

[illegible]

Consulting Engineers and Scientists



APPENDIX E
RESULTS TABLES



	Inorganics																	Metals																								
	Turbidity	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Ammonia as N	Ammonia as NH3 (calculated)	BOD	Chloride	COD	Ferrous Iron	Kjeldahl Nitrogen Total	Nitrogen (Organic)	Sodium	Sulphate	TOC	Hardness as CaCO3	Antimony (Filtered)	Arsenic (Filtered)	Barium (Filtered)	Beryllium (Filtered)	Cadmium (Filtered)	Calcium	Chromium (hexavalent) (Filtered)	Chromium (III+VI) (Filtered)	Chromium (Trivalent) (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Ferric Iron	Iron	Lead (Filtered)	Magnesium	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Potassium	Selenium (Filtered)	Silver (Filtered)	Titanium (Filtered)	Vanadium (Filtered)	Zinc (Filtered)	
	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	1	20	10	20	20	0.01		5	1	25	0.05	0.2	0.2	0.5	5	5	5	0.005	0.001	0.02	0.001	0.0002	0.5	0.005	0.001	0.005	0.001	0.001	0.05	0.05	0.001	0.5	0.005	0.0001	0.001	0.5	0.001	0.005	0.005	0.005	0.005	0.005
ADWG Health & Aesthetic	5						0.5		250					180	250		200	0.003	0.01	2	0.06	0.002		0.05				1		0.3	0.01		0.1	0.001	0.02		0.01	0.1			3	
ANZECC Livestock																		0.5				0.01				1		0.4			0.1		0.002	1		0.02				20		
ANZG Freshwater 95%						0.9																0.0002		0.0004				0.0014			0.0034		1.9	0.0006	0.011		0.011	0.00005			0.008	

Location Sample Date

MW1	13/03/2023	<1	400	<10	<20	400	<0.01	-	42	680	47	<0.05	<0.2	<0.2	570	1,400	44	1,100	<0.005	<0.001	<0.02	<0.001	<0.0002	250	<0.005	0.001	<0.005	<0.001	0.002	<0.05	<0.05	<0.001	110	0.028	<0.0001	0.003	13	0.001	<0.005	<0.005	<0.005	<0.005
MW2	13/03/2023	<1	420	<10	<20	420	0.11	0.13	<5	980	25	<0.05	1.5	1.39	750	3,200	75	2,700	<0.005	<0.001	<0.02	<0.001	<0.0002	600	<0.005	<0.001	<0.005	0.004	0.017	<0.05	<0.05	<0.001	290	0.089	0.0001	0.014	28	0.001	<0.005	<0.005	<0.005	<0.005
MW3	13/03/2023	<1	220	<10	<20	220	1.6	1.95	49	110	50	<0.05	1.9	0.3	62	460	27	530	<0.005	<0.001	0.04	<0.001	<0.0002	120	<0.005	<0.001	<0.005	<0.001	<0.001	<0.05	<0.05	<0.001	58	0.019	<0.0001	0.001	6.8	0.03	<0.005	<0.005	<0.005	<0.005
MW4	13/03/2023	<1	360	<10	<20	360	0.06	0.07	36	780	76	<0.05	<0.2	<0.2	740	3,300	54	2,300	<0.005	<0.001	<0.02	<0.001	<0.0002	510	<0.005	<0.001	<0.005	0.01	0.003	<0.05	<0.05	<0.001	260	0.82	<0.0001	0.007	20	<0.001	<0.005	<0.005	<0.005	<0.005
MW5	13/03/2023	<1	300	<10	<20	300	0.03	0.04	<5	900	<25	<0.05	0.3	0.27	630	2,000	47	1,600	<0.005	<0.001	<0.02	<0.001	<0.0002	350	<0.005	<0.001	<0.005	<0.001	0.003	<0.05	<0.05	<0.001	180	0.066	<0.0001	0.002	19	0.003	<0.005	<0.005	<0.005	<0.005
MW6	13/03/2023	3	380	<10	<20	380	0.09	0.11	<5	660	<25	<0.05	0.3	0.21	400	770	48	990	<0.005	0.004	0.04	<0.001	<0.0002	230	<0.005	<0.001	<0.005	<0.001	<0.001	0.18	0.18	<0.001	100	0.032	<0.0001	<0.001	9.1	<0.001	<0.005	<0.005	<0.005	<0.005
MW7	13/03/2023	<1	540	<10	<20	540	0.09	0.11	7.8	640	<25	<0.05	8.3	8.21	490	680	53	560	<0.005	<0.001	<0.02	<0.001	<0.0002	120	<0.005	<0.001	<0.005	<0.001	0.002	<0.05	<0.05	<0.001	65	<0.005	<0.0001	0.002	9.3	0.002	<0.005	<0.005	<0.005	<0.005
MW81	13/03/2023	<1	260	<10	<20	260	0.27	0.33	<5	1,000	<25	<0.05	0.3	<0.2	310	2,800	27	3,200	<0.005	<0.001	<0.02	<0.001	<0.0002	550	<0.005	<0.001	<0.005	<0.001	0.004	<0.05	<0.05	<0.001	440	0.062	<0.0001	0.001	19	<0.001	<0.005	<0.005	<0.005	<0.005
MW82	13/03/2023	<1	380	<10	<20	380	0.02	0.02	7.5	770	<25	<0.05	<0.2	<0.2	550	1,300	45	1,100	<0.005	<0.001	<0.02	<0.001	<0.0002	250	<0.005	<0.001	<0.005	<0.001	0.003	<0.05	<0.05	<0.001	120	0.13	<0.0001	0.001	12	0.001	<0.005	<0.005	<0.005	<0.005
MW83	13/03/2023	1.2	330	<10	<20	330	0.04	0.05	<5	210	<25	<0.05	<0.2	<0.2	140	790	42	830	<0.005	0.004	<0.02	<0.001	<0.0002	200	<0.005	<0.001	<0.005	<0.001	0.002	<0.05	0.06	<0.001	83	0.041	<0.0001	<0.001	9.3	<0.001	<0.005	<0.005	<0.005	<0.005
MW84	13/03/2023	<1	450	<10	<20	450	0.04	0.05	<5	310	<25	<0.05	<0.2	<0.2	170	430	42	640	<0.005	<0.001	0.03	<0.001	<0.0002	140	<0.005	<0.001	<0.005	<0.001	0.002	<0.05	<0.05	<0.001	75	0.01	<0.0001	<0.001	4.9	0.002	<0.005	<0.005	0.005	0.005
MW85	13/03/2023	<1	390	<10	<20	390	<0.01	-	<5	92	<25	<0.05	<0.2	<0.2	73	160	38	360	<0.005	<0.001	0.04	<0.001	<0.0002	64	<0.005	<0.001	<0.005	<0.001	0.002	<0.05	<0.05	<0.001	47	<0.005	<0.0001	0.001	14	0.002	<0.005	<0.005	<0.005	<0.005
MW86	13/03/2023	<1	360	<10	<20	360	<0.01	-	<5	550	<25	<0.05	<0.2	<0.2	370	710	43	780	<0.005	<0.001	<0.02	<0.001	<0.0002	180	<0.005	<0.001	<0.005	<0.001	0.005	<0.05	<0.05	<0.001	82	0.007	<0.0001	<0.001	8.3	0.002	<0.005	<0.005	<0.005	<0.005

Statistical Summary

Number of Results	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
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[illegible][illegible]



	Phenols (Halogenated)								Polychlorinated Biphenyls								TRH											
	2,3,4,6-tetrachlorophenol	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	4-chloro-3-methylphenol	Pentachlorophenol	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	C6-C10	C6-C10 less BTEX (F1)	C10-C16	C10-C16 less NAPHTHALENE (F2)	C16-C34	C34-C40	C10 - C40 (Sum of total)	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	10	10	10	3	3	3	10	10	5	5	5	5	5	5	5	5	0.02	0.02	0.05	0.05	0.1	0.1	100	20	50	100	100	100
ADWG Health & Aesthetic			2	0.3		0.1		10																				
ANZECC Livestock																												
ANZG Freshwater 95%	20		20	160		490		10				0.6		0.03														

Location	Sample Date	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.02	<0.02	<0.05	<0.05	<0.1	<0.1	<100	<20	<50	<100	<100	<100
MW1	13/03/2023	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<100	<40	<50	<100	<100	<100
MW2	13/03/2023	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<100	<40	<50	<100	<100	<100
MW3	13/03/2023	-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
MW4	13/03/2023	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<100	<40	<50	<100	<100	<100
MW5	13/03/2023	-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
MW6	13/03/2023	-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
MW7	13/03/2023	-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
MW81	13/03/2023	-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
MW82	13/03/2023	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<100	<40	<50	<100	<100	<100
MW83	13/03/2023	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.06	<0.06	<0.05	<0.05	<0.1	<0.1	<100	<50	<50	<100	<100	<100
MW84	13/03/2023	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.02	<0.02	<0.05	<0.05	<0.1	<0.1	<100	<20	<50	<100	<100	<100
MW85	13/03/2023	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.02	<0.02	<0.05	<0.05	<0.1	<0.1	<100	<20	<50	<100	<100	<100
MW86	13/03/2023	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.02	<0.02	<0.05	<0.05	<0.1	<0.1	<100	<20	<50	<100	<100	<100

Statistical Summary		8	8	8	8	8	8	8	8	13	13	13	13	13	13	13	13	8	8	8	8	8	8	8	8	8	8	8
Number of Results		8	8	8	8	8	8	8	8	13	13	13	13	13	13	13	13	8	8	8	8	8	8	8	8	8	8	8
Maximum Concentration		<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<5	0.06	0.06	<0.05	<0.05	<0.1	<0.1	<100	50	<50	<100	<100

[illegible]

Number of Results	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Maximum Concentration	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<0.005	<0.001	<1	<1	<1	<1	<5	<1	<1	<1	<1	<5	<5	<5	<1	<1	<1	<5	<5	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5	<0.005	<0.005



		SVOCs																																																	
		Benzyl chloride	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chlorophenyl phenyl ether	Bis(2-chloroethoxy) methane	Bis(2-chloroisopropyl) ether	Dibenz(a,j)acridine	Dibenzofuran	N-nitrosopiperidine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	1-naphthylamine	2-naphthylamine	Diphenylamine	2-nitroaniline	Aniline	Pronamide	Trifluralin	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	Acetophenone	1-Chloronaphthalene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	1,2,3,4-tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,3-trichlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,4-trichlorobenzene	1,3,5-Trichlorobenzene	Pentachlorobenzene	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	7,12-dimethylbenz(a)anthracene	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate			
EQL		0.005	5	5	5	5	5	5	5	5	0.005	5	5	5	5	5	5	5	5	5	5	5	0.005	5	5	50	5	5	5	5	5	0.005	0.005	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
ADWG Health & Aesthetic			0.7																			70	0.09																												
ANZECC Livestock																																																			
ANZG Freshwater 95%					360															250		0.0044	65		550									10		170										1000	3700	26			

Location	Sample Date																																																								
MW1	13/03/2023	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<50	<5	<5	<5	<5	<5	<0.005	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5										
MW2	13/03/2023	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<50	<5	<5	<5	<5	<5	<0.005	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5							
MW3	13/03/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
MW4	13/03/2023	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<50	<5	<5	<5	<5	<5	<0.005	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5						
MW5	13/03/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
MW6	13/03/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
MW7	13/03/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
MW81	13/03/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
MW82	13/03/2023	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<50	<5	<5	<5	<5	<5	<0.005	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5				
MW83	13/03/2023	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<50	<5	<5	<5	<5	<5	<0.005	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5			
MW84	13/03/2023	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<50	<5	<5	<5	<5	<5	<0.005	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		
MW85	13/03/2023	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<50	<5	<5	<5	<5	<5	<0.005	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
MW86	13/03/2023	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.005	<5	<5	<50	<5	<5	<5	<5	<5	<0.005	<0.005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Statistical Summary																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Number of Results	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8



	Inorganics																	Metals																									
	Turbidity	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Ammonia as N	Ammonia as NH3 (calculated)	BOD	Chloride	COD	Ferrous Iron	Kjeldahl Nitrogen Total	Nitrogen (Organic)	Sodium	Sulphate	TOC	Hardness as CaCO3	Antimony (Filtered)	Arsenic (Filtered)	Barium (Filtered)	Beryllium (Filtered)	Cadmium (Filtered)	Calcium	Chromium (hexavalent) (Filtered)	Chromium (III+VI) (Filtered)	Chromium (Trivalent) (Filtered)	Cobalt (Filtered)	Copper (Filtered)	Ferric Iron	Iron	Lead (Filtered)	Magnesium	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Potassium	Selenium (Filtered)	Silver (Filtered)	Titanium (Filtered)	Vanadium (Filtered)	Zinc (Filtered)		
	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
	1	20	10	20	20	0.01	mg/L	5	1	25	0.05	0.2	0.2	0.5	5	5	5	0.005	0.001	0.02	0.001	0.0002	0.5	0.005	0.001	0.005	0.001	0.001	0.05	0.05	0.001	0.5	0.005	0.0001	0.001	0.5	0.001	0.005	0.005	0.005	0.005	0.005	
	EQL																																										
ADWG Health & Aesthetic	5						0.5		250					180	250		200	0.003	0.01	2	0.06	0.002		0.05					1		0.3	0.01		0.1	0.001	0.02		0.01	0.1				3
ANZECC Livestock																			0.5				0.01			1		0.4				0.1		0.002	1		0.02					20	
ANZG Freshwater 95%						0.9																0.0002		0.0004					0.0014			0.0034		1.9	0.0006	0.011		0.011	0.00005			0.008	
Location Sample Date																																											
SW2	13/03/2023	17	250	<10	<20	250	4.1	4.99	9.4	250	200	0.46	6.9	2.8	140	59	130	140	<0.005	0.011	0.2	<0.001	<0.0002	33	<0.005	0.003	<0.005	0.002	0.006	0.94	1.4	<0.001	15	0.23	<0.0001	0.008	65	<0.001	<0.005	<0.005	0.006	<0.005	
Statistical Summary																																											
Number of Results	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Maximum Concentration	17	250	<10	<20	250	4.1	4.99	9.4	250	200	0.46	6.9	2.8	140	59	130	140	<0.005	0.011	0.2	<0.001	<0.0002	33	<0.005	0.003	<0.005	0.002	0.006	0.94	1.4	<0.001	15	0.23	<0.0001	0.008	65	<0.001	<0.005	<0.005	0.006	<0.005		

		Organochlorine Pesticides																				PAH																BTEX								
		4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Benzo[b,j]fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total	
EQL		µg/L 5	µg/L 5	µg/L 5	µg/L	µg/L 5	µg/L 5	µg/L 5	µg/L 5	µg/L	µg/L 5	µg/L 5	µg/L 5	µg/L 5	µg/L 5	µg/L 5	µg/L 5	µg/L 5	µg/L 5	µg/L 5	µg/L 5	µg/L 5	µg/L 0	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 3	
ADWG Health & Aesthetic					0.3				9									10	0.3									0.01													1	3	25			20
ANZECC Livestock																																														
ANZG Freshwater 95%									0.01						0.02			0.2	0.09																16					950					350	
Location Sample Date																																														
SW2		13/03/2023	<5	<5	<5	<10	<5	<5	<5	<5	<15	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<2	<1	<3
Statistical Summary																																														
Number of Results		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Maximum Concentration		<5	<5	<5	<10	<5	<5	<5	<5	<15	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<2	<1	<3	



	MAH	Phenols (non-Halogenated)								Phenols (Halogenated)								Polychlorinated Biphenyls								TRH													
		Total MAH	2,4-dimethylphenol	2,4-dinitrophenol	2-methylphenol	2-nitrophenol	3,4,4-methylphenol	4,6-Dinitro-2-methylphenol	4-nitrophenol	Phenol	2,3,4,6-tetrachlorophenol	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	4-chloro-3-methylphenol	Pentachlorophenol	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	C6-C10	C6-C10 less BTEX (F1)	C10-C16	C10-C16 less NAPHTHALENE (F2)	C16-C34	C34-C40	C10 - C40 (Sum of total)	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	
EQL	3	3	0.03	3	10	6	30	30	3	10	10	10	3	3	3	10	10	5	5	5	5	5	5	5	5	0.02	0.02	0.05	0.05	0.1	0.1	100	20	50	100	100	100		
ADWG Health & Aesthetic												2	0.3		0.1		10																						
ANZECC Livestock																																							
ANZG Freshwater 95%			0.045						320	20		20	160		490		10				0.6		0.03																
Location Sample Date																																							
SW2	13/03/2023	<3	<3	<0.03	<3	<10	<6	<30	<30	<3	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.02	<0.02	<0.05	<0.05	<0.1	<0.1	<100	<20	<50	<100	<100	<100		
Statistical Summary																																							
Number of Results		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Maximum Concentration		<3	<3	<0.03	<3	<10	<6	<30	<30	<3	<10	<10	<10	<3	<3	<3	<10	<10	<5	<5	<5	<5	<5	<5	<5	<0.02	<0.02	<0.05	<0.05	<0.1	<0.1	<100	<20	<50	<100	<100	<100		

		VOCs																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,2,3-trichloropropane	1,2,4-trimethylbenzene	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane	1,3,5-trimethylbenzene	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	Methyl Ethyl Ketone	4-chlorotoluene	4-Methyl-2-pentanone	Acetone	Allyl chloride	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Iodomethane	Isopropylbenzene	Styrene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichlorofluoromethane	Vinyl chloride	Vic EPA IWRG 621 CHC (Total)*	Vic EPA IWRG 621 Other CHC (Total)*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
EQL		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1	5	1	1	1	1	1	5	1	1	1	1	1	1	5	5	5	1	5	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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APPENDIX F
GROUNDWATER LEVELS AND CONTOURS

	Date	Bore and Elevation (m AHD)												
		MW1	MW2	MW3	MW4A	MW5A	MW6A	MW7A	MW81	MW82	MW83	MW84	MW85	MW86
		565.96	565.41	579.93	565.03	571.05	577.13	569.08	567.04	572.24	574.50	579.50	573.94	-
						571.00	582.31							
Depth to Water	Feb-14	6.41	4.37	20.17	3.59	11.42	22.55	9.53	7.17	-	-	-	-	-
	Feb-15	5.44	2.62	19.82	2.23	10.62	21.69	8.67	7.41	-	-	-	-	-
	Aug-15	6.12	3.62	20.01	2.91	11.17	22.29	9.25	6.82	-	-	-	-	-
	Feb-16	6.23	3.75	20.17	3.18	11.28	22.37	9.34	7.24	-	-	-	-	-
	Aug-16	6.19	3.48	20.17	2.82	11.26	22.34	9.31	7.47	-	-	-	-	-
	Feb-17	5.57	3.27	19.77	2.62	10.72	21.77	8.71	7.48	-	-	-	-	-
	Mar-18	6.73	4.38	20.61	3.57	11.79	22.90	9.87	7.80	-	-	-	-	-
	Mar-19	7.27	5.01	21.33	3.63	12.49	23.58	10.55	8.39	-	-	-	-	-
	Mar-20	8.19	5.53	22.12	3.50	13.27	23.81	11.34	8.90	14.61	16.88	21.87	16.33	22.62
	May-21	7.96	4.63	22.16	3.29	13.08	23.61	11.12	9.28	14.44	16.70	21.77	16.12	22.42
	Mar-22	5.89	1.93	20.29	1.99	11.32	21.81	9.31	9.09	12.70	14.94	20.31	14.33	20.62
	Mar-23	6.44	2.95	20.60	2.76	11.55	25.95	9.58	7.82	12.30	15.15	20.25	14.58	20.87
Reduced Water Level	Feb-14	559.55	561.04	559.76	561.44	559.59	559.76	559.55	559.87	-	-	-	-	-
	Feb-15	560.52	562.79	560.11	562.80	560.38	560.62	560.41	559.63	-	-	-	-	-
	Aug-15	559.84	561.79	559.93	562.12	559.84	560.02	559.83	560.22	-	-	-	-	-
	Feb-16	559.73	561.67	559.76	561.85	559.73	559.94	559.75	559.80	-	-	-	-	-
	Aug-16	559.78	561.93	559.77	562.21	559.74	559.97	559.77	559.57	-	-	-	-	-
	Feb-17	560.40	562.14	560.17	562.41	560.29	560.54	560.37	559.56	-	-	-	-	-
	Mar-18	559.23	561.03	559.33	561.46	559.21	559.41	559.21	559.23	-	-	-	-	-
	Mar-19	558.69	560.40	558.61	561.40	558.51	558.73	558.53	558.65	-	-	-	-	-
	Mar-20	557.78	559.88	557.81	561.53	557.73	558.50	557.74	558.14	557.64	557.62	557.63	557.61	-
	May-21	558.00	560.78	557.78	561.74	557.92	558.70	557.96	557.76	557.81	557.81	557.73	557.82	-
	Mar-22	560.07	563.48	559.64	563.05	559.68	560.49	559.77	557.95	559.54	559.56	559.19	559.61	-
	Mar-23	559.52	562.46	559.33	562.27	559.45	-	559.50	559.21	559.94	559.35	559.25	559.36	-
Water Level Change	Feb-14 to Feb-15	0.97	1.75	0.35	1.36	0.80	0.86	0.86	-0.24	-	-	-	-	-
	Feb-15 to Aug-15	-0.68	-1.00	-0.19	-0.68	-0.55	-0.59	-0.58	0.59	-	-	-	-	-
	Aug-15 to Feb-16	-0.11	-0.13	-0.16	-0.27	-0.11	-0.08	-0.08	-0.42	-	-	-	-	-
	Feb-16 to Aug-16	0.04	0.26	0.00	0.36	0.01	0.03	0.03	-0.23	-	-	-	-	-
	Aug-16 to Feb-17	0.62	0.21	0.40	0.20	0.55	0.57	0.59	-0.01	-	-	-	-	-
	Feb-17 to Mar-18	-1.16	-1.11	-0.84	-0.95	-1.08	-1.13	-1.16	-0.32	-	-	-	-	-
	Mar-18 to Mar-19	-0.54	-0.63	-0.72	-0.07	-0.70	-0.69	-0.68	-0.58	-	-	-	-	-
	Mar-19 to Mar-20	-0.91	-0.52	-0.80	0.14	-0.78	-0.23	-0.79	-0.51	-	-	-	-	-
	Mar-20 to May-21	0.22	0.89	-0.03	0.20	0.19	0.20	0.22	-0.38	0.17	0.18	0.10	0.21	-0.20
	May-21 to Mar-22	2.07	2.70	1.87	1.31	1.76	1.79	1.81	0.19	1.73	1.75	1.46	1.79	-1.79
	Mar-22 to Mar-23	-0.55	-1.02	-0.31	-0.78	-0.23	-	-0.27	1.27	0.40	-0.21	0.06	-0.25	0.25



Scale (m)
0 40 80

- Notes:
1. Groundwater contours generated by Surfer software with a grid generated using triangulation with linear interpolation.
 2. Base aerial photo from Nearmap dated May 2020.
 3. MW6 & MW86 was omitted from the contours as no elevation data is available for these wells.

Legend

- MW2 Groundwater monitoring well
- 560 — Groundwater level contour (m AHD)
- Landfill boundary

Figure 6 - Groundwater Level Contours
Alice Springs Town Council Regional Waste Management Facility
Monitoring Report - March 2023



Notes:
 1. Salinity contours generated by Surfer software with a grid generated using triangulation with linear interpolation.
 2. Base aerial photo from Nearmap dated May 2020.

- Legend**
- MW2 Groundwater monitoring well
 - 2000 Salinity contour (ppm)
 - Landfill boundary

Figure 7 - Groundwater Salinity Contours
 Alice Springs Town Council Regional Waste Management Facility
 Monitoring Report - March 2023



Notes:
 1. pH contours generated by Surfer software with a grid generated using triangulation with linear interpolation.
 2. Base aerial photo from Nearmap dated May 2020.

- Legend**
- MW2 Groundwater monitoring well
 - 8.0 pH contour
 - Landfill boundary

Figure 8 - Groundwater pH Contours
 Alice Springs Town Council Regional Waste Management Facility
 Monitoring Report - March 2023

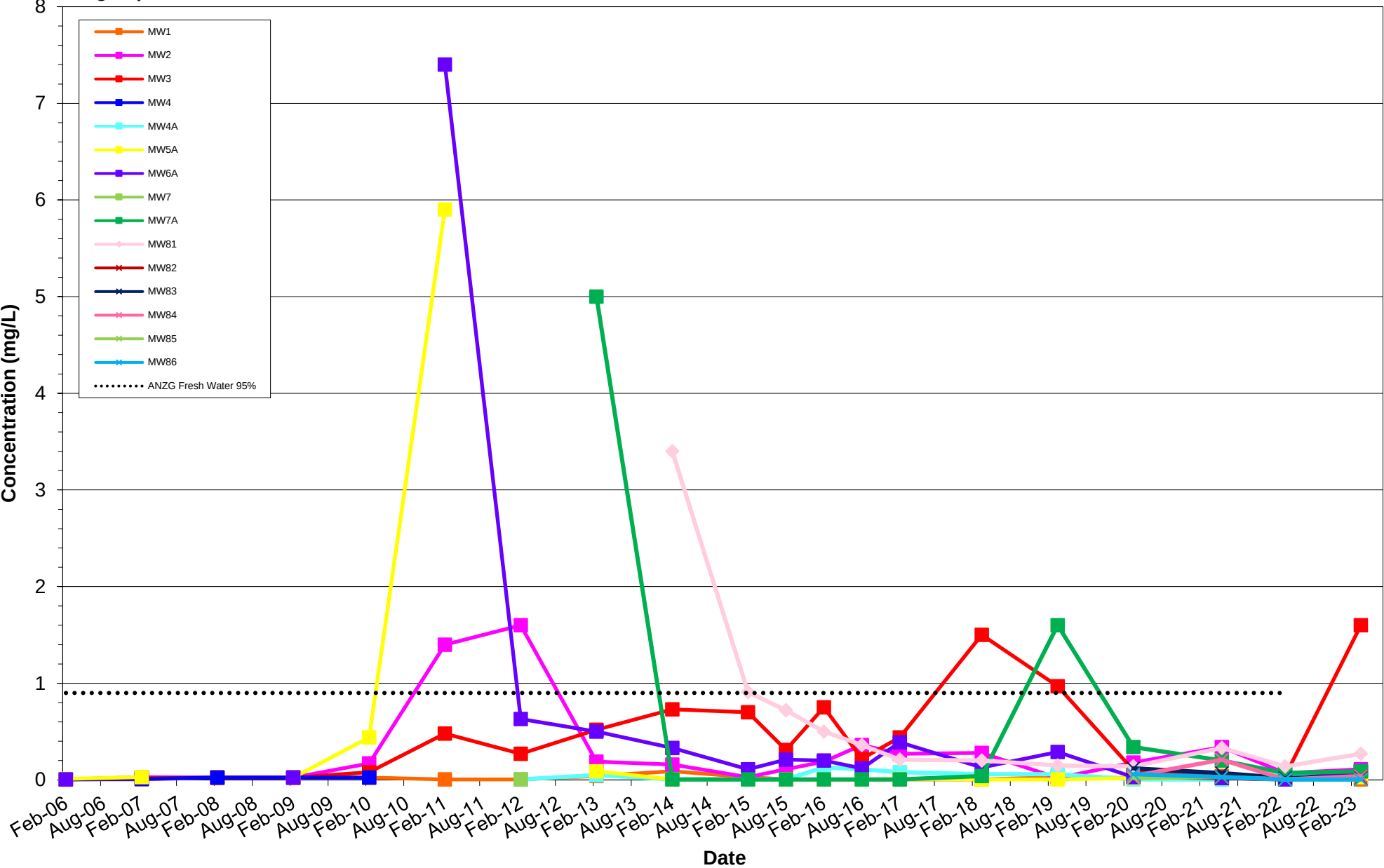
Consulting Engineers and Scientists



APPENDIX G
GROUNDWATER TRENDS

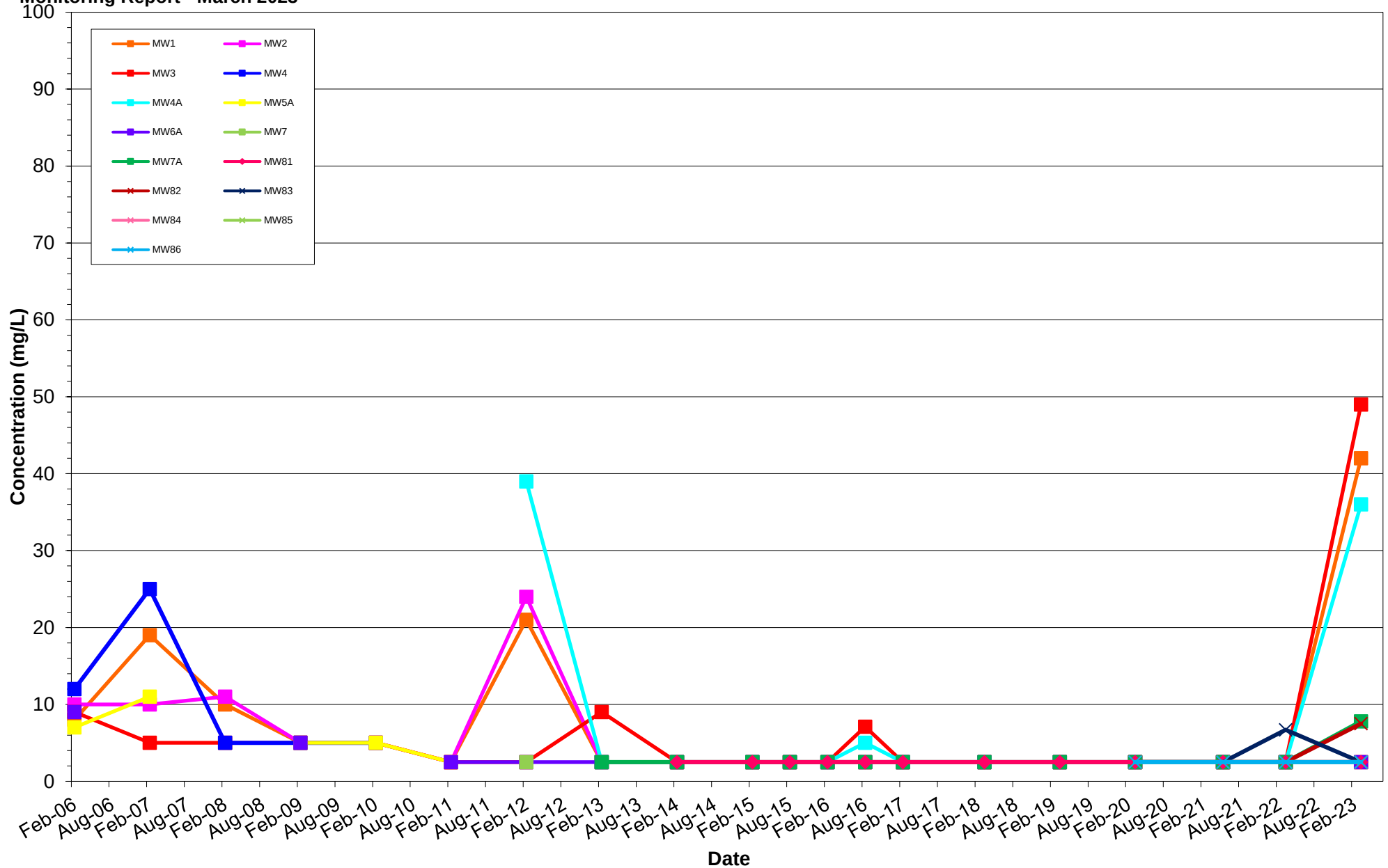
ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

