ANNUAL ENVIRONMENTAL MANAGEMENT REPORT 2019-2021

Whytes Gully Landfill Extension Project

For The NSW Department of Planning, Infrastructure and Environment

Wollongong City Council
Waste Services

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Document Information

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Wollongong Waste and Resource Recovery Park (Whytes Gully)

Annual Environmental Management Review 2019-2021

1 Introduction

1.1 Background

WOLLONGONG City Council (the Council) own and operate the Wollongong Waste and Resource Recovery Park (Whytes Gully) located at the base of the Illawarra Escarpment on Reddalls Road, Kembla Grange New South Wales (NSW) (Figure 1 and 2). The facility is licensed by the NSW Environmental Protection Agency (EPA) under the *Protection of the Environment operations Act 1997 (*POEO Act), Environmental Protection License (EPL) number 5862 (EPL 5862).

In addition to this, as part of the proposed expansion of the facility which included the construction of new landfill cells and leachate ponds under *Section 75J* of the *Environmental Planning and Assessment Act 1979*, Project Approval (Approval No.11-0094) was granted by the Minister for Planning and Infrastructure on 3 April 2013. The approval was subject to conditions stipulated in Schedules 2-5, which, among other things, requires an Annual Environmental Management Review (AEMR) report to be prepared on an annual basis detailing the following:

(a) Operations that were carried out in the past calendar year;
(b) Monitoring results and complaint records of the project over the past year, which includes a comparison of these results against the:
    a. Relevant statutory requirements, limits or performance measures/criteria;
    b. Monitoring results of previous years; and
    c. Relevant predictions in the Environmental Assessment (EA)
(c) Details of any non-compliance over the last year, and description of what actions were (or are being) taken to ensure compliance;
(d) Trends in the monitoring data over the life of the project; and
(e) Actions proposed to be implemented over the following year to improve the environmental performance of the project (including a timeline for completion of each action).

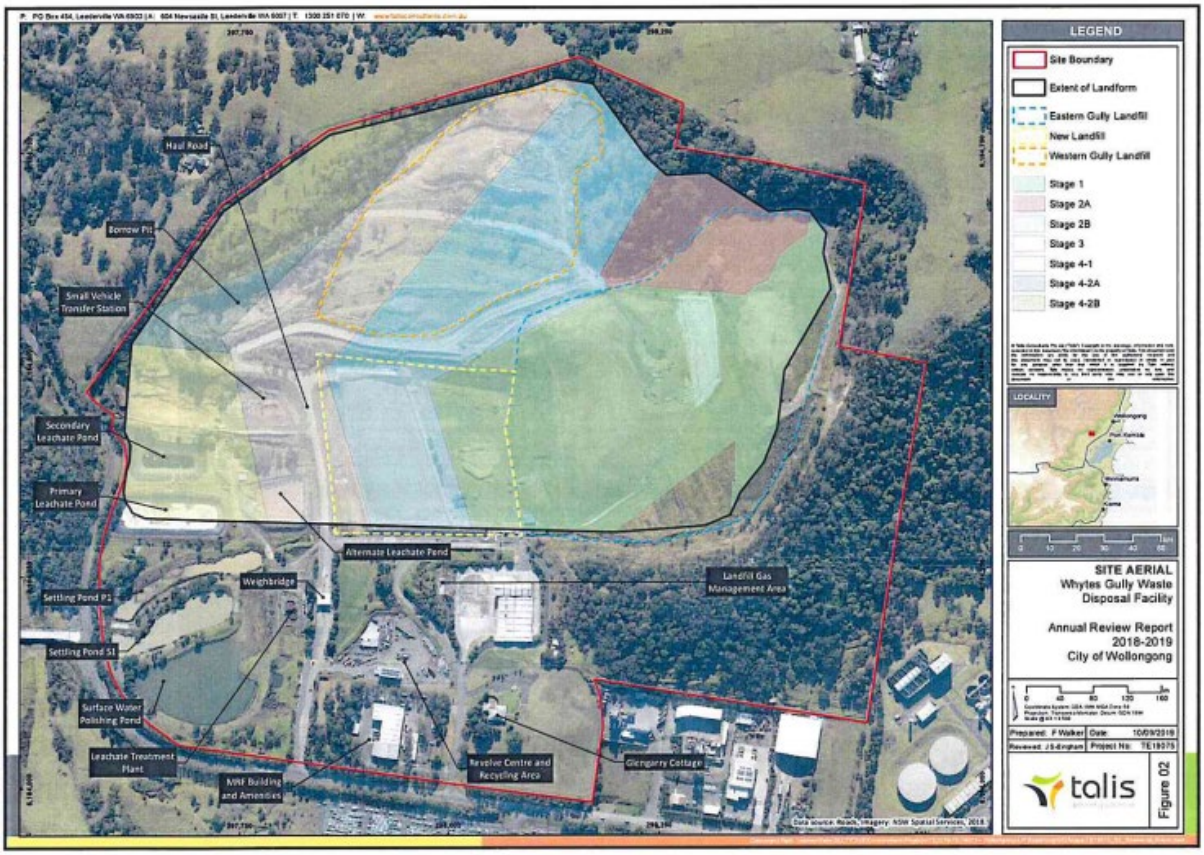
In addition to the above, item (f) states that the Council is required to publish the report on the Council's website within two weeks of its completion.

Two modifications to Project Approval No.11_0094 were also submitted and approved for the new landfill cell, these include:

- Modification 1 (MP 11_0994 MOD1): Modification of operating hours. Approved on 11 April 2018; and
- Modification 2 (MP11_0094 MOD 2): Modification of eastern gully drainage channel alignment to be predominantly outside the landfill footprint. Approved on 29 May 2018.

Figure 1 Locality Plan

Figure 2 Site Aerial Photograph



1.2 Objectives

The objectives of this AEMR report is to satisfy the Council's Project approval obligations for the 2019-2020 and 2020-2021 annual reporting periods, which will cover 2 March 2019 to 1 March 2021. The compiled monitoring data presented in this AEMR report addresses all aspects stipulated in Section 1.1 (items (a) through to (e)).

The COVID Pandemic in 2020 disrupted normal operations at Wollongong City Council and Waste Services (including Whytes Gully) for a significant part of the year. As a result, the Annual AEMR for this period was not able to be completed in the timeframe. However, during this reporting period the Independent Environmental Audit (IEA) for Whytes Gully was required to be undertaken. This was completed and submitted in November 2020 and was officially accepted by the Department on the 15th January 2021.

This AEMR report will cover two reporting periods from 2019 to 2021.

1.3 Purpose of this Report

The purpose of this Annual Review is to provide the DPIE with a report of the site's environmental performance over the past two years, actions taken in relation to environmental control and compliance with Development Consent Project Approval MP11_0094, and two modifications to this consent (MP11_0094 MOD 1 and MP11_0094 MOD 2). Condition 5 of Schedule 5 of the Project Approval outlines the requirement for WCC to prepare an annual report.

Table 1.1 outlines the content included in this report to address the requirements of Condition 5 of Schedule 5 of the Project Approval.

Table1.1 Condition 5 of Schedule 5 requirements and annual review section.

Condition	Requirement	Annual Review Section/Response
5	One year after the commencement of operation, and annually thereafter, the Proponent shall review the environmental performance to the satisfaction of the Director-General. This review must:	This document has been prepared in response to the requirements of Schedule 5, Condition 5. The report covers the two reporting periods between the 2nd March 2019 to 1st March 2021.
(a)	Describe the operations that were carried out in the past year;	See Section 2
(b)	Analyse the monitoring results and complaints records over the past year, which includes a comparison of these results against the: • Relevant statutory requirements, limits or performance measures/criteria • Monitoring results of the previous years • Relevant predictions in the Environmental Assessment	See Section 3 for monitoring results, analysis and comparison against relevant criteria. See Section 4 for complaints results, analysis and comparison against relevant criteria.

Condition	Requirement	Annual Review Section/Response
(c)	Identify any non-compliance over the last year and describe what actions were (or are being) taken to ensure compliance;	See Section 5.
(d)	Identify any trends in the monitoring data over the life of the project;	See Section 3 for environmental components. See Section 4 for complaints.
(e)	Describe what actions will be implemented over the next year to improve the environmental performance of the project (including a timeline for completion of each action); and	See Section 5.
(f)	Be placed on Council's website within 2 weeks of completion.	This Report will be submitted to the Department of Planning and will be made available to the public via WCC's website.

1.4 Consideration of Compliance

1.4.1 Assessment of Compliance

Consideration of site compliance with the Project Approval and modifications is provided in Appendix A of this document. Consideration of site compliance with the Landfill and Construction Environmental Plans and associated subplans is provided in Appendix B of this document.

This Annual Environmental Management Review identifies the relevant environmental monitoring environment requirements as identified in the EPL licence, Trade Waste Agreement and management programs and plans. A discussion of requirements and results is provided in Section 3.

The compliance status of each requirement or commitment was determined according to the definitions in the Compliance Reporting: *Post Approval Requirements (DPIE-May 2020).* A summary of non-compliances for the reviewed conditions (including the findings from the recent Independent Environmental Audit (November 2020)) are provided in Section 5.

1.4.2 Independent Environmental Audit (IEA)

The second Independent Environmental Audit was undertaken during this reporting period. The audit period spanned from the 11th September 2017 to the 23rd October 2020. The relevant findings will be summarised within this report.

The IEA process was based on the *Independent Audit: Post Approval Requirements (DPIE-May 2020)* and assessed compliance with relevant approvals, licenses, and implementation of environmental management plans applicable to the project. The IEA process was constrained by COVID 19 and was undertaken finally between July and October 2020 when site visits could be completed. The final report was approved by DPIE in February 2021.

1.4.3 Non-compliance

30 non-compliances were recorded during the reporting period. These were reported in accordance with DPIE and EPA requirements. Of these, there was one potentially significant environmental incident that influenced these results. In early 2020, the Whytes Gully Landfill site received 336.5

mm of consistent, heavy rainfall over a period of 4 days. From 12 am to 11 pm on the 9th February 2020, 156.5 mm fell on the site resulting in leachate seepage and stormwater overflow.

The Pollution Incident Response Management Plan (PIRMP) was activated in a timely manner and mitigation measures were put in place and reported to DPIE, as well as in the IEA. Correspondence was received from the EPA regarding the incident and the following preventative and mitigation works were undertaken in response to the incident:

1. complete a preliminary review of the existing stormwater management system;

2. prepare a comprehensive water balance assessment;

3. conduct an independent assessment of the revised stormwater management system; and

4. vary a stormwater monitoring location point on the licence.

In addition, the following actions raised during the Independent Audit have commenced.

Action required	**Due by**
Schedule 3 Condition 2 Landfill Environmental Management Plan. The body of the main document of the Landfill Environmental Management Plan to be updated .	28 March 2022
Schedule 4 Condition 14 & Condition 15 Soil, Water and Leachate Management Plan. Develop a Stormwater Management Plan	30 September 2021.
Schedule 4 Condition 17 Soil, Water and Leachate Management Plan. Develop a Leachate Management Plan.	30 September 2021
Schedule 4 Condition 18 Soil, Water and Leachate Management Plan. Finalise the entire plan (including soil/stockpile management) .	30 November 2021
Schedule 4 Condition 24 Air Quality Management Plan. Dust Management Plan and review of dust monitoring requirements at Whytes Gully.	30 August 2021

2 General Facility Operations

During the reporting period 2019-2021, the facility operated as per '*normal',* in accordance with EPL 5862 and Project approval No. 11_ 0094. The operating hours were Monday – Friday 0730 to 1630, and Saturday, Sunday and public holidays (0800 to 1600). Details pertaining to the waste streams and volumes received are provided in Section 6.

The Facility continued to operate throughout the COVID 19 Pandemic with appropriate safety measures and reduced staffing. This proved challenging at times, however operations managed to continue safely during this period.

The different areas of operations undertaken in this reporting period are outlined below:

- Weighbridge and gatehouse
- Community Recycling Centre
- Small Vehicle Transfer Station
- Filling of cell 1B with waste
- Leachate and stormwater management and associated monitoring area
- Monitoring Areas – landfill gas, groundwater and air quality
- Green Waste Transfer Area
- Landfill gas flare
- Installation of landfill gas collection infrastructure
- Stockpiling areas
- Water management
- Environmental controls
- Weed Control and Revegetation works

During this reporting period, the first lift in the new cell was completed in October 2020. This was fully surveyed prior to commencement of the second lift which is currently underway. Overfilling in the south west corner of Lift 1 was also corrected in September 2020 and filling plans updated to correct the error in northern section.

Further construction works in this time included:

- Cascade Drain Concrete Lining
  Construction Dates: January 2020 – July 2020
- Southern Batter Slope Shotcreting
  Construction Dates: January 2020 – July 2020
- New leachate Pond Groundwater Interception Trench
  Construction Dates: September 2020 – November 2020

Also, during this period Wollongong City Council introduced their Food Organics Garden Organics (FOGO) Program in November 2020.

3 Water Monitoring – Surface Water

Surface water (stormwater) monitoring was completed in order satisfy Approval No.11_ 0094 Schedule 4, conditions pertaining to 'Soil and Water'. The findings for the 2019-2021 reporting period are provided in the sections below.

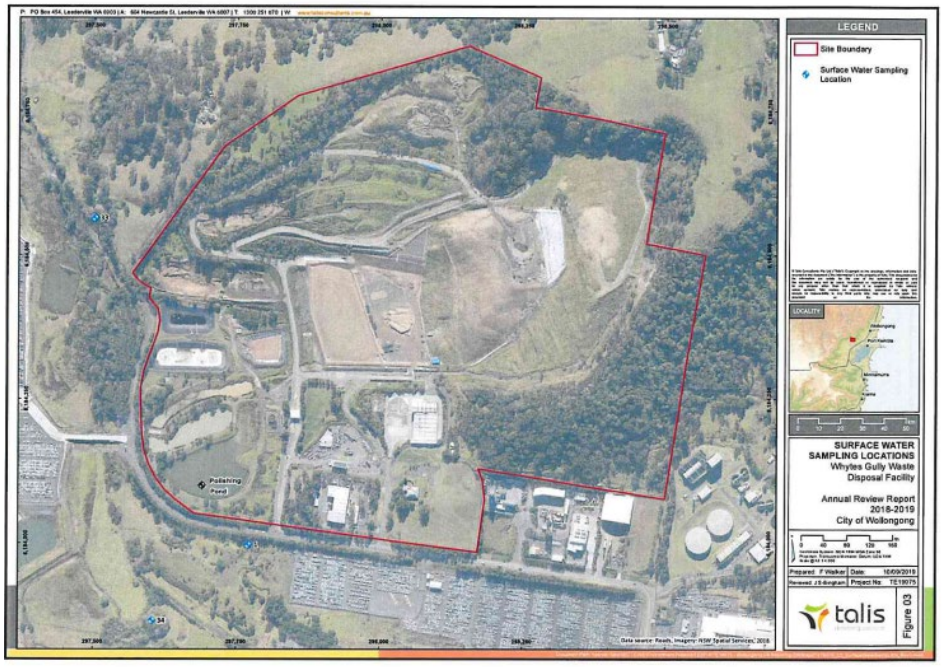
3.1 Overview

Surface water monitoring was undertaken by ALS Environmental, with the monitoring locations shown in Figure 3. A summary of the monitoring requirements are detailed in Table 3-1 below:

Table 3-1: Surface Water Monitoring

Activity	Description		
Purpose	Detect excess sediment loads in stormwater leaving the site and/or potential cross contamination of stormwater with landfill leachate.		
Frequency	**Surface Water Monitoring Points**: Following an overflow event (9th February 2020), water sampling was undertaken daily until the end of the reporting period in accordance with EPL 5862; and **Polishing Pond**: During controlled release.		
Location	Sampling locations were those listed in EPL 5862, and included the following: • Monitoring Point 1 – outlet at Reddalls Road • Monitoring Point 33 – Downstream monitoring point; and • Monitoring Point 34 – Upstream Monitoring point In addition, the 'Polishing Pond' is monitored by Council during any controlled release event or overflow.		
Methodology	Samples were collected using a 'scoop'; and Field parameters were recorded using a calibrated water quality meter. Table 3-2 : Surface Water Quality Parameters (Point 1, 33 and 34)		
Analytes/Field Parameters	Annually		
	Alkalinity	Calcium	Conductivity (EC)
	Filterable Iron	Magnesium	pH
	Sodium	Temperature	Total phenolics
	Ammonia	Chloride	Dissolved Oxygen
	Fluoride	Nitrate	Potassium
	Sulfate	Total Organic Carbon	Total Suspended Solids
	In addition, the 'Polishing Pond' was subject to analysis for pH and turbidity to ensure the water is suitable for release.		

Figure 3 Surface Water Sampling



3.2 Performance Criteria

The performance criteria for surface water monitoring is detailed in the table below:

Table 3.2 Surface Water Performance Criteria

Description	Performance Criteria	Reference Document
Stormwater Discharge	No discharge of contaminated stormwater to water under dry weather conditions (*less than 10 mm of rainfall within a 24 hour period).*	EPL 5862
	No discharge of contaminated stormwater to water during a storm event of less than 1:10 year, 24 hour recurrence interval *(less than 297.4 mm of rain within 24 hours*).	
	pH: 6.5 – 8.5 Turbidity: 40 NTU	
Monitoring Point 1	pH: 6.5 to 8.5 TSS: 50 mg/L	Section 3 (I2) of EPL 5862

In addition to the above, Section 7.4 of the Draft LEMP (Golder 2020) states that all surface water results are to be assessed against the Australian and New Zealand and Australian State and Territory Governments (ANZAST) *Guidelines for Fresh & Marine Water Quality, 2018 (ANZAST 2018*).

3.3 Results- Monitoring Points 1, 33 and 34

Surface water was monitored during various stormwater events and annually during this period. In total, there were 97 overflow events with 30 constituting non-compliances based on the license constraints for pH and TSS stemming from the February 2020 incident. It is significant to note that the prolonged drought period in the region was officially broken during this reporting period.

The full set of tabulated surface water results are provided in Appendix A, with a summary of the key results presented in the sections below.

3.3.1 pH and Total Suspended Solids (TSS)

pH remained relatively stable at Point 1 during the first half of the two-year reporting period averaging just over 7. However, after the early February 2020 storm event, values fell generally below 7 with a non-compliant result of 6.3 on the 8th March 2020. The rest of the period is characterised by fluctuating levels of pH as the water column remained unstable.

On 29 occasions at Point 1, TSS values were recorded over 50 mg/L. This was firstly in the early February rainfall event in 2020, then during scattered storm events with continuous heavy downpours from May to August 2020.

Upstream and downstream results were influenced by rainfall events in this reporting period. On the 9th February 2020, downstream Point 33 had a recording of 489 mg/L TSS and on the 31st October 2020 a recording of 539 mg/L TSS. pH fluctuated between 6.3 on 20th February 2020 and 7.9 on 9th February 2020.

At Point 33, an upstream recording 141 mg/L TSS occurred on 10th February 2020. pH fluctuated after the February 2020 rainfall event with levels as low as 5.9 recorded on the 3rd March 2020 to 7.9 on the 8th August 2020.

Table 3.3 Surface Water Results

Discharge Point (Monitoring Point 1)

Chemical Name	LOR Lower	LOR Upper	Units	09/02/2020	10/02/2020	11/02/2020	12/02/2020	13/02/2020	14/02/2020	15/02/2020	16/02/2020	17/02/2020	18/02/2020	19/02/2020	20/02/2020	21/02/2020	22/02/2020	23/02/2020
pH	6.5	8.5	pH	7.8	7.3	7.2	7.4	7.5	7.5	7.2	7	7	7.2	7	6.7	6.7	6.8	6.6
Total suspended solids	0	50	mg/L	51	115	118	15	31	79	15	10	30	0	22	22	12	13	19

Chemical Name	LOR Lower	LOR Upper	Units	24/02/2020	25/02/2020	26/02/2020	27/02/2020	28/02/2020	29/02/2020	01/03/2020	02/03/2020	03/03/2020	04/03/2020	05/03/2020	06/03/2020	08/03/2020	09/03/2020	10/03/2020
pH	6.5	8.5	pH	6.5	6.8	7	7.3	7	6.5	6.7	6.6	6.8	6.5	6.8	6.9	6.3	7.3	7.2
Total suspended solids	0	50	mg/L	66	19	34	33	22	33	20	22	19	48	34	12	14	13	18

Chemical Name	LOR Lower	LOR Upper	Units	11/03/2020	12/03/2020	13/03/2020	14/03/2020	15/03/2020	16/03/2020	17/03/2020	18/03/2020	30/03/2020	01/04/2020	02/04/2020	03/04/2020	04/04/2020	05/04/2020	06/04/2020
pH	6.5	8.5	pH	7.2	7.4	7.3	7.2	7.3	7.2	7.3	7.3	6.8	7.6	7.7	7.6	7.3	7	7.1
Total suspended solids	0	50	mg/L	20	29	21	24	8	17	85	103	19	12	8	58	44	38	18

Chemical Name	LOR Lower	LOR Upper	Units	07/04/2020	08/04/2020	09/04/2020	10/04/2020	11/04/2020	12/04/2020	13/04/2020	14/04/2020	01/05/2020	02/05/2020	03/05/2020	04/05/2020	05/05/2020	06/05/2020	07/05/2020
pH	6.5	8.5	pH	6.5	7.2	7.2	6.9	7	6.9	6.8	6.9	7.8	7.8	7.7	7.8	7.2	7.7	7.7
Total suspended solids	0	50	mg/L	56	53	49	43	77	36	45	26	20	23	22	24	35	37	45

Chemical Name	LOR Lower	LOR Upper	Units	08/05/2020	09/05/2020	10/05/2020	27/07/2020	28/07/2020	29/07/2020	30/07/2020	31/07/2020	03/08/2020	04/08/2020	05/08/2020	06/08/2020	07/08/2020	08/08/2020	09/08/2020
pH	6.5	8.5	pH	7.8	7.7	7.5	7.9	7.6	7.6	7.6	7.9	7.8	7.7	8	7.8	7.8	7.8	7.7
Total suspended solids	0	50	mg/L	56	80	89	58	69	48	40	21	55	36	49	21	16	46	70

Chemical Name	LOR Lower	LOR Upper	Units	10/08/2020	11/08/2020	12/08/2020	13/08/2020	24/08/2020	31/10/2020	01/11/2020	02/11/2020	03/11/2020	05/11/2020	06/11/2020	07/11/2020	08/11/2020	09/11/2020	10/11/2020
pH	6.5	8.5	pH	7.7	7.6	7.6	7.3	7.3	7.7	7.6	7.2	7.4	7.5	7.4	7.5	7.5	7.5	7.4
Total suspended solids	0	50	mg/L	99	105	8	86	10	134	134	97	60	15	23	148	57	18	58

Chemical Name	LOR Lower	LOR Upper	Units	11/11/2020	08/01/2021	12/01/2021	22/01/2021	25/01/2021	04/02/2021	15/02/2021
pH	6.5	8.5	pH	7.5	7.4	7.4	7.9	7.7	8	7.5
Total suspended solids	0	50	mg/L	44	12	290	19	26	16	10

Downstream (Monitoring Point 33)

Chemical Name	LOR Lower	LOR Upper	Units	09/02/2020	10/02/2020	11/02/2020	12/02/2020	13/02/2020	14/02/2020	15/02/2020	16/02/2020	17/02/2020	18/02/2020	19/02/2020	20/02/2020	21/02/2020	22/02/2020	23/02/2020
pH	6.5	8.5	pH	7.9	7.2	7.2	7.4	7.7	7.5	7.2	6.9	7.2	7.2	6.7	6.3	6.6	6.6	6.5
Total suspended solids	0	50	mg/L	489	74	0	0	19	7	0	0	38	0	6	0	0	0	0

Chemical Name	LOR Lower	LOR Upper	Units	24/02/2020	25/02/2020	26/02/2020	27/02/2020	28/02/2020	29/02/2020	01/03/2020	02/03/2020	03/03/2020	04/03/2020	05/03/2020	06/03/2020	08/03/2020	09/03/2020	10/03/2020
pH	6.5	8.5	pH	6.5	6.8	7.1	7.1	6.8	6.5	7	6.6	6.4	6.8	7.1	7.2	6.7	7.3	6.8
Total suspended solids	0	50	mg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0

Chemical Name	LOR Lower	LOR Upper	Units	11/03/2020	12/03/2020	13/03/2020	14/03/2020	15/03/2020	16/03/2020	17/03/2020	18/03/2020	30/03/2020	01/04/2020	02/04/2020	03/04/2020	04/04/2020	05/04/2020	06/04/2020
pH	6.5	8.5	pH	7.2	6.9	7.4	7.4	7.5	7.2	7.2	7.1	7	7.3	7.4	7.3	7	7.1	7.1
Total suspended solids	0	50	mg/L	0	8	0	0	0	0	0	0	0	6	0	6	0	6	0

Chemical Name	LOR Lower	LOR Upper	Units	07/04/2020	08/04/2020	09/04/2020	10/04/2020	11/04/2020	12/04/2020	13/04/2020	14/04/2020	01/05/2020	02/05/2020	03/05/2020	04/05/2020	05/05/2020	06/05/2020	07/05/2020
pH	6.5	8.5	pH	6.6	7.1	7.1	6.7	7	7.1	6.8	6.8	7.2	7	7	7	7	7.1	7
Total suspended solids	0	50	mg/L	7	6	0	10	6	7	9	0	0	7	5	12	8	0	10

Chemical Name	LOR Lower	LOR Upper	Units	08/05/2020	09/05/2020	10/05/2020	27/07/2020	28/07/2020	29/07/2020	30/07/2020	31/07/2020	03/08/2020	04/08/2020	05/08/2020	06/08/2020	07/08/2020	08/08/2020	09/08/2020
pH	6.5	8.5	pH	7.2	6.6	6.6	7.4	7.6	7.3	7.3	7.3	7.4	7.5	7.6	7.5	7.8	7.5	7.7
Total suspended solids	0	50	mg/L	8	11	6	38	13	8	0	0	0	5	8	5	0	20	10

Chemical Name	LOR Lower	LOR Upper	Units	10/08/2020	11/08/2020	12/08/2020	13/08/2020	24/08/2020	31/10/2020	01/11/2020	02/11/2020	03/11/2020	05/11/2020	06/11/2020	07/11/2020	08/11/2020	09/11/2020	10/11/2020
pH	6.5	8.5	pH	7.5	7.4	7.7	7.6	7.1	7.4	7.2	7.2	7.4	7.4	7.4	7.4	7.3	7.3	7.4
Total suspended solids	0	50	mg/L	25	9	12	11	0	539	31	14	14	9	0	28	62	9	8

Chemical Name	LOR Lower	LOR Upper	Units	11/11/2020	08/01/2021	12/01/2021	22/01/2021	25/01/2021	04/02/2021	15/02/2021
pH	6.5	8.5	pH	7.5	7.4	7.3	7.3	7.1	7.4	7.5
Total suspended solids	0	50	mg/L	0	0	0	6	0	0	0

Upstream (Monitoring Point 34)

Chemical Name	LOR Lower	LOR Upper	Units	09/02/2020	10/02/2020	11/02/2020	12/02/2020	13/02/2020	14/02/2020	15/02/2020	16/02/2020	17/02/2020	18/02/2020	19/02/2020	20/02/2020	21/02/2020	22/02/2020	23/02/2020
pH	6.5	8.5	pH	7.5	7.1	7.4	7.3	7.2	7.2	7.2	6.9	6.9	7	6.6	6.2	6.7	6.6	6.4
Total suspended solids	0	50	mg/L	38	141	15	12	14	8	5	0	12	0	6	9	0	0	0

Chemical Name	LOR Lower	LOR Upper	Units	24/02/2020	25/02/2020	26/02/2020	27/02/2020	28/02/2020	29/02/2020	01/03/2020	02/03/2020	03/03/2020	04/03/2020	05/03/2020	06/03/2020	08/03/2020	09/03/2020	10/03/2020
pH	6.5	8.5	pH	6.4	6.8	6.9	7	6.7	6.4	6.8	6.4	5.9	6.5	7	7	6.9	7.5	7.1
Total suspended solids	0	50	mg/L	0	5	0	0	0	0	0	0	0	5	6	0	0	0	0

Chemical Name	LOR Lower	LOR Upper	Units	11/03/2020	12/03/2020	13/03/2020	14/03/2020	15/03/2020	16/03/2020	17/03/2020	18/03/2020	30/03/2020	01/04/2020	02/04/2020	03/04/2020	04/04/2020	05/04/2020
pH	6.5	8.5	pH	7.4	7	7.1	7	7.5	7.5	7.4	7.4	6.9	7.7	7.6	7.6	6.6	6.5
Total suspended solids	0	50	mg/L	0	89	0	0	0	0	0	0	0	0	0	0	0	0

Chemical Name	LOR Lower	LOR Upper	Units	06/04/2020	07/04/2020	08/04/2020	09/04/2020	10/04/2020	11/04/2020	12/04/2020	13/04/2020	14/04/2020	01/05/2020	02/05/2020	03/05/2020	04/05/2020	05/05/2020
pH	6.5	8.5	pH	7	6.8	7.4	7.4	6.9	6.6	7	6.8	7	7.2	7.2	7	7.1	7.1
Total suspended solids	0	50	mg/L	0	7	0	0	6	0	6	0	6	0	0	0	0	0

Chemical Name	LOR Lower	LOR Upper	Units	07/05/2020	08/05/2020	09/05/2020	10/05/2020	27/07/2020	28/07/2020	29/07/2020	30/07/2020	31/07/2020	03/08/2020	04/08/2020	05/08/2020	06/08/2020	07/08/2020
pH	6.5	8.5	pH	6.7	6.7	6.8	6.6	7.5	7.5	7.5	7.4	7.3	7.5	7.4	7.8	7.5	7.7
Total suspended solids	0	50	mg/L	0	0	0	0	23	12	0	0	0	0	0	0	0	0

Chemical Name	LOR Lower	LOR Upper	Units	08/08/2020	09/08/2020	10/08/2020	11/08/2020	12/08/2020	13/08/2020	24/08/2020	31/10/2020	01/11/2020	02/11/2020	03/11/2020	05/11/2020	06/11/2020	07/11/2020	08/11/2020
pH	6.5	8.5	pH	7.9	7.7	7.7	7.5	7.6	7.5	7.4	7.4	7.4	7.1	7.5	7.3	7.4	7.4	7.5
Total suspended solids	0	50	mg/L	16	8	20	7	111	0	0	98	12	0	0	8	0	12	12

Chemical Name	LOR Lower	LOR Upper	Units	09/11/2020	10/11/2020	11/11/2020	08/01/2021	12/01/2021	22/01/2021	25/01/2021	04/02/2021	15/02/2021
pH	6.5	8.5	pH	7.5	7.4	7.5	7.6	7.4	7.4	7.3	7.6	7.6
Total suspended solids	0	50	mg/L	0	0	0	0	0	0	0	5	0

As mentioned in the beginning of this report, a significant stormwater event occurred on the 9th February 2020, greatly influencing water quality during this period as can be seen in Table 3.4. This event broke the period of prolonged drought experienced at Whytes Gully (over 200 mm from the 7-9th February 2020) and also resulted in leachate to entering the stormwater management system.

By midday on the 9th February 2020, the Polishing Pond (which overflows to Point 1 sampling location) began overtopping the discharge point resulting in potential leachate contaminated stormwater leaving the site.

Council collected stormwater samples daily at discharge point 1 and analysed for TSS, pH and ammonia. The results from the first three days (as reported to DPIE and EPA) noted exceedances of the 50 mg/L TSS permitted by the EPL, however they were below the upstream concentration due to significant stormwater runoff upstream of the site. The pH was within license limits at this time.

3.3.2 All Other Parameters

3.3.2.1 Nutrients and Total Organic Carbon (TOC)

No trigger values in ANZAST (2018) guidelines are specified for these compounds in fresh waters. The previous 2000 threshold level for nitrate (0.7 mg/L) is erroneous according to Australian and New Zealand Water Quality Guidelines and no current updated value is available for comparison.

Generally, increased nitrate concentrations correlated with the significant rainfall events at all Points (1, 33, 34). Point 1 had nitrate levels peaking at 1.47 mg/L between 7/11/20 and 9/11/20. Levels from the 9th February 2020 peaked at 1.07 mg/L at Point 1. During normal conditions, nitrate levels were generally under 0.5 mg/L. Upstream and downstream results were generally lower, however followed the similar peaking rates after rain events travelled through the upper and lower catchment.

Ammonia, which is a compound commonly associated with leachate, was reported at low concentrations at all sampling points, though marginally higher at Discharge Point 1. A value of 54.7 mg/L was recorded on the 4/4/2020, however samples were taken the day before and the day after (with levels of 0.36 mg/L and 8.45 mg/L respectively) which were consistent with the other results over the reporting period. This value appears to be an anomaly.

TOC, which can be used as a general water quality indicator reported higher concentrations at Discharge Monitoring Point 1, with lower concentrations reported at both the Upstream and Downstream Monitoring Points (33 and 34). This may indicate a small influence at the sampling point which can be contributed to the facility, though this is not being carried through to the downstream sampling point. It also appears that higher concentrations were reported at the discharge point during the stormwater overflow events compared to the annual sampling event. This suggests a slight increase in discharge during the storm event, which is to be expected.

In general, TOC and nutrient concentrations were lowest at the upstream sampling point (Monitoring Point 34). Concentrations slightly increase at the discharge sampling point (Monitoring Point 1), then slightly decrease at the downstream sampling point (Monitoring Point 33), to concentrations similar to the upstream monitoring location. Again, this suggests that the discharge point is having some level of influence on surface water quality at this location.

3.3.2.2 Major Anions and Cations

No trigger values are specified in the ANZAST (2018) for anions and cations, but their inclusion allows for an understanding of water characteristics and whether these characteristics are changing between monitoring points.

Overall, concentrations of anions and cations at Discharge Monitoring Point 1 and Downstream Monitoring Point 33 were similar, with lower concentrations of calcium, chloride, fluoride, magnesium, potassium, sodium, sulphate and alkalinity reported at the upstream point. It appears that the facility may be causing a slight change in water facies downstream.

In almost all cases, cation and anion levels spiked significantly during the numerous rainfall events.

3.3.2.3 Electrical Conductivity (EC)

No trigger values are specified in ANZAST (2018), though its inclusion allows for an understanding of water quality and possible impacts to this quality.

The measured EC varied across the three locations with increased spikes after rain events. The highest level was 2540 µS/L at Point 1 which occurred on 3rd March 2020 once again influenced by the significant rain event on February 9/2/ 2020. These elevated levels lasted for nine days.

Overall, EC was lowest at the Upstream Monitoring Point with values averaging around 400 µS/L, which is classified as 'fresh water'.

3.3.2.4 Filterable Iron

No trigger values are specified in the ANZAST (2018) for filterable iron.

Low detectable concentrations were reported at all at all locations during sampling events with the exception of the 23rd and 24th February 2020 with values of 3.19 and 6.18 mg/L at Point 1 respectively. This coincided with the heavy rainfall event and leachate contamination incident. The monitoring points upstream and downstream however also spiked at around 1.5-2 mg/ as the heavy rain.

3.3.2.5 Dissolved Oxygen and Temperature

Reported DO concentrations ranged between 0.68 and 0.76 (Point 1 on the 19th February 2020 and 13th August 2020 respectively) and 11.4 (Point 33 on 5th August 2020). Once more results have been influenced by stormwater events, leachate seepage and aeration through water movement within the catchment.

Overall, higher DO concentrations were reported during the stormwater flow event compared to the annual event. This is likely associated with the stormwater event increasing aeration and the extra aeration added after the water turned black from leachate contamination.

Temperature varied significantly with the rainfall events but all three monitoring points showed similar trends. Downstream was particularly extreme with temperatures ranging from 9.1 to 28.1. This is most likely associated with a seasonal change.

3.3.2.6 Total Phenolics

Total phenolics (phenols) were reported below the laboratory practical quantification limits (PQLs) at all Monitoring points (1, 33 and 34) during all sampling events. No graph is provided for these parameters for this reason

3.4 Results – Polishing Pond

The tabulated results for the polishing pond are provided in Appendix A.

The Polishing Pond is subjected to testing for pH and turbidity prior to, and during all controlled release events. Controlled release is undertaken to allow the stormwater management system to be maintained to increase storage of stormwater during rainfall events.

The polishing pond parameters (pH and turbidity) were measured on 63 occasions, while controlled release occurred on 45 occasions where pH was within the suitable range (6.5-8.5), and turbidity was < 40 NTU.

3.5 Non-Conformances

In reference to surface water monitoring, the facility had 30 non-conformances during the 2019/2021 reporting period.

3.6 Monitoring Trends

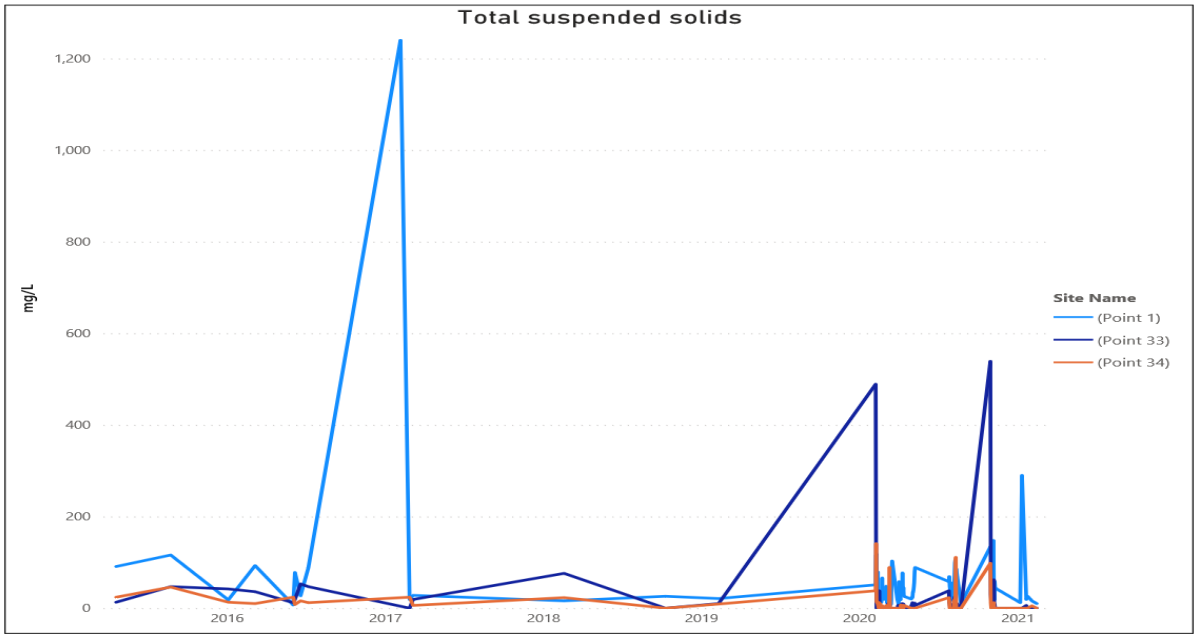
The graphed TSS and pH values for the last 5 years (2016-2021) are provided below, while the other analytes subject to monitoring during the same period are provided in Appendix A. A summary of the observable trends are provided below.

3.6.1 TSS Trends

As shown in the graph below, TSS concentrations have generally exceeded the performance criteria, with several large spikes coinciding with heavy rainfall events after a prolonged period of drought. This has led to fluctuating TSS levels, with a significant amount of sediment being deposited in the stormwater system. However, this has meant that controlled discharge was able to be undertaken from the polishing pond in a compliant manner.

The three overflow events that triggered the breaches were directly related to severe storm events that affected the entire region, and therefore Council was not considered to be at fault by the EPA or DPIE. However, the infiltration of leachate into the stormwater management system required Council to investigate this event and develop a surface water management plan.

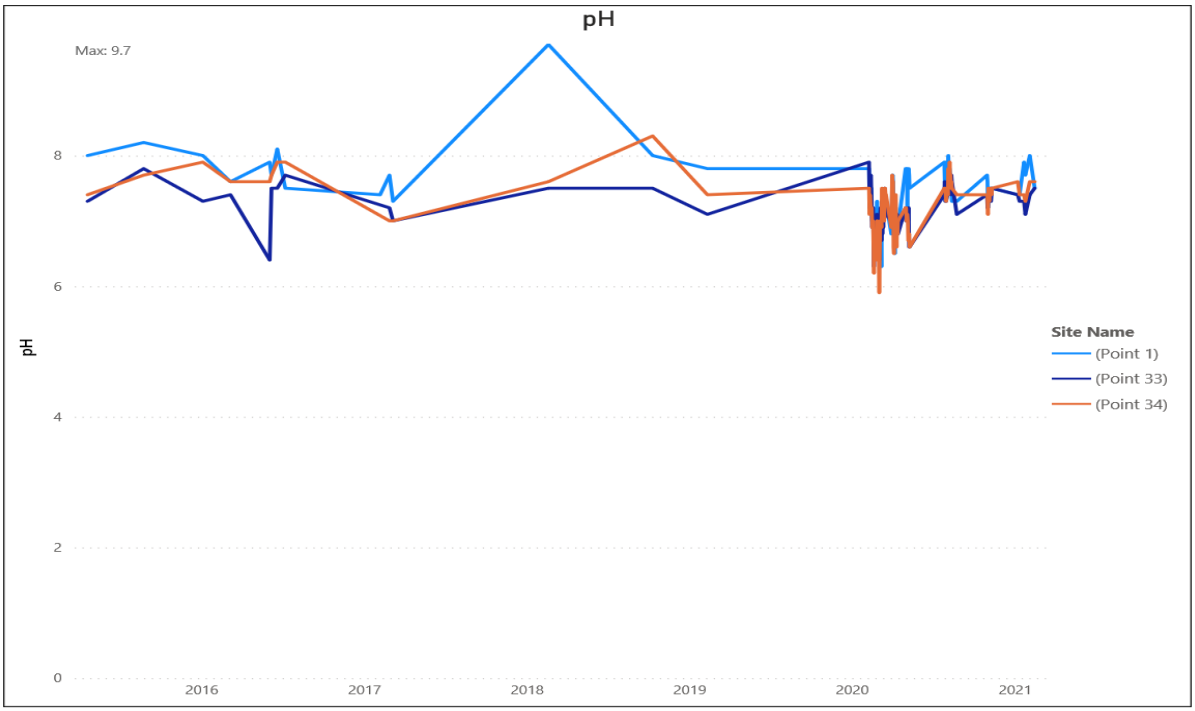
Graph 1: TSS Trends - Total Suspended Solids



3.6.2 pH Trends

As shown in the graph below, pH has been relatively stable and within range (6.5-8.5) for the range of the project until the last reporting period. The breaking of the drought has resulted in fluctuating pH and instability in the water over the 2020/21 as a range of contaminants were mobilised in the catchment.

Graph 2: pH Trends



3.6.3 All Other Parameters

In relation to other parameters monitored, trend graphs are provided in Appendix A. Like pH and Total Suspended Solids (TSS), the heavy rainfall in this reporting period has resulted in instability in the surface water network and the measured parameters reflect this.

Of interest, is the changing nature of the catchment. Until the last three years, the surrounding land use was predominantly rural residential land use. Whilst upstream remains relatively stable with limited to no development, adjacent land use has become predominantly light industrial (e.g. vehicle storage, bitumen plants, commercial composting).

This will undoubtably impact surrounding water quality, however it has been difficult to assess in this reporting period due to the heavy rainfall events.

3.7 EA Predictions

The EA did not provide predictions relating to surface water. However, the following are the relevant outcomes relating to surface water management from the IEA after DPIE submission and acceptance.

- Schedule 4 Condition 14 & Condition 15 Soil, Water and Leachate Management Plan. Develop a Stormwater Management Plan by 30 September 2021.
- Schedule 4 Condition 17 Soil, Water and Leachate Management Plan. Develop a Leachate Management Plan by 30 September 2021.
- Schedule 4 Condition 18 Soil, Water and Leachate Management Plan. Finalise the entire plan (including soil/stockpile management) for 30 November 2021 submission.

4 Water Monitoring- Groundwater

Groundwater monitoring was completed in order to satisfy Approval No. 11_0094 Schedule 4, conditions pertaining to 'Soil and Water'. The findings for the 2019-2021 annual reporting period are provided in the sections below.

4.1 Overview

Groundwater monitoring was undertaken by ALS Environmental, with monitoring locations shown in Figure 4. A summary of the monitoring requirements are detailed below:

Table 4-1: Groundwater Monitoring

Activity	Description
Purpose	Detect if groundwater is impacted by leachate.
Frequency	Quarterly in accordance with EPL 5862. Monitoring was completed in: • May 2019 • August 2019 • November 2019 • February 2020

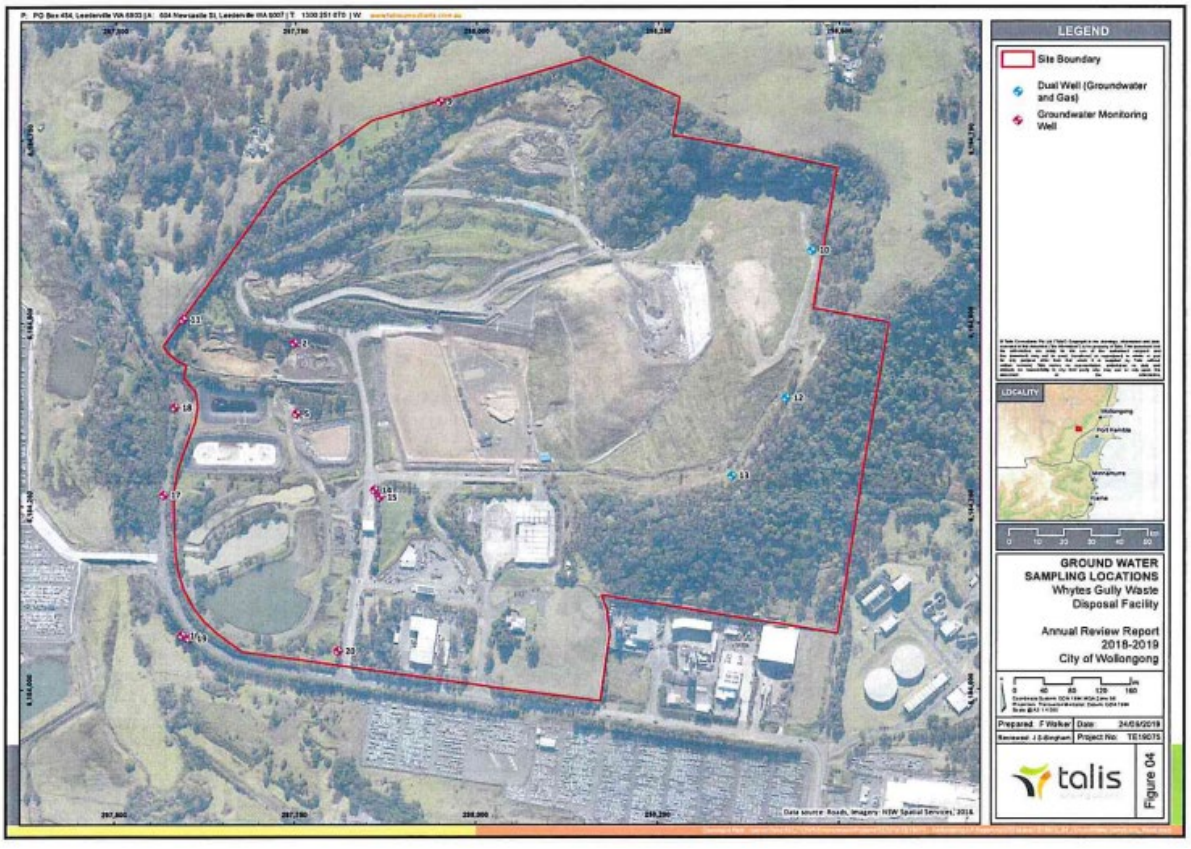
<table>
<tr><td></td><td>

May 2020
August 2020
November 2020
February 2021

</td></tr>
<tr><td>Locations</td><td>Sampling locations were in accordance with EPL 5862, and included the following monitoring points: 5,9,10,11,12,13,14,15,16,17,18,19 and 20.</td></tr>
<tr><td>Methodology</td><td>Prior to sampling, the sampling the standing water levels (SWLs) were measured using a water level meter;
Groundwater samples were collected using a bailer;
Field parameters were recorded using a calibrated water quality meter prior to sampling.</td></tr>
<tr><td>Analytes/Field Parameters</td><td>The analysis schedule was in accordance with M2.3 of EPL 5862 and included:

Table 4-2: Groundwater Parameters
<table>
<tr><th>Annually</th><th>Quarterly</th></tr>
<tr><td>Metals: aluminium, arsenic, barium, cadmium, chromium (hexavalent and total), cobalt, copper, lead, manganese, mercury, zinc</td><td>Alkalinity</td></tr>
<tr><td>Benzene, toluene, ethylbenzene, xylene (BTEX)</td><td>Major anions and cations:
Calcium, magnesium, potassium, sodium, chloride, sulfate</td></tr>
<tr><td>Fluoride</td><td>pH and EC</td></tr>
<tr><td>Nitrate and nitrite</td><td>SWLs</td></tr>
<tr><td>Organochlorine and organophosphate (OC and OP pesticides)</td><td>Total dissolved solids (TDS)</td></tr>
<tr><td>Polycyclic aromatic hydrocarbons (PAH)</td><td>TOC</td></tr>
<tr><td>Total Petroleum Hydrocarbons (TRH)</td><td>Nitrogen – (ammonia)</td></tr>
<tr><td>Total phenolics</td><td></td></tr>
</table>
</td></tr>
</table>

Figure 4: Groundwater sampling locations



4.2 Performance Criteria

Consistent with the surface water monitoring performance criteria, Section 7.4 of the LEMP (Draft Golder 2020) states that all groundwater results are to be assessed against the relevant ANZAST, 2018 Fresh Water (95%) guidelines and or other relevant trigger values specified in the document will be adopted during future monitoring events.

4.3 Results

4.3.1 Depth to Water Table

Groundwater flows in a south westerly direction through the site. The minimum and maximum recorded SWLs (metres below top of casing (m b ToC) were as follows:

Table 4-3: Standing Water Levels

Monitoring Event	Minimum Depth (m bToC)	Maximum Depth (m bToC)
12/11/2019	1.89 (Point 20)	7.64 (Point 11)
12/08/2019	1.92 (Point 20)	7.92 (Point 10)
12/11/2019	1.89 (Point 20)	8.9 (Point 11)
17/02/2020	1.38 (Point 20)	10.92 (Point 12)
8/05/2020	1.65(Point 20)	11.1 (Point 12)
24/08/2020	1.42(Point 20)	11.0 (Point 12)
16/11/2021	1.4(Point 20)	10.1(Point 12)
15/02/2021	1.37(Point 20)	10.3 (Point 12)

4.3.1.1 pH and EC

Groundwater pH was reported to be relatively neutral averaging between 6.5 to 7 for the reporting period. The exception was Point 12 (GMW105) that averaged between 5.5 and 5.8. This bore has been dry since before the last reporting period (2018/19) and was only able to be sampled at the 15/02/2020 quarterly sampling event.

Electrical Conductivity varied greatly across the site with the lowest value recorded being 268 µS/L at Point 12 (GMW105) on the 15th February 2021 and the highest value recorded being 5940 µS/L at Point 5 (GABHO2).

The early February 2020 event has resulted in all bores being active across the site.

4.3.2 Laboratory Analysis Results

Tabulated analysis results for the 2019-2021 annual reporting period are provided in Appendix B, with a summary of the results presented in the following sections.

4.3.2.1 Metals

Metals were detected in groundwater at all sampling locations, with concentrations of arsenic, barium, cadmium, chromium, cobalt, lead, mercury and zinc below the ANZAST (2018) criteria for freshwater. However, the following exceedances were reported:

Table 4-4 Metals Exceedances

Metals	Monitoring Point	Exceedance (mg/L)	Assessment Criteria ANZAST (2018)
Aluminium	9 10 11 12 14 15 16 17 18 11 16 11 16 11 16 5 9 10 11 12 14 15 16 17 18 11 16	24.6 (11/02/21) 2.49 (11/02/21) 4.6 (11/02/21) 1.76 (11/02/21) 1.94 (11/02/21) 0.35 (11/02/21) 0.15 (11/02/21) 1.43 (11/02/21) 2.1 (11/02/21) 4.26 (16/11/20) 6.24(16/11/20) 5.54 (24/06/20) 4.36 (24/06/20) 4.32 (06/05/20) 127 (06/05/20) 2.01 (17/02/20) 1.83 (17/02/20) 8.02 (17/02/20) 9.2 (17/02/20) 0.7 (17/02/20) 8.6 (17/02/20) 0.17 (17/02/20) 4.52 (17/02/20) 4.08 (17/02/20) 10 (17/02/20) 4.24 (12/11/19) 7.44 (12/11/19)	0.055
Copper	9 16 16 16 16 10 11 14 16 18 16	0.534 (11/02/21) 0.016 (11/02/21) 0.0025 (16/11/20) 0.024 (24/06/20) 0.478 (06/05/20) 0.023 (17/02/20) 0.018 (17/02/20) 0.015 (17/02/20) 0.033 (17/02/20) 0.01 (17/02/20) 0.018 (12/11/19)	0.0014
Manganese	16	2.25 (11/02/21) 6.07 (16/11/20) 10.1 (24/06/20) 11.2 (06/05/20) 5.38(17/02/20) 3.76(12/11/19)	1.9

4.3.2.2 Hydrocarbons

Concentrations of BTEX, TRH, PAH and total phenolics were reported below the laboratory PQLs and below the adopted assessment criteria. Graphs of these values have not been included and the Results Table in Appendix B has shown them as a 0 value.

4.3.2.3 Major Anions and Cations

Concentrations of calcium, magnesium, potassium, chloride, fluoride, sulfate and sodium varied across the groundwater network. It however appears that groundwater is dominated by calcium, sodium and chloride ions, with all groundwater wells exhibiting concentrations of these ions compared to others.

Groundwater within the site is described as very hard to extremely hard. Monitoring Point 5 recorded the highest $CaCO_3$ concentrations during the reporting period, ranging between 870 mg/L (20/05/2019) to 1250 mg/L (17/02/2020 and 16/11/2020). Monitoring Point 12 had the lowest concentrations ranging between 28 mg/L (17/02/2020) and 51 mg/L (08/05/2020).

4.3.2.4 Total Dissolved Solids (TDS)

Groundwater across the site was reported to be 'fresh' to 'brackish', with TDS concentrations ranging between 226 mg/L at Point 9 (17/02/2020) and 3350 at Monitoring Point 5 (16/11/2020). Concentrations began to fluctuate significantly across the site after the February 2020 rainfall event.

4.3.2.5 Total Organic Carbon (TOC)

No trigger values were adopted for TOC as none exists in the ANZAST (2018) guidelines. Concentrations across the site range from below the laboratory PQL (<1 mg/L) prior to the rainfall event in early February 2020, to 37 mg/L (Point 16) on the 28/02/2020.

4.3.2.6 OC and OP Pesticides

OC and OP pesticides were reported below the laboratory PQLs during the reporting period. It is noted however, that several PQLs were higher than the ANZAST (2018) guideline values, and as such some exceedances may be masked.

4.3.2.7 Nutrients

Nutrient concentrations including nitrate, nitrite and ammonia-N concentrations were reported below the adopted assessment criteria in almost all groundwater bores. However, there was an elevated level of 1.1 mg/L Ammonia-N at Monitoring Point 18 on the 8/05/2020.

Nitrate and nitrite levels remained low and relatively stable during the reporting period.

4.4 Conformances

In relation to groundwater, the monitoring schedule was in conformance with during the 2019/2021 reporting period. However, in relation to concentrations of contaminants of potential concern (COPs) in groundwater, the following non-conformances were noted:

- Raised OC/OP PQLs which may potentially mask exceedances in the adopted criteria.
- Continued metal exceedance (aluminium, copper and manganese) at several locations. However, based on previous monitoring data, it appears that aluminium and copper appear to be regionally elevated.

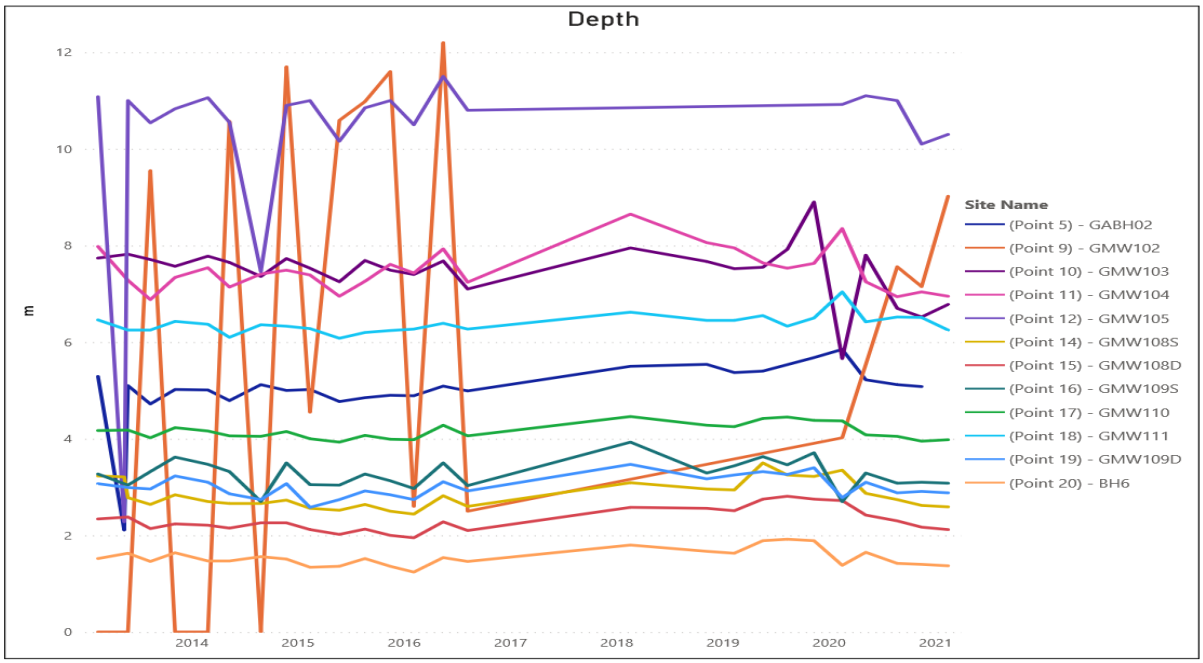
4.5 Monitoring Trends

The graphed monitoring trends for groundwater depth, TOC, ammonia-N and metals including aluminium, arsenic, copper, cadmium and zinc for the period 2016-2021 are provided below. The full suite of graphed trends are provided in Appendix B, with a summary of observable trends provided below.

4.5.1 Depth to Water Table

Depth to water table remained consistent with previous years until early February 2020 when the drought breaking rainfall began. This meant that previously dry bores at Monitoring Points 9 and 12 were flowing again and able to be measured.

Graph 3- Depth to Water Table



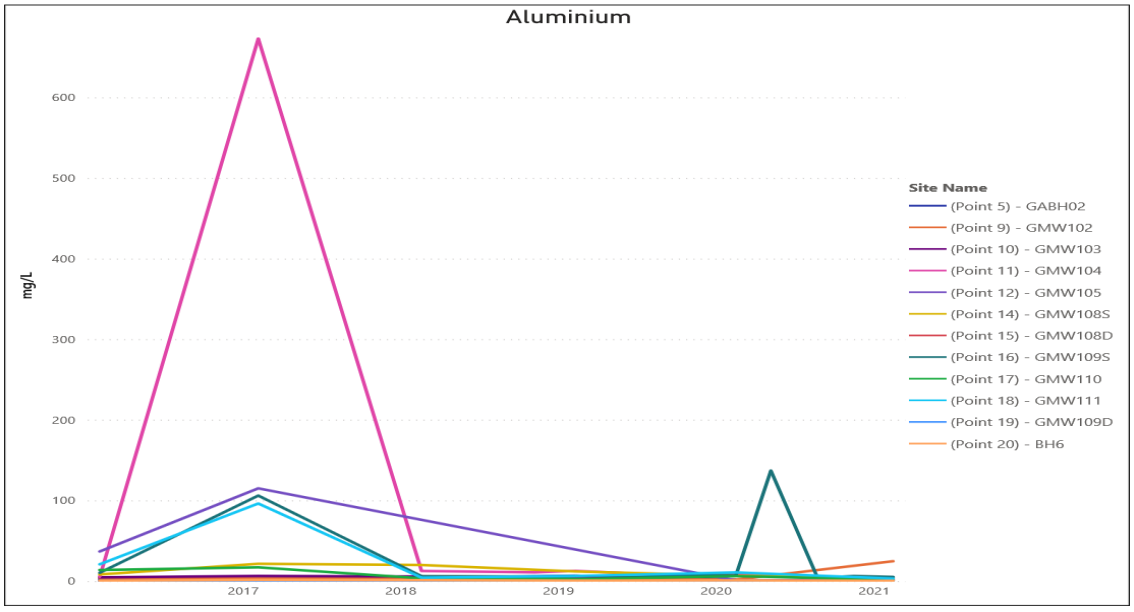
4.5.2 Metals

Aluminium

As shown in the graph below, aluminium concentrations remained stable after peaking in 2017 (after a heavy rainfall event) until February 2020 when heavy rainfall again mobilised metals in the groundwater system. Concentrations peaked at 137 mg/L at Monitoring Point on 17/02/2020.

Generally, aluminium exceeded the adopted assessment criteria (0.055 mg/L).

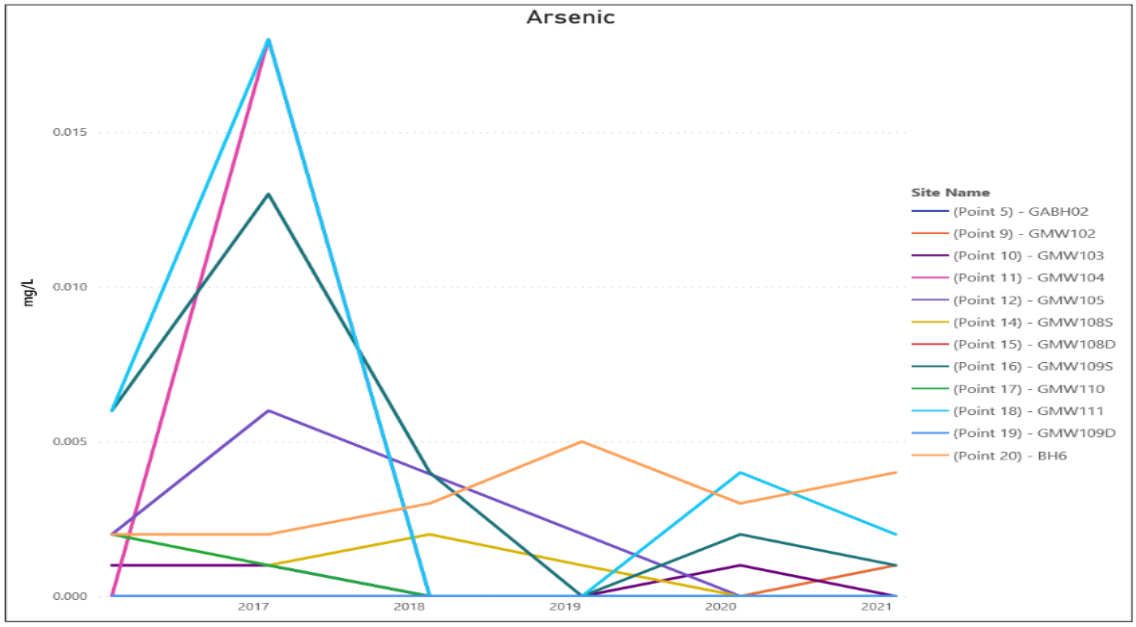
Graph 4 – Aluminium Trends



Arsenic

As shown in the graph below, arsenic concentrations have fluctuated over the period of the project but have generally stayed below the adopted guideline value of 0.013 mg/L. Even with increased levels peaking at Monitoring Points 10, 16 and 18 arsenic mobility in groundwater was below the guideline value.

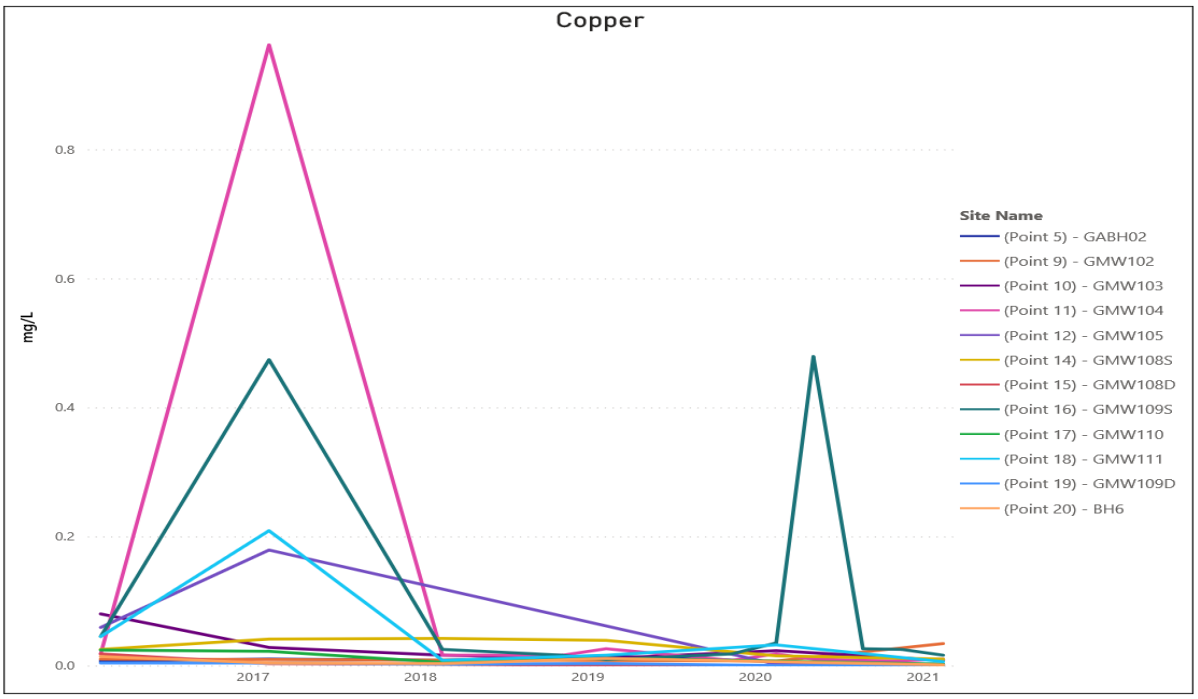
Graph 5: Arsenic Trends



Copper

As shown in the graph below, copper concentrations have generally exceeded the adopted assessment criteria of 0.0014 mg/L. Monitoring Point 16 showed the highest exceedance after heavy rainfall events, with 0.479 mg/L being recorded at the 8/05/2020 sampling event. Levels returned to long term steady values by the next sampling event.

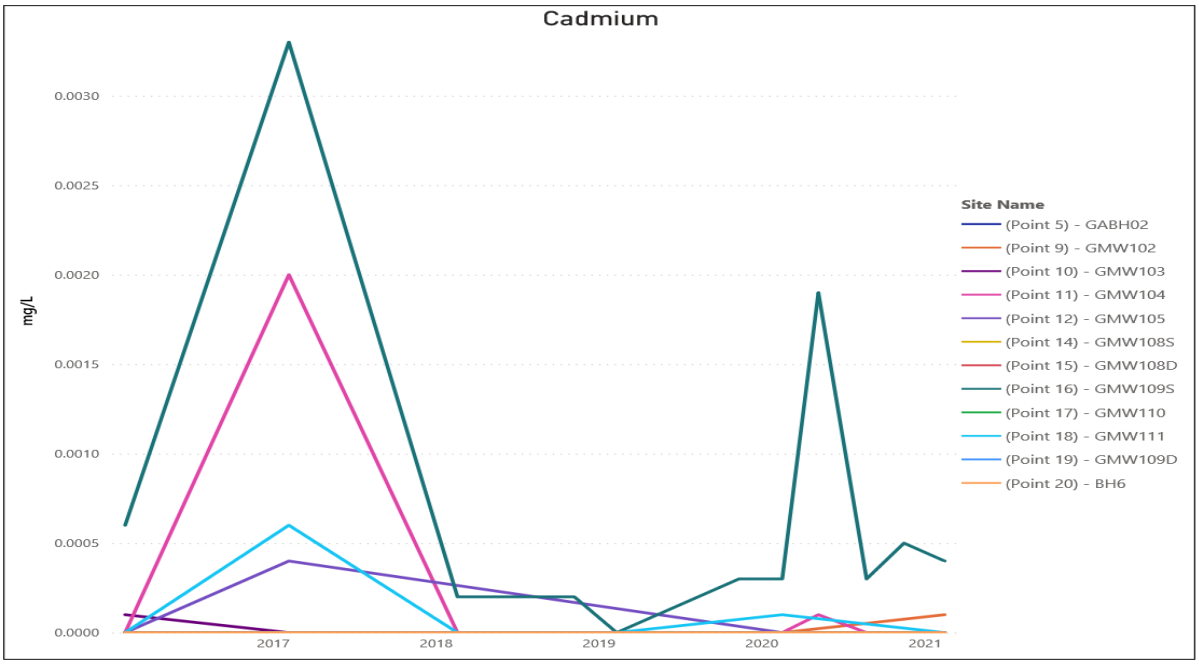
Graph 6: Copper Trends



Cadmium

The guideline values for cadmium were corrected to account for water hardness. As shown in the graph below, cadmium concentrations have been generally stable and below 0.002 mg/L including at Monitoring Point 16 on the 8/05/2020 which peaked at 0.0019 mg/L. Following this, concentrations at the monitoring points returned to their long term trends. Concentrations at all locations remained below the adopted assessment criteria.

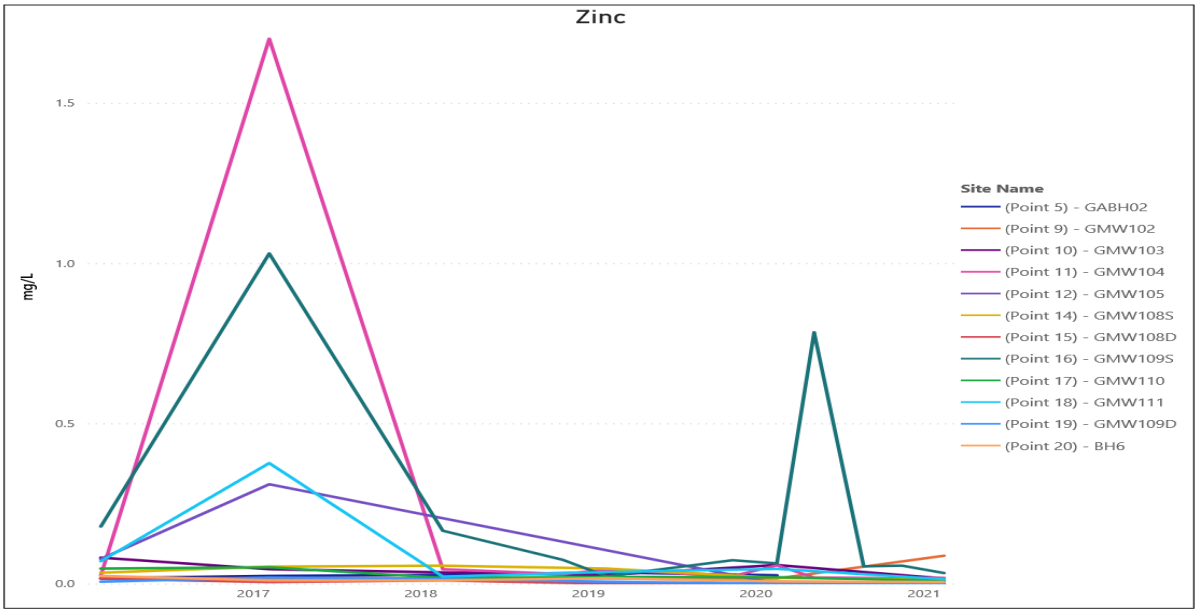
Graph 7 Cadmium Trends



Zinc

The guideline values were corrected for hardness, and all results (including Monitoring Point 16 that peaked after the early February 2020 rainfall event) stabilised and reported below the adopted assessment criteria.

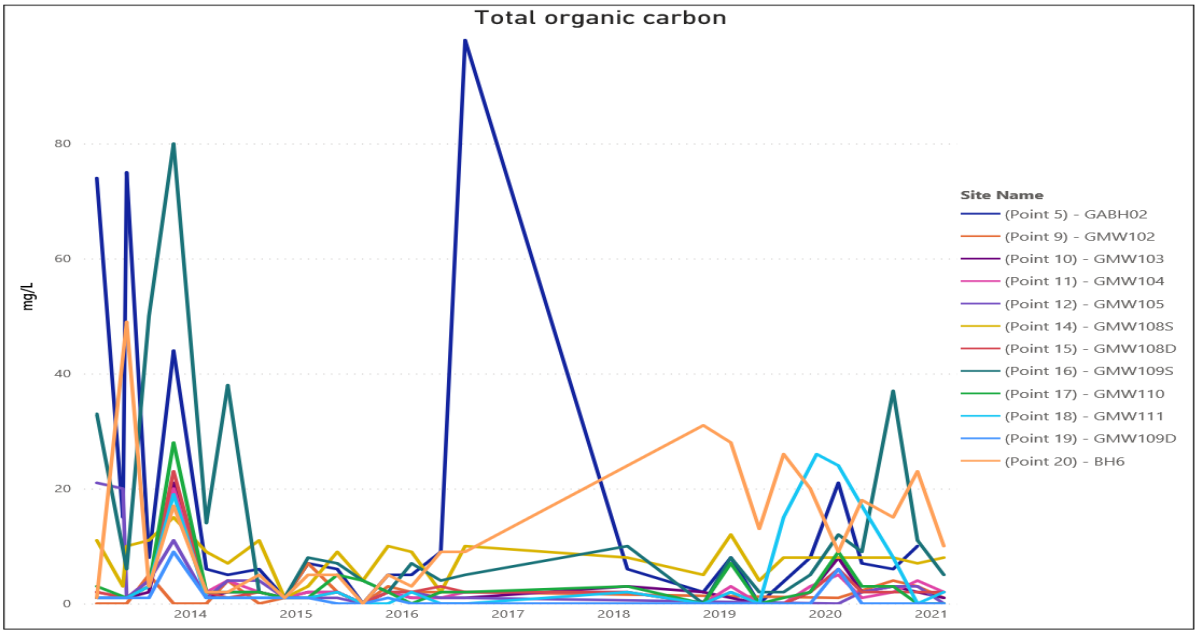
Graph 8 Zinc Trends



4.5.3 Total Organic Carbon (TOC)

As shown in the graph below, TOC concentrations have varied significantly over time with overall increases during this reporting period. This can most likely be attributed to heavy rainfall events that have mobilised solutes within the groundwater system.

Graph 9 -TOC Trends

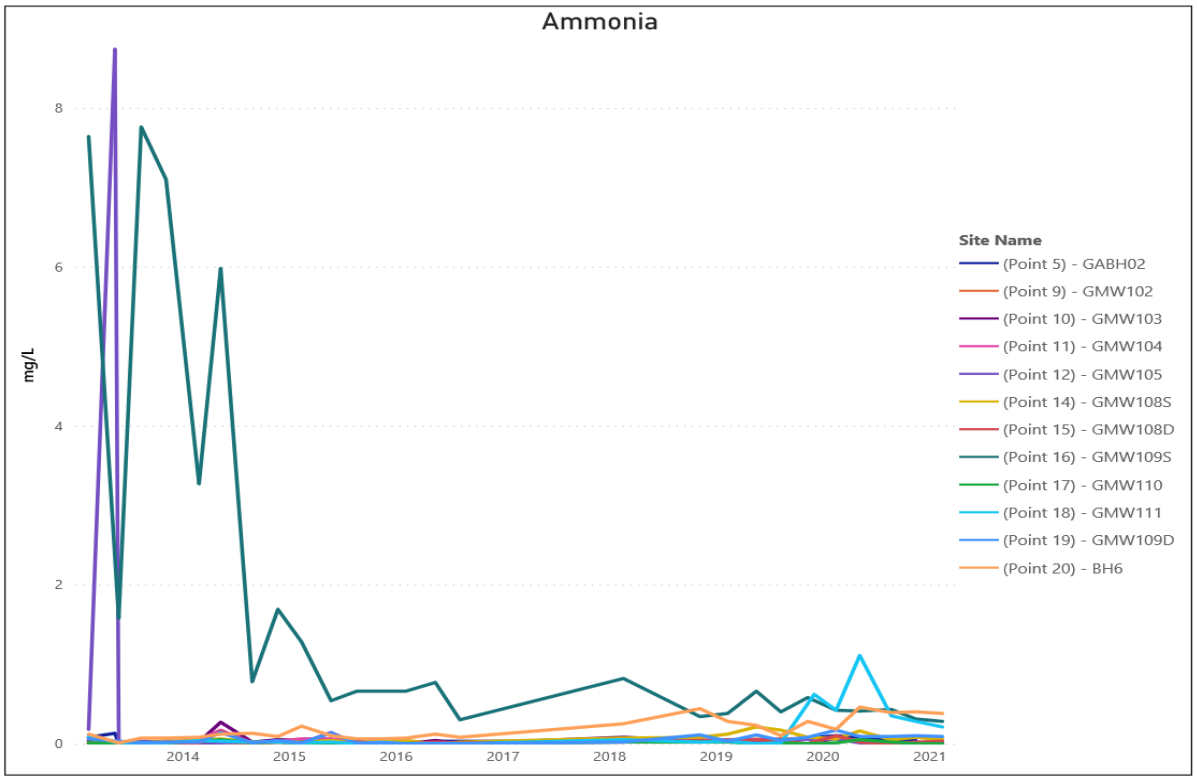


4.5.4 Ammonia-N

As shown in the graph below, ammonia-N was reported below the threshold level of 0.95 mg/L throughout the reporting period except for one sampling event at Monitoring Point 18 on the 8/05/2020 which was recorded at 1.11 mg/L.

Previous to the drought breaking conditions, ammonia levels across the groundwater network were decreasing, however all bores are now running and flow throughout the system is once more active.

Graph 10: Ammonia- N Trends



4.5.5 Other Analytes

The full suite of graphed trends for the same period are provided in Appendix B, with a summary of observable trends provided below. Concentrations have been subject to major fluctuations across this monitoring period due to heavy rainfall causing the groundwater system to flow.

Major anions and cations, total dissolved solids, nutrients, pH and electrical conductivity were all heavily influenced by rainfall events during the 2019/2020 period as solutes were mobilised in the water column.

OC and OP Pesticides, PAH, BTEX and Total Phenolic concentrations were all reported below the laboratory PQLs during all monitoring events.

4.6 EA Predictions

The EA predictions were that leachate migration into groundwater would be controlled via the permeability of the landfill liner. Additionally, no high value groundwater dependent ecosystems are located within the vicinity of the facility, and the landfill would present a relatively low risk if leachate did migrate into groundwater.

The leachate seepage on the 9th February 2020 did not appear to have an adverse long-term impact on the groundwater system based on the sampling data. Low ammonia-N concentrations were reported in groundwater even after the seepage event (with one minor elevated reading of 1.11 mg/L) throughout the reporting period.

Based on the overall groundwater assessment, results have generally confirmed the EA predictions in the groundwater system underlying the facility. An updated management plan for groundwater will be included in the Soil Water and Leachate Management Plan that will be submitted to the Department in November 2021.

5 Waste Monitoring – Trade Waste and Leachate

Sampling of trade wastewater and leachate was undertaken in order to satisfy Approval No. 11_0094 Schedule 4, conditions pertaining to 'Waste'. The findings for the 2019 -2021 reporting period are provided in the sections below.

5.1 Overview

Trade wastewater and leachate sampling was undertaken by ALS Environmental in accordance with the *Consent to Discharge Industrial Trade Wastewater* (Sydney Water 2018). The monitoring locations are shown in Figure 5. A summary of the monitoring requirements is detailed in the table below.

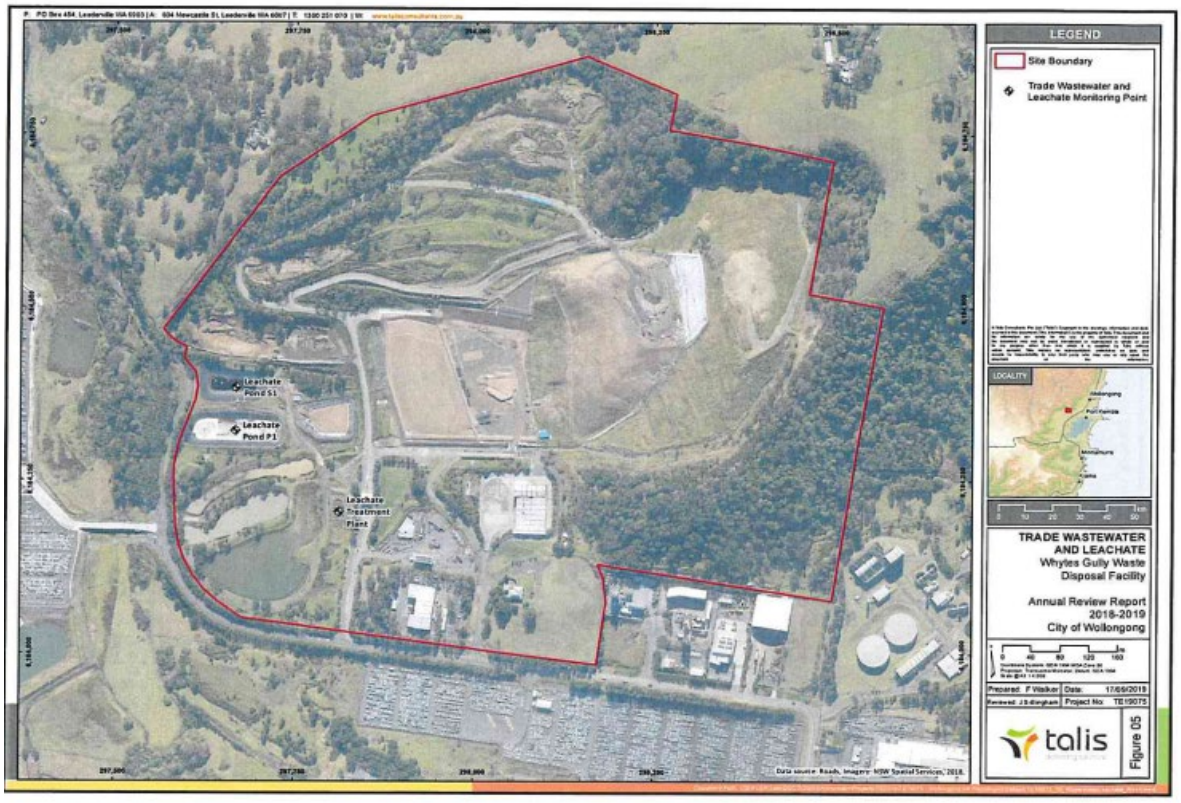
Table 5-1: Trade Waste Monitoring Requirements

Activity	Description
Purpose	**Trade Wastewater**: Confirm quality of wastewater discharged from the facility. **Leachate**: Chemically characterise the leachate to allow assessment of potential environmental harm and impacts.
Frequency	**Trade Wastewater:** Monthly in accordance with EPL 5862. Monitoring was completed in: On 13th March 2019 and every 22 days thereafter. If trade wastewater was not discharged on a scheduled day, then sampling was taken the next day when trade wastewater was discharged. **Leachate:** On 3 March 2019 and every week thereafter.
Locations	Sampling locations were in accordance with Sydney Water 2018, and included the Eastern Arm Collection Well, Balance Tank and Trade Wastewater (locations are depicted as Leachate Treatment Plant in Figure 5). In addition, sampling was also undertaken at Leachate Ponds P1 and S1.

<table>
<tr><td>Methodology</td><td>Trade Wastewater: Composite samples were collected over a 24 hour period using a composite autosampler, while grab samples were collected pre and post monitoring;
The composite samples were collected over one full production day by combining equal volumes taken over 30 minute intervals. The volumes collected were at least 5L over the full day; and
Readings of the flowmeter were obtained at the start and end of each sampling day.
Leachate: The ponds were sampled using a ‘scoop’ whereas the Balance Tank samples are directly collected from the tap, and the Eastern Arm Collection well is sampled using a bailer.</td></tr>
<tr><td>Analytes/Field Parameters</td><td>Samples were subject to laboratory analysis for the following:

Table 5-2: Trade Wastewater and Leachate Parameters
<table>
<tr><th colspan="2">Trade Wastewater</th><th>Leachate (CW-East, Balance Tank and Pond P1 and S1)</th></tr>
<tr><td>EC</td><td>Ammonia-N</td><td>TDS, TSS</td></tr>
<tr><td>Biological Oxygen Demand (BOD)</td><td>TSS</td><td>pH</td></tr>
<tr><td>TDS</td><td>EC</td><td>Ammonia-N</td></tr>
<tr><td>pH</td><td>Temperature</td><td>Temperature</td></tr>
<tr><td colspan="3">Discrete samples were tested for pH, EC and temperature using a calibrated water quality meter at the start and finish of each day.</td></tr>
</table></td></tr>
</table>

Figure 5: Wastewater and Leachate Sampling Locations



5.2 Performance Criteria

The performance criteria for trade wastewater discharged from the facility to the sewer is provided in the table below:

Acceptance Standard	Performance Criteria	Guidance Document
Volume Discharged	605 kL/day	Sydney Water 2018
Concentrations	Start and finish: pH 7-10 Ammonia – N: 100 mg/L TSS: 600 mg/L TDS: 10 000 mg/L Temperature: < 38^{0}C	
Maximum Daily Mass	Ammonia: 36 kg/day TSS: 150 kg/day TDS: 2500 kg/day BOD: 80 kg/day Ammonia: 100 mg/L TSS: 19.5 mg/L TDS: 10 000 mg/L	

Section 4, Condition O7.2 of EPL 5862 states that the '*licensee must maintain a leachate management system to collect and direct all leachate to a point for treatment and disposal to sewer'*. The leachate is treated at the facility and is discharged as Trade Wastewater.

The performance criteria for leachate contained at the facility is provided in the table below:

Acceptance Standard	Performance Criteria	Guidance Document
Leachate	No discharge of leachate to waters under dry weather conditions (<10 mm of rainfall in 24 hours) or stormwater events of less than 1:25 year, 24 hour recurrence interval (< 371.5 mm rainfall in 24 hours)	Section 3 L1.3 of EPL 5862

Note: Discharge of leachate from the pond caused by a 1:25 year, 24 hour recurrence interval storm event or greater does not constitute a breach of EPL 5862.

Consistent with the surface water monitoring performance criteria, Section 7.4 of the LEMP (Draft Golder 2020) for the facility states that all leachate results are to be assessed against the relevant water quality guidelines, specifically:

- ANZAST(2018) Freshwater (95%) guidelines.

5.3 Results

5.3.1 Trade Wastewater Discharged

The full tabulated trade wastewater results for the 2019-2021 reporting period are provided in Appendix C.

The volumes discharged and the analyte concentrations, including maximum daily mass and long-term average daily mass concentrations, were all reported below the trigger values specified in the performance criteria, with pH also reported within the recommended range. The maximum and minimum concentrations reported were as follows:

Table 5.3: Trade Waste Concentrations

Analyte	Minimum	Maximum	Performance Criteria
Volume Discharged	20/12/2019 20 kL	12/8/2020 and 1/9/2020 420 kL	605 kL/day
pH start	7.4	9.1	pH 7-10
pH finish	7.4	9	
Ammonia-N Concentrations	0 mg/L	46.8 mg/L	100 mg/L
Ammonia -N Maximum Daily Mass	0	19-656 kg	Maximum Daily Mass: 36 kg/day Long Term Average:3.98 kg/day
TSS	0	84 mg/L	600 mg/L
TDS	2500 mg/L	8260 mg/L	10 000mg/L
Temperature	12^{O} C	33^{0} C	< 38^{0} mg/L

5.4 Conformances

Based on the reported results, pertaining to trade wastewater discharged, the facility was in conformance for the 2019-2021 reporting period.

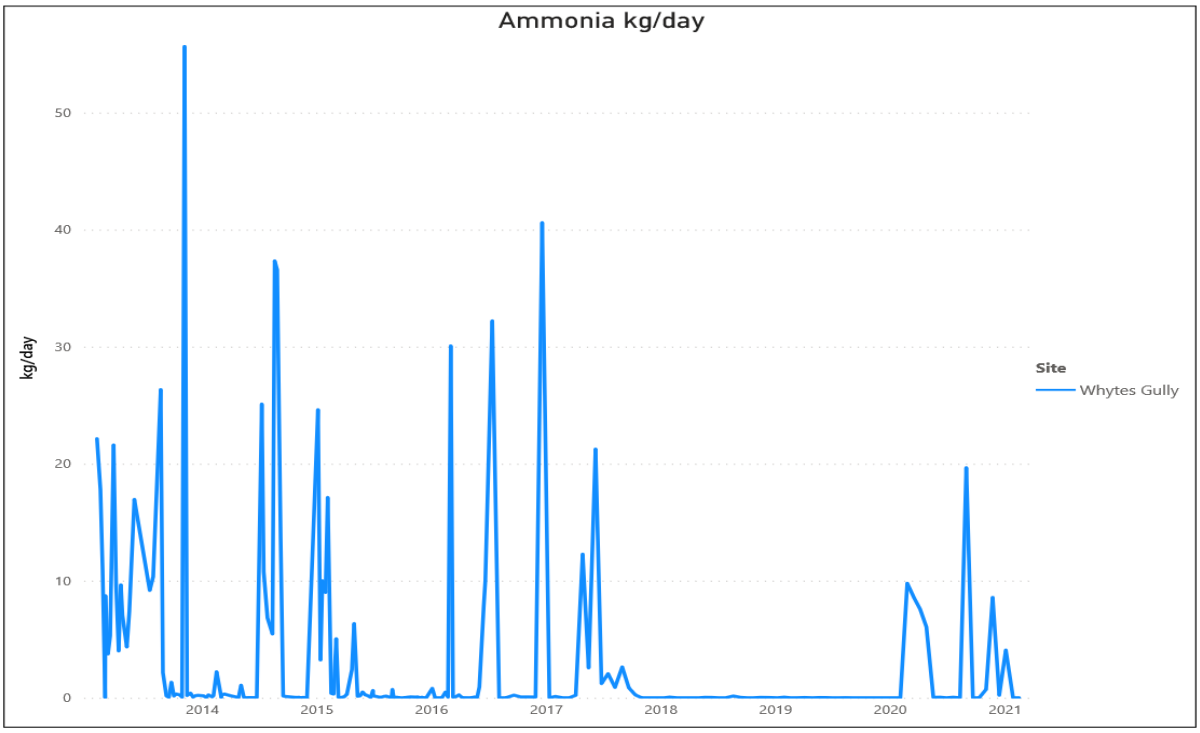
A number of ammonia-N exceedances were reported in leachate samples; however, this does not impact the facility's successful operation, as this leachate is treated and discharged as trade wastewater, with the trade wastewater reporting all analyte concentrations, including ammonia-N below the performance criteria.

5.5 Monitoring Trends

5.5.1 Ammonia

As shown in the graph below, ammonia concentrations in trade wastewater were very stable over the prolonged dry period prior to early February 2020. Fluctuations occur following each of the heavy rainfall events, however the performance criteria of 36 kg/day was not exceeded.

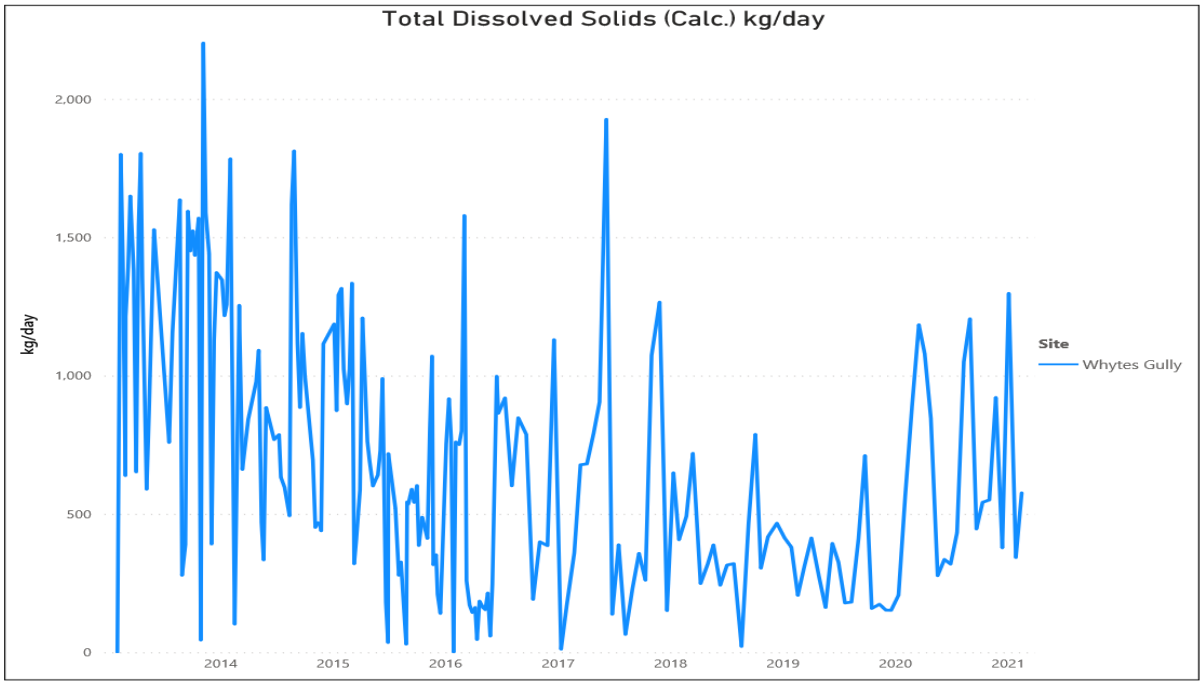
Graph 11: Ammonia Trends



5.5.2 TDS

As shown in the graph below, TDS concentrations have been subject to fluctuations influenced by rainfall events. Nonetheless, concentrations have been reported below the performance criteria of 2500 kg/day over the life of the project (with exception of initial plant commissioning).

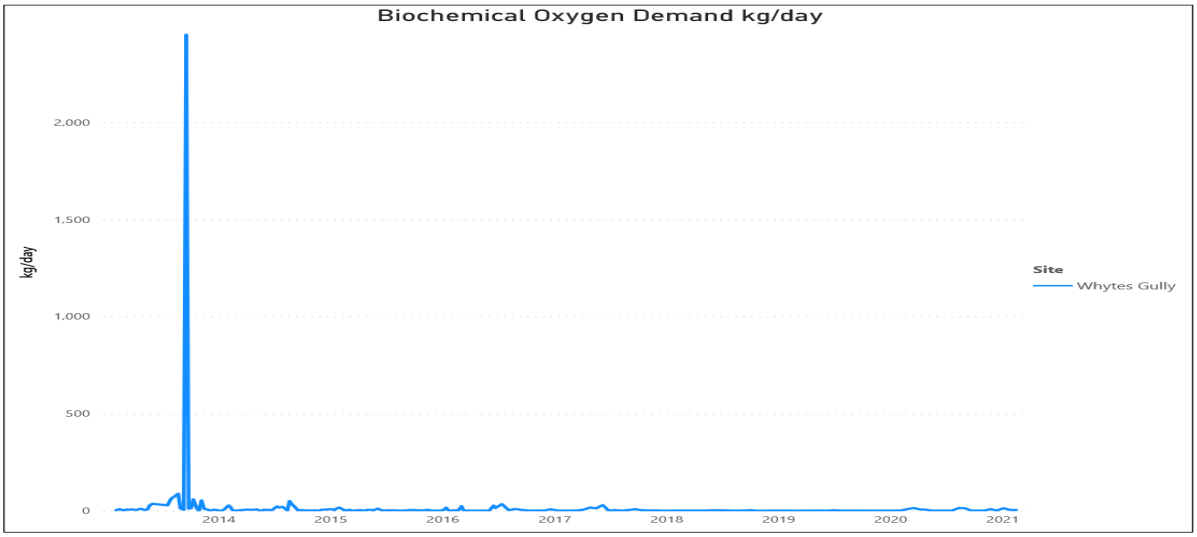
Graph 12: TDS Trends



5.5.3 Biological Oxygen Demand (BOD)

As shown in the graph below, BOD concentrations in trade wastewater have generally been stable and continues as leachate treatment and management upgrades are implemented.

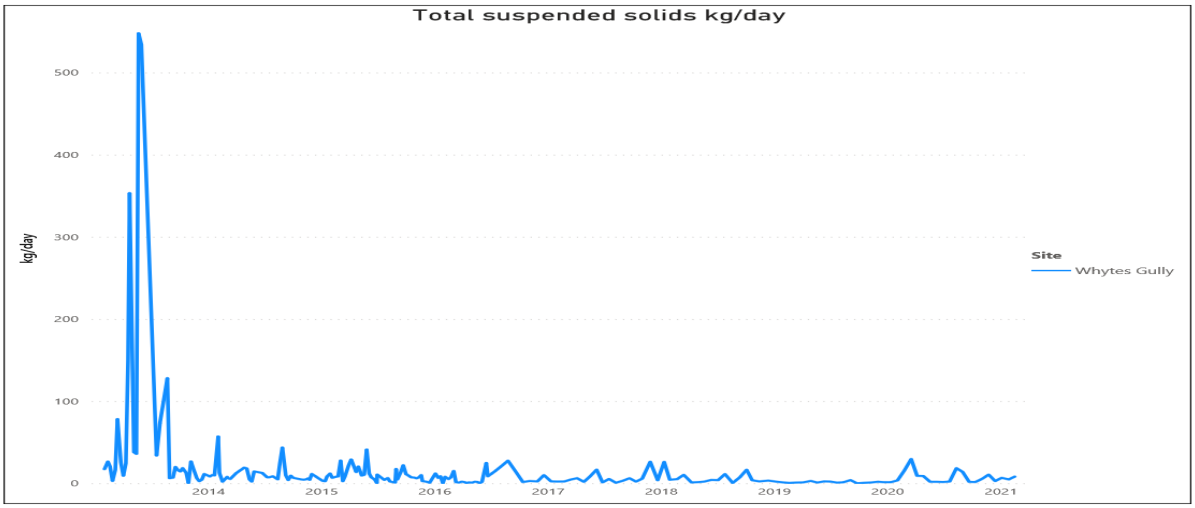
Graph 13: BOD Trends



5.5.4 TSS

As shown in the graph below, TSS concentrations in trade wastewater have been stable over the dry period like most parameters. With the early February 2020 rainfall event and subsequent follow up events, a number of individual exceedances occurred, however, when averaged over a 12 month period (as per Sydney Trade Waste Agreement 2018), these were under the agreed license requirements.

Graph 14: TSS Trends



5.6 EA Predictions

There were no EA predictions pertaining to trade wastewater discharged. At the time of the EA, the facility initially had a Trade Waste Agreement with Sydney Water to treat and discharge 250kL/day. This was instantaneously increased to 605 kL/day in 2017, however negotiations between Sydney Water and Council are currently underway for the new agreement.

6 Waste- General

Waste screening and monitoring is required to satisfy Project Approval_No.11_0094 Schedule 4, conditions pertaining to 'Waste'. The findings for the 2019-2021 reporting period are provided in the sections below.

6.1 Overview

Waste screening and monitoring was undertaken by Council for the 2019-2021 reporting period in accordance with EPL 5862 and Project Approval No.11_0094. A summary of the requirements are detailed in the table below:

Table 6-1: Waste Screening

Activity	Description
Purpose	To ensure that the facility only accepts wastes that are authorised for receipt as per EPL 5862.
Frequency	**Random vehicle audits**: Daily **Screening of waste:** Continuous **Screening when truck tipping at the tip face or tipping at transfer station**: Continuous
Location	Weighbridge and transfer station tipping face.
Methodology	• Signs are present at the facility clearly stating the material accepted. The customer declares at the weighbridge the type of waste being disposed. Where the weighbridge operator is suspicious of the waste load, an inspection of the load is conducted. • Inspections via above load CCTV at the weighbridge. • Industrial loads require an application to be submitted with the waste loads- which is then reviewed by the weighbridge operator. • Visual inspection of small vehicle loads at the tipping face of the transfer station.

During this reporting period, the 'Wasteman' program used to record inbound and outbound waste was replaced with 'Mandalay' to improve customer service and provide more up to date data collection for reporting in real time.

6.2 Performance Criteria

The performance criteria for waste received at the facility is provided in the following table:

Table 6.2: Waste Received Criteria

Acceptance Standard	Performance Criteria	Guidance Document
Rejected Loads	Quantity of unacceptable waste types rejected.	Draft LEMP (Golder 2020)
	Number of detection reports of any waste rejected.	
	Number of incidences whereby unacceptable waste was discovered at the tipping face.	
	Monitoring data indicating consistent occurrences of unacceptable waste being detected.	
Tyres	No disposal of tyres <1.2 m in diameter.	EPL 5862
	No stockpiling of more than 50 tonnes at any one time.	
General solid waste (non-putrescible)	No more than 180 000 tonnes per annum.	Schedule 3, Condition 5 Project Approval No. 11_0094.
General solid waste (non-putrescible)		
Asbestos	*Not currently accepted at the facility.*	

6.3 Results

During the reporting period, only suitable waste streams were accepted at the facility, with an inbound total of 110 737.40 tonnes of material received. This is less than the maximum allowable performance criteria limit (180 000 tonnes per annum (tpa).

6.3.1 Rejected Loads

There was a total of 3391 tonnes rejected during the 2019-2021 reporting period.

6.3.2 Tyres

A total of 13 840 were received during the reporting period. The tyres are temporarily stored at the facility in accordance with EPL 5862, following which they were collected and taken offsite for recycling by Tyrecycle.

6.3.3 Other Inbound and Outbound Waste

Table 6-4: Inbound and Outbound Waste

Waste Stream Description	Inbound (tonnes)
Mixed Waste – Clean Up Australia Day	10.72
Dead Animals	42.24
General Waste	71 990.87

Commercial General Waste	38 693.57
Weighbridge Failure – Small Domestic Waste	-
TOTAL	**110 737.40**
Specific Items (tyres and mattresses)	16 627 (items)
Recyclables (kerbside tyres and e-waste)	333.74

Waste Stream Description	Outbound (tonnes)
External Sources	5410.78
Outbound	10 724.66
TOTAL	**16 135.44**

1 Includes: computers/televisions, CRC, general recyclables, metal and motor oil.

2 Includes: clay, computer/televisions, gravel/aggregate, green waste, mattresses, 'other', rejected material, material from the revolve/recycle area, tyres and VENM.

6.4 Conformances

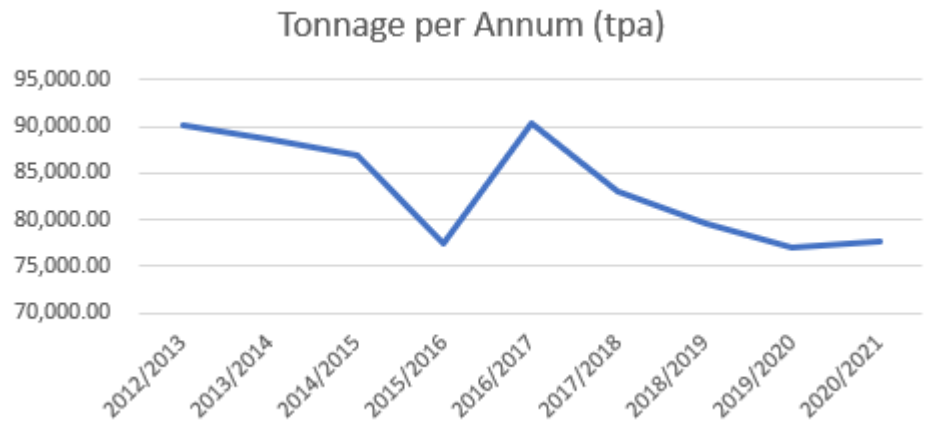
In relation to waste, the facility operated in conformance during the 2019/2021 reporting period.

6.5 Monitoring Trends

The total waste stream volumes received between 2013 and 2019 remained generally consistent. Looking at the volumes in the last reporting period, there appears to be a decreasing trend in the total waste stream amounts entering the facility.

The trend can be seen in the following graph.

Graph 15: Inbound Waste Trends



6.6 EA Predictions

The EA predictions were made based on historical weighbridge records. In the EA predictions, it was reported that the waste volume received at the facility between the period 2008 and 2012 would range between approximately 120 000 -150 000 tpa.

It was predicted that the volume of waste accepted at the facility would not increase, and the waste stream volume for this reporting period was consistent with this EA prediction. Waste volumes continue to decrease, resultant of more formal recycling programs, introduction of the organics program (FOGO) and overall diversion from landfill.

7 Air Quality Monitoring – Landfill Gases

Landfill gas monitoring was completed in order to satisfy Project Approval No. 11_0094 conditions in Schedule 4, pertaining to 'Air Quality'. The findings for the 2019-2021 reporting are provided in the sections below.

7.1 Overview

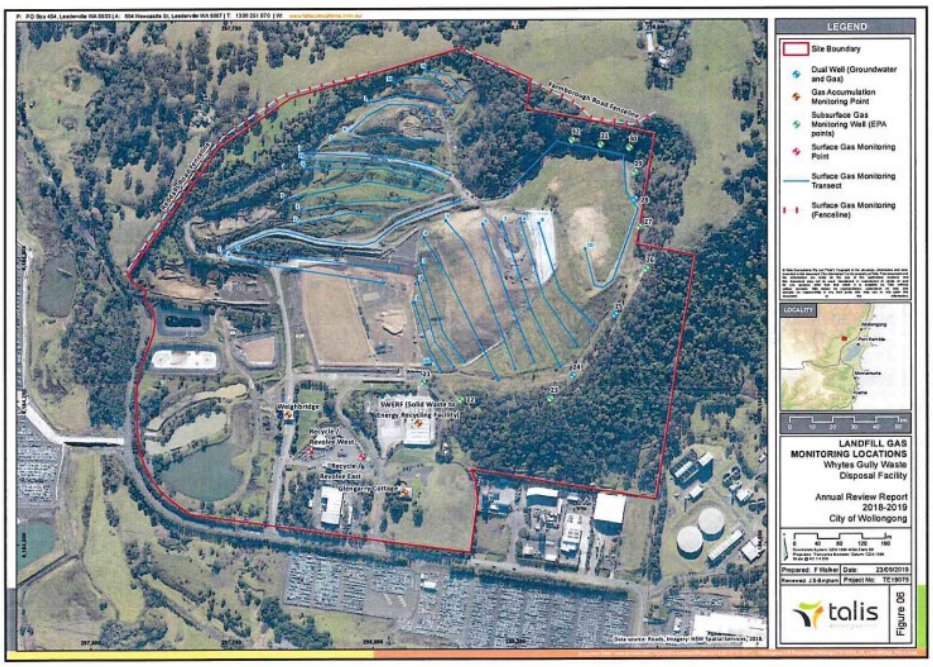
Surface gas, subsurface gas and gas accumulation into buildings, monitoring was undertaken by ALS Environmental in accordance with the *NSW EPA Environmental Guidelines: Solid waste landfills (second addition) 2016 (NSW EPA, 2016).* The monitoring locations are shown in Figure 6. A summary of the monitoring requirements for the facility are detailed in the table below:

Table 7-1: Air Quality Monitoring Requirements

Activity	Description
Purpose	Demonstrate that the cover material and extraction system is controlling the emissions of landfill gas.
Frequency	Monthly in accordance with EPL 5862.
Locations	• Transects 1-11[1] • Former landfill cell located to the north-west of the current active cell. Transects: A, C, D, E, F, G, H and I. • Recycle/Revolve East and West; and • Reddalls Road and Farmborough Road fence lines.
Methodology	Monitoring was undertaken using a calibrated *Inspectra Laser Gas Detector*. Methane concentrations were recorded at 5 cm above the ground surface in areas containing intermediate or final cover. The monitoring was undertaken at 25 metre spaced out transects on calm days, where wind speeds were <10 km/hour.
Subsurface Monitoring	
Purpose	Assess the presence of methane along the perimeter of the landfill cell and the potential for offsite migration.
Frequency	Monthly in accordance with EPL 5862.
Locations	12 landfill gas monitoring wells, including: EPA Point 21 (LFG MW1) to Point 32 (LFG MW12) in accordance with EPL 5862.

Methodology	Monitoring was undertaken using a calibrated *Inspectra Laser Gas Detector*.
Gas Accumulation	
Purpose	Demonstrate that methane along the perimeter of the landfill cell and the potential for offsite migration.
Frequency	Monthly in accordance with EPL 5862.
Locations	• Weighbridge • Glengarry Cottage (administrative building) • Recycling Transfer Station • Whytes Gully Operations Hub • Old SWERF/Visy site • Neighbouring properties within 250 m (these formally declined monitoring by WCC)
Methodology	Monitoring was undertaken using a calibrated *Inspectra Laser Gas Detector*.

Figure 6: Landfill Gas Monitoring Locations



7.2 Performance Criteria

The performance criteria adopted for the 2019-2021 reporting period for landfill gases is provided in the table below:

Table 7-2: Landfill Gas Performance Criteria

Details	Corrective Action Criteria	Mandatory Reporting Requirement	Guidance Document
Surface Gas	Methane: 500 parts per million (ppm)	Yes	NSW EPA (2016)
Subsurface Gas	Methane: 1.0% volume/volume (v/v)	Yes	
		No	

	Carbon Dioxide: 1.5% v/v, above established background levels.		
Gas Accumulation	Methane :1% v/v	Yes	

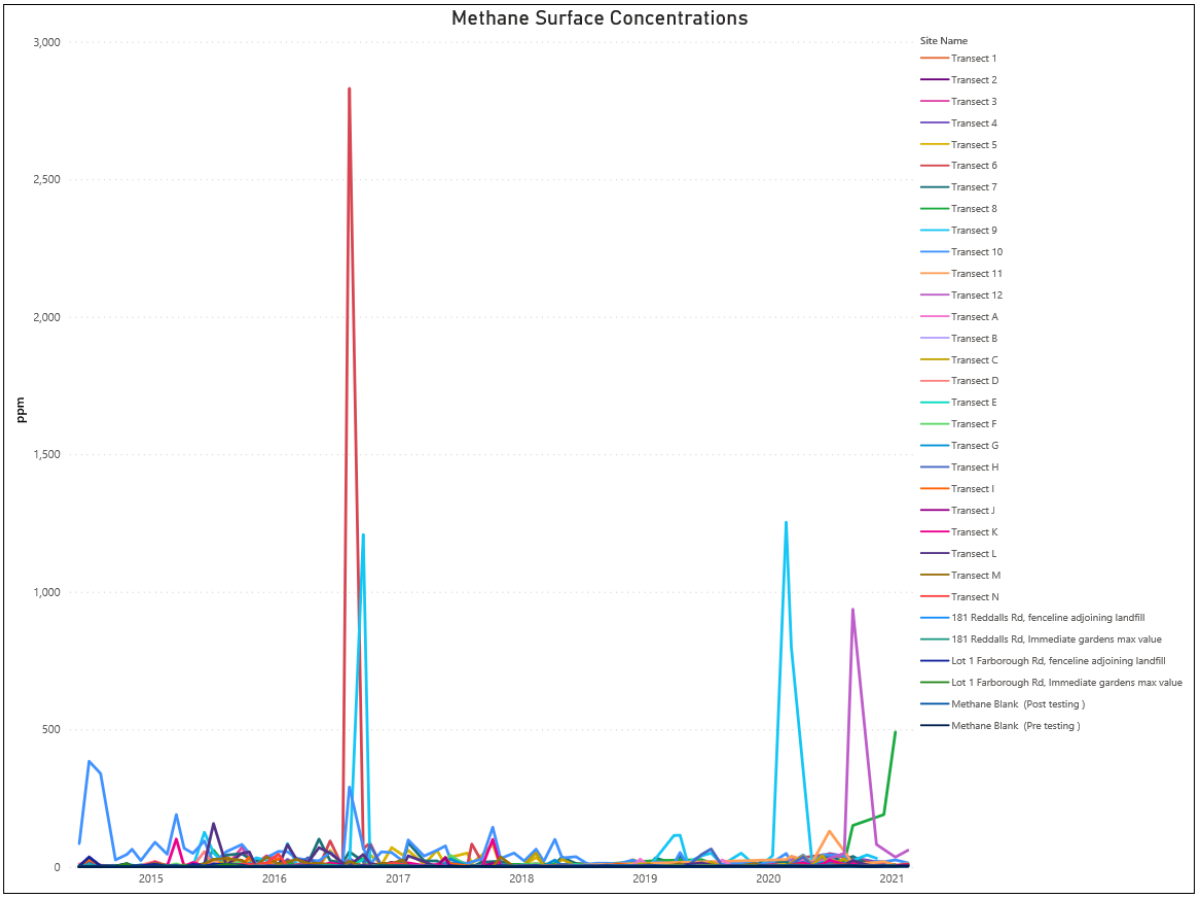
7.3 Results

The landfill gas monitoring results for the 2019-2021 reporting period are summarised in the following sections, with a copy of the full results provided in Appendix E.

7.3.1 Surface Methane

Surface gas results were reported above 500 ppm on three occasions within the reporting period. Two of these readings were on the 24 February 2020 at Transect 9.2 (1253 ppm) and at Transect 9.6 ppm (970 ppm). The other reading was on 10 March 2020 at Transect 9.4 (800 ppm).

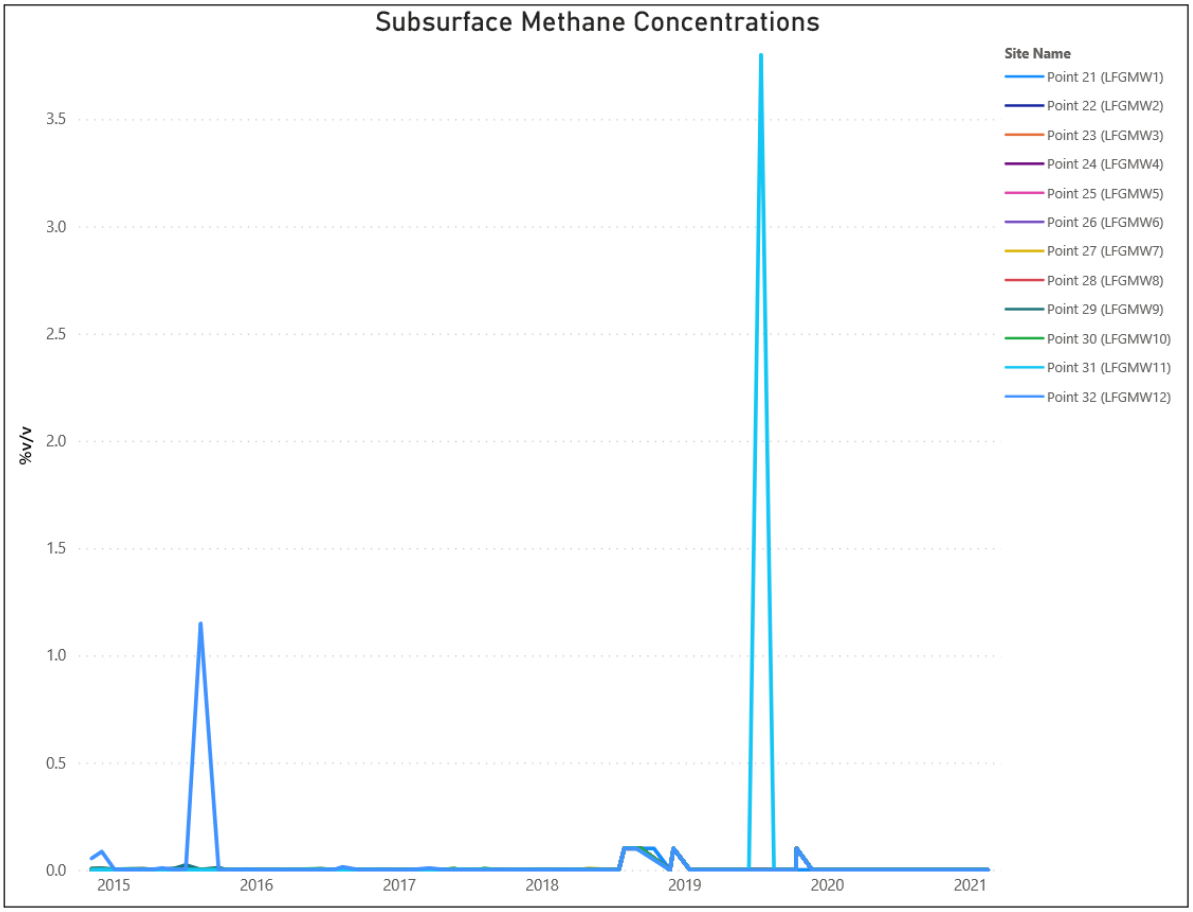
Graph 16: Surface Methane Concentrations



7.3.2 Subsurface Methane

Subsurface gas results were recorded over 1.0 % vv on one occasion at 3.8% vv on the 17th July 2019 at Monitoring Point 31. Most readings were around 0 for the reporting period.

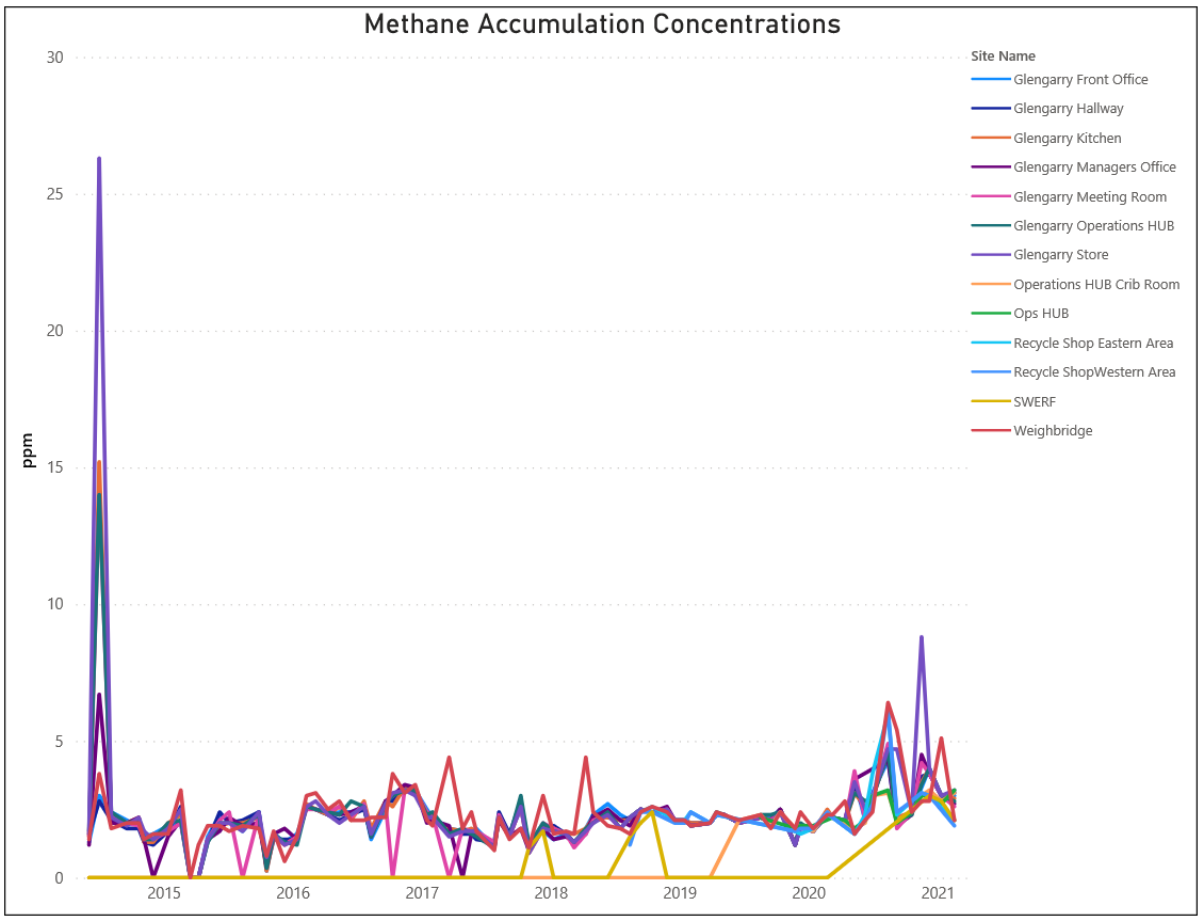
Graph 17: Subsurface Methane Concentrations



7.3.3 Gas Accumulation

As shown in the following graph, the methane concentrations accumulating into buildings have remained low even though there has been a slight increase in levels over the last reporting period.

Graph 18: Methane Accumulation Concentrations



7.3.4 EA Prediction

There were no predictions pertaining to concentrations of methane accumulating into buildings, subsurface and near surface emissions.

8 Air Quality Monitoring – Dust

Dust monitoring was completed in order to satisfy Approval No. 11_0094 conditions in Schedule 4, pertaining to 'Air Quality'. The findings for the 2019-2021 reporting period are provided in the section below.

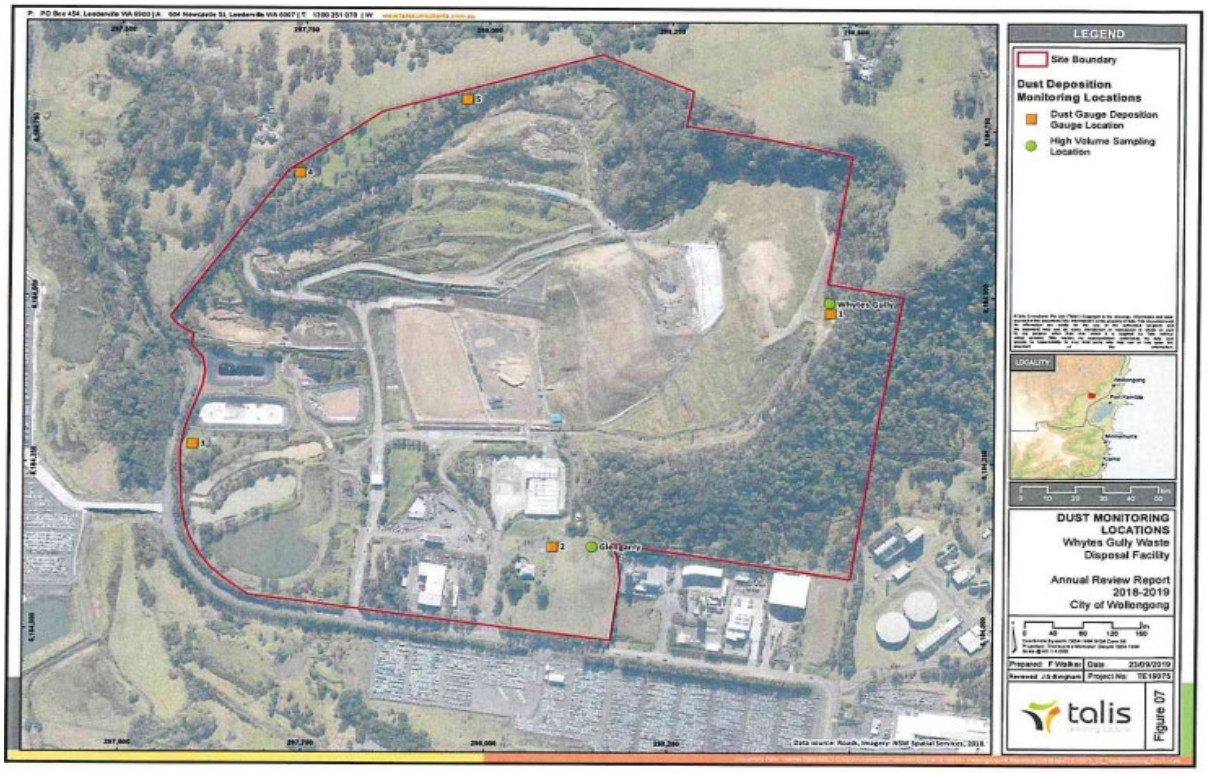
8.1 Overview

Dust monitoring was undertaken on a continuous basis using dust deposition gauges as detailed in the table below, with sampling location presented in Figure 7.