Ammonia
Time Series



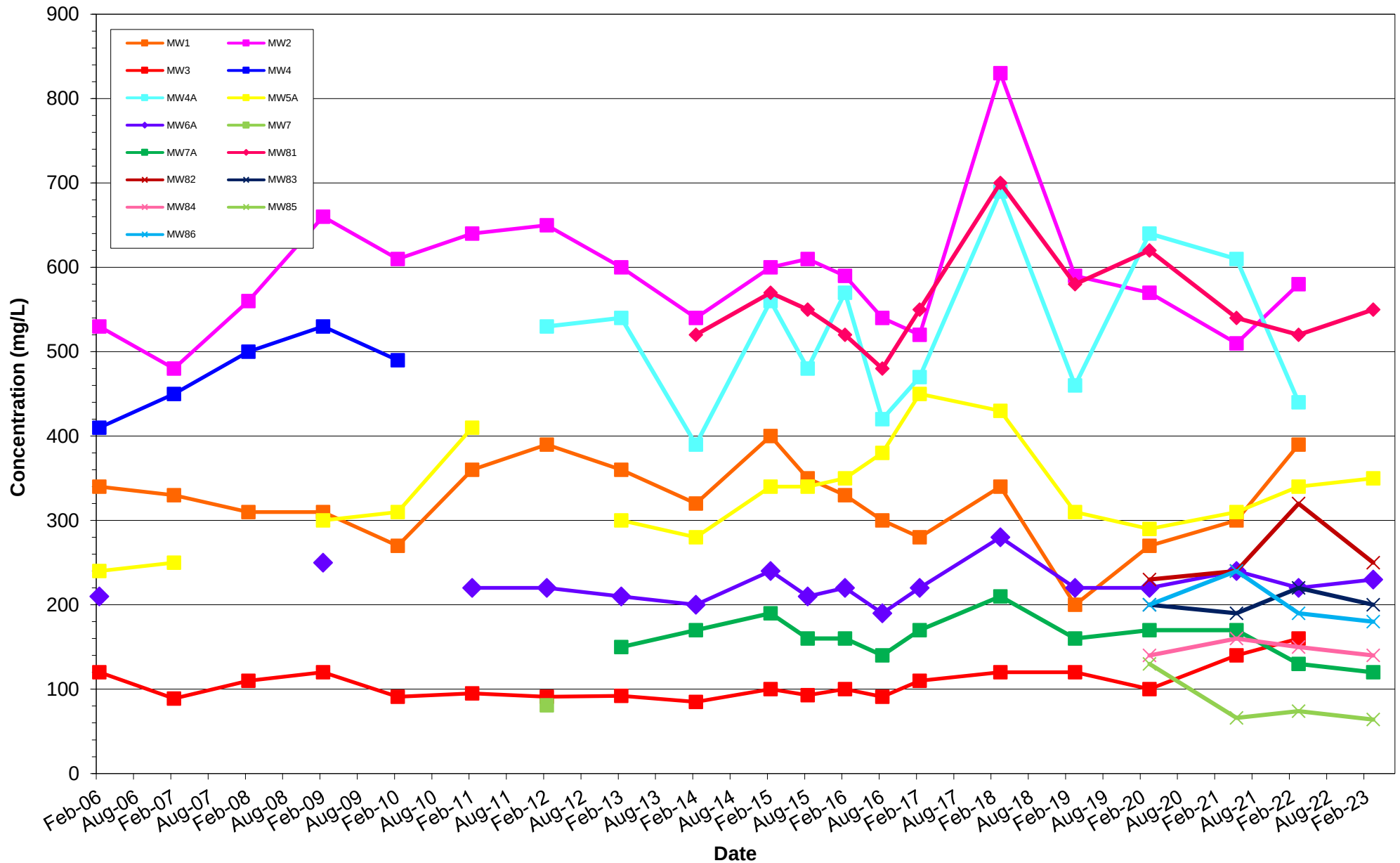
ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

BOD
Time Series



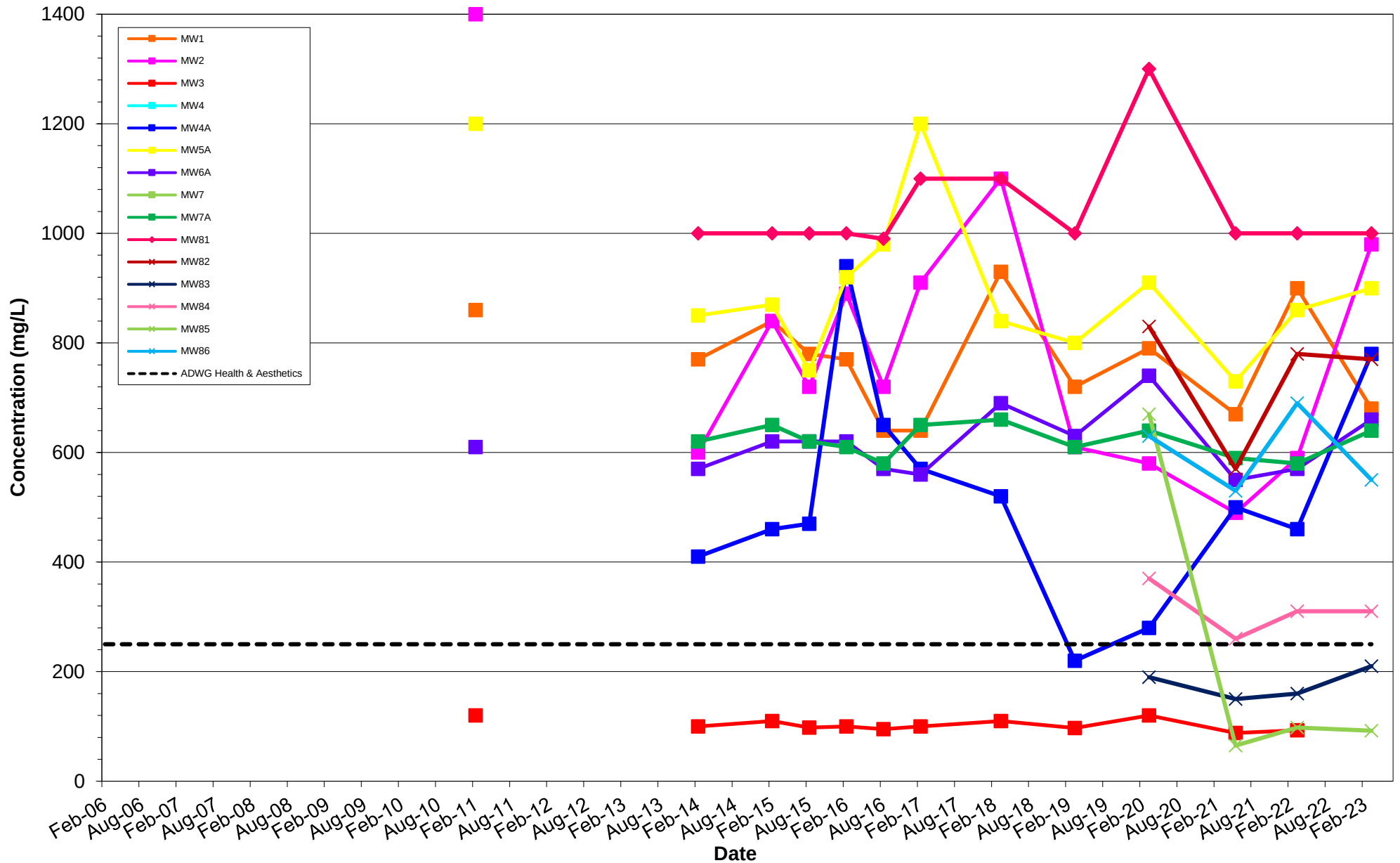
ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

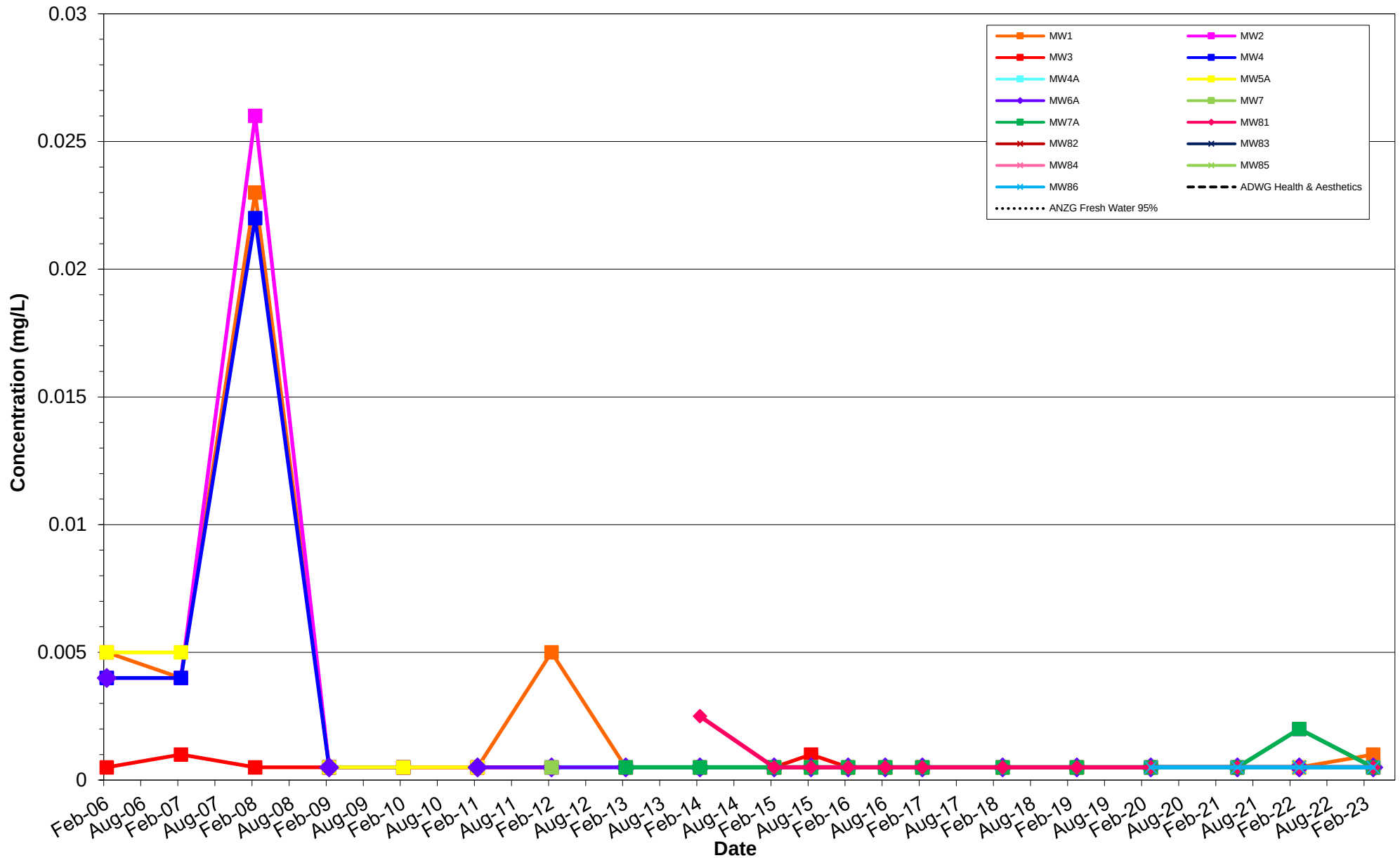
Calcium
Time Series



ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

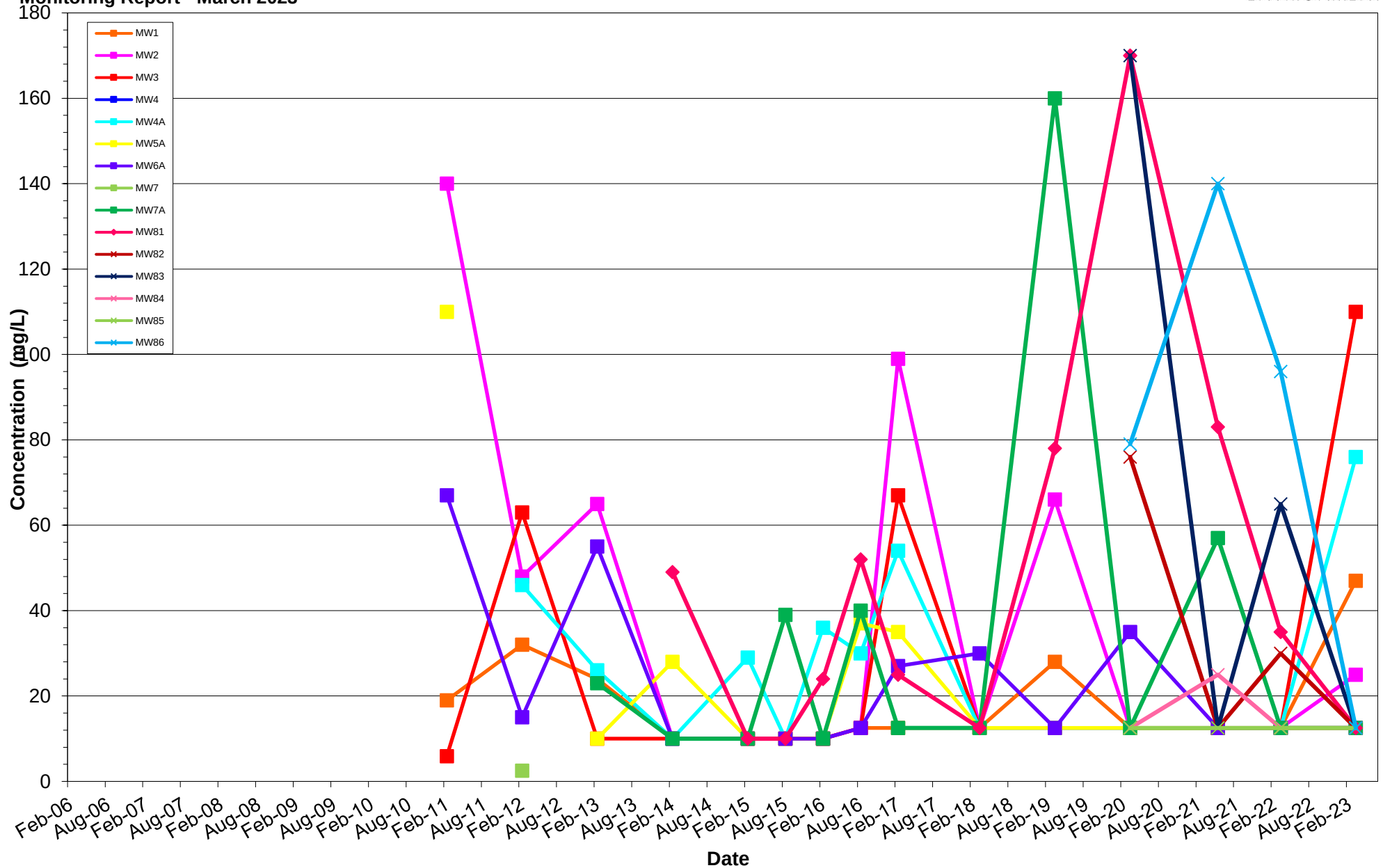
Chloride
Time Series





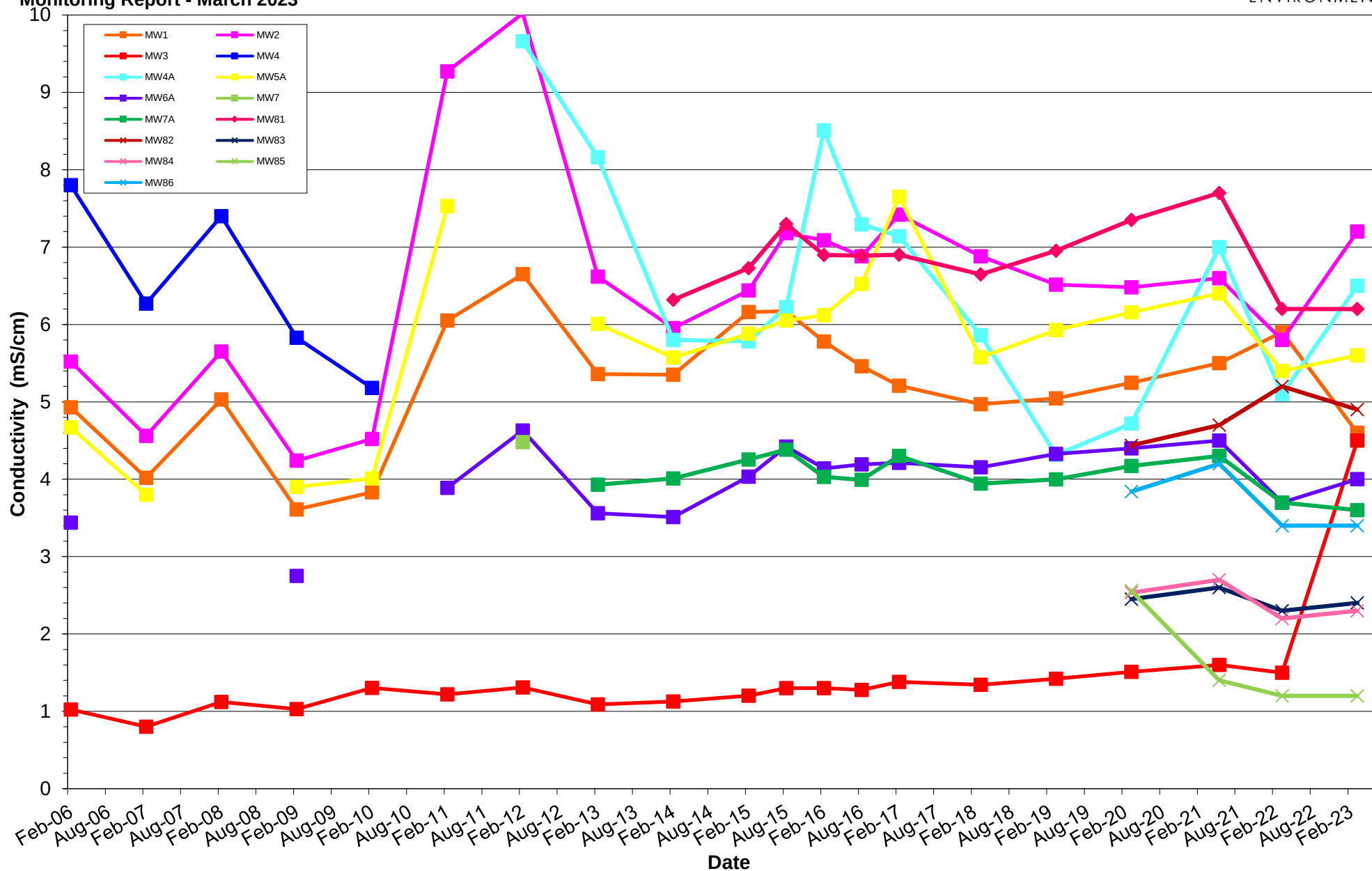
ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

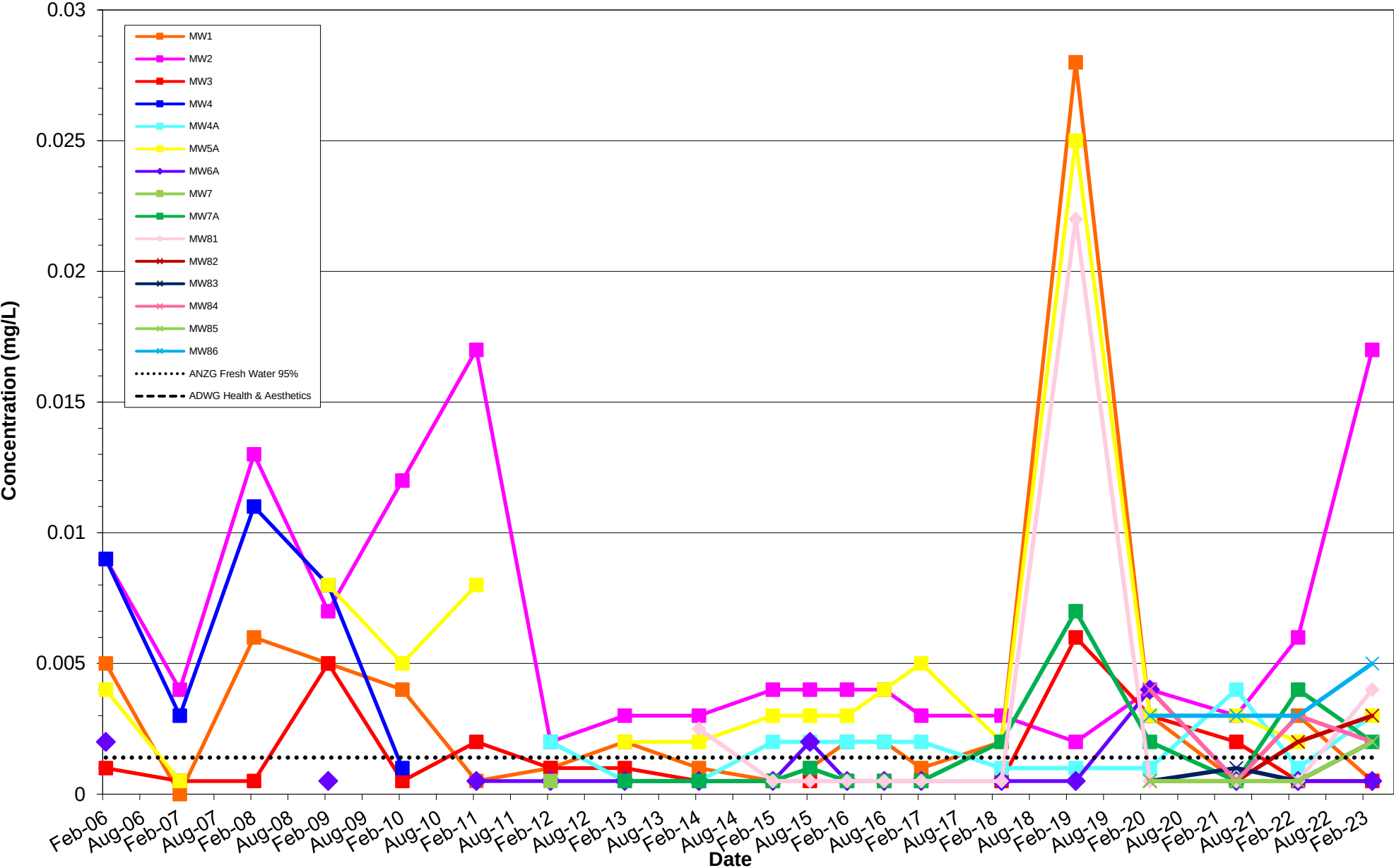
COD
Time Series

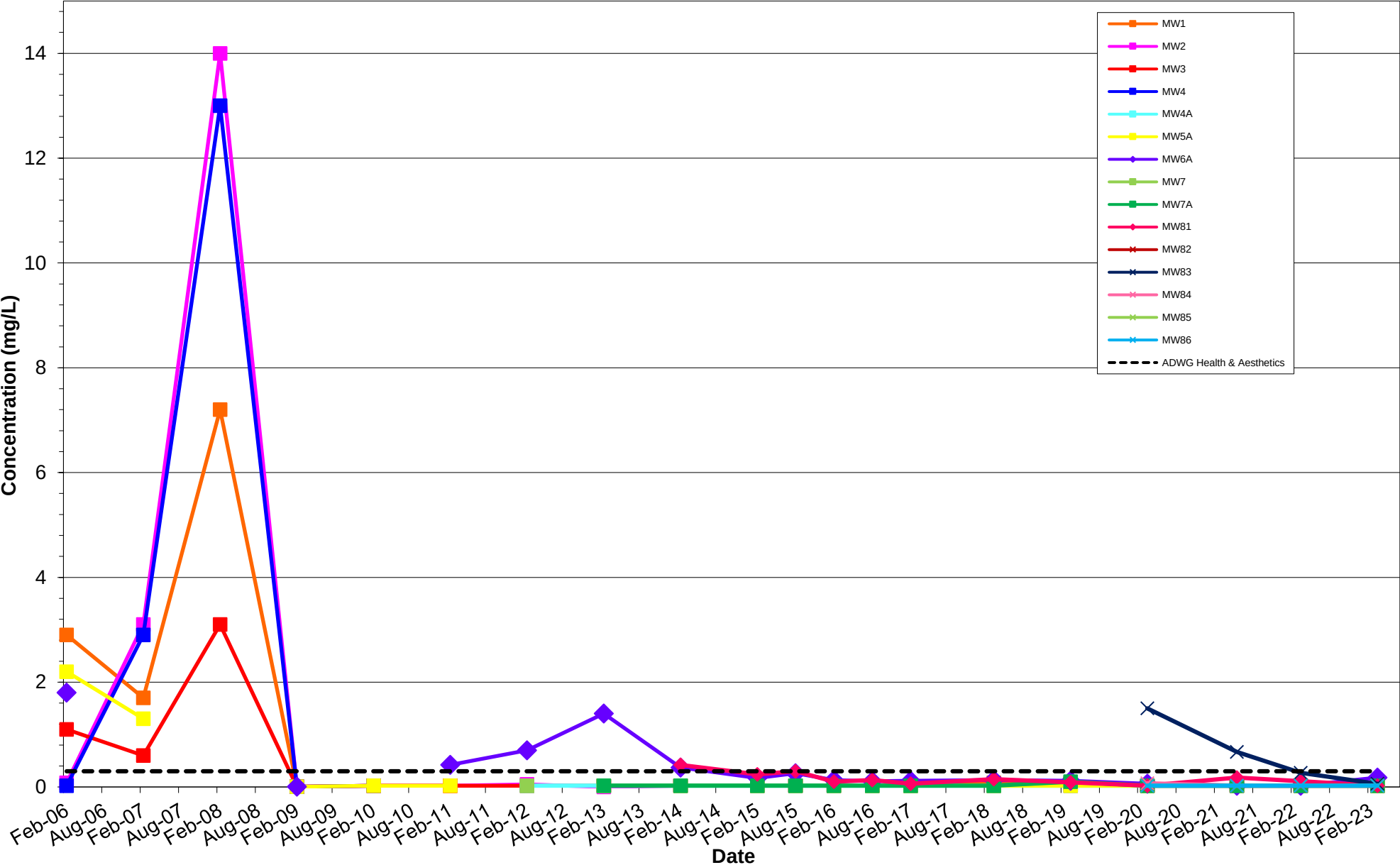


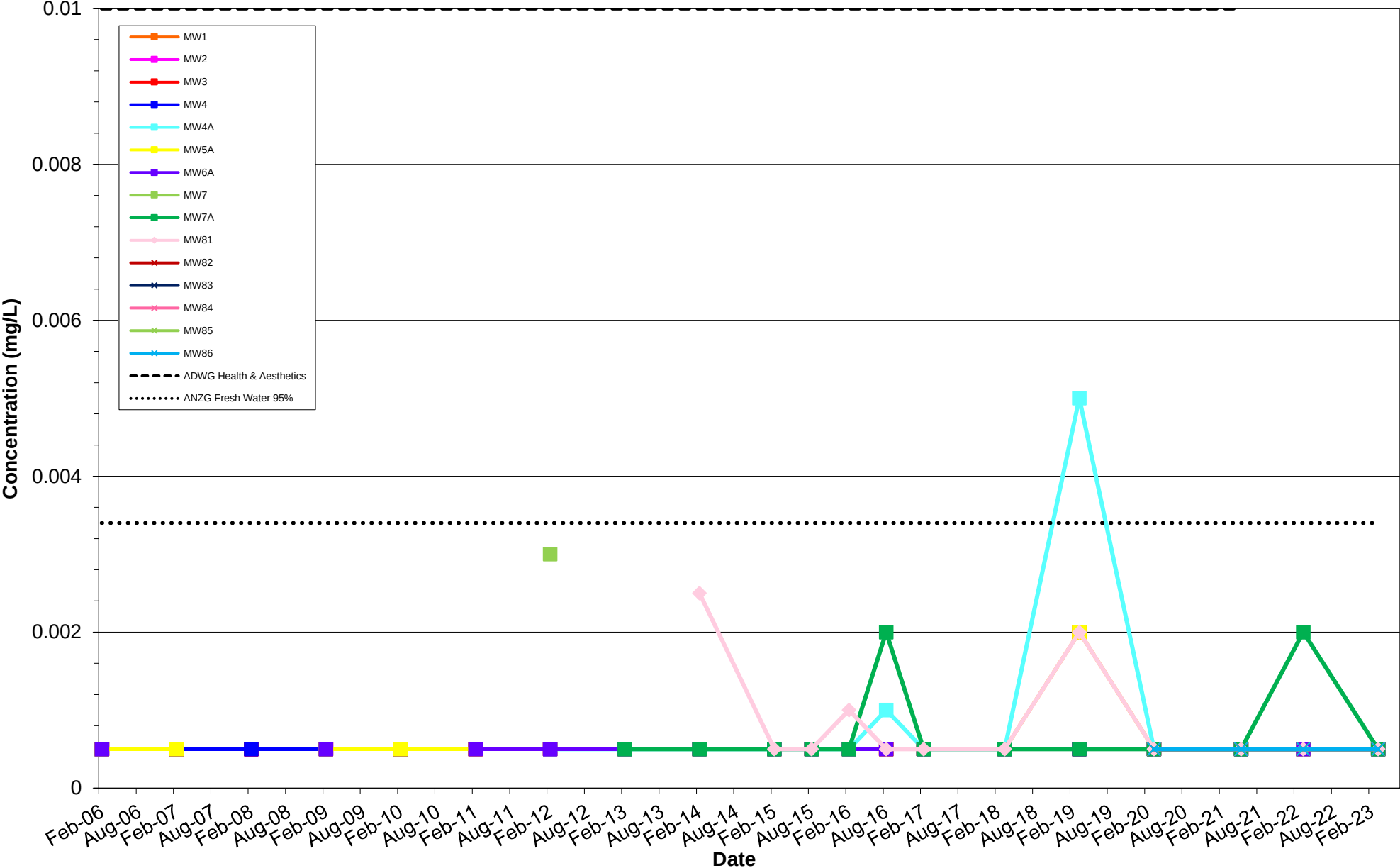
ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