Table 8-1: Dust Monitoring Requirements

Activity	Description	
Purpose	Measure respirable dust due to sensitive receptors.	
Frequency	Continual basis with dust deposition gauges (DDG) collected and analysed monthly.	
Locations	A total of locations are monitored, including DDG1 – DDG5 which were placed around the perimeter which were placed around the perimeter of the facility, with high-vol samplers set up at two of these locations (DDG1 and DDG2 – Glengarry Cottage and Whytes Gully).	
Methodology	The dust deposition gauges were installed by ALS Environmental in accordance with *Australian Standard (AS) 3580.10.1:2003 Methods for analysis of ambient air, Method 10.1: Determination of particulate matter- deposited matter- gravimetric method (AS 3580.10.1:2003).* The gauges were placed around the perimeter of the facility's boundaries with bottles swapped out on a monthly basis. Once per month, respirable dust sampling (particulate (PM)) was undertaken at least two locations utilising a PM_{10} sampler.	
Analytes	The laboratory analysis was as follows: **Table 8-2 Dust Analysis Schedule**	
	Ash content (g/m^2/month and mg)	Total suspended particulates (TSP)
	Combustible matter (g/m^2/month and mg)	PM_{10}
	Total insoluble matter (g/m^2/month and mg)	

Figure 7: Dust Monitoring Locations



8.2 Performance Criteria

The dust monitoring performance criteria adopted for the facility is provided in the following table:

Table 8-3: Dust Criteria

Details	Averaging Period	Criteria	Guidance Document
Long-term for Particulate Matter			
TSP	Annual	90 µg/m^3	Approval No. 11_0094
PM_{10}	Annual	30 µg/m^3	
Short-term for Particulate Matter			
PM_{10}	24 hour	50 µg/m^3	Approval No. 11_0094
Long-term for Deposited Dust			
Deposited dust	Annual	Maximum increase in deposited dust level: 2 g/m^2/mon	Approval No. 11_0094
		Maximum total deposited dust level: 4 g/m^2/mon	

8.3 Results

The tabulated dust monitoring results are provided in Appendix F.

TSP and PM_{10} concentrations varied on a monthly basis across the monitoring period. Of significance, was a dust storm event on the 13/02/2019 that resulted in exceedances within this sampling period, as well as the devasting bushfires in the 9/12/2019 -6/01/2020 sampling period.

8.4 Conformances

The bushfire events at the end of 2019 and beginning of 2020 greatly influenced air quality in the region and made it difficult to discern overall site activity contribution. However, the facility mostly conformed to air quality criteria throughout the rest of the reporting period.

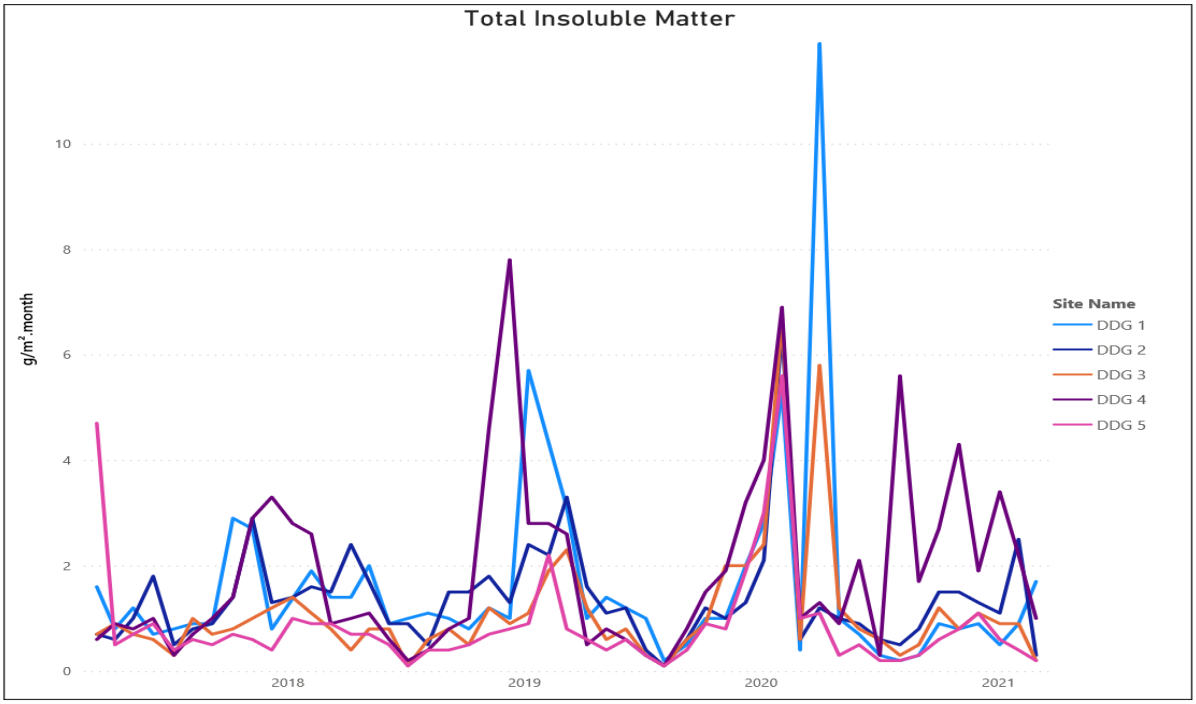
8.5 Monitoring Trends

The graphed monitoring trends measured at the Dust Deposition Gauges (DDGs) for the 2019/2021 reporting period are provided below.

8.5.1 Total Insoluble Matter

As shown in the graph below, dust concentrations have been subject to fluctuations but were generally below the performance criteria. The dust g/m^2/month exceeded the performance criteria (4 g/m^2/month) on several occasions, peaking at over 10 g/m^2/month at DDG1 in the height of the bushfires in December 2019/January 2020.

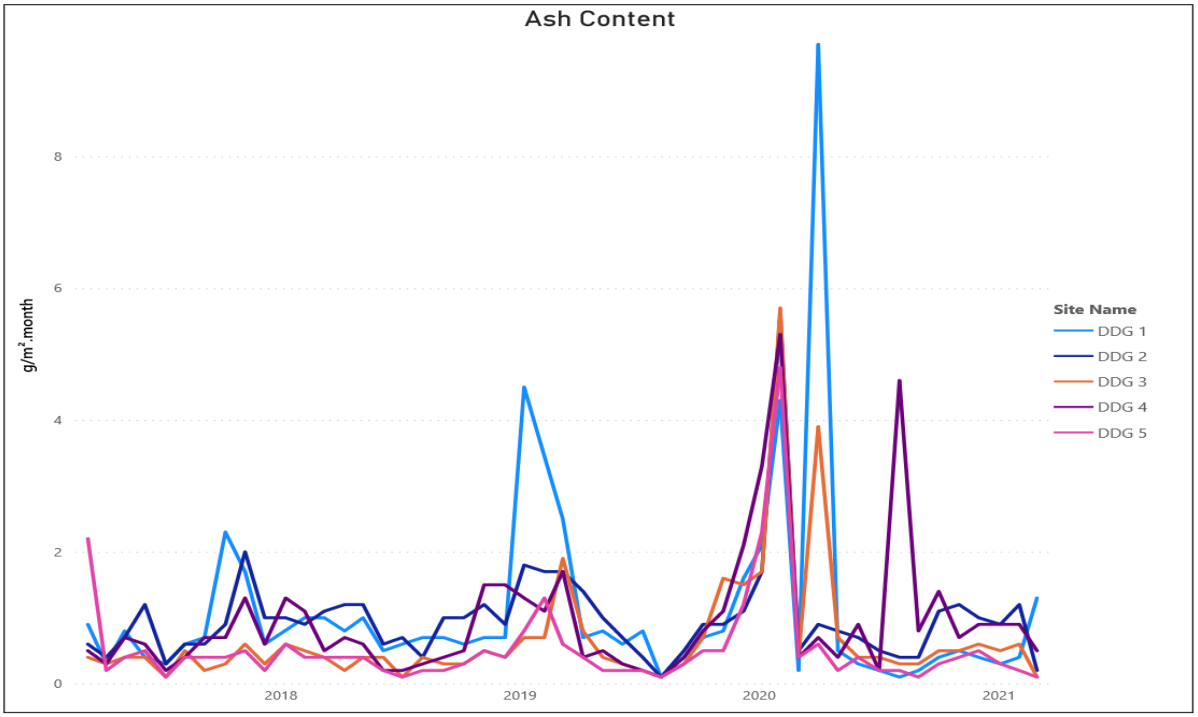
Graph 19: Total Insoluble Matter



8.5.2 Ash Content

There are no trigger values for ash content. As shown in the graph below, ash content has been subject to fluctuations across the monitoring period with a slight increase in the 2018/2019 reporting period. However, in the 2019/2020 severe bushfire season, ash content spiked to above 10 g/m^2/month at DDG1.

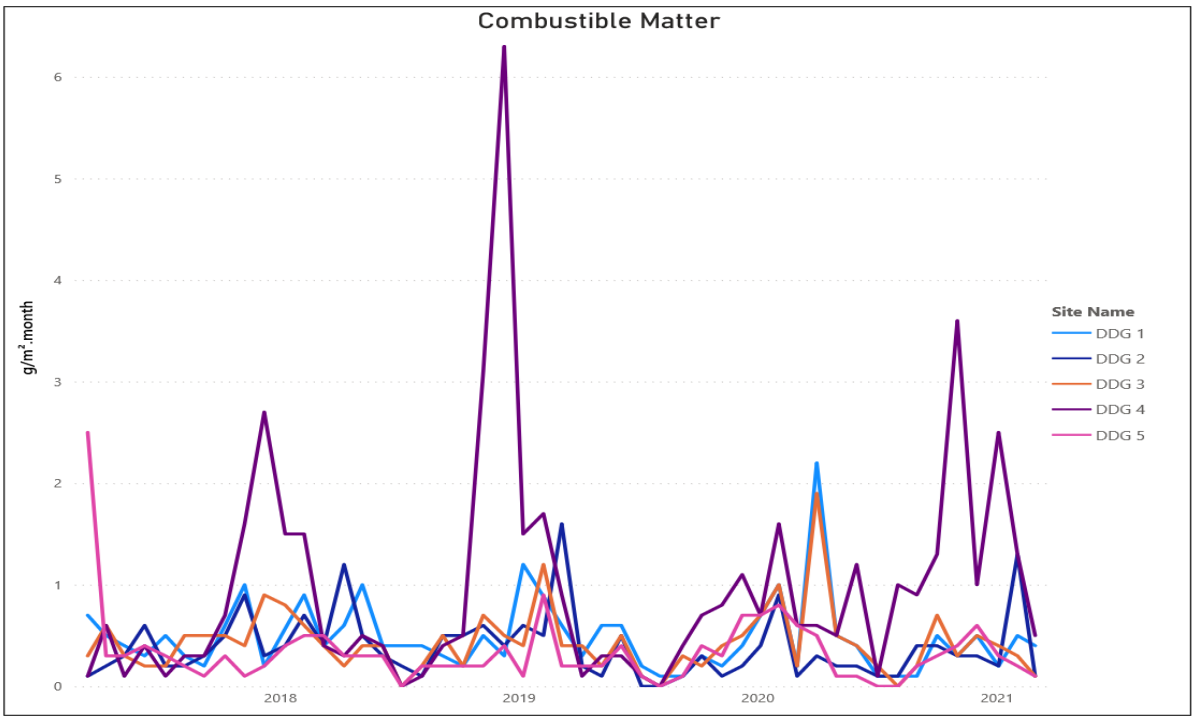
Graph 20: Ash Content



8.5.3 Combustible Matter

There are no trigger values for combustible matter. As shown in the graph below, combustible matter has been subject to fluctuations across the monitoring period. Interestingly, values in the reporting period were lower overall than the 2018/2019 spike, with DDG1 peaking between 2.5 and 3.5 g/m^2/month during the bushfire event.

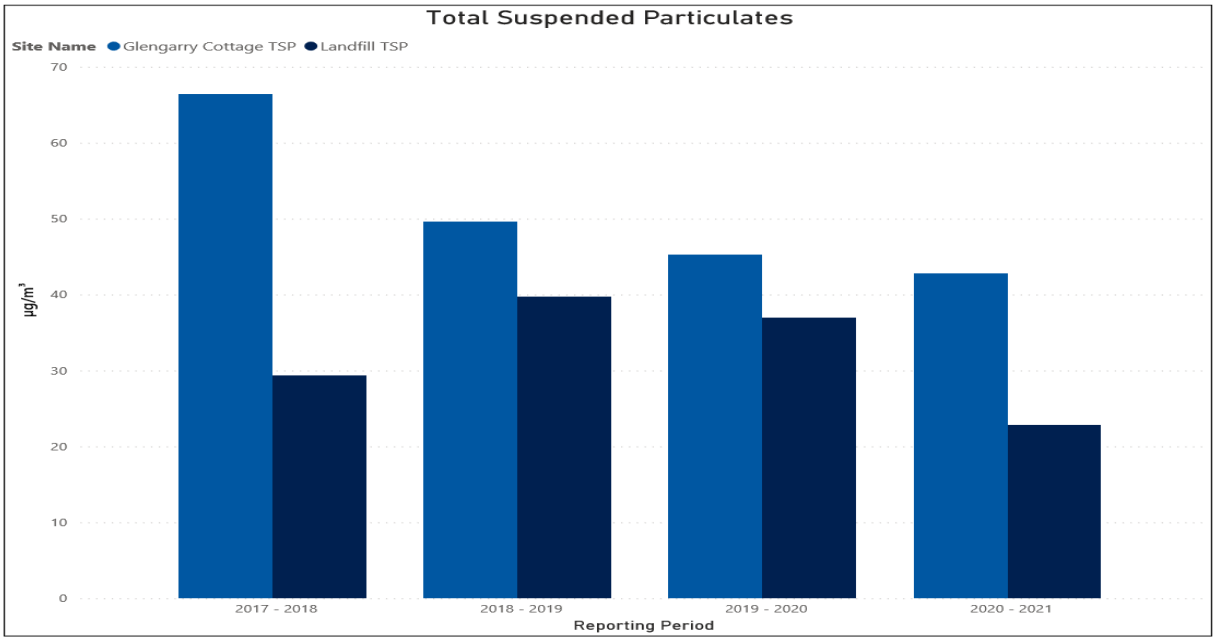
Graph 21: Combustible Matter



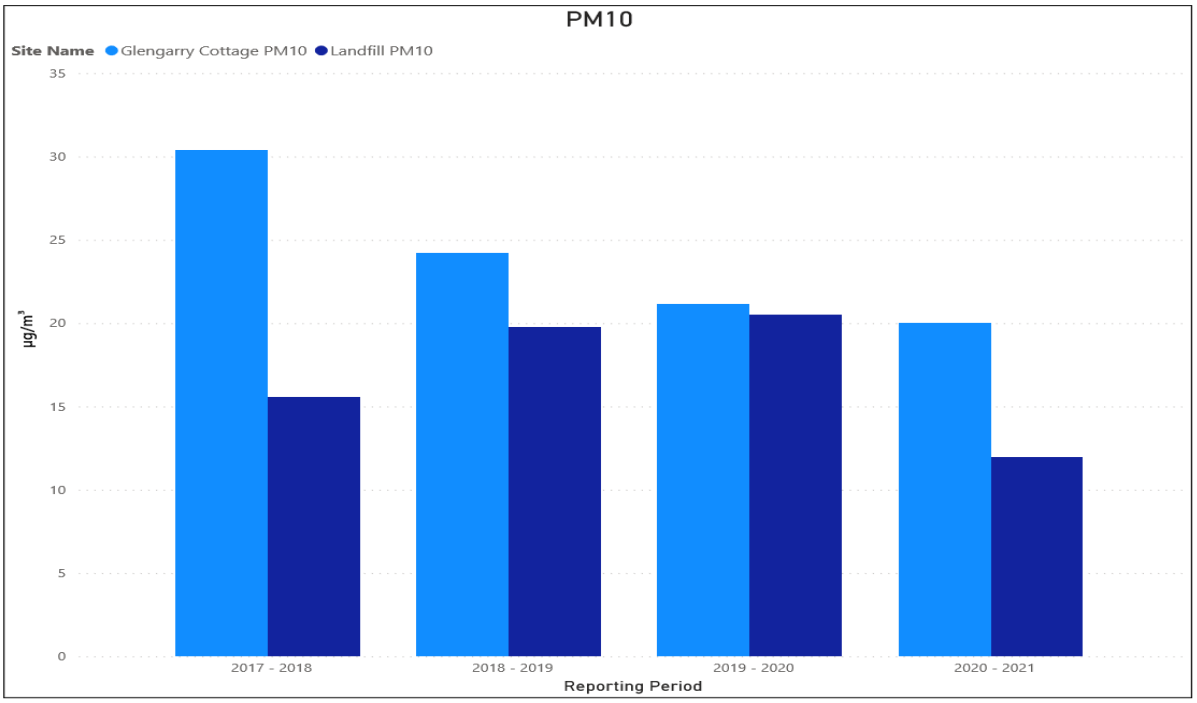
8.5.4 Rolling Monthly Average

As shown in the following graphs, there has been a slight decrease at DDG1 (Glengarry) and DDG2 (Whytes Gully) in the last reporting period despite external environmental factors.

Graph 22: TSP Rolling Monthly Average



Graph 23: PM_{10} Rolling Monthly Average



EA Predictions

The EA predictions made from dispersive modelling undertaken suggested that, should the implementation of appropriate mitigation and management measures undertaken, there would be compliance with the relevant legislative criteria at all potential offsite residences. During the operational phase of the project, the identified mitigation measures includes dust suppression, restriction of the active tipping face and required daily cover areas.

Overall, in this reporting period, measures have proved to be effective and are consistent with EA predictions.

9 Air Quality Monitoring – Odour

Odour management is required at the facility to satisfy Approval No. 11_0094 in Schedule 4, pertaining to 'Air Quality'. The findings 2019/2021 reporting period are provided in the section below.

9.1 Overview

Whilst not a mandatory requirement, Council proactively undertakes odour inspections on a daily basis around the perimeter of the facility. This is undertaken in order to determine the source of any potential odour breaches, and where additional active management is required. A copy of the weekly log is provided in Appendix G.

9.2 Performance Criteria

In reference to odour, EPL 5862 stipulates that no offensive odours are emitted beyond the boundary of the facility. As such, the performance criteria for potential offensive odour emissions are formal complaints received from the public and ad hoc offsite odour monitoring by the Council and EPA.

9.3 Results

Council received a total of 74 complaints from the public during the reporting period pertaining to offensive odours noted outside the facility's boundary. This is an increase from previous years.

During the reporting period, there were a number of changes in land use in the surrounding catchment. With the implementation of FOGO, increase in commercial organics composting has

occurred in the industrial precinct adjacent to the facility. There has also been an increase in bitumen production in the same period, resulting in an increase in potential odour sources close to the landfill.

EPA has been working with Council to quantify odours within the catchment during the beginning of 2021 and investigation outcomes will be reported in the next AEMR.

9.4 Conformances

Due to the changing nature of industrial production within the catchment, it has been difficult to identify the source of the odour complaints. However, Council has followed up on odour complaints, increased monitoring and ensured operations are conducted in accordance with best practice at all times.

9.5 Trends

Graph24 (see Section 11) shows an overall increase in complaints similar to levels in the operational start up period of 2012/2013.

10 Noise Monitoring

Noise monitoring and management is required at the facility to satisfy Approval 11_0094 Conditions in Schedule 4, pertaining to noise.

10.1 Overview

Noise monitoring at the facility commenced in early March 2019 in accordance with the NSW Industrial Noise Policy (2000) and Whytes Gully New Landfill Cell Noise Management Plan (Golder 2019). Should any noise complaints be received, additional noise monitoring events will be undertaken. No noise complaints have been received to date.

10.2 Performance Criteria

The following criteria apply to the 5 residential receiver locations on the perimeter of the facility:

Residential Receiver Location	L_{Aeq}(15 min)
N1	47
N2	45
N3	38
N4	35
N5	35

10.3 Results

The following Table provides the results for the reporting period.

Table 10:1- Noise Monitoring Data

		Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
N1														
Laeq	dB	42.8	47.3	55.7	44.9	44.2	42	49.2	49.6	50.6	47.2	49.2	52	46
Lamax	dB	67.4	68.6	83.2	61.2	68.9	54.1	65.1	69.5	65.9	66.7	67.9	68	72.1
N2														
Laeq	dB	43.9	44.5	49.9	53.4	45.8	46	47.6	47	51.4	45.1	69.5	52.2	57
Lamax	dB	58.4	58.2	78.4	86.1	72.9	55	73.2	62.6	64.2	67.3	91.5	68	79.6
N3														
Laeq	dB	57.9	65.1	62.9	67.4	68.7	69.7	69.6	70	67.3	68.6	68.5	62.4	70.7
Lamax	dB	72.4	84.7	81.1	82.9	87.4	84.7	86.5	92.7	87.6	94.4	88.7	82.7	98.9
N4														
Laeq	dB	49.8	51.4	55.3	50.3	42.9	56.9	51	39.6	50.1	47.1	49.1	55.8	46.1
Lamax	dB	75	74.7	83.7	73.8	67.6	74.5	67.1	68.1	74.1	66.4	73.3	76.2	66.1
N5														
Laeq	dB	44.7	42.3	45.7	64.8	45.1	49.6	45.5	47.6	50.8	52.6	50.3	40.5	44.9
Lamax	dB	71.9	55.1	63.5	77.2	59.7	71.8	67.9	73.7	73.4	79.2	65.1	59.7	62.8

	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21
N1											
Laeq	42.6	no access	no access	47.3	51	44.8	53.2	50.2	48.5	no access	45.9
Lamax	60	no access	no access	64.1	73.7	67.3	68.9	65.1	66.9	no access	61.6
N2											
Laeq	51.9	no access	no access	47.2	57.2	62.1	46.5	53.8	44.4	70.7	50
Lamax	65.6	no access	no access	67.3	83.4	77.8	70.5	69.2	65	96.7	63.5
N3											
Laeq	67.8	69.7	68.5	67.4	71.9	68.7	68.7	69.8	69	54.8	69.1
Lamax	89.8	96.3	85.3	86.3	96.3	87.2	83.7	84.7	85.3	76.7	82.5
N4											
Laeq	44	45.2	53.9	51.8	48.1	57.6	41.2	50.1	68.2	56.5	53.7
Lamax	60.2	68.9	79	64.6	71.6	84.8	58.2	66.6	73.9	76.7	82.9
N5											
Laeq	54.8	53.6	52.9	51.2	50.2	49.1	74.4	52.5	63	56.5	40.4
Lamax	80.7	71.9	76.1	68.4	75.4	69.3	84.5	72.5	81.6	73.6	58.2

10.4 Conformances

The results from monthly monitoring at the perimeter receivers were predominantly non-conforming. This is not the result of noise emanating from the facility, but rather the surrounding catchment. Due to the change in land use discussed in the previous section, the noise criteria are now not achievable in a light industrial area. They were previously set when the area was a predominantly rural residential and are not applicable to current surrounding industrial land use.

10.5 Trends

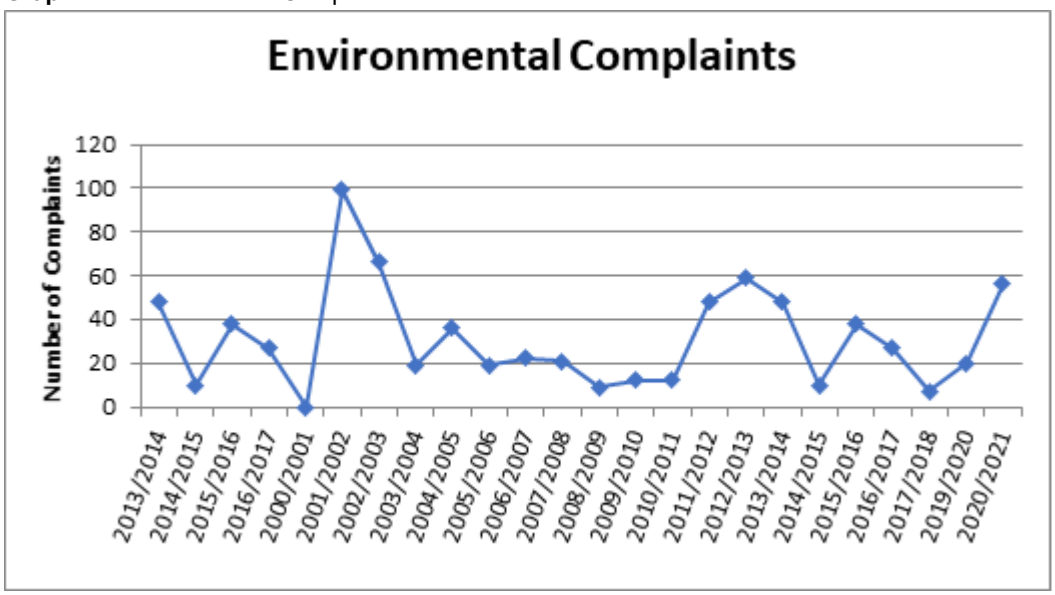
Noise monitoring only commenced in this reporting period, therefore no trends are evident at this time.

11 Complaints, Incidences and Community Consultation

11.1 Complaints

During the 2019-2021 reporting period, a total of 75 complaints were received. Almost all complaints were pertaining to offensive odour, except one dust complaint.

Graph 24: Environmental Complaints



11.2 Incidents

Two environmental incidents occurred within the reporting period, a fire and a leachate/stormwater overflow.

11.2.1 Fire 4 March 2019

At 2.50 am on the 4 March 2019, an unknown person called 000 to report a fire at the facility. The fire was in Package 2 and 3 in the active landfill and was controlled by the Rural Fire Service. The EPA & DPIE were notified of the event.

11.2.2 Leachate/Stormwater Overflow 9 February 2020

On the morning of the 9 February 2020, following a very heavy rainfall event (over 200 mm from the 7-9 February 2020) discoloured discharge, suspected to be leachate, was observed to be seeping

from the base of Cell 1B and was being carried downstream into the stormwater system by the significant surface water flows across the site. The EPA and DPIE were notified of the event.

11.3 Community Consultation

Community consultation was undertaken between Council and the local community on 21st August 2019, 31st March 2020 and 8th February 2021 during the reporting period. Unfortunately, COVID disrupted community participation and activities to some extent, with meetings being deferred during late 2020.

12 Compliances and Non-compliances

The annual return stipulated that the facility generally operated in compliance during the 2019-2020 reporting period. A copy of the annual return is provided in Appendix J. The current Return (2020/2021) will not be submitted until 28 July 2021 and will be included in the next AEMR.

In regard to the specific Project Approval No. 11_0094 compliance requirements, it was reported the facility generally operated in compliance with all conditions, with the exception of the non-compliances detailed below. This has been summarised from the findings of the IEA completed during this reporting period.

12.1 Landfill Environmental Management Plan (LEMP)

Schedule 3, Condition 2

Non-compliances with PA 11_00948 were identified during the audit. Based on the non-compliances with the Project Approval, this condition has been assessed as non-compliant. It is recommended that the LEMP be updated to reflect current practices.

12.2 Stormwater Management

Schedule 4, Condition 14,15

Based on the data available, the following exceedances with the discharge limits in the EPL (L2.4) were recorded during the audit period:

- TSS exceedances on 29 occasions.

- pH of 6.3 recorded on the 8 March 2020.

14 of the TSS exceedances (up until 10 May 2020) were included in the 2019-2020 Annual Return as the cause of the exceedances was recorded as '1 heavy rainfall event'. The pH exceedance was suspected to be an anomaly in the data.

Additional processes and procedures have been placed around the site's stormwater management and are now reviewed after each event. A stormwater management plan is being developed.

12.3 Leachate Management

Schedule 4, Condition 17

The leachate management system was considered to be designed and constructed in accordance with EPL requirements on the basis of design and construction. The leachate management system was generally being operated to prevent leachate escaping to surface water, groundwater or soils, however there was one incident in this reporting period where leachate escaped to surface water. This related to a heavy rain event in February 2020 where leachate seeping from the base of Cell 1 B was carried downstream into the stormwater system by the significant surface water flows across the site. On the basis of this incident, this condition has been assessed as non-compliant. It is noted that leachate leakage from previously constructed cells could be an ongoing risk.

12.4 Greenhouse Gas Management

Schedule 4 Condition 30

Greenhouse gas management is outlined in the LEMP and states it will:

- Assess the site's energy profile and usage patterns and use this as the basis for identifying opportunities for reducing energy consumption and costs.

This had not been undertaken.

Specific measures relating to energy savings had not been identified and implemented. It also states that WCC will prepare an annual action plan and progress report, focusing on ways of reducing emissions. This is undertaken at a whole of council level through the WCC Climate Change Mitigation Plan 2020. The WCC Climate Change Mitigation Plan 2020 includes Council's emissions profile (85% of emissions are from the landfill) and includes reduction targets and actions to reduce emissions. The Plan reports progress to date and includes future actions. Of relevance, the plan commits to expanding the landfill gas capture system at Whytes Gully between 2020 – 2022 and exploring the feasibility of the construction of a Whytes Gully Renewable Energy Facility with a 1MW Power Station between 2020-2025. As stated above, this had been included in the Construction Projects Priority List Master Plan.

12.5 Noise Management

Schedule 4 Condition 31,34

Council was unable to demonstrate compliance with noise criteria within this reporting period and in response was issued with a Warning Letter from DPIE dated 2 December 2019 for failing to comply with this condition (Schedule 4, Condition 31). The Warning Letter noted that the non-compliance did not appear to cause harm to people or the environment and that there was no record of noise complaints during the period. It was recommended that the Noise Management Plan (NMP) be reviewed and updated.

Currently, the NMP focuses on construction noise and does not specify a frequency for operational noise monitoring to assess compliance with the noise criteria. On the basis that compliance with the

noise criteria could not be demonstrated prior to February 2021, this condition has been assessed as non-compliant. The existing Noise Management Plan should be updated to reflect the change in surrounding land use.

12.6 Vegetation Management

Schedule 4 Condition 49

The initial Vegetation Management Plan was prepared by Biosis and included in the LEMP which was approved by DPIE on 11/12/14. The VMP was updated by Biosis and separated into two documents addressing the construction and operational phases of the project:

- Vegetation Management Plan: Whytes Gully New Landfill Cell (construction)
- Vegetation Management Plan: Whytes Gully Waste and Resource Recovery Centre (operations)

The VMPs were submitted to DPIE in November 2019 (not within six months of the MOD 2 determination on the 29 May 2018). DPIE provided comments on the 28 November 2019 and a response and updated VMPs were provided to DPIE on the 14 January 2020. DPIE advised that it would approve the VMPs as part of the LEMP which was yet to be approved at the time of writing. On the basis of the timing not being met for the update and approval of the VMP in the given timeframe, this condition has been assessed as non-compliant. Subsequently, the VMP was approved and implemented within the reporting period.

13 Recommendations

In accordance with the formal recommendations presented in correspondence from DPIE dated the 15th February 2021 relating the findings of the IEA and the outcomes of this AEMR, Council proposes to address the following in the next reporting period:

- Schedule 3 Condition 2 Landfill Environmental Management Plan.
    - The body of the main document of the Landfill Environmental Management Plan to be updated by the 28 March 2022.
- Schedule 4 Condition 14 & Condition 15 Soil, Water and Leachate Management Plan.
    - Develop a Stormwater Management Plan by 30 September 2021.
- Schedule 4 Condition 17 Soil, Water and Leachate Management Plan.
    - Develop a Leachate Management Plan by 30 September 2021.
- Schedule 4 Condition 18 Soil, Water and Leachate Management Plan. Finalise the entire plan (including soil/stockpile management) for 30 November 2021 submission.
- Schedule 4 Condition 24 Air Quality Management Plan.
    - Dust Management Plan and review of dust monitoring requirements at Whytes Gully by 30 August 2021.

APPENDICES

Appendix A: Surface Water: Tabulated Results and Trends

Table 1: Surface Water Results

Site Name	Sample Date	Alkalinity (as calcium carbonate) mg/L	Ammonia mg/L	Calcium mg/L	Chloride mg/L	Conductivity µS/cm	Dissolved Oxygen mg/L	Filterable iron mg/L	Fluoride mg/L	Magnesium mg/L	Nitrate mg/L	pH pH	Potassium mg/L	Sodium mg/L	Sulfate mg/L	Temperature °C	Total organic carbon mg/L	Total Phenolics mg/L	Total suspended solids mg/L
(Point 1)	09/02/2020	126	0.96	30	78	620	7.46	0.12	0.3	16	0.45	7.8	10	82	43	20.3	15	0	51
	10/02/2020	124	2.29	30	41	419	5.37	0.11	0.2	13	1.07	7.3	9	42	30	21	20	0	115
	11/02/2020	120	2.22	28	40	435	7.32	0.12	0.2	12	0.28	7.2	8	39	32	22.8	13	0	118
	12/02/2020	136	2.28	30	42	500	3.08	0.18	0.3	14	0.02	7.4	9	44	40	25.1	18	0	15
	13/02/2020	144	2.47	29	43	507	2.11	0.22	0.3	15	0	7.5	9	46	32	25.7	23	0	31
	14/02/2020	169	2.35	35	50	550	1.15	0.51	0.2	16	0.1	7.5	11	51	36	25.5	24	0	79
	15/02/2020	195	2.81	53	52	626	2.68	1.79	0.3	20	0.05	7.2	10	61	40	24.2	32	0	15
	16/02/2020	203	2.67	59	54	668	2.82	2.58	0.3	22	0	7	10	64	43	23.6	26	0	10
	17/02/2020	145	0.97	41	28	407	4.91	0.36	0.3	12	0.13	7	5	36	32	21.9	17	0	30
	18/02/2020	197	1.61	43	48	623	5.39	1.18	0.4	16	0.06	7.2	7	53	41	23.5	17	0	0
	19/02/2020	193	2.21	36	53	582	0.68	0.48	0.3	16	0.01	7	10	51	27	22.9	31	0	22
	20/02/2020	205	2.39	42	47	602	1.25	0.82	0.3	18	0	6.7	11	56	26	22.3	28	0	22
	21/02/2020	222	2.17	39	61	632	2.63	1.52	0.3	18	0	6.7	9	55	28	21.4	29	0	12
	22/02/2020	233	2.25	43	66	643	3.03	1.22	0.4	18	0	6.8	14	62	29	22.8	28	0	13
	23/02/2020	292	2.2	58	78	799	2.84	3.19	0.4	24	0	6.6	12	75	67	21.8	22	0	19
	24/02/2020	282	2.92	55	91	855	2.42	6.18	0.4	25	0	6.5	12	76	54	21.5	34	0	66
	25/02/2020	312	3.91	68	113	975	3.02	6	0.4	29	0	6.8	9	82	53	22	24	0	19
	26/02/2020	327	3.77	77	163	1,150	4.71	1.3	0.4	35	0	7	8	100	78	21.7	18	0	34
	27/02/2020	377	4.92	81	168	1,170	4.91	0.25	0.4	37	0	7.3	8	107	83	19.5	19	0	33
	28/02/2020	370	3.82	90	186	1,270	4.91	0.33	0.4	38	0	7	8	119	55	18.2	18	0	22
	29/02/2020	368	3.67	88	191	1,300	4.6	0.2	0.4	42	0	6.5	7	132	62	20.2	15	0	33
	01/03/2020	368	2.99	89	232	1,380	4.58	0.4	0.4	43	0	6.7	6	138	67	22.2	17	0	20
	02/03/2020	366	2.89	95	243	1,430	5.06	0.1	0.4	45	0	6.6	6	148	79	20.5	13	0	22
	03/03/2020	348	3.03	87	254	1,520	5.27	0.13	0.4	45	0.04	6.8	6	151	90	19.1	15	0	19
	04/03/2020	288	1.54	76	390	2,540	3.68	0.3	0.4	43	0.65	6.5	135	167	133	21.3	15	0	48
	05/03/2020	292	3.9	89	178	1,290	3.42	2.46	0.3	37	0	6.8	6	109	178	21.1	16	0	34
	06/03/2020	194	1.13	50	49	577	3.39	0.34	0.3	18	0.04	6.9	5	55	61	21.6	10	0	12
	08/03/2020	222	0.74	57	53	629	5.15	0.44	0.4	17	0.13	6.3	6	53	50	20	13	0	14
	09/03/2020	236	1.33	59	84	738	4.26	0.77	0.4	21	0.05	7.3	8	67	46	19.5	13	0	13
	10/03/2020	192	0.74	57	58	654	5.19	0.43	0.4	19	0.11	7.2	6	57	50	21.9	14	0	18
	11/03/2020	253	1.33	58	108	793	4.6	0.33	0.4	24	0.06	7.2	10	74	48	19.2	14	0	20
	12/03/2020	260	1.4	68	127	906	5.8	0.64	0.4	29	0.03	7.4	7	94	48	22.1	16	0	29
	13/03/2020	228	1.36	74	158	986	5.77	1.48	0.4	32	0.02	7.3	7	94	44	18.5	16	0	21
	14/03/2020	256	1.4	82	183	1,120	4.98	1.13	0.4	36	0.13	7.2	6	110	59	17.8	12	0	24
	15/03/2020	206	0.96	66	101	821	5.59	0.19	0.4	26	0.08	7.3	5	76	63	17.4	12	0	8
	16/03/2020	222	1	69	124	901	4.85	0.2	0.4	29	0.04	7.2	5	87	60	18	13	0	17
	17/03/2020	298	1.02	75	138	989	4.9	0.16	0.4	32	0.02	7.3	5	93	71	18.7	13	0	85
	18/03/2020	323	1.1	84	182	1,110	4.05	0.24	0.4	36	0.09	7.3	5	109	68	18.4	10	0	103
	30/03/2020	226	0.42	66	151	926	5	0.14	0.4	27	0.02	6.8	3	90	66	19.8	9	0	19
	01/04/2020	186	0.36	46	83	636	5.77	0.1	0.3	27	0.6	7.6	12	82	0	22.6	14	0	12
	02/04/2020	216	0.4	53	118	754	6.06	0.11	0.4	21	0.54	7.7	11	65	24	22.8	15	0	8
	03/04/2020	216	0.36	52	119	755	5.83	0.11	0.4	20	0.66	7.6	10	63	0	21.9	14	0	58
	04/04/2020	205	54.7	55	107	763	5.76	0.13	0.4	20	0.67	7.3	10	60	0	20.7	16	0	44
	05/04/2020	220	8.45	58	118	367	5.38	0.13	0.4	22	0.8	7	9	65	31	18.8	16	0	38
	06/04/2020	222	0.18	59	128	854	4.37	0.09	0.4	22	0.61	7.1	9	69	34	18.4	14	0	18
	07/04/2020	242	0.35	64	162	959	3.54	0.11	0.4	25	0.11	6.5	9	85	33	18.3	14	0	56
	08/04/2020	232	0.23	56	154	872	4.31	0.1	0.4	23	0.36	7.2	7	72	35	18.6	14	0	53
	09/04/2020	243	0.34	53	180	944	4.96	0.07	0.4	23	0.12	7.2	5	71	49	19.4	14	0	49
	10/04/2020	267	0.4	69	181	1,040	6.36	0.07	0.4	31	0.08	6.9	7	98	51	18.2	13	0	43
	11/04/2020	205	0.12	56	116	782	5.53	0.06	0.3	22	0.56	7	8	71	45	18.3	15	0	77
	12/04/2020	227	0.31	64	201	1,060	5.48	0.08	0.4	30	0.12	6.9	6	106	58	15.8	13	0	36
	13/04/2020	238	0.42	69	190	1,080	4.95	0.06	0.4	32	0.05	6.8	6	103	56	16.1	12	0	45
	14/04/2020	261	0.4	78	235	1,240	4.88	0	0.4	37	0.06	6.9	6	118	63	17.4	13	0	26
	01/05/2020	244	0.14	54	144	827	8.81	0	0.3	24	0.85	7.8	11	75	36	15.1	14	0	20
	02/05/2020	222	0.11	55	135	827	9.54	0	0.3	25	0.75	7.8	11	78	33	13.5	16	0	23
	03/05/2020	228	0.12	55	131	831	10.1	0	0.3	25	0.78	7.7	11	78	32	13.1	6	0	22
	04/05/2020	217	0.14	54	130	839	9.6	0	0.3	24	0.74	7.8	11	75	32	14.6	5	0	24
	05/05/2020	220	0.07	56	135	846	9.6	0	0.4	25	0.74	7.2	11	79	32	16	5	0	35
	06/05/2020	208	0.1	48	134	853	8.55	0	0.3	20	0.72	7.7	10	77	33	17.4	4	0	37
	07/05/2020	227	0.15	55	138	859	8.36	0	0.4	25	0.75	7.7	13	80	34	17.7	14	0	45
	08/05/2020	204	0.17	54	143	871	8.35	0	0.4	26	0.73	7.8	13	80	35	18.2	14	0	56
	09/05/2020	210	0.24	40	139	877	9.15	0	0.4	27	0.72	7.7	13	82	37	15.8	14	0	80
	10/05/2020	211	0.39	39	138	896	9.24	0	0.4	27	0.66	7.5	13	83	39	14.2	13	0	89
	27/07/2020	160	0.5	41	52	564	8.59	0.08	0.3	42	1.06	7.9	133	462	36	14.4	17	0	58
	28/07/2020	140	0.95	25	39	484	5.52	0.11	0.3	15	1.8	7.6	8	50	31	15.2	22	0	69
	29/07/2020	167	0.76	34	46	521	3.78	0.14	0.3	16	0.03	7.6	9	55	33	15	22	0	48
	30/07/2020	164	1	32	53	531	4.68	0.12	0.3	16	0.04	7.6	8	55	33	14.2	12	0	40

31/07/2020	206	0.52	48	159	949	8.91	0	0.4	29	0.3	7.9	11	104	61	14.5	18	0	21
03/08/2020	180	0.97	38	62	644	8.03	0.12	0.3	20	0.04	7.8	9	69	41	14.2	30	0	55
04/08/2020	207	0.87	44	104	776	7.9	0.1	0.3	23	0.03	7.7	10	84	51	14.4	20	0	36
05/08/2020	184	1.06	38	64	653	9.31	0.09	0.3	19	0.06	8	10	67	40	9.1	15	0	49
06/08/2020	183	1.06	37	59	642	9.15	0.12	0.3	19	0.09	7.8	10	68	40	10.6	18	0	21
07/08/2020	188	1.1	37	59	676	9.76	0.08	0.3	19	0.03	7.8	9	65	40	10.6	18	0	16
08/08/2020	181	1.17	34	47	549	7.7	0.21	0.3	17	0.43	7.8	8	55	33	12.2	17	0	46
09/08/2020	162	1.12	30	41	483	6.92	0.17	0.2	15	0.49	7.7	8	48	28	12	17	0	70
10/08/2020	172	2.14	33	37	481	6.28	0.22	0.2	14	0	7.7	8	45	25	13	28	0	99
11/08/2020	173	2.59	33	38	481	4.5	0.23	0.2	14	0.01	7.6	8	45	25	13.5	26	0	105
12/08/2020	73	0	21	37	485	4.14	0.12	0.1	10	0.41	7.6	2	24	20	14.4	4	0	8
13/08/2020	235	1.89	43	56	621	0.76	1.41	0.3	18	0	7.3	8	56	34	17.8	45	0	86
24/08/2020	196	2.11	36	46	548	6.57	0.08	0.3	15	0.18	7.3	8	50	22	12.7	20	0	10
31/10/2020	184	1.22	38	95	699	8.47	0	0.3	20	0.43	7.7	9	70	28	19.3	12	0	134
01/11/2020	160	0.73	33	59	567	6.79	0	0	17	0.97	7.6	8	61	25	18.9	11	0	134
02/11/2020	150	0.74	30	68	517	6.82	0.08	0	16	0.78	7.2	8	57	14	19.3	12	0	97
03/11/2020	146	0.66	31	70	520	6.69	0.07	0.3	17	1.18	7.4	9	52	24	19.9	12	0	60
05/11/2020	136	0.41	27	50	456	7.28	0.08	0.3	12	0.9	7.5	6	40	25	18.1	10	0	15
06/11/2020	151	0.54	31	57	512	5.25	0.08	0.3	15	1.16	7.4	8	48	24	18.9	14	0	23
07/11/2020	164	0.13	34	61	532	5.84	0.1	0.3	16	1.47	7.5	8	53	25	20.9	11	0	148
08/11/2020	164	0.12	32	54	534	6.16	0.1	0.3	15	1.47	7.5	8	53	23	20.2	11	0	57
09/11/2020	158	0.13	33	54	533	6.9	0.09	0.3	16	1.47	7.5	8	51	23	20.3	13	0	18
10/11/2020	154	0.12	33	62	547	5.67	0.1	0.3	16	1.46	7.4	8	56	24	19.9	13	0	58
11/11/2020	173	0.09	34	68	575	5.42	0.07	0.3	16	1.41	7.5	8	57	24	20.3	12	0	44
08/01/2021	194	0.04	43	35	471	5.27	0.17	0.3	13	0.06	7.4	3	40	22	21	10	0	12
12/01/2021	287	0.3	57	130	924	5.18	0	0.4	29	0.11	7.4	7	93	33	21	11	0	290
22/01/2021	232	0.34	38	101	764	6.95	0.09	0.5	23	0.08	7.9	10	93	28	25.2	11	0	19
25/01/2021	258	0.58	38	102	794	6.79	0.08	0.4	23	0.15	7.7	10	93	55	28.1	12	0	26
04/02/2021	213	0.23	35	73	702	7.57	0	0.4	19	0.19	8	9	75	30	25.8	12	0	16
15/02/2021	277	0.2	55	177	1,010	7.4	0.16	0.5	29	0.07	7.5	4	108	35	20.2	8	0	10

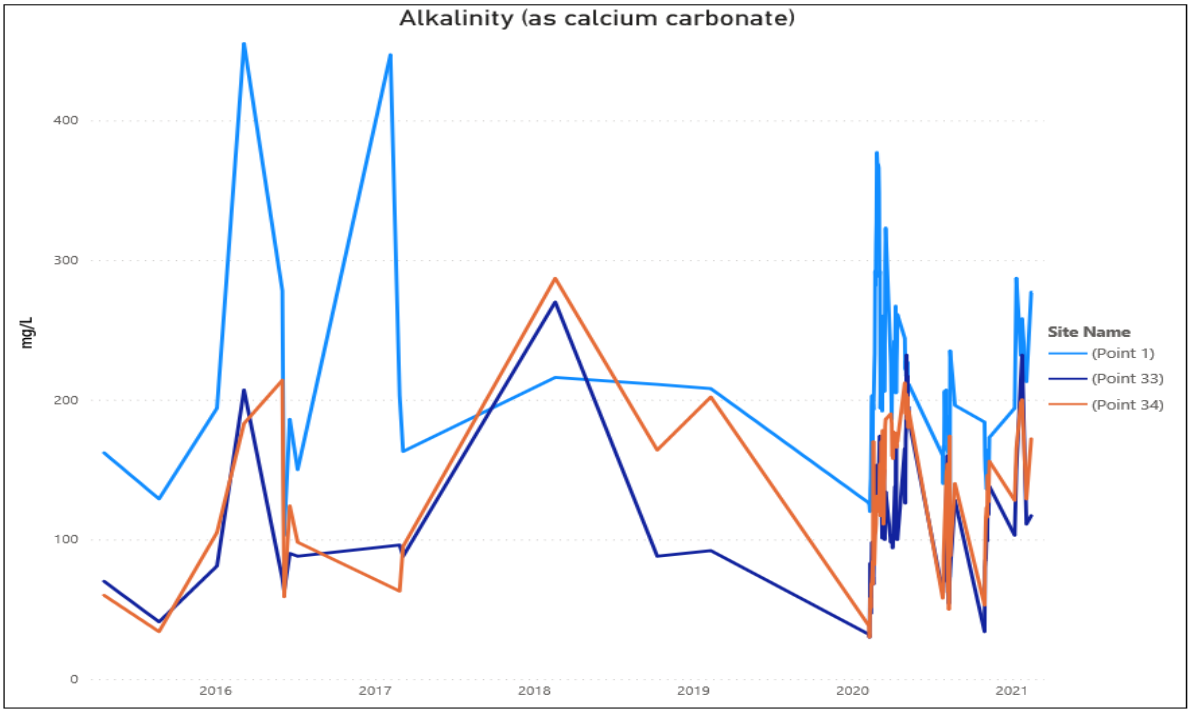
Site Name	Sample Date	Alkalinity (as calcium carbonate) mg/L	Ammonia mg/L	Calcium mg/L	Chloride mg/L	Conductivity µS/cm	Dissolved Oxygen mg/L	Filterable iron mg/L	Fluoride mg/L	Magnesium mg/L	Nitrate mg/L	pH	Potassium mg/L	Sodium mg/L	Sulfate mg/L	Temperature °C	Total organic carbon mg/L	Total Phenolics mg/L	Total suspended solids mg/L
(Point 33)	09/02/2020	32	0.04	19	30	216	8.51	0.4	0.1	7	2.52	7.9	6	19	14	19.9	11	0	489
	10/02/2020	30	0.07	13	30	190	8.71	0.28	0.1	6	1.94	7.2	4	18	15	20.2	7	0	74
	11/02/2020	58	0.01	22	41	325	8.76	0.15	0.1	10	1.47	7.2	4	24	27	20.4	3	0	0
	12/02/2020	83	0	28	42	389	7.46	0.06	0.2	13	0.85	7.4	4	29	31	25.5	5	0	0
	13/02/2020	47	0	15	32	254	7.67	0.28	0.1	7	0.91	7.7	3	21	17	24.4	8	0	19
	14/02/2020	74	0	25	44	338	7.68	0.11	0.1	11	0.79	7.5	5	27	26	25.5	5	0	7
	15/02/2020	86	0.03	37	43	375	7.67	0.06	0.1	14	0.42	7.2	4	29	29	21.6	5	0	0
	16/02/2020	98	0.03	40	45	397	7.6	0.06	0.1	15	0.27	6.9	4	31	30	21.7	4	0	0
	17/02/2020	68	0.07	24	35	280	9.11	0.3	0.1	10	0.42	7.2	4	24	20	21.9	9	0	38
	18/02/2020	73	0.02	22	40	336	8.27	0.14	0.1	10	0.54	7.2	3	25	23	21	2	0	0
	19/02/2020	68	0.03	19	41	310	8.13	0.15	0.1	8	0.6	6.7	3	22	19	19.5	7	0	6
	20/02/2020	87	0	28	40	367	8.27	0.12	0.1	12	0.36	6.3	3	27	24	18.2	3	0	0
	21/02/2020	101	0.02	28	50	387	8.31	0.08	0.2	12	0.19	6.6	3	26	26	19.5	4	0	0
	22/02/2020	113	0	29	50	399	8.74	0.09	0.2	14	0.08	6.6	4	34	31	20.8	4	0	0
	23/02/2020	117	0	32	52	420	8.81	0.08	0.2	15	0.04	6.5	5	36	32	20.6	4	0	0
	24/02/2020	129	0	34	52	437	8.03	0.08	0.2	16	0.02	6.5	5	36	33	19.9	4	0	0
	25/02/2020	153	0.03	36	44	452	7.41	0.11	0.2	16	0	6.8	3	30	28	21	3	0	0
	26/02/2020	136	0	36	53	469	6.81	0.15	0.2	16	0	7.1	3	31	34	21.3	2	0	0
	27/02/2020	153	0.02	39	52	485	7.04	0.12	0.1	17	0	7.1	3	33	37	19.8	3	0	0
	28/02/2020	144	0.02	44	52	490	7.24	0.11	0.1	18	0	6.8	4	33	30	18.5	3	0	0
	29/02/2020	149	0	41	49	498	7.47	0.17	0.2	18	0	6.5	4	33	30	20.7	3	0	0
	01/03/2020	152	0.01	43	54	511	7.59	0.17	0.2	19	0	7	4	35	164	23.9	3	0	0
	02/03/2020	148	0	44	55	518	6.37	0.14	0.2	19	0.02	6.6	4	35	31	20.8	2	0	0
	03/03/2020	156	0.02	41	56	526	5.78	0.17	0.2	20	0	6.4	3	35	32	19.8	3	0	0
	04/03/2020	169	0.03	41	56	536	6.76	0.16	0.2	20	0.03	6.8	5	36	32	21	4	0	0
	05/03/2020	174	0.07	42	55	525	6.81	0.24	0.2	18	0.03	7.1	3	32	35	20.4	3	0	0
	06/03/2020	164	0.05	46	54	512	7.11	0.1	0.1	21	0.05	7.2	4	37	34	20.4	3	0	0
	08/03/2020	121	0.04	30	41	384	6.61	0.7	0.2	11	0.12	6.7	4	32	24	21.2	6	0	0
	09/03/2020	125	0.02	31	45	396	6.3	0.81	0.2	11	0.1	7.3	4	33	22	20.1	6	0	10
	10/03/2020	101	0.04	30	43	390	5.42	0.91	0.2	13	0.08	6.8	3	32	24	21.7	7	0	0
	11/03/2020	137	0.03	31	48	587	4.23	1.16	0.2	13	0.09	7.2	3	38	24	19.6	6	0	0
	12/03/2020	134	0.03	33	47	429	4.89	0.85	0.2	14	0.07	6.9	3	36	23	22.1	7	0	8
	13/03/2020	139	0.05	47	53	530	6.51	0.28	0.2	20	0.06	7.4	4	36	32	20.3	2	0	0
	14/03/2020	150	0.06	48	57	545	6.03	0.15	0.2	21	0.06	7.4	4	37	34	17.5	2	0	0
	15/03/2020	124	0.02	36	54	469	6.52	0.79	0.2	15	0.12	7.5	3	40	26	17.8	7	0	0
	16/03/2020	100	0.02	29	45	384	6.37	0.9	0.1	12	0.07	7.2	3	34	22	18.7	7	0	0
	17/03/2020	126	0.04	31	41	385	5.43	1.1	0.1	13	0.08	7.2	3	33	23	19	6	0	0
	18/03/2020	134	0.01	31	48	399	4.71	1.16	0.1	13	0.04	7.1	3	35	21	19.3	7	0	0
	30/03/2020	98	0.01	25	36	347	4.99	0.26	0.2	10	0.04	7	2	33	0	21	5	0	0
	01/04/2020	103	0	24	39	347	5.98	0.32	0.2	10	0.19	7.3	3	32	0	21.6	8	0	6
	02/04/2020	101	0.03	25	38	341	6.59	0.27	0.1	10	0.09	7.4	3	31	0	21.1	6	0	0
	03/04/2020	94	0.08	21	33	312	6.83	0.28	0.1	8	0.07	7.3	2	26	0	20.9	5	0	6
	04/04/2020	98	0.1	19	31	327	5.87	0.26	0.1	8	0.06	7	2	26	0	20.9	5	0	0
	05/04/2020	110	0.03	21	36	808	4.58	0.41	0.1	10	0.05	7.1	2	30	20	17.6	6	0	6
	06/04/2020	117	0.02	24	38	391	4.5	0.49	0.1	11	0.04	7.1	2	31	19	18.8	6	0	0
	07/04/2020	125	0	29	49	414	4.83	0.72	0.1	11	0.04	6.6	3	35	18	18.2	4	0	7
	08/04/2020	134	0.01	30	45	419	4.4	0.85	0.2	12	0.03	7.1	2	33	19	17.5	6	0	6
	09/04/2020	138	0.02	32	50	435	4.27	0.93	0.2	13	0	7.1	2	35	22	19.4	6	0	0
	10/04/2020	130	0.01	33	48	459	4.58	1.14	0.1	14	0	6.7	3	38	20	18.2	6	0	10
	11/04/2020	168	0	40	61	553	6.25	0.38	0.2	17	0.01	7	3	47	26	18	8	0	6
	12/04/2020	102	0.02	24	34	342	7.54	0.34	0.1	10	0.04	7.1	2	30	20	17.4	5	0	7
	13/04/2020	100	0.01	23	33	330	5.71	0.56	0.1	10	0.03	6.8	2	29	19	15.8	5	0	9
	14/04/2020	100	0	24	35	349	4.16	0.71	0.1	10	0	6.8	2	30	18	17	3	0	0
	01/05/2020	165	0.02	32	54	471	5.8	0.58	0.1	14	0.02	7.2	3	41	23	14.7	6	0	0
	02/05/2020	126	0.02	31	62	489	6.67	0.49	0.2	14	0.19	7	4	47	26	13.2	11	0	7
	03/05/2020	172	0.07	41	71	636	6.4	0.51	0.2	18	0.28	7	6	59	28	13.2	1	0	5
	04/05/2020	180	0.13	45	114	721	4.87	1.22	0.2	21	0.19	7	6	67	29	14.2	3	0	12
	05/05/2020	232	0	52	125	810	7.71	0.13	0.4	24	0.52	7	10	76	31	14.5	4	0	8
	06/05/2020	180	0	43	124	779	8.05	0.37	0.3	19	0.27	7.1	8	72	33	15.2	4	0	0
	07/05/2020	217	0.08	48	130	775	4.42	1.49	0.2	22	0.13	7	8	74	30	16	12	0	10
	08/05/2020	187	0.1	46	127	623	4.03	0.93	0.3	22	0.08	7.2	6	72	29	16.2	11	0	8
	09/05/2020	195	0.06	36	132	806	5.01	1.59	0.3	23	0.18	6.6	6	77	34	16.3	12	0	11
	10/05/2020	186	0.06	36	131	821	4.87	2.12	0.3	24	0.14	6.6	6	78	32	16.2	3	0	6
	27/07/2020	62	0.01	15	24	242	9.85	0.35	0.1	7	1.21	7.4	4	22	16	14.1	11	0	38

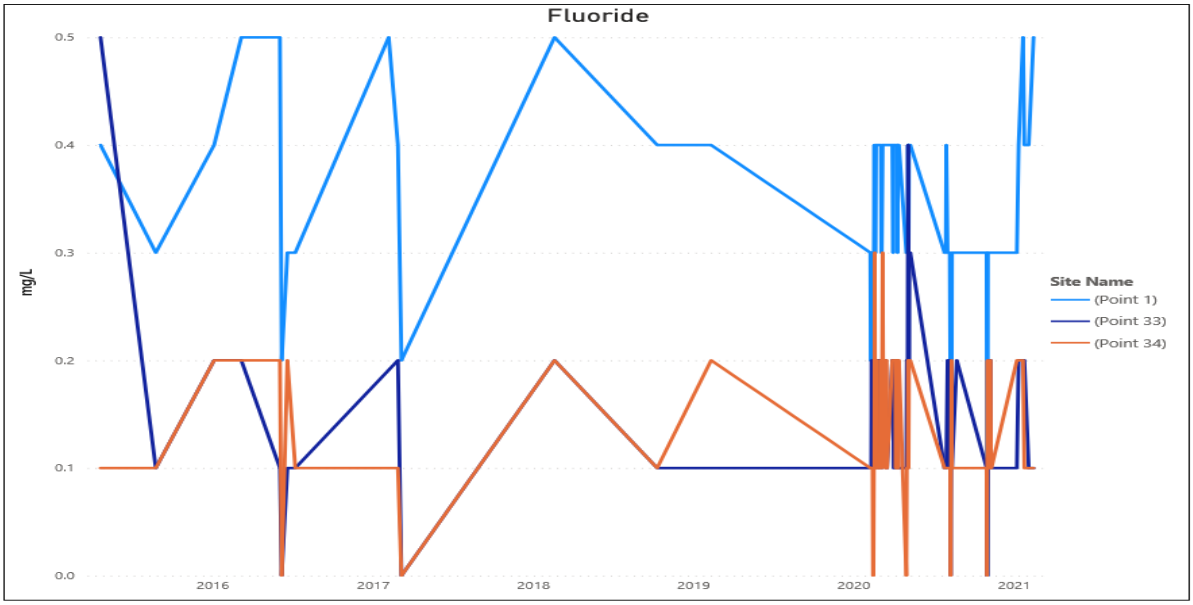
28/07/2020	62	0.02	14	27	259	8.25	0.29	0.1	7	1.08	7.6	3	24	17	14.8	8	0	13
29/07/2020	73	0.03	19	29	272	8.32	0.26	0.1	8	0.72	7.3	3	25	18	14.4	7	0	8
30/07/2020	70	0.04	19	31	267	8.98	0.17	0.1	8	0.51	7.3	2	24	17	14.2	4	0	0
31/07/2020	74	0.03	20	31	263	9.06	0.12	0.1	8	0.34	7.3	2	23	16	13.9	5	0	0
03/08/2020	104	0.03	28	39	364	9.2	0.26	0.2	12	0.26	7.4	2	31	23	13.4	6	0	0
04/08/2020	129	0.06	33	50	455	8.7	0.26	0.2	14	0.22	7.5	3	40	28	13.5	7	0	5
05/08/2020	139	0.11	37	55	522	11.4	0.27	0.2	16	0.21	7.6	5	47	31	9.1	7	0	8
06/08/2020	144	0.11	35	51	500	8.79	0.34	0.2	16	0.26	7.5	5	46	30	10.7	9	0	5
07/08/2020	160	0.32	36	54	535	9.37	0.24	0.2	16	0.2	7.8	6	53	34	9.9	11	0	0
08/08/2020	66	0.09	16	26	253	9.43	0.37	0.1	7	0.89	7.5	3	22	17	13.1	7	0	20
09/08/2020	66	0.04	16	28	256	10.3	0.32	0.1	8	0.65	7.7	3	22	17	11.1	6	0	10
10/08/2020	54	0.13	14	25	222	9.47	0.34	0	7	0.72	7.5	3	19	14	13.4	6	0	25
11/08/2020	62	0.12	17	31	249	9.39	0.24	0.1	8	0.64	7.4	2	21	17	13	5	0	9
12/08/2020	72	0.13	18	31	268	9.48	0.17	0.1	8	0.52	7.7	2	23	18	14.3	5	0	12
13/08/2020	78	0.13	19	35	308	8.14	0.19	0.1	9	0.41	7.6	2	24	18	17	6	0	11
24/08/2020	128	0.26	34	42	432	8.68	0.31	0.2	16	0.19	7.1	4	38	23	11.9	6	0	0
31/10/2020	34	0	10	14	140	8.47	0.4	0.1	5	0.85	7.4	6	11	26	18	9	0	539
01/11/2020	80	0.05	20	30	296	6.8	0.24	0	9	0.53	7.2	3	27	20	18.6	8	0	31
02/11/2020	85	0.07	20	30	291	7	0.23	0	9	0.4	7.2	3	26	19	18.8	6	0	14
03/11/2020	86	0.05	21	36	302	7.5	0.14	0.1	9	0.33	7.4	3	25	18	19.5	6	0	14
05/11/2020	108	0.04	24	41	407	8.05	0.1	0.2	10	0.34	7.4	4	29	20	17.4	8	0	9
06/11/2020	99	0.03	24	33	321	6.9	0.18	0.1	10	0.18	7.4	3	24	19	18.4	6	0	0
07/11/2020	123	0.04	29	42	389	6.83	0.16	0.2	12	0.1	7.4	3	32	20	21.2	6	0	28
08/11/2020	124	0.04	30	39	390	6.87	0.21	0.2	12	0.1	7.3	3	31	18	19	5	0	62
09/11/2020	118	0.03	29	39	389	6.75	0.23	0.2	13	0.09	7.3	3	30	18	18.1	5	0	9
10/11/2020	130	0.03	30	45	417	7.34	0.24	0.1	14	0.07	7.4	3	34	20	19.2	5	0	8
11/11/2020	138	0.03	31	47	424	7.58	0.26	0.1	14	0.06	7.5	3	33	20	19.4	5	0	0
08/01/2021	103	0	22	28	293	7.13	0.25	0.1	9	0.01	7.4	2	26	13	20.8	5	0	0
12/01/2021	150	0.04	30	40	409	5.13	0.35	0.2	12	0.03	7.3	2	32	14	22.5	5	0	0
22/01/2021	214	0.04	39	74	636	3.78	0.36	0.2	19	0	7.3	5	67	16	23.5	9	0	6
25/01/2021	232	0.06	44	86	669	3.28	0.64	0.2	19	0.01	7.1	4	72	4	27.1	9	0	0
04/02/2021	111	0.02	24	34	341	6.61	0.13	0.1	10	0.06	7.4	3	30	14	25.2	5	0	0
15/02/2021	117	0.02	26	35	330	7.42	0.26	0.1	10	0.04	7.5	2	26	12	22.4	4	0	0

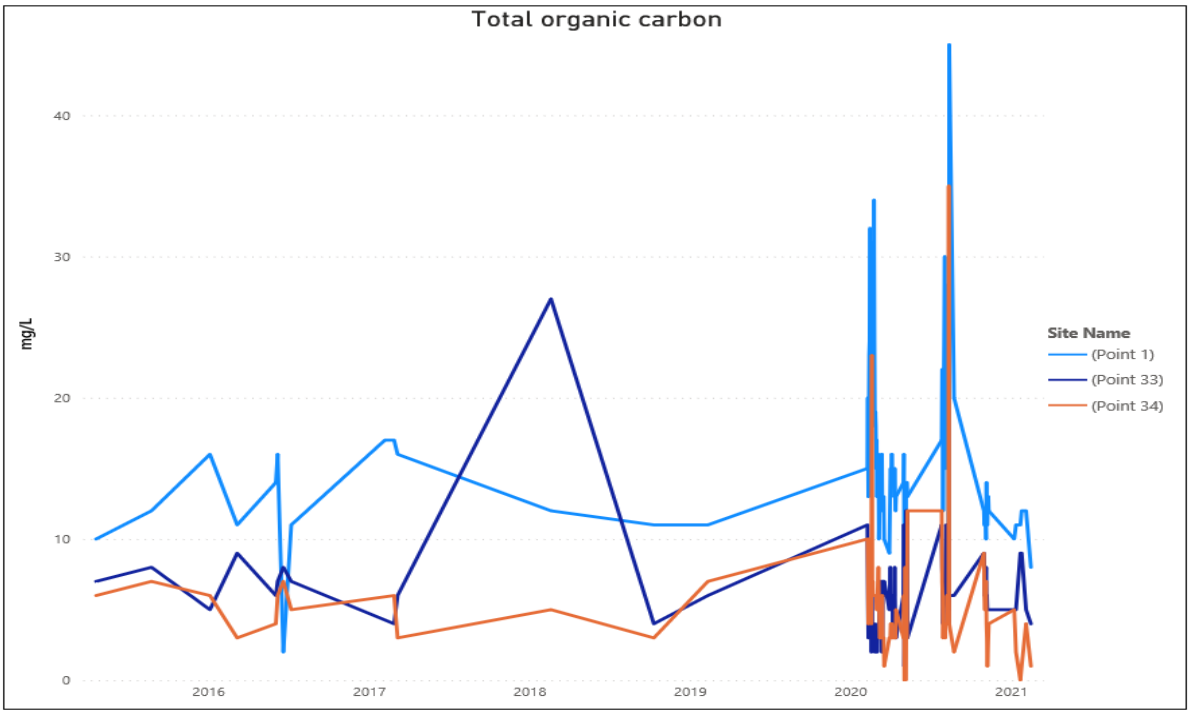
Site Name	Sample Date	Alkalinity (as calcium carbonate) mg/L	Ammonia mg/L	Calcium mg/L	Chloride mg/L	Conductivity µS/cm	Dissolved Oxygen mg/L	Filterable iron mg/L	Fluoride mg/L	Magnesium mg/L	Nitrate mg/L	pH pH	Potassium mg/L	Sodium mg/L	Sulfate mg/L	Temperature °C	Total organic carbon mg/L	Total Phenolics mg/L	Total suspended solids mg/L
(Point 34)	09/02/2020	38	0.11	17	36	274	7.1	0.32	0.1	7	2.22	7.5	6	24	23	20.1	10	0	38
	10/02/2020	30	0.18	12	25	179	7.76	0.51	0.1	5	1.82	7.1	5	17	14	21.3	8	0	141
	11/02/2020	46	0.2	18	34	283	9.07	0.26	0.1	8	1.25	7.4	4	23	25	21.4	4	0	15
	12/02/2020	58	0.14	20	35	311	6.42	0.17	0.1	8	0.7	7.3	4	24	27	24.8	6	0	12
	13/02/2020	51	0.15	15	30	257	6.79	0.32	0.1	7	0.74	7.2	4	22	19	24.8	10	0	14
	14/02/2020	68	0.23	21	38	314	6.77	0.25	0.1	9	0.73	7.2	4	27	24	25.4	7	0	8
	15/02/2020	68	0.09	26	34	291	6.33	0.29	0	10	0.42	7.2	4	25	24	23.1	6	0	5
	16/02/2020	74	0.11	27	33	295	6.34	0.33	0	10	0.26	6.9	3	25	24	24	6	0	0
	17/02/2020	84	0.17	30	61	622	7.2	0.27	0.1	12	0.3	6.9	5	44	28	21.9	8	0	12
	18/02/2020	68	0.06	19	37	316	6.98	0.25	0.1	8	0.43	7	3	24	22	22.3	4	0	0
	19/02/2020	170	1.34	33	48	526	3.26	0.56	0.3	14	0	6.6	8	46	28	22.9	23	0	6
	20/02/2020	84	0.18	25	34	338	6.85	0.4	0.1	9	0.27	6.2	3	27	22	19.8	6	0	9
	21/02/2020	82	0.06	21	39	305	7.24	0.41	0.1	9	0.15	6.7	3	23	20	20.9	7	0	0
	22/02/2020	92	0.07	24	43	358	7.11	0.46	0.1	10	0.12	6.6	5	32	43	22.5	6	0	0
	23/02/2020	103	0.07	26	46	363	6.61	0.56	0.2	12	0.1	6.4	5	35	27	22.2	6	0	0
	24/02/2020	106	0.07	27	48	387	7.12	0.6	0.2	12	0.07	6.4	5	35	27	20.8	6	0	0
	25/02/2020	111	0.06	29	41	397	6.03	0.86	0.1	13	0.06	6.8	4	30	24	23.3	6	0	5
	26/02/2020	131	0.04	28	51	422	5.95	1.05	0.1	13	0.05	6.9	3	30	28	23.2	6	0	0
	27/02/2020	125	0.05	31	50	428	5.58	1.2	0.1	13	0.06	7	4	33	30	21.1	6	0	0
	28/02/2020	120	0.08	34	51	436	5.5	1.33	0.1	15	0.06	6.7	4	32	23	20.4	6	0	0
	29/02/2020	121	0.03	33	49	443	5.15	1.49	0.1	15	0.05	6.4	4	33	23	21.7	6	0	0
	01/03/2020	127	0.15	34	52	442	4.37	1.57	0.1	16	0.05	6.8	4	35	24	23.4	5	0	0
	02/03/2020	130	0.06	34	55	461	4.33	1.69	0.1	15	0.04	6.4	4	34	24	21.9	5	0	0
	03/03/2020	125	0.06	32	56	469	4.13	2	0.2	16	0.03	5.9	4	35	23	20.7	6	0	0
	04/03/2020	144	0.03	32	56	468	4.51	1.04	0.2	16	0.04	6.5	4	37	24	21.3	7	0	5
	05/03/2020	154	0.08	35	58	498	5.93	0.96	0.2	14	0.13	7	4	36	29	21.1	8	0	6
	06/03/2020	117	0.04	30	40	372	6.43	0.56	0.1	12	0.09	7	4	32	25	21.6	6	0	0
	08/03/2020	170	0.02	46	54	514	7.56	0.2	0.3	18	0.05	6.9	5	36	33	20.2	3	0	0
	09/03/2020	169	0.03	47	57	519	6.82	0.16	0.2	18	0.04	7.5	5	37	33	18.9	3	0	0
	10/03/2020	150	0.03	45	52	517	6.78	0.13	0.2	20	0.04	7.1	4	35	36	21.7	4	0	0
	11/03/2020	178	0.04	44	55	525	6.97	0.34	0.2	21	0.05	7.4	3	39	34	18.9	3	0	0
	12/03/2020	178	0.23	46	54	545	6	0.34	0.2	18	0.04	7	4	35	34	22.3	6	0	89
	13/03/2020	111	0.02	34	48	430	4.53	0.11	0.2	14	0.05	7.1	3	36	21	20.9	6	0	0
	14/03/2020	117	0.02	34	52	446	4.5	1.55	0.1	15	0.04	7	3	37	22	17.5	6	0	0

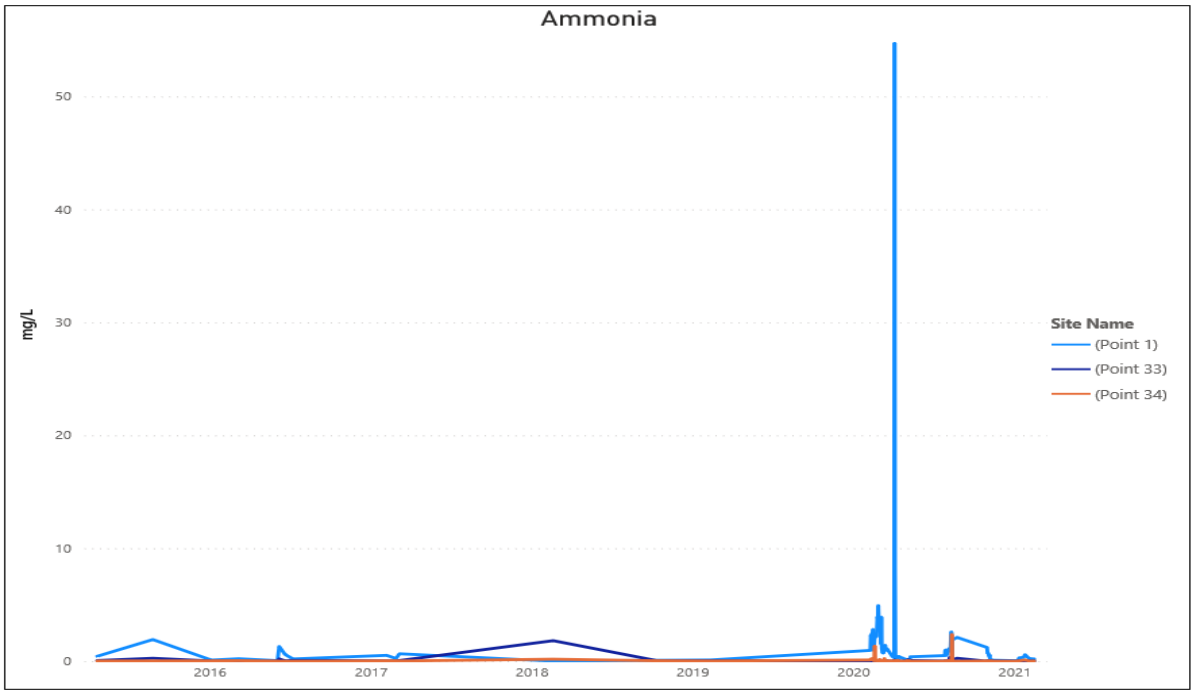
15/03/2020	141	0.04	47	57	541	7.4	0.12	0.2	20	0.1	7.5	4	37	37	19	3	0	0
16/03/2020	149	0.04	48	57	543	6.76	0.13	0.2	21	0.13	7.5	4	38	37	18.4	3	0	0
17/03/2020	181	0.04	50	51	536	6.41	0.16	0.2	21	0.04	7.4	4	37	37	19.8	3	0	0
18/03/2020	186	0.04	51	60	545	5.95	0.15	0.1	21	0.04	7.4	4	38	36	18.6	1	0	0
30/03/2020	190	0.02	47	50	578	5.75	0.11	0.2	21	0.02	6.9	4	39	52	19.7	3	0	0
01/04/2020	183	0	45	46	512	7.83	0.08	0.2	20	0.12	7.7	4	36	30	21.4	3	0	0
02/04/2020	160	0.02	40	46	502	8.2	0.1	0.2	18	0.18	7.6	3	38	21	20.6	4	0	0
03/04/2020	160	0.02	39	49	499	8.28	0.1	0.2	17	0.1	7.6	3	36	25	20.5	4	0	0
04/04/2020	158	0.04	34	48	521	6.91	0.12	0.2	17	0.07	6.6	3	34	28	19.2	3	0	0
05/04/2020	177	0.03	34	47	528	7.42	0.14	0.2	17	0.04	6.5	3	34	35	16.7	4	0	0
06/04/2020	166	0.03	43	48	535	7.53	0.13	0.2	18	0.02	7	3	34	34	18	3	0	0
07/04/2020	171	0.02	42	52	545	8.35	0.2	0.1	17	0.02	6.8	4	37	27	19.9	3	0	7
08/04/2020	172	0	42	52	529	6.34	0.14	0.2	17	0.03	7.4	3	34	29	18.2	3	0	0
09/04/2020	176	0.02	45	56	535	6.44	0.17	0.2	19	0.05	7.4	3	36	37	20.4	3	0	0
10/04/2020	174	0.02	47	52	555	6.3	0.1	0.1	20	0.01	6.9	3	38	37	18.3	3	0	6
11/04/2020	176	0.08	46	50	550	7.65	0.08	0.2	20	0.02	6.6	3	38	39	17.4	3	0	0
12/04/2020	166	0.02	46	52	557	8.28	0.1	0.1	20	0.01	7	3	38	39	15.1	3	0	6
13/04/2020	171	0.02	46	52	558	7.33	0.1	0.1	20	0.07	6.8	3	38	39	15.9	3	0	0
14/04/2020	170	0.01	47	53	571	5.88	0.12	0.2	20	0	7	3	38	38	18.6	5	0	6
01/05/2020	212	0.01	51	59	612	7.46	0	0	23	0.03	7.2	3	41	45	13.6	3	0	0
02/05/2020	194	0.02	51	58	609	7.7	0.08	0.1	23	0.02	7.2	3	42	43	12.7	6	0	0
03/05/2020	190	0.04	50	51	614	6.67	0.13	0.1	23	0.04	7	3	41	39	12.4	0	0	0
04/05/2020	204	0	51	52	618	5.34	0.12	0.1	23	0.02	7.1	3	42	37	14	0	0	0
05/05/2020	199	0	51	50	620	6.08	0.15	0.2	23	0.01	7.1	3	43	37	14.9	8	0	0
06/05/2020	186	0	44	60	623	4.58	0.08	0.1	19	0	7	3	42	45	15.7	0	0	0
07/05/2020	202	0.01	51	57	620	6	0.07	0.2	23	0	6.7	3	43	40	16.4	3	0	0
08/05/2020	190	0.04	48	58	772	3.99	0.09	0.2	24	0	6.7	3	43	38	16.9	3	0	0
09/05/2020	180	0	37	53	625	5.34	0.08	0.2	24	0	6.8	2	43	42	15.4	3	0	0
10/05/2020	192	0	36	59	627	4.17	0.09	0.2	24	0	6.6	2	43	40	13.5	12	0	0
27/07/2020	58	0	16	26	256	9.57	0.39	0.1	8	1.59	7.5	3	21	18	13.9	12	0	23
28/07/2020	62	0.02	15	29	265	9.09	0.31	0.1	7	1.15	7.5	2	22	18	14.8	7	0	12
29/07/2020	88	0	26	36	344	8.99	0.22	0.1	12	0.82	7.5	2	28	22	14.6	6	0	0
30/07/2020	98	0	26	43	353	9.3	0.11	0.1	12	0.62	7.4	2	28	24	14.6	3	0	0

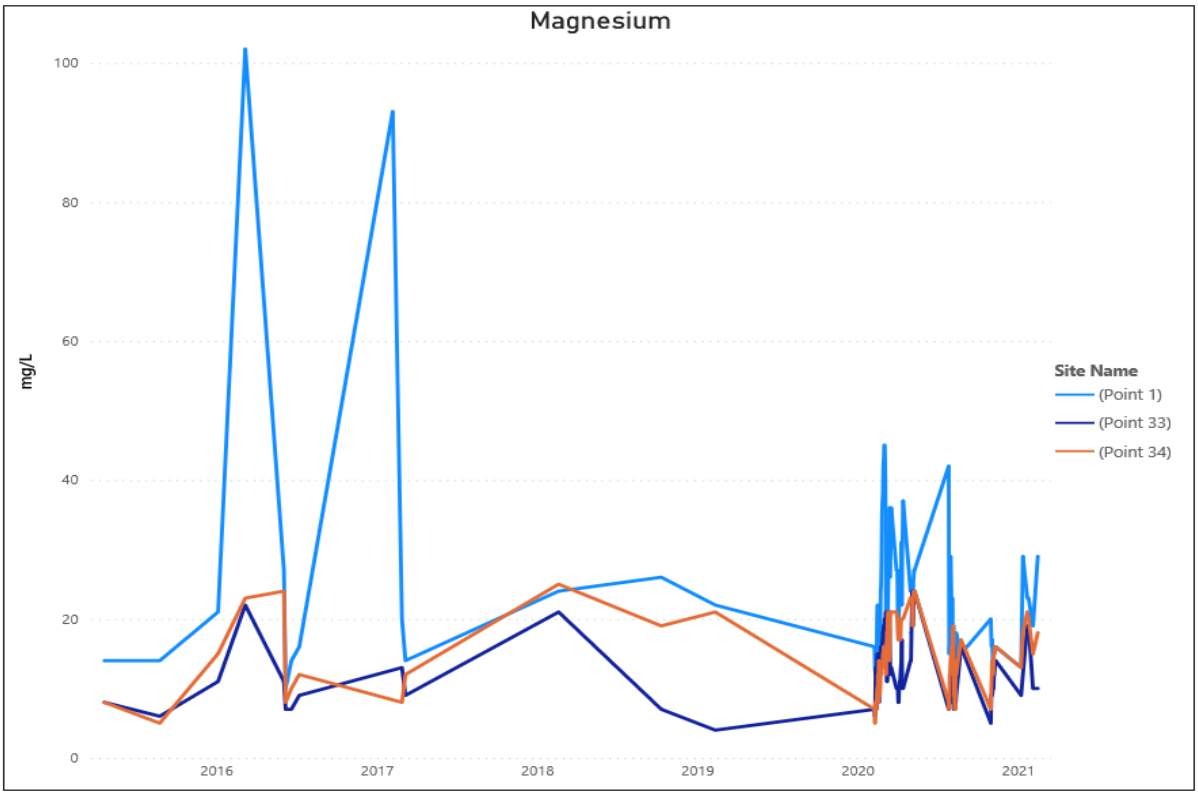
31/07/2020	107	0	32	45	382	9.37	0.06	0.1	14	0.42	7.3	3	30	24	14.6	4	0	0
03/08/2020	131	0.02	37	42	437	9.31	0.05	0.1	16	0.24	7.5	3	33	29	13.5	4	0	0
04/08/2020	146	0.05	40	44	445	9.2	0.06	0.1	16	0.15	7.4	3	33	30	13.2	3	0	0
05/08/2020	149	0.02	41	45	470	11.3	0.07	0.1	18	0.14	7.8	3	33	30	7.8	4	0	0
06/08/2020	147	0.01	43	43	457	9.17	0.1	0.1	19	0.16	7.5	3	36	32	10.2	4	0	0
07/08/2020	154	0	40	43	486	9.09	0.08	0.1	17	0.1	7.7	3	33	31	10.8	4	0	0
08/08/2020	63	0	17	28	258	10.7	0.23	0.1	9	0.94	7.9	2	21	18	11.8	6	0	16
09/08/2020	70	0	18	31	274	10.7	0.28	0.1	9	0.62	7.7	2	22	20	11.5	5	0	8
10/08/2020	50	0	14	27	219	10.9	0.34	0	7	0.64	7.7	3	18	15	13.4	6	0	20
11/08/2020	66	0	19	33	271	10.6	0.14	0.1	9	0.55	7.5	2	21	18	12.7	4	0	7
12/08/2020	174	2.37	32	38	304	10.2	0.25	0.2	14	0	7.6	8	45	24	14.8	35	0	111
13/08/2020	88	0.02	24	43	359	9.34	0.1	0.1	12	0.3	7.5	2	25	22	17.5	4	0	0
24/08/2020	140	0	37	47	465	9.64	0.06	0.1	17	0.07	7.4	3	31	30	13.9	2	0	0
31/10/2020	53	0.02	14	20	204	9.94	0.45	0.1	7	1.11	7.4	5	16	17	17.6	9	0	98
01/11/2020	86	0	22	33	323	8.9	0.23	0	10	0.48	7.4	3	28	24	17.8	6	0	12
02/11/2020	103	0.02	26	34	353	7.34	0.22	0.2	12	0.34	7.1	3	28	27	18.8	5	0	0
03/11/2020	116	0.01	30	46	392	7.64	0.11	0.1	14	0.21	7.5	3	28	27	19.4	5	0	0
05/11/2020	123	0	28	44	363	6.87	0.05	0.1	12	0.12	7.3	3	28	29	18.1	7	0	8
06/11/2020	116	0	30	41	383	7.87	0.11	0.1	13	0.14	7.4	3	28	26	17.8	4	0	0
07/11/2020	146	0.01	36	46	458	8.58	0	0.2	15	0.06	7.4	3	32	28	21.1	3	0	12
08/11/2020	145	0.04	37	41	450	8.53	0	0.2	15	0.05	7.5	3	32	28	19.4	1	0	12
09/11/2020	127	0.03	37	41	450	8.28	0	0.2	16	0.05	7.5	3	30	28	19.4	2	0	0
10/11/2020	143	0.01	38	46	472	9.23	0.06	0.1	16	0.04	7.4	3	33	29	18.8	3	0	0
11/11/2020	156	0	38	49	472	8.53	0.06	0.1	16	0.03	7.5	3	33	29	19.2	4	0	0
08/01/2021	128	0	29	37	384	8.19	0.18	0.2	13	0.08	7.6	3	31	21	21.9	5	0	0
12/01/2021	165	0.04	39	44	477	6.29	0.14	0.2	18	0.05	7.4	3	32	26	20.6	2	0	0
22/01/2021	198	0.09	46	50	547	6.03	0.16	0.2	21	0.02	7.4	3	41	27	25.3	0	0	0
25/01/2021	200	0.11	47	55	574	4.87	0.18	0.1	20	0.04	7.3	4	41	24	27.5	1	0	0
04/02/2021	129	0.01	32	41	419	8.55	0.09	0.1	15	0.17	7.6	3	30	24	24	4	0	5
15/02/2021	172	0.02	39	51	501	8.38	0.13	0.1	18	0.07	7.6	3	34	26	20.8	1	0	0

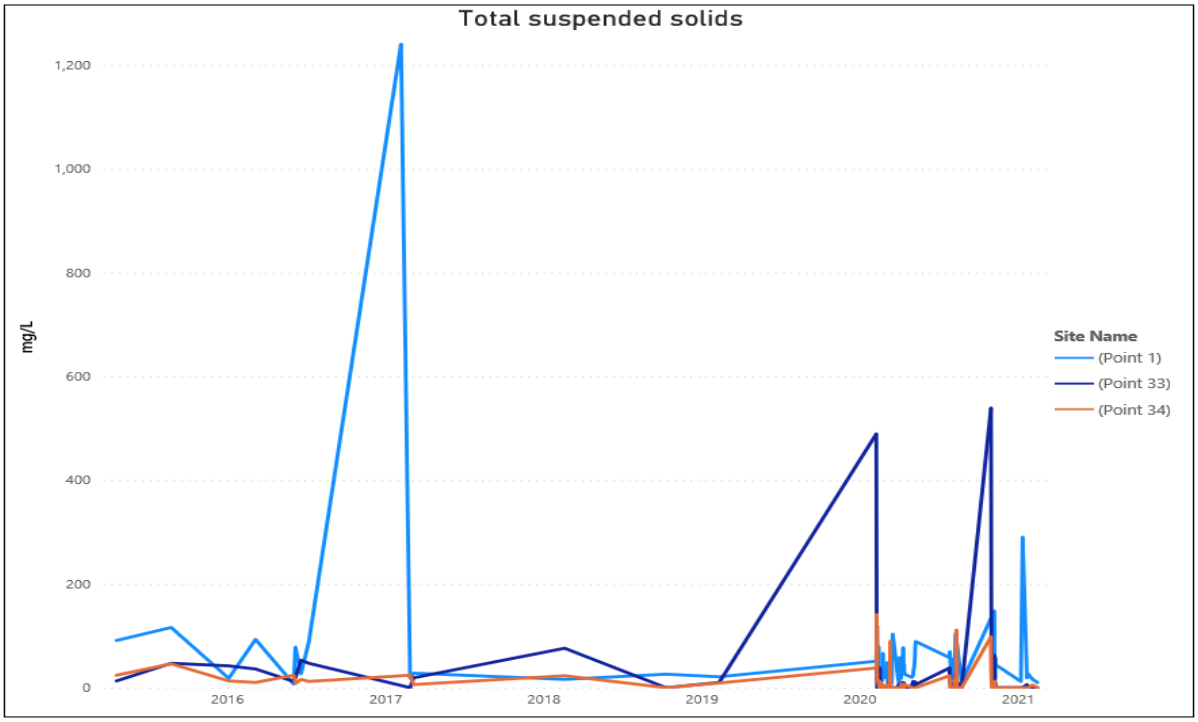

Alkalinity (as calcium carbonate)
mg/L
400
300
200
100
0
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

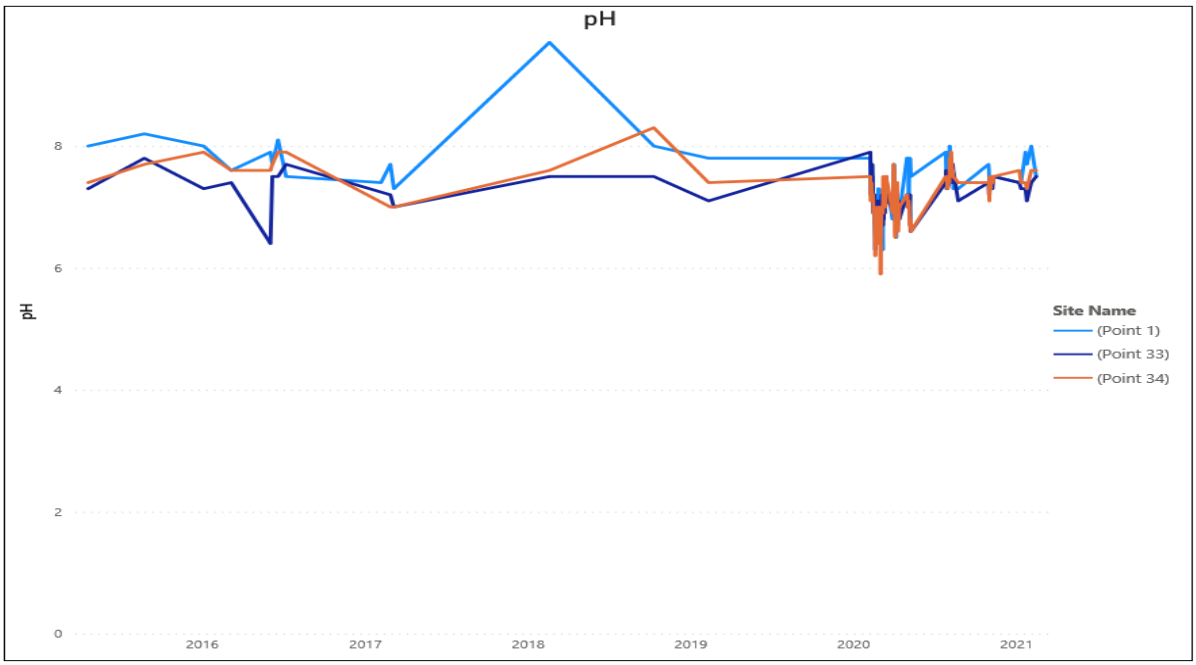

Fluoride
mg/L
0.5
0.4
0.3
0.2
0.1
0.0
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

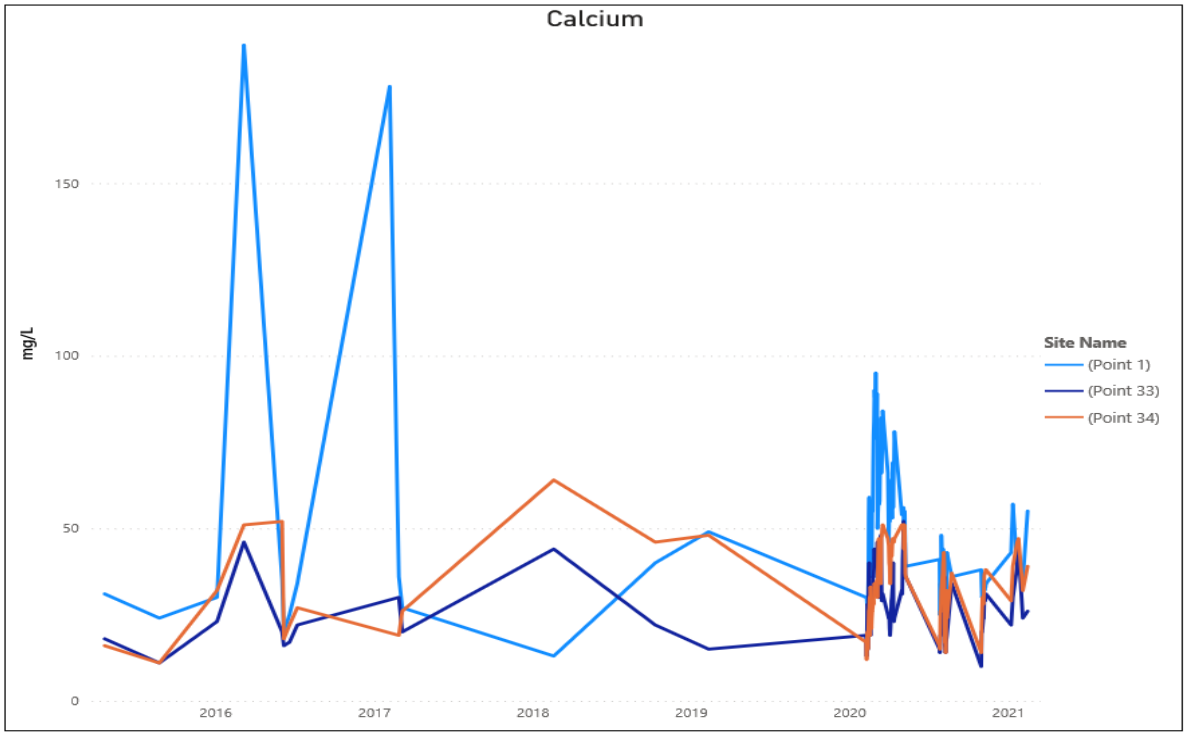

Total organic carbon
mg/L
40
30
20
10
0
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

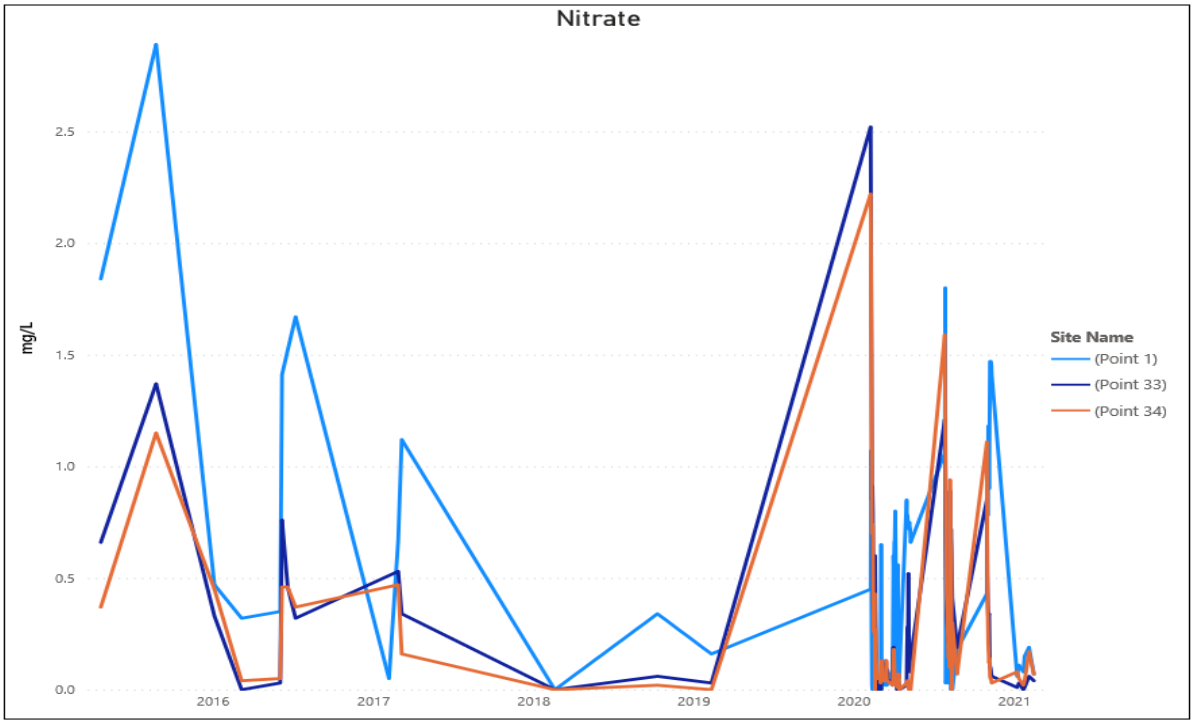

Ammonia
mg/L
50
40
30
20
10
0
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

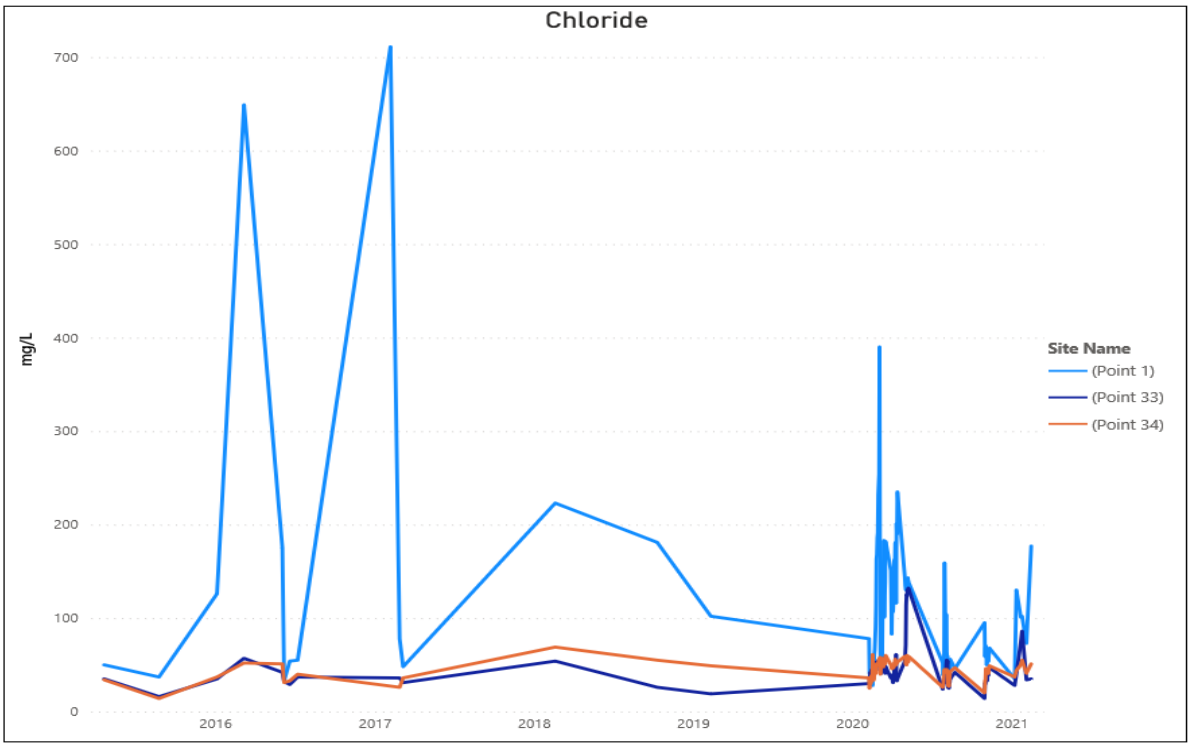

Magnesium
100
80
60
40
20
0
mg/L
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

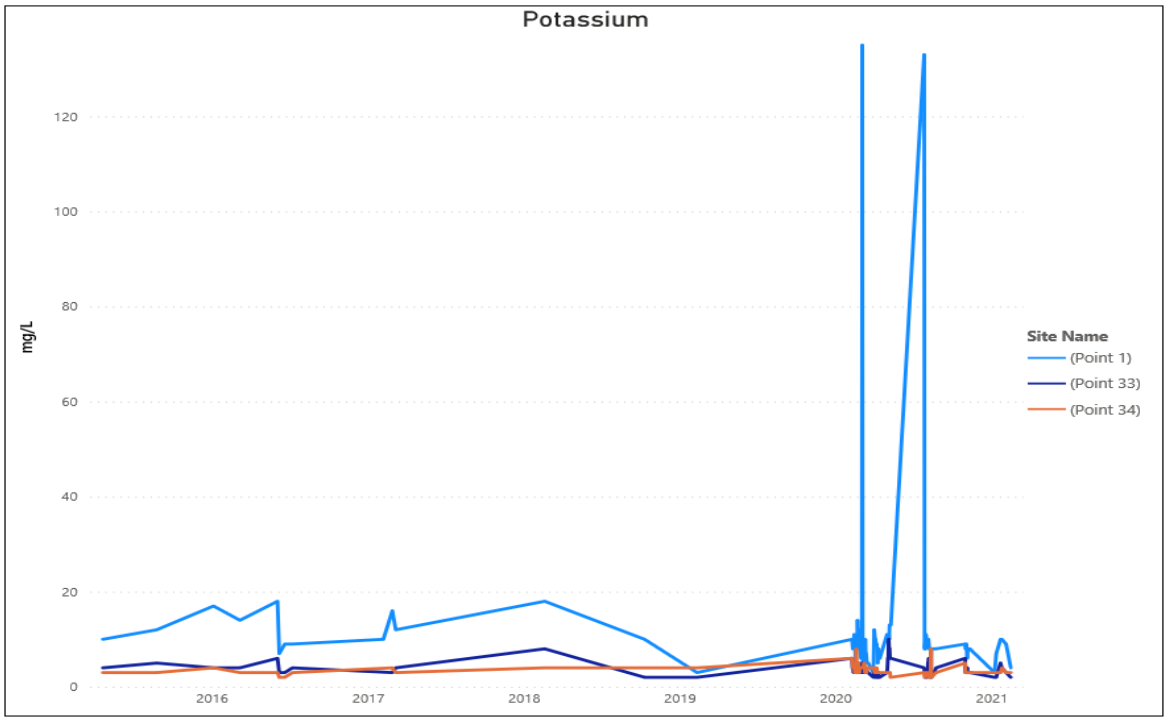

Total suspended solids
1,200
1,000
800
600
400
200
0
mg/L
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

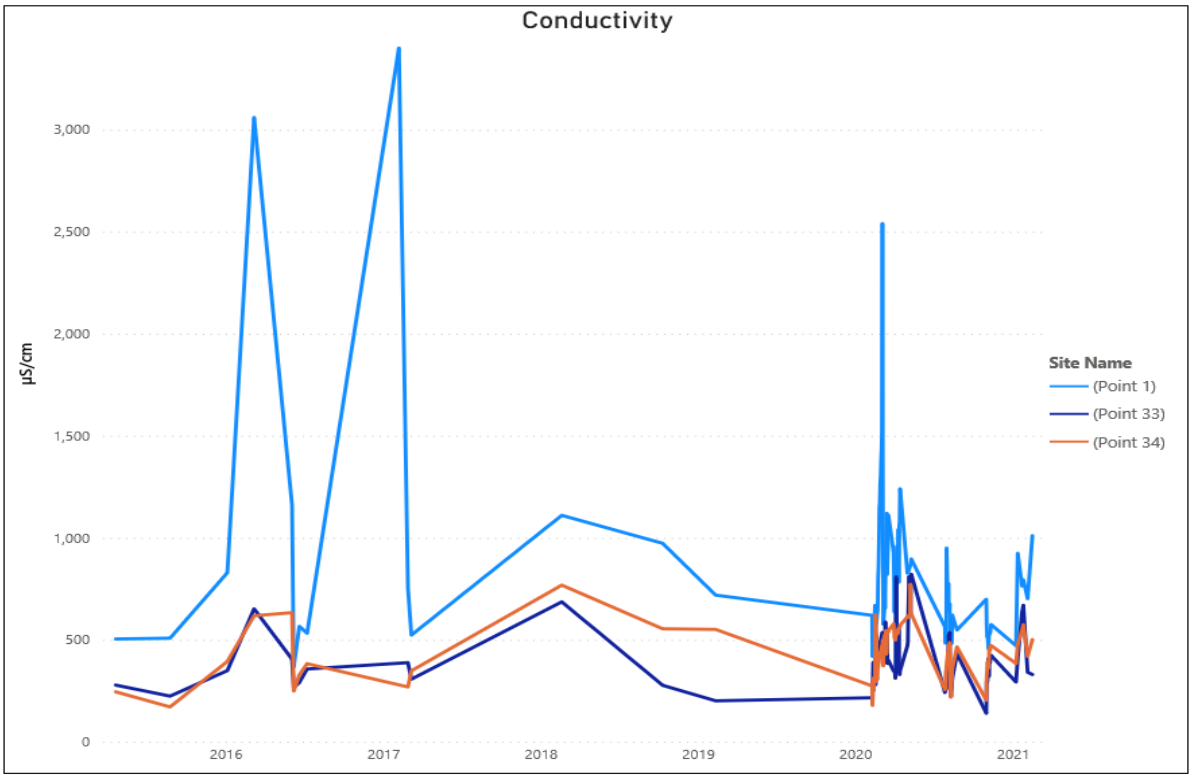

pH
8
6
4
2
0
pH
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

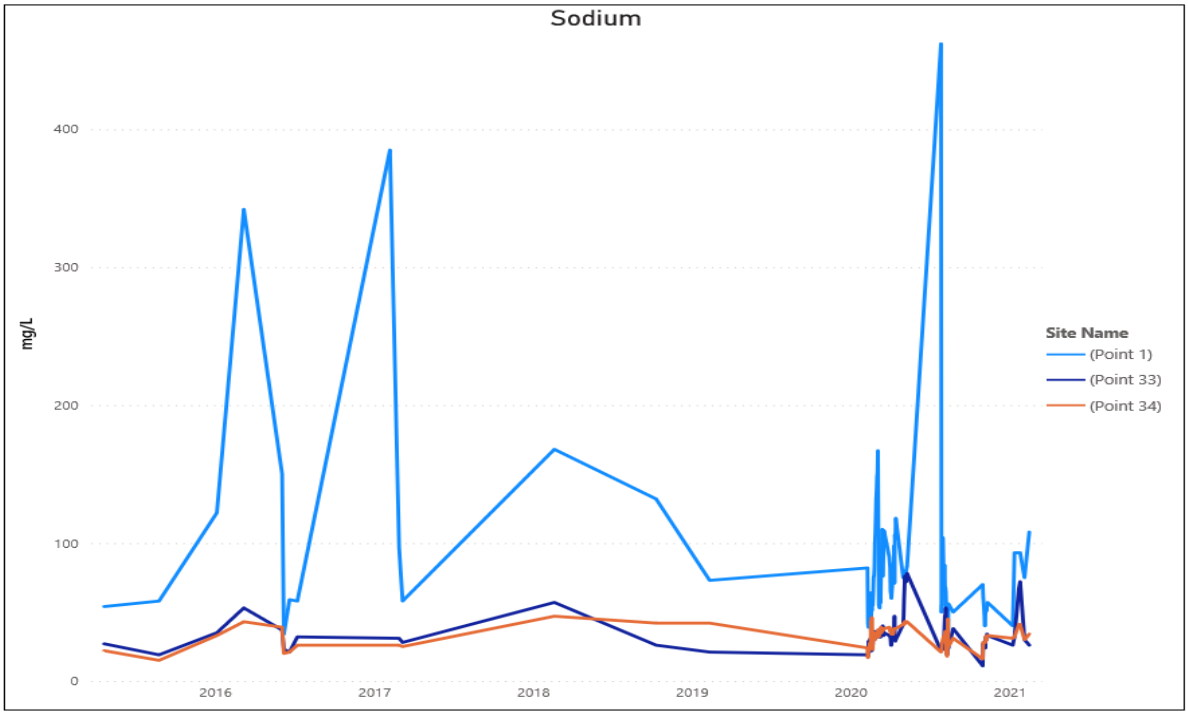

Calcium
150
100
50
0
mg/L
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

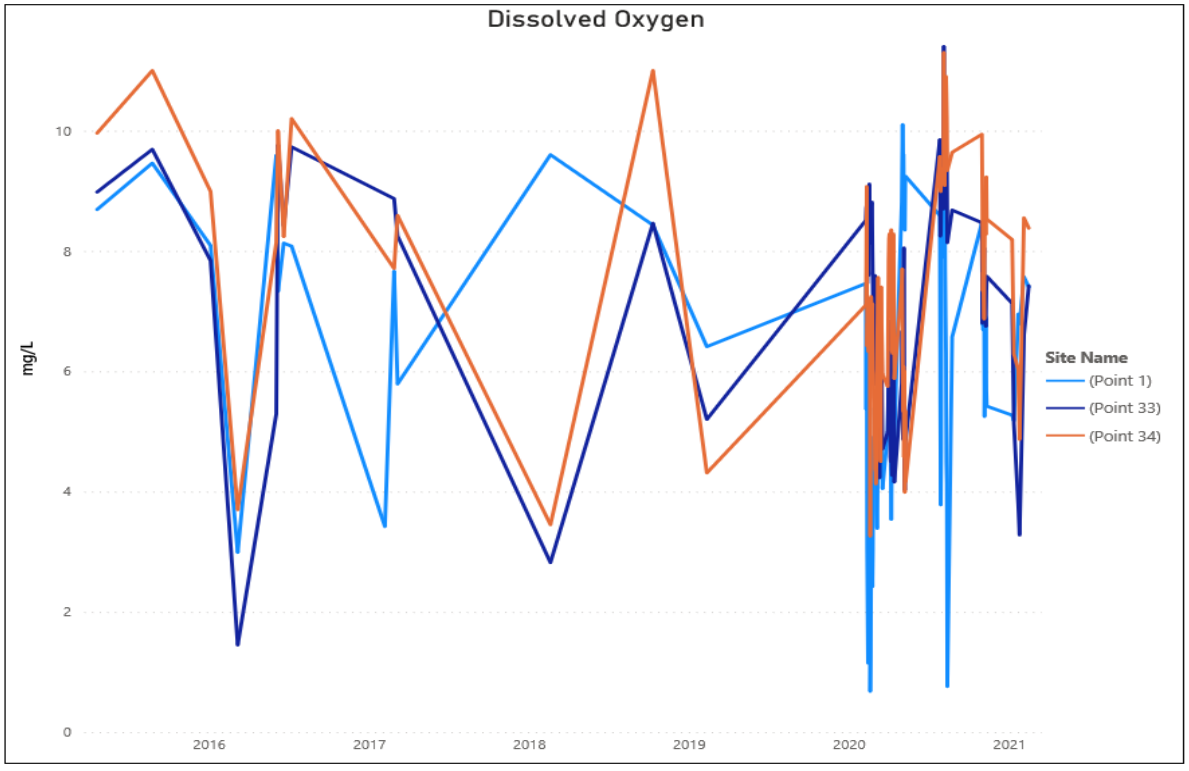

Nitrate
mg/L
2.5
2.0
1.5
1.0
0.5
0.0
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

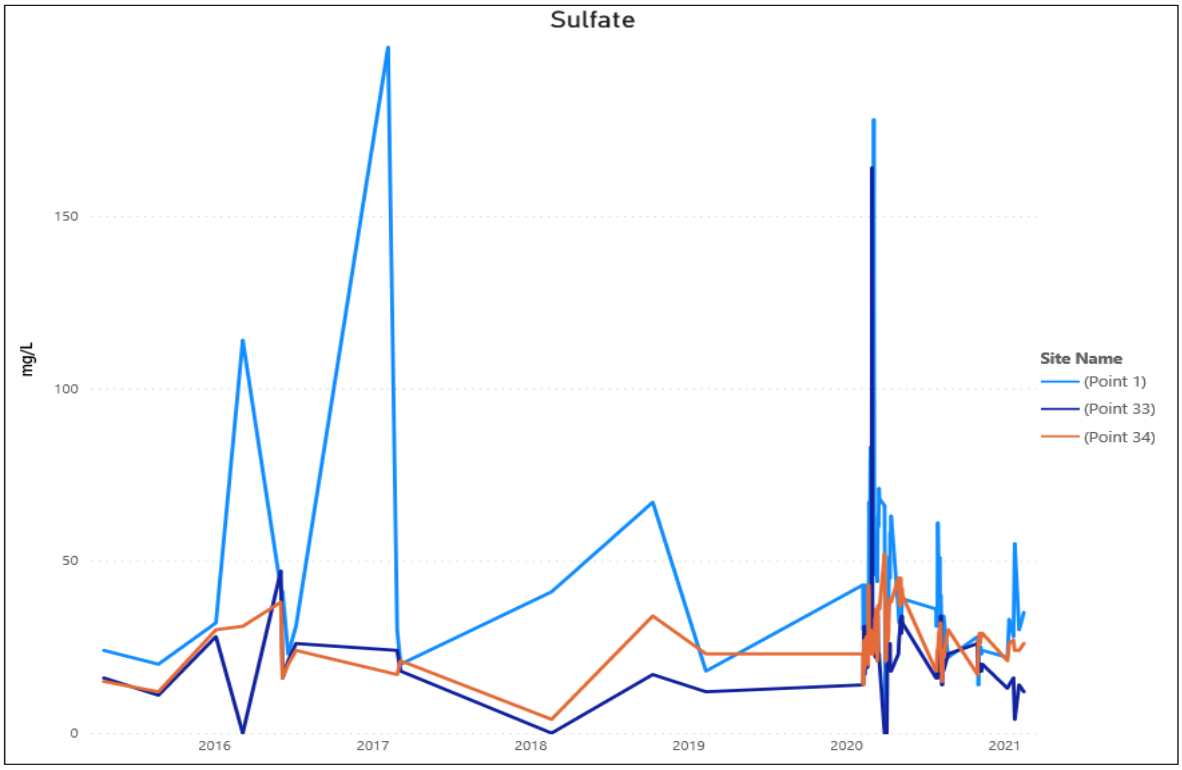

Chloride
mg/L
700
600
500
400
300
200
100
0
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

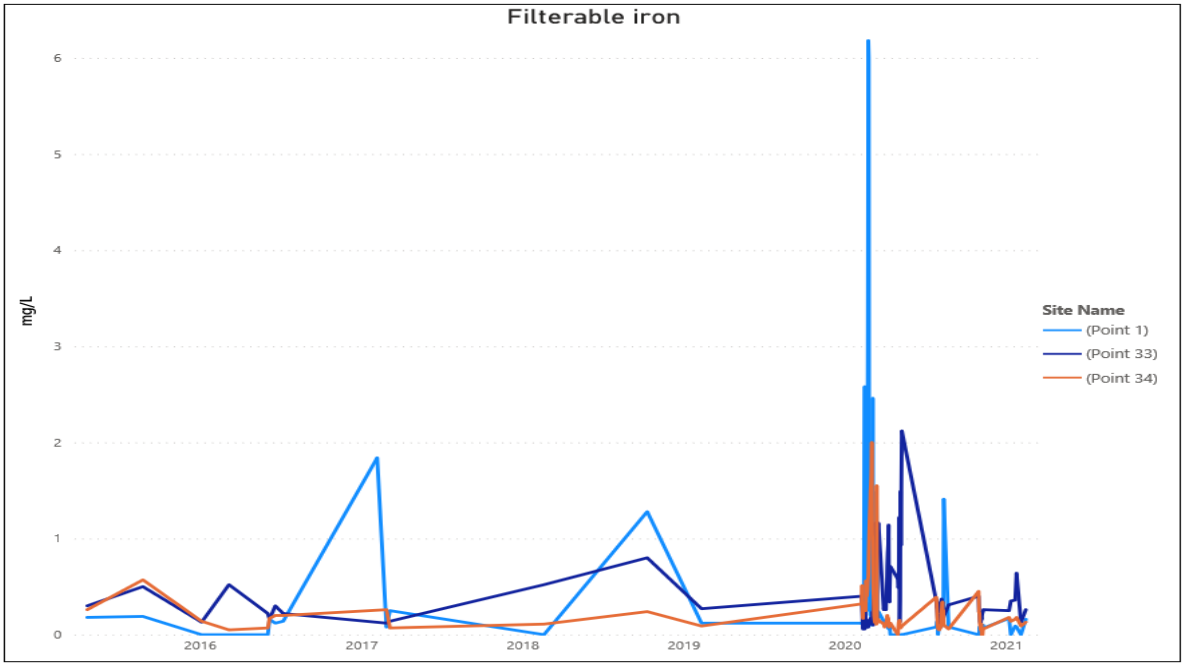

Potassium
120
100
80
60
40
20
0
mg/L
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)


Conductivity
3,000
2,500
2,000
1,500
1,000
500
0
µS/cm
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)


Sodium
400
300
200
100
0
mg/L
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)


Dissolved Oxygen
10
8
6
4
2
0
mg/L
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)


Sulfate
mg/L
150
100
50
0
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)


Filterable iron
mg/L
6
5
4
3
2
1
0
2016
2017
2018
2019
2020
2021
Site Name
(Point 1)
(Point 33)
(Point 34)

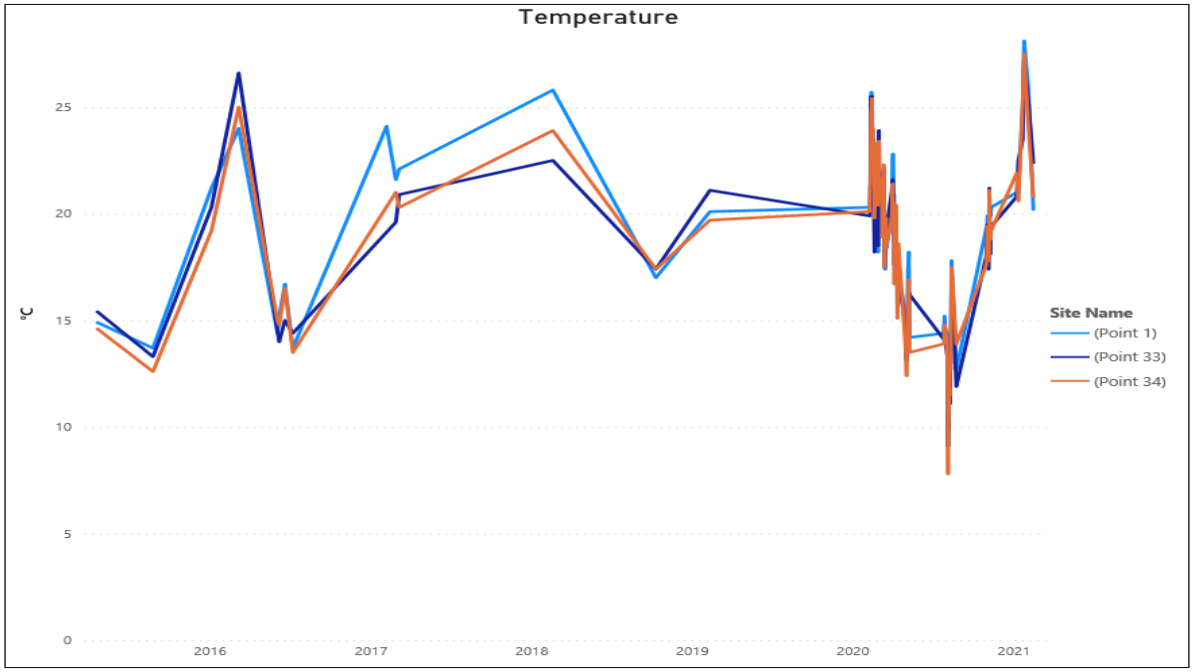


Table 2 Polishing Pond Results

Date	time	Rainfall (mm)	WCC on site testing Location PPL Council Turbidimeter (NTU)	WCC on site testing PPL PH	ALS Report Polishing Pond - pH 6.5-8.5	ALS Report Polishing Pond -TSS <50mg/L	ALS Report Polishing Pond - Turbidity
27/03/2019					7.3	12	98.5
10/04/2019	8AM			7.5	7.8	13	
11/04/2019	7.30am				7.5	18	
24.04.2019	2.00pm				8.2	50	
8/05/2019	10am				8.1	28	24.8
14/05/2019	9am		15	7.5			
17/05/2019	9am		18.1	7.5			
17/06/2019	11am		39	7	7.7		36.3
8/07/2019	10am		30.2	6.5	8	26	
29/08/2019	2pm				8.3	18	
3/09/2019	8am				8.3	7	
25/09/2019	8.3				7.8	10	
14/10/2019						29	
7/02/2020					8.4	5	41
30/10/2020	2.30pm		30.9	8.05			
11/01/2021	9.00am		19.8	8.38			
20/01/2021	9.00am		21.3	7.23			
2/02/2020	12.05pm		12.05	8.1			
22/02/2021	10		15.29	8.32			
23/02/2021	10.45am		21.6	7.98			
8/03/2021	10.00am		24.2	8.13			
9/03/2021	9.15am		8.6	7.77			
30/04/2021	8.00am		4.47	8.07			