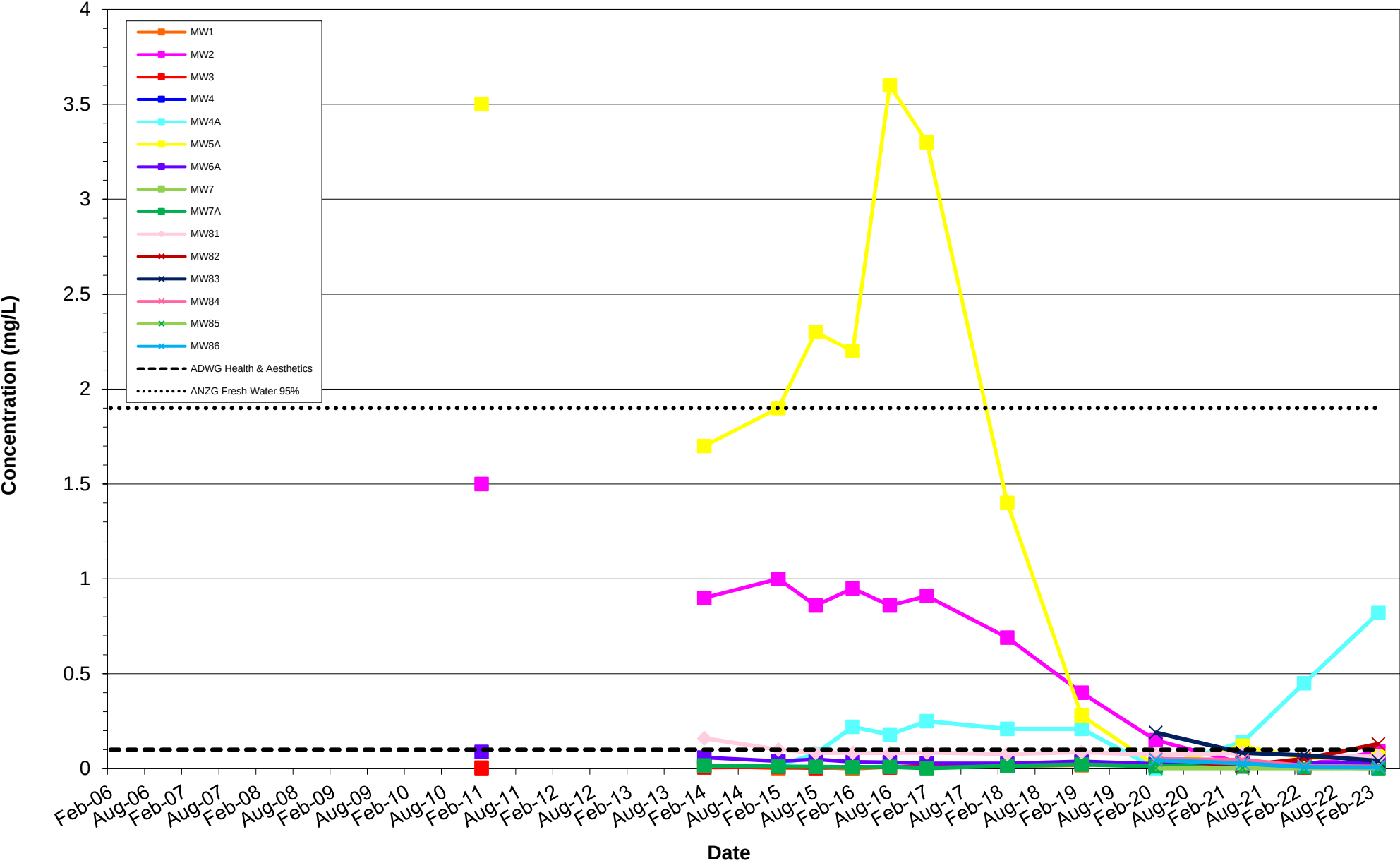
Conductivity
Time Series

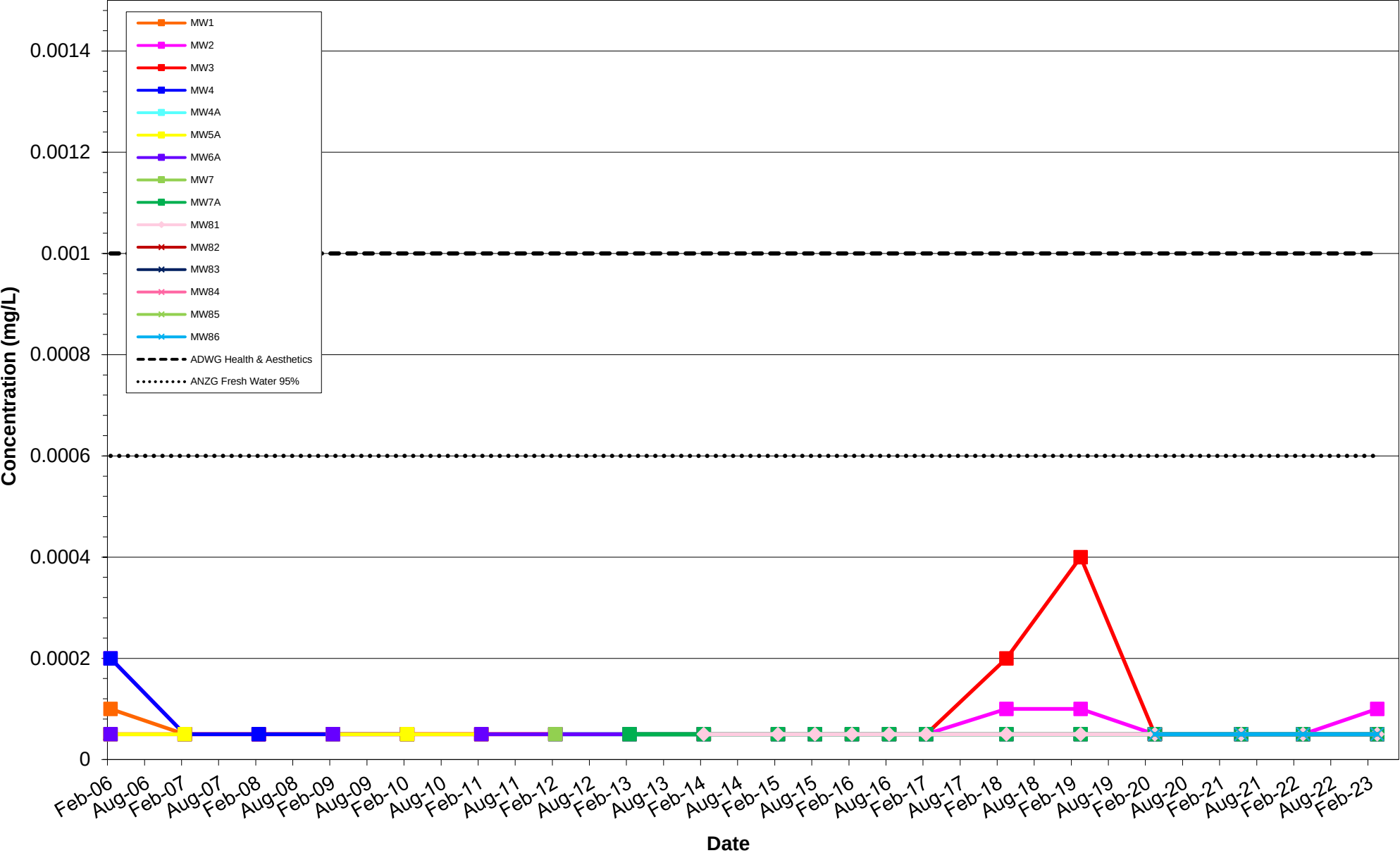


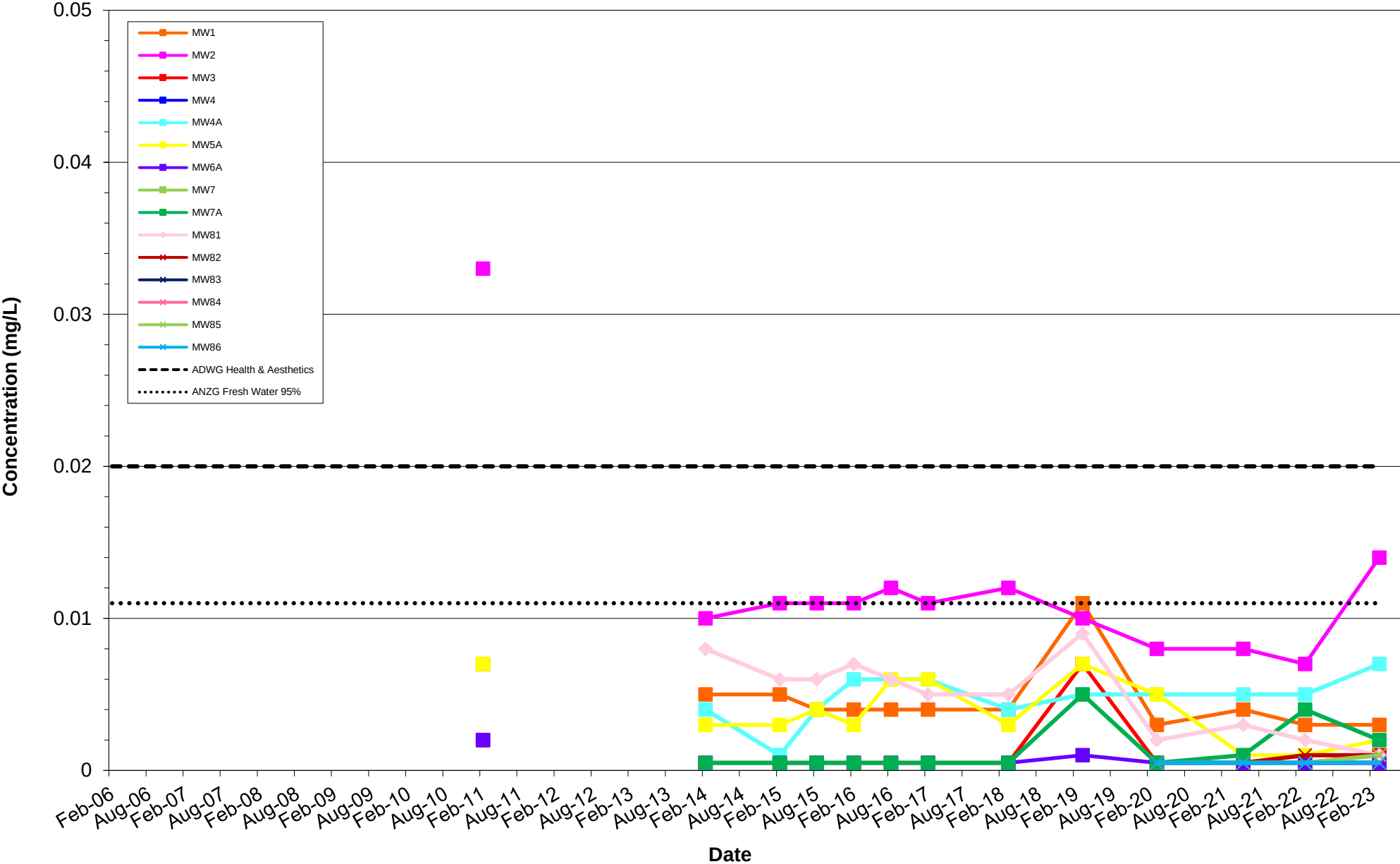






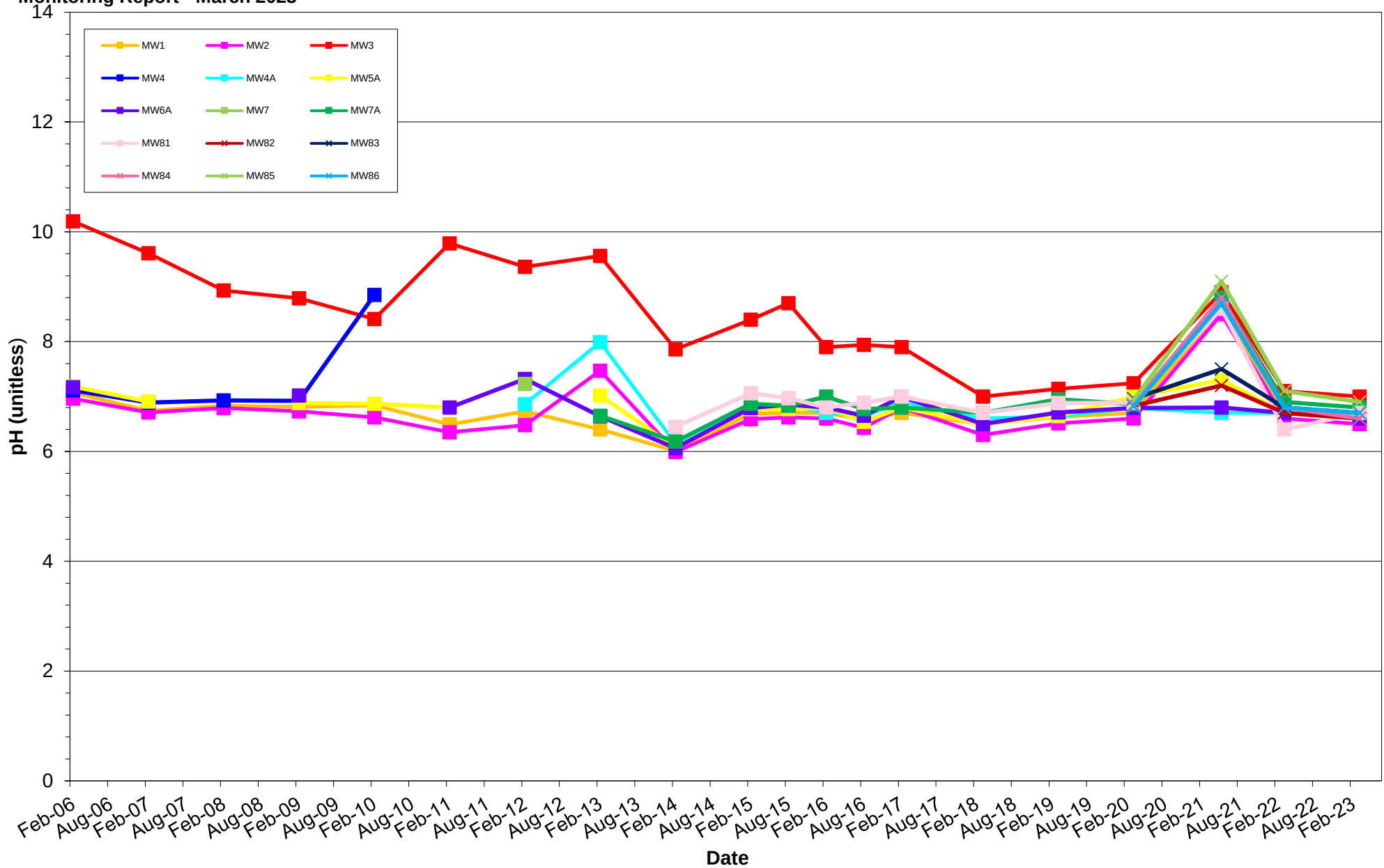






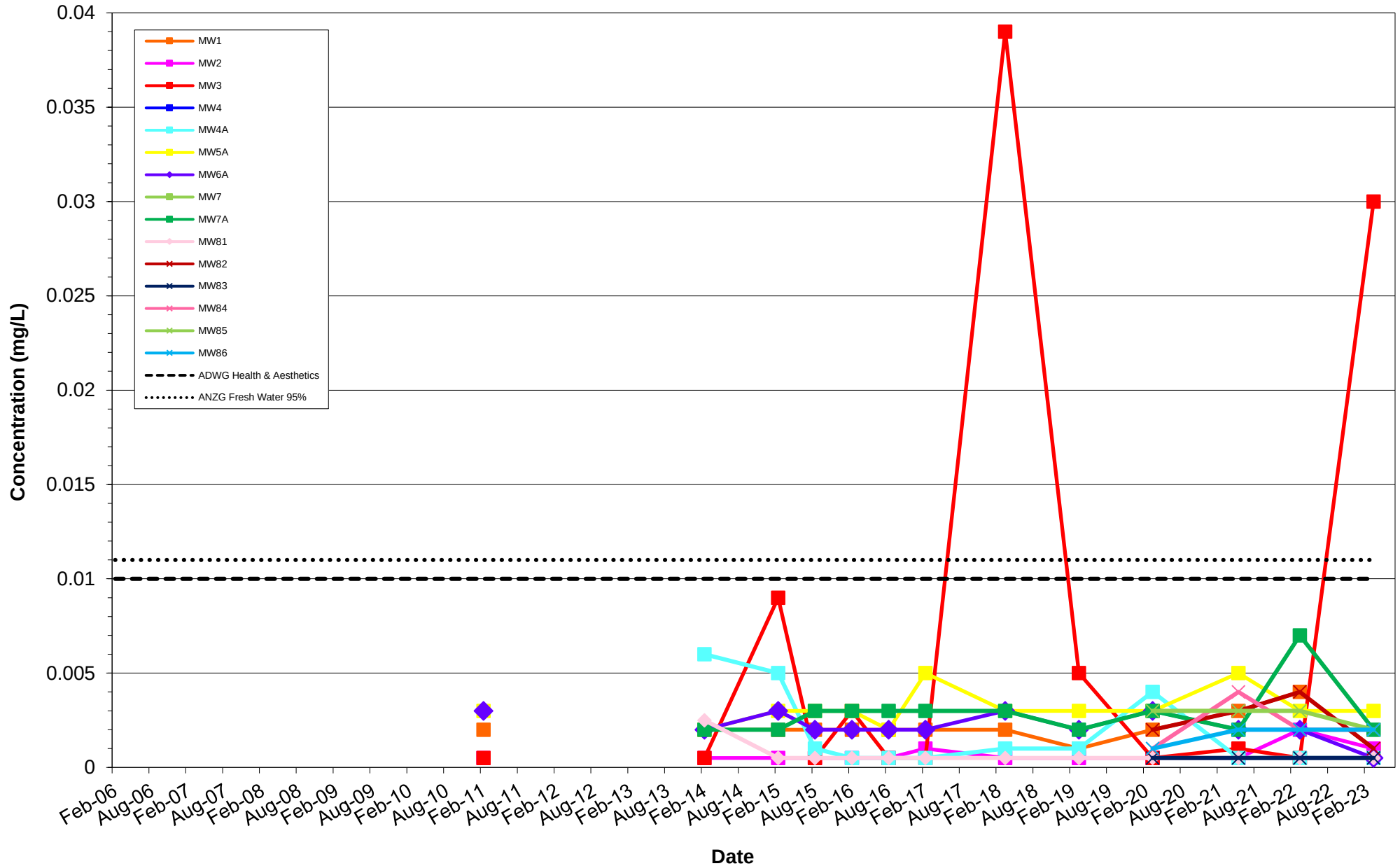
ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

pH
Time Series



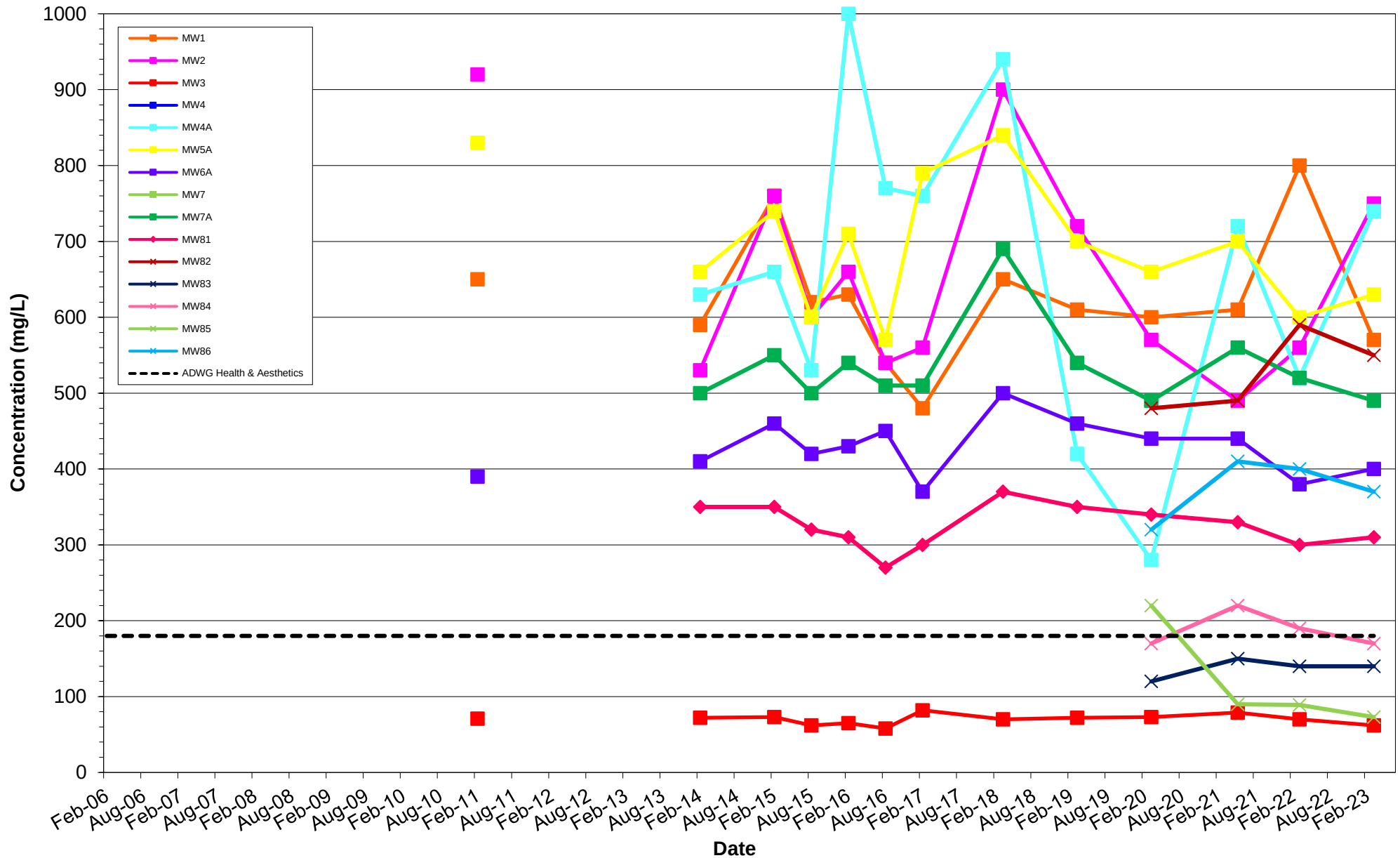
ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

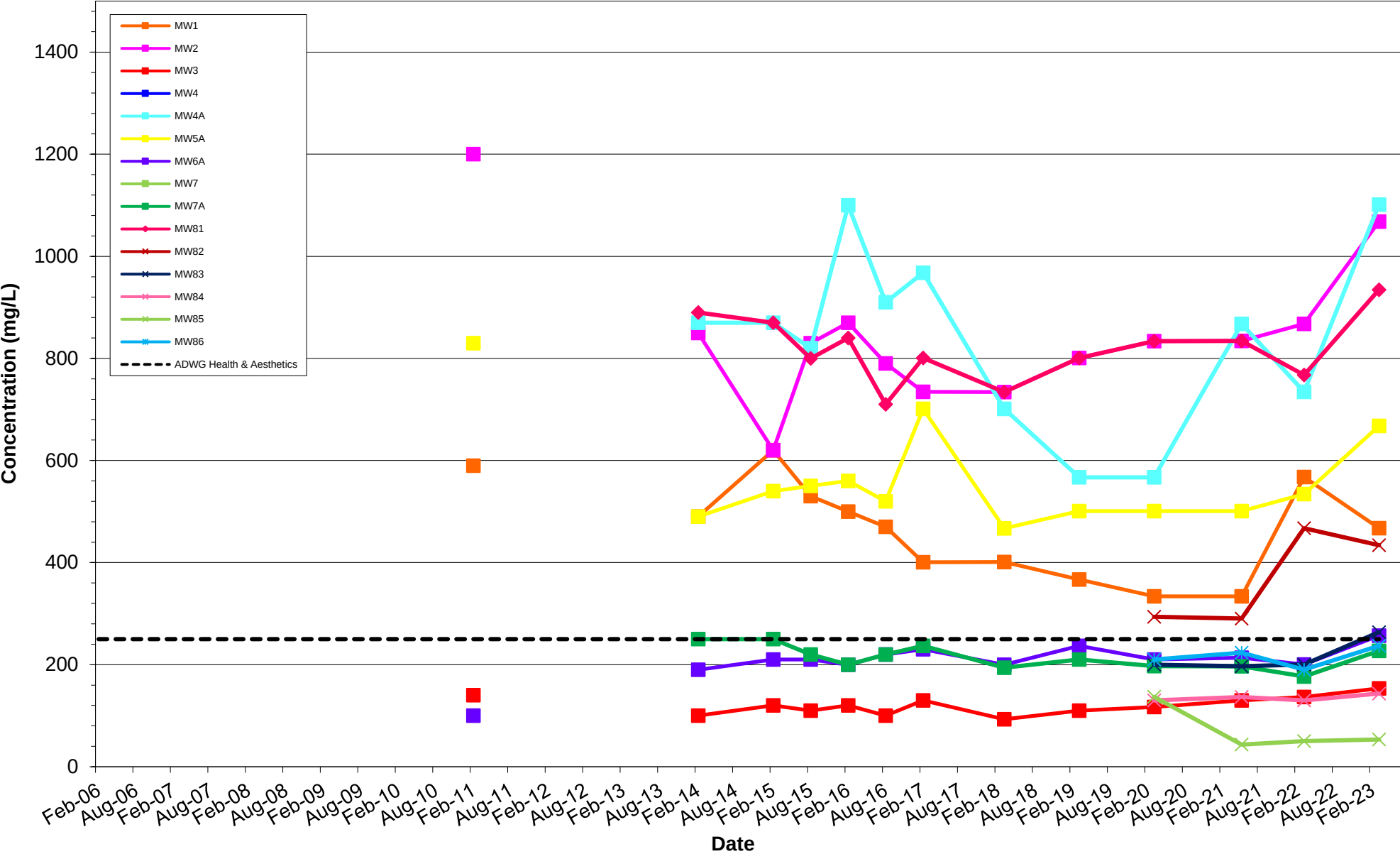
Selenium
Time Series



ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

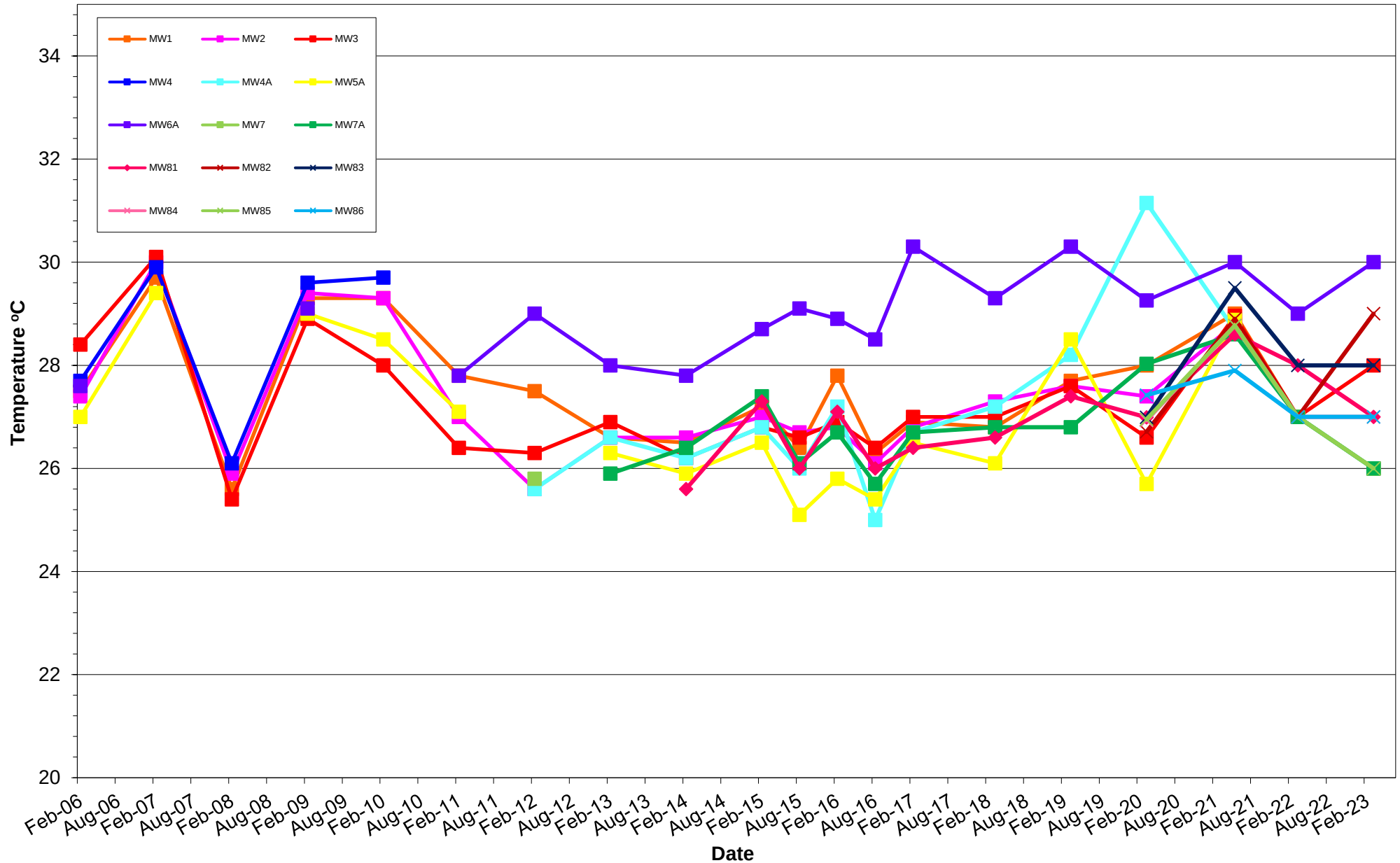
Sodium
Time Series





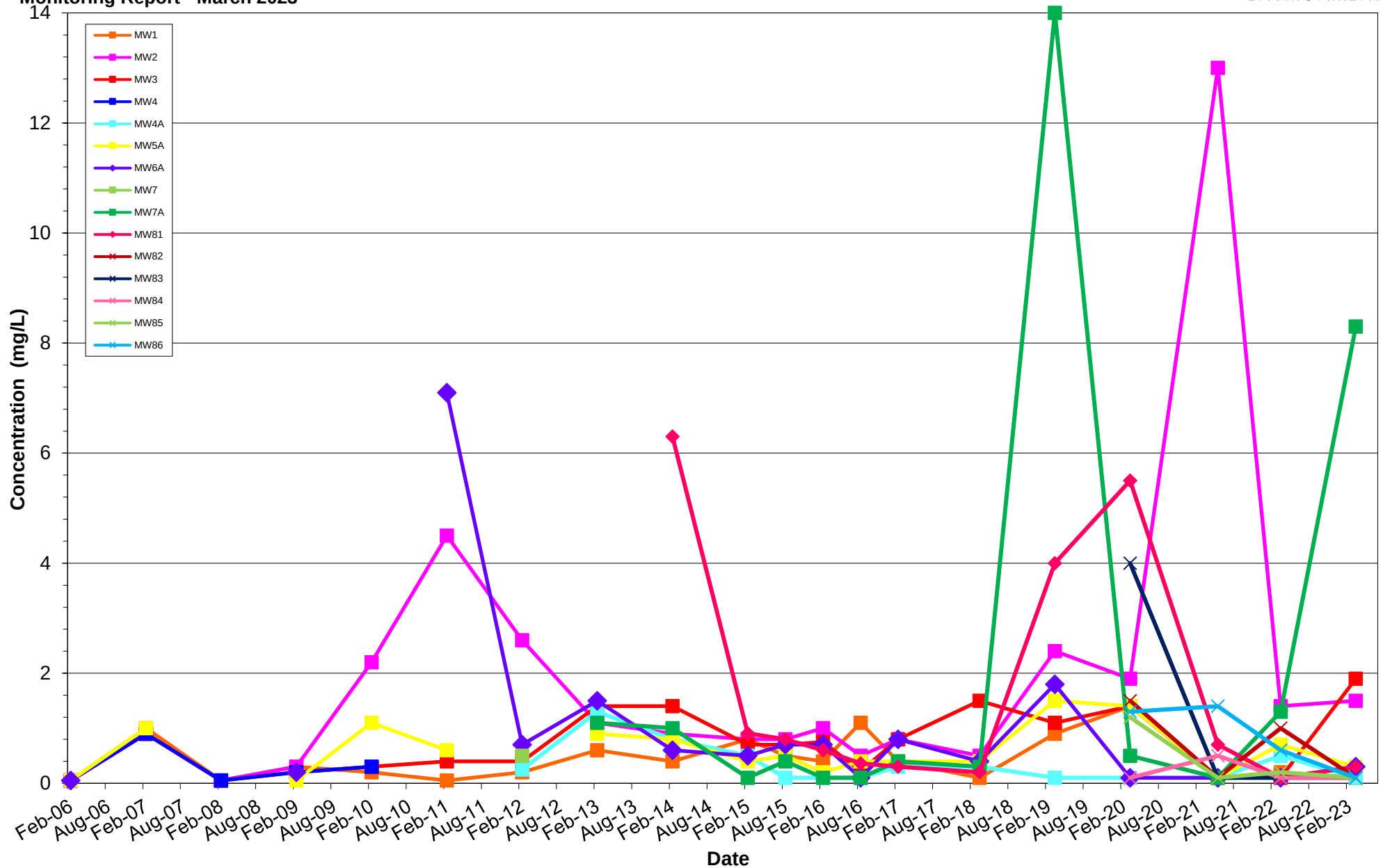
ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

Temperature
Time Series



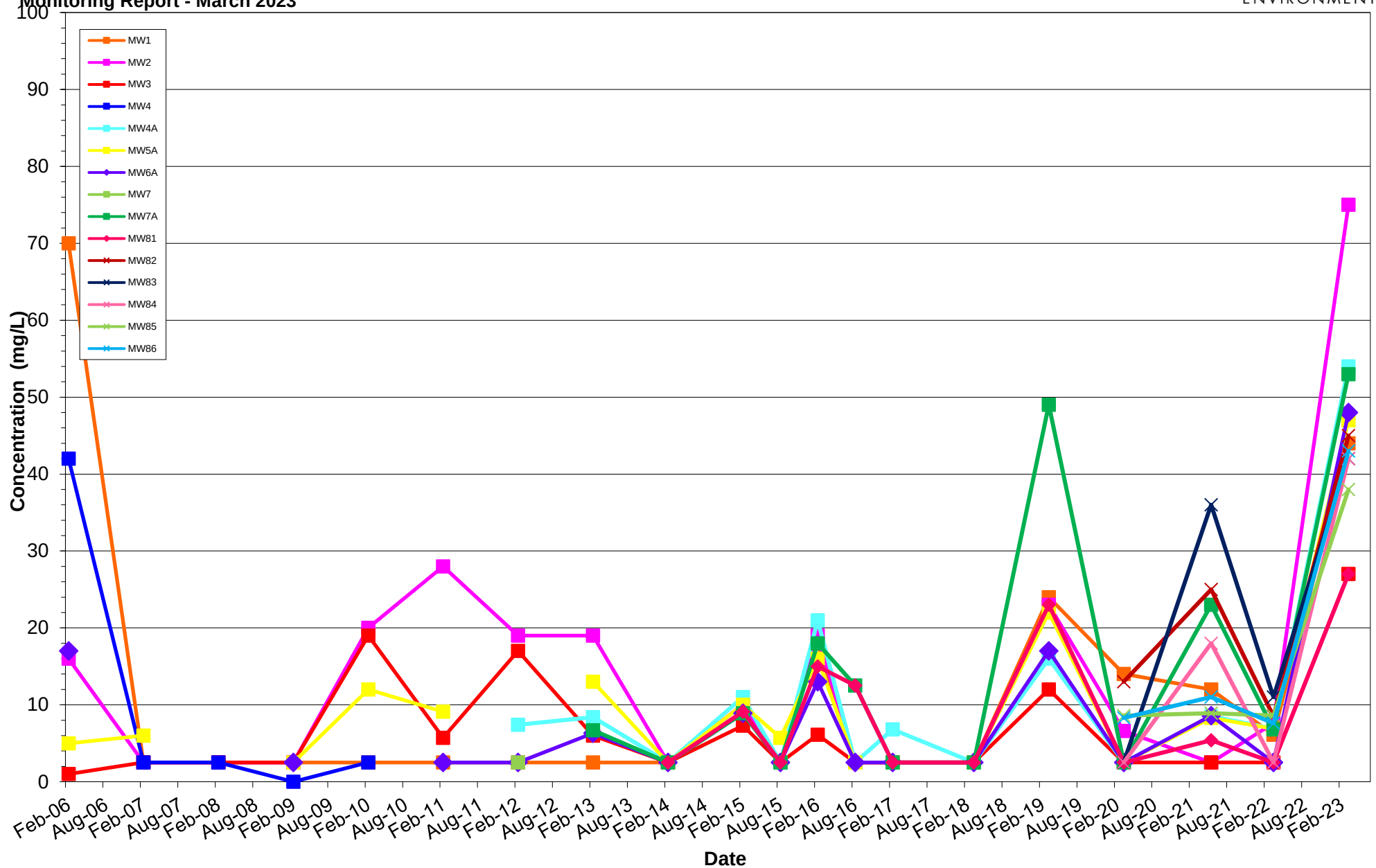
ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

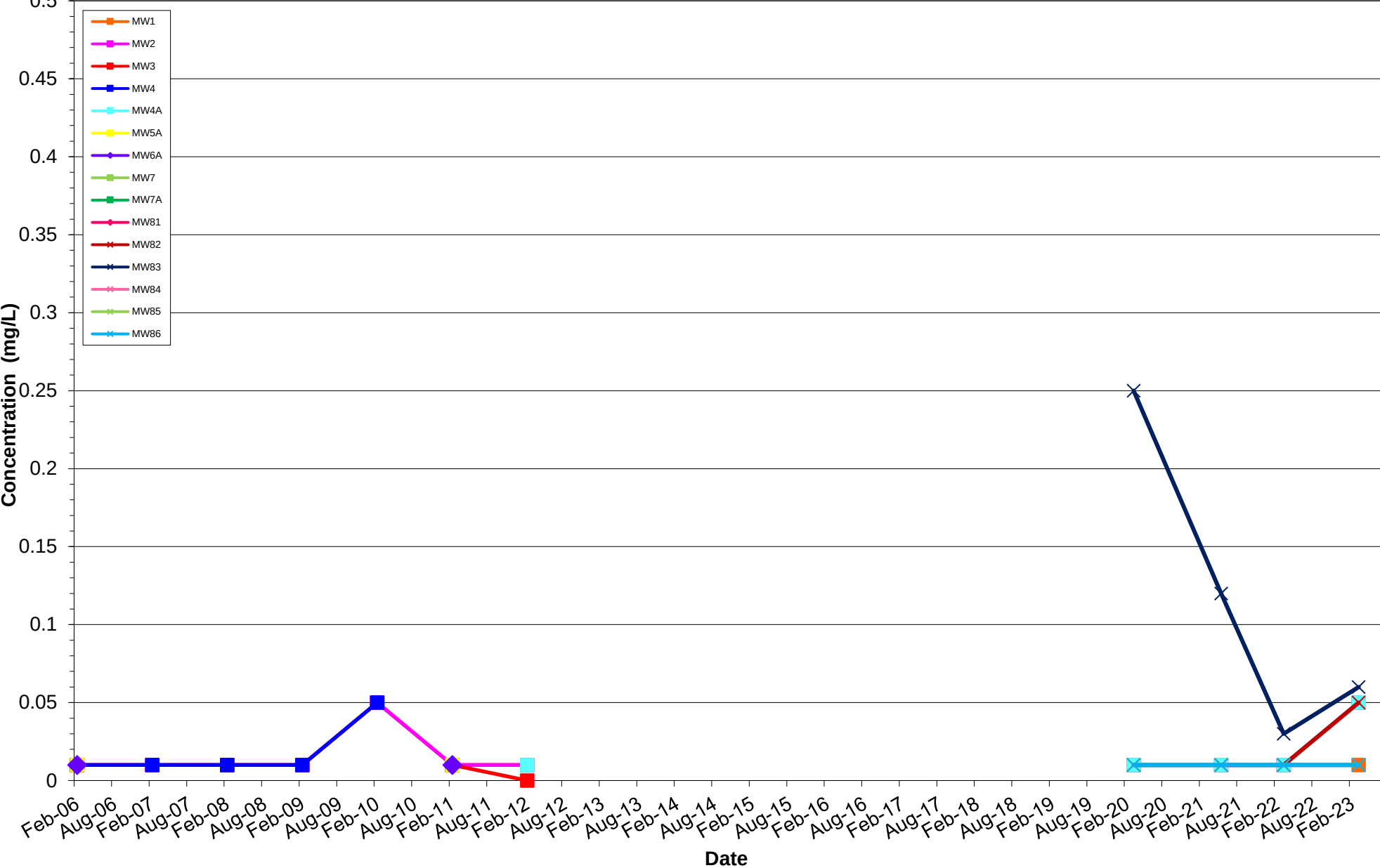
TKN
Time Series

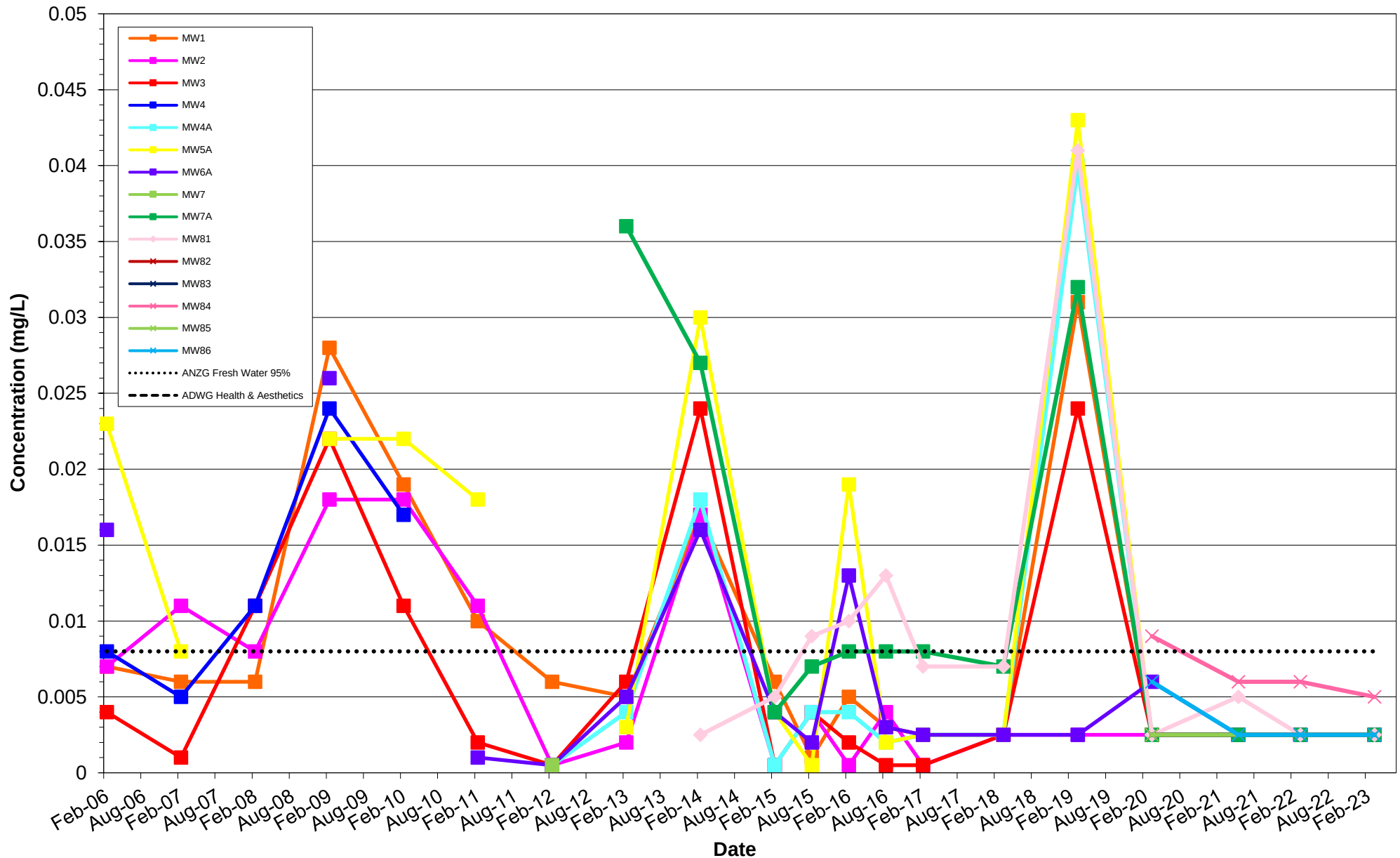


ASTC Regional Waste Management Facility
Environmental Performance
Monitoring Report - March 2023

TOC
Time Series







Consulting Engineers and Scientists



APPENDIX H
QA/QC ASSESSMENT

H.1 Field QA/QC Procedures

Field methodology

The field methodology described in Section 2 is considered appropriate and applicable to site conditions encountered during field works and water characteristics reported by the laboratories.

Sample preservation

The primary laboratory supplied clean bottles for groundwater samples and rinsate and field blank samples. The bottles were labelled prior to field work based on a predetermined sampling program. On site, the bottles were filled with water and stored in an esky with ice. At the end of the day samples were stored in a refrigerator if not sent to the laboratories. During transportation to the laboratories the samples were packed in eskies with ice and packaging to avoid damage.

Field Equipment Calibration

An Ion Phoccheck Tiger PID with a 10.6eV gas discharge lamp was used on 14 to 16 March 2023. Fresh air calibrations and span calibrations using 100ppm isobutylene were performed at the start of the day and then when required.

Kennards Hire provided a Smart Troll multi parameter water quality meter (WQM) which was used on 12 to 14 March 2023 and a GA5000 landfill gas analyser which was used on 14 to 16 March 2023.

Kennards calibrated all equipment prior to delivery. Copies of the calibration certificates for each instrument is provided in Appendix I.

H.2 Data Quality Indicators

H.2.1 Completeness

Completeness is expressed as a percentage of usable data from a data collection activity. The following factors were considered and assessed:

Field and laboratory considerations	Achieved
All critical locations samples	Yes
All samples collected (e.g. all available wells, detention basins, leachate)	Groundwater – Yes Gas – No (four wells were not in service) Leachate – No (well is not in service) Surface Water – No (four ponds were dry)
Standard operating practices (SOPs) listed in Section 2 appropriate and complied with	Yes
Experienced field personnel utilised	Yes
Field documentation appropriate and complete	Yes
All critical samples analysed	Yes
All critical analytes analysed	Yes
Appropriate methods and practical quantification limits	Yes
Sample documentation complete	Yes
Sample holding times complied with	Generally (see below)

A review of reports provided by Eurofins|mgt indicated that sample holding times as specified by the laboratory were adhered to with the following exception:

- SVOC, PCB, TRH, VOC, PAH, BOD and Ferrous Iron exceeded their respective maximum stipulated laboratory holding times due to transport time restrictions from Alice Springs to the

laboratory (consistent with previous rounds of investigation at Alice Springs). However we note that the laboratory holding times are inconsistent with AS4482.1 2005 Guide to the investigation and sampling of sites with potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds. If the Australian Standard holding times were applied only VOC, BOD and Ferrous Iron would exceed holding times.

Delayed analysis would not have significantly altered the BOD and Ferrous Iron results. Hence the delayed analysis for BOD and Ferrous Iron is considered acceptable. VOC may be slightly lower than due to the holding time exceedance however 1 to 3 days out of holding time is not expected to have a significant impact.

Completeness is influenced by field performance issues (e.g. access, site restrictions, damage to sampling infrastructure) and laboratory performance issues (e.g. matrix interference, holding times). A percentage completeness of 95% is considered acceptable. The above assessment indicates that the achieved percentage completeness is over 95%.

H.2.2 Comparability

Comparability is expressed qualitatively to indicate that data may be considered to be equivalent for each sampling and analytical event.

Field and laboratory considerations	Results
Same SOPs used on each occasion	Standard operating practices as listed in Section 2
Experienced sampler	Environmental scientist with 26 years of experience
Climatic conditions (temperature, rainfall, wind)	No climatic influences
Same types of samples collected	Yes, specific laboratory prepared water bottles
Same analytical methods used (including clean-up)	Yes
Sample PQLs	Standard
Same laboratories	Yes
Same units	Yes

The above assessment indicates that data will be comparable to future sampling events conducted under similar conditions.

H.2.3 Representativeness

Representativeness is expressed qualitatively to indicate that data is representative of each medium present on the site.

Field and laboratory considerations	Achieved
Appropriate media sampled according to field observations	Yes
All media identified during field work sampled	Yes
All samples analysed according to field observations	Yes
Samples were reasonably homogeneous	Yes

The above assessment indicates that data is representative of each medium encountered on the site.

H.2.4 Precision

Precision is a quantitative measure of the variability of data.

Field and laboratory considerations	Achieved
Standard operating procedure appropriate and complied with	Yes
Analysis of intra and inter laboratory duplicates	Yes
Analysis of laboratory duplicates	Yes, refer below

Duplicate samples were collected to provide an indication of the reliability of the sampling and analysis process. Duplicate groundwater samples were analysed for the majority of parameters. Duplicate sample results are presented in the quality assessment data provided below.

Relative Percentage Differences (RPDs) for intra-laboratory (or field) and inter-laboratory duplicate samples were calculated and are also presented below.

All calculated RPDs were within the acceptable limits of 0% to 50% for concentrations 10 to 30 times the limits of reporting and 0% to 30% for concentrations 30 times greater than the limits of reporting.

The above assessment indicates that observed data variability (or reproducibility) is acceptable.

H.2.5 Accuracy

Accuracy is a quantitative measure of the closeness of reported data to the true value. Bias could be introduced by chemicals during collection/handling or transport, from contaminated equipment, from contaminated reagent, during laboratory analysis, during laboratory preparation, during preparation or by the analytical method.

Field and laboratory considerations	Achieved
Standard operating procedure appropriate and complied with	Yes
Analysis of rinsates, field blanks and trip blanks	Yes
Analysis of laboratory method blanks, control samples, spike samples and duplicates	Yes, refer below
Analysis of laboratory prepared volatile trip spikes	No

Rinsate, field blank and trip blank samples were collected as follows:

Date	Rinsate collected from	Field blank collected	Trip blank used	Trip spike used
12/03/23	Filter & Syringe	Yes	Yes	No

The rinsate, field blank and trip blank results were all below the limits of reporting for all analytes. A summary table of the results is provided at the end of this appendix.

During the analysis of samples, Eurofins|mgt conducted internal QA/QC procedures including the analysis of laboratory method blanks, control samples, spike samples and duplicates. Results of these QA/QC procedures complied with the laboratory's acceptance criteria as presented in its reports.

Laboratory reports with results for method blanks, control samples, spike samples and duplicates are provided in Appendix K.

H.3 Field QA/QC

The following information on field QA/QC is provided.

Issue	Achieved
Replicate samples are split in the field and submitted to two separate laboratories in accordance with the requirements of NEPM Schedule B3	Yes, refer to Section 2.5
The sampling program includes assessment of all relevant environmental media, i.e. groundwater	Yes
Sample collection, handling and transportation procedures are documented and appropriate	Yes, refer to Section 2.1
Sampling is representative of site conditions, based on the selection of appropriate numbers of sampling points and of samples from each relevant strata and material type	Yes, refer to Section 2
Experienced field team members	Yes, refer to Section H.2.2
Sampling methods	Yes, refer to Section 2.1
Evidence of appropriate decontamination procedures carried out between sampling events	Yes, refer to Section H.2.2
Completed purging records for each well, showing time, location, initials of sampler, duplicate locations, duplicate type, site observations and weather conditions	Yes, refer to Appendix D
Completed chain-of-custody documentation	Yes, refer to Section 2.6
A statement of duplicate frequency for intra-laboratory and inter-laboratory duplicate samples, appropriate splitting techniques and duplicate sample results	Yes, refer to Section 2.5
Field blank results, background sample results, rinsate sample results, laboratory-prepared trip spike results for volatile analytes and trip blank results	Results presented as tables in this appendix and on original lab reports in Appendix K. Background and trip spike samples were not analysed.

H.4 Laboratory QA/QC

The following information on laboratory QA/QC is provided.

Issue	Achieved
Appropriate methodologies for each potential contaminant in the matrix in laboratories accredited for those analyses by NATA	Yes, refer to Section 2.7
Appropriate practical quantitation limits (PQLs) for the chemicals of concern for use in the assessment of risk	Yes, refer to Section 2.7 and below
COCs, comparison of holding times, analytical methods, laboratory accreditation, laboratory performance	Yes, refer to Appendix K
Results of blind duplicate samples (intra laboratory duplicates)	Yes, refer Section H.2.4

The laboratory's limits of reporting for selected analytes (antimony, Cr⁶⁺, silver, OCPs, benzo(a)pyrene, phenols, PCB and some VOCs and SVOCs) were above ANZG 95% fresh water criteria and/or ANZECC livestock and/or ADWG health and aesthetic criteria. The results for these parameters were below the laboratory's limits of reporting. The higher limits of reporting are considered acceptable given that:

- All wells (background, down gradient of the sewage ponds and down gradient of the landfill) have the same results.

- There is no indication of leachate contamination in the water (discolouration, odour, ammonia, COD, ferrous iron, heavy metals) so it is unlikely that these less common chemicals would be present due to the landfill.
- OCPs, Phenols, PCB and B(a)P have very low solubilities and mobilities compared to more soluble common leachate chemicals such as ammonia, ferrous iron and heavy metals.

H.5 QA/QC Discussion

Quality assurance and quality control was conducted based upon Terra Environment's environmental investigation principles to ensure that data of known quality is reported. The required scope of sample numbers, analytical testing and quality testing was achieved. Specific aspects of the investigation used to achieve appropriate QA/QC results are summarised below:

Field Procedures	The investigations, including the collection of duplicates, are of a standard that provides confidence in the quality of the samples collected. Field procedures were undertaken in accordance with NEPM requirements and EPA guidelines.
Analytical Procedures	The laboratories used for analytical work are NATA registered for the analyses undertaken. The laboratories' internal QA/QC results indicate that analytical information provided by the laboratories is reliable.
Sample Tracking	Chain of Custody documentation was used for the transport of all samples to the laboratories.
Sample Preservation and Storage	Samples were placed in containers supplied by the laboratories and placed in chilled eskies for transport to the laboratories.
Sample Holding Times	The required holding times were generally adhered to. Where exceedances were observed the following it noted:- - Observed exceedances for BOD and ferrous iron were considered acceptable. - VOC results may be slightly lower due to the holding time exceedance however it is not expected to have a significant impact.
Data Transcription	Summary tables were generated from laboratory supplied CSV files using ESDAT software.
Laboratory Limits of Reporting	Some limits of reporting are above ANZG, ANZECC and ADWG criteria but they are considered acceptable as per Section H.4.
Field Equipment Calibration	The field equipment used was appropriately calibrated.
Intra Laboratory Duplicate Sample	The primary laboratory's processes by which its results are obtained are considered to be acceptable in terms of the precision /repeatability of those results.
Inter Laboratory Duplicate Sample	The primary laboratory's processes by which its results are obtained are considered to be acceptable in terms of their accuracy of those results (i.e. in terms of how close the results are to their 'true' value).
Rinsate and Field Blank Samples	The results for rinsates indicate that the equipment used for the collection of samples did not impact upon results.
Laboratory Internal Quality Control	Results obtained from laboratory internal quality control samples were within the acceptable limits of repeatability, chemical extraction and detection. Details of laboratory quality control measures are provided on laboratory certificates.