Appendix B: Groundwater

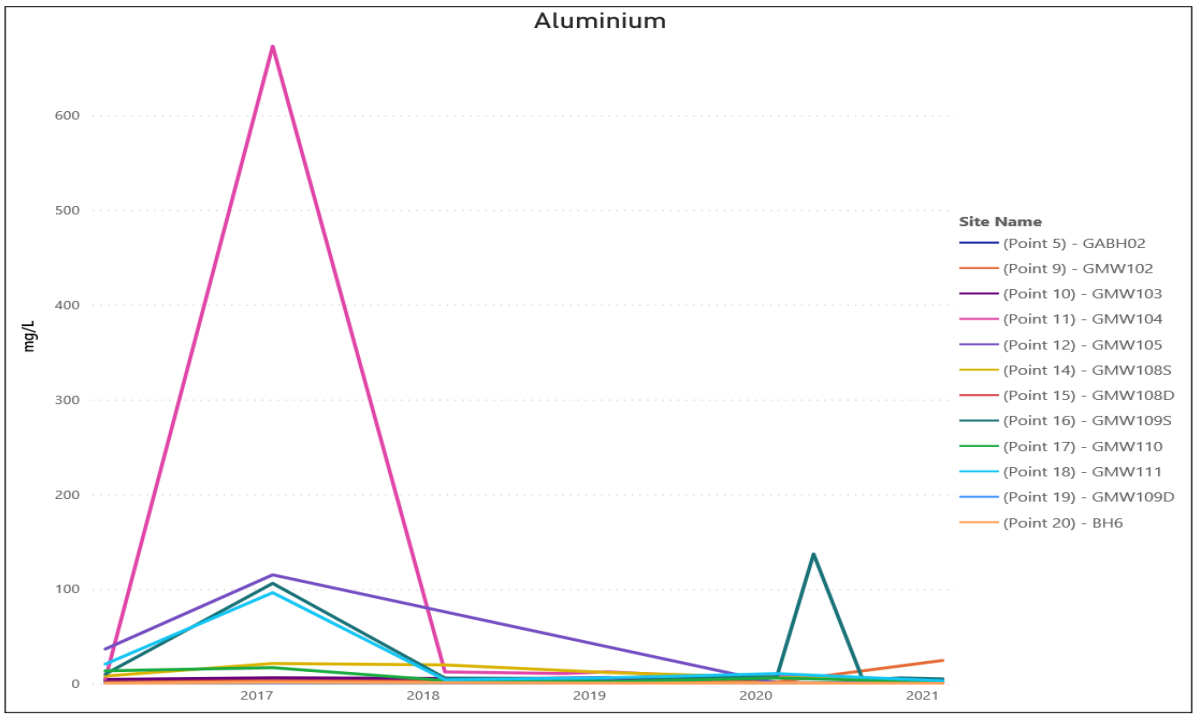
Results and Trends

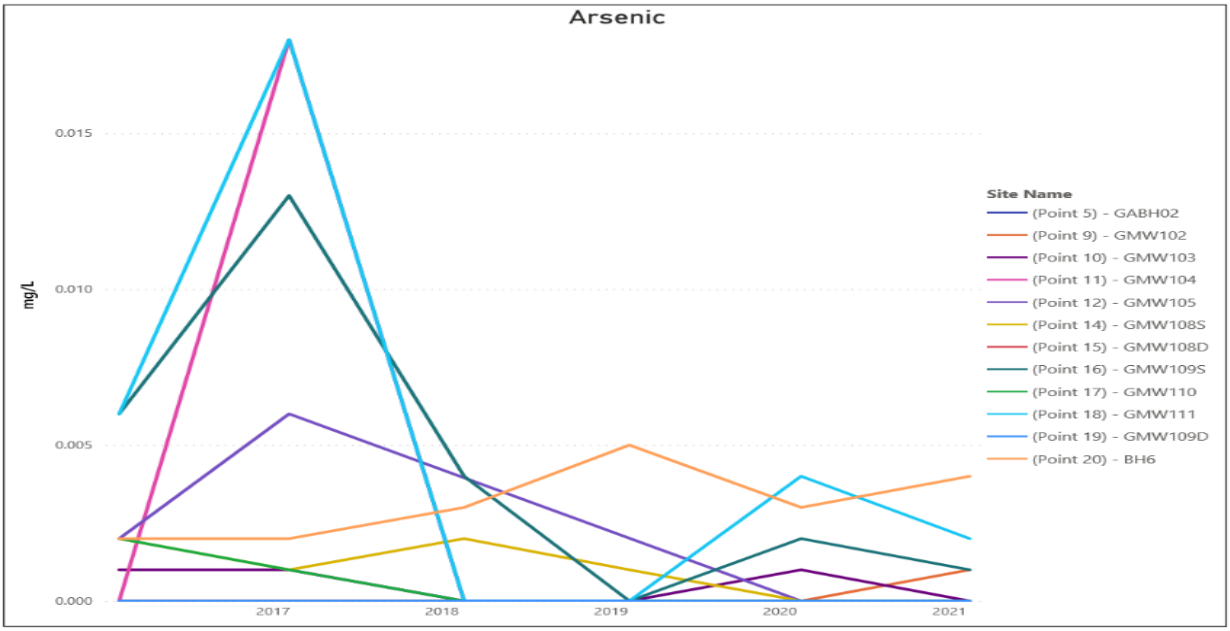
Site Name	Sample Date	Alkalinity (as calcium carbonate) mg/L	Aluminium mg/L	Ammonia mg/L	Arsenic mg/L	Barium mg/L	Benzene µg/L	Cadmium mg/L	Calcium mg/L	Chloride mg/L	Chromium (hexavalent) mg/L	Chromium (Total) mg/L	Cobalt mg/L	Conductivity µS/cm	Copper mg/L	Depth m
(Point 5) - GABH02	20/05/2019	870		0.03					310	1,180				5,940		5.4
	12/11/2019	35		0.07					260	1,040				4,970		5.68
	17/02/2020	1,250	2.01	0.1	0	0.06	0	0	298	1,060	0	0.004	0.002	5,090	0.006	5.85
	08/05/2020	1,210		0.08					320	1,160				5,400		5.22
	24/08/2020	1,190		0.04					257	1,060				5,380		5.12
	16/11/2020	1,250		0.04					312	1,180				5,480		5.08
(Point 9) - GMW102	17/02/2020	144	1.83	0.07	0	0.027	0	0	30	29	0	0.001	0	376	0.007	4.02
	24/08/2020	164		0					32	24				415		7.56
	16/11/2020	168		0					29	29				360		7.15
	15/02/2021	139	24.6	0	0.001	0.109	0	0.0001	40	24	0	0.01	0.012	329	0.034	9.02
(Point 10) - GMW103	20/05/2019	399		0.02					166	313				1,920		7.55
	12/08/2019	416		0.03					162	327				1,980		7.92
	12/11/2019	424		0					158	356				1,960		8.9
	17/02/2020	736	8.02	0.07	0.001	0.054	0	0	149	116	0	0.011	0.006	1,660	0.023	5.66
	08/05/2020	579		0.02					175	274				1,900		7.8
	24/08/2020	651		0					86	153				1,640		6.7
	16/11/2020	701		0					112	104				1,540		6.52
	15/02/2021	629	2.49	0	0	0.02	0	0	126	110	0	0.003	0.003	1,520	0.008	6.78
(Point 11) - GMW104	20/05/2019	371		0.02					63	112				1,280		7.64
	12/08/2019	362		0.02					54	66				1,180		7.53
	12/11/2019	467	6.24	0		0.037		0	51	70		0.004	0.006	1,120	0.008	7.63
	17/02/2020	399	9.2	0.09	0	0.046	0	0	56	70	0	0.011	0.01	996	0.018	8.35
	08/05/2020	398	6.32	0.02		0.034		0.0001	50	66		0.004	0.004	934	0.01	7.25
	24/08/2020	335	5.94	0		0.024		0	39	54		0.004	0.005	836	0.008	6.94
	16/11/2020	383	4.28	0		0.021		0	46	66		0.003	0.003	898	0.007	7.04
	15/02/2021	228	4.6	0	0	0.02	0	0	33	51	0	0.004	0.003	581	0.01	6.95
(Point 12) - GMW105	17/02/2020	28	0.7	0.06	0	0.004	0	0	17	98	0	0.002	0	417	0.002	10.92
	08/05/2020	51		0.01					9	67				356		11.1
	24/08/2020	36		0.02					13	68				391		11
	16/11/2020	44		0					8	48				271		10.1
	15/02/2021	49	1.76	0	0	0.007	0	0	9	48	0	0	0	268	0.002	10.3
(Point 14) - GMW108S	20/05/2019	260		0.21					70	242				1,460		3.5
	12/08/2019	212		0.17					31	57				737		3.25
	12/11/2019	242		0.08					23	76				773		3.22
	17/02/2020	202	6.6	0.06	0	0.105	0	0	36	20	0	0.005	0.003	417	0.015	3.35
	08/05/2020	282		0.16					50	113				912		2.87
	24/08/2020	205		0.05					26	36				516		2.74
	16/11/2020	226		0.08					40	79				698		2.62
	15/02/2021	227	3.94	0.05	0	0.096	0	0	45	60	0	0.003	0.002	601	0.01	2.59
(Point 15) - GMW108D	20/05/2019	408		0.05					130	661				3,380		2.75
	12/08/2019	437		0.03					127	644				3,240		2.81
	12/11/2019	514		0					124	682				3,250		2.75
	17/02/2020	518	0.17	0.1	0	0.016	0	0	140	666	0	0	0	3,280	0	2.72
	08/05/2020	527		0.02					145	723				3,220		2.42
	24/08/2020	500		0					120	659				3,210		2.3
	16/11/2020	491		0.02					133	677				3,120		2.17
	15/02/2021	460	0.35	0.03	0	0.039	0	0	116	612	0	0	0.001	2,700	0	2.12
(Point 16) - GMW109S	20/05/2019	195		0.66					77	320				1,570		3.63
	12/08/2019	217		0.4					80	341				1,660		3.46
	12/11/2019	249	7.44	0.58		0.252		0.0003	73	341		0.009	0.041	1,640	0.018	3.71
	17/02/2020	321	6.92	0.42	0.002	0.202	0	0.0003	131	443	0	0.011	0.049	2,150	0.035	2.7
	08/05/2020	223	137	0.41		2.19		0.0019	114	425		0.191	0.187	1,760	0.479	3.29
	24/08/2020	621	4.16	0.43		0.174		0.0003	222	366		0.006	0.055	3,040	0.026	3.08
	16/11/2020	389	6.24	0.31		0.177		0.0005	117	301		0.008	0.047	1,840	0.025	3.1
	15/02/2021	218	5.15	0.28	0.001	0.101	0	0.0004	56	157	0	0.007	0.024	1,070	0.016	3.08
(Point 17) - GMW110	20/05/2019	508		0					212	942				4,710		4.42
	12/08/2019	561		0.01					203	842				4,320		4.45
	12/11/2019	637		0					204	886				4,340		4.38
	17/02/2020	696	6.08	0.01	0	0.019	0	0	202	898	0	0.004	0.003	4,350	0.007	4.37
	08/05/2020	636		0.05					230	941				4,220		4.08
	24/08/2020	667		0.02					166	852				4,160		4.05
	16/11/2020	680		0					214	946				4,270		3.95
	15/02/2021	650	1.83	0	0	0.008	0	0	192	908	0	0.001	0.002	4,020	0.002	3.98
(Point 18) - GMW111	20/05/2019	450		0					134	727				3,670		6.55
	12/08/2019	496		0.01					125	667				3,460		6.33
	12/11/2019															6.5
	04/12/2019	8		0.62					94	344				2,020		
	17/02/2020	487	10.7	0.42	0.004	0.185	0	0.0001	99	261	0	0.018	0.015	2,520	0.032	7.04
	08/05/2020	646		1.11					116	518				2,830		6.42
	24/08/2020	700		0.35					111	661				3,320		6.52
	16/11/2020	650		0.28					135	753				3,420		6.51
	15/02/2021	715	3.11	0.21	0.002	0.047	0	0	128	742	0	0.003	0.003	3,540	0.006	6.25
(Point 19) - GMW109D	20/05/2019	200		0.11					98	466				1,830		3.32
	12/08/2019	216		0.04					87	427				1,780		3.26
	12/11/2019	242		0.08					93	480				1,910		3.4
	17/02/2020	266	0.18	0.17	0	0.156	0	0	107	471	0	0	0.002	1,900	0	2.78
	08/05/2020	253		0.09					110	486				1,810		3.1
	24/08/2020	253		0.09					93	464				1,890		2.88
	16/11/2020	253		0.1					106	515				1,930		2.91
	15/02/2021	255	0.03	0.09	0	0.135	0	0	101	514	0	0	0.002	1,890	0	2.88
(Point 20) - BH6	20/05/2019	473		0.23					73	331				1,910		1.89
	12/08/2019	512		0.1					80	163				1,670		1.92
	12/11/2019	822		0.28					73	194				1,690		1.89
	17/02/2020	273	0.92	0.18	0.003	0.064	0	0	69	26	0	0.002	0.005	656	0.006	1.38
	08/05/2020	627		0.46					86	157				1,580		1.65
	24/08/2020	355		0.39					58	56				924		1.42
	16/11/2020	465		0.4					66	109				1,120		1.4
	15/02/2021	664	0.33	0.38	0.004	0.062	0	0	86	327	0	0	0.008	2,140	0.001	1.37

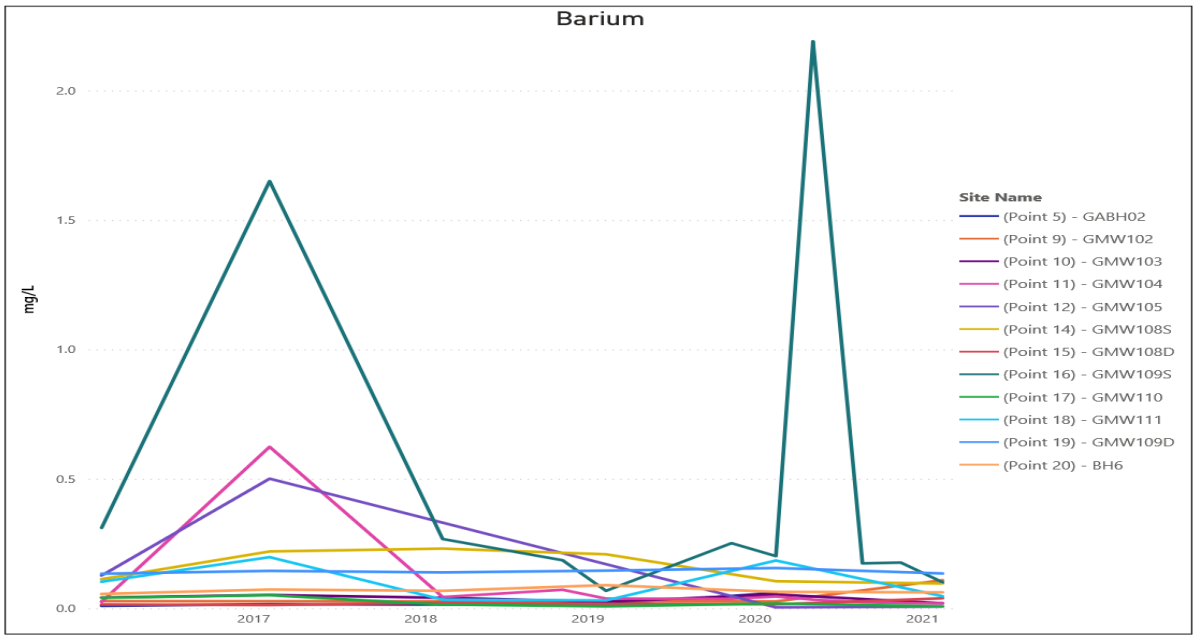
Site Name	Sample Date	Ethyl benzene µg/L	Fluoride mg/L	Lead mg/L	Magnesium mg/L	Manganese mg/L	Mercury mg/L	Nitrate mg/L	Nitrite as N mg/L	Organochlorine Pesticides mg/L	Organophosphate Pesticides mg/L	pH pH	Polycyclic aromatic hydrocarbons µg/L	Potassium mg/L	Sodium mg/L
(Point 5) - GABH02	20/05/2019				188							6.9		3	599
	12/11/2019				179							6.8		4	557
	17/02/2020	0	0.4	0.004	197	0.752	0	0.01	0	0	0	7	0	3	649
	08/05/2020				208							6.3		3	678
	24/08/2020				170							6.7		2	562
	16/11/2020				186							6.7		3	605
(Point 9) - GMW102	17/02/2020	0	0.4	0.002	11	0.042	0	1.48	0	0	0	7.3	0	0	35
	24/08/2020				11							7		0	34
	16/11/2020				10							6.9		0	30
	15/02/2021	0	0.2	0.011	20	0.587	0	0.81	0	0	0	6.8	0	3	25
(Point 10) - GMW103	20/05/2019				55							7.4		1	160
	12/08/2019				60							7.1		0	177
	12/11/2019				59							6.9		0	152
	17/02/2020	0	0.3	0.012	63	0.282	0	0.73	0	0	0	7.2	0	2	178
	08/05/2020				63							6.9		0	179
	24/08/2020				50							5		0	154
	16/11/2020				50							7.2		0	159
	15/02/2021	0	0.4	0.004	50	0.11	0	0.04	0	0	0	7.2	0	1	159
(Point 11) - GMW104	20/05/2019				40							7.5		0	166
	12/08/2019				40							7.2		0	170
	12/11/2019			0.004	34	0.438						7		0	141
	17/02/2020	0	0.6	0.009	36	0.664	0	0.45	0	0	0	7.2	0	1	125
	08/05/2020			0.004	31	0.28						7.1		0	132
	24/08/2020			0.003	24	0.52						7.2		0	103
	16/11/2020			0.003	27	0.26						7.2		0	118
	15/02/2021	0	0.6	0.004	20	0.358	0	0.1	0	0	0	7.1	0	1	66
(Point 12) - GMW105	17/02/2020	0	0.1	0	8	0.02	0	6.43	0	0	0	5.5	0	0	50
	08/05/2020				5							5.5		0	45
	24/08/2020				6							5.5		0	46
	16/11/2020				4							5.8		0	36
	15/02/2021	0	0.2	0	4	0.027	0	1.91	0	0	0	5.8	0	0	36
(Point 14) - GMW108S	20/05/2019				39							7		5	170
	12/08/2019				15							6.9		3	103
	12/11/2019				16							6.6		3	100
	17/02/2020	0	0.2	0.004	14	0.115	0	0.03	0	0	0	6.9	0	8	38
	08/05/2020				26							6.6		4	120
	24/08/2020				11							6.8		4	64
	16/11/2020				17							6.8		5	80
	15/02/2021	0	0.2	0.003	17	0.082	0	0.01	0	0	0	6.8	0	6	56
(Point 15) - GMW108D	20/05/2019				83							7		2	396
	12/08/2019				89							6.8		1	483
	12/11/2019				92							6.7		1	410
	17/02/2020	0	0.6	0	93	0.046	0	0	0	0	0	6.9	0	1	433
	08/05/2020				98							6.6		1	467
	24/08/2020				82							6.7		0	396
	16/11/2020				80							6.8		2	382
	15/02/2021	0	0.4	0	74	0.225	0	0	0	0	0	6.8	0	4	326
(Point 16) - GMW109S	20/05/2019				48							6.5		2	159
	12/08/2019				58							6.2		2	199
	12/11/2019			0.014	52	3.79						6.2		2	156
	17/02/2020	0	0	0.01	77	5.38	0	0.03	0	0	0	6.3	0	3	215
	08/05/2020			0.187	66	11.2						5.8		2	200
	24/08/2020			0.007	108	10.1						6.4		2	265
	16/11/2020			0.007	64	6.07						7.4		2	174
	15/02/2021	0	0	0.005	34	2.25	0	0	0	0	0	6.2	0	3	111
(Point 17) - GMW110	20/05/2019				155							6.9		2	457
	12/08/2019				162							6.7		1	521
	12/11/2019				167							6.8		2	455
	17/02/2020	0	0.4	0.002	171	0.175	0	0.44	0	0	0	6.8	0	2	486
	08/05/2020				177							6.3		2	518
	24/08/2020				137							6.6		1	417
	16/11/2020				153							6.6		2	466
	15/02/2021	0	0.4	0.001	152	0.096	0	0.75	0	0	0	6.8	0	2	437
(Point 18) - GMW111	20/05/2019				101							7.1		1	416
	12/08/2019				104							7.2		1	487
	04/12/2019				62							6.9		5	336
	17/02/2020	0	0.4	0.013	65	1.34	0	0	0.01	0	0	7	0	3	405
	08/05/2020				87							6.7		2	429
	24/08/2020				94							7		1	412
	16/11/2020				100							7.1		2	455
	15/02/2021	0	0.4	0.003	106	1.37	0	0	0	0	0	7	0	2	468
(Point 19) - GMW109D	20/05/2019				50							7.1		1	188
	12/08/2019				49							6.8		1	201
	12/11/2019				54							6.8		2	184
	17/02/2020	0	0.3	0	56	0.849	0	0	0	0	0	7	0	1	200
	08/05/2020				57							6.5		1	210
	24/08/2020				48							6.8		1	182
	16/11/2020				52							6.9		1	194
	15/02/2021	0	0.4	0	51	0.824	0	0.01	0	0	0	6.9	0	1	191
(Point 20) - BH6	20/05/2019				51							7.1		3	290
	12/08/2019				50							7		3	244
	12/11/2019				46							6.9		4	210
	17/02/2020	0	0.5	0.005	18	0.469	0	0.01	0	0	0	7.2	0	6	54
	08/05/2020				50							6.6		4	237
	24/08/2020				22							7		4	95
	16/11/2020				30							7		5	141
	15/02/2021	0	0.6	0.002	53	1.54	0	0.02	0	0	0	6.8	0	3	301

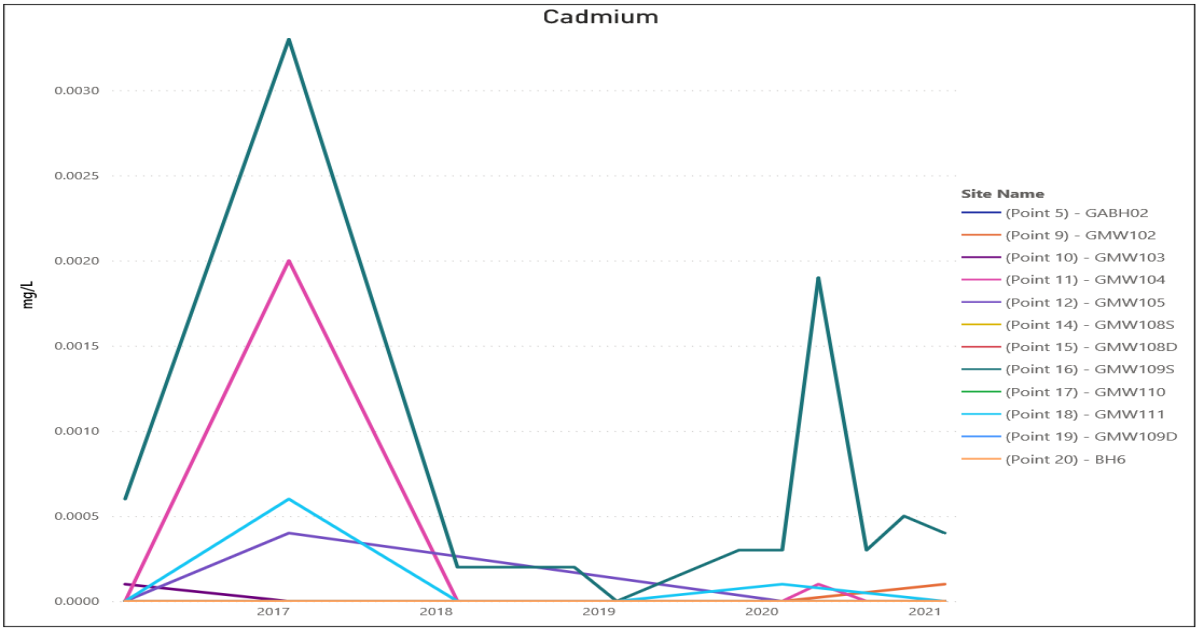
Site Name	Sample Date	Sulfate mg/L	Toluene µg/L	Total Dissolved Solids mg/L	Total organic carbon mg/L	Total Petroleum Hydrocarbons mg/L	Total Phenolics mg/L	Xylene µg/L	Zinc mg/L
(Point 5) - GABH02	20/05/2019	211		3,030	0				
	12/11/2019	169		2,920	8				
	17/02/2020	172	0	3,080	21	0	0	0	0.026
	08/05/2020	159		3,320	7				
	24/08/2020	166		3,100	6				
	16/11/2020	168		3,350	10				
(Point 9) - GMW102	17/02/2020	9	0	226	1	0	0	0	0.016
	24/08/2020	20		258	4				
	16/11/2020	14		260	3				
	15/02/2021	12	0	308	1	0	0	0	0.087
(Point 10) - GMW103	20/05/2019	158		1,040	0				
	12/08/2019	138		1,180	0				
	12/11/2019	151		1,130	2				
	17/02/2020	135	0	968	8	0	0	0	0.058
	08/05/2020	145		1,160	2				
	24/08/2020	104		954	3				
	16/11/2020	99		904	2				
	15/02/2021	83	0	923	1	0	0	0	0.016
(Point 11) - GMW104	20/05/2019	58		724	0				
	12/08/2019	52		713	0				
	12/11/2019	48		595	3				0.023
	17/02/2020	39	0	584	5	0	0	0	0.057
	08/05/2020	38		540	1				0.019
	24/08/2020	37		474	2				0.018
	16/11/2020	37		526	4				0.016
	15/02/2021	21	0	346	2	0	0	0	0.018
(Point 12) - GMW105	17/02/2020	10	0	308	0	0	0	0	0
	08/05/2020	15		290	2				
	24/08/2020	14		250	3				
	16/11/2020	12		290	3				
	15/02/2021	30	0	212	0	0	0	0	0.006
(Point 14) - GMW108S	20/05/2019	68		836	4				
	12/08/2019	23		582	8				
	12/11/2019	29		505	8				
	17/02/2020	4	0	284	8	0	0	0	0.018
	08/05/2020	34		566	8				
	24/08/2020	14		254	8				
	16/11/2020	24		486	7				
	15/02/2021	24	0	404	8	0	0	0	0.013
(Point 15) - GMW108D	20/05/2019	247		1,820	0				
	12/08/2019	204		1,700	0				
	12/11/2019	219		1,600	2				
	17/02/2020	210	0	1,910	6	0	0	0	0
	08/05/2020	202		1,860	2				
	24/08/2020	204		1,790	2				
	16/11/2020	194		1,840	2				
	15/02/2021	170	0	1,560	2	0	0	0	0
(Point 16) - GMW109S	20/05/2019	135		853	2				
	12/08/2019	126		1,100	2				
	12/11/2019	109		862	5				0.073
	17/02/2020	194	0	1,360	12	0	0	0	0.063
	08/05/2020	186		2,130	9				0.784
	24/08/2020	618		2,100	37				0.054
	16/11/2020	237		1,200	11				0.056
	15/02/2021	151	0	667	5	0	0	0	0.033

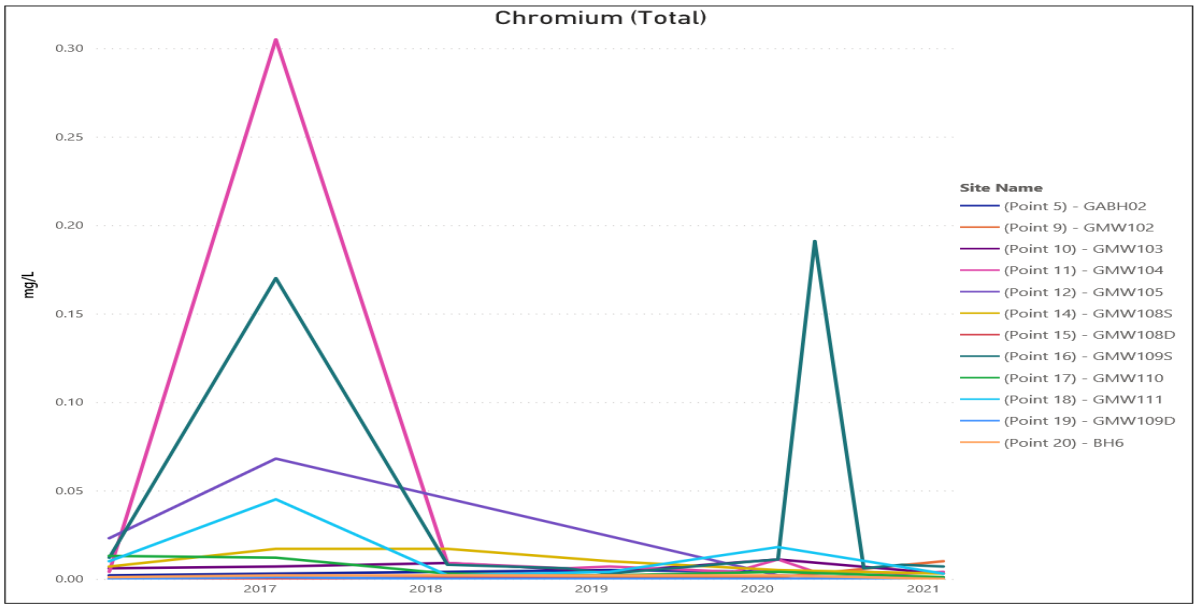
(Point 17) - GMW110	20/05/2019	400		2,720	0				
	12/08/2019	326		2,680	1				
	12/11/2019	358		2,400	2				
	17/02/2020	330	0	2,650	9	0	0	0	0.02
	08/05/2020	312		2,650	3				
	24/08/2020	340		2,440	3				
	16/11/2020	328		2,670	0				
	15/02/2021	321	0	2,470	0	0	0	0	0.009
(Point 18) - GMW111	20/05/2019	246		1,820	0				
	12/08/2019	191		1,780	15				
	04/12/2019	44		1,140	26				
	17/02/2020	477	0	1,690	24	0	0	0	0.046
	08/05/2020	207		1,710	17				
	24/08/2020	178		1,850	8				
	16/11/2020	194		2,060	0				
	15/02/2021	188	0	1,990	2	0	0	0	0.014
(Point 19) - GMW109D	20/05/2019	21		1,170	0				
	12/08/2019	20		1,010	0				
	12/11/2019	25		1,080	0				
	17/02/2020	25	0	1,130	6	0	0	0	0
	08/05/2020	24		1,240	0				
	24/08/2020	62		1,100	0				
	16/11/2020	25		1,240	0				
	15/02/2021	27	0	1,120	0	0	0	0	0
(Point 20) - BH6	20/05/2019	146		1,110	13				
	12/08/2019	117		1,000	26				
	12/11/2019	106		1,170	20				
	17/02/2020	49	0	414	9	0	0	0	0.007
	08/05/2020	77		915	18				
	24/08/2020	59		517	15				
	16/11/2020	37		732	23				
	15/02/2021	58	0	1,290	10	0	0	0	0.005

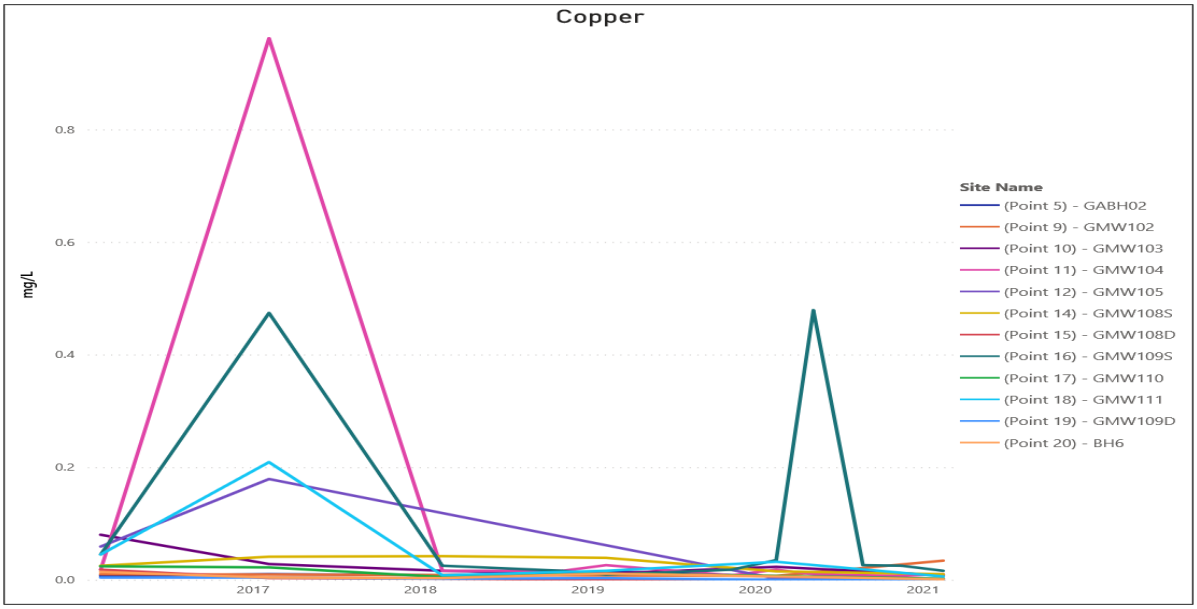

Aluminium
mg/L
600
500
400
300
200
100
0
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

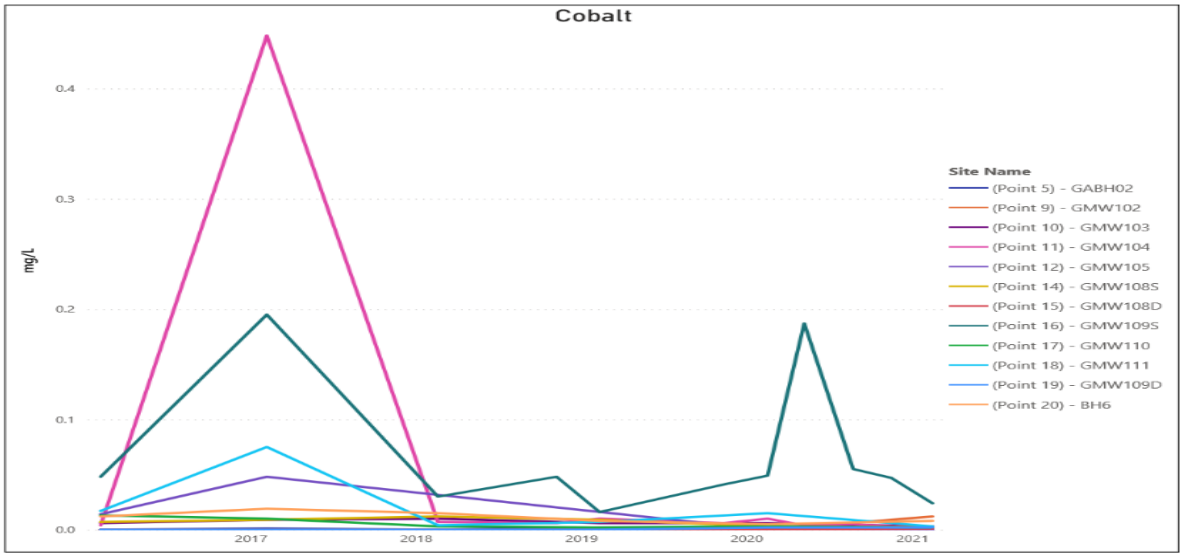

Arsenic
mg/L
0.015
0.010
0.005
0.000
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

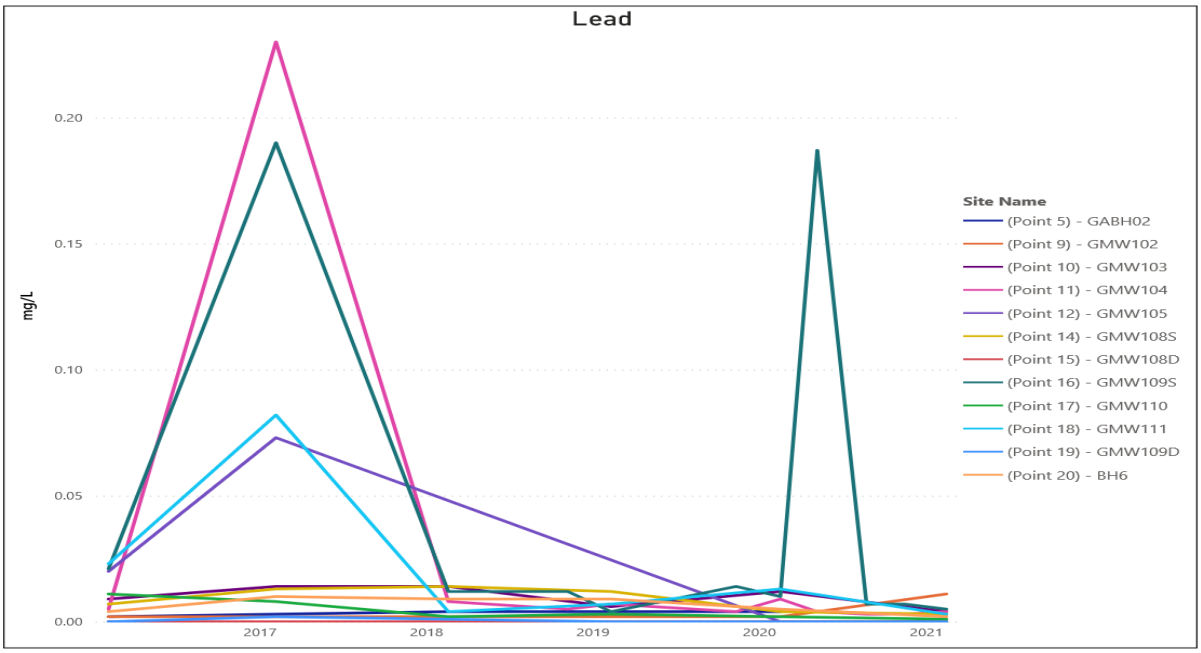

Barium
mg/L
2.0
1.5
1.0
0.5
0.0
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

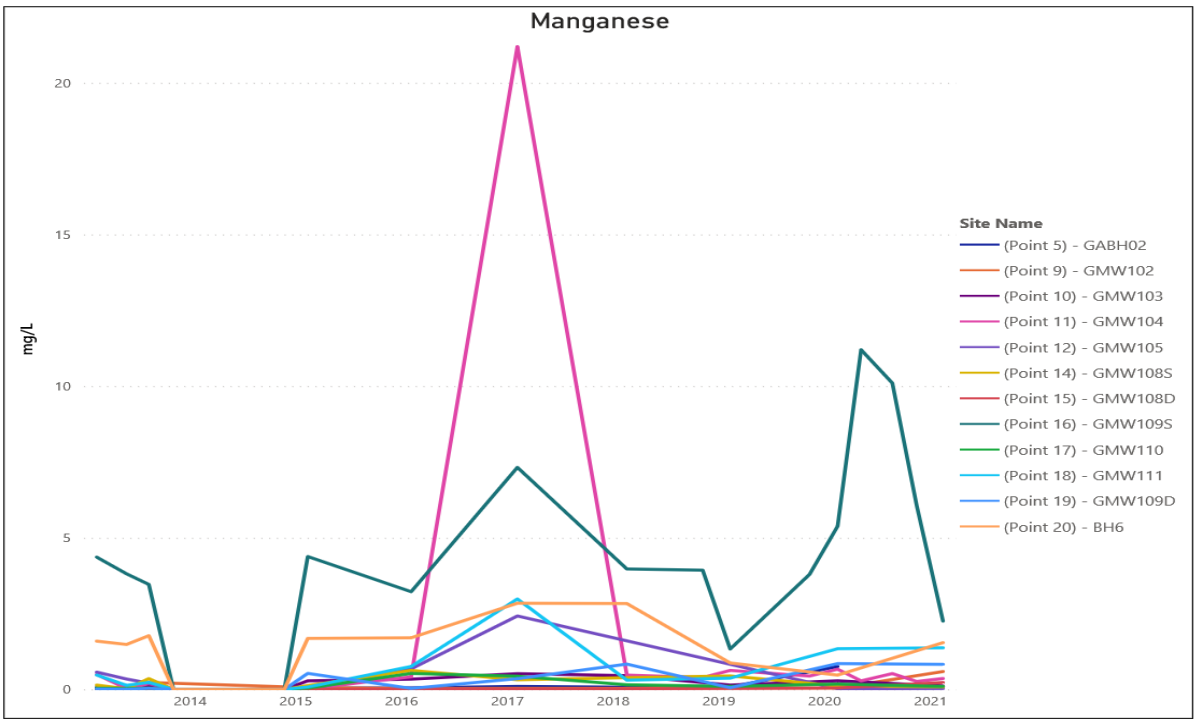

Cadmium
mg/L
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

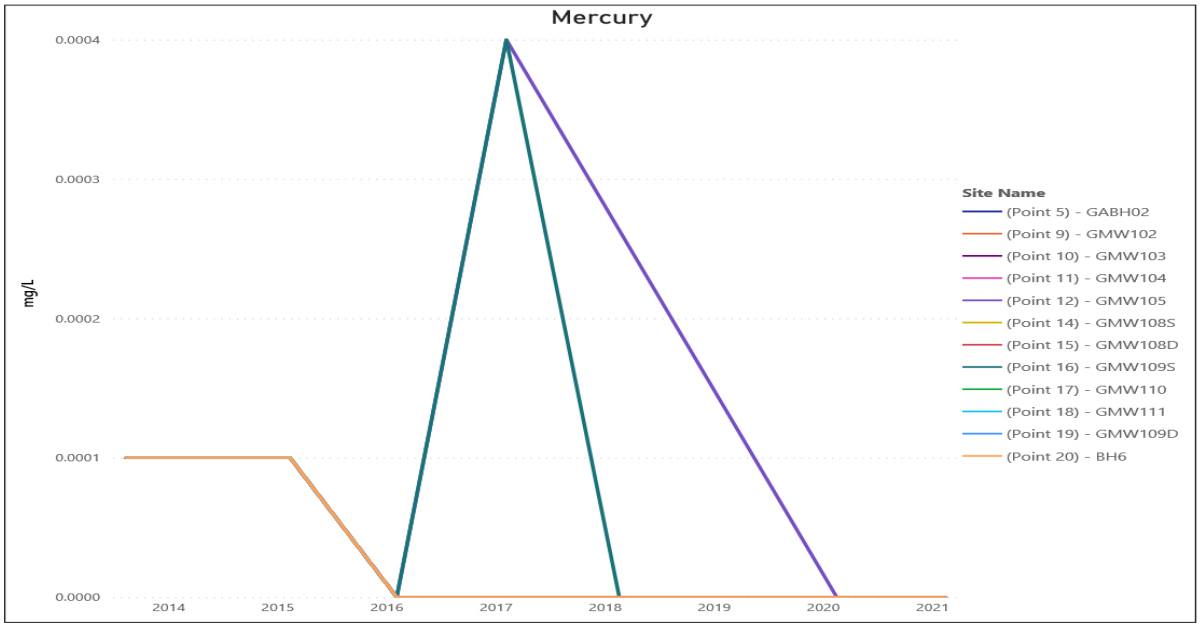

Chromium (Total)
mg/L
0.30
0.25
0.20
0.15
0.10
0.05
0.00
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

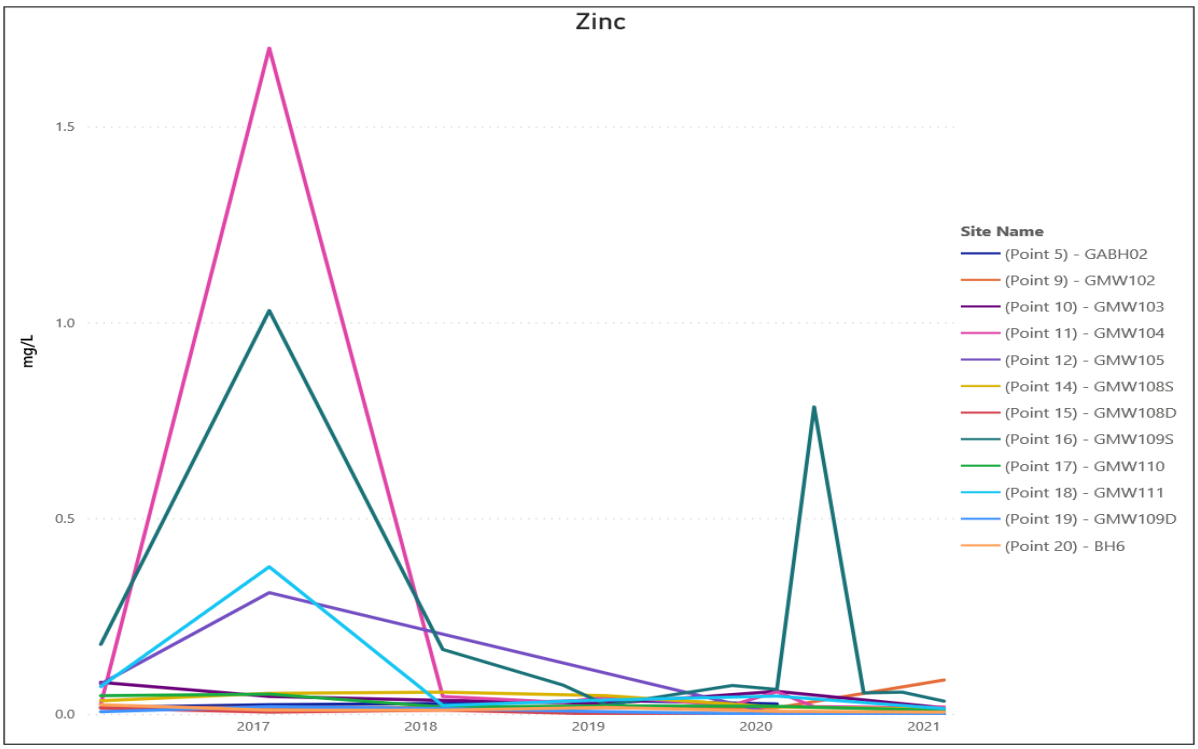

Copper
mg/L
0.8
0.6
0.4
0.2
0.0
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

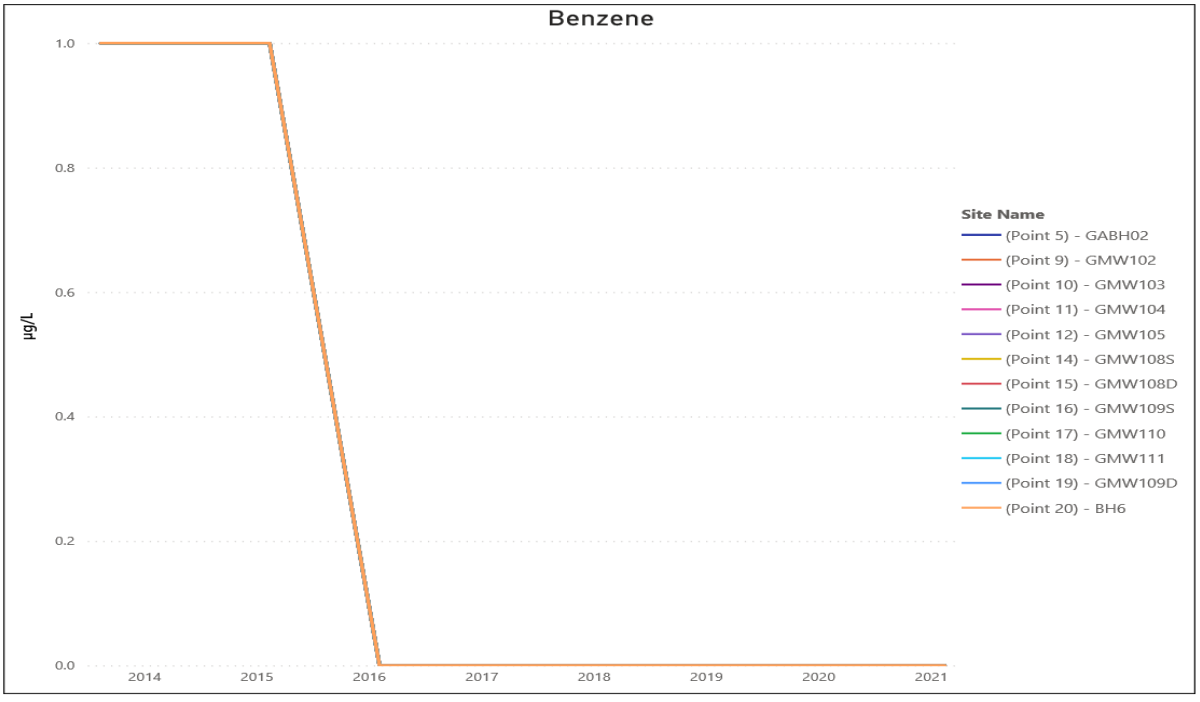

Cobalt
mg/L
0.4
0.3
0.2
0.1
0.0
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

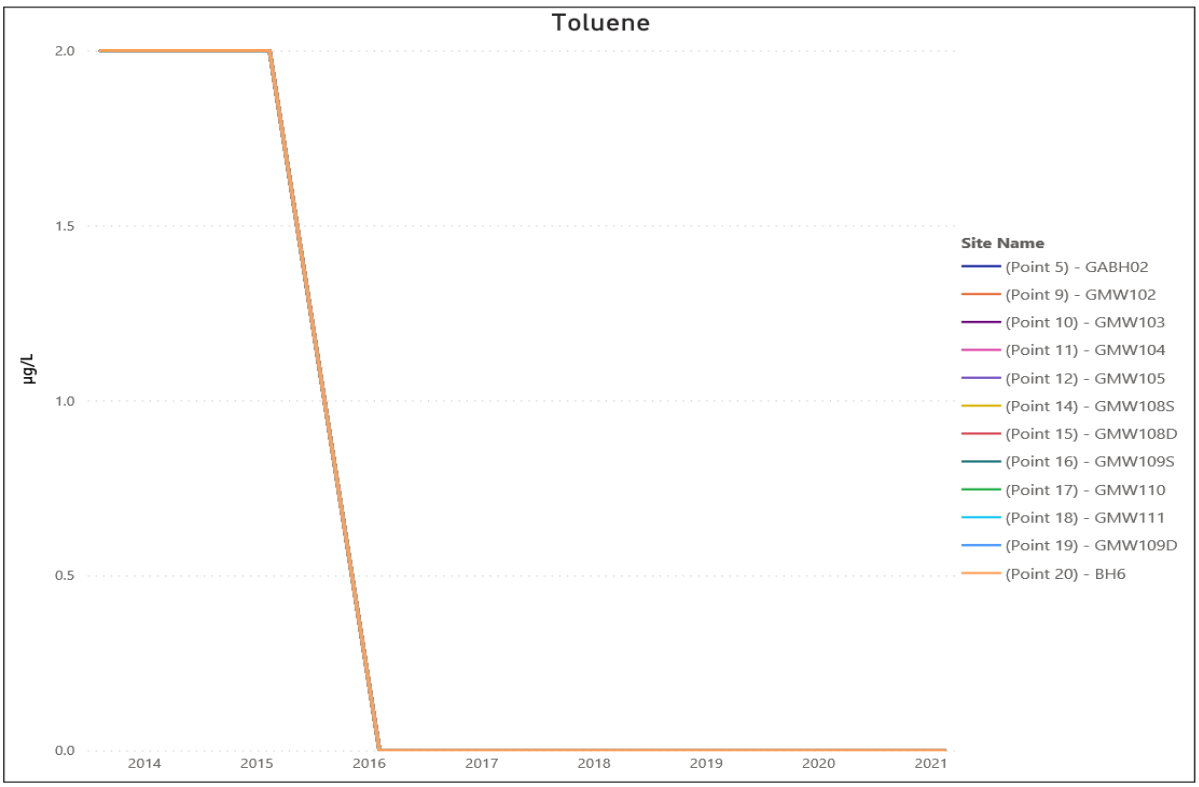

Lead
mg/L
0.20
0.15
0.10
0.05
0.00
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

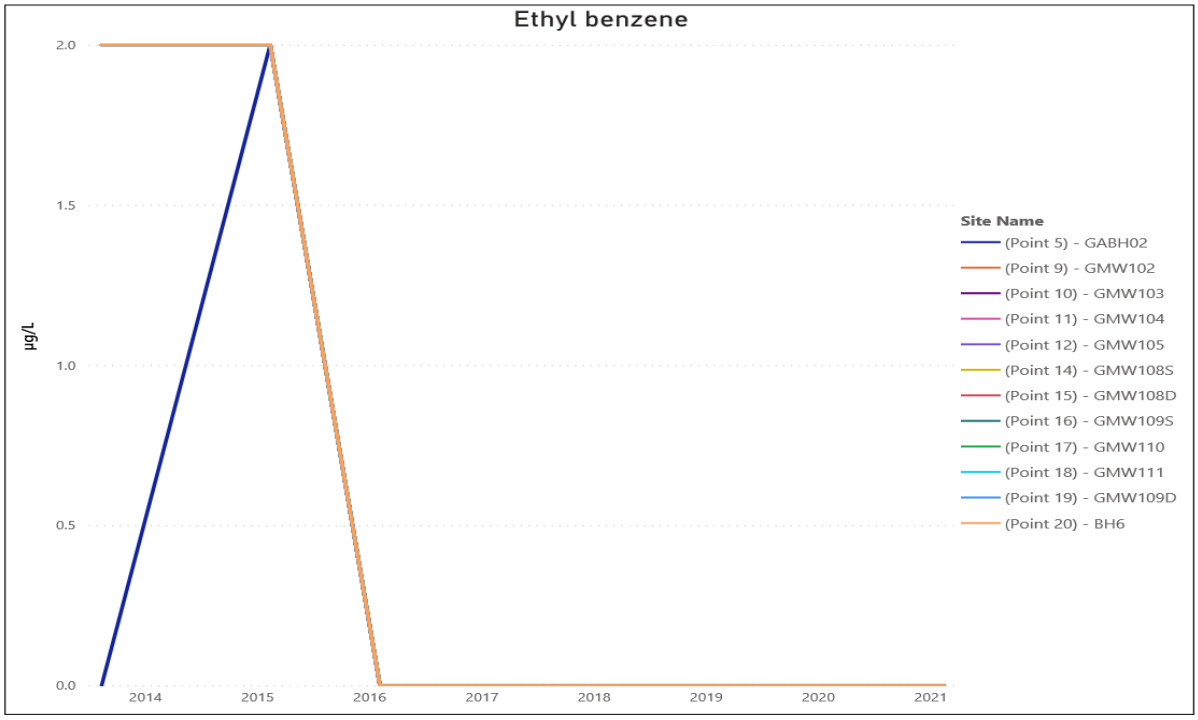

Manganese
mg/L
20
15
10
5
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

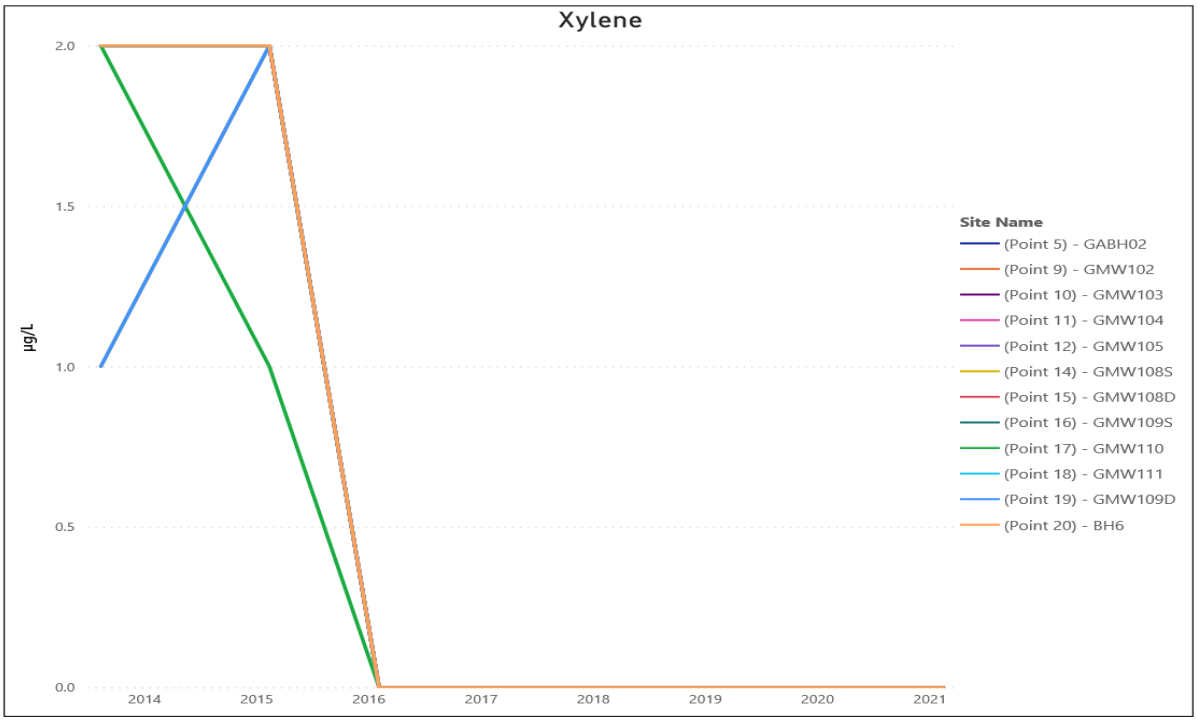

Mercury
mg/L
0.0004
0.0003
0.0002
0.0001
0.0000
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

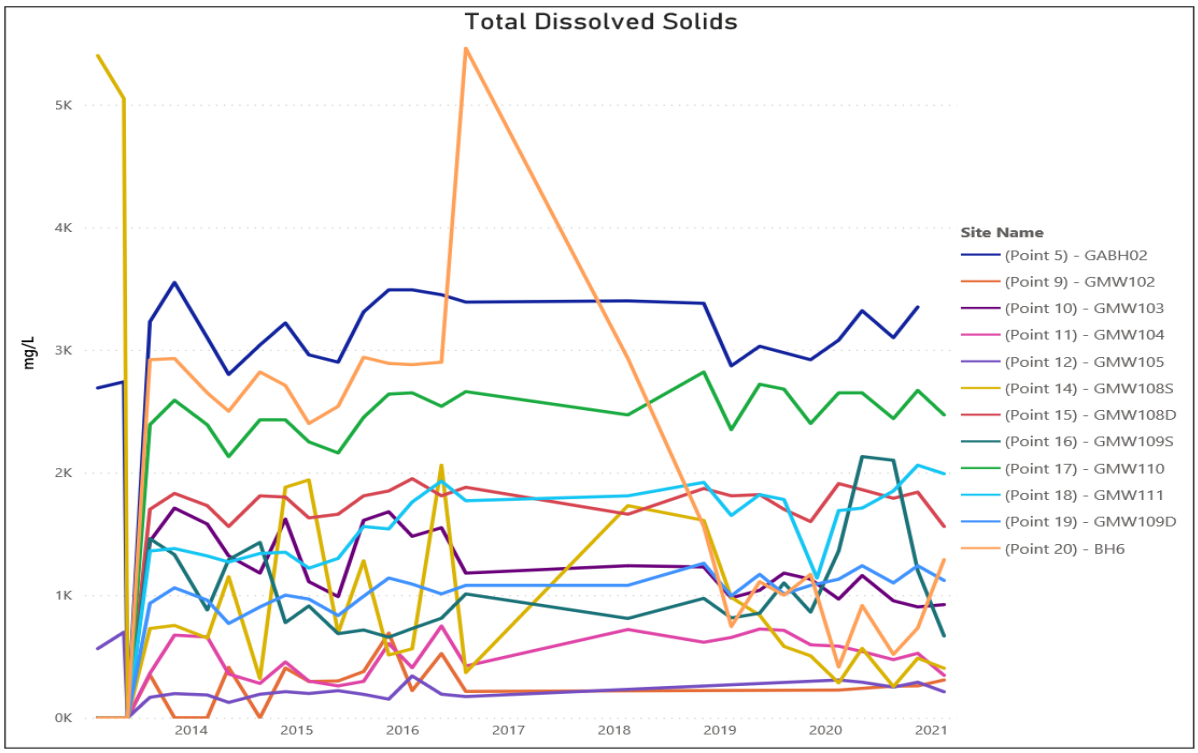

Zinc
mg/L
1.5
1.0
0.5
0.0
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

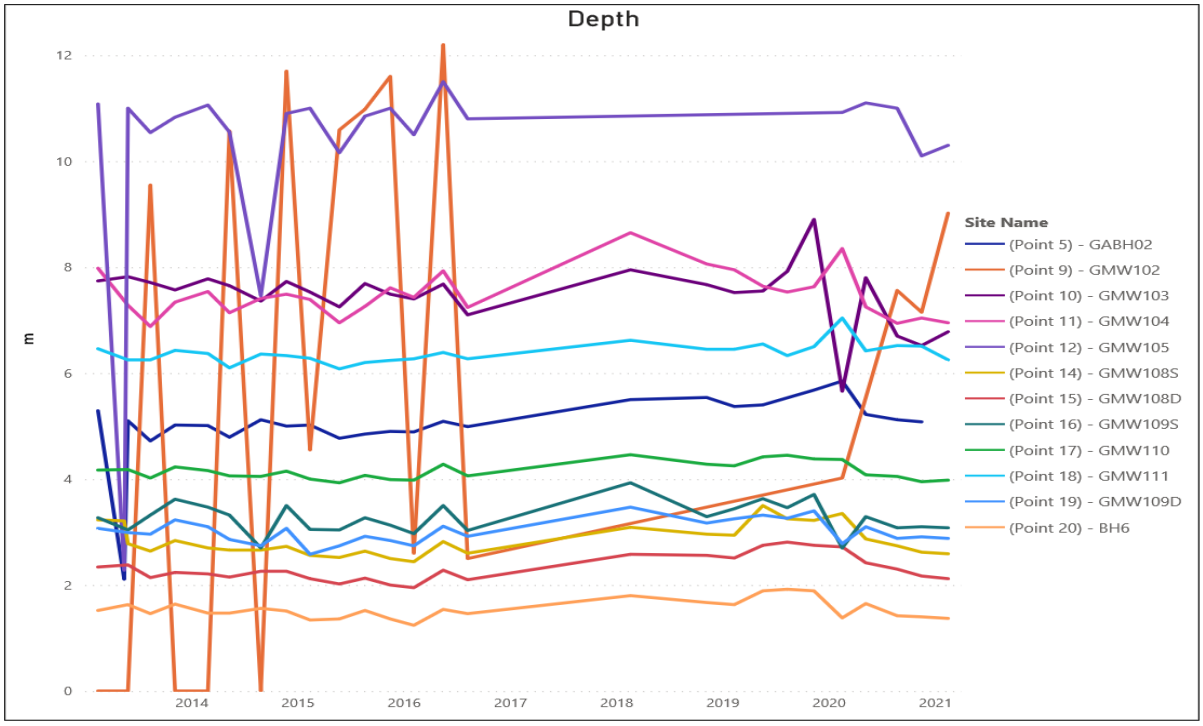

Benzene
µg/L
1.0
0.8
0.6
0.4
0.2
0.0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

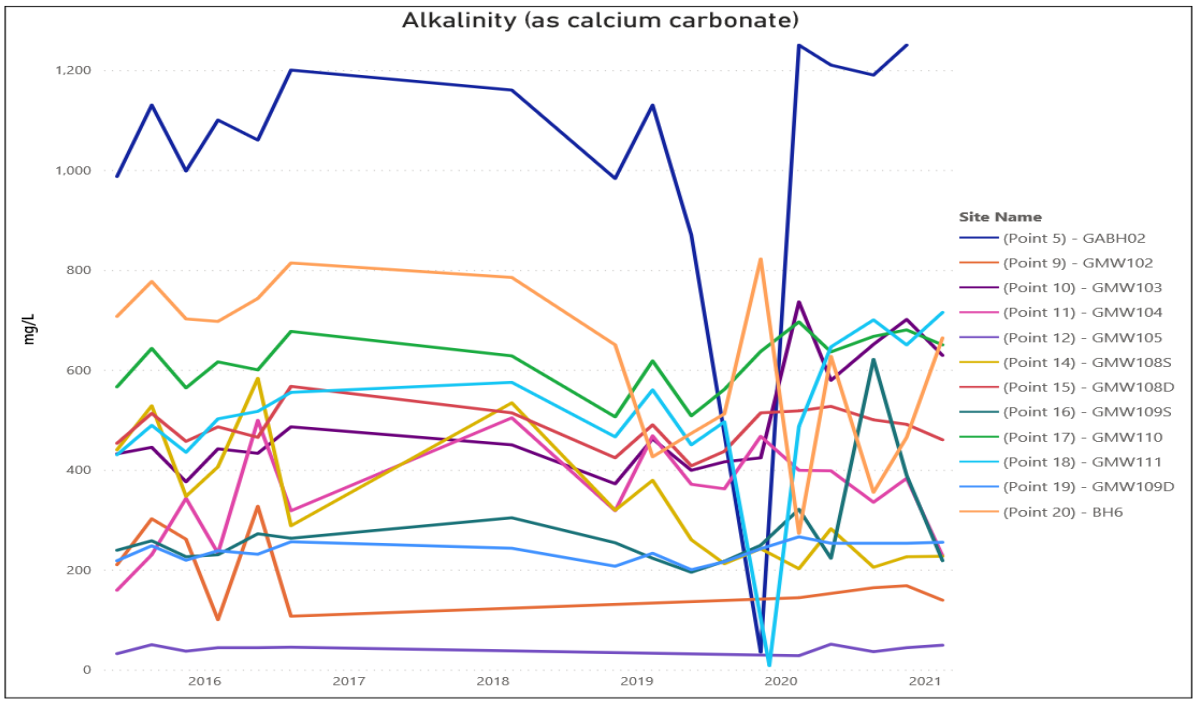

Toluene
2.0
1.5
1.0
0.5
0.0
µg/L
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