Based on the QA/QC information listed in this report, the results are considered to be of an appropriate standard and it is concluded that:

- field investigation and sample preservation methods are appropriate for the investigations reported
- the analytical methods used for site assessment are of appropriate precision and accuracy, and that the sensitivity and selectivity of the analytical methods are appropriate for the assessment of risks
- the precision and accuracy criteria set out in the QA/QC plan, for a given method and matrix, meet the performance expected of the reference method
- the quality of data supplied by the analytical laboratory meets the objectives of the testing laboratory's quality plan for blanks, spikes, control samples, laboratory duplicates and holding times



			SDG	17/03/2023	17/03/2023	RPD	17/03/2023	Interlab_D	
			Sample ID Sample Date	MW2-A	MW2-X		MW2-A	MW2-Y	RPD
ChemName	Units	EQL							
BTEX									
Benzene	µg/l	1		<1.0	<1.0	0	<1.0		
Ethylbenzene	µg/l	1		<1.0	<1.0	0	<1.0		
Toluene	µg/l	1		<1.0	<1.0	0	<1.0		
Xylene (m & p)	µg/l	2		<2.0	<2.0	0	<2.0		
Xylene (o)	µg/l	1		<1.0	<1.0	0	<1.0		
Xylene Total	µg/l	3		<3.0	<3.0	0	<3.0		
Total MAH	mg/l	0.003		<0.003	<0.003	0	<0.003		
Inorganics									
Alkalinity (Bicarbonate as CaCO3)	mg/l	20		420.0	390.0	7	420.0		
Alkalinity (Carbonate as CaCO3)	mg/l	10		<10.0	<10.0	0	<10.0		
Alkalinity (Hydroxide) as CaCO3	mg/l	20		<20.0	<20.0	0	<20.0		
Alkalinity (total) as CaCO3	mg/l	20		420.0	390.0	7	420.0		
Ammonia as N	mg/l	0.01		0.11	0.1	10	0.11		
BOD	mg/l	5		<5.0	26.0	135	<5.0		
Chloride	mg/l	1		980.0	1000.0	2	980.0		
COD	mg/l	25		25.0	28.0	11	25.0		
Ferrous Iron	mg/l	0.05		<0.05	<0.05	0	<0.05		
Kjeldahl Nitrogen Total	mg/l	0.2		1.5	0.8	61	1.5		
Nitrogen (Organic)	mg/l	0.2		1.39	0.7	66	1.39		
Sodium	mg/l	0.5		750.0	740.0	1	750.0		
Sulphate	mg/l	5		3200.0	3200.0	0	3200.0		
Turbidity	NTU	1		<1.0	<1.0	0	<1.0		
TOC	mg/l	5		75.0	71.0	5	75.0		
Hardness as CaCO3	mg/l	5		2700.0	2700.0	0	2700.0		
Metals									
Antimony (Filtered)	mg/l	0.005 (Primary): 0.001 (Interlab)		<0.005	<0.005	0	<0.005	<0.001	0
Arsenic (Filtered)	mg/l	0.001		<0.001	<0.001	0	<0.001	<0.001	0
Barium (Filtered)	mg/l	0.02 (Primary): 0.001 (Interlab)		<0.02	<0.02	0	<0.02	0.014	0
Beryllium (Filtered)	mg/l	0.001 (Primary): 0.0005 (Interlab)		<0.001	<0.001	0	<0.001	<0.0005	0
Cadmium (Filtered)	mg/l	0.0002 (Primary): 0.0001 (Interlab)		<0.0002	<0.0002	0	<0.0002	<0.0001	0
Calcium	mg/l	0.5		600.0	610.0	2	600.0		
Chromium (hexavalent) (Filtered)	mg/l	0.005		<0.005	<0.005	0	<0.005		
Chromium (III+VI) (Filtered)	mg/l	0.001		<0.001	<0.001	0	<0.001	0.001	0
Chromium (Trivalent) (Filtered)	mg/l	0.005		<0.005	<0.005	0	<0.005		
Cobalt (Filtered)	mg/l	0.001		0.004	0.004	0	0.004	0.004	0
Copper (Filtered)	mg/l	0.001		0.017	0.018	6	0.017	0.023	30
Ferric Iron	mg/l	0.05		<0.05	<0.05	0	<0.05		
Iron	mg/l	0.05		<0.05	<0.05	0	<0.05		
Lead (Filtered)	mg/l	0.001		<0.001	<0.001	0	<0.001	<0.001	0
Magnesium	mg/l	0.5		290.0	290.0	0	290.0		
Manganese (Filtered)	mg/l	0.005		0.089	0.09	1	0.089	0.12	30
Mercury (Filtered)	mg/l	0.0001 (Primary): 0.00005 (Interlab)		0.0001	0.0002	67	0.0001	0.0002	67
Nickel (Filtered)	mg/l	0.001		0.014	0.015	7	0.014	0.018	25
Potassium	mg/l	0.5		28.0	27.0	4	28.0		
Selenium (Filtered)	mg/l	0.001		0.001	0.001	0	0.001	<0.001	0
Silver (Filtered)	mg/l	0.005 (Primary): 0.001 (Interlab)		<0.005	<0.005	0	<0.005	<0.001	0
Titanium (Filtered)	mg/l	0.005 (Primary): 0.001 (Interlab)		<0.005	<0.005	0	<0.005	<0.001	0
Vanadium (Filtered)	mg/l	0.005 (Primary): 0.001 (Interlab)		<0.005	<0.005	0	<0.005	0.005	0
Zinc (Filtered)	mg/l	0.005 (Primary): 0.001 (Interlab)		<0.005	<0.005	0	<0.005	0.006	18
Organochlorine Pesticides									
4,4-DDE	µg/l	5		<5.0	<5.0	0	<5.0		
a-BHC	µg/l	5		<5.0	<5.0	0	<5.0		
Aldrin	µg/l	5		<5.0	<5.0	0	<5.0		
b-BHC	µg/l	5		<5.0	<5.0	0	<5.0		
d-BHC	µg/l	5		<5.0	<5.0	0	<5.0		
DDD	µg/l	5		<5.0	<5.0	0	<5.0		
DDT	µg/l	5		<5.0	<5.0	0	<5.0		
Dieldrin	µg/l	5		<5.0	<5.0	0	<5.0		
Endosulfan I	µg/l	5		<5.0	<5.0	0	<5.0		
Endosulfan II	µg/l	5		<5.0	<5.0	0	<5.0		
Endosulfan sulphate	µg/l	5		<5.0	<5.0	0	<5.0		
Endrin	µg/l	5		<5.0	<5.0	0	<5.0		
Endrin aldehyde	µg/l	5		<5.0	<5.0	0	<5.0		
Endrin ketone	µg/l	5		<5.0	<5.0	0	<5.0		
g-BHC (Lindane)	µg/l	5		<5.0	<5.0	0	<5.0		
Heptachlor	µg/l	5		<5.0	<5.0	0	<5.0		
Heptachlor epoxide	µg/l	5		<5.0	<5.0	0	<5.0		
Hexachlorobenzene	µg/l	5		<5.0	<5.0	0	<5.0		
Methoxychlor	µg/l	5		<5.0	<5.0	0	<5.0		
PAH									
Benzo[b+]fluoranthene	mg/l	0.001		<0.001	<0.001	0	<0.001		
7,12-dimethylbenz(a)anthracene	µg/l	5		<5.0	<5.0	0	<5.0		
Acenaphthene	µg/l	1		<1.0	<1.0	0	<1.0		
Acenaphthylene	µg/l	1		<1.0	<1.0	0	<1.0		
Acetophenone	µg/l	5		<5.0	<5.0	0	<5.0		
Anthracene	µg/l	1		<1.0	<1.0	0	<1.0		
Benz(a)anthracene	µg/l	1		<1.0	<1.0	0	<1.0		
Benzo(a) pyrene	µg/l	1		<1.0	<1.0	0	<1.0		
Benzo(g,h,i)perylene	µg/l	1		<1.0	<1.0	0	<1.0		
Benzo(k)fluoranthene	µg/l	1		<1.0	<1.0	0	<1.0		
Chrysene	µg/l	1		<1.0	<1.0	0	<1.0		
Dibenz(a,h)anthracene	µg/l	1		<1.0	<1.0	0	<1.0		
Fluoranthene	µg/l	1		<1.0	<1.0	0	<1.0		
Fluorene	µg/l	1		<1.0	<1.0	0	<1.0		
Indeno(1,2,3-c,d)pyrene	µg/l	1		<1.0	<1.0	0	<1.0		
Naphthalene	µg/l	10		<10.0	<10.0	0	<10.0		
Naphthalene	µg/l	1		<1.0	<1.0	0	<1.0		
PAHs (Sum of total)	µg/l	1		<1.0	<1.0	0	<1.0		
Phenanthrene	µg/l	1		<1.0	<1.0	0	<1.0		
Pyrene	µg/l	1		<1.0	<1.0	0	<1.0		
Phenols (Halogenated)									
2,3,4,6-tetrachlorophenol	µg/l	10		<10.0	<10.0	0	<10.0		
2,4,5-trichlorophenol	µg/l	10		<10.0	<10.0	0	<10.0		
2,4,6-trichlorophenol	µg/l	10		<10.0	<10.0	0	<10.0		
2,4-dichlorophenol	µg/l	3		<3.0	<3.0	0	<3.0		
2,6-dichlorophenol	µg/l	3		<3.0	<3.0	0	<3.0		
2-chlorophenol	µg/l	3		<3.0	<3.0	0	<3.0		
4-chloro-3-methylphenol	µg/l	10		<10.0	<10.0	0	<10.0		
Pentachlorophenol	µg/l	10		<10.0	<10.0	0	<10.0		
Phenols (non-Halogenated)									
2,4-dimethylphenol	µg/l	3		<3.0	<3.0	0	<3.0		
2,4-dinitrophenol	mg/l	0.03		<0.03	<0.03	0	<0.03		
2-methylphenol	µg/l	3		<3.0	<3.0	0	<3.0		
2-nitrophenol	µg/l	10		<10.0	<10.0	0	<10.0		
3-&4-methylphenol	µg/l	6		<6.0	<6.0	0	<6.0		
4,6-Dinitro-2-methylphenol	µg/l	30		<30.0	<30.0	0	<30.0		
4-nitrophenol	µg/l	30		<30.0	<30.0	0	<30.0		
Phenol	µg/l	3		<3.0	<3.0	0	<3.0		
Polychlorinated Biphenyls									
Arochlor 1016	µg/l	5		<5.0	<5.0	0	<5.0		
Arochlor 1221	µg/l	5		<5.0	<5.0	0	<5.0		
Arochlor 1232	µg/l	5		<5.0	<5.0	0	<5.0		
Arochlor 1242	µg/l	5		<5.0	<5.0	0	<5.0		
Arochlor 1248	µg/l	5		<5.0	<5.0	0	<5.0		
Arochlor 1254	µg/l	5		<5.0	<5.0	0	<5.0		
Arochlor 1260	µg/l	5		<5.0	<5.0	0	<5.0		
PCBs (Sum of total)	µg/l	5		<5.0	<5.0	0	<5.0		
TPH									
C10-C16	mg/l	0.05		<0.05	<0.05	0	<0.05		
C10-C16 less NAPHTHALENE (F2)	mg/l	0.05		<0.05	<0.05	0	<0.05		
C16-C34	mg/l	0.1		<0.1	<0.1	0	<0.1		
C34-C40	mg/l	0.1		<0.1	<0.1	0	<0.1		
C6 - C9	µg/l	20		40.0	40.0	0	40.0		
C10 - C14	µg/l	50		<50.0	<50.0	0	<50.0		
C15 - C28	µg/l	100		<100.0	<100.0	0	<100.0		
C29-C36	µg/l	100		<100.0	<100.0	0	<100.0		
+C10 - C36 (Sum of total)	µg/l	100		<100.0	<100.0	0	<100.0		
C10 - C40 (Sum of total)	µg/l	100		<100.0	<100.0	0	<100.0		
C6-C10 less BTEX (F1)	mg/l	0.02		0.05	0.05	0	0.05		
C6-C10	mg/l	0.02		0.05	0.05	0	0.05		



SDG		17/03/2023	17/03/2023	RPD	17/03/2023	Interlab_D	
Sample ID		MW2-A	MW2-X		MW2-A	MW2-Y	RPD
Sample Date							
ChemName	Units	EQL					
VOCs							
1,1,1,2-tetrachloroethane	ug/l	1	<1.0	<1.0	0	<1.0	
1,1,1-trichloroethane	ug/l	1	<1.0	<1.0	0	<1.0	
1,1,2,2-tetrachloroethane	ug/l	1	<1.0	<1.0	0	<1.0	
1,1,2-trichloroethane	ug/l	1	<1.0	<1.0	0	<1.0	
1,1-dichloroethane	ug/l	1	<1.0	<1.0	0	<1.0	
1,1-dichloroethene	ug/l	1	<1.0	<1.0	0	<1.0	
1,2,3-trichloropropane	ug/l	1	<1.0	<1.0	0	<1.0	
1,2,4-trimethylbenzene	ug/l	1	<1.0	<1.0	0	<1.0	
1,2-dibromoethane	ug/l	1	<1.0	<1.0	0	<1.0	
1,2-dichlorobenzene	ug/l	5	<5.0	<5.0	0	<5.0	
1,2-dichlorobenzene	ug/l	1	<1.0	<1.0	0	<1.0	
1,2-dichloroethane	ug/l	1	<1.0	<1.0	0	<1.0	
1,2-dichloropropane	ug/l	1	<1.0	<1.0	0	<1.0	
1,3,5-trimethylbenzene	ug/l	1	<1.0	<1.0	0	<1.0	
1,3-dichlorobenzene	ug/l	5	<5.0	<5.0	0	<5.0	
1,3-dichlorobenzene	ug/l	1	<1.0	<1.0	0	<1.0	
1,3-dichloropropane	ug/l	1	<1.0	<1.0	0	<1.0	
1,4-dichlorobenzene	ug/l	5	<5.0	<5.0	0	<5.0	
1,4-dichlorobenzene	ug/l	1	<1.0	<1.0	0	<1.0	
Methyl Ethyl Ketone	ug/l	5	<5.0	<5.0	0	<5.0	
4-chlorotoluene	ug/l	1	<1.0	<1.0	0	<1.0	
4-Methyl-2-pentanone	ug/l	5	<5.0	<5.0	0	<5.0	
Acetone	mg/l	0.005	<0.005	<0.005	0	<0.005	
Allyl chloride	mg/l	0.001	<0.001	<0.001	0	<0.001	
Bromobenzene	ug/l	1	<1.0	<1.0	0	<1.0	
Bromochloromethane	ug/l	1	<1.0	<1.0	0	<1.0	
Bromodichloromethane	ug/l	1	<1.0	<1.0	0	<1.0	
Bromoform	ug/l	1	<1.0	<1.0	0	<1.0	
Bromomethane	ug/l	5	<5.0	<5.0	0	<5.0	
Carbon disulfide	ug/l	1	<1.0	<1.0	0	<1.0	
Carbon tetrachloride	ug/l	1	<1.0	<1.0	0	<1.0	
Chlorobenzene	ug/l	1	<1.0	<1.0	0	<1.0	
Chlorodibromomethane	ug/l	1	<1.0	<1.0	0	<1.0	
Chloroethane	ug/l	5	<5.0	<5.0	0	<5.0	
Chloroform	ug/l	5	<5.0	<5.0	0	<5.0	
Chloromethane	ug/l	5	<5.0	<5.0	0	<5.0	
cis-1,2-dichloroethene	ug/l	1	<1.0	<1.0	0	<1.0	
cis-1,3-dichloropropene	ug/l	1	<1.0	<1.0	0	<1.0	
Dibromomethane	ug/l	1	<1.0	<1.0	0	<1.0	
Dichlorodifluoromethane	ug/l	5	<5.0	<5.0	0	<5.0	
Dichloromethane	ug/l	5	<5.0	<5.0	0	<5.0	
Iodomethane	ug/l	1	<1.0	<1.0	0	<1.0	
Isopropylbenzene	ug/l	1	<1.0	<1.0	0	<1.0	
Styrene	ug/l	1	<1.0	<1.0	0	<1.0	
Trichloroethene	ug/l	1	<1.0	<1.0	0	<1.0	
Tetrachloroethene	ug/l	1	<1.0	<1.0	0	<1.0	
trans-1,2-dichloroethene	ug/l	1	<1.0	<1.0	0	<1.0	
trans-1,3-dichloropropene	ug/l	1	<1.0	<1.0	0	<1.0	
Trichlorofluoromethane	ug/l	5	<5.0	<5.0	0	<5.0	
Vinyl chloride	ug/l	5	<5.0	<5.0	0	<5.0	
Vic EPA IWRG 621 CHC (Total)*	mg/l	0.005	<0.005	<0.005	0	<0.005	
Vic EPA IWRG 621 Other CHC (Total)*	mg/l	0.005	<0.005	<0.005	0	<0.005	
SVOCs							
3,3-Dichlorobenzidine	ug/l	5	<5.0	<5.0	0	<5.0	
4-(dimethylamino) azobenzene	ug/l	5	<5.0	<5.0	0	<5.0	
4-bromophenyl phenyl ether	ug/l	5	<5.0	<5.0	0	<5.0	
4-chlorophenyl phenyl ether	ug/l	5	<5.0	<5.0	0	<5.0	
Bis(2-chloroethoxy) methane	ug/l	5	<5.0	<5.0	0	<5.0	
Bis(2-chloroisopropyl) ether	ug/l	5	<5.0	<5.0	0	<5.0	
Dibenz(a,j)acridine	mg/l	0.005	<0.005	<0.005	0	<0.005	
Dibenzofuran	ug/l	5	<5.0	<5.0	0	<5.0	
N-nitrosopiperidine	ug/l	5	<5.0	<5.0	0	<5.0	
Bis(2-ethylhexyl) phthalate	ug/l	5	<5.0	<5.0	0	<5.0	
Butyl benzyl phthalate	ug/l	5	<5.0	<5.0	0	<5.0	
Diethylphthalate	ug/l	5	<5.0	<5.0	0	<5.0	
Dimethyl phthalate	ug/l	5	<5.0	<5.0	0	<5.0	
Di-n-butyl phthalate	ug/l	5	<5.0	<5.0	0	<5.0	
Di-n-octyl phthalate	ug/l	5	<5.0	<5.0	0	<5.0	
1-Chloronaphthalene	ug/l	5	<5.0	<5.0	0	<5.0	
2-chloronaphthalene	ug/l	5	<5.0	<5.0	0	<5.0	
2-methylnaphthalene	ug/l	5	<5.0	<5.0	0	<5.0	
3-methylcholanthrene	ug/l	5	<5.0	<5.0	0	<5.0	
2-Picoline	ug/l	5	<5.0	<5.0	0	<5.0	
4-aminobiphenyl	ug/l	5	<5.0	<5.0	0	<5.0	
Pentachloronitrobenzene	ug/l	5	<5.0	<5.0	0	<5.0	
N-nitrosodi-n-butylamine	ug/l	5	<5.0	<5.0	0	<5.0	
N-nitrosodi-n-propylamine	ug/l	5	<5.0	<5.0	0	<5.0	
1-naphthylamine	ug/l	5	<5.0	<5.0	0	<5.0	
2-naphthylamine	ug/l	5	<5.0	<5.0	0	<5.0	
Diphenylamine	ug/l	5	<5.0	<5.0	0	<5.0	
2-nitroaniline	ug/l	5	<5.0	<5.0	0	<5.0	
Aniline	ug/l	5	<5.0	<5.0	0	<5.0	
Benzyl chloride	mg/l	0.005	<0.005	<0.005	0	<0.005	
Hexachlorobutadiene	ug/l	5	<5.0	<5.0	0	<5.0	
Hexachlorocyclopentadiene	ug/l	5	<5.0	<5.0	0	<5.0	
Hexachloroethane	ug/l	5	<5.0	<5.0	0	<5.0	
2,4-Dinitrotoluene	ug/l	5	<5.0	<5.0	0	<5.0	
2,6-dinitrotoluene	ug/l	5	<5.0	<5.0	0	<5.0	
Nitrobenzene	ug/l	50	<50.0	<50.0	0	<50.0	
1,2,3,4-tetrachlorobenzene	mg/l	0.005	<0.005	<0.005	0	<0.005	
1,2,3,5-Tetrachlorobenzene	mg/l	0.005	<0.005	<0.005	0	<0.005	
1,2,3-trichlorobenzene	ug/l	5	<5.0	<5.0	0	<5.0	
1,2,4,5-tetrachlorobenzene	ug/l	5	<5.0	<5.0	0	<5.0	
1,2,4-trichlorobenzene	ug/l	5	<5.0	<5.0	0	<5.0	
1,3,5-Trichlorobenzene	ug/l	5	<5.0	<5.0	0	<5.0	
Pentachlorobenzene	ug/l	5	<5.0	<5.0	0	<5.0	
Pronamide	ug/l	5	<5.0	<5.0	0	<5.0	
Trifluralin	mg/l	0.005	<0.005	<0.005	0	<0.005	

*RPDs have only been considered where a concentration is greater than 1 times the EQL
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 50 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory



SDG	17/03/2023	17/03/2023	17/03/2023
Field_ID	20230312FB1	20230312R1	20230312TB1
Sampled_Date			
Sample_Type	Field_B	Rinsate	Trip_B

ChemName	Units	EQL			
Vic EPA IWRG 621 CHC (Total)*	mg/l	0.005			<0.005
Vic EPA IWRG 621 Other CHC (Total)*	mg/l	0.005			<0.005
BTEX					
Benzene	µg/l	1			<1
Ethylbenzene	µg/l	1			<1
Toluene	µg/l	1			<1
Xylene (m & p)	µg/l	2			<2
Xylene (o)	µg/l	1			<1
Xylene Total	µg/l	3			<3
MAH					
Total MAH	mg/l	0.003			<0.003
Metals					
Antimony (Filtered)	mg/l	0.005	<0.005	<0.005	
Arsenic (Filtered)	mg/l	0.001	<0.001	<0.001	
Barium (Filtered)	mg/l	0.02	<0.02	<0.02	
Beryllium (Filtered)	mg/l	0.001	<0.001	<0.001	
Cadmium (Filtered)	mg/l	0.0002	<0.0002	<0.0002	
Chromium (hexavalent) (Filtered)	mg/l	0.005	<0.005	<0.005	
Chromium (III+VI) (Filtered)	mg/l	0.001	<0.001	<0.001	
Chromium (Trivalent) (Filtered)	mg/l	0.005	<0.005	<0.005	
Cobalt (Filtered)	mg/l	0.001	<0.001	<0.001	
Copper (Filtered)	mg/l	0.001	<0.001	<0.001	
Lead (Filtered)	mg/l	0.001	<0.001	<0.001	
Manganese (Filtered)	mg/l	0.005	<0.005	<0.005	
Mercury (Filtered)	mg/l	0.0001	<0.0001	<0.0001	
Nickel (Filtered)	mg/l	0.001	<0.001	<0.001	
Selenium (Filtered)	mg/l	0.001	<0.001	<0.001	
Silver (Filtered)	mg/l	0.005	<0.005	<0.005	
Titanium (Filtered)	mg/l	0.005	<0.005	<0.005	
Vanadium (Filtered)	mg/l	0.005	<0.005	<0.005	
Zinc (Filtered)	mg/l	0.005	<0.005	<0.005	
VOCs					
1,1,1,2-tetrachloroethane	µg/l	1			<1
1,1,1-trichloroethane	µg/l	1			<1
1,1,2,2-tetrachloroethane	µg/l	1			<1
1,1,2-trichloroethane	µg/l	1			<1
1,1-dichloroethane	µg/l	1			<1
1,1-dichloroethene	µg/l	1			<1
1,2,3-trichloropropane	µg/l	1			<1
1,2,4-trimethylbenzene	µg/l	1			<1
1,2-dibromoethane	µg/l	1			<1
1,2-dichlorobenzene	µg/l	1			<1
1,2-dichloroethane	µg/l	1			<1
1,2-dichloropropane	µg/l	1			<1
1,3,5-trimethylbenzene	µg/l	1			<1
1,3-dichlorobenzene	µg/l	1			<1
1,3-dichloropropane	µg/l	1			<1
1,4-dichlorobenzene	µg/l	1			<1
Methyl Ethyl Ketone	µg/l	5			<5
4-chlorotoluene	µg/l	1			<1
4-Methyl-2-pentanone	µg/l	5			<5
Acetone	mg/l	0.005			<0.005
Allyl chloride	mg/l	0.001			<0.001
Bromobenzene	µg/l	1			<1
Bromochloromethane	µg/l	1			<1
Bromodichloromethane	µg/l	1			<1
Bromoform	µg/l	1			<1
Bromomethane	µg/l	5			<5
Carbon disulfide	µg/l	1			<1
Carbon tetrachloride	µg/l	1			<1
Chlorobenzene	µg/l	1			<1
Chlorodibromomethane	µg/l	1			<1
Chloroethane	µg/l	5			<5
Chloroform	µg/l	5			<5
Chloromethane	µg/l	5			<5
cis-1,2-dichloroethene	µg/l	1			<1
cis-1,3-dichloropropene	µg/l	1			<1
Dibromomethane	µg/l	1			<1
Dichlorodifluoromethane	µg/l	5			<5
Dichloromethane	µg/l	5			<5
Iodomethane	µg/l	1			<1
Isopropylbenzene	µg/l	1			<1
Styrene	µg/l	1			<1
Trichloroethene	µg/l	1			<1
Tetrachloroethene	µg/l	1			<1
trans-1,2-dichloroethene	µg/l	1			<1
trans-1,3-dichloropropene	µg/l	1			<1
Trichlorofluoromethane	µg/l	5			<5
Vinyl chloride	µg/l	5			<5

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APPENDIX I
CALIBRATION CERTIFICATES

EQUIPMENT CERTIFICATION REPORT

PGN9003871 WATER QUALITY METER – MULTIFUNCTION (YSI PRO PLUS)

Plant Number: 1088644 Serial Number: 21H104345

SENSOR	CONCENTRATION	SPAN 1	SPAN 2	TRACEABILITY	PASS
pH	pH 7.00 / pH 4.00	7.00 pH	4.00 pH	330737 380327	☒
Conductivity	12.88 mS/cm	12.88 mS/cm	—	364457	☒
Dissolved Oxygen	Sodium Sulphite / Air	0.0% in Sodium Sulphite	% Saturation in Air	10465	☒
ORP	240mV @ 20°C	240mV	—	337308 338782	☒

Battery Status <u>70</u> %	Temperature <u>21.5</u> °C
Electrodes Cleaned and Checked	

Note: Calibration solution traceability information is available upon request.

Checked By: Wilma Fouché Date: 3/3/23 Signed: [Signature]

Accessories List:

User's Manual	pH Sensor	Conductivity/ Temp Sensor
Dissolved Oxygen Sensor	Redox (ORP) Sensor	Flow Cell
User Guide	Stainless Steel Restrictor	Spare Batteries
Calibration Cup		



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EQUIPMENT CERTIFICATION REPORT

PGN9003827 GAS DETECTOR - PID

Plant Number: 234959 Serial Number: 592-919103

SENSOR	CONCENTRATION	SPAN 1	SPAN 2	TRACEABILITY	PASS
PID Isobutylene	100ppm	0	100ppm	Lot #	☒
		0,0	100,0	1293468	

Data Cleared ☒

Battery Status <u>100</u> (%)	Temperature <u> </u> °C
Electrical Test & Tag (AS/NZS 3760)	Inlet Filter Checked/Changed

Note: Calibration traceability information is available upon request.

Checked By: Nilma Fouché Date: 3/3/23 Signed: [Signature]

Accessories List:

User's Manual	Charger / Comms Adaptor	Wall Charger
2x Spare Air Filters	1x Spare Rechargeable Battery	Carry Transit Case
	Calibration Report	



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EQUIPMENT CERTIFICATION REPORT

PGN9003823 GAS ANALYSER – LANDFILL

GA5000 / GEM5000

Plant Number: 234906 Serial Number: G502371

SENSOR	CONCENTRATION	INSTRUMENT READING	TRACEABILITY	PASS
CH4	60%	<u>60</u> %	Lot # <u>1485461</u>	☒
CO2	40%	<u>40</u> %	Lot # <u>1485461</u>	☒
O2	20.9%	<u>20.9</u> %	FRESH AIR	☒
CO	60ppm	<u>60</u> ppm	Lot # <u>271163</u>	☒
H2S	20ppm	<u>20</u> ppm	Lot # <u>271163</u>	☒

Data Cleared ☒

Battery Status <u>100</u> (%)	Temperature <u> </u> °C
Electrical Test & Tag (AS/NZS 3760)	Inlet Filter Cleaned/Replaced

Note: Calibration traceability information is available upon request.

Checked By: Wilma Fouché Date: 3/3/23 Signed: [Signature]

Accessories List:

User's Manual & USB	1x Gas Inlet Hoses	1X Gas Inlet Hose With Filter
1x Gas Inlet Hose & Clip Fitting	2x Spare Inlet Filters	1x Flow Through Desiccant
1x Wall Charger	Carry Pouch With Neck Strap	1x USB Comms Cable
Carry Transit Case	Calibration Certificate	



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APPENDIX J
LANDFILL ENVIRONMENTAL RECORDS

Landfill Environmental Monitoring Record**General**Person conducting monitoring: Daryl BurrowsOrganisation/Position: Tierra Principal ScientistDate of Monitoring 16 March 2023Tierra Project Number AAQ-06-023.25**Summary of Inspection of Stormwater Ponds⁽²⁾**

Stormwater pond SW2 contained water and ponds SW1, SW3, SW4 and SW5 were dry. The water in pond SW2 was slightly turbid but was not discoloured, did not have any sheens and was not odorous.

The water in the pond appear to have been receding as there was evidence of a higher water level. The water in the pond was sampled as part of the investigation works. Drainage lines appeared to be in relatively good condition.

**Monitoring Record
Completed by:**

Signature16 March 2023
Date**Monitoring Record Received
by Tierra Environment**Not applicable
SignatureNA
Date

Landfill Environmental Monitoring Record

Date of Monitoring⁽⁴⁾

Inspection: 16 March 2023 9:00am

Person conducting monitoring: Daryl Burrows

Organisation/Position: Tierra Principal Scientist

Observations⁽²⁾:

Location N1:	<u>No odour</u>
	<u>Wind from north west</u>
Location N2:	<u>No odour</u>
Location N3:	<u>No odour</u>
Location N4:	<u>No odour</u>

Inspection: 16 March 2023 11:30am

Person conducting monitoring: Daryl Burrows

Organisation/Position: Tierra Principal Scientist

Observations⁽²⁾:

Location N1:	<u>No odour</u>
	<u>Wind from north west</u>
Location N2:	<u>No odour</u>
Location N3:	<u>No odour</u>
Location N4:	<u>No odour</u>

Inspection: 16 March 2023 3:00pm

Person conducting monitoring: Daryl Burrows

Organisation/Position: Tierra Principal Scientist

Observations⁽²⁾:

Location N1:	<u>No odour</u>
	<u>Wind from north west</u>
Location N2:	<u>No odour</u>
Location N3:	<u>No odour</u>
Location N4:	<u>No odour</u>

Notes:

- Monitoring to be conducted at random intervals averaging 12 monitoring events per year.
- Classify odours as either 'No Odour', 'Slight Odour' or 'Strong Odour'.

**Monitoring Record
Completed by:**


Signature

16 March 2023
Date

**Monitoring Record Received
by Tierra Environment**

Not applicable
Signature

NA
Date

Landfill Environmental Monitoring Record**General**

Person conducting monitoring: Daryl Burrows
Organisation/Position: Tierra Principal Scientist
Date of monitoring⁽¹⁾: 16 March 2023
Tierra project Number AAQ-06-023.25

Inspection of Site

The active filling area is suitably small and being pushed out and compacted as material is placed. Recently filled areas have been well covered with daily cover. The recycling area to the west of the filling area (where metals, concrete and timber are recycled) are larger than previous years however they are well stockpiled, marked and the surrounding areas are neat.

Other observations

In general the landfill is in neat and tidy condition and access roads are well maintained. There was however in the vicinity of well MW6A recent filling using concrete that had not been crushed. This has resulted in large voids in the waste and poor utilisation of air space. Large material should be crushed and large material such as concrete should be diverted from filling for crushing and re-use. There was also a small stockpile north of MW5A that contained steel and timber and this should be separated and recycled/reused rather than filled.

Inspection of Boundary Fence

Minor litter on landfill slopes. Does not appear to be significant and is old (deteriorated) and stuck in vegetation (so not blowing around).

Inspection of Adjacent Properties

Observations No significant litter associated with the landfill operations (i.e. no significant windblown debris).

Note: 1. Monitoring to be conducted during annual monitoring event.

**Monitoring Record
Completed by:**


Signature

16 March 2023
Date

**Monitoring Record Received
by Tierra Environment**

Not applicable
Signature

NA
Date

General

Person conducting monitoring: Daryl Burrows

Organisation/Position: Tierra Principal Scientist

Date of Monitoring⁽¹⁾: 16 March 2023

Tierra Project Number AAQ-06-023.25

Weeds⁽²⁾

Weeds are generally quite wide spread likely due to the recent extensive rains. Side slopes and the top of the landfill are well vegetated with the top having mainly weeds. While weeds are dominant in some areas this does not seem to be an issue as it has stabilised the surface well.

Pests⁽²⁾

Bird numbers (eagles and crows) were again low which is consistent with the fact that the active filling area is small and compacting and covering is continuous throughout the day.

Landscaping⁽²⁾

Vegetation on side slopes and the top surface is likely a mix of native vegetation and weeds and appears to be healthy and would appear to be adequately stabilising the surface cover. Weeds should not be removed unless a program of revegetation with alternate natives is proposed otherwise particularly on the side slopes increased erosion may occur.

Erosion⁽²⁾

Erosion control at present appears good. A healthy spread of vegetation on the side slopes appears to be assisting the slope stability. There has been some placement of mulch on the southern slope which has covered erosion gullies and should be adequate for light to moderate rain events. Heavier rains may remove this material as it is not stabilised with plantings or matting.

**Monitoring Record
Completed by:**


Signature

16 March 2023
Date

**Monitoring Record Received
by Tierra Environment**

Not applicable
Signature

NA
Date

Noise Monitor Data
Regional Waste Management Facility

				Leq-1											
Date	File name	Location	Run Time	% Over 65 Db	% Over 80 Db	% Over 90 Db	Odo ur Land fill	Odo ur Pond	Litte r	Wind	Win d Direc tion	Initials	Fast/Slow Response time	A, C, or Z Frequency Weighting -	Comments
3/05/2022	S00695.SES	N1	5:17:11	9.78%	0.32%	0.00%	n	n	y	gentle	ESE	ef/da	slow	A	Please Note: N1 remains highly littered
13/05/2022	S00697.SES	N2	4:03:14	12.76%	0.41%	0.00%	n	n	n	calm	N	ef/da	slow	A	
17/05/2022	S00698.SES	N1	6:56:06	8.56%	0.28%	0.00%	n	n	y	moderate	E	ef/da	slow	A	
20/05/2022	S00699.SES	N4	5:08:10	10.10%	0.32%	0.00%	n	y	n	light	E	ef/da	slow	A	
24/05/2022	S00700.SES	N4	4:30:47	11.48%	0.37%	0.00%	n	n	n	calm	SW	ef/da	slow	A	
30/05/2022	S00701.SES	N1	5:45:41	8.96%	0.29%	0.00%	n	n	y	fresh	SSW	ef/da	slow	A	
7/06/2022	S00702.SES	N2	4:44:45	10.92%	0.35%	0.00%	n	n	n	gentle	SE	ef/lp	slow	A	
15/06/2022	S00703.SES	N1	5:44:47	9.01%	0.29%	0.00%	n	y	y	Calm	NW	ef/lp	slow	A	
4/07/2022	S00704.SES	N2	4:53:42	10.58%	0.34%	0.00%	n	n	n	light breeze	WSW	ef/lp	slow	A	
7/07/2022	S00705.SES	N3	5:00:57	10.33%	0.33%	0.00%	n	y	n	calm	SE	ef/lp	slow	A	
13/07/2022	S00706.SES	N3	5:23:13	9.60%	0.31%	0.00%	n	y	n	light breeze	S	ef/lp	slow	A	
21/07/2022	S00707.SES	N1	5:15:08	9.84%	0.32%	0.00%	n	y	y	moderate	E	ef/lp	slow	A	
10/08/2022	S00708.SES	N1	4:18:18	12.02%	0.39%	0.00%	n	n	y	gentle	WNW	ef/lp	slow	A	
12/08/2022	S00709.SES	N3	5:19:52	9.71%	0.31%	0.00%	y	n	n	gentle	WSW	ef/lp	slow	A	
16/08/2022	S00710.SES	N2	6:02:32	8.56%	0.28%	0.00%	y	n	n	gentle	ESE	ef/lp	slow	A	Back burning occuring at north/east of monitoring at little sisters
17/08/2022	S00711.SES	N3	5:36:22	9.23%	0.30%	0.00%	y	n	n	Calm	NW	ef/lp	slow	A	
24/08/2022	S00712.SES	N2	5:34:21	10.80%	0.35%	0.00%	y	n	n	Gentle	E	ef/lp	slow	A	
31/08/2022	S00713.SES	N1	5:57:12	8.70%	0.28%	0.00%	y	y	y	Moderate	E	ef/lp	slow	A	Location of monitoring point currently back burnt
2/09/2022	S00714.SES	N4	5:06:29	10.13%	0.33%	0.00%	y	y	n	light breeze	ESE	ef/lp	slow	A	
8/09/2022	S00715.SES	N2	5:30:02	9.39%	0.30%	0.00%	y	n	n	Calm	SW	ef/da	slow	A	
14/09/2022	S00716.SES	N3	5:31:17	9.37%	0.30%	0.00%	y	n	n	moderate	NNW	ef/da	slow	A	
28/09/2022	S00717.SES	N4	5:04:29	10.20%	0.33%	0.00%	n	n	n	Gentle	SE	ef/da	slow	A	
4/10/2022	S00718.SES	N1	7:47:56	6.64%	0.21%	0.00%	n	n	n	light breeze	WSW	ef/da	slow	A	
20/10/2022	S00720.SES	N3	5:15:55	9.84%	0.32%	0.00%	n	n	n	moderate	S	ef/da	slow	A	

Noise Monitor Data
Regional Waste Management Facility

				Leq-1											
Date	File name	Location	Run Time	% Over 65 Db	% Over 80 Db	% Over 90 Db	Odour Landfill	Odour Pond	Litter	Wind	Wind Direction	Initials	Fast/Slow Response time	A, C, or Z Frequency Weighting -	Comments
1/11/2022	S00721.SES	N1	6:00:58	8.61%	0.28%	0.00%	n	n	y	Fresh Bree	SW	ef/da	slow	A	
2/11/2022	S00722.SES	N4	5:52:09	8.80%	0.28%	0.00%	n	n	n	Moderate	ESE	ef/da	slow	A	
10/11/2022	S00723.SES	N3	5:18:59	9.75%	0.31%	0.00%	n	n	n	Fresh Bree	NNW	ef/mk	slow	A	
18/11/2022	S00724.SES	N2	5:22:59	9.63%	0.31%	0.00%	n	n	n	Moderate	NW	ef/mk	slow	A	
25/11/2022	S00725.SES	N1	5:28:46	9.45%	0.30%	0.00%	n	n	n	light breez	E	ef/da	slow	A	
28/11/2022	S00726.SES	N4	4:31:13	11.43%	0.37%	0.00%	n	n	n	Moderate	ESE	ef/da	slow	A	
2/12/2022	S00727.SES	N2	5:44:52	9.01%	0.29%	0.00%	n	n	n	Gentle	ENE	ef/da	slow	A	
14/12/2022	S00728.SES	N1	5:04:59	10.20%	0.33%	0.00%	y	n	n	Gentle	ESE	ef/da	slow	A	
21/12/2022	S00729.SES	N1	6:29:15	7.97%	0.26%	0.00%	n	n	n	Moderate	NW	ef/da	slow	A	
29/12/2022	S00730.SES	N2	4:45:31	10.88%	0.35%	0.00%	n	n	n	Gentle	SE	ef/da	slow	A	
10/01/2023	S00731.SES	N1	5:47:31	8.93%	0.29%	0.00%	y	n	n	Gentle	E	ef/da	slow	A	
19/01/2023	S00732.SES	N4	5:08:34	10.06%	0.32%	0.00%	n	n	n	Gentle	SSE	ef/da	slow	A	
24/01/2023	S00733.SES	N2	4:54:45	10.54%	0.34%	0.00%	y	y	n	light breez	NE	ef/da	slow	A	
2/02/2023	S00734.SES	N3	5:25:20	9.54%	0.30%	0.00%	y	n	n	light breez	ENE	ef/da	slow	A	
8/02/2023	S00735.SES	N2	5:37:21	9.20%	0.27%	0.00%	n	n	n	light air	SSW	ef/da	slow	A	
10/02/2023	S00736.SES	N2	5:50:31	8.86%	0.29%	0.00%	y	n	n	Gentle	NE	ef/da	slow	A	
15/02/2023	S00737.SES	N2	5:09:11	10.03%	0.32%	0.00%	n	n	n	Gentle	ENE	ef/da	slow	A	
5/04/2023	S00738.SES	N2	5:25:42	9.54%	0.31%	0.00%	n	n	n	light breez	NW	ef/da	slow	A	
3/05/2023	S00739.SES	N2	6:02:49	8.56%	0.28%	0.00%	n	y	n	light breez	E	ef/da	slow	A	
4/05/2023	S00740.SES	N2	7:14:17	7.14%	0.23%	0.00%	n	n	n	Gentle	E	ef/da	slow	A	
9/05/2023	S00741.SES	N2	4:34:48	11.31%	0.37%	0.00%	n	n	n	Gentle	ESE	ef/da	slow	A	
11/05/2023	S00742.SES	N2	5:14:38	9.87%	0.32%	0.00%	n	y	n	Calm		ef/da	slow	A	
16/05/2023	S00743.SES	N2	5:57:38	8.68%	0.28%	0.00%	n	n	n	light breez	WNW	ef/da	slow	A	
19/05/2023	S00744.SES	N2	5:54:34	8.76%	0.28%	0.00%	n	n	n	light breez	ESE	ef/da	slow	A	
24/05/2023	S00745.SES	N1	6:36:38	7.83%	0.25%	0.00%	n	n	n	Calm		ef/da	slow	A	
30/05/2023	S00746.SES	N2	4:58:49	10.40%	0.34%	0.00%	n	n	n	light breez	ESE	ef/da	slow	A	
7/06/2023	S00747.SES	N4	5:26:15	9.50%	0.31%	0.00%	n	y	n	light breez	W	ef/da	slow	A	
15/06/2023	S00748.SES	N2	5:36:07	9.22%	0.30%	0.00%	n	n	n	Calm	WNW	ef/da	slow	A	

Consulting Engineers and Scientists



APPENDIX K
LABORATORY REPORTS

mgt

CLIENT DETAILS

Page 1 of 1

Company Name : Tierra Environment				Contact Name : Daryl Burrows				Purchase Order : NA				COC Number : T1887														
Office Address :				Project Manager : Daryl Burrows				Project Number : AAQ 06 023.25				QUOTE ID : 230216TIES														
				Email for results : <u>general@tierra.com.au</u>				Project Name : Alice Springs Landfill				Esdat														
Special Directions & Comments : *Metals to consist of Sb, As, Ba, Be, Cd, Cr, Cr3+, Cr6+, Co, Cu, Fe (total) Pb, Mn, Hg, Ni, Se, Ag, Tl, V, Zn				Analytes												Laboratory Address										
				Turbidity B11E: Anion Suite - Chloride, SO4, Alkalinity B11D: Cation Suite - NA, K, Ca, Mg, Organic N (Ammonia, TKN, Organic N) TOC BOD 5 Day COD M13 - Metals* Ferrous/Ferric Fe Speciation PAH PCB TRH SVV: SVOC, VOC VOC <td colspan="8">Eurofins - Melbourne 6 Monterey Road, Dandenong South, VIC 3175 Phone: 03 8584 5000 Fax: 03 8564 5090 Email: EnviroSampleVic@eurofins.com</td>												Eurofins - Melbourne 6 Monterey Road, Dandenong South, VIC 3175 Phone: 03 8584 5000 Fax: 03 8564 5090 Email: EnviroSampleVic@eurofins.com										
																Containers								Sample Comment		
500P	250A	50P	250A	VIAL	125mL A	Jar																				
1	MW1	11&12 Mar 2023	Water	x	x	x	x	x	x	x	x	x	x	x	x				2	2	5		2	1		
2	MW2-A	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x	x	x				2	2	5		2	1		
3	MW2-X	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x	x	x				2	2	5		2	1		
4	MW3	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x						2	2	5			1		
5	MW4	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x	x	x				2	2	5		2	1		
6	MW5	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x						2	2	5			1		
7	MW6	13-Mar-22	Water	x	x	x	x	x	x	x	x	x	x						2	2	5			1		
8	MW7	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x						2	2	5			1		
9	MW81	13-Mar-22	Water	x	x	x	x	x	x	x	x	x	x						2	2	5			1		
10	MW82	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x	x	x				2	2	5		2	1		
11	MW83	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x	x	x				2	2	5		2	1		
12	MW84	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x	x	x				2	2	5		2	1		
13	MW85	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x	x	x				2	2	5		2	1		
14	MW86	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x	x	x				2	2	5		2	1		
15	SW2	11&12 Mar 2022	Water	x	x	x	x	x	x	x	x	x	x	x	x				2	2	5		2	1		
16	20230312R1	11&12 Mar 2022	Water								x								2	2	5		2	1		
17	20230312FB1	11&12 Mar 2022	Water								x								2	2	5		2	1		
18	20230312TB1	11&12 Mar 2022	Water														x						1			
19																										
20																										
21																										
			Laboratory Staff Adelaide						Laboratory Staff Melbourne						Turn around Time				Method Of Shipment							
Relinquished By: Daryl Burrows			Received By:						Received By:						24 Hrs 48 Hrs				☒ Courier ☐ Hand Delivered ☐ Postal							
Date & Time : 13/03/23 2pm			Date & Time :						Date & Time :																	
Signature: 			Signature:						Signature:						5 Days 10 Days											

Tierra Environmental Pty Ltd
PO Box 360
Mitcham
SA 5062



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: **Daryl Burrows**

Report **973111-W**
Project name **ALICE SPRINGS LANDFILL**
Project ID **AAQ 06 023.25**
Received Date **Mar 16, 2023**

Client Sample ID			MW1	MW2-A	MW2-X	MW3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23- Ma0043276	M23- Ma0043277	M23- Ma0043278	M23- Ma0043279
Date Sampled			Not Provided ¹²	Not Provided ¹²	Not Provided ¹²	Not Provided ¹²
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	0.04	0.04	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C6-C10	0.02	mg/L	< 0.02	0.05	0.05	-
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	0.05	0.05	-
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Butanone (MEK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Propanone (Acetone)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW1 Water M23- Ma0043276 Not Provided ¹¹²	MW2-A Water M23- Ma0043277 Not Provided ¹¹²	MW2-X Water M23- Ma0043278 Not Provided ¹¹²	MW3 Water M23- Ma0043279 Not Provided ¹¹²
Volatile Organics						
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromomethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methylene Chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichlorofluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Vinyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Total MAH*	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Bromofluorobenzene (surr.)	1	%	98	100	104	-
Toluene-d8 (surr.)	1	%	101	102	104	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW1 Water M23- Ma0043276 Not Provided ¹²	MW2-A Water M23- Ma0043277 Not Provided ¹²	MW2-X Water M23- Ma0043278 Not Provided ¹²	MW3 Water M23- Ma0043279 Not Provided ¹²
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	73	52	80	57
p-Terphenyl-d14 (surr.)	1	%	80	63	90	78
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Total PCB*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibutylchloredate (surr.)	1	%	72	94	91	83
Tetrachloro-m-xylene (surr.)	1	%	67	59	77	69
Semivolatile Organics						
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1.2-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1.3-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1.4-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Fluorobiphenyl (surr.)	1	%	73	52	80	-
2-Methylnaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Nitroaniline	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2-Picoline	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
2.4-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.4.6-Tribromophenol (surr.)	1	%	38	84	42	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW1 Water M23- Ma0043276 Not Provided ¹²	MW2-A Water M23- Ma0043277 Not Provided ¹²	MW2-X Water M23- Ma0043278 Not Provided ¹²	MW3 Water M23- Ma0043279 Not Provided ¹²
Semivolatile Organics						
2,4,6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2,6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2,6-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	-
3-Methylcholanthrene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
3,3'-Dichlorobenzidine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Aminobiphenyl	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
4,4'-DDD	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4,4'-DDE	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4,4'-DDT	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
7,12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
a-HCH	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acetophenone	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aldrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aniline	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
b-HCH	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Butyl benzyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
d-HCH	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Di-n-butyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Di-n-octyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a,j)acridine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Dibenzofuran	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Dieldrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Diethyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Dimethyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Dimethylaminoazobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Diphenylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endosulfan I	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endosulfan II	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endosulfan sulphate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endrin aldehyde	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endrin ketone	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			MW1	MW2-A	MW2-X	MW3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23- Ma0043276	M23- Ma0043277	M23- Ma0043278	M23- Ma0043279
Date Sampled			Not Provided ¹²	Not Provided ¹²	Not Provided ¹²	Not Provided ¹²
Test/Reference	LOR	Unit				
Semivolatile Organics						
g-HCH (Lindane)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Heptachlor	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Heptachlor epoxide	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Hexachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Hexachlorobutadiene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Hexachloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Methoxychlor	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
N-Nitrosodibutylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
N-Nitrosodipropylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
N-Nitrosopiperidine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Nitrobenzene	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Nitrobenzene-d5 (surr.)	1	%	56	97	59	-
Pentachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Pentachloronitrobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Phenol-d6 (surr.)	1	%	26	41	48	-
Pronamide	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trifluralin	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Haloethers						
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Ammonia (as N)	0.01	mg/L	< 0.01	0.11	0.10	1.6
Biochemical Oxygen Demand (BOD-5 Day)	5	mg/L	42	< 5	26	49
Chemical Oxygen Demand (COD)	25	mg/L	47	25	28	50
Chloride	1	mg/L	680	980	1000	110
Chromium (trivalent filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Ferric Iron - Fe3+	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Ferrous Iron - Fe2+	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Organic Nitrogen (as N)*	0.2	mg/L	< 0.2	1.39	0.7	0.3
Sulphate (as SO4)	5	mg/L	1400	3200	3200	460
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	1.5	0.8	1.9
Total Organic Carbon	5	mg/L	44	75	71	27
Turbidity	1	NTU	< 1	< 1	< 1	< 1
Hardness mg equivalent CaCO3/L	5	mg/L	1100	2700	2700	530
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	400	420	390	220
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	400	420	390	220

Client Sample ID			MW1	MW2-A	MW2-X	MW3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Ma0043276	M23-Ma0043277	M23-Ma0043278	M23-Ma0043279
Date Sampled			Not Provided ¹²	Not Provided ¹²	Not Provided ¹²	Not Provided ¹²
Test/Reference	LOR	Unit				
Hexavalent Chromium Set (filtered)						
Chromium (hexavalent filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Heavy Metals						
Antimony (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.04
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001	0.004	0.004	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.017	0.018	< 0.001
Iron	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.028	0.089	0.090	0.019
Mercury (filtered)	0.0001	mg/L	< 0.0001	0.0001	0.0002	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.014	0.015	0.001
Selenium (filtered)	0.001	mg/L	0.001	0.001	0.001	0.030
Silver (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Titanium (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vanadium (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Alkali Metals						
Calcium	0.5	mg/L	250	600	610	120
Magnesium	0.5	mg/L	110	290	290	58
Potassium	0.5	mg/L	13	28	27	6.8
Sodium	0.5	mg/L	570	750	740	62

Client Sample ID			MW4	MW5	MW6	MW7
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Ma0043280	M23-Ma0043281	M23-Ma0043282	M23-Ma0043283
Date Sampled			Not Provided ¹²	Not Provided ¹²	Mar 13, 2023	Not Provided ¹²
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	0.04	-	-	-
TRH C10-C14	0.05	mg/L	< 0.05	-	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	-	-	-
TRH C6-C10	0.02	mg/L	0.05	-	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	0.05	-	-	-
TRH >C10-C16	0.05	mg/L	< 0.05	-	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	-	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-	-	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW4 Water M23- Ma0043280 Not Provided ¹²	MW5 Water M23- Ma0043281 Not Provided ¹²	MW6 Water M23- Ma0043282 Mar 13, 2023	MW7 Water M23- Ma0043283 Not Provided ¹²
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	-	-	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	-	-	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	-	-	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	-	-	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	-	-	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
2-Butanone (MEK)	0.005	mg/L	< 0.005	-	-	-
2-Propanone (Acetone)	0.005	mg/L	< 0.005	-	-	-
4-Chlorotoluene	0.001	mg/L	< 0.001	-	-	-
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005	-	-	-
Allyl chloride	0.001	mg/L	< 0.001	-	-	-
Benzene	0.001	mg/L	< 0.001	-	-	-
Bromobenzene	0.001	mg/L	< 0.001	-	-	-
Bromochloromethane	0.001	mg/L	< 0.001	-	-	-
Bromodichloromethane	0.001	mg/L	< 0.001	-	-	-
Bromoform	0.001	mg/L	< 0.001	-	-	-
Bromomethane	0.005	mg/L	< 0.005	-	-	-
Carbon disulfide	0.001	mg/L	< 0.001	-	-	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	-	-	-
Chlorobenzene	0.001	mg/L	< 0.001	-	-	-
Chloroethane	0.005	mg/L	< 0.005	-	-	-
Chloroform	0.005	mg/L	< 0.005	-	-	-
Chloromethane	0.005	mg/L	< 0.005	-	-	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	-	-	-
Dibromochloromethane	0.001	mg/L	< 0.001	-	-	-
Dibromomethane	0.001	mg/L	< 0.001	-	-	-
Dichlorodifluoromethane	0.005	mg/L	< 0.005	-	-	-
Ethylbenzene	0.001	mg/L	< 0.001	-	-	-
Iodomethane	0.001	mg/L	< 0.001	-	-	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	-	-	-
m&p-Xylenes	0.002	mg/L	< 0.002	-	-	-
Methylene Chloride	0.005	mg/L	< 0.005	-	-	-
o-Xylene	0.001	mg/L	< 0.001	-	-	-
Styrene	0.001	mg/L	< 0.001	-	-	-
Tetrachloroethene	0.001	mg/L	< 0.001	-	-	-
Toluene	0.001	mg/L	< 0.001	-	-	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	-	-	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW4 Water M23- Ma0043280 Not Provided ¹¹²	MW5 Water M23- Ma0043281 Not Provided ¹¹²	MW6 Water M23- Ma0043282 Mar 13, 2023	MW7 Water M23- Ma0043283 Not Provided ¹¹²
Volatile Organics						
Trichloroethene	0.001	mg/L	< 0.001	-	-	-
Trichlorofluoromethane	0.005	mg/L	< 0.005	-	-	-
Vinyl chloride	0.005	mg/L	< 0.005	-	-	-
Xylenes - Total*	0.003	mg/L	< 0.003	-	-	-
Total MAH*	0.003	mg/L	< 0.003	-	-	-
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	-	-	-
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	-	-	-
4-Bromofluorobenzene (surr.)	1	%	105	-	-	-
Toluene-d8 (surr.)	1	%	104	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.01	mg/L	< 0.01	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	88	52	66	64
p-Terphenyl-d14 (surr.)	1	%	100	63	73	90
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Total PCB*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibutylchloroendate (surr.)	1	%	55	59	77	85
Tetrachloro-m-xylene (surr.)	1	%	89	59	67	54
Semivolatile Organics						
2-Methyl-4,6-dinitrophenol	0.03	mg/L	< 0.03	-	-	-
1-Chloronaphthalene	0.005	mg/L	< 0.005	-	-	-
1-Naphthylamine	0.005	mg/L	< 0.005	-	-	-
1,2-Dichlorobenzene	0.005	mg/L	< 0.005	-	-	-
1,2,3-Trichlorobenzene	0.005	mg/L	< 0.005	-	-	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference			MW4 Water M23- Ma0043280 Not Provided ¹²	MW5 Water M23- Ma0043281 Not Provided ¹²	MW6 Water M23- Ma0043282 Mar 13, 2023	MW7 Water M23- Ma0043283 Not Provided ¹²
	LOR	Unit				
Semivolatile Organics						
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005	-	-	-
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	-	-	-
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005	-	-	-
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	-	-	-
1.3-Dichlorobenzene	0.005	mg/L	< 0.005	-	-	-
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005	-	-	-
1.4-Dichlorobenzene	0.005	mg/L	< 0.005	-	-	-
2-Chloronaphthalene	0.005	mg/L	< 0.005	-	-	-
2-Chlorophenol	0.003	mg/L	< 0.003	-	-	-
2-Fluorobiphenyl (surr.)	1	%	88	-	-	-
2-Methylnaphthalene	0.005	mg/L	< 0.005	-	-	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	-	-	-
2-Naphthylamine	0.005	mg/L	< 0.005	-	-	-
2-Nitroaniline	0.005	mg/L	< 0.005	-	-	-
2-Nitrophenol	0.01	mg/L	< 0.01	-	-	-
2-Picoline	0.005	mg/L	< 0.005	-	-	-
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01	-	-	-
2.4-Dichlorophenol	0.003	mg/L	< 0.003	-	-	-
2.4-Dimethylphenol	0.003	mg/L	< 0.003	-	-	-
2.4-Dinitrophenol	0.03	mg/L	< 0.03	-	-	-
2.4-Dinitrotoluene	0.005	mg/L	< 0.005	-	-	-
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	-	-	-
2.4.6-Tribromophenol (surr.)	1	%	43	-	-	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	-	-	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	-	-	-
2.6-Dinitrotoluene	0.005	mg/L	< 0.005	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	-	-	-
3-Methylcholanthrene	0.005	mg/L	< 0.005	-	-	-
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005	-	-	-
4-Aminobiphenyl	0.005	mg/L	< 0.005	-	-	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	-	-	-
4-Nitrophenol	0.03	mg/L	< 0.03	-	-	-
4.4'-DDD	0.005	mg/L	< 0.005	-	-	-
4.4'-DDE	0.005	mg/L	< 0.005	-	-	-
4.4'-DDT	0.005	mg/L	< 0.005	-	-	-
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005	-	-	-
a-HCH	0.005	mg/L	< 0.005	-	-	-
Acenaphthene	0.001	mg/L	< 0.001	-	-	-
Acenaphthylene	0.001	mg/L	< 0.001	-	-	-
Acetophenone	0.005	mg/L	< 0.005	-	-	-
Aldrin	0.005	mg/L	< 0.005	-	-	-
Aniline	0.005	mg/L	< 0.005	-	-	-
Anthracene	0.001	mg/L	< 0.001	-	-	-
b-HCH	0.005	mg/L	< 0.005	-	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-	-
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	-	-	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	-	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-	-