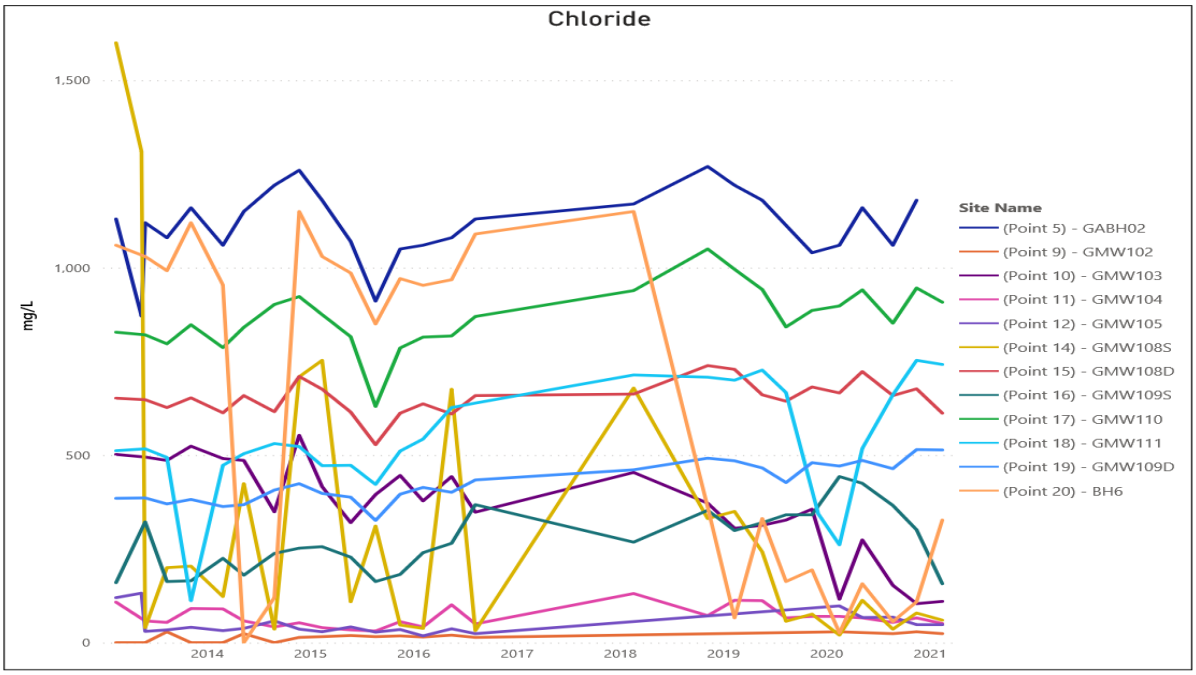

Ethyl benzene
2.0
1.5
1.0
0.5
0.0
µg/L
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

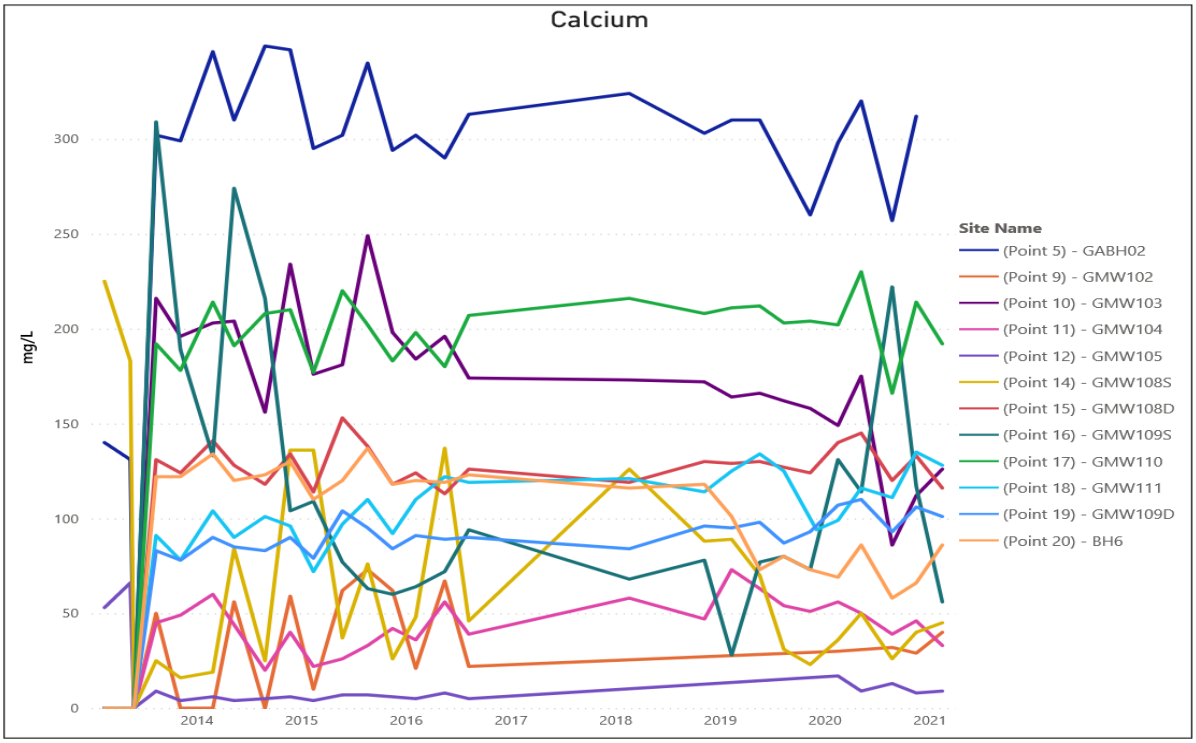

Xylene
2.0
1.5
1.0
0.5
0.0
µg/L
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

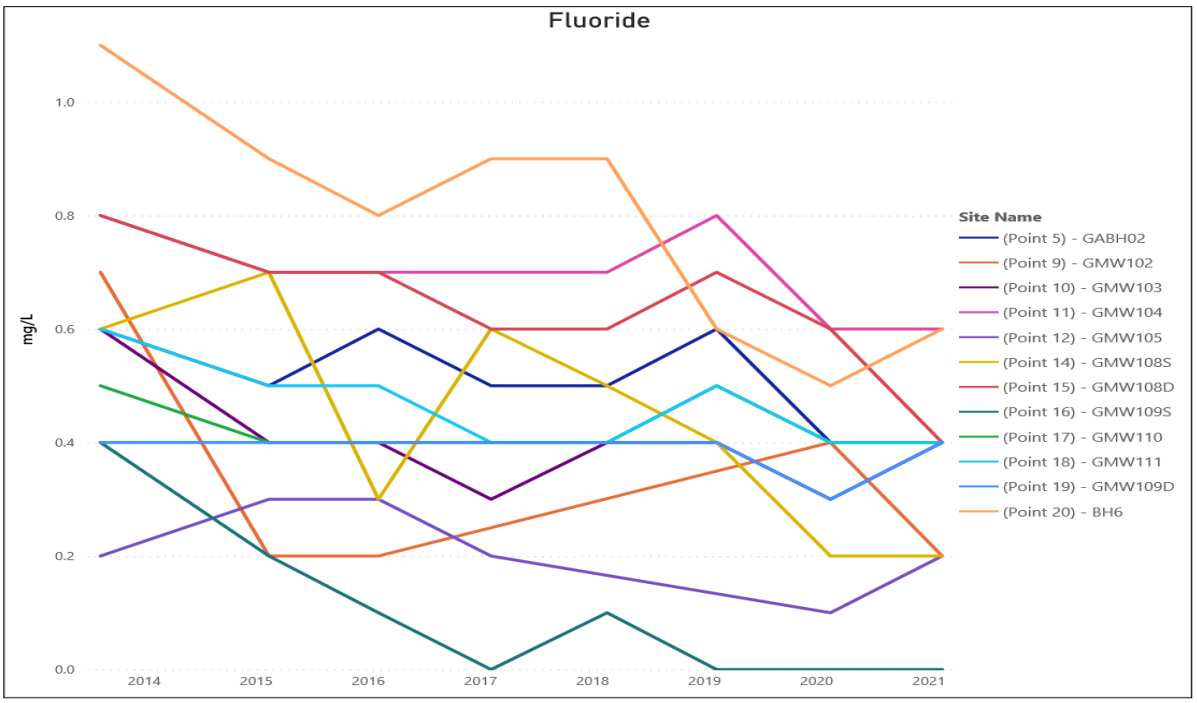

Total Dissolved Solids
5K
4K
3K
2K
1K
0K
mg/L
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

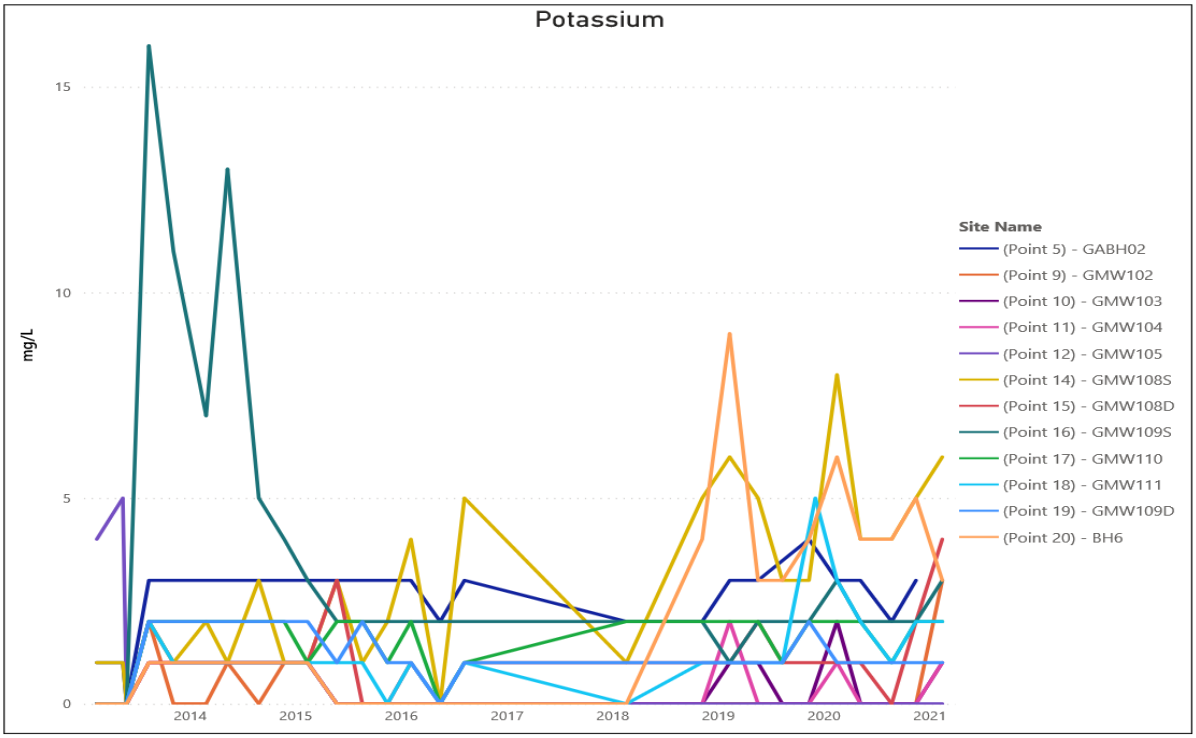

Depth
m
12
10
8
6
4
2
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

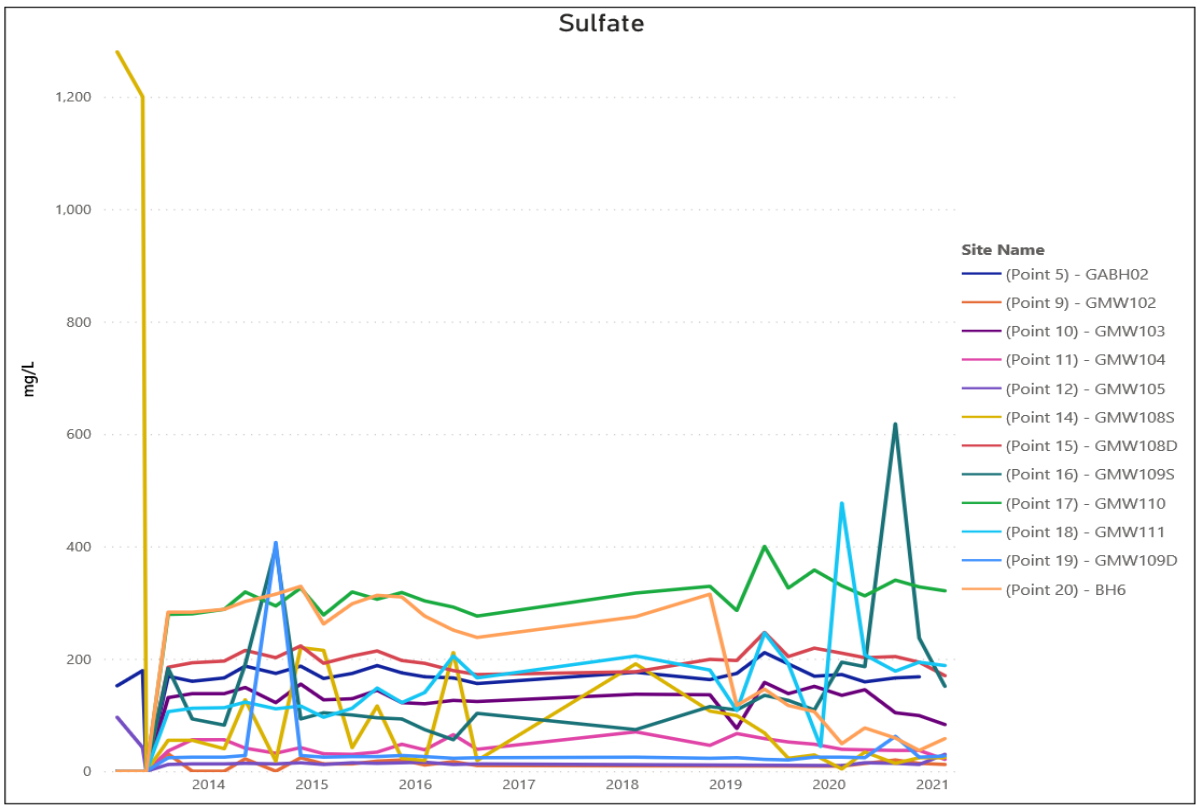

Alkalinity (as calcium carbonate)
mg/L
1,200
1,000
800
600
400
200
0
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

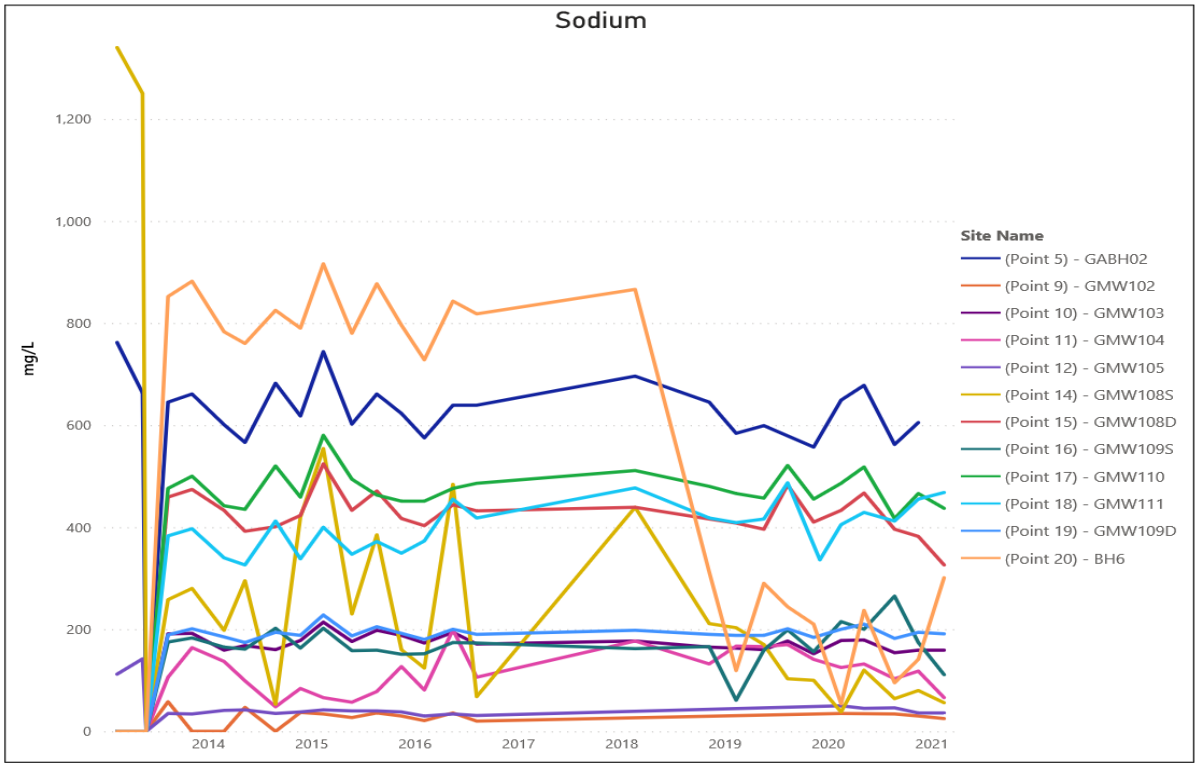

Chloride
mg/L
1,500
1,000
500
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

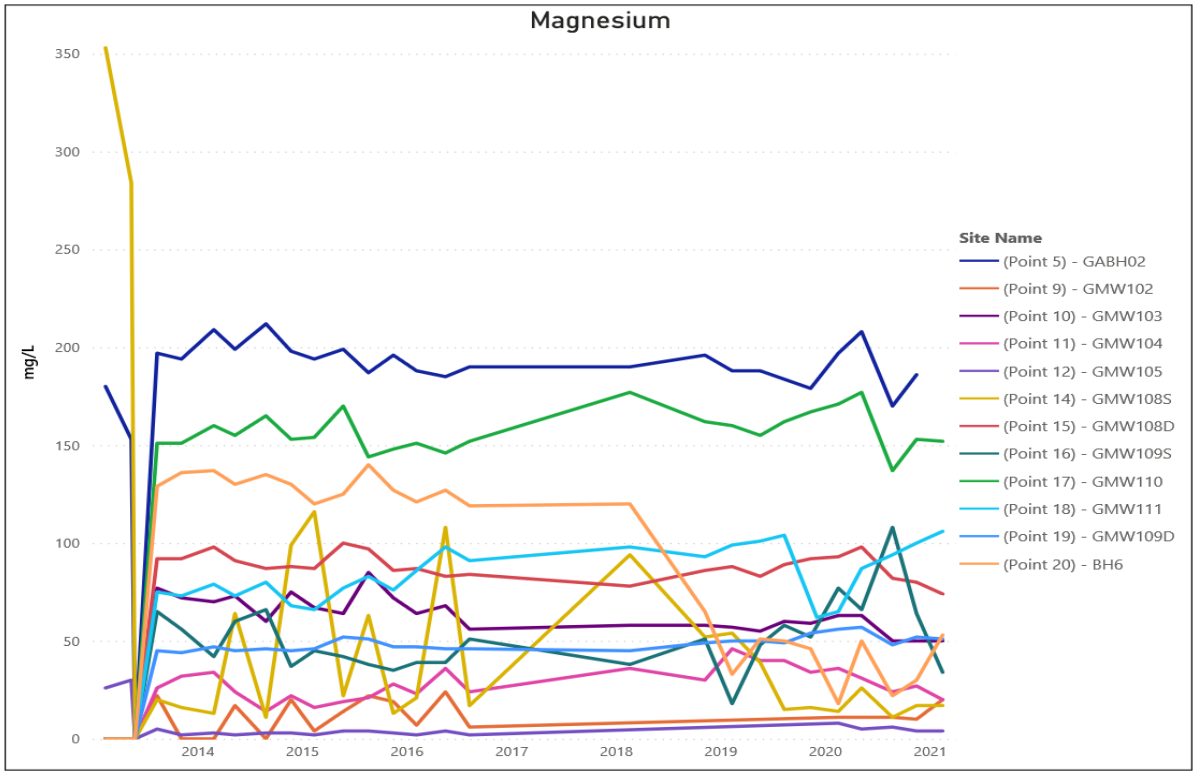

Calcium
mg/L
300
250
200
150
100
50
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

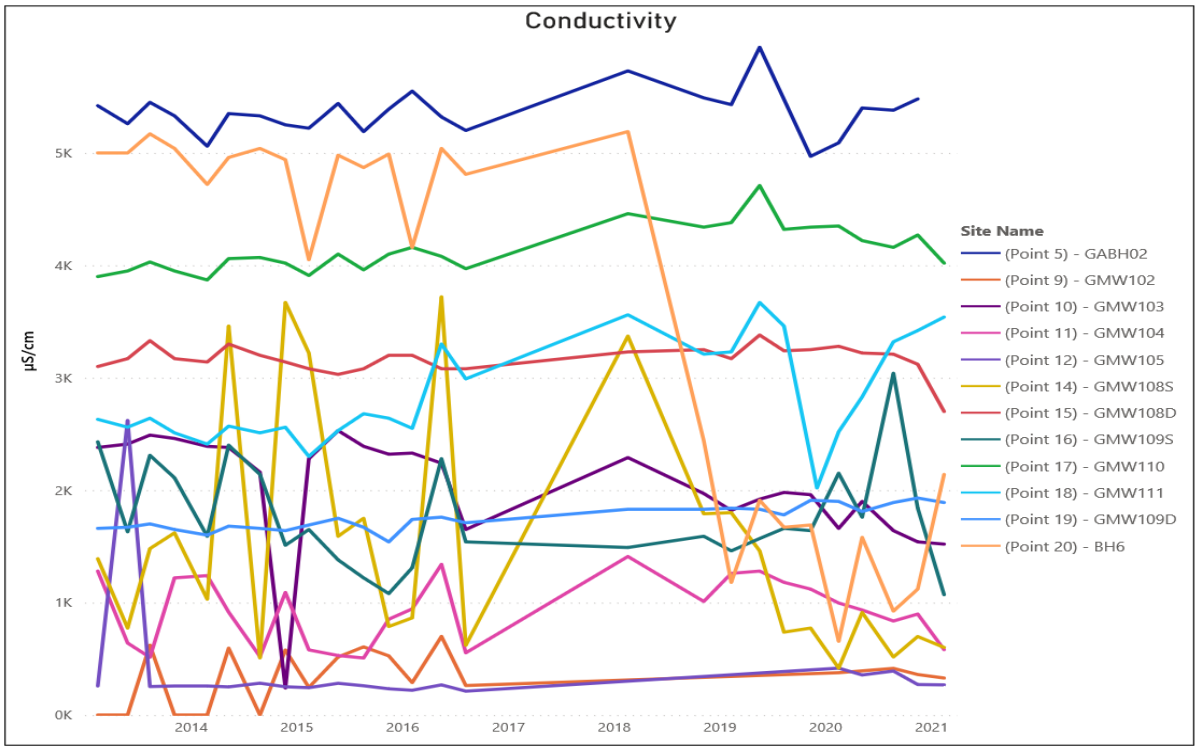

Fluoride
mg/L
1.0
0.8
0.6
0.4
0.2
0.0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

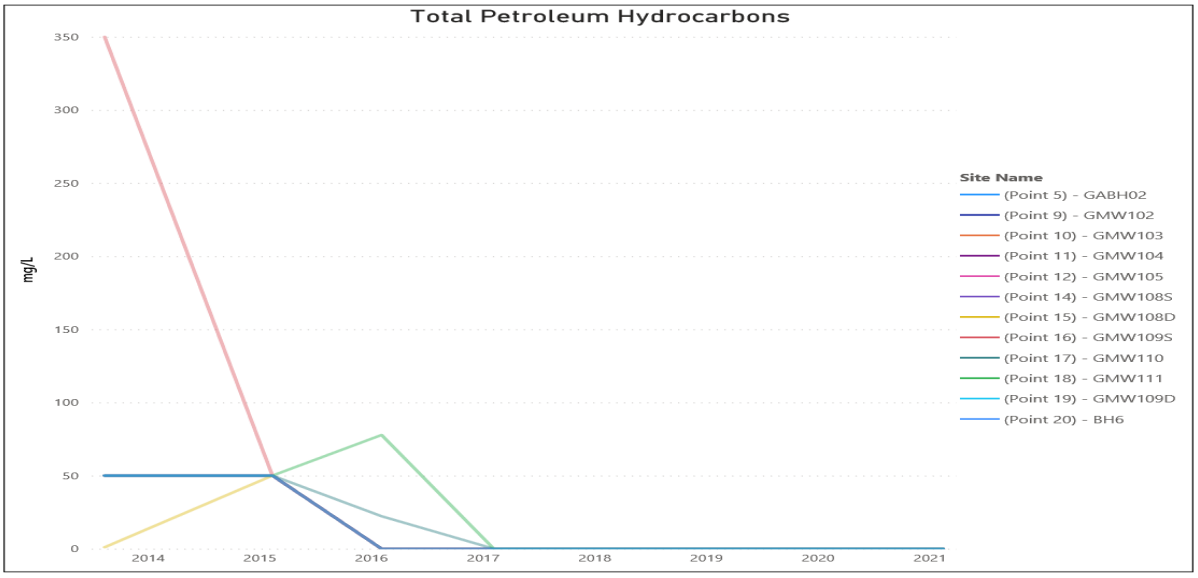

Potassium
mg/L
15
10
5
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

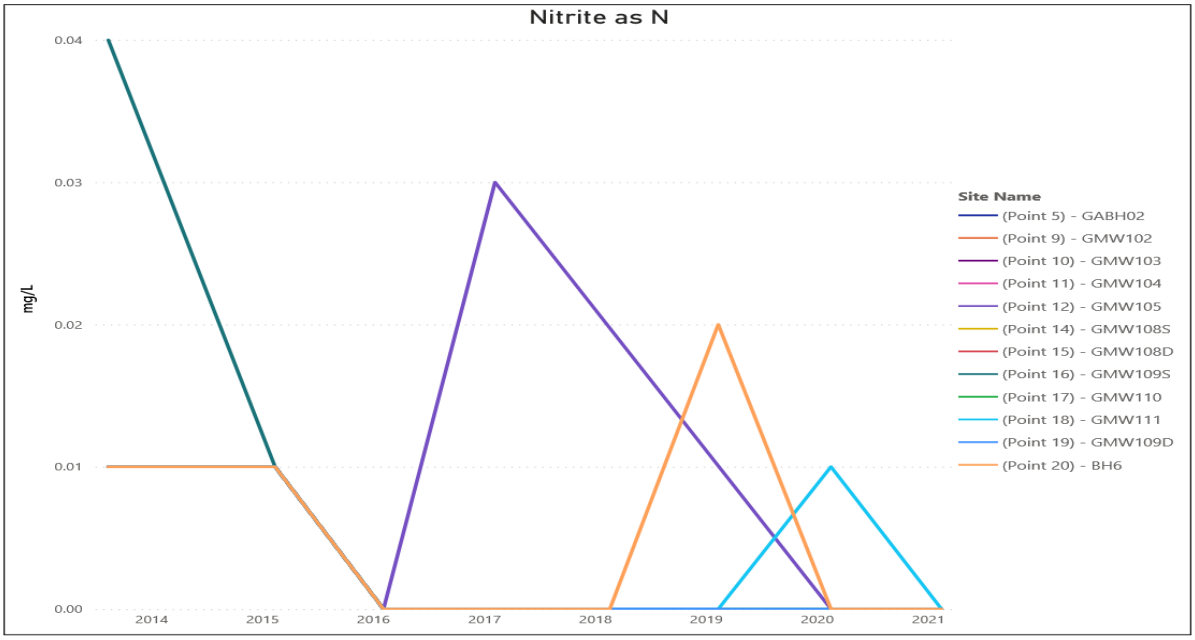

Sulfate
mg/L
1,200
1,000
800
600
400
200
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

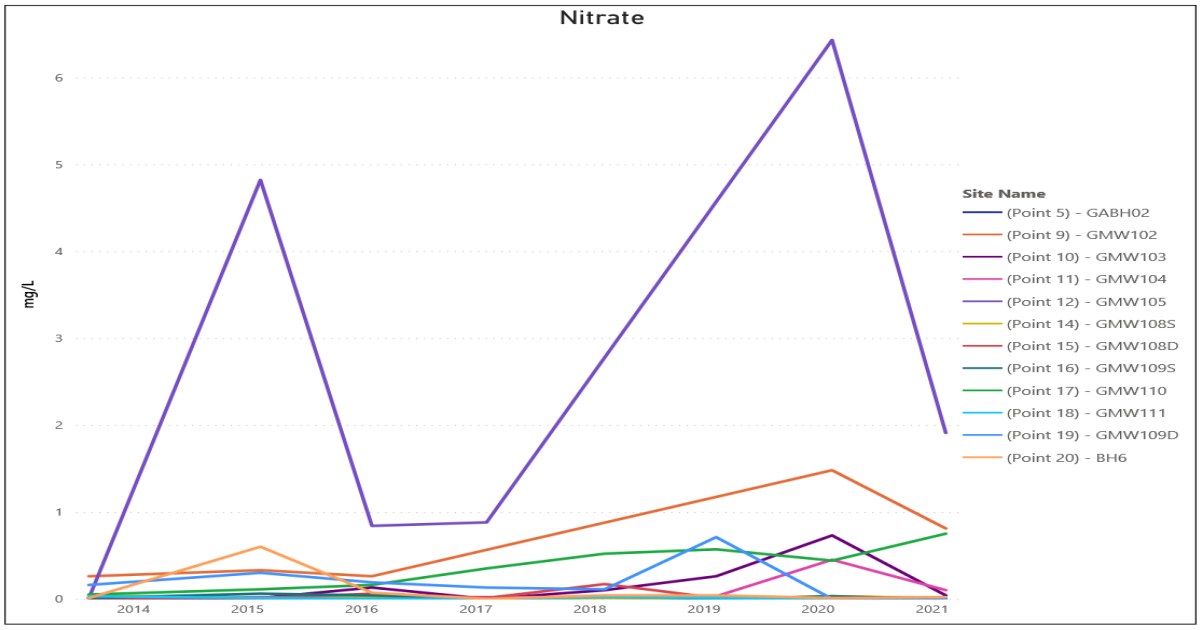

Sodium
mg/L
1,200
1,000
800
600
400
200
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

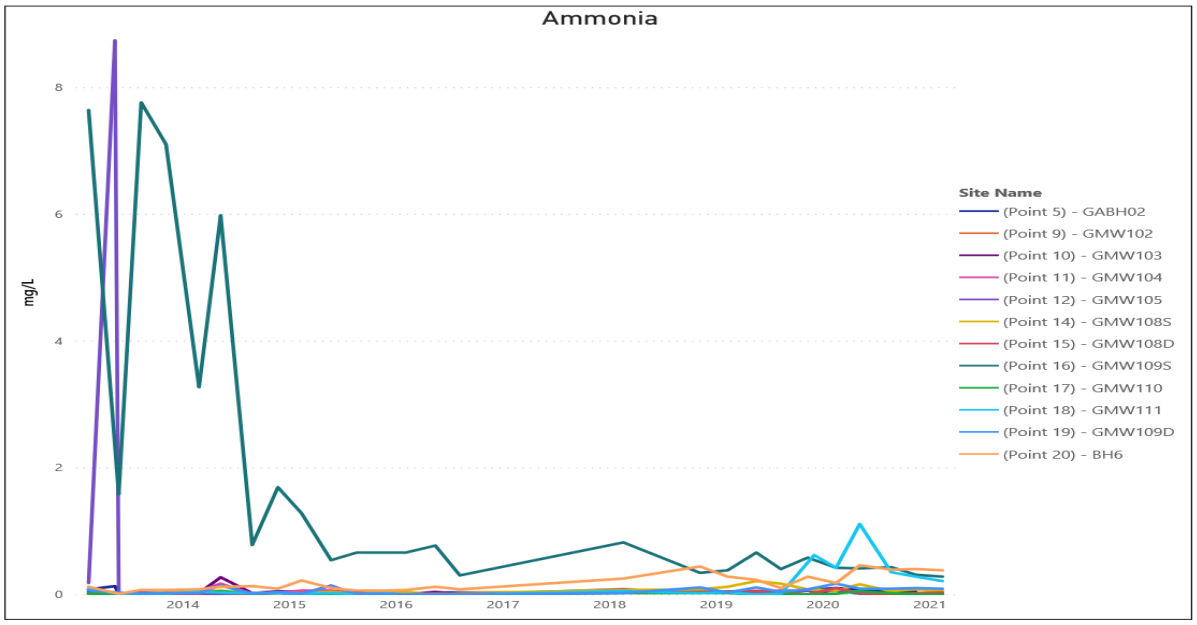

Magnesium
mg/L
350
300
250
200
150
100
50
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

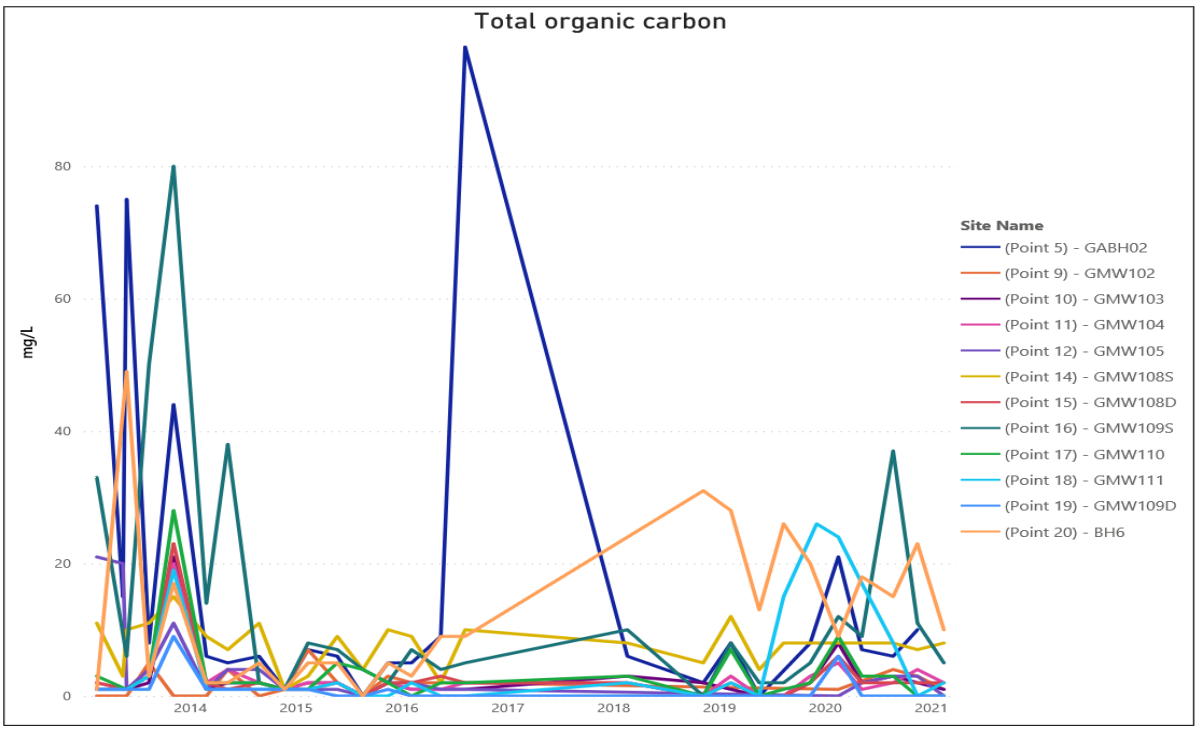

Conductivity
µS/cm
5K
4K
3K
2K
1K
0K
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

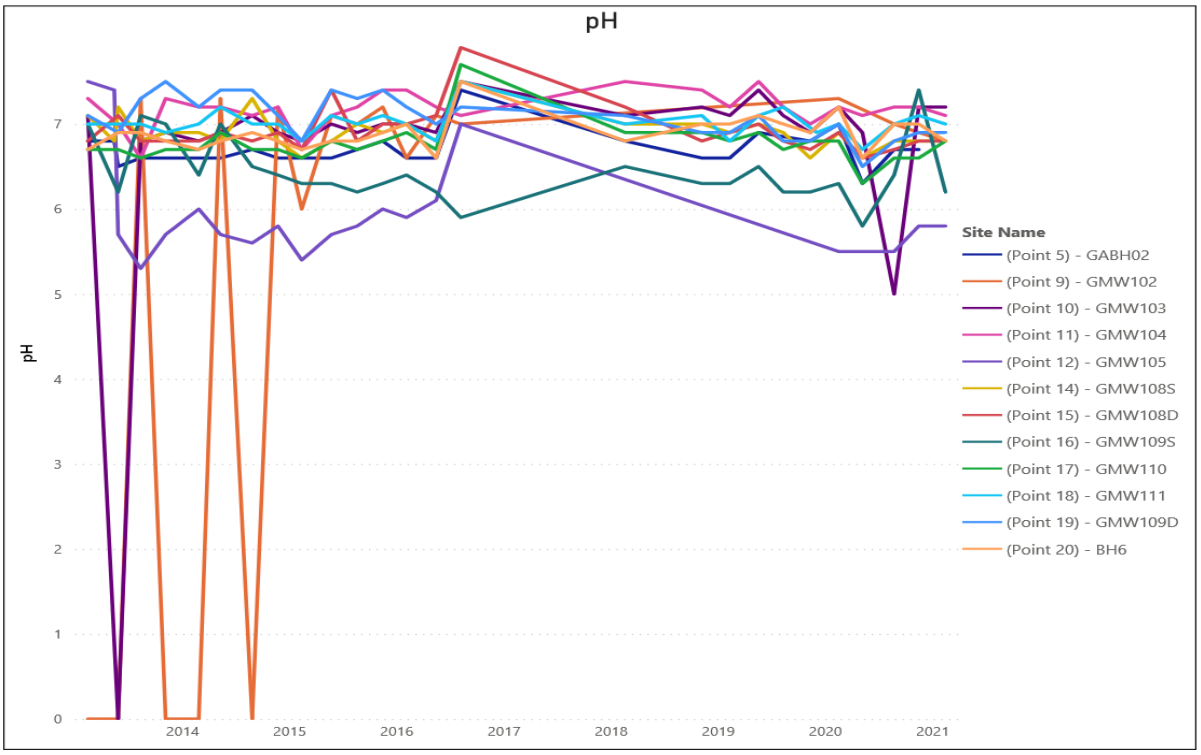

Total Petroleum Hydrocarbons
mg/L
350
300
250
200
150
100
50
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6


Nitrite as N
mg/L
0.04
0.03
0.02
0.01
0.00
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6


Nitrate
mg/L
6
5
4
3
2
1
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6


Ammonia
mg/L
8
6
4
2
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6


Total organic carbon
mg/L
80
60
40
20
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6


pH
pH
7
6
5
4
3
2
1
0
2014
2015
2016
2017
2018
2019
2020
2021
Site Name
(Point 5) - GABH02
(Point 9) - GMW102
(Point 10) - GMW103
(Point 11) - GMW104
(Point 12) - GMW105
(Point 14) - GMW108S
(Point 15) - GMW108D
(Point 16) - GMW109S
(Point 17) - GMW110
(Point 18) - GMW111
(Point 19) - GMW109D
(Point 20) - BH6

Appendix C: Trade Wastewater: Tabulated Results and Trends

Compound Name	Units	12/03/2019	13/03/2019	04/04/2019	05/04/2019	29/04/2019	30/04/2019	20/05/2019	21/05/2019	11/06/2019	12/06/2019	01/07/2019	02/07/2019	22/07/2019	23/07/2019
Ammonia	mg/L		0.1		0.3		0		0.9		0.3		0		0
Biochemical Oxygen Demand	mg/L		3		4		15		29		8		48		32
Electrical Conductivity @ 25°C	µS/cm		11,900		8,050		8,520		10,400		10,100		9,260		8,330
Finish Time	hrs		0		0		0		0		0		0		0
Temperature	°C		25		19		18		21		20		12		16
Total Dissolved Solids (Calc.)	mg/L		7,740		5,230		5,540		6,760		6,560		6,020		5,410
Total suspended solids	mg/L		23		14		59		38		39		40		26
Volume Discharged	kL		40		79		49		24		60		54		33
Meter Reading (start)	kL		300,556		304,306		305,521		306,343		307,836		309,811		311,814
Meter Reading (finish)	kL		300,596		304,385		305,570		306,367		307,896		309,865		311,847
pH (start)	pH	8.3		8.5		9.1		9.1		7.7		8		8.2	
pH (finish)	pH		8.3		8.2		9		8.6		7.9		8		8.1
Ammonia kg/day	kg/day		0.004		0.0237		0		0.0216		0.018		0		0
Biochemical Oxygen Demand kg/day	kg/day		0.12		0.316		0.735		0.696		0.48		2.592		1.056
Total Dissolved Solids (Calc.) kg/day	kg/day		309.6		413.17		271.46		162.24		393.6		325.08		178.53
Total suspended solids kg/day	kg/day		0.92		1.106		2.891		0.912		2.34		2.16		0.858

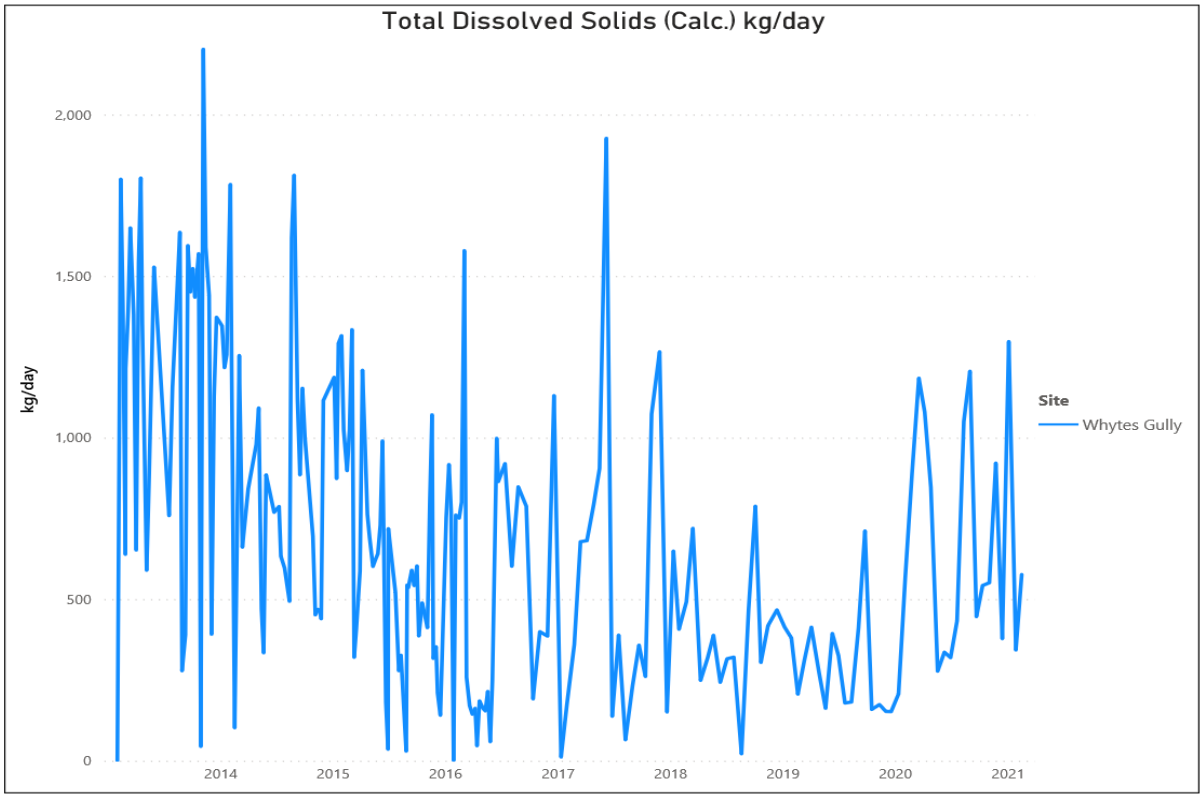
Compound Name	Units	12/08/2019	13/08/2019	04/09/2019	05/09/2019	25/09/2019	26/09/2019	17/10/2019	18/10/2019	11/11/2019	12/11/2019	02/12/2019	03/12/2019	19/12/2019	20/12/2019
Ammonia	mg/L		0.3		0		0		0		0		0		0
Biochemical Oxygen Demand	mg/L		7		11		4		9		3		22		6
Electrical Conductivity @ 25°C	µS/cm		9,020		10,200		7,980		7,870		9,220		10,200		11,700
Finish Time	hrs		0		0		0		0		0		0		0
Temperature	°C		18		19		19		22		29		19.5		24
Total Dissolved Solids (Calc.)	mg/L		5,860		6,630		5,190		5,120		5,990		6,630		7,600
Total suspended solids	mg/L		40		63		0		20		36		84		70
Volume Discharged	kL		31		62		137		31		29		23		20
Meter Reading (start)	kL		312,602		313,823		316,367		319,218		320,010		320,611		320,960
Meter Reading (finish)	kL		312,633		313,885		316,504		319,249		320,039		320,634		320,980
pH (start)	pH	7.9		8.1		8.3		8.2		8		8		7.6	
pH (finish)	pH		7.9		8.3		8.2		8.3		8.4		8.2		8
Ammonia kg/day	kg/day		0.0093		0		0		0		0		0		0
Biochemical Oxygen Demand kg/day	kg/day		0.217		0.682		0.548		0.279		0.087		0.506		0.12
Total Dissolved Solids (Calc.) kg/day	kg/day		181.66		411.06		711.03		158.72		173.71		152.49		152
Total suspended solids kg/day	kg/day		1.24		3.906		0		0.62		1.044		1.932		1.4

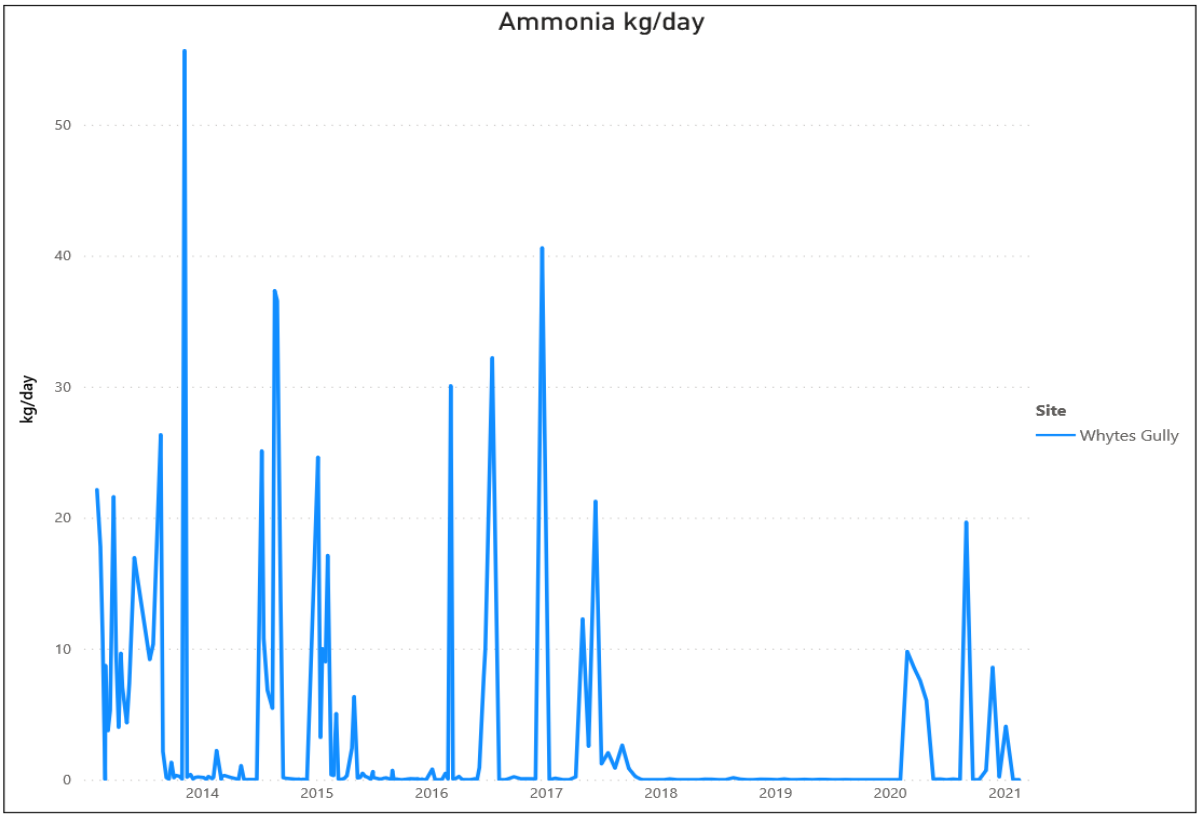
Compound Name	Units	13/01/2020	03/02/2020	04/02/2020	25/02/2020	26/02/2020	18/03/2020	19/03/2020	06/04/2020	07/04/2020	27/04/2020	28/04/2020	18/05/2020	19/05/2020
Ammonia	mg/L	0		0		32.6		21.3		23.2	19			0.7
Biochemical Oxygen Demand	mg/L	7		14		26		35		21	17			4
Electrical Conductivity @ 25°C	µS/cm	12,700		12,000		4,570		4,550		5,090	4,100			8,050
Finish Time	hrs	0		0		0		0		0	0			0
Temperature	°C	22		24		33		22		26		21		20
Total Dissolved Solids (Calc.)	mg/L	8,260		7,800		2,970		2,960		3,310	2,660			5,230
Total suspended solids	mg/L	53		49		52		74		28	28			35
Volume Discharged	kL	25		73		300		400		326	318			53
Meter Reading (start)	kL	321,489		322,687		329,878		337,720		343,724	349,902			354,075
Meter Reading (finish)	kL	321,514		322,760		330,178		338,120		344,050	350,220			354,128
pH (start)	pH	7.9	7.6		8.1		8.3		8.5			8.3	8.1	
pH (finish)	pH	8.1		7.7		8.6		8.4		8.3		8.4		8.3
Ammonia kg/day	kg/day	0		0		9.78		8.52		7.5632	6.042			0.0371
Biochemical Oxygen Demand kg/day	kg/day	0.175		1.022		7.8		14		6.846	5.406			0.212
Total Dissolved Solids (Calc.) kg/day	kg/day	206.5		569.4		891		1,184		1,079.06	845.88			277.19
Total suspended solids kg/day	kg/day	1.325		3.577		15.6		29.6		9.128	8.904			1.855

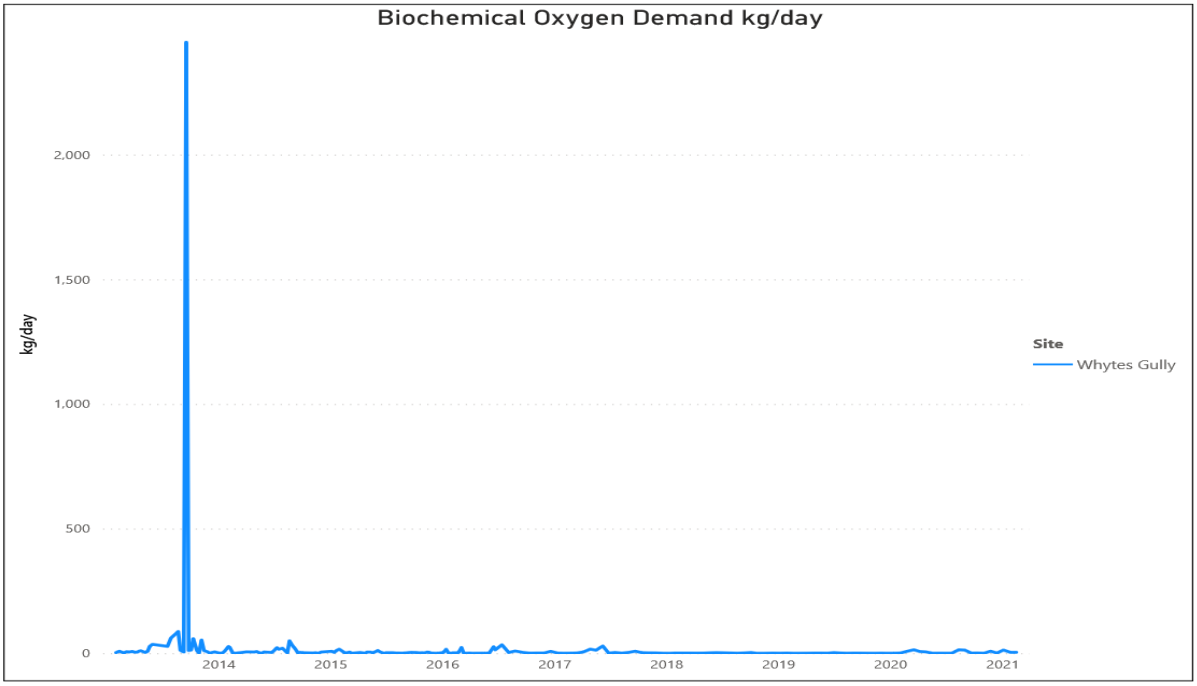
Compound Name	Units	09/06/2020	10/06/2020	29/06/2020	30/06/2020	20/07/2020	21/07/2020	11/08/2020	12/08/2020	31/08/2020	01/09/2020	21/09/2020	22/09/2020	12/10/2020	13/10/2020
Ammonia	mg/L		0.8		0		0.6		0		46.8		0	0	
Biochemical Oxygen Demand	mg/L		7		5		5		33		30		6	13	
Electrical Conductivity @ 25°C	µS/cm		8,620		8,040		8,640		3,850		4,420		5,440	9,730	
Finish Time	hrs		0		0		0		0		0		0	0	
Temperature	°C		18		15		15		15		17		21.9		23
Total Dissolved Solids (Calc.)	mg/L		5,600		5,230		5,620		2,500		2,870		3,540	6,320	
Total suspended solids	mg/L		31		26		28		44		33		14	18	
Volume Discharged	kL		60		61		77		420		420		126	85.8	
Meter Reading (start)	kL		356,818		358,555		360,142		369,039		377,859		4,022.47	9,306.65	
Meter Reading (finish)	kL		356,878		358,616		360,219		369,459		378,279		4,148.73	9,392.4	
pH (start)	pH	8.4		7.9		8		8.5		8.5		7.9			7.7
pH (finish)	pH		8.2		8.2		8		8.7		8.1		8.1		7.9
Ammonia kg/day	kg/day		0.048		0		0.0462		0		19.656		0	0	
Biochemical Oxygen Demand kg/day	kg/day		0.42		0.305		0.385		13.86		12.6		0.756	1.1154	
Total Dissolved Solids (Calc.) kg/day	kg/day		336		319.03		432.74		1,050		1,205.4		446.04	542.256	
Total suspended solids kg/day	kg/day		1.86		1.586		2.156		18.48		13.86		1.764	1.5444	

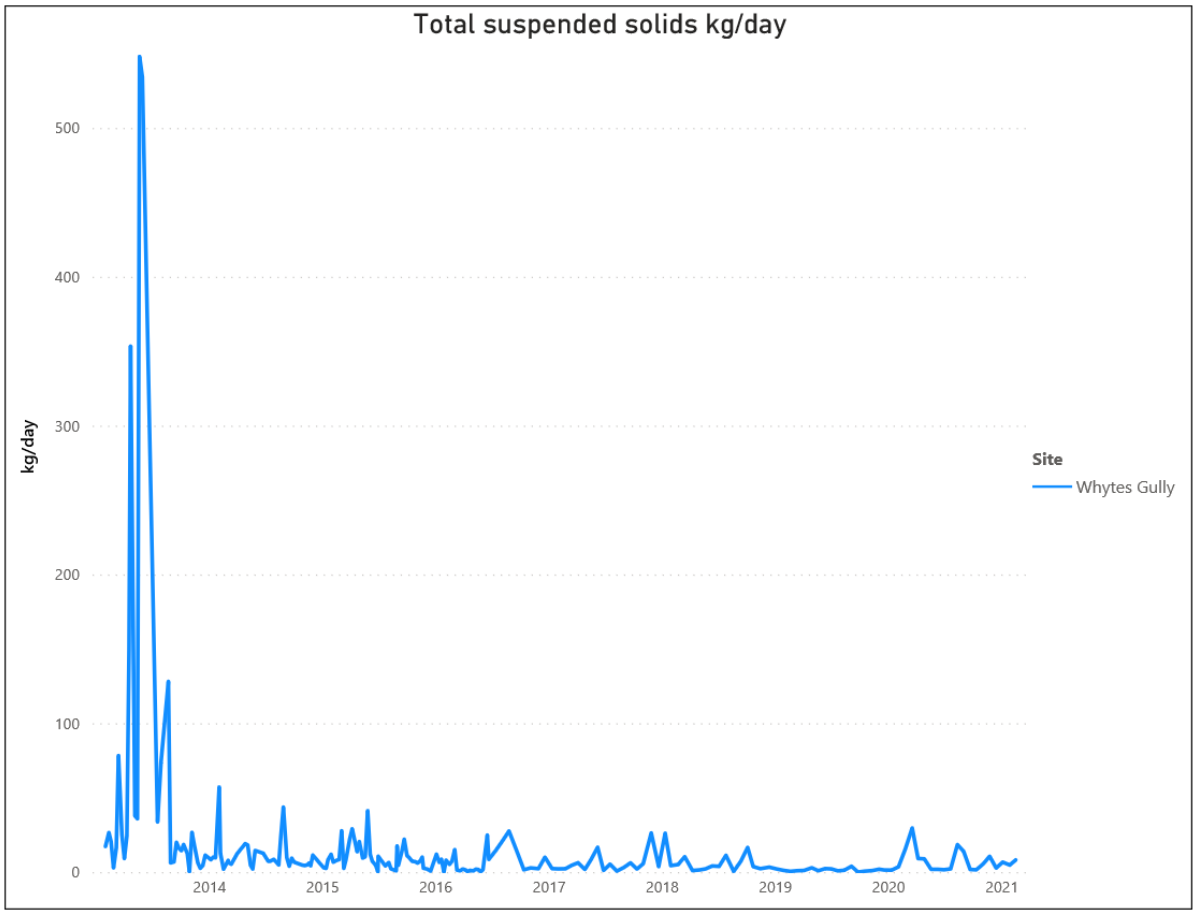
Compound Name	Units	02/11/2020	03/11/2020	23/11/2020	24/11/2020	14/12/2020	15/12/2020	04/01/2021	05/01/2021	27/01/2021	28/01/2021	15/02/2021	16/02/2021
Ammonia	mg/L		5.9		28.3		2.6		14.6		0		0
Biochemical Oxygen Demand	mg/L		2		27		11		46		39		24
Electrical Conductivity @ 25°C	µS/cm		7,060		4,680		7,100		7,160		5,800		5,640
Finish Time	hrs		0		0		0		0		0		0
Temperature	°C		22		25		28		28		27		28
Total Dissolved Solids (Calc.)	mg/L		4,590		3,040		4,620		4,650		3,770		3,670
Total suspended solids	mg/L		46		35		33		24		52		52
Volume Discharged	kL		120		303		81.8		279		90.9		157
Meter Reading (start)	kL		14,128.19		26,219.55		27,166.89		29,743.92		35,813.26		41,303.64
Meter Reading (finish)	kL		14,248.36		26,522.34		27,248.66		30,023.16		35,904.18		41,460.58
pH (start)	pH	8.1		7.6		7.4		7.8		7.6		7.6	
pH (finish)	pH		8.2		8.2		7.5		7.4		7.4		7.7
Ammonia kg/day	kg/day		0.708		8.5749		0.21268		4.0734		0		0
Biochemical Oxygen Demand kg/day	kg/day		0.24		8.181		0.8998		12.834		3.5451		3.768
Total Dissolved Solids (Calc.) kg/day	kg/day		550.8		921.12		377.916		1,297.35		342.693		576.19
Total suspended solids kg/day	kg/day		5.52		10.605		2.6994		6.696		4.7268		8.164

Trade Wastewater






Biochemical Oxygen Demand kg/day
kg/day
2,000
1,500
1,000
500
0
2014
2015
2016
2017
2018
2019
2020
2021
Site
Whytes Gully


Total suspended solids kg/day
kg/day
500
400
300
200
100
0
2014
2015
2016
2017
2018
2019
2020
2021
Site
Whytes Gully