Client Sample ID			MW4 Water M23- Ma0043280 Not Provided ¹¹²	MW5 Water M23- Ma0043281 Not Provided ¹¹²	MW6 Water M23- Ma0043282 Mar 13, 2023	MW7 Water M23- Ma0043283 Not Provided ¹¹²
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Semivolatile Organics						
Benzyl chloride	0.005	mg/L	< 0.005	-	-	-
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005	-	-	-
Butyl benzyl phthalate	0.005	mg/L	< 0.005	-	-	-
Chrysene	0.001	mg/L	< 0.001	-	-	-
d-HCH	0.005	mg/L	< 0.005	-	-	-
Di-n-butyl phthalate	0.005	mg/L	< 0.005	-	-	-
Di-n-octyl phthalate	0.005	mg/L	< 0.005	-	-	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	-	-	-
Dibenz(a,j)acridine	0.005	mg/L	< 0.005	-	-	-
Dibenzofuran	0.005	mg/L	< 0.005	-	-	-
Dieldrin	0.005	mg/L	< 0.005	-	-	-
Diethyl phthalate	0.005	mg/L	< 0.005	-	-	-
Dimethyl phthalate	0.005	mg/L	< 0.005	-	-	-
Dimethylaminoazobenzene	0.005	mg/L	< 0.005	-	-	-
Diphenylamine	0.005	mg/L	< 0.005	-	-	-
Endosulfan I	0.005	mg/L	< 0.005	-	-	-
Endosulfan II	0.005	mg/L	< 0.005	-	-	-
Endosulfan sulphate	0.005	mg/L	< 0.005	-	-	-
Endrin	0.005	mg/L	< 0.005	-	-	-
Endrin aldehyde	0.005	mg/L	< 0.005	-	-	-
Endrin ketone	0.005	mg/L	< 0.005	-	-	-
Fluoranthene	0.001	mg/L	< 0.001	-	-	-
Fluorene	0.001	mg/L	< 0.001	-	-	-
g-HCH (Lindane)	0.005	mg/L	< 0.005	-	-	-
Heptachlor	0.005	mg/L	< 0.005	-	-	-
Heptachlor epoxide	0.005	mg/L	< 0.005	-	-	-
Hexachlorobenzene	0.005	mg/L	< 0.005	-	-	-
Hexachlorobutadiene	0.005	mg/L	< 0.005	-	-	-
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005	-	-	-
Hexachloroethane	0.005	mg/L	< 0.005	-	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-	-
Methoxychlor	0.005	mg/L	< 0.005	-	-	-
N-Nitrosodibutylamine	0.005	mg/L	< 0.005	-	-	-
N-Nitrosodipropylamine	0.005	mg/L	< 0.005	-	-	-
N-Nitrosopiperidine	0.005	mg/L	< 0.005	-	-	-
Naphthalene	0.001	mg/L	< 0.001	-	-	-
Nitrobenzene	0.05	mg/L	< 0.05	-	-	-
Nitrobenzene-d5 (surr.)	1	%	75	-	-	-
Pentachlorobenzene	0.005	mg/L	< 0.005	-	-	-
Pentachloronitrobenzene	0.005	mg/L	< 0.005	-	-	-
Pentachlorophenol	0.01	mg/L	< 0.01	-	-	-
Phenanthrene	0.001	mg/L	< 0.001	-	-	-
Phenol	0.003	mg/L	< 0.003	-	-	-
Phenol-d6 (surr.)	1	%	36	-	-	-
Pronamide	0.005	mg/L	< 0.005	-	-	-
Pyrene	0.001	mg/L	< 0.001	-	-	-
Trifluralin	0.005	mg/L	< 0.005	-	-	-

Client Sample ID			MW4	MW5	MW6	MW7
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23- Ma0043280	M23- Ma0043281	M23- Ma0043282	M23- Ma0043283
Date Sampled			Not Provided ¹²	Not Provided ¹²	Mar 13, 2023	Not Provided ¹²
Test/Reference	LOR	Unit				
Haloethers						
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005	-	-	-
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005	-	-	-
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005	-	-	-
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005	-	-	-
Ammonia (as N)	0.01	mg/L	0.06	0.03	0.09	0.09
Biochemical Oxygen Demand (BOD-5 Day)	5	mg/L	36	< 5	< 5	7.8
Chemical Oxygen Demand (COD)	25	mg/L	76	< 25	< 25	< 25
Chloride	1	mg/L	780	900	660	640
Chromium (trivalent filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Ferric Iron - Fe3+	0.05	mg/L	< 0.05	< 0.05	0.18	< 0.05
Ferrous Iron - Fe2+	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Organic Nitrogen (as N)*	0.2	mg/L	< 0.2	0.27	0.21	8.21
Sulphate (as SO4)	5	mg/L	3300	2000	770	680
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	0.3	0.3	8.3
Total Organic Carbon	5	mg/L	54	47	48	53
Turbidity	1	NTU	< 1	< 1	3.0	< 1
Hardness mg equivalent CaCO3/L	5	mg/L	2300	1600	990	560
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	360	300	380	540
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	360	300	380	540
Hexavalent Chromium Set (filtered)						
Chromium (hexavalent filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Heavy Metals						
Antimony (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.004	< 0.001
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	0.04	< 0.02
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	0.010	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.003	0.003	< 0.001	0.002
Iron	0.05	mg/L	< 0.05	< 0.05	0.18	< 0.05
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.82	0.066	0.032	< 0.005
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.007	0.002	< 0.001	0.002
Selenium (filtered)	0.001	mg/L	< 0.001	0.003	< 0.001	0.002
Silver (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Titanium (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vanadium (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Alkali Metals						
Calcium	0.5	mg/L	510	350	230	120
Magnesium	0.5	mg/L	260	180	100	65
Potassium	0.5	mg/L	20	19	9.1	9.3
Sodium	0.5	mg/L	740	630	400	490

Client Sample ID			MW81 Water M23- Ma0043284 Mar 13, 2023	MW82 Water M23- Ma0043285 Not Provided ¹²	MW83 Water M23- Ma0043286 Not Provided ¹²	MW84 Water M23- Ma0043287 Not Provided ¹²
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	-	0.04	0.05	< 0.02
TRH C10-C14	0.05	mg/L	-	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	-	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	-	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	-	< 0.1	< 0.1	< 0.1
TRH C6-C10	0.02	mg/L	-	0.05	0.06	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	-	0.05	0.06	< 0.02
TRH >C10-C16	0.05	mg/L	-	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	-	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	-	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	-	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	-	< 0.1	< 0.1	< 0.1
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
2-Butanone (MEK)	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
2-Propanone (Acetone)	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
4-Chlorotoluene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Allyl chloride	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Benzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Bromomethane	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Carbon disulfide	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Chloroethane	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Chloroform	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Chloromethane	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001

Client Sample ID			MW81 Water	MW82 Water	MW83 Water	MW84 Water
Sample Matrix			M23- Ma0043284	M23- Ma0043285	M23- Ma0043286	M23- Ma0043287
Eurofins Sample No.			Mar 13, 2023	Not Provided ¹¹²	Not Provided ¹¹²	Not Provided ¹¹²
Date Sampled						
Test/Reference	LOR	Unit				
Volatile Organics						
Dibromomethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Dichlorodifluoromethane	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Ethylbenzene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002	< 0.002	< 0.002
Methylene Chloride	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
o-Xylene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
trans-1,2-Dichloroethene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
trans-1,3-Dichloropropene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Vinyl chloride	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Xylenes - Total*	0.003	mg/L	-	< 0.003	< 0.003	< 0.003
Total MAH*	0.003	mg/L	-	< 0.003	< 0.003	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
4-Bromofluorobenzene (surr.)	1	%	-	104	109	113
Toluene-d8 (surr.)	1	%	-	100	105	103
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.01	mg/L	-	< 0.01	< 0.01	< 0.01
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	93	50	53	56
p-Terphenyl-d14 (surr.)	1	%	98	71	92	80
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			MW81	MW82	MW83	MW84
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23- Ma0043284	M23- Ma0043285	M23- Ma0043286	M23- Ma0043287
Date Sampled			Mar 13, 2023	Not Provided ¹¹²	Not Provided ¹¹²	Not Provided ¹¹²
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Total PCB*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibutylchloredate (surr.)	1	%	102	77	65	86
Tetrachloro-m-xylene (surr.)	1	%	95	57	97	59
Semivolatile Organics						
2-Methyl-4,6-dinitrophenol	0.03	mg/L	-	< 0.03	< 0.03	< 0.03
1-Chloronaphthalene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
1-Naphthylamine	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
1,2-Dichlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
1,2,3-Trichlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
1,2,3,4-Tetrachlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
1,2,3,5-Tetrachlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
1,2,4-Trichlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
1,2,4,5-Tetrachlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
1,3-Dichlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
1,3,5-Trichlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
1,4-Dichlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
2-Chloronaphthalene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
2-Chlorophenol	0.003	mg/L	-	< 0.003	< 0.003	< 0.003
2-Fluorobiphenyl (surr.)	1	%	-	50	53	56
2-Methylnaphthalene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	-	< 0.003	< 0.003	< 0.003
2-Naphthylamine	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
2-Nitroaniline	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
2-Nitrophenol	0.01	mg/L	-	< 0.01	< 0.01	< 0.01
2-Picoline	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
2,3,4,6-Tetrachlorophenol	0.01	mg/L	-	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	0.003	mg/L	-	< 0.003	< 0.003	< 0.003
2,4-Dimethylphenol	0.003	mg/L	-	< 0.003	< 0.003	< 0.003
2,4-Dinitrophenol	0.03	mg/L	-	< 0.03	< 0.03	< 0.03
2,4-Dinitrotoluene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
2,4,5-Trichlorophenol	0.01	mg/L	-	< 0.01	< 0.01	< 0.01
2,4,6-Tribromophenol (surr.)	1	%	-	39	65	68
2,4,6-Trichlorophenol	0.01	mg/L	-	< 0.01	< 0.01	< 0.01
2,6-Dichlorophenol	0.003	mg/L	-	< 0.003	< 0.003	< 0.003
2,6-Dinitrotoluene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	-	< 0.006	< 0.006	< 0.006
3-Methylcholanthrene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
3,3'-Dichlorobenzidine	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
4-Aminobiphenyl	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	-	< 0.01	< 0.01	< 0.01
4-Nitrophenol	0.03	mg/L	-	< 0.03	< 0.03	< 0.03
4,4'-DDD	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
4,4'-DDE	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
4,4'-DDT	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
7,12-Dimethylbenz(a)anthracene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
a-HCH	0.005	mg/L	-	< 0.005	< 0.005	< 0.005

Client Sample ID			MW81 Water	MW82 Water	MW83 Water	MW84 Water
Sample Matrix			M23- Ma0043284	M23- Ma0043285	M23- Ma0043286	M23- Ma0043287
Eurofins Sample No.			Mar 13, 2023	Not Provided ¹¹²	Not Provided ¹¹²	Not Provided ¹¹²
Date Sampled						
Test/Reference	LOR	Unit				
Semivolatile Organics						
Acenaphthene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Acetophenone	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Aldrin	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Aniline	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Anthracene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
b-HCH	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Benz(a)anthracene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Benzyl chloride	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Butyl benzyl phthalate	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Chrysene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
d-HCH	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Di-n-butyl phthalate	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Di-n-octyl phthalate	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Dibenz(a,h)anthracene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Dibenz(a,j)acridine	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Dibenzofuran	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Dieldrin	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Diethyl phthalate	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Dimethyl phthalate	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Diphenylamine	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Endosulfan I	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Endosulfan II	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Endosulfan sulphate	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Endrin	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Endrin aldehyde	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Endrin ketone	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Fluoranthene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
g-HCH (Lindane)	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Heptachlor	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Heptachlor epoxide	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Hexachlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Hexachlorobutadiene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Hexachloroethane	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Methoxychlor	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
N-Nitrosopiperidine	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Naphthalene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Nitrobenzene	0.05	mg/L	-	< 0.05	< 0.05	< 0.05

Client Sample ID			MW81	MW82	MW83	MW84
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23- Ma0043284	M23- Ma0043285	M23- Ma0043286	M23- Ma0043287
Date Sampled			Mar 13, 2023	Not Provided ¹¹²	Not Provided ¹¹²	Not Provided ¹¹²
Test/Reference	LOR	Unit				
Semivolatile Organics						
Nitrobenzene-d5 (surr.)	1	%	-	93	86	57
Pentachlorobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Pentachloronitrobenzene	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Pentachlorophenol	0.01	mg/L	-	< 0.01	< 0.01	< 0.01
Phenanthrene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Phenol	0.003	mg/L	-	< 0.003	< 0.003	< 0.003
Phenol-d6 (surr.)	1	%	-	35	56	66
Pronamide	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Pyrene	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Trifluralin	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Haloethers						
4-Bromophenyl phenyl ether	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
4-Chlorophenyl phenyl ether	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	-	< 0.005	< 0.005	< 0.005
Ammonia (as N)	0.01	mg/L	0.27	0.02	0.04	0.04
Biochemical Oxygen Demand (BOD-5 Day)	5	mg/L	< 5	7.5	< 5	< 5
Chemical Oxygen Demand (COD)	25	mg/L	< 25	< 25	< 25	< 25
Chloride	1	mg/L	1000	770	210	310
Chromium (trivalent filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Ferric Iron - Fe3+	0.05	mg/L	< 0.05	< 0.05	0.06	< 0.05
Ferrous Iron - Fe2+	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Organic Nitrogen (as N)*	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Sulphate (as SO4)	5	mg/L	2800	1300	790	430
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.3	< 0.2	< 0.2	< 0.2
Total Organic Carbon	5	mg/L	27	45	42	42
Turbidity	1	NTU	< 1	< 1	1.2	< 1
Hardness mg equivalent CaCO3/L	5	mg/L	3200	1100	830	640
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	260	380	330	450
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	260	380	330	450
Hexavalent Chromium Set (filtered)						
Chromium (hexavalent filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Heavy Metals						
Antimony (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.004	< 0.001
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.03
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.004	0.003	0.002	0.002
Iron	0.05	mg/L	< 0.05	< 0.05	0.06	< 0.05
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.062	0.13	0.041	0.010

Client Sample ID			MW81	MW82	MW83	MW84
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Ma0043284	M23-Ma0043285	M23-Ma0043286	M23-Ma0043287
Date Sampled			Mar 13, 2023	Not Provided ¹²	Not Provided ¹²	Not Provided ¹²
Test/Reference	LOR	Unit				
Heavy Metals						
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.001	0.001	< 0.001	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	0.002
Silver (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Titanium (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vanadium (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	0.005
Alkali Metals						
Calcium	0.5	mg/L	550	250	200	140
Magnesium	0.5	mg/L	440	120	83	75
Potassium	0.5	mg/L	19	12	9.3	4.9
Sodium	0.5	mg/L	310	550	140	170

Client Sample ID			MW85	MW86	SW2	20230312R1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Ma0043288	M23-Ma0043289	M23-Ma0043290	M23-Ma0043291
Date Sampled			Not Provided ¹²	Not Provided ¹²	Not Provided ¹²	Not Provided ¹²
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			MW85	MW86	SW2	20230312R1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23- Ma0043288	M23- Ma0043289	M23- Ma0043290	M23- Ma0043291
Date Sampled			Not Provided ¹²	Not Provided ¹²	Not Provided ¹²	Not Provided ¹²
Test/Reference	LOR	Unit				
Volatile Organics						
1,4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Butanone (MEK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Propanone (Acetone)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromomethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
cis-1,2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1,3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methylene Chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	0.001	-
trans-1,2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1,3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichlorofluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Vinyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Total MAH*	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Bromofluorobenzene (surr.)	1	%	109	117	109	-
Toluene-d8 (surr.)	1	%	107	104	105	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{NO2}	0.01	mg/L	< 0.01	< 0.01	< 0.01	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW85 Water M23- Ma0043288 Not Provided ¹²	MW86 Water M23- Ma0043289 Not Provided ¹²	SW2 Water M23- Ma0043290 Not Provided ¹²	20230312R1 Water M23- Ma0043291 Not Provided ¹²
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	66	71	78	-
p-Terphenyl-d14 (surr.)	1	%	79	80	81	-
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Total PCB*	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Dibutylchlorendate (surr.)	1	%	101	51	86	-
Tetrachloro-m-xylene (surr.)	1	%	58	62	69	-
Semivolatile Organics						
2-Methyl-4,6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1,2-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1,2,3-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1,2,3,4-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1,2,3,5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1,2,4-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1,2,4,5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1,3-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1,3,5-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1,4-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Fluorobiphenyl (surr.)	1	%	66	71	78	-
2-Methylnaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-

Client Sample ID			MW85	MW86	SW2	20230312R1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23- Ma0043288	M23- Ma0043289	M23- Ma0043290	M23- Ma0043291
Date Sampled			Not Provided ¹¹²	Not Provided ¹¹²	Not Provided ¹¹²	Not Provided ¹¹²
Test/Reference	LOR	Unit				
Semivolatile Organics						
2-Nitroaniline	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2-Picoline	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2,3,4,6-Tetrachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2,4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2,4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2,4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
2,4-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2,4,5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2,4,6-Tribromophenol (surr.)	1	%	97	86	88	-
2,4,6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2,6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2,6-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	-
3-Methylcholanthrene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
3,3'-Dichlorobenzidine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Aminobiphenyl	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
4,4'-DDD	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4,4'-DDE	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4,4'-DDT	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
7,12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
a-HCH	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acetophenone	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aldrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Aniline	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
b-HCH	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Butyl benzyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
d-HCH	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Di-n-butyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Di-n-octyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a,j)acridine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Dibenzofuran	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Dieldrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Diethyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Dimethyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-

Client Sample ID			MW85	MW86	SW2	20230312R1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23- Ma0043288	M23- Ma0043289	M23- Ma0043290	M23- Ma0043291
Date Sampled			Not Provided ¹¹²	Not Provided ¹¹²	Not Provided ¹¹²	Not Provided ¹¹²
Test/Reference	LOR	Unit				
Semivolatile Organics						
Dimethylaminoazobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Diphenylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endosulfan I	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endosulfan II	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endosulfan sulphate	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endrin	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endrin aldehyde	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Endrin ketone	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
g-HCH (Lindane)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Heptachlor	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Heptachlor epoxide	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Hexachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Hexachlorobutadiene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Hexachloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Methoxychlor	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
N-Nitrosodibutylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
N-Nitrosodipropylamine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
N-Nitrosopiperidine	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Nitrobenzene	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Nitrobenzene-d5 (surr.)	1	%	51	54	50	-
Pentachlorobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Pentachloronitrobenzene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Phenol-d6 (surr.)	1	%	36	39	34	-
Pronamide	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trifluralin	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Haloethers						
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	4.1	-
Biochemical Oxygen Demand (BOD-5 Day)	5	mg/L	< 5	< 5	9.4	-
Chemical Oxygen Demand (COD)	25	mg/L	< 25	< 25	200	-
Chloride	1	mg/L	92	550	250	-
Chromium (trivalent filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Ferric Iron - Fe3+	0.05	mg/L	< 0.05	< 0.05	0.94	-
Ferrous Iron - Fe2+	0.05	mg/L	< 0.05	< 0.05	0.46	-
Organic Nitrogen (as N)*	0.2	mg/L	< 0.2	< 0.2	2.8	-
Sulphate (as SO4)	5	mg/L	160	710	59	-

Client Sample ID			MW85	MW86	SW2	20230312R1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Ma0043288	M23-Ma0043289	M23-Ma0043290	M23-Ma0043291
Date Sampled			Not Provided ¹²	Not Provided ¹²	Not Provided ¹²	Not Provided ¹²
Test/Reference	LOR	Unit				
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	6.9	-
Total Organic Carbon	5	mg/L	38	43	130	-
Turbidity	1	NTU	< 1	< 1	17	-
Hardness mg equivalent CaCO ₃ /L	5	mg/L	360	780	140	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO ₃)	20	mg/L	390	360	250	-
Carbonate Alkalinity (as CaCO ₃)	10	mg/L	< 10	< 10	< 10	-
Hydroxide Alkalinity (as CaCO ₃)	20	mg/L	< 20	< 20	< 20	-
Total Alkalinity (as CaCO ₃)	20	mg/L	390	360	250	-
Hexavalent Chromium Set (filtered)						
Chromium (hexavalent filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Heavy Metals						
Antimony (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.011	< 0.001
Barium (filtered)	0.02	mg/L	0.04	< 0.02	0.20	< 0.02
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	0.003	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.005	0.006	< 0.001
Iron	0.05	mg/L	< 0.05	< 0.05	1.4	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	< 0.005	0.007	0.23	< 0.005
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.001	< 0.001	0.008	< 0.001
Selenium (filtered)	0.001	mg/L	0.002	0.002	< 0.001	< 0.001
Silver (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Titanium (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vanadium (filtered)	0.005	mg/L	< 0.005	< 0.005	0.006	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Alkali Metals						
Calcium	0.5	mg/L	64	180	33	-
Magnesium	0.5	mg/L	47	82	15	-
Potassium	0.5	mg/L	14	8.3	65	-
Sodium	0.5	mg/L	73	370	140	-

Client Sample ID			20230312FB1	20230312TB1
Sample Matrix			Water	Water
Eurofins Sample No.			M23-Ma0043292	M23-Ma0043293
Date Sampled			Not Provided ¹²	Not Provided ¹²
Test/Reference	LOR	Unit		
Volatile Organics				
1.1-Dichloroethane	0.001	mg/L	-	< 0.001
1.1-Dichloroethene	0.001	mg/L	-	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	-	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	-	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	-	< 0.001

Client Sample ID			20230312FB1	20230312TB1
Sample Matrix			Water	Water
Eurofins Sample No.			M23-Ma0043292	M23-Ma0043293
Date Sampled			Not Provided ¹²	Not Provided ¹²
Test/Reference	LOR	Unit		
Volatile Organics				
1.1.2.2-Tetrachloroethane	0.001	mg/L	-	< 0.001
1.2-Dibromoethane	0.001	mg/L	-	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	-	< 0.001
1.2-Dichloroethane	0.001	mg/L	-	< 0.001
1.2-Dichloropropane	0.001	mg/L	-	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	-	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	-	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	-	< 0.001
1.3-Dichloropropane	0.001	mg/L	-	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	-	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	-	< 0.001
2-Butanone (MEK)	0.005	mg/L	-	< 0.005
2-Propanone (Acetone)	0.005	mg/L	-	< 0.005
4-Chlorotoluene	0.001	mg/L	-	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	-	< 0.005
Allyl chloride	0.001	mg/L	-	< 0.001
Benzene	0.001	mg/L	-	< 0.001
Bromobenzene	0.001	mg/L	-	< 0.001
Bromochloromethane	0.001	mg/L	-	< 0.001
Bromodichloromethane	0.001	mg/L	-	< 0.001
Bromoform	0.001	mg/L	-	< 0.001
Bromomethane	0.005	mg/L	-	< 0.005
Carbon disulfide	0.001	mg/L	-	< 0.001
Carbon Tetrachloride	0.001	mg/L	-	< 0.001
Chlorobenzene	0.001	mg/L	-	< 0.001
Chloroethane	0.005	mg/L	-	< 0.005
Chloroform	0.005	mg/L	-	< 0.005
Chloromethane	0.005	mg/L	-	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	-	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	-	< 0.001
Dibromochloromethane	0.001	mg/L	-	< 0.001
Dibromomethane	0.001	mg/L	-	< 0.001
Dichlorodifluoromethane	0.005	mg/L	-	< 0.005
Ethylbenzene	0.001	mg/L	-	< 0.001
Iodomethane	0.001	mg/L	-	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002
Methylene Chloride	0.005	mg/L	-	< 0.005
o-Xylene	0.001	mg/L	-	< 0.001
Styrene	0.001	mg/L	-	< 0.001
Tetrachloroethene	0.001	mg/L	-	< 0.001
Toluene	0.001	mg/L	-	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	-	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	-	< 0.001
Trichloroethene	0.001	mg/L	-	< 0.001
Trichlorofluoromethane	0.005	mg/L	-	< 0.005
Vinyl chloride	0.005	mg/L	-	< 0.005
Xylenes - Total*	0.003	mg/L	-	< 0.003
Total MAH*	0.003	mg/L	-	< 0.003

Client Sample ID			20230312FB1	20230312TB1
Sample Matrix			Water	Water
Eurofins Sample No.			M23-Ma0043292	M23-Ma0043293
Date Sampled			Not Provided¹²	Not Provided¹²
Test/Reference	LOR	Unit		
Volatile Organics				
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	-	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	-	< 0.005
4-Bromofluorobenzene (surr.)	1	%	-	96
Toluene-d8 (surr.)	1	%	-	99
Chromium (hexavalent)	0.005	mg/L	< 0.005	-
Chromium (trivalent)	0.005	mg/L	< 0.005	-
Heavy Metals				
Antimony	0.005	mg/L	< 0.005	-
Arsenic	0.001	mg/L	< 0.001	-
Barium	0.02	mg/L	< 0.02	-
Beryllium	0.001	mg/L	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	-
Chromium	0.001	mg/L	< 0.001	-
Cobalt	0.001	mg/L	< 0.001	-
Copper	0.001	mg/L	< 0.001	-
Lead	0.001	mg/L	< 0.001	-
Manganese	0.005	mg/L	< 0.005	-
Mercury	0.0001	mg/L	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	-
Selenium	0.001	mg/L	< 0.001	-
Silver	0.005	mg/L	< 0.005	-
Titanium	0.005	mg/L	< 0.005	-
Vanadium	0.005	mg/L	< 0.005	-
Zinc	0.005	mg/L	< 0.005	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Mar 22, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 22, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 22, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Volatile Organics	Melbourne	Mar 22, 2023	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Semivolatile Organics	Melbourne	Mar 22, 2023	7 Days
- Method: USEPA SW 846 8270			
Polycyclic Aromatic Hydrocarbons	Melbourne	Mar 22, 2023	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Mar 22, 2023	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Biochemical Oxygen Demand (BOD-5 Day)	Melbourne	Mar 17, 2023	2 Days
- Method: LTM-INO-4010 Biochemical Oxygen Demand (BOD5) in Water			
Chemical Oxygen Demand (COD)	Melbourne	Mar 23, 2023	28 Days
- Method: LTM-INO-4220 Determination of COD in Water			
Total Organic Carbon	Melbourne	Mar 22, 2023	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Turbidity	Melbourne	Mar 22, 2023	28 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Heavy Metals	Melbourne	Mar 22, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Melbourne	Mar 22, 2023	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8	Melbourne	Mar 22, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Melbourne	Mar 22, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Ammonia (as N)	Melbourne	Mar 22, 2023	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Organic Nitrogen (as N)*	Melbourne	Mar 17, 2023	7 Days
- Method: APHA 4500 Organic Nitrogen (N)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Mar 22, 2023	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Melbourne	Mar 22, 2023	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Sulphate (as SO4)	Melbourne	Mar 22, 2023	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Mar 22, 2023	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Chromium (speciated, filtered Cr)			
Hexavalent Chromium Set (filtered)	Melbourne	Mar 22, 2023	28 Days
- Method: LTM-INO-4100 Hexavalent Chromium by Spectrometric detection			
Iron (speciated)			
Ferrous Iron - Fe2+	Melbourne	Mar 22, 2023	7 Days
- Method: LTM-INO-4190 Ferrous Iron in Water by Discrete Analyser			
Eurofins Suite B11D: Na/K/Ca/Mg and Hardness			
Hardness mg equivalent CaCO3/L	Melbourne	Mar 22, 2023	28 Days

Description	Testing Site	Extracted	Holding Time
- Method: APHA 2340B Hardness by Calculation			
Alkali Metals	Melbourne	Mar 22, 2023	180 Days
- Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES			
Chromium (speciated)			
Chromium (hexavalent)	Melbourne	Mar 22, 2023	28 Days
- Method: LTM-INO-4100 Hexavalent Chromium by Spectrometric detection			

Company Name:	Tierra Environmental Pty Ltd	Order No.:		Received:	Mar 17, 2023 10:50 AM
Address:	PO Box 360 Mitcham SA 5062	Report #:	973111	Due:	Mar 24, 2023
		Phone:	08 8373 2512	Priority:	5 Day
		Fax:	08 8373 2515	Contact Name:	Daryl Burrows
Project Name:	ALICE SPRINGS LANDFILL				
Project ID:	AAQ 06 023.25				

Eurofins Analytical Services Manager : Amy Meunier

Sample Detail						Eurofins Suite B11E: Cl/SO4/Alkalinity																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Project Name:	ALICE SPRINGS LANDFILL	Phone:	08 8373 2512	Priority:	5 Day
Project ID:	AAQ 06 023.25	Fax:	08 8373 2515	Contact Name:	Daryl Burrows