Appendix E: Landfill Gas Tabulated results and trends

Table 1: Subsurface Gas Results

Monitoring Point ID	Sample ID	Sample Date	Bal %	Baro hPa	CH4 %v/v	CH4 Peak %v/v	CO2 %v/v	CO2 Peak %v/v	Flow l/h	Relative Pressure
21	LFG MW1	Friday, March 29, 2019	81.6	1007	0	0	7.8	7.8	0	-0.02
		Tuesday, April 16, 2019	80.7	1007	0	0	8.4	8.4	0	-0.02
		Wednesday, May 8, 2019	79.1	1009	0	0	8.7	11.8	0	-0.02
		Sunday, June 16, 2019	77.5	1019	0	0	10.4	10.4	0	-0.02
		Wednesday, July 17, 2019	80.9	1014	0	0	7.8	7.8	0.1	0.05
		Monday, August 19, 2019	78.5	1018	0	0	7.2	7.2	0.4	0.03
		Monday, October 14, 2019	81.1	1015	0	0	7.2	7.2	0.5	0
		Monday, November 25, 2019	78.3	1009	0	0	5.2	5.3	0.3	0.02
		Monday, December 9, 2019	78.4	1011	0	0	4.8	4.8	0.3	0.02
		Wednesday, January 15, 2020	78.6	1013	0	0	4.9	4.9	0.4	0.02
		Monday, February 24, 2020	80.1	1019	0	0	6	6.5	0.4	0.03
		Tuesday, March 10, 2020	79.8	1020	0	0	3.3	3.9	0.2	-0.05
		Tuesday, April 14, 2020	80.6	1016	0	0	1.1	1.1	0.2	0.06
		Monday, May 11, 2020	80.6	1023	0	0	2.5	3.1	0.2	0.02
		Tuesday, June 9, 2020	81.9	1029	0	0	4.1	4.1	0	0
		Wednesday, July 1, 2020	81.5	1024	0	0	5.5	5.6	0.1	0.05
		Wednesday, August 12, 2020	82.7	1012	0	0	6.5	9.1	0	0.1
		Tuesday, September 8, 2020	77.9	1025	0	0	1.6	1.7	0	0.09
		Monday, October 19, 2020	78.5	1015	0	0	1	1	0	0.03
		Tuesday, November 17, 2020	79.5	1014	0	0	0.6	1	0.1	0.02
		Thursday, December 10, 2020	79.4	1014	0	0	0.3	0.4	0	0.02
		Thursday, January 14, 2021	81	1007	0	0	0.4	0.4	0	0.05
		Wednesday, February 17, 2021	80.1	1025	0	0	0.1	0.1	0	0.09
22	LFG MW2	Friday, March 29, 2019	81.9	1009	0	0	7.6	7.6	0.2	-0.05
		Tuesday, April 16, 2019	81.7	1009	0	0	6.1	6.1	0.2	-0.05
		Wednesday, May 8, 2019	80.6	1006	0	0	7.8	7.8	0.2	0
		Sunday, June 16, 2019	81.1	1018	0	0	7.1	7.7	0.1	0.01
		Wednesday, July 17, 2019	81	1014	0	0	2	3	0	-0.02
		Monday, August 19, 2019	81.9	1018	0	0	4	4	0.4	0.07
		Monday, October 14, 2019	81.2	1015	0	0	1.9	2.3	0.6	0.05
		Monday, November 25, 2019	80.8	1008	0	0	1.3	2.8	0.3	0.07
		Monday, December 9, 2019	80	1010	0	0	1.1	2.4	0.3	0.02
		Wednesday, January 15, 2020	80.4	1008	0	0	7.6	7.6	0.4	0.05
		Monday, February 24, 2020	81.6	1018	0	0	3.7	4	0.5	-0.02
		Tuesday, March 10, 2020	80.3	1019	0	0	0.3	0.3	0.5	0.05
		Tuesday, April 14, 2020	82.9	1013	0	0	5	5	0.4	0.09
		Monday, May 11, 2020	79.7	1022	0	0	0.1	0.2	0.1	0
		Tuesday, June 9, 2020	79.5	1026	0	0	0	0	0.1	0.05
		Wednesday, July 1, 2020	80.6	1024	0	0	1.4	1.5	0.1	0.05
		Wednesday, August 12, 2020	85	1010	0	0	6.4	6.4	0.5	0.02
		Tuesday, September 8, 2020	84.3	1020	0	0	6.1	6.1	0	0
		Monday, October 19, 2020	81.5	1014	0	0	2.1	2.3	0	0.07
		Tuesday, November 17, 2020	81	1014	0	0	0.9	8.9	0	0.05
		Thursday, December 10, 2020	79.6	1014	0	0	0.1	0.1	0	0.05
		Thursday, January 14, 2021	86.6	1006	0	0	2.7	2.7	0.1	0.05
		Wednesday, February 17, 2021	85.6	1023	0	0	3.9	3.9	0	0.03

23	LFG MW3	Friday, March 29, 2019	80.5	1006	0	0	5	5	0.1	-0.02
		Tuesday, April 16, 2019	79.9	1006	0	0	3.9	4	0.1	-0.02
		Wednesday, May 8, 2019	79.1	1007	0	0	4	6.2	0.1	0.01
		Sunday, June 16, 2019	79.8	1015	0	0	2.9	2.9	0.1	0.09
		Wednesday, July 17, 2019	79.3	1014	0	0	3.2	3.2	0.2	-0.05
		Monday, August 19, 2019	80.1	1018	0	0	2.6	2.6	0.4	0.03
		Monday, October 14, 2019	79.6	1009	0	0	4.1	4.1	0.5	0.03
		Monday, November 25, 2019	79.8	1005	0	0	3.5	3.5	0.5	0
		Monday, December 9, 2019	79.4	1008	0	0	3.3	3.4	0.3	0.03
		Wednesday, January 15, 2020	79.3	1008	0	0	2.8	2.8	0.5	0.03
		Monday, February 24, 2020	86.6	1014	0	0	4.6	4.6	0.4	0.02
		Tuesday, March 10, 2020	82	1016	0	0	5.3	5.3	0.5	0.03
		Tuesday, April 14, 2020	82.3	1012	0	0	5.3	5.3	0.4	0.09
		Monday, May 11, 2020	79.5	1019	0	0	0.7	0.7	0.1	0.02
		Tuesday, June 9, 2020	80.1	1025	0	0	2.8	2.8	0	0.07
		Wednesday, July 1, 2020	81.8	1018	0	0	5.1	5.1	0.1	-0.02
		Wednesday, August 12, 2020	89.3	1006	0	0	1.3	1.6	0	-0.03
		Tuesday, September 8, 2020	79.3	1020	0	0	3.7	3.7	0	0.02
		Monday, October 19, 2020	79.6	1012	0	0	0.9	2	0	0.09
		Tuesday, November 17, 2020	81.9	1014	0	0	8.3	8.4	0.1	0.1
		Thursday, December 10, 2020	80	1014	0	0	3.3	3.4	0	0.07
		Thursday, January 14, 2021	84.3	1002	0	0	6.1	6.1	0	0
		Wednesday, February 17, 2021	84.6	1017	0	0	1.4	1.4	0	0.07
24	LFG MW4	Friday, March 29, 2019	80	1006	0	0	6.2	6.2	0.2	0.07
		Tuesday, April 16, 2019	79.9	1006	0	0	4.6	4.6	0.2	0.07
		Wednesday, May 8, 2019	79.6	1004	0	0	9.6	9.8	0.1	0.03
		Sunday, June 16, 2019	79.8	1014	0	0	1.4	1.4	0.2	0.07
		Wednesday, July 17, 2019	80.2	1009	0	0	7.1	7.1	0.2	-0.05
		Monday, August 19, 2019	80.7	1018	0	0	6.1	6.1	0.4	0.05
		Monday, October 14, 2019	80.2	1009	0	0	6.5	6.5	0.5	0.03
		Monday, November 25, 2019	80.8	1005	0	0	3.9	3.9	0.4	0.02
		Monday, December 9, 2019	81	1008	0	0	3.8	3.8	0.4	0.02
		Wednesday, January 15, 2020	80	1007	0	0	4.4	4.4	0.5	0.02
		Monday, February 24, 2020	80.4	1013	0	0	7.5	7.5	0.5	0.03
		Tuesday, March 10, 2020	80.2	1014	0	0	3.2	3.2	0.5	0
		Tuesday, April 14, 2020	82	1012	0	0	1.3	1.3	0.3	0.05
		Monday, May 11, 2020	79.9	1018	0	0	3.6	3.6	0.1	0.02
		Tuesday, June 9, 2020	81.3	1024	0	0	4.9	4.9	0.1	0.05
		Wednesday, July 1, 2020	81.5	1016	0	0	6.2	6.2	0	0.07
		Wednesday, August 12, 2020	84	1005	0	0	11.9	11.9	1	0.09
		Tuesday, September 8, 2020	79.9	1020	0	0	4.8	4.8	0	0.05
		Monday, October 19, 2020	79.2	1010	0	0	0.2	0.9	0.1	0.05
		Tuesday, November 17, 2020	79.5	1011	0	0	0	0	0	0.07
		Thursday, December 10, 2020	79.7	1013	0	0	0.3	0.3	0	0.07
		Thursday, January 14, 2021	82.5	1001	0	0	6.2	6.2	0	0
		Wednesday, February 17, 2021	89.9	1017	0	0	0	0	0	0.03

25	LFG MW5	Friday, March 29, 2019	80.9	1006	0	0	2.7	2.7	0.1	-0.03
		Tuesday, April 16, 2019	80.5	1006	0	0	2	2	0.1	-0.03
		Wednesday, May 8, 2019	81.1	1002	0	0	4.8	4.9	0.1	-0.03
		Sunday, June 16, 2019	79.9	1013	0	0	1.4	1.4	0.2	0.05
		Wednesday, July 17, 2019	78.6	1006	0	0	9.4	9.4	0.2	-0.03
		Monday, August 19, 2019	80.2	1018	0	0	3.2	3.2	0.4	0.09
		Monday, October 14, 2019	81.2	1007	0	0	9	9	0.5	0.1
		Monday, November 25, 2019	82.1	1003	0	0	5.6	5.6	0.2	0
		Monday, December 9, 2019	82	1007	0	0	5.8	5.8	0.5	0
		Wednesday, January 15, 2020	80.8	1007	0	0	6.2	6.2	0.4	0.03
		Monday, February 24, 2020	81	1012	0	0	6	6	0.4	0.05
		Tuesday, March 10, 2020	79.8	1014	0	0	0.1	0.1	0.5	0.03
		Tuesday, April 14, 2020	83	1011	0	0	7.5	7.5	0.3	0.1
		Monday, May 11, 2020	79.3	1017	0	0	0.3	0.4	0.1	0
		Tuesday, June 9, 2020	85.1	1025	0	0	10	10.1	0	0.03
		Wednesday, July 1, 2020	82.1	1016	0	0	7.4	8.7	0.1	0.09
		Wednesday, August 12, 2020	86.3	1004	0	0	9.6	9.6	0	0.09
		Tuesday, September 8, 2020	79.9	1018	0	0	6.1	6.1	0	0.02
		Monday, October 19, 2020	79	1009	0	0	0.1	0.1	0	0.09
		Tuesday, November 17, 2020	79.5	1012	0	0	0.1	0.1	0	0.02
		Thursday, December 10, 2020	79.9	1011	0	0	0.5	0.5	0	0.07
		Thursday, January 14, 2021	83.3	1001	0	0	8	8.1	0.1	0.02
		Wednesday, February 17, 2021	81.5	1017	0	0	3.9	3.9	0.1	0.12
26	LFG MW6	Friday, March 29, 2019	80.4	1005	0	0	4.5	4.5	0.2	-0.03
		Tuesday, April 16, 2019	80.1	1005	0	0	2.4	2.4	0.2	-0.03
		Wednesday, May 8, 2019	80.4	1002	0	0	0	1.6	0	0.02
		Sunday, June 16, 2019	79.5	1012	0	0	1.1	1.1	0.2	0.1
		Wednesday, July 17, 2019	78.9	1007	0	0	1.2	1.2	0.2	-0.02
		Monday, August 19, 2019	79.8	1018	0	0	2.9	2.9	0.5	0.07
		Monday, October 14, 2019	79.3	1007	0	0	2.4	2.4	0.5	0.02
		Monday, November 25, 2019	80	1002	0	0	3.1	3.1	0.3	0.02
		Monday, December 9, 2019	80	1007	0	0	3	3	0.2	0
		Wednesday, January 15, 2020	79.6	1006	0	0	3.7	3.7	0.4	-0.03
		Monday, February 24, 2020	80.3	1012	0	0	6.8	6.8	0.5	0.09
		Tuesday, March 10, 2020	80	1013	0	0	0	0	0.4	0.03
		Tuesday, April 14, 2020	80.6	1011	0	0	3.5	3.5	0.5	0.03
		Monday, May 11, 2020	79.2	1017	0	0	0.1	0.1	0.1	0.07
		Tuesday, June 9, 2020	79.6	1023	0	0	0.4	0.4	0.1	0.03
		Wednesday, July 1, 2020	79.7	1016	0	0	0.9	0.9	0	0.03
		Wednesday, August 12, 2020	80.6	1003	0	0	7.5	7.6	0.2	0.03
		Tuesday, September 8, 2020	78.2	1019	0	0	0.5	0.5	0	0.05
		Monday, October 19, 2020	79	1008	0	0	0	0	0	0
		Tuesday, November 17, 2020	79.4	1011	0	0	0	0	0	0.05
		Thursday, December 10, 2020	79.9	1008	0	0	0	0	0	0.12
		Thursday, January 14, 2021	81.8	1001	0	0	6	6	0	0.09
		Wednesday, February 17, 2021	80.3	1017	0	0	0	0	0	0.02

27	LFG MW7	Friday, March 29, 2019	80.4	1005	0	0	1	2.5	0.1	-0.02
		Tuesday, April 16, 2019	80.1	1005	0	0	0.6	1.6	0.1	-0.02
		Wednesday, May 8, 2019	80.1	1003	0	0	0.6	1.1	0.1	0.02
		Sunday, June 16, 2019	79	1013	0	0	1.1	2.5	0.1	0.03
		Wednesday, July 17, 2019	79	1006	0	0	5	1	0.1	0.02
		Monday, August 19, 2019	79.6	1018	0	0	0.9	0.9	0.4	0.05
		Monday, October 14, 2019	79.5	1007	0	0	0.9	2.6	0.2	0.05
		Monday, November 25, 2019	80.2	1003	0	0	1.5	2.4	0.3	0.05
		Monday, December 9, 2019	80	1007	0	0	1.3	2.7	0.3	0.01
		Wednesday, January 15, 2020	80.1	1005	0	0	0.1	0.1	0.4	0.05
		Monday, February 24, 2020	80.7	1012	0	0	1.3	2.7	0.4	0.07
		Tuesday, March 10, 2020	80.2	1014	0	0	0.9	3.6	0.4	0.05
		Tuesday, April 14, 2020	81	1011	0	0	1.7	2.1	0.2	0.03
		Monday, May 11, 2020	79.2	1018	0	0	1.1	2.1	0.1	0.05
		Tuesday, June 9, 2020	79.6	1024	0	0	0.8	2.2	0.1	0.03
		Wednesday, July 1, 2020	79.5	1017	0	0	1	1.7	0	0.1
		Wednesday, August 12, 2020	78.9	1004	0	0	3.5	5.7	0	-0.05
		Tuesday, September 8, 2020	78.1	1018	0	0	1.1	1.6	0	0.14
		Monday, October 19, 2020	79	1009	0	0	0.1	1.7	0	0.07
		Tuesday, November 17, 2020	79.2	1012	0	0	0.6	0.9	0	-0.02
		Thursday, December 10, 2020	80.2	1011	0	0	0.6	0.6	0.1	0.07
		Thursday, January 14, 2021	80.7	1002	0	0	0.1	0.2	0.1	0.03
		Wednesday, February 17, 2021	80.4	1018	0	0	1.2	2.4	0	0.02
28	LFG MW8	Friday, March 29, 2019	80.6	1006	0	0	1	1.8	-1.6	-0.05
		Tuesday, April 16, 2019	80.2	1006	0	0	0.8	1.3	-1.6	-0.05
		Wednesday, May 8, 2019	80	1003	0	0	0.9	1	0.1	0
		Sunday, June 16, 2019	79.4	1013	0	0	0.8	1	-0.1	0.07
		Wednesday, July 17, 2019	79.3	1006	0	0	1.3	1.3	0	0.03
		Monday, August 19, 2019	79.6	1018	0	0	0.1	0.1	0.4	0.02
		Monday, October 14, 2019	80.4	1008	0	0	1.5	1.5	0.2	0.05
		Monday, November 25, 2019	80.3	1003	0	0	0.2	0.6	0.4	0.03
		Monday, December 9, 2019	80.1	1007	0	0	0.2	0.9	0.3	0.03
		Wednesday, January 15, 2020	80.6	1006	0	0	1.2	1.2	0.1	-0.02
		Monday, February 24, 2020	80.8	1012	0	0	1.3	1.6	0.2	0.07
		Tuesday, March 10, 2020	80.3	1014	0	0	0.6	0.7	0.4	0.09
		Tuesday, April 14, 2020	80.5	1012	0	0	0.8	0.8	0.2	0.05
		Monday, May 11, 2020	79.2	1018	0	0	0.4	0.4	0.1	0.02
		Tuesday, June 9, 2020	79.5	1024	0	0	0.8	1.1	0	0.05
		Wednesday, July 1, 2020	79.2	1017	0	0	0.6	0.8	0	0.09
		Wednesday, August 12, 2020	79.1	1004	0	0	0.1	0.3	0	0.07
		Tuesday, September 8, 2020	77.8	1019	0	0	1.3	1.3	0	0
		Monday, October 19, 2020	78.6	1010	0	0	0.3	0.5	0.5	0.07
		Tuesday, November 17, 2020	78.7	1012	0	0	0.8	0.8	0	0.09
		Thursday, December 10, 2020	79.6	1012	0	0	0.6	0.6	0	0.1
		Thursday, January 14, 2021	79.8	1002	0	0	1.2	1.2	0	0.12
		Wednesday, February 17, 2021	79.1	1018	0	0	1.7	1.7	0	0.03

29	LFG MW9	Friday, March 29, 2019	83	1006	0	0	5.8	5.8	0	-0.03
		Tuesday, April 16, 2019	81.3	1006	0	0	5.9	5.9	0	-0.03
		Wednesday, May 8, 2019	79.1	1004	0	0	4	4.1	0.1	0.02
		Sunday, June 16, 2019	81.8	1013	0	0	4.2	4.2	0	0.05
		Wednesday, July 17, 2019	78.4	1006	0	0	2.9	2.9	0.1	-0.03
		Monday, August 19, 2019	80	1018	0	0	1	1.3	0	0.05
		Monday, October 14, 2019	80.4	1008	0	0	5	5	0.4	0.1
		Monday, November 25, 2019	79.9	1003	0	0	2	2.1	0.2	0.02
		Monday, December 9, 2019	79.8	1007	0	0	2.1	2.1	0.3	0.02
		Wednesday, January 15, 2020	80	1006	0	0	1.4	1.4	0.4	0.02
		Monday, February 24, 2020	87.9	1012	0	0	4.1	4.1	0.4	0.03
		Tuesday, March 10, 2020	82.9	1015	0	0	6.1	6.1	0.3	0.05
		Tuesday, April 14, 2020	79.7	1012	0	0	5.1	5.1	0.5	0.1
		Monday, May 11, 2020	78.4	1018	0	0	3.4	3.4	0.1	0.05
		Tuesday, June 9, 2020	78.6	1024	0	0	5.5	5.5	0	0.07
		Wednesday, July 1, 2020	77.6	1017	0	0	5.2	5.2	0.1	-0.03
		Wednesday, August 12, 2020	80.1	1004	0	0	0.7	1.6	0	0.05
		Tuesday, September 8, 2020	77.7	1019	0	0	4.1	4.1	0	0.02
		Monday, October 19, 2020	78.5	1010	0	0	2.3	2.4	0	0.07
		Tuesday, November 17, 2020	81.5	1012	0	0	6.6	6.6	0.1	0.03
		Thursday, December 10, 2020	79.2	1012	0	0	3.1	3.1	0	0.07
		Thursday, January 14, 2021	84.1	1002	0	0	6.1	6.1	0.1	0.05
		Wednesday, February 17, 2021	80.6	1018	0	0	1.7	1.7	0	0.02
30	LFG MW10	Friday, March 29, 2019	80.9	1006	0	0	2.2	3.2	0	0.02
		Tuesday, April 16, 2019	80.1	1006	0	0	3.4	3.4	0	0.02
		Wednesday, May 8, 2019	79.9	1004	0	0	2.3	2.4	0	-0.03
		Sunday, June 16, 2019	79.7	1014	0	0	2.3	2.3	0	0.2
		Wednesday, July 17, 2019	93.1	1006	0	0	3.1	3.1	0.1	-0.03
		Monday, August 19, 2019	80.6	1018	0	0	1	1	0.4	0
		Monday, October 14, 2019	80.1	1008	0	0	2.1	2.1	0.4	0.02
		Monday, November 25, 2019	79.9	1003	0	0	2.8	2.9	0.3	0.03
		Monday, December 9, 2019	80	1007	0	0	2.7	2.9	0.3	0.04
		Wednesday, January 15, 2020	80.3	1006	0	0	2.3	2.3	0.4	0.03
		Monday, February 24, 2020	81.8	1012	0	0	1.8	1.9	0.4	0.03
		Tuesday, March 10, 2020	81.8	1015	0	0	3	3	0.5	0.05
		Tuesday, April 14, 2020	80	1012	0	0	2.6	2.6	0.5	0.05
		Monday, May 11, 2020	79.4	1019	0	0	3	3	0.1	0
		Tuesday, June 9, 2020	78.9	1025	0	0	1.7	1.7	0	0.07
		Wednesday, July 1, 2020	78.5	1017	0	0	1.7	1.7	0.1	0.05
		Wednesday, August 12, 2020	79.4	1005	0	0	0.4	0.6	0	0.1
		Tuesday, September 8, 2020	78.3	1020	0	0	1.4	1.4	0	0.09
		Monday, October 19, 2020	78.9	1010	0	0	1.4	2.1	0.1	0.09
		Tuesday, November 17, 2020	80.3	1012	0	0	2.4	2.4	0.1	0.09
		Thursday, December 10, 2020	79.9	1012	0	0	3.7	3.7	0	0.07
		Thursday, January 14, 2021	83.3	1002	0	0	4	4	0.1	-0.02
		Wednesday, February 17, 2021	80.9	1018	0	0	3.2	3.2	0.1	0

31	LFG MW11	Friday, March 29, 2019	81.6	1006	0	0	13.7	13.7	0	-0.05
		Tuesday, April 16, 2019	82.9	1006	0	0	12.8	12.8	0	-0.05
		Wednesday, May 8, 2019	81.3	1004	0	0	14.8	15	0.1	0.07
		Sunday, June 16, 2019	81.4	1014	0	0	14.2	14.2	0.1	0
		Wednesday, July 17, 2019	93.1	1006	3.8	3.8	13	13	0.2	-0.02
		Monday, August 19, 2019	78.3	1018	0	0	13.1	13.1	0.5	0.02
		Monday, October 14, 2019	77.6	1008	0	0	11.9	11.9	0.4	0
		Monday, November 25, 2019	80.4	1003	0	0	9.5	9.6	0.4	0.07
		Monday, December 9, 2019	80.6	1007	0	0	9.8	9.8	0.4	0.01
		Wednesday, January 15, 2020	79.9	1006	0	0	9	9	0.4	0.03
		Monday, February 24, 2020	80.9	1013	0	0	2	2	0.4	-0.03
		Tuesday, March 10, 2020	82.6	1015	0	0	6.2	6.2	0.4	0.05
		Tuesday, April 14, 2020	82.7	1013	0	0	4.1	4.1	0.5	0.09
		Monday, May 11, 2020	80.7	1019	0	0	2.9	2.9	0.1	0
		Tuesday, June 9, 2020	80.5	1025	0	0	4	4	0	0.05
		Wednesday, July 1, 2020	81.8	1018	0	0	3.4	3.4	0.1	0.03
		Wednesday, August 12, 2020	79.7	1005	0	0	0.5	0.5	0	0
		Tuesday, September 8, 2020	78.1	1020	0	0	2.6	2.6	0	0.02
		Monday, October 19, 2020	80.5	1010	0	0	4.5	4.5	0	-0.02
		Tuesday, November 17, 2020	80.8	1012	0	0	3.8	3.8	0.1	0.03
		Thursday, December 10, 2020	81.8	1012	0	0	6.7	6.7	0	0.05
		Thursday, January 14, 2021	81.1	1002	0	0	6.5	6.5	0.1	0.03
		Wednesday, February 17, 2021	80.9	1018	0	0	7.2	7.2	0	0.07

32	LFG MW12	Friday, March 29, 2019	85.9	1006	0	0	10.6	10.6	0.1	0.03
		Tuesday, April 16, 2019	84.4	1006	0	0	11	11	0.1	0.03
		Wednesday, May 8, 2019	82	1004	0	0	13.9	13.9	0.2	-0.02
		Sunday, June 16, 2019	84.7	1015	0	0	10.8	11.1	0.1	0
		Wednesday, July 17, 2019	84.4	1000	0	0	10.9	10.9	0.1	0.02
		Monday, August 19, 2019	89.8	1018	0	0	4.7	5.4	0.1	0.02
		Monday, October 14, 2019	86	1008	0	0	8.3	8.3	0.4	0.05
		Monday, November 25, 2019	81.4	1004	0	0	5.8	5.9	0.2	0.07
		Monday, December 9, 2019	81.5	1007	0	0	6	6.2	0.2	0.01
		Wednesday, January 15, 2020	84.4	1006	0	0	11.2	11.2	0.4	0.02
		Monday, February 24, 2020	84.7	1013	0	0	1.3	4.2	0.2	0
		Tuesday, March 10, 2020	89.2	1015	0	0	9.6	9.6	0.4	0.05
		Tuesday, April 14, 2020	88.7	1013	0	0	10.6	10.6	0.6	0.05
		Monday, May 11, 2020	85	1020	0	0	11.9	11.9	0.1	0.03
		Tuesday, June 9, 2020	81.2	1026	0	0	8.4	8.4	0	-0.05
		Wednesday, July 1, 2020	80.6	1018	0	0	9.2	9.2	0.1	0.09
		Wednesday, August 12, 2020	91.9	1005	0	0	4	4.4	0	0.05
		Tuesday, September 8, 2020	86.4	1020	0	0	7.8	7.8	0	0.02
		Monday, October 19, 2020	82.3	1011	0	0	9	9	0	0.07
		Tuesday, November 17, 2020	89.1	1012	0	0	8.2	8.2	0	0.07
		Thursday, December 10, 2020	84.2	1012	0	0	9.4	9.4	0	0.02
		Thursday, January 14, 2021	86.2	1002	0	0	8.6	8.6	0	0.05
		Wednesday, February 17, 2021	90.7	1018	0	0	8.4	8.4	0.1	0.03

Table 2: Accumulation – Buildings

Location	Sample Number	29/03/2019 ppm	16/04/2019 ppm	08/05/2019 ppm	19/06/2019 ppm	19/08/2019 ppm	17/09/2019 ppm	14/10/2019 ppm	25/11/2019 ppm	10/12/2019 ppm	15/01/2020 ppm	24/02/2020 ppm	10/03/2020 ppm
Crib Room	1	0			2.1	2.3	1.9	2.4	1.8	1.9	1.7	2.4	2.2
Glengarry Cottage	Glengarry Front Office	2	2.3	2.3	2	2.2	2.2	2.5	1.2	1.9	1.7	2.4	2.2
	Glengarry Hallway	2	2.3	2.3	2	2.2	2.1	2.5	1.2	1.9	1.7	2.4	2.2
	Glengarry Kitchen	2	2.3	2.3	2	2.2	2.1	2.5	1.2	1.9	1.7	2.5	2.2
	Glengarry Managers Office	2	2.3	2.3	2	2.2	2.1	2.5	1.2	1.9	1.7	2.3	2.2
	Glengarry Meeting Room	2	2.3	2.3	2	2.2	2.1	2.4	1.2	1.9	1.7	2.4	2.2
	Glengarry Operations Room	2	2.4	2.3	2	2.3	2.3	2.4	1.2	2	1.7	2.3	2.2
	Glengarry Store	2	2.3	2.3	2	2.2	2	2.4	1.2	1.8	1.7	2.3	2.2
	Max reading gardens	2	2.3	0	1.9	2.2	2.2	2.4	0	1.9	1.7	2.4	2.2
Ops Office	1					2.2			1.8	1.9	1.9		2.2
Recycle Centre	Eastern Area	2	2.3						1.7	1.6	1.8	2.3	2.2
	Western Area	2	2.3						1.7	1.8	1.8	2.4	2.2
SWERF	SWERF	0		0		0	0		0	0		0	
Weighbridge	1	2	2.4		2.1	2.3	1.8	2.4	1.8	2.4	1.8	2.3	2.3

Location	Sample Number	14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm
Crib Room	1	2	1.8	2	3	3.1	2.1	2.4	3	3.2	2.8	3.1
Glengarry Cottage	Glengarry Front Office	2	3.6	2.1	3.1	4.3	2	2.4	3.3	4	3	3
	Glengarry Hallway	2.1	3.3	2.4	3	4.5	2.1	2.4	3.7	3.8	3	3.1
	Glengarry Kitchen	2	3.1	2.6	2.9	4.6	2.2	2.4	3.5	4	3	2.9
	Glengarry Managers Office	2.1	3.6			4.3	1.9	2.3	4.5	3.8	3	2.7
	Glengarry Meeting Room	2	3.9	2.1	2.9	4.9	1.8	2.4	4.2	3.8	3	2.6
	Glengarry Operations Room	2.1	3.1	2.8	2.9	4.6	2.1	2.3	3.4	4	3	2.8
	Glengarry Store	2.1	3.5	2.5	3	4.7	4.7	2.4	8.8	4	3	3.2
	Max reading gardens	2.2		2.8	3.7	3.4	3.4	2.4	4.1	3.6	2.8	3.2
Ops Office	1	2.1	1.8	2.1	3	3.2	2	2.4	3	3	2.7	3.2
Recycle Centre	Eastern Area		1.6	2.3	3.8	6	2.3	2.8	3.1	3		2.1
	Western Area		1.6	2.1	2.7	6.1	2.4	2.8	3.1	3		1.9
SWERF	SWERF									3	2.8	2.1
Weighbridge	1	2.8	1.6	2.1	2.4	6.4	5.4	2.4	2.8	2.8	5.1	2.1

Table 3: Surface Gas Results

Location	Sample Number	29/03/2019 ppm	16/04/2019 ppm	08/05/2019 ppm	19/06/2019 ppm	17/07/2019 ppm	19/08/2019 ppm	17/09/2019 ppm	14/10/2019 ppm	25/11/2019 ppm	10/12/2019 ppm	15/01/2020 ppm	24/02/2020 ppm	10/03/2020 ppm
Transect 1	1	2.3	2.3	3.1	0	3	0		5.5		1.3	4.9	2.9	2.3
	2	2.6	2.6	2.5		3.3			4.6		1.3	4	2.4	2.2
	3	2.7	2.7	2.8		3.1			6.2		1.3	3.8	2.5	2.6
Transect 2	1			2.7			0		4.3		1.5		3.7	2.2
	2			2.3					5.4		1.4		2.5	2.4
	3			2.1					3.9		1.3		2.8	2.2
	4			1.8					3.3		1.3			2.3
	5			1.8					2.6					
Transect 3	1	2.1	3	1.8	1.1	4.8	0		4.1	2.1	2.1	2.7	5.7	2
	2	2.1	2.6	1.8	1.7	3.7			4.2	2.1	1.7	2.6	3.6	2.2
	3	2.1	2.9	2	1.7	3.7			4.4	1.9	1.5	3.6	2.9	2
	4	2.1	2.5	2.1	1.7	3.7			4.7	2	1.5	4	3	2.1
	5		2.7	1.8	1.7	10.1				2	1.4	5.4	3.1	
Transect 4	1				3.2		0							
	2				2									
	3				1.9									
	4				1.8									
	5				1.7									
	6													
Transect 5	1	5.2	2.6	2.8		3.5	0		3.3	3.1	2.3	4.2	4.4	3
	2	4.4	3.8	2.7		6.5			8.5	2.1	2.3	4.1	5.4	3.1
	3	3.3	4.3	3.1		4.2			10.8	1.9	2.7	5.8	10.1	2.4
	4	2.6	2.5	1.9		10.5			9.1	1.9	2.4	5.9	8.2	3.6
	5	2.4	44.1	2.3		14.3			12.5	1.9	1.9	21.4		2.3
	6		8.8	2.3		10.2			9.3			15.4		

Location	Sample Number	14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm
Transect 1	1											
	2		1.9			4.1			3.3			
	3		2			3						
Transect 2	1		2			3						
	2	2.4	1.7		2.7	3		2.3	2.9	4.2	2.4	
	3	2.8	1.5		2.7	3.1		2.4	3.1	5	2.5	
	4	2.2	1.5		2.8	3		2.4	2.5	4.8	2.5	
	5	5.4	1.4		2.8	3.1		2.4	2.7	9.1	2.5	
Transect 3	1		1.5			3.1			2.3			
	2		1.8		5.4	2.9			2.3			
	3		2.1		4.4	3.4			2.6			
	4		1.8		3.8	3.4			2.4			
	5		2.4		3.6	3.1			2.4			
Transect 4	1		5.2		2.7	3.14			2.4			
	2	4.1			40.2					8.2	2.8	2.5
	3	2.4			16.7					13.2	3.1	2.1
	4	3.3			3.4					8.5	2.9	2.3
	5	2.2			48.3					11.5	4.4	2.3
	6	1.9			3.8					5.4	2.5	2.5
Transect 5	1	1.9										
	2		1.6		3.6	7.6		2.3	2.9			
	3		2		5	6.6		2.3	2.8			
	4		4.7		8.4	6.4		2.4	2.7			
	5		4.3		28.3	6.2			2.7			
	6		4.4		4.2				2.6			
			1.8									

Location	Sample Number	14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm
Transect 6	1	2.8			23.7		2.5			5.4	2.4	
	2	3.8			3.9		3.1			6.2	5.3	
	3	5.5			7.8		3.7			6.6	4	
	4	34			8.3		27.5			6.9	4.1	
	5	15.6			5.7					4.2	5.4	
	6	3.8			32.7					4.9	4.1	
	7	3.1			45.7					6.4	5.4	
	8									4.7		
Transect 7	1											
	10		2.5		4.4	17.87	38.2	10.6	2.9			2.2
	11											
	12											
	2											
	3		2.4		40.5	14.3	5.9	6.7	4.1			2.3
	4		2.3		6.5	13.6	5.7	3.6	3.4			2.9
	5		3		4.6	10	5.2	2.9	3.6			2.6
	6		2		5.3	8.4	6.4	2.5	3.7			2
	7		1.9			9			3.3			
	8											
	9											

Location	Sample Number	29/03/2019 ppm	16/04/2019 ppm	08/05/2019 ppm	19/06/2019 ppm	17/07/2019 ppm	19/08/2019 ppm	17/09/2019 ppm	14/10/2019 ppm	25/11/2019 ppm	10/12/2019 ppm	15/01/2020 ppm	24/02/2020 ppm	10/03/2020 ppm
Transect 6	1						0				4.8			
	2										4.2			
	3										3.3			
	4										2.9			
	5										2.1			
	6										2.3			
	7													
	8													
Transect 7	1	3.4	40	5.1	2.2	3.5	0		4.1	1.7	7.1	4.9	18.5	2.4
	10												16.9	
	11												19.1	
	12												15.3	
	2	5.4	5.8	2.1	2	4.5			3.7	1.8	8.4	6.1	7.2	2.8
	3	12	2.7	1.8	5.2	5.8			3.2	1.7	6.7	3.2	5	3.5
	4	3.7	2.7	3.1	6.2	3.6			2.7	1.7	2.8	5.1	5.4	2.4
	5	2.6	2.5	2.3	5	5.9			2.8	1.7	8.4	6	8.6	4.7
	6		2.8			9.5			6		18.3	20.3	13.7	
	7												7.9	
	8												8.7	
	9												11.5	

Location	Sample Number	29/03/2019 ppm	16/04/2019 ppm	08/05/2019 ppm	19/06/2019 ppm	17/07/2019 ppm	19/08/2019 ppm	17/09/2019 ppm	14/10/2019 ppm	25/11/2019 ppm	10/12/2019 ppm	15/01/2020 ppm	24/02/2020 ppm	10/03/2020 ppm
Transect 8	1				26		0							
	2				4.4									
	3				4.5									
	4				2.3									
	5				2.5									
	6				3.2									
	7													
	8													
	9													
Transect 9	1	5.5	12.3	10.1	40.2	50	4.1		49.8	1.9	2.2	17.6	21.4	35
	2	114	115	5.7	12	20.6	3.8		12.1	1.7	3	35.1	1253	5.6
	3	8.4	5	3.2	7	6.5	6.1		6.8		2.2	9.2	19.3	14.5
	4	45.5	4	11.1	3.5	18.4	5.1		7		2.1	18.5	21.9	800
	5	8	30.9	16.1	3.5	14.5	6.4		4.4	1.8	4.1	41	34.9	35
	6	8.1	3.9		3.5		7.1		3.4	2.8			970	
	7						7.2							

14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm
5.3				14.8	15.2			7.8	450	
2.5				8.5	150.3			6.2	3.6	
2.3				7.7	18.8			11.5	450	
3.5				12.1	2.8			9.5	480	
5.2				11.8	23.2			10.3	490	
3.8				12.1	2.5			190	121	
								50	60.1	
									21	
									92.6	
	4.8			11.8		6.5	5.1			
	10.5			5.1		25.2	14.1			
	9.6			3.9		13.4	31.2			
	5.6			4.8		43.2	5			
	3.1			3.9		43.2	6.3			
	2.3					27.2	6.3			
						10.9				

Location	Sample Number
Transect 8	1
	2
	3
	4
	5
	6
	7
	8
	9
Transect 9	1
	2
	3
	4
	5
	6
	7

Location	Sample Number	29/03/2019 ppm	16/04/2019 ppm	08/05/2019 ppm	19/06/2019 ppm	17/07/2019 ppm	19/08/2019 ppm	17/09/2019 ppm	14/10/2019 ppm	25/11/2019 ppm	10/12/2019 ppm	15/01/2020 ppm	24/02/2020 ppm	10/03/2020 ppm
Transect 10	1	2.5	11.5	3.8	8	2.5	2.3	3.5	2.4	10.1	8.2	2.9	1.8	16
	10	2.7					7.1		5.3		4.6	8.1	5.1	5.3
	11						8.5		11.9		3		4	9.8
	12						4.1						3.1	3.2
	13						3.9						4.8	4.8
	14						3.8						5.4	3.7
	15												5.3	3.3
	16												5.8	3.3
	17												4	
	2	9.2	27	2.4	2.7	3.2	2.3	3.1	5.2	7.1	6.3	3.2	1.6	10.4
	3	2.2	10.1	2.6	2	4.8	2.4	7.2	6.9	3.4	4.1	2.9	2.9	8.1
	4	2	15.3	6.8	2.9	12.5	3.1	7.4	3.4	6.7	7.8	4	48.5	4.5
	5	3.2	8.2	7.1	2.4	8.1	3.6	4.6	2.1	13.5	8.6	5.1	7.8	3.5
	6	9.2	6.5	9.3	2	16.3	3.1	7	3	12.87	1.6	6	7.4	2.8
	7	2.9	52		10	9.7	6.5	7.7	6.8	11.1	5.1	16.7	14.8	5.4
	8	5.3	6.6		13.9	18.3	4.6	15.2	14.1	9.5	3.6	11.2	8.5	10.1
	9	10.9	4.9		4.8		5.8	13	9.8	8.7	2.9	12.1	4.7	7.7
Transect 11	1												5.4	5.7
	2												8.6	3.9
	3												11.9	39
	4												26.4	32
	5												16.4	30
	6												6.7	13.8
	7												4.6	10.6
	8												4.2	6.8
	9												12.3	

Location	Sample Number	14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm
Transect 12	1		8.6		12.1	23	956		8.7		15.6	24.6
	2		16.1		30.6	31.3	61.2		16.3		13	60.1
	3		10.1		26.1	34.7	45.1		81.4		14.1	21
	4		11.8		4.1	35.7	50.2		43.5		19.9	13.8
	5		11.8		13.1	33.4	257		22.6		35.2	9.1
	6		12.9		8.6	48.3	17.4		14.9		8.4	
	7					43.4	36.9		13.6			
	8					49.4			33.8			
Transect A												
	1	23	1.7	20.1	9.4	4.1	2.3	2.2	2.3	2.1	2.7	10.8
	2	21.4	1.8	12.9	9.3	3.6	2.3	2.3	2.3	2.1	2.6	7.7
	3	22	1.7	4.6	8.5	3.5	2.2	2.3	2.2	2.1	2.6	5.6
	4	21.5	1.8	5.3	8.2	3.6	2.2		2.2	2.1	2.6	5.6
	5	21.7		4.8	5.8					2.1		5.7
	6	20.5		2.8	6.5							
	7				5.9							
Transect B	1											

Location	Sample Number	14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm
Transect C	1	21.7	1.6	2.5	6.1	3.3	2.2	2.4	2.2	2.1	2.5	6
	10		5.6	41.1	3.4	10						
	11				3.8	29						
	12				3.8							
	13											
	2	21.2	1.6	3	5.6	3.2	2.2	2.4	2.2	2.1	2.5	6.6
	3	22.6	1.8	2.9	4.7	3.3	2.3	2.4	2.2	2.1	2.5	4.4
	4	26.5	1.8	3.1	4.9	4.1	2.2	3.1	2.2	2.2	2.9	3.9
	5	30.8	2.1	4.5	2.8	7.3	2.9	6.1	2.5	2.2	2.4	5.1
	6	39.4	3.9	5.9	3	7.5	2.5	2.8	2.2	2.4	2.5	7.9
	7	26.6	2.8	12.6	3.2	7.5	2.3	3.2	2.2	2.5	2.5	9.2
	8	25.7	2.1	18.1	3.4	8.1	4.2	7.6	2.2	2.6	2.7	8.3
	9	28.4	2.6	38	3.9	8.1					2.5	
Transect D	1	3.5	2.1	1.5	4.7	5.7	3.2	2.2	2.8	3.7	2.5	6.1
	2	5	2.6	1.7	5.1	5.3	2.3	2.2	2.8	2.9	2.6	4.8
	3	5	2.2	1.8	5.4	6.8	2.5	2.2	2.9	2.7	2.6	5
	4	4.8	3.5	1.9	4.7	7	2.3	2.2	3.5	2.6	2.7	4.7
	5	5.6	3.1	2	4.7	4.2	2.6	2.1	2.8	2.6	2.7	4.9
	6		2.9			4.2		2.1	2.8	2.6		4.6
	7		2.8			4.2			2.8			
	8								2.7			

Location	Sample Number	14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm
Transect E	1	4.8	1.9	3.1	5	6.8	2.2	2.3	2.7	2.8	2.3	3.9
	2	8.2	5.2	3.4	5.3	6.7	2.3	2.4	2.7	2.8	2.3	6.1
	3	3.8	3	2.3	5	6.7	3.6	2.3	2.6	3	2.3	6.7
	4	4.2	3.1	2	4.2	6.7	3.1	3.1	2.6	2.9	2.4	6.4
	5	4.8	3.1	2.3	4.7	6.8	4	2.3	2.6	2.8	2.4	11.6
	6	3.9	2.6	2	4.4	6.8		2.2	2.6	2.9	2.4	
	7	3.4	2.6	1.7		6.7			2.6		2.4	
Transect F	1	14.2	2	5.7	23.1	6.1	2.5	2.2	2.3	3	2.4	6.8
	2	14.3	1.9	6.1	2.3	6	2.3	2.2	2.3	3.1	2.5	4.7
	3	13.4	1.8	6.1	2.3	6	2.3	2.2	2.3	3.3	2.4	3.6
	4	9.8	2.1	5.7	4.2	5.8	2.2	2.2	2.3	3.3	2.4	4
	5	3.2	2	8.2	3.6	5.3	2.3	2.2	2.3	3.3	2.4	3.3
	6	3.4	2.1	16.3	11.2	5	2.3	2.3	2.4	3.2	2.4	4.3
	7	4.2	2.2	8.8		5	2.2	2.4	2.6	3.2	2.4	3.5
	8	5.8	2.6	6.5		6.1	2.2	2.4	2.5	2.8	2.4	
	9			4.2				2.3		2.8		
Transect G	1	16.2	2.2	9.1	2.4	7.3	2.2	2.3	2.3	3	2.8	5.7
	2	17.4	2	8.4	4.3	7.2	2.5	2.3	2.3	3	2.7	5.3
	3	8.6	1.9	7.4	3	7	2.4	2.3	2.5	3	2.7	5.2
	4	8.6	2.3	6.7	3.1	6.8	2.2	2.3	2.5	3	2.6	3.8
	5	8.6	2.3	16	2.9	6.9	2.2	2.3	2.5	2.8	2.6	6
	6	7.8	2.6	15	2.2	6.9	2.3	2.3	2.5	2.7	2.6	6.6
	7	7.8	3.2	6.8	2.1	6.8	2.4	2.5	2.5	2.7	2.6	
	8			8.4	2.2			2.4		2.7		
	9			11.6	2.5							

Location	Sample Number	29/03/2019 ppm	16/04/2019 ppm	08/05/2019 ppm	19/06/2019 ppm	17/07/2019 ppm	19/08/2019 ppm	17/09/2019 ppm	14/10/2019 ppm	25/11/2019 ppm	10/12/2019 ppm	15/01/2020 ppm	24/02/2020 ppm	10/03/2020 ppm
Transect H	1	2.3	2.3	2.4	1.8	2.8	2.5	2.2	2.1	1.1	2.2	3	2.2	9.3
	2	2.3	2.4	2.4	1.9	2.8	2.5	2.2	2.1	1.1	2.4	2.6	2	6
	3	2.3	2.4	2.4	45	65	2.5	2.2	2.1	1.1	3.1	2.9	2.3	4.4
	4	2.3	2.4	2.4	2.4	2.5	2.5	2.3	2.1	1.2	6.3	4.8	2.2	3
	5	2.4	2.5	2.4	2.3	2.3	2.5	2.3	2.1	1.1	2.6	3.2	2	2.8
	6	2.4	2.6	2.3	2.3	2.2	2.5	2.5	2.3	1.3	2.2	2	2	2.8
	7							2.3						
	8													
Transect I	1	2.2	4.5	2.5	1.6	2.3	2.6	2.3	2.3	1.3	1.6	2.2	2.1	5.5
	2	2.1	2.3	2.4	1.7	2.3	2.3	2.3	2.3	1.7	1.5	1.8	2.2	4.7
	3	2.2	2.3	2.3	1.7	2.6	2.3	2.3	2.3	1.2	1.9	1.8	2.3	7.4
	4	2.2	2.5	2.3	1.7	2.6	2.2	2.3	2.3	1	1.8	2.3	2	5.4
	5	2.2	2.6	2.2	1.7	2.6	2.2	2.6	2.5	1.1	2.1	2.6	2	3.4
	6	2.2	2.3	2.3	1.8	3.1	2.2	2.3	2.6	1.1	2.2	2.5	2.1	2.7
	7	2.1							2.3					
Transect J	1	0	0	0	3.5	2.3	2.2	2.5		1.5	5	1.2	2.1	3.3
	2				2.1	2.4	2.3	2.5		1.3	3.9	1.2	2	2.9
	3				2.2	3.4	2.3	2.5		1.2	4.2	1.2	2.1	2.9
	4						2.3	2.6		1.1	4.3	1.6	1.9	3
	5						2.3	2.6		1	4.6	1.8	2.1	3.1
	6										3.4	1.7		
Transect K	1	0	3.2		2.3	3.4		2.7	2.6	1.5	2.3	2.6	1.5	5.4
	2		3.5		2.3	2.4		3.3	2.9	1.6	3	1.7	1.5	5.9
	3		2.7		2.4	2.6		3.9	2.7	1.7	2.8	8	1.8	6.5
	4				2.6	2.4		2.7	2.5	1.3	2.7	5.7	2.1	6.6
	5				2.5	2.4		2.7	5.1	1.7	3.8	4		
	6							2.6	2.6	1.8		2.3		

Location	Sample Number	14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm
Transect H	1	35.9	2.7	5.7	2.3	11.4	2.5	2.8	2.2	3	2.7	4.4
	2	27.4	2.8	3.7	2.3	9.3	2.3	2.8	2.3	3.1	2.5	4.2
	3	25.2	2.2	3.6	9.4	10	2.5	2.6	2.3	3.3	2.6	4.6
	4	22.4	2.4	2.5	4.7	9.5	2.3	2.6	2.3	3.3	2.8	4.9
	5	20.9	2.6	2.7	2.2	9	2.3	2.4	2.3	3.3	2.7	7.6
	6	19.5	2.7	2.9	2.9	8.5		2.3	2.3	3.3	2.8	4.4
	7			3.8	15.1					3.2		4
	8			3.1						3.1		
Transect I	1	10.1	3.2	2.8	4.4	8.3	18.8	2.2	3.1	2.8	2.8	3.3
	2	2.9	3.6	2.1	5.4	8.4	2.2	2.1	3.2	2.7	2.7	3.2
	3	3.1	2.8	2.6	4.9	8.1	2.1	2.1	3.2	2.7	2.7	3.2
	4	2.5	2.3	4	4.5	6.8	2.2	2.2	3.2	2.6	2.6	4.3
	5	2.5	2.7	2.3	4.6	6.5	2.5	2.3	3.2	2.8	2.8	9.8
	6	2.3	5.6	2.5	3.4	6.4		2.2	3.2	2.8	2.8	3.3
	7			3.7	3.2					2.7		
Transect J	1	12.5	2.3	2.1	3.7	6.7	3.6	2.2	3.2	2.6	3.1	3.8
	2	11.3	3	3.9	3.1	7.2	2.2	2.2	3.2	3	4.1	3.6
	3	8.1	3.3	5.7	2.9	5.9	4.2	2.2	3.2	3	2.8	4.8
	4	7.9	3.1	2.9	3	6.1	2.9	2.2	3.2	2.6	2.7	4.8
	5	7.9	2.9	2.7	2.9	6.4	2.7	2.2	3.2	2.6	2.7	3.3
	6	5.7	4.2	5.9		3.2	2.2	2.2	3.1		2.8	
Transect K	1	2.5	2.4	2.5	2.9	6	3.2	2.2	2.8	2.7	2.8	5.2
	2	2.9	2.6	5.9	2.9	6.4	2.3	2.4	2.8	2.4	3.2	4.8
	3	15.1	2.5	9.4	24.5	6.6	3	2.6	2.8	2.4	4.7	6.2
	4	8.4	2.2	3.5	12.1	6.5	12.1	2.9	2.8	2.4	2.6	8.3
	5	2.4	2.3	2.9	3.9	6.8	2.3	2.3	2.8	2.4	2.6	4
	6	2.3	2.1	2	4.1	9.1			2.9	2.4	2.6	3.3

Location	Sample Number	29/03/2019 ppm	16/04/2019 ppm	08/05/2019 ppm	19/06/2019 ppm	17/07/2019 ppm	19/08/2019 ppm	17/09/2019 ppm	14/10/2019 ppm	25/11/2019 ppm	10/12/2019 ppm	15/01/2020 ppm	24/02/2020 ppm	10/03/2020 ppm
Transect L	1	2.3	2.7		2.6	2.4	2.3	0	2.3	0	2.4	1.4	2.4	
	2	3.3	2.7		2.6	6.4	2.3		2.3		2.3	1.6	2.2	
	3	3	2.7		3.7	4.8	2.2		2.3		2.1	1.8	2.3	
	4	2.2	4.3		14.2	6.6	2.1		2.3		2.1	1.8	1.9	
	5		3.9		2.5	2.3	2.3		2.3		2.2	2		
	6		6		2.5	2.4	2.3					2.6		
Transect M	1	2.2	4.5	0	2.5	2.4	2.2	0	2.6	1.1	2.5	1.8	2	2.2
	2	2.3	3.4		2.6	2.4	2.3		2.6	1.3	4.6	1.5	2.2	2.4
	3	4.2	3.4		4	4	3.4		4.1	1.8	4.8	1.4	2.4	2.6
	4	2.9	5.1		2.9	4.6	3.6		4.6	12.1	3.5	1.4	4.5	3.1
	5	7.2	11.3		3.4	3.5	3		4.3	10.5	4.2	1.5	2.6	2.6
	6	2.3	2.7		2.7	5.4	2.8		2.5	8.1	3.8		2.2	7.6
	7													5.5
	8													4.9
	9													
Transect N	1	0	0	0				0		0	2.9	1.8	0	4.1
	10													
	11													
	12													
	13													
	2										3	1.8		3.2
	3										3.5	1.9		2.9
	4										3.5	1.8		2.8
	5										3.9	1.9		
	6											1.8		

Location	Sample Number	14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm
Transect L	1	2.3	2.7	1.6	3	5.6	2.1	2.3	2.9	2.3	6.2	
	2	3.8	2.8	1.7	3.5	5.4	2.8	5.3	3	2.5	2.7	
	3	4.3	2.5	1.9	3	5.8	2.5	3	3.1	2.5	2.8	
	4	5.2	2.3		3.9	6.9	23	7	3.2	2.6	3	
	5	2.6	2.5			7.1	6.6	2.9	3	2.7	2.9	
	6		2.1			7.1	3.3	2.5	3.1	2.7	2.9	
Transect M	1	4.3	2.3	1.5	3	7.1	2.2	2.4	3	2.5	2.5	
	2	3.5	2.5	1.7	3.4	7.1	2.2	4.1	3	2.4	2.5	
	3	5.9	2.7	1.7	6.1	6	2.1	4.5	3	2.4	2.5	
	4	5.7	2.1	4.8	4.7	5.4	2.2	2.4	4.5	2.6	4.1	
	5	2.5	2.3	1.5		5.3	2.2	2.4	3	2.6	7.2	
	6	2.2	2.5	1.3		5.2	3.5				2.7	
	7		2.7									
	8		2.1									
	9		2.3									
Transect N	1	2.4		1.3	3.4	6.8	2.2		3.1	2.4	2.7	
	10		2.5									
	11		2									
	12		2.7									
	13		2.6									
	2	2.3		1.2	3.5	6.4	2.5		3.1	2.5	2.8	
	3	2.2		1.4	3.5	6.5	2.2		3.1	2.5	2.6	
	4	2.3		1.3	3.3	6.6	2.2			2.6	2.6	
	5	2.3		1.2		6.7	2.2			2.6	2.5	
	6					6.6	4.1			2.7		

Location	Sample Number	29/03/2019 ppm	16/04/2019 ppm	08/05/2019 ppm	19/06/2019 ppm	17/07/2019 ppm	19/08/2019 ppm	17/09/2019 ppm	14/10/2019 ppm	25/11/2019 ppm	10/12/2019 ppm	15/01/2020 ppm	24/02/2020 ppm	10/03/2020 ppm
181 Reddalls Rd, fenceline adjoining landfill	fenceline adjoining landfill	2.1	2.3	2.3	2		2.3	2.3	2.2	1.3	2.3	1.7	2	4.3
	Immediate gardens max value	2.1	2.3	2.3	1.9		2.3	2.3	2.2	1.3	2.3	1.6	1.9	3.7
	1													4.3
	3													3.6
	5													3.3
	7													3.1
	8													3
181 Reddalls Rd, Immediate gardens max value	1													
	2													3.7
	4													3.4
	6													3.1

Lot 1 Farborough Rd, fenceline adjoining landfill	fenceline adjoining landfill	0	0	4.3	0		2.4	2.4	2.2	1.3	3.4	1.8	2	2.9
	Immediate gardens max value	0	0		0									
	1													2.6
	2													2.7
	3													2.7
	4													2.4
	5													2.1
	6													2.9
	7													2.6
	8													2.3
Methane Blank (Post testing)	1													2
	main gate WGully			2	1.9		2.4	2.3	2	2				2
Methane Blank (Pre testing)	1													2.1
	main gate WGully			1.9	1.9		2.2	2.3	2	2				2.1

Location	Sample Number	29/03/2019 ppm	16/04/2019 ppm	08/05/2019 ppm	19/06/2019 ppm	17/07/2019 ppm	19/08/2019 ppm	17/09/2019 ppm	14/10/2019 ppm	25/11/2019 ppm	10/12/2019 ppm	15/01/2020 ppm	24/02/2020 ppm	10/03/2020 ppm

14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm
2.1	2.3	3.3	2.6		2.2	2.2	2.9	2.9	2.6	
2.1	2.3	1.9	2.8		2.3	2.3	2.9	2.9	2.4	
2	2.3	1.9	2.9		2.3	2	2.9	3	2.6	
2	2.3	2	2.9		2.3	2.2	2.9	3	2.6	
2	2.3	2.1	3.2		2.3	2	2.9	3	2.6	
			3.2					3	2.6	
2	2.5	2	3.1		2.2	2.4	2.9	2.9	2.6	
2.1	2.2	1.8	2.7		2.2	2.1	3	3	2.5	
2.1	2.3	2.1	2.5		2.3	2.3	2.9	3	2.6	

Location	Sample Number	14/04/2020 ppm	11/05/2020 ppm	10/06/2020 ppm	01/07/2020 ppm	14/08/2020 ppm	08/09/2020 ppm	20/10/2020 ppm	17/11/2020 ppm	09/12/2020 ppm	12/01/2021 ppm	18/02/2021 ppm

Location	Sample Number											
181 Reddalls Rd, fenceline adjoining landfill	fenceline adjoining landfill											
	Immediate gardens max value		2.7							2.8	2.9	
	1		2.3							2.9	2.9	
	3		1.8							3.1	2.9	
	5		1.8							3	3	
	7		1.8							3	2.9	
	8		1.7							3	3	
181 Reddalls Rd, Immediate gardens max value	1		1.9									
	2		1.9									
	4		1.6	1.8	1.8	3.2	3.2	1.2	1.2	2.4	2.3	3.1
	6		1.5	1.6	1.6	3.2	3.2	1.2	1.2	2.4	2.3	2.8

Appendix F: Dust : Tabulated Data and Trends

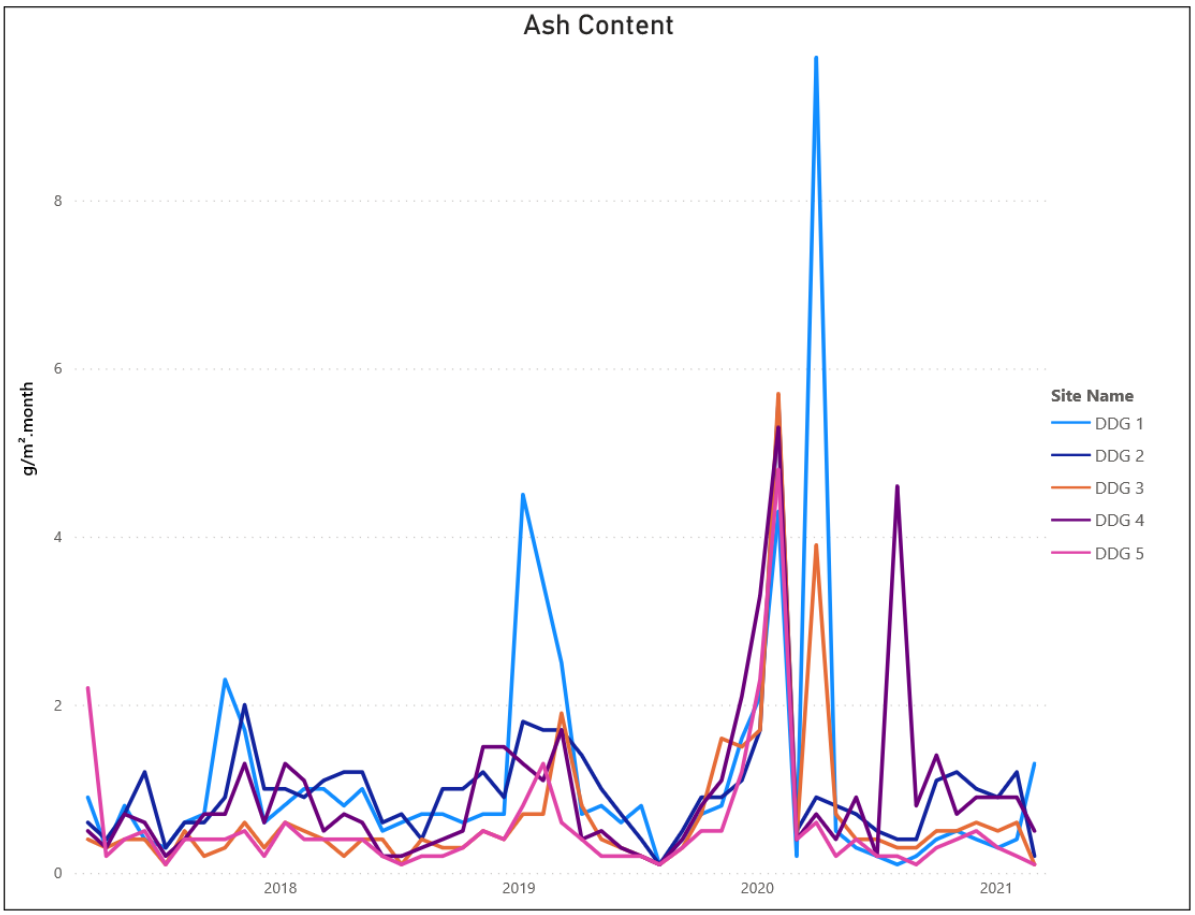
Table 1 Respirable Dust

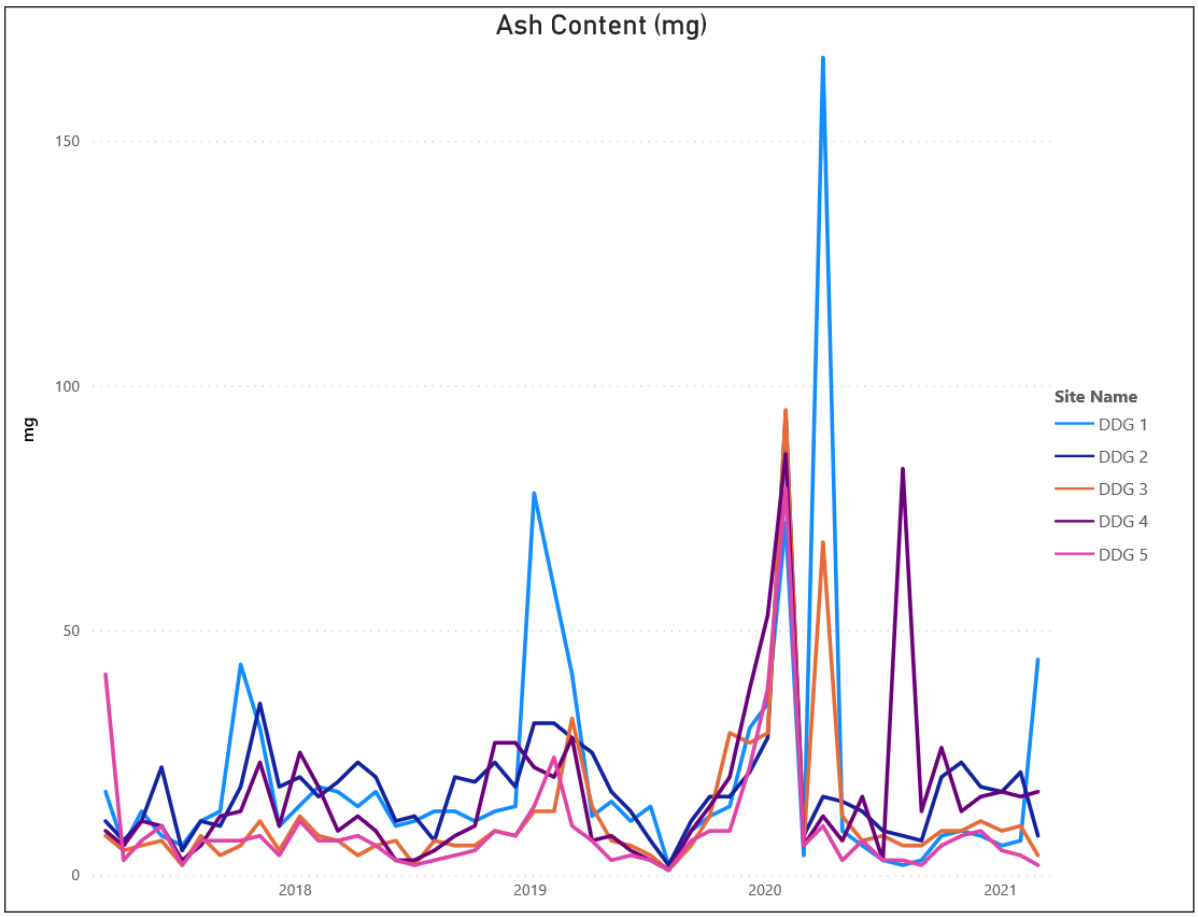
Site Name	Sample Date	PM10 µg/m³	PM10 (mass per filter) mg/filter	Total Suspended Particulates µg/m³	Total Suspended Particulates (mass per filter) mg/filter
Glengarry Cottage PM10	19/03/2019	15.2	22.5		
	15/04/2019	19.4	29.1		
	14/05/2019	17.7	27.1		
	24/06/2019	0	0.1		
	16/07/2019	7.3	11.2		
	05/08/2019	19.3	29.6		
	16/09/2019	18.7	28.5		
	14/10/2019	22.8	33.6		
	21/11/2019	41.4	61.8		
	09/12/2019	59.1	87.6		
	20/01/2020	16.5	23.8		
	17/02/2020	20.3	30.1		
	18/03/2020	15.8	23.8		
	22/04/2020	23.9	35.7		
	11/05/2020	8.6	13.4		
	09/06/2020	9.6	14.9		
	13/07/2020	3.2	4.9		
	10/08/2020	3.6	5.6		
	08/09/2020	29.8	45.1		
	19/10/2020	15.7	23.8		
	16/11/2020	42.8	61.1		
	04/12/2020	46.9	69		
	11/01/2021	20	29.5		
	15/02/2021	8.5	12.8		
	[illegible]				
Landfill PM10	20/03/2019	12.7	18.4		
	16/04/2019	7	10.5		
	13/05/2019	33.4	48.7		
	25/06/2019	1.2	1.8		
	16/07/2019	10.1	15.5		
	06/08/2019	12.6	19		
	17/09/2019	6.1	9.4		
	15/10/2019	19	28		
	20/11/2019	29.3	44.3		
	10/12/2019	67.9	99.7		
	21/01/2020	11.8	17.2		
	18/02/2020	41.8	60.1		
	18/03/2020	19.5	29.2		
	23/04/2020	17	25.1		
	12/05/2020	9.9	14.8		
	11/06/2020	10.2	15.5		
	14/07/2020	2.9	4.5		
	11/08/2020	7.2	11		
	09/09/2020	8.8	13.3		
	20/10/2020	9.4	14		
	17/11/2020	21.1	31.9		
	07/12/2020	12.3	18		
	12/01/2021	22.6	32.9		
	16/02/2021	13.3	19.8		