Eurofins Analytical Services Manager : Amy Meunier

Sample Detail						Eurofins Suite B11E: Cl/SO4/Alkalinity	Eurofins Suite B11D: Na/K/Ca/Mg and	Eurofins Suite SV: SVO/CVOC	Total Recoverable Hydrocarbons	Chromium (speciated, filtered Cr)	Volatile Organics	Chromium (speciated)	Organic Nitrogen Set (as N)	Iron (speciated)	Metals M8 filtered	Metals M8	Polychlorinated Biphenyls	Polycyclic Aromatic Hydrocarbons	Vanadium (filtered)	Vanadium	Turbidity	Total Organic Carbon	Titanium (filtered)	Titanium	Silver (filtered)	Silver	Selenium (filtered)	Selenium	Manganese (filtered)	Manganese	Cobalt (filtered)	Cobalt	Chemical Oxygen Demand (COD)	Biochemical Oxygen Demand (BOD-5 Day)	Beryllium (filtered)	Beryllium	Barium (filtered)	Barium	Antimony (filtered)	Antimony		
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	MW86	Not Provided		Water	M23-Ma0043289	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15	SW2	Not Provided		Water	M23-Ma0043290	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16	20230312R1	Not Provided		Water	M23-Ma0043291	X	X	X	X						X				X																							
17	20230312FB1	Not Provided		Water	M23-Ma0043292	X	X	X	X			X				X				X																						
18	20230312TB1	Not Provided		Water	M23-Ma0043293	X	X	X	X												X																					
Test Counts						1	16	1	16	1	16	15	15	1	16	1	16	15	15	1	16	15	15	15	16	16	1	16	1	16	1	16	1	16	15	15	1	16	1	16	10	15

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
trans-1,2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1,3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1221	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB*	mg/L	< 0.005			0.005	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4,6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1,2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,3,4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,3,5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,4,5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1,3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,3,5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2.4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
4.4'-DDD	mg/L	< 0.005			0.005	Pass	
4.4'-DDE	mg/L	< 0.005			0.005	Pass	
4.4'-DDT	mg/L	< 0.005			0.005	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-HCH	mg/L	< 0.005			0.005	Pass	
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
b-HCH	mg/L	< 0.005			0.005	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
d-HCH	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
g-HCH (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Nitrobenzene	mg/L	< 0.05			0.05	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Haloethers							
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Biochemical Oxygen Demand (BOD-5 Day)	mg/L	< 5			5	Pass	
Chemical Oxygen Demand (COD)	mg/L	< 25			25	Pass	
Chloride	mg/L	< 1			1	Pass	
Ferrous Iron - Fe2+	mg/L	< 0.05			0.05	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Chromium (hexavalent)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Hexavalent Chromium Set (filtered)							
Chromium (hexavalent filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Antimony	mg/L	< 0.005			0.005	Pass	
Antimony (filtered)	mg/L	< 0.005			0.005	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Silver	mg/L	< 0.005			0.005	Pass	
Silver (filtered)	mg/L	< 0.005			0.005	Pass	
Titanium	mg/L	< 0.005			0.005	Pass	
Titanium (filtered)	mg/L	< 0.005			0.005	Pass	
Vanadium	mg/L	< 0.005			0.005	Pass	
Vanadium (filtered)	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	93			70-130	Pass	
Anthracene	%	73			70-130	Pass	
Benz(a)anthracene	%	91			70-130	Pass	
Benzo(a)pyrene	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	%	102			70-130	Pass	
Benzo(g,h,i)perylene	%	70			70-130	Pass	
Benzo(k)fluoranthene	%	94			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a,h)anthracene	%	102			70-130	Pass	
Fluoranthene	%	79			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluorene	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	76			70-130	Pass	
Naphthalene	%	87			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	84			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	88			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	%	43			25-140	Pass	
2-Chlorophenol	%	46			25-140	Pass	
2-Methylphenol (o-Cresol)	%	43			25-140	Pass	
2-Nitrophenol	%	45			25-140	Pass	
2.4-Dichlorophenol	%	44			25-140	Pass	
2.4-Dimethylphenol	%	52			25-140	Pass	
2.4-Dinitrophenol	%	52			25-140	Pass	
2.4.5-Trichlorophenol	%	46			25-140	Pass	
2.4.6-Trichlorophenol	%	48			25-140	Pass	
2.6-Dichlorophenol	%	47			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	40			25-140	Pass	
4-Chloro-3-methylphenol	%	62			25-140	Pass	
4-Nitrophenol	%	35			25-140	Pass	
Acenaphthene	%	84			70-130	Pass	
Acenaphthylene	%	90			70-130	Pass	
Anthracene	%	92			70-130	Pass	
Benz(a)anthracene	%	71			70-130	Pass	
Benzo(a)pyrene	%	77			70-130	Pass	
Benzo(b&j)fluoranthene	%	115			70-130	Pass	
Benzo(g,h,i)perylene	%	70			70-130	Pass	
Benzo(k)fluoranthene	%	85			70-130	Pass	
Chrysene	%	82			70-130	Pass	
Dibenz(a,h)anthracene	%	81			70-130	Pass	
Fluoranthene	%	110			70-130	Pass	
Fluorene	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	76			70-130	Pass	
Naphthalene	%	86			70-130	Pass	
Pentachlorophenol	%	33			25-140	Pass	
Phenanthrene	%	111			70-130	Pass	
Phenol	%	45			25-140	Pass	
Pyrene	%	107			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	105			70-130	Pass	
Biochemical Oxygen Demand (BOD-5 Day)	%	93			85-115	Pass	
Chemical Oxygen Demand (COD)	%	86			70-130	Pass	
Chloride	%	105			70-130	Pass	
Ferrous Iron - Fe2+	%	76			70-130	Pass	
Sulphate (as SO4)	%	118			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	83			70-130	Pass	
Chromium (hexavalent)	%	96			70-130	Pass	
LCS - % Recovery							
Hexavalent Chromium Set (filtered)							
Chromium (hexavalent filtered)	%	96			80-120	Pass	
LCS - % Recovery							

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Alkali Metals										
Calcium				%	88			80-120	Pass	
Magnesium				%	85			80-120	Pass	
Potassium				%	82			80-120	Pass	
Sodium				%	85			80-120	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons					Result 1					
Acenaphthene	M23-Ma0043276	CP	%	106				70-130	Pass	
Acenaphthylene	M23-Ma0043276	CP	%	113				70-130	Pass	
Anthracene	M23-Ma0043276	CP	%	95				70-130	Pass	
Benz(a)anthracene	M23-Ma0043276	CP	%	100				70-130	Pass	
Benzo(a)pyrene	M23-Ma0043276	CP	%	75				70-130	Pass	
Benzo(b&j)fluoranthene	M23-Ma0043276	CP	%	89				70-130	Pass	
Benzo(g,h,i)perylene	M23-Ma0043276	CP	%	80				70-130	Pass	
Benzo(k)fluoranthene	M23-Ma0043276	CP	%	106				70-130	Pass	
Chrysene	M23-Ma0043276	CP	%	103				70-130	Pass	
Dibenz(a,h)anthracene	M23-Ma0043276	CP	%	81				70-130	Pass	
Fluoranthene	M23-Ma0043276	CP	%	98				70-130	Pass	
Fluorene	M23-Ma0043276	CP	%	108				70-130	Pass	
Indeno(1,2,3-cd)pyrene	M23-Ma0043276	CP	%	89				70-130	Pass	
Naphthalene	M23-Ma0043276	CP	%	83				70-130	Pass	
Phenanthrene	M23-Ma0043276	CP	%	98				70-130	Pass	
Pyrene	M23-Ma0043276	CP	%	97				70-130	Pass	
Spike - % Recovery										
Polychlorinated Biphenyls					Result 1					
Aroclor-1016	M23-Ma0043276	CP	%	119				70-130	Pass	
Aroclor-1260	M23-Ma0043276	CP	%	108				70-130	Pass	
Spike - % Recovery										
Semivolatile Organics					Result 1					
2-Methyl-4,6-dinitrophenol	M23-Ma0043276	CP	%	46				30-130	Pass	
2-Chlorophenol	M23-Ma0043276	CP	%	100				30-130	Pass	
2-Methylphenol (o-Cresol)	M23-Ma0043276	CP	%	79				30-130	Pass	
2-Nitrophenol	M23-Ma0043276	CP	%	78				30-130	Pass	
2,4-Dichlorophenol	M23-Ma0043276	CP	%	80				30-130	Pass	
2,4-Dimethylphenol	M23-Ma0043276	CP	%	59				30-130	Pass	
2,4-Dinitrophenol	M23-Ma0043276	CP	%	52				30-130	Pass	
2,4,5-Trichlorophenol	M23-Ma0043276	CP	%	78				30-130	Pass	
2,4,6-Trichlorophenol	M23-Ma0043276	CP	%	56				30-130	Pass	
2,6-Dichlorophenol	M23-Ma0043276	CP	%	75				30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M23-Ma0043276	CP	%	75				30-130	Pass	
4-Chloro-3-methylphenol	M23-Ma0043276	CP	%	55				30-130	Pass	
4-Nitrophenol	M23-Ma0043276	CP	%	66				30-130	Pass	
Hexachlorobenzene	M23-Ma0043276	CP	%	86				70-130	Pass	
Pentachlorophenol	M23-Ma0043276	CP	%	42				30-130	Pass	
Phenol	M23-Ma0043276	CP	%	33				30-130	Pass	
Spike - % Recovery										
Heavy Metals					Result 1					
Antimony	M23-Ma0043276	CP	%	86				75-125	Pass	
Antimony (filtered)	M23-Ma0043276	CP	%	84				75-125	Pass	
Arsenic (filtered)	M23-Ma0043276	CP	%	85				75-125	Pass	
Barium	M23-Ma0043276	CP	%	90				75-125	Pass	
Barium (filtered)	M23-Ma0043276	CP	%	90				75-125	Pass	
Beryllium	M23-Ma0043276	CP	%	82				75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Beryllium (filtered)	M23-Ma0043276	CP	%	96			75-125	Pass	
Cadmium	M23-Ma0043276	CP	%	88			75-125	Pass	
Cadmium (filtered)	M23-Ma0043276	CP	%	85			75-125	Pass	
Chromium (filtered)	M23-Ma0043276	CP	%	96			75-125	Pass	
Cobalt	M23-Ma0043276	CP	%	96			75-125	Pass	
Cobalt (filtered)	M23-Ma0043276	CP	%	93			75-125	Pass	
Copper	M23-Ma0043276	CP	%	89			75-125	Pass	
Copper (filtered)	M23-Ma0043276	CP	%	85			75-125	Pass	
Iron	M23-Ma0043276	CP	%	86			75-125	Pass	
Lead	M23-Ma0043276	CP	%	82			75-125	Pass	
Lead (filtered)	M23-Ma0043276	CP	%	81			75-125	Pass	
Manganese	M23-Ma0043276	CP	%	88			75-125	Pass	
Manganese (filtered)	M23-Ma0043276	CP	%	87			75-125	Pass	
Mercury	M23-Ma0043276	CP	%	96			75-125	Pass	
Mercury (filtered)	M23-Ma0043276	CP	%	101			75-125	Pass	
Nickel	M23-Ma0043276	CP	%	97			75-125	Pass	
Nickel (filtered)	M23-Ma0043276	CP	%	94			75-125	Pass	
Selenium	M23-Ma0043276	CP	%	78			75-125	Pass	
Selenium (filtered)	M23-Ma0043276	CP	%	91			75-125	Pass	
Silver	M23-Ma0043276	CP	%	83			75-125	Pass	
Titanium	M23-Ma0043276	CP	%	86			75-125	Pass	
Titanium (filtered)	M23-Ma0043276	CP	%	86			75-125	Pass	
Vanadium	M23-Ma0043276	CP	%	89			75-125	Pass	
Vanadium (filtered)	M23-Ma0043276	CP	%	86			75-125	Pass	
Zinc	M23-Ma0043276	CP	%	86			75-125	Pass	
Zinc (filtered)	M23-Ma0043276	CP	%	83			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	M23-Ma0043276	CP	%	115			75-125	Pass	
Magnesium	M23-Ma0043276	CP	%	103			75-125	Pass	
Potassium	M23-Ma0043276	CP	%	94			75-125	Pass	
Sodium	M23-Ma0043276	CP	%	104			75-125	Pass	
Spike - % Recovery									
				Result 1					
Total Kjeldahl Nitrogen (as N)	M23-Ma0043280	CP	%	87			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	M23-Ma0043285	CP	%	91			75-125	Pass	
Magnesium	M23-Ma0043285	CP	%	92			75-125	Pass	
Potassium	M23-Ma0043285	CP	%	89			75-125	Pass	
Sodium	M23-Ma0043285	CP	%	91			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony (filtered)	M23-Ma0043286	CP	%	92			75-125	Pass	
Arsenic (filtered)	M23-Ma0043286	CP	%	92			75-125	Pass	
Barium (filtered)	M23-Ma0043286	CP	%	86			75-125	Pass	
Beryllium (filtered)	M23-Ma0043286	CP	%	92			75-125	Pass	
Cadmium (filtered)	M23-Ma0043286	CP	%	91			75-125	Pass	
Chromium (filtered)	M23-Ma0043286	CP	%	106			75-125	Pass	
Cobalt (filtered)	M23-Ma0043286	CP	%	101			75-125	Pass	
Copper (filtered)	M23-Ma0043286	CP	%	95			75-125	Pass	
Iron	M23-Ma0043286	CP	%	88			75-125	Pass	
Lead (filtered)	M23-Ma0043286	CP	%	92			75-125	Pass	
Manganese (filtered)	M23-Ma0043286	CP	%	84			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury (filtered)	M23-Ma0043286	CP	%	109			75-125	Pass	
Nickel (filtered)	M23-Ma0043286	CP	%	98			75-125	Pass	
Selenium (filtered)	M23-Ma0043286	CP	%	85			75-125	Pass	
Silver (filtered)	M23-Ma0043286	CP	%	92			75-125	Pass	
Titanium (filtered)	M23-Ma0043286	CP	%	81			75-125	Pass	
Vanadium (filtered)	M23-Ma0043286	CP	%	90			75-125	Pass	
Zinc (filtered)	M23-Ma0043286	CP	%	89			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M23-Ma0053808	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	M23-Ma0053808	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	M23-Ma0053688	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M23-Ma0053808	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	M23-Ma0053808	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	M23-Ma0053808	NCP	mg/L	0.001	0.001	27	30%	Pass	
Chloroethane	M23-Ma0053808	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	M23-Ma0053808	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
cis-1.2-Dichloroethene	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	M23-Ma0053808	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Ethylbenzene	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iodomethane	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	M23-Ma0053808	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	M23-Ma0053808	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vinyl chloride	M23-Ma0053808	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Xylenes - Total*	M23-Ma0053808	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate								
				Result 1	Result 2	RPD		
Chemical Oxygen Demand (COD)	M23-Ma0040254	NCP	mg/L	35	30	17	30%	Pass
Total Organic Carbon	M23-Ma0043276	CP	mg/L	44	40	9.0	30%	Pass
Turbidity	M23-Ma0046238	NCP	NTU	< 1	< 1	<1	30%	Pass
Hardness mg equivalent CaCO ₃ /L	S23-Ma0042894	NCP	mg/L	300	310	3.1	30%	Pass
Duplicate								
Alkalinity (speciated)				Result 1	Result 2	RPD		
Bicarbonate Alkalinity (as CaCO ₃)	M23-Ma0046069	NCP	mg/L	300	290	1.6	30%	Pass
Carbonate Alkalinity (as CaCO ₃)	M23-Ma0046069	NCP	mg/L	< 10	< 10	<1	30%	Pass
Hydroxide Alkalinity (as CaCO ₃)	M23-Ma0046069	NCP	mg/L	< 20	< 20	<1	30%	Pass
Total Alkalinity (as CaCO ₃)	M23-Ma0046069	NCP	mg/L	300	290	1.6	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Antimony	M23-Ma0043276	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Antimony (filtered)	M23-Ma0043276	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Arsenic (filtered)	M23-Ma0043276	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Barium	M23-Ma0043276	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Barium (filtered)	M23-Ma0043276	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Beryllium	M23-Ma0043276	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Beryllium (filtered)	M23-Ma0043276	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium	M23-Ma0043276	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Cadmium (filtered)	M23-Ma0043276	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	M23-Ma0043276	CP	mg/L	0.001	0.001	3.2	30%	Pass
Cobalt	M23-Ma0043276	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cobalt (filtered)	M23-Ma0043276	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	M23-Ma0043276	CP	mg/L	0.003	0.003	2.0	30%	Pass
Copper (filtered)	M23-Ma0043276	CP	mg/L	0.002	0.002	5.3	30%	Pass
Iron	M23-Ma0043276	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Lead	M23-Ma0043276	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead (filtered)	M23-Ma0043276	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese	M23-Ma0043276	CP	mg/L	0.033	0.031	4.3	30%	Pass
Manganese (filtered)	M23-Ma0043276	CP	mg/L	0.028	0.027	<1	30%	Pass
Mercury	M23-Ma0043276	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Mercury (filtered)	M23-Ma0043276	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	M23-Ma0043276	CP	mg/L	0.003	0.003	3.7	30%	Pass
Nickel (filtered)	M23-Ma0043276	CP	mg/L	0.003	0.002	13	30%	Pass
Selenium	M23-Ma0043276	CP	mg/L	0.004	0.002	74	30%	Fail
Selenium (filtered)	M23-Ma0043276	CP	mg/L	0.001	0.001	7.4	30%	Pass
Silver	M23-Ma0043276	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Silver (filtered)	M23-Ma0043276	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Titanium	M23-Ma0043276	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Titanium (filtered)	M23-Ma0043276	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Vanadium	M23-Ma0043276	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Vanadium (filtered)	M23-Ma0043276	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Zinc	M23-Ma0043276	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Zinc (filtered)	M23-Ma0043276	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	M23-Ma0043276	CP	mg/L	250	250	1.5	30%	Pass
Magnesium	M23-Ma0043276	CP	mg/L	110	110	1.9	30%	Pass
Potassium	M23-Ma0043276	CP	mg/L	13	13	<1	30%	Pass
Sodium	M23-Ma0043276	CP	mg/L	570	550	3.1	30%	Pass

Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C10-C14	M23-Ma0043277	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH C15-C28	M23-Ma0043277	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH C29-C36	M23-Ma0043277	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH >C10-C16	M23-Ma0043277	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH >C16-C34	M23-Ma0043277	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH >C34-C40	M23-Ma0043277	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	M23-Ma0043277	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1221	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1232	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1242	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1248	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1254	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1260	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Total PCB*	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Semivolatile Organics				Result 1	Result 2	RPD		
2-Methyl-4,6-dinitrophenol	M23-Ma0043277	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass
1-Chloronaphthalene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1-Naphthylamine	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2-Dichlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2,3-Trichlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2,3,4-Tetrachlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2,3,5-Tetrachlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2,4-Trichlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2,4,5-Tetrachlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,3-Dichlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,3,5-Trichlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,4-Dichlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2-Chloronaphthalene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2-Chlorophenol	M23-Ma0043277	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2-Methylnaphthalene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2-Methylphenol (o-Cresol)	M23-Ma0043277	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2-Naphthylamine	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2-Nitroaniline	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass

Duplicate								
Semivolatile Organics				Result 1	Result 2	RPD		
2-Nitrophenol	M23-Ma0043277	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2-Picoline	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2,3,4,6-Tetrachlorophenol	M23-Ma0043277	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,4-Dichlorophenol	M23-Ma0043277	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4-Dimethylphenol	M23-Ma0043277	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4-Dinitrophenol	M23-Ma0043277	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass
2,4-Dinitrotoluene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2,4,5-Trichlorophenol	M23-Ma0043277	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,4,6-Trichlorophenol	M23-Ma0043277	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,6-Dichlorophenol	M23-Ma0043277	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,6-Dinitrotoluene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M23-Ma0043277	CP	mg/L	< 0.006	< 0.006	<1	30%	Pass
3-Methylcholanthrene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
3,3'-Dichlorobenzidine	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
4-Aminobiphenyl	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
4-Chloro-3-methylphenol	M23-Ma0043277	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
4-Nitrophenol	M23-Ma0043277	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass
4,4'-DDD	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
4,4'-DDE	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
4,4'-DDT	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
7,12-Dimethylbenz(a)anthracene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
a-HCH	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Acetophenone	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aldrin	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aniline	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
b-HCH	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Benzyl chloride	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Bis(2-ethylhexyl)phthalate	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Butyl benzyl phthalate	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
d-HCH	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Di-n-butyl phthalate	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Di-n-octyl phthalate	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Dibenz(a,j)acridine	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Dibenzofuran	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Dieldrin	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Diethyl phthalate	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Dimethyl phthalate	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Dimethylaminoazobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Diphenylamine	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endosulfan I	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endosulfan II	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endosulfan sulphate	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endrin	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endrin aldehyde	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endrin ketone	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
g-HCH (Lindane)	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Heptachlor	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Heptachlor epoxide	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Hexachlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Hexachlorobutadiene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Hexachlorocyclopentadiene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Hexachloroethane	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Methoxychlor	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
N-Nitrosodibutylamine	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass

Duplicate								
Semivolatile Organics				Result 1	Result 2	RPD		
N-Nitrosodipropylamine	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
N-Nitrosopiperidine	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Nitrobenzene	M23-Ma0043277	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Pentachlorobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Pentachloronitrobenzene	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Pentachlorophenol	M23-Ma0043277	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Phenol	M23-Ma0043277	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Pronamide	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Trifluralin	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Haloethers				Result 1	Result 2	RPD		
4-Bromophenyl phenyl ether	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
4-Chlorophenyl phenyl ether	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Bis(2-chloroethoxy)methane	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Bis(2-chloroisopropyl)ether	M23-Ma0043277	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Total Organic Carbon	M23-Ma0043277	CP	mg/L	75	63	18	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Total Kjeldahl Nitrogen (as N)	M23-Ma0043279	CP	mg/L	1.9	0.3	20	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Biochemical Oxygen Demand (BOD-5 Day)	M23-Ma0043283	CP	mg/L	7.8	< 5	<1	30%	Pass
Chloride	M23-Ma0043283	CP	mg/L	640	650	1.9	30%	Pass
Sulphate (as SO4)	M23-Ma0043283	CP	mg/L	680	640	5.4	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chloride	M23-Ma0043284	CP	mg/L	1000	1000	1.2	30%	Pass
Ferrous Iron - Fe2+	M23-Ma0043284	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Sulphate (as SO4)	M23-Ma0043284	CP	mg/L	2800	2800	1.2	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ferrous Iron - Fe2+	M23-Ma0043285	CP	mg/L	< 0.05	0.05	12	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	M23-Ma0043285	CP	mg/L	250	250	<1	30%	Pass
Magnesium	M23-Ma0043285	CP	mg/L	120	120	1.0	30%	Pass
Potassium	M23-Ma0043285	CP	mg/L	12	12	1.1	30%	Pass
Sodium	M23-Ma0043285	CP	mg/L	550	550	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M23-Ma0043286	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Antimony (filtered)	M23-Ma0043286	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Arsenic (filtered)	M23-Ma0043286	CP	mg/L	0.004	0.005	12	30%	Pass
Barium (filtered)	M23-Ma0043286	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Beryllium (filtered)	M23-Ma0043286	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium (filtered)	M23-Ma0043286	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	M23-Ma0043286	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cobalt (filtered)	M23-Ma0043286	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	M23-Ma0043286	CP	mg/L	0.002	0.002	6.8	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Iron	M23-Ma0043286	CP	mg/L	0.06	0.06	3.0	30%	Pass
Lead (filtered)	M23-Ma0043286	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese (filtered)	M23-Ma0043286	CP	mg/L	0.041	0.043	4.8	30%	Pass
Mercury (filtered)	M23-Ma0043286	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	M23-Ma0043286	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Selenium (filtered)	M23-Ma0043286	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Silver (filtered)	M23-Ma0043286	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Titanium (filtered)	M23-Ma0043286	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Vanadium (filtered)	M23-Ma0043286	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Zinc (filtered)	M23-Ma0043286	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M23-Ma0043287	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Biochemical Oxygen Demand (BOD-5 Day)	M23-Ma0043289	CP	mg/L	< 5	< 5	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	N/A
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
I12	Where sampling date has not been provided, Eurofins Environment Testing is not able to determine whether analysis has been performed within recommended holding times.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Catherine Wilson	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Emily Rosenberg	Senior Analyst-Metal
Joseph Edouard	Senior Analyst-Organic
Joseph Edouard	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Metal
Mele Singh	Senior Analyst-Volatile
Scott Beddoes	Senior Analyst-Inorganic



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 1 of 1

ENVIROLAB
SERVICES

A DIVISION OF Envirolab Group

ENVIROLAB
LABORATORY

Company Name : Tierra Environment	Contact Name : Daryl Burrows	Purchase Order : NA	COC Number : T1888
Office Address :	Project Manager : Daryl Burrows	Project Number : AAQ 06 023.25	QUOTE ID : 18SA026v2
	Email for results : general@tierra.com.au	Project Name : Alice Springs Landfill	Esdat

Special Directions & Comments :

*Metals to consist of Sb, As, Ba, Be, Cd,
Cr, Cr3+, Co, Cu, Pb, Mn, Hg, Ni, Se, Ag, Tl, V, Zn

Analytes

Laboratory Address

Envirolab - Melbourne

25 Research Drive, Croydon South, VIC 3136

Phone: 03 9763 2500

Fax: 03 9763 2633

Email: adelalade@envirolab.com.au

	Sample ID	Date	Matrix	Met											Containers							Sample Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Relinquished By: Daryl Burrows		Received By: ELS Melb		Turn around Time		Method Of Shipment	
Date & Time : 13/3/23 2pm	Date & Time :	Date & Time : 17/3/23 12:10pm	Date & Time :	24 Hrs	48 Hrs	☐ Courier	
Signature: <i>[Signature]</i>	Signature:	Signature: AP	Signature:	☐ 5 Days	☐ 10 Days	☒ Hand Delivered	
Report Number :	Report Number :	Report Number : 36333	Report Number :				
For samples which require transportation between internal laboratories		Departing Matthew		Date & Time 17/3/23		Upon Receipt	
		Signature <i>[Signature]</i>		Temperature 8am		Date & Time	
						Temperature	

Envirolab Services
25 Research Drive
Croydon South VIC 3136
Ph: (03) 9763 2500

Job No: **36333**
Date Received: **17/3/23**
Time Received: **12:10pm**
Received By: **AP**
Temp: **Cool Ambient**
Cooling: **Icepack**
Security: **Intact/Broken/None**

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CERTIFICATE OF ANALYSIS 36333

Client Details

Client	Tierra Environment
Attention	Daryl Burrows
Address	31 Hauteville Tce, EASTWOOD, SA, 5062

Sample Details

Your Reference	<u>AAQ 06 023.05 Alice Springs Landfill</u>
Number of Samples	1 Water
Date samples received	17/03/2023
Date completed instructions received	17/03/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	24/03/2023
Date of Issue	24/03/2023
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Jessica Vimpany, Chemist
Tara White, Metals Team Leader

Authorised By



Pamela Adams, Laboratory Manager

HM in water - dissolved		
Our Reference		36333-1
Your Reference	UNITS	MW2-Y
Date Sampled		12/03/2023
Type of sample		Water
Date prepared	-	20/03/2023
Date analysed	-	20/03/2023
Antimony-Dissolved	µg/L	<1
Arsenic-Dissolved	µg/L	<1
Barium-Dissolved	µg/L	14
Beryllium-Dissolved	µg/L	<0.5
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	1
Cobalt-Dissolved	µg/L	4
Copper-Dissolved	µg/L	23
Lead-Dissolved	µg/L	<1
Manganese-Dissolved	µg/L	120
Mercury-Dissolved	µg/L	0.2
Nickel-Dissolved	µg/L	18
Selenium-Dissolved	µg/L	<1
Silver-Dissolved	µg/L	<1
Titanium-Dissolved	µg/L	<1
Vanadium-Dissolved	µg/L	5
Zinc-Dissolved	µg/L	6
Trivalent Chromium, Cr ³⁺	mg/L	<0.005

Miscellaneous Inorganics		
Our Reference	UNITS	36333-1
Your Reference		MW2-Y
Date Sampled		12/03/2023
Type of sample		Water
Date prepared	-	21/03/2023
Date analysed	-	21/03/2023
Hexavalent Chromium, Cr ⁶⁺	mg/L	<0.005

Method ID	Methodology Summary
Inorg-024	Hexavalent Chromium (Cr6+) - determined colourimetrically by discrete analyser. Water samples are filtered on receipt prior to analysis.
INORG-118	Hexavalent Chromium by Ion Chromatographic separation and colourimetric determination.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Metals-022 ICP-MS	Determination of various metals by ICP-MS.

Client Reference: AAQ 06 023.05 Alice Springs Landfill

QUALITY CONTROL: HM in water - dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			20/03/2023	[NT]	[NT]	[NT]	[NT]	20/03/2023	[NT]
Date analysed	-			20/03/2023	[NT]	[NT]	[NT]	[NT]	20/03/2023	[NT]
Antimony-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Barium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Beryllium-Dissolved	µg/L	0.5	Metals-022 ICP-MS	<0.5	[NT]	[NT]	[NT]	[NT]	105	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022 ICP-MS	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Chromium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Cobalt-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Copper-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Lead-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Manganese-Dissolved	µg/L	5	Metals-022 ICP-MS	<5	[NT]	[NT]	[NT]	[NT]	110	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021 CV-AAS	<0.05	[NT]	[NT]	[NT]	[NT]	106	[NT]
Nickel-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Selenium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Silver-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Titanium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Vanadium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Zinc-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]

Client Reference: AAQ 06 023.05 Alice Springs Landfill

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			21/03/2023	[NT]	[NT]	[NT]	[NT]	21/03/2023	[NT]
Date analysed	-			21/03/2023	[NT]	[NT]	[NT]	[NT]	21/03/2023	[NT]
Hexavalent Chromium, Cr ⁶⁺	mg/L	0.005	INORG-118	<0.005	[NT]	[NT]	[NT]	[NT]	100	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.