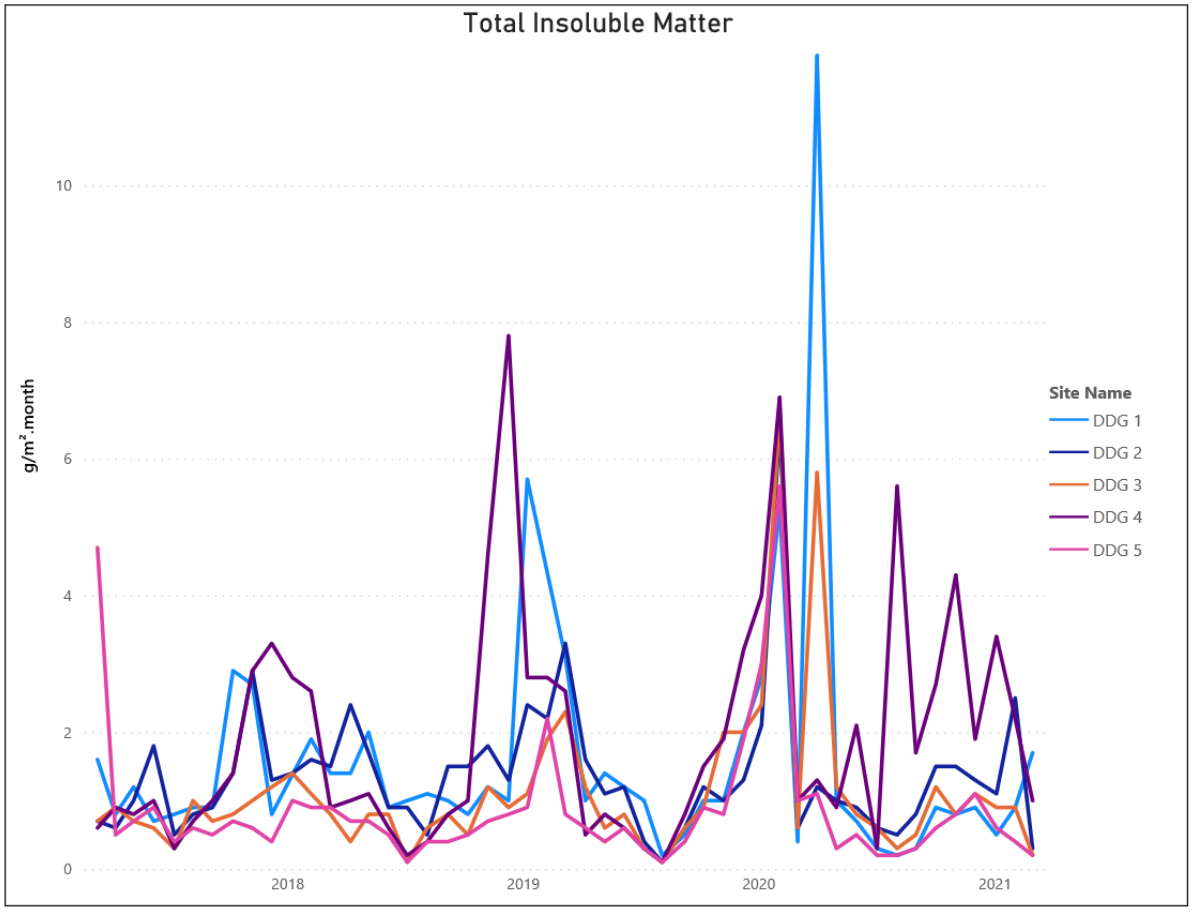
Site Name	Sample Date	PM10 µg/m³	PM10 (mass per filter) mg/filter	Total Suspended Particulates µg/m³	Total Suspended Particulates (mass per filter) mg/filter
Glengarry Cottage TSP	19/03/2019			16.8	25.3
	15/04/2019			40.5	61.8
	14/05/2019			43.8	68.3
	24/06/2019			4.1	6.5
	16/07/2019			14.9	22.8
	05/08/2019			40.1	62.4
	16/09/2019			39.8	61
	14/10/2019			55	77
	21/11/2019			78.1	118
	09/12/2019			120	180
	20/01/2020			55.1	82.9
	17/02/2020			23	34.7
	18/03/2020			41.1	63.1
	22/04/2020			47	71.6
	11/05/2020			24.9	39.3
	09/06/2020			25.5	40.2
	13/07/2020			9.4	14.7
	10/08/2020			7.4	11.4
	08/09/2020			64.2	98.1
	19/10/2020			36.9	56.3
	16/11/2020			75.7	110
	04/12/2020			116	172
	11/01/2021			36.1	53.7
	15/02/2021			14.3	21.7
Landfill TSP	20/03/2019			20.4	30.2
	16/04/2019			14	21.3
	13/05/2019			97.2	143
	25/06/2019			4.9	7.6
	16/07/2019			10.5	16
	06/08/2019			28.6	43.9
	17/09/2019			17.1	26.7
	15/10/2019			36.3	54.3
	20/11/2019			47.9	72.4
	10/12/2019			99.7	149
	21/01/2020			25	37
	18/02/2020			79.3	117
	18/03/2020			46.7	71.4
	23/04/2020			28.1	42.7
	12/05/2020			19.8	30.6
	11/06/2020			14	21.7
	14/07/2020			6.6	10.2
	11/08/2020			13.2	20.2
	09/09/2020			15.9	24
	20/10/2020			14.9	22.4
	17/11/2020			59.7	90.3
	07/12/2020			19.7	29.1
	12/01/2021			38.2	56.2
	16/02/2021			23.7	35.6

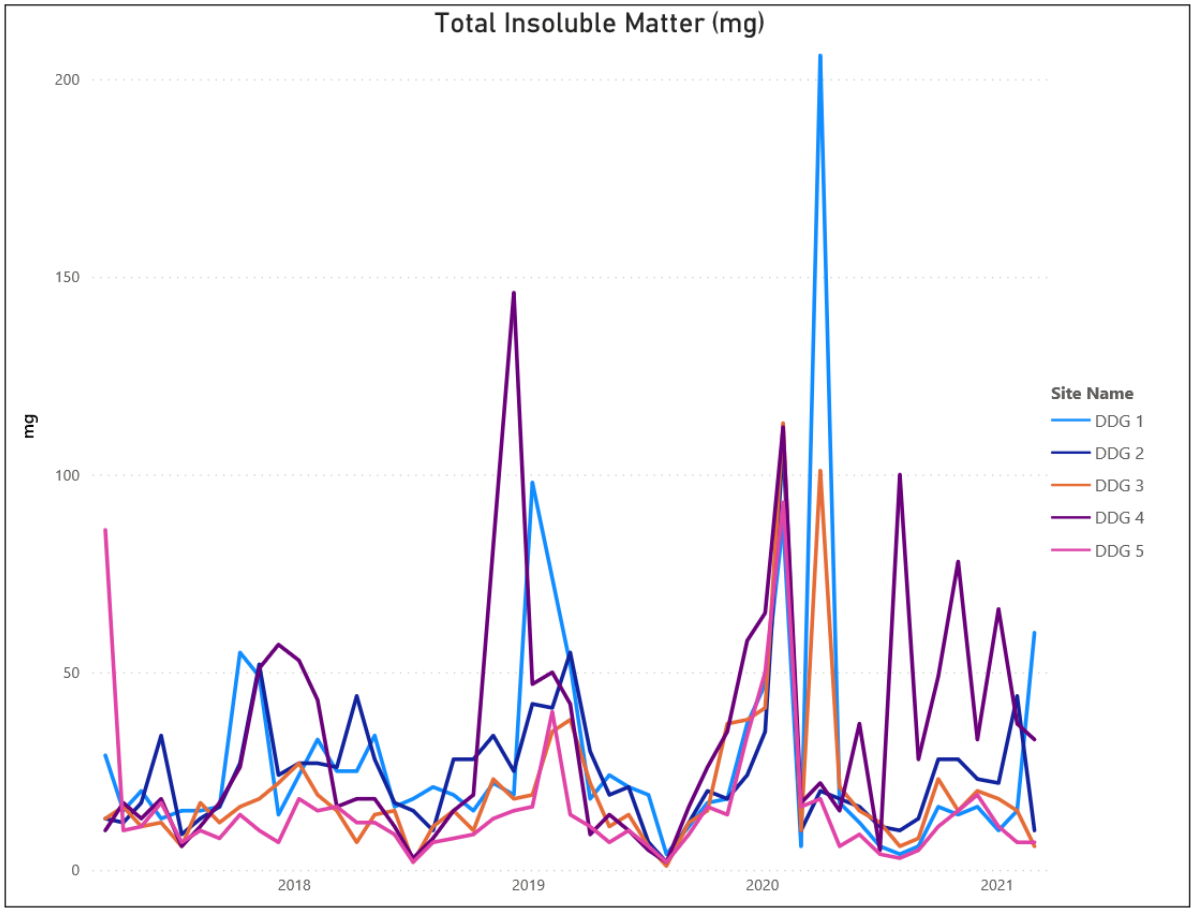
Table 2 Total Insoluble Matter

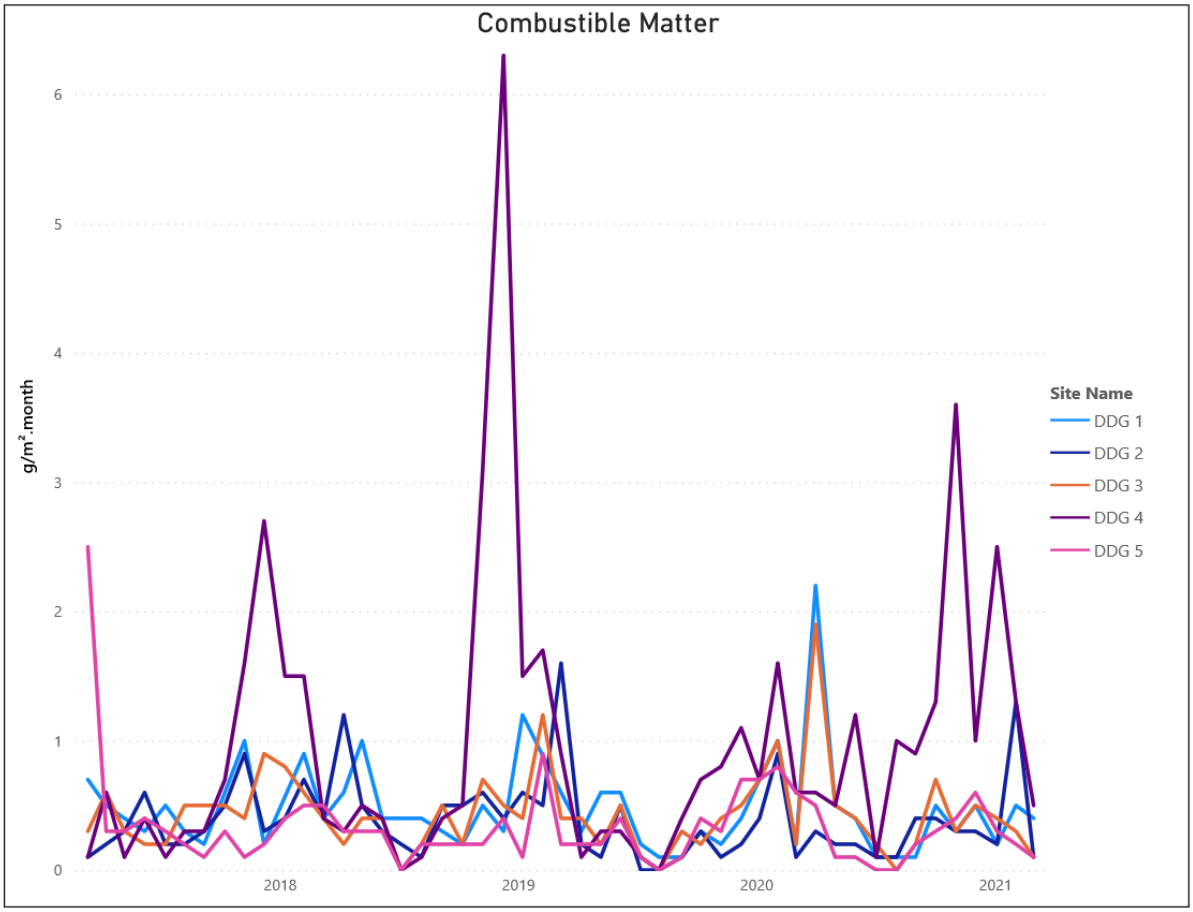
Sample Date	Chemical Name	Units	DDG 1	DDG 2	DDG 3	DDG 4	DDG 5
01/03/2021	Total Insoluble Matter	g/m².month	1.7	0.3	0.2	1	0.2
02/02/2021	Total Insoluble Matter	g/m².month	0.9	2.5	0.9	2.2	0.4
04/01/2021	Total Insoluble Matter	g/m².month	0.5	1.1	0.9	3.4	0.6
02/12/2020	Total Insoluble Matter	g/m².month	0.9	1.3	1.1	1.9	1.1
02/11/2020	Total Insoluble Matter	g/m².month	0.8	1.5	0.8	4.3	0.8
02/10/2020	Total Insoluble Matter	g/m².month	0.9	1.5	1.2	2.7	0.6
01/09/2020	Total Insoluble Matter	g/m².month	0.3	0.8	0.5	1.7	0.3
03/08/2020	Total Insoluble Matter	g/m².month	0.2	0.5	0.3	5.6	0.2
03/07/2020	Total Insoluble Matter	g/m².month	0.3	0.6	0.6	0.3	0.2
01/06/2020	Total Insoluble Matter	g/m².month	0.7	0.9	0.8	2.1	0.5
01/05/2020	Total Insoluble Matter	g/m².month	1	1	1.2	0.9	0.3
01/04/2020	Total Insoluble Matter	g/m².month	11.9	1.2	5.8	1.3	1.1
02/03/2020	Total Insoluble Matter	g/m².month	0.4	0.6	0.6	1	1
03/02/2020	Total Insoluble Matter	g/m².month	5.3	6.5	6.7	6.9	5.6
06/01/2020	Total Insoluble Matter	g/m².month	2.8	2.1	2.4	4	3
09/12/2019	Total Insoluble Matter	g/m².month	2	1.3	2	3.2	1.9
08/11/2019	Total Insoluble Matter	g/m².month	1	1	2	1.9	0.8
08/10/2019	Total Insoluble Matter	g/m².month	1	1.2	0.9	1.5	0.9
09/09/2019	Total Insoluble Matter	g/m².month	0.5	0.6	0.6	0.8	0.4
05/08/2019	Total Insoluble Matter	g/m².month	0.2	0.1	0.1	0.1	0.1
08/07/2019	Total Insoluble Matter	g/m².month	1	0.4	0.3	0.3	0.3
07/06/2019	Total Insoluble Matter	g/m².month	1.2	1.2	0.8	0.6	0.6
08/05/2019	Total Insoluble Matter	g/m².month	1.4	1.1	0.6	0.8	0.4
08/04/2019	Total Insoluble Matter	g/m².month	1	1.6	1.2	0.5	0.6
08/03/2019	Total Insoluble Matter	g/m².month	3.1	3.3	2.3	2.6	0.8

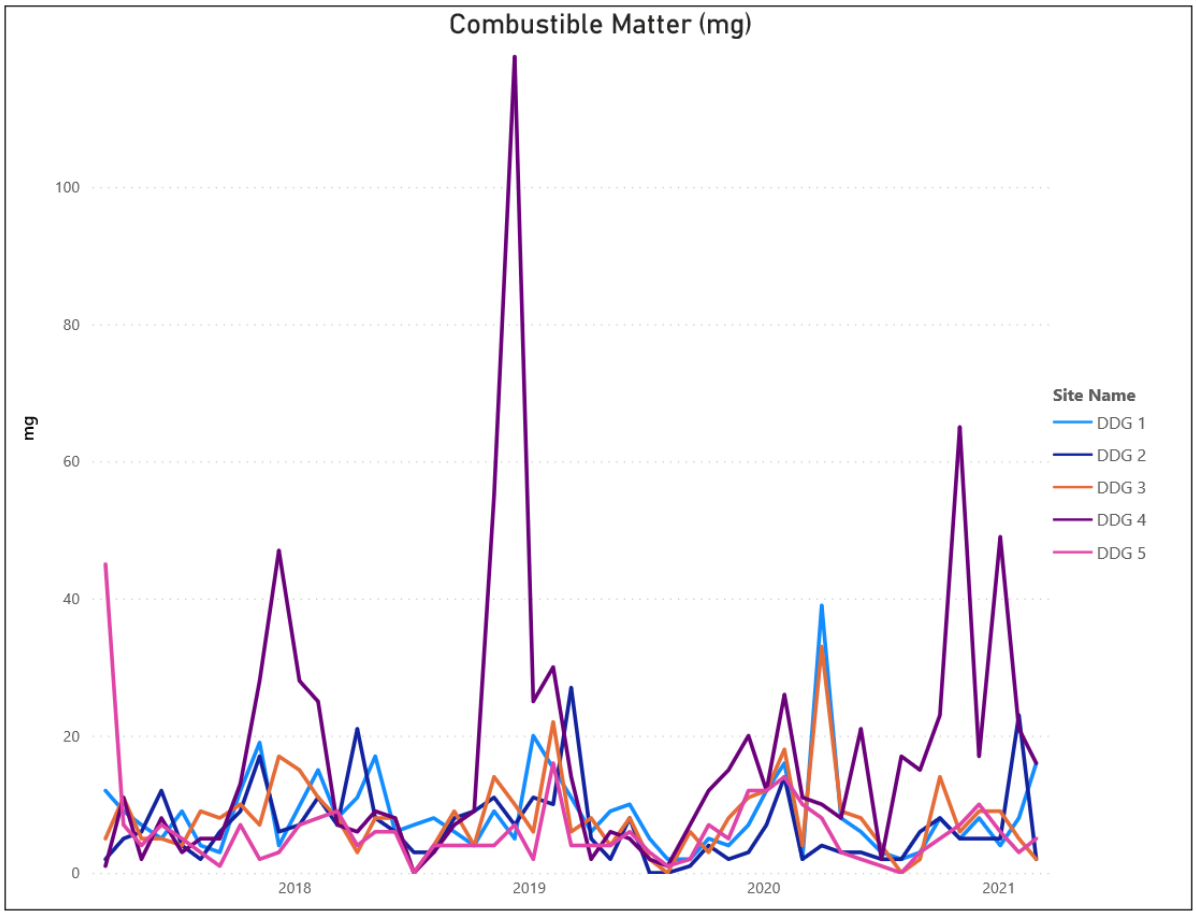

Ash Content
g/m².month
8
6
4
2
0
2018
2019
2020
2021
Site Name
DDG 1
DDG 2
DDG 3
DDG 4
DDG 5

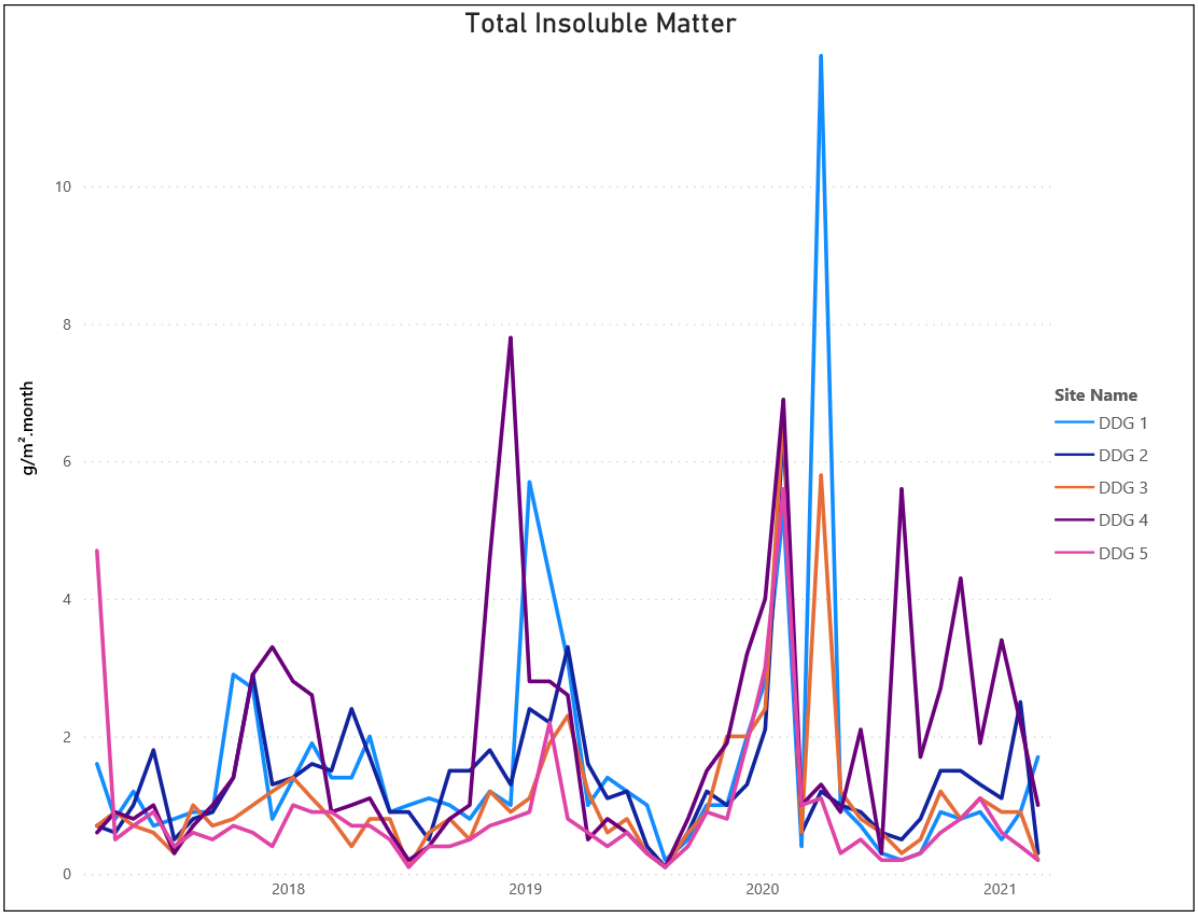

Ash Content (mg)
150
100
50
0
mg
2018
2019
2020
2021
Site Name
DDG 1
DDG 2
DDG 3
DDG 4
DDG 5

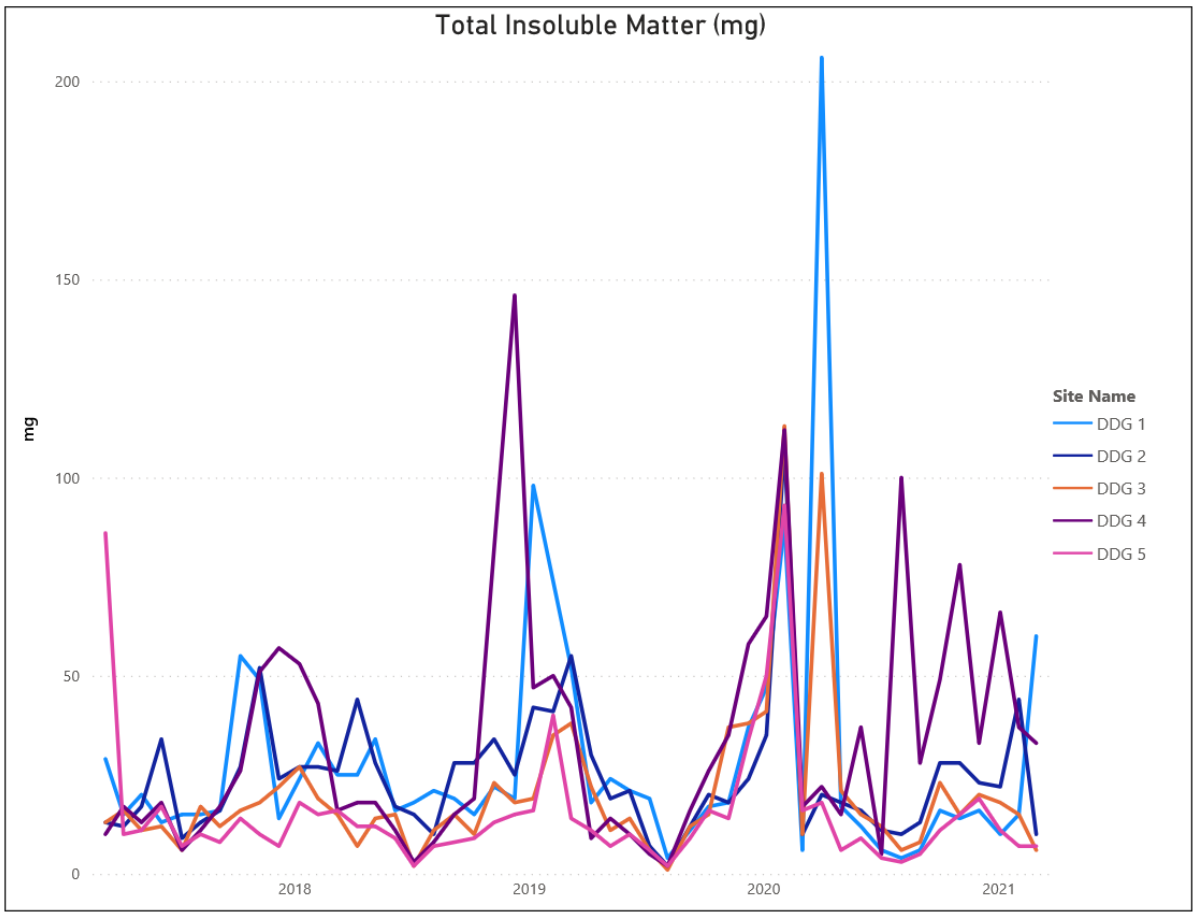

Total Insoluble Matter
g/m².month
10
8
6
4
2
0
2018
2019
2020
2021
Site Name
DDG 1
DDG 2
DDG 3
DDG 4
DDG 5

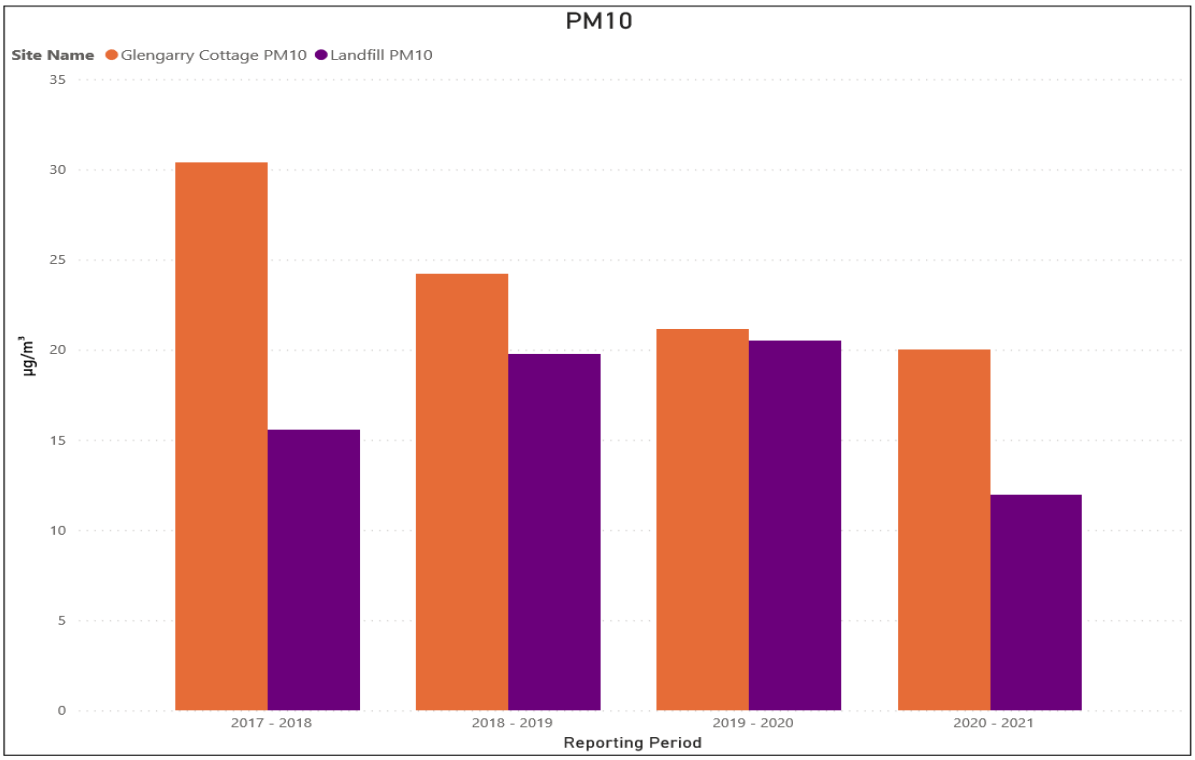

Total Insoluble Matter (mg)
mg
200
150
100
50
0
2018
2019
2020
2021
Site Name
DDG 1
DDG 2
DDG 3
DDG 4
DDG 5

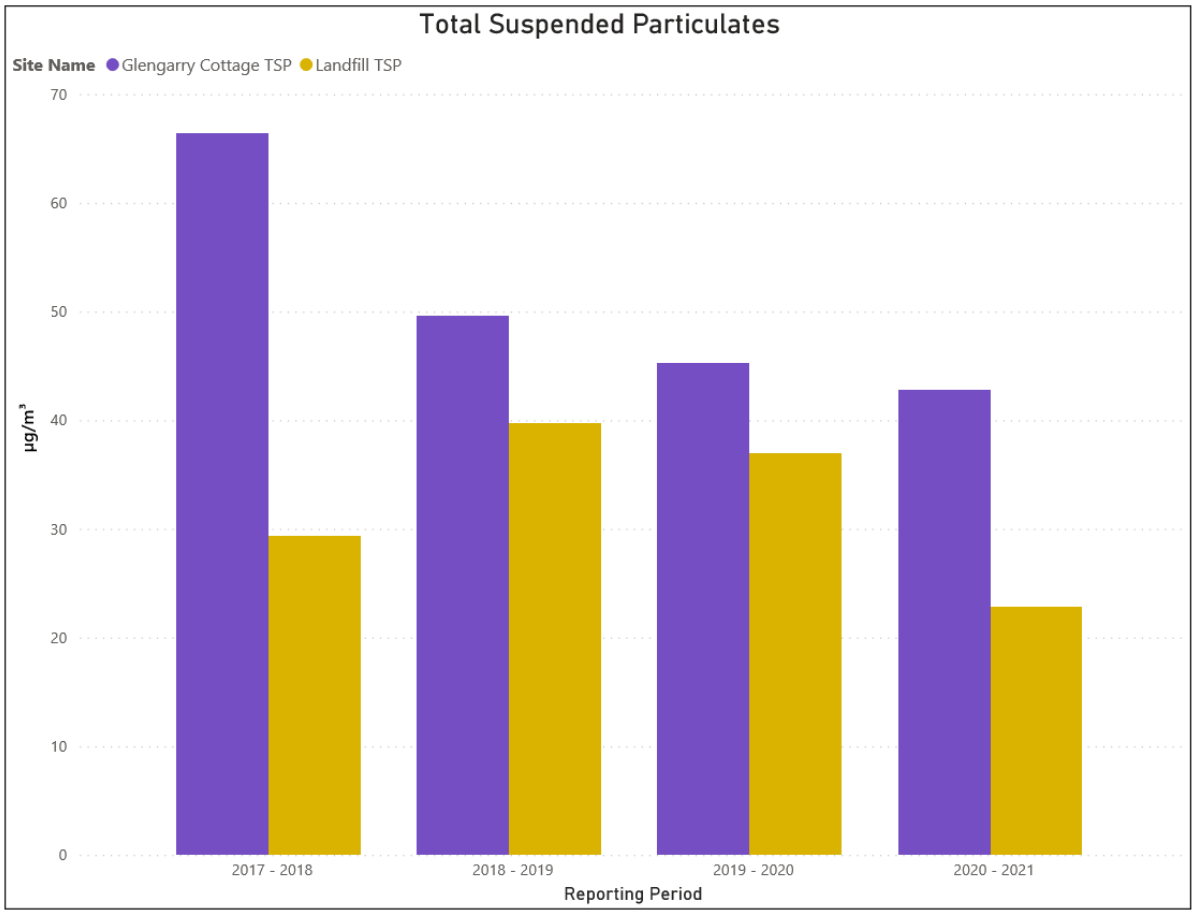

Combustible Matter
g/m².month
6
5
4
3
2
1
0
2018
2019
2020
2021
Site Name
DDG 1
DDG 2
DDG 3
DDG 4
DDG 5


Combustible Matter (mg)
mg
100
80
60
40
20
0
2018
2019
2020
2021
Site Name
DDG 1
DDG 2
DDG 3
DDG 4
DDG 5


Total Insoluble Matter
g/m².month
10
8
6
4
2
0
2018
2019
2020
2021
Site Name
DDG 1
DDG 2
DDG 3
DDG 4
DDG 5


Total Insoluble Matter (mg)
mg
200
150
100
50
0
2018
2019
2020
2021
Site Name
DDG 1
DDG 2
DDG 3
DDG 4
DDG 5


PM10
Site Name
Glengarry Cottage PM10
Landfill PM10
35
30
25
20
15
10
5
0
µg/m³
2017 - 2018
2018 - 2019
2019 - 2020
2020 - 2021
Reporting Period


Total Suspended Particulates
Site Name
Glengarry Cottage TSP
Landfill TSP
70
60
50
40
30
20
10
0
µg/m³
2017 - 2018
2018 - 2019
2019 - 2020
2020 - 2021
Reporting Period

Appendix G: **Odour** & Complaints

Request Number	Request Type	Date Received	Completed Date
621018	Air Pollution - Commercial/Industrial	8/04/2019	8/04/2019
621234	Air Pollution - Commercial/Industrial	10/04/2019	11/04/2019
640120	Air Pollution - Commercial/Industrial	18/10/2019	9/12/2019
646910	Air Pollution - Commercial/Industrial	19/12/2019	20/12/2019
647696	Air Pollution - Commercial/Industrial	7/01/2020	7/01/2020
651210	Air Pollution - Commercial/Industrial	11/02/2020	3/03/2020
652502	Air Pollution - Commercial/Industrial	21/02/2020	24/02/2020
652542	Air Pollution - Commercial/Industrial	21/02/2020	24/02/2020
652558	Air Pollution - Commercial/Industrial	21/02/2020	24/02/2020
653710	Air Pollution - Residential	3/03/2020	20/03/2020
653718	Air Pollution - Residential	3/03/2020	20/03/2020
653720	Air Pollution - Residential	3/03/2020	20/03/2020
653721	Air Pollution - Residential	3/03/2020	20/03/2020
653883	Air Pollution - Residential	4/03/2020	20/03/2020
653886	Air Pollution - Residential	4/03/2020	20/03/2020
653888	Air Pollution - Residential	4/03/2020	20/03/2020
653890	Air Pollution - Residential	4/03/2020	20/03/2020
655032	Air Pollution - Commercial/Industrial	16/03/2020	20/03/2020
655181	Air Pollution - Commercial/Industrial	17/03/2020	20/03/2020
655184	Air Pollution - Commercial/Industrial	17/03/2020	20/03/2020
658687	Air Pollution - Commercial/Industrial	27/04/2020	2/05/2020
	Number of Requests =	21	

Odour complaints

No of comp. tally	TRIM Link	Date of report / incident	Time	Complaint	Address
1		2/11/2020			
2		16/11/2020			
3		22/11/2020			
4		23/11/2020			
5		25/11/2020			
6	CR0036768	2/12/2020		Lochview Avenue, Farmborough Heights -	
7		3/12/2020		3 December 2020 •Ben Nevis Road, Farmborough Heights (2 callers) (please enter this twice) CR0036769 & CR0036773 •Loch Carron Ave, Farmborough Heights - CR0036794 •Fairloch Ave, Farmborough Heights CR0036796	Ben Nevis Road, Farmborough Heights; Loch Carron Ave Farmborough Heights Fairloch Ave Farmborough Heights
8		3/12/2020		3 December 2020 •Ben Nevis Road, Farmborough Heights (2 callers) (please enter this twice) CR0036769 & CR0036773 •Loch Carron Ave, Farmborough Heights - CR0036794 •Fairloch Ave, Farmborough Heights CR0036796	Ben Nevis Road, Farmborough Heights; Loch Carron Ave Farmborough Heights Fairloch Ave Farmborough Heights
9		3/12/2020		3 December 2020 •Ben Nevis Road, Farmborough Heights (2 callers) (please enter this twice) CR0036769 & CR0036773 •Loch Carron Ave, Farmborough Heights - CR0036794 •Fairloch Ave, Farmborough Heights CR0036796	Ben Nevis Road, Farmborough Heights; Loch Carron Ave Farmborough Heights Fairloch Ave Farmborough Heights

10		3/12/2020		3 December 2020 •Ben Nevis Road, Farmborough Heights (2 callers) (please enter this twice) CR0036769 & CR0036773 •Loch Carron Ave, Farmborough Heights - CR0036794 •Fairloch Ave, Farmborough Heights CR0036796
11		5/12/2020		Highview Drive Farmborough Heights
12		6/12/2020		Farmborough Road Farmborough heights
13		7/12/2020		(via EPA) Linda rang today (10.30am 7/12/2020) to advise she has experienced a very strong odour at Farmborough Road, Farmborough Heights over the last 5 days -although not at this exact moment The odour is normally very strong at around 7am and after hours (up until bed time when windows cant be left open) I explained that we have received odour complaints 2 & 3 December in the Farmborough Heights area (that I am currently investigating) and Linda stated that those dates likely correspond with her complaint. I explained waste service process and investigations that are undertaken when odour complaints are received. I advised Linda to call the Council customer service line in future (rather than my direct number) to ensure she is able to convey odour complaints to an officer in the waste services area at the time the odour is experienced. This allows the waste services team the opportunity to inspect and monitor the area immediately to potentially identify source and implement appropriate actions. Ill add Linda's complaint to the odour investigation I am currently conducting on the 3 December 2020
14		10/12/2020			Highview Dr and 179 Farmborough Heights
15		10/12/2020		Linda Amone (via EPA)	Highview Dr and 179 Farmborough Heights
16	CR0038310	5-6 December 2020		from EPA to Council (Tracey McAndrew)	Highview Drive Farmborough Heights & Farmborough Road Farmborough heights
17		29 ,31/12/2020; 3-4/1/2021		I have not reported any Odour this week because it seems to be apparent most days at some time of the day, and so after reporting and recording the smell since 2011 (nearly 10 years) I am finally realising I am most likely wasting my time. Over this time I have written to the local member, the EPA the WCC. I have met with EPA officials, both individually and as amember of the Farmborough Heights Action Group. I also attend regular WCC meetings at the Whytes Gully Site. Even though there are periods when we don't have the smell, it always returns. Whether or not FOGO is the reason for this increase and intensity of the odour of late I am unsure, but this past month has been one of the worst since the leachate problem early in 2020. This morning Monday 4 th Jan 2021 when I went outside at 7 am the odour was disgusting. No wind and mostly overcast with high clouds. A couple of walkers stopped and were complaining about the smell. The odour was strong on Sunday 3 rd Jan 2021 which I smelt in between rain showers. On 31 Dec 2020 it was putrid in the morning between 8 am and 10 am. On Tuesday 29 th Dec 2020 at 4 pm. It had just stopped raining. Overcast no wind. You have to appreciate I am not home all the time and mostly, if you are inside with windows closed, you won't smell it. Most days, at some time of the day the smell is apparent, if not at my residence, I can smell it at my mothers in Fairloch Ave, or on the way to her place. She has given up complaining as she is elderly	20 Highview Drive Farmborough Heights 2526

18	**CR0043528**	**25/01/2021**		**Detail:Alison called stating that a really bad smell is coming from Whytes Gully tip today and also yesterday.**	
19	Z21/15836	27/01/2021	13:34	I am emailing to complain about the consistent bad smell emanating from Whytes gully. I live at 4 Loch Carron aver Farmborough Heights and have complained over the years to EPA on 131555. (although not recently) I have found these complaints to be of little or no avail. I am hoping this email will have some effect. I have also contacted Paul Scully the local member for help	Loch Carron Ave, Farmborough Heights
20	Z21/15843	27/01/2021	21:25	I've lived here (Farmborough Heights) many years and never have I every smelt such bad odour. The odour is getting worse and varies. Some days worse than others. Hopefully this problem will be sorted out before it gets worse.	Farmborough Heights
21	Z21/15993	28/01/2021	15:24	Living in Lochview Ave in Farmborough Heights we get the smell of tip up our place from time to time, especially after rain but the last couple of months there have been many more days of the most awful stench. It is so strong we have to close up the house, my daughter can't play outside and we have to wait till we can take our walk around the neighbourhood to the odour finally passes. Is there anything the council is able to do about the way waste is being processed at the tip so it is less intense and less frequent?	Lochview Ave, Farmborough Heights
22	Z21/18865 Z21/17487	30/01/2021	8:59	I'm writing to inform you that there is a very unpleasant smell in our street (Loch Carron Ave, Farmborough Heights) this afternoon. I have notified the EPA on several other occasions, today's smell is particularly bad considering there isn't any breeze it is very strong and unpleasant and hits you as soon as you walk out the front door. Would you be able to provide some information on where it is coming from, what is causing it and if it is harmful to the local residents health. Thank you for your attention. Yours sincerely	Loch Carron Ave, Farmborough Heights
23	Z21/25119	1/02/2021	7:20	Caller advising that there is an excessive smell of rotting material. Caller advised that the smell is entering their home and they are unable to open the windows. Caller advised that this is an ongoing issue, usually early morning and in the evening.	179 Farmborough Road Farmborough Heights
24	Z21/25119	1/02/2021	8:30	Caller affected by offensive odour, this report logs for several days: Caller affected from 1:10am on 26/1/21 and on for the rest of the night by an offensive odour, described as a greenwaste smell. Wind direction not noted for this event. Thursday 28/1/21 2:05am, duration and wind conditions were not recorded by the complainant. And today 1/2/21 05:55am, offensive odour with a light S-SW wind for around half an hour. Odour present again at around 8:30am today 1/2/21 with a light WSW wind. Odour was then noted all the way to the end of	27 Ben Nevis Road Farmborough Heights
25	Z21/25119	1/02/2021	10:18	Complainant advises that they then went outside and there it was. A horrible stench.	12 Highview Drive Farmborough Heights
26	Z21/25119	1/02/2021	13:50	Caller affected by a strong chemical odour, 'plastic-like', not burning, uncertain source. Odour is occurring with a North-Easterly wind. Caller has noticed the odour frequently over the last two weeks when NE winds present. The odour makes the caller feel unwell, eg headache.	133 Iola Avenue Farmborough Heights

27	Z21/25119	1/02/2021	21:18	Complainant states that it is 9:18pm on 1/2/21 and they had to close all the windows. The foul smell is strong.	12 Highview Drive Farmborough Heights
28	Z21/25119	1/02/2021	21:25	Sewerage smell, decomposing rubbish smell. The smell is putrid. Caller was just sitting in their lounge room and the smell has wafted through the house and into the lounge room. Caller has closed their windows but by the time they smelt it, its too late, its all through their house and now they have to sleep in this smell. The smell is rank.	274 Farmborough Road, FARMBOROUGH HEIGHTS NSW 2526
29	Z21/25119	1/02/2021	21:30	At 9:30pm caller noticed a change come through with the storm and an immediate odour has come through. Almost unbearable.	10 Fairloch Ave, FARMBOROUGH HEIGHTS NSW 2526
30	Z21/18927	1/02/2021	21:35	I am a resident of Farmborough Heights. I wish to register a complaint about the smell that is increasingly becoming worse. With doors and windows open the smell is right through my home. I seriously believe this needs attention. I shouldn't have to put up with this.	Farmborough Heights
31	Z21/20936	3/02/2021	18:53	I refer to the bad smell in the Farmborough Heights area, which seems to have increased since Wollongong City Council's FOGO has been in operation. If you can advise how the issue can be rectified it would be appreciated.	Farmborough Heights
32	Z21/25119	5/02/2021	6:00	Odour affecting Farmborough Heights. Caller recorded dates and times over the past couple of weeks – Saturday 23/1, 7-8am. Monday 25/1, 7-9am. Wed 27/1, 5:40am then caller went out to work so duration unknown. Mon 1/2 at 8pm (had to shut up all the windows to keep out of the house so duration unknown). Today Friday 6am-6:30am was still stinking as caller left at 6:30am.	18 Highview Drive Farmborough Heights
33	Z21/25100	7/02/2021	7:00	Caller experienced a stinking odour. Last time caller advised it was so bad it brought tears to your eyes . Not as bad today but it is still honking (callers word) . Caller advised they did close up the house but it was too late as it is right through the house.	200 Farmborough Road, FARMBOROUGH HEIGHTS NSW 2526
34	Z21/22916 Z21/25100	7/02/2021	8:00	Ongoing issue of rotting garbage odour. Caller went outside this morning and noticed the offensive odour. Caller advised a few weeks the smell was really bad it entered into the house and it was putrid when he woke up at about midnight. Two or three times a week they can smell it but not as bad as the previous night a few weeks ago.	206 Farmborough Rd, FARMBOROUGH HEIGHTS NSW 2526
35	Z21/25100	7/02/2021	8:48	Complainant emailed about a waste smell.	61 Stanley Ave , FARMBOROUGH HEIGHTS NSW 2526

36	Z21/25100	8/02/2021	5:00	Caller advised they experienced a concerning odour that it is as if something has died. It's quite rancid and takes callers breath away. Caller advised that the dates that the smell has been the most potent are 16.01 at 08:00, 17.01 05:30, 19.01 at 09:00, 25.01 at 05:00 and then on the 01.02 at 21:30, and the 03.02 at 11:30 06.02 at 22:15 and then today (08.02) at 05:00.	274 Farmborough Rd, FARMBOROUGH HEIGHTS NSW 2526
37	Z21/23305	8/02/2021	6:00	This morning at 6am I walked outside my house and the smell was discussing I live in Farmborough heights It's happening way to much since councils FOGO started Thank you Maria Vicelli	Farmborough Heights
38	Z21/25100	8/02/2021	6:30	Caller has noticed an increase in garbage like smells in their home. The caller has been woken up at night and been close to vomiting due to the foul stench coming from south facing bedroom windows. Smell was detected 8:30pm 6/2/21, 9:00am 7/2/21, 4:30 am and 630am 8/2/21.	Kingfisher Place Farmborough Heights NSW 2526
39	Z21/25100	8/02/2021	8:00	Caller reported that it is 8:00 am and they had to close all the windows again. The foul smell is overpowering.	12 Highview Drive, FARMBOROUGH HEIGHTS NSW 2526

39	Z21/25100	8/02/2021	8:00	Caller reported that it is 8:00 am and they had to close all the windows again. The foul smell is overpowering.	12 Highview Drive, FARMBOROUGH HEIGHTS NSW 2526

40	Z21/22913	8/02/2021	8:16	I would like to notify you of the increased garbage like smells that have been noticed in my home since late last year. I have been woken in the middle of the night close to vomiting from the foul stench coming from my south facing bedroom windows. I have lived in Farmborough Heights for almost 25 years and yes the tip would smell after substantial rain but never anything like we have been experiencing lately. Today 8/2 the stench has been coming through my window continuously for the last 2 hours. If you look at my data it has been a daily occurance. I don't think it is reasonable to have to close my windows, I am currently recovering from a broken leg so am spending a lot of time in bed at the moment. Recorded times 6/2/21 8:30pm 7/2/21	5 Kingfisher Place Farmborough Heights
41	Z21/25100	8/02/2021	8:30	Caller experienced a terrible smell. It seems as if early mornings someone turns on the smell machine. Virtually any morning from 6am to 8.30 am when I am outside it smells sometime between these time frames.	20 Highview Drive, FARMBOROUGH HEIGHTS NSW 2526

42	Z21/25100	8/02/2021	8:30	Caller reporting odour for the last 2 days: on 7/2 at 12:53am there was a slight wind from WNW and there was a smell all night. On 8/2/21 there was and odour that started at 2:43am and went to about 8:30am. The wind was slight from SSW. The odour was pungent from organic and rotting food waste	27 Ben Nevis Road Farmborough Heights
43	Z21/25100	8/02/2021	8:45	Caller smelled a rotten aromatic stench. The caller noticed the odour at 08:45 when driving daughter to school and the odour has disapated when caller came back home. The odour has started up again at 12:55.	360 Farmborough Rd, FARMBOROUGH HEIGHTS NSW 2526
44	Z21/25100	8/02/2021	9:15	Caller affected by a rotting greenwaste odour today. The caller noted that there is little wind today, pretty calm.	340 Farmborough Road, FARMBOROUGH HEIGHTS NSW 2526
45	Z21/25097	9/02/2021	8:50	Odour affecting caller at her home in Farmborough Heights. Caller reporting that she noticed "pockets of odour" when she went walking around 6:30am but that at 8:50am when she went outside the odour was very strong and solid at her home. The odour has been on and off for the past month but this is pretty much the strongest it's been in that time.	43 Gerard Avenue, FARMBOROUGH HEIGHTS NSW 2526
46	z21/30828	12/02/2021	16:30	Caller advised the smell has gotten worse, for about 3-4 months. Odour is when there is a south west wind and the whole of Farmborough Heights.Type Of Odour : Waste	Fairloch Avenue, FARMBOROUGH HEIGHTS NSW 2526
47	z21/30828	12/02/2021	17:30	Caller advised odour gives bad taste on lips. Bad smell. Odour has gotten more frequent. Type Of Odour : Waste odour	10 Fairloch Ave, FARMBOROUGH HEIGHTS NSW 2526
48	Z21/32507	13/02/2021	5:30 PM	Odour of rotting garbage affecting caller at home or nearby on three recent occasions. Home is at 360 Farmborough Rd, Farmborough Heights. 1. Wind today is south-easterly. Noticed odour at 9am when she first went outside. Caller is now 700m north-north-west of where she first first noticed the odour near Farmborough Road and the odour is not noticeable now, at 9.48am. 2. Friday night 5.30pm caller noticed odour on Farmbourough Road as caller drove past Brendon Avenue. Still present as she drove past again at 7.30pm and it was really strong. 3. Saturday 5.30pm at home. Wind was south-easterly. Caller only outside for 5 minutes so can't say how long it lasted.	360 Farmborough Rd, Farmborough Heights
49	Z21/32507	14/02/2021	2:49 AM	Caller has called in to report a continuing issue of a foul smell in the air, early in the morning. It happened 3 times over the period of the 13th and 14th. On 13/2 at 2:30am a light fog and southerly wind led to the smell of food waste in the air, causing the caller to close all their windows to prevent the smell entering their house. On 14/2 at 1:00am and 2:49am caller noticed the smell again, causing them to close their windows once again to prevent the smell from entering their	27 ben Nevis Rd, Farmborough Heights
50	z21/30828	14/02/2021	22:30	Caller advised previous occasions has been like sewerage smell but not as bad tonight. Last night was also not as bad as tonight. Odour first noticeable 03:00 this morning and again 22:30 tonight. Caller advised ongoing issue from this site. Not very pleasant to be woken up at 03:00 with sewerage smell. Not very pleasant to be going to bed with a sewerage smell. Recently they have had continual bouts of odours ranging in strength from mild to overwhelming putrid sewerage type smell.	274 Farmborough Road, FARMBOROUGH HEIGHTS NSW 2526

51	Z21/32495	14/02/2021	8.30am	Complainant has been away for 2 days this week but odours have been apparent on Monday 8th Feb 2021 at 7:30am and Sunday 14th Feb 2021 at 8:30am. The wind has been pretty strong this week and so odours have reduced. That said complainant has been riding their push bike down Fairloch Ave, and although they only report odours at their home address, 1 in 3 times the odour is apparent in Fairloch Ave.	20 Highview drive, Farmborough Heights
52	email record	22/02/2021	8:00 AM	I have smelt the odour this morning at 8am when I answered the front door to receive a delivery. The wind was very slight from the SW. It was also at bthe back of the house in the yard coming from that SW direction.	20 Highview Drive, Farmborough Heights
53	email record	27/02/2021	9:30	Caller advised that there is a strong smell. Mixture between mould and rotting food.	327 Farmborough Rd, Farmborough Heights

Appendix I

WHYTES GULLY REFERENCE GROUP

Note of Meeting Held 11 March 2020

At Glengarry Cottage - 5.30 PM

PRESENT:

Corey Stoneham – Manager Waste and Resource Recovery (*Wollongong City Council*)

Oscar Gallagher – Waste & Resource Recovery Coordinator (*Wollongong City Council*)

Charlie Emery (*Soilco*)

Chris Wade (*Remondis*)

John Lucas (*Community Representative*)

Tony Atkins (*Community Representative*)

Barry Wooton (*Community Representative*)

Jan Waples (*Community Representative*)

Ziggy Osiadacz *(Community Representative)*

John *(Community Representative)*

Welcome:

Waste and Resource Recovery Manager (Corey Stoneham) welcomed everyone to the meeting and introduced Council staff and contractors.

Confirmation of Previous Minutes

Previous Minutes were confirmed as being correct and accurate.

Matters Arising from Previous Minutes

Corey Stoneham spoke about several issues raised at the previous meeting in August 2019 including the issue of traffic flow along Reddalls Road, particularly in the early morning. Council has written to

their commercial customers, reminding them of hours of operation, and reiterated there is to be no parking/stopping/queuing prior to the site opening at 7.30am.

Corey also spoke about the Vegetation Management Plan for the site and works to date to control weeds and replanting along Reddalls Rd.

Barry, Tony and John raised concern with the timeframe for replanting along the northern and western boundaries. Tony and John both advised that recent weed removal along the northern boundary at the far end of Reddalls Rd had created new sightlines into the site and newly planted trees weren't yet big enough to provide screening. John also advised that removal of some of the weed vegetation along Reddalls Rd had allowed more wind-blown litter to enter his property.

ACTION: Present dates for screening planting along Northern and Western boundaries at the next community group meeting in August 2020.

ACTION: Regular litter collection to be undertaken in north-western corner of site (adjacent to former borrow pit area).

General Business

Waste Services Manager showed a PowerPoint presentation with photographs of the new cell and upgrades to the Small Vehicle Transfer Station to improve dust management, safety and traffic control and photos of the green waste transfer station.

Other items discussed included:

Storm Event – 9th February 2020

The storm event of 9-10 February was discussed. The site received approx. 400 mm of rainfall over a four-day period including 300mm on the 9th Feb. Management of leachate and stormwater across the site was discussed including the tankering of leachate and treatment of stormwater dams.

The residents raised concern with odour emanating from the site for several weeks following the storm event. Management advised that dissolved oxygen levels within the ponds had decreased after the rain due to stirring up of a lot of sediment that had been laying dormant within the dams during the drought. The low dissolved oxygen levels had resulted in some odour.

Management explained that since the 9th February a chemical engineer had been engaged by Council to provide a strategy to improve the water quality following the storm event. Strategies that Council has since implemented include aeration of the three stormwater dams, chemical salt dosing to remove sediment and suspended solids and biological treatment to reduce nutrient levels. Daily analysis of the water is occurring, and dissolved oxygen levels are improving. Additionally, the deodoriser trailer has been set up adjacent to the stormwater ponds.

In relation to leachate management, levels in the leachate system are now reducing. It is expected that levels will again be at minimum volumes within 2-3 weeks.

Council has been working closely with the EPA since the storm event with regular reports provided and a site inspection on the 4th March.

Residents advised that odour from the site has improved in the last week.

Fogo Trial

Spoke about the success of the FOGO trial due which commenced in September 2019. The possibility of expanding the FOGO Trial across the LGA was discussed with a briefing of Councillors and options for FOGO scheduled in coming months.

Landfill Gas Capture

Council is looking to extend current landfill gas capturing on site and has signed a contract with a service provider. With this process there is the possibility of electricity generation from the captured methane.

Stanwell Park Bin Spring Trial

A trial of a product known as a bin spring has commenced. This product prevents cockatoos and other birds from opening the lids of bins and spreading waste. A trial in Stanwell Park has been underway since July 2019 and has proven successful. The bin spring is only available in 240L sizes at present, Remondis is working with the manufacturer to see if they can produce an 80L and 120L sized product. It is hoped the product may assist with minimising windblown waste from domestic garbage bins also.

Materials Recovery Facility Demolition

The former MRF on Reddalls Rd is scheduled for demolition in April and May. There are no immediate plans for the site other than for it to be used as an extension of the free drop off area for residents for items such as steel and e-waste.

Soilco

Charlie Emery spoke about the proposed expansion to their operations including additional composting tunnels within their southern Reddalls Rd site (former One Steel sheds).

Charlie spoke about the storm event of 9th February and management of storm water and leachate at the Soilco site.

Remondis

Chris Wade provided an update on their operation including the growth within the local government area. Chris advised that 3-4 additional trucks were being purchased each year to keep up with growth across the region.

Meeting ended 6.45pm

WHYTES GULLY REFERENCE GROUP

Note of Meeting Held 8 February 2021

At Glengarry Cottage – 6:00 PM

PRESENT:

Christopher Brown – Acting Manager Waste and Resource Recovery (*Wollongong City Council*)

Melinda Hale – Operations Coordinator (*Wollongong City Council*)

Chris Hayne – Contracts Manager (*Wollongong City Council*)

Louise Hickson– Acting Waste Strategic Projects Coordinator (*Wollongong City Council*)

Giordano Bianco – Waste Construction Projects Coordinator (*Wollongong City Council*)

Steven Robinson – Engagement Officer (*Wollongong City Council*)

Charlie Emery (*Soilco*)

Chris Wade (*Remondis*)

Ziggy Osiadacz (*Community Representative*)

APOLOGIES:

Barry Wooton (*Community Representative*)

Joanne Page – Acting Director Infrastructure and Works (*Wollongong City Council*)

Paul Tracey – Acting Divisional Manager Open Space and Environmental Services (*Wollongong City Council*)

Welcome:

- Manager Waste and Compliance welcomed everyone to the meeting and introduced Council staff and contractors.

Community Feedback

- Ziggy provided feedback on the odour present at his residence in Farmborough Heights.

    - Odour is present in morning but worse at night.
    - Only happened in the past 2-3 months and smells like battery acid.
    - Doesn't think smell generated from grain spillage.
- WCC staff provided the following information:
    - Met with EPA 2-3 times.
    - Have been unable to pinpoint source
    - Getting an odour assessment undertaken.

Operations Update

- Council outlined the odour management practices currently in place. Current odour management practices include;
    - Two deodoriser trailers in operation
    - Use of cover material each day and at the end of operations in conjunction with the use of large metal landfill lids
    - Proactive inspections in the Farmborough Heights and Unanderra area
    - Green waste is no longer stored on site but is removed daily by Soilco to keep stockpile at a minimal size.

Construction Projects Update

- Council is relocating the Small vehicle Transfer Station and Green waste areas to adjacent the Operations Hub.

Strategic Projects Update

- FOGO was launched in November 2020 and has received positive feedback. Focussing on education and communication.
- Working with charities to reduce waste to landfill.
- On-call collection project being worked on with ISJO and Green Connect.
- LMS has gas extraction contract and looking to increase the amount extracted.

Soilco Update

- Normal operations at present.
- Working on a significant upgrade.
- Commenced work on One steel building and activities in top building will be moved there.
- The top shed will then be used for finishing.
- This will result in less traffic at top shed.
- Project commenced June 2020 and due for completion in December 2021
- Haven't had a large change in feedstock. Have been managing food waste for over 10 years including material from Kiama and Shellharbour.

Remondis Update

- FOGO has been going well with the amount of FOGO collected exceeding general waste.
- Four new trucks were purchased for FOGO.
- Invitation extended to Ziggy to view a garbage truck.

General Business

- Briefly discussed rejuvenation of group.

Actions

- Update on Vegetation Management Plan – Next Meeting
- Update on Deer Management – Next Meeting

Meeting closed at 7.00pm

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Appendix J Annual Return (2019-2020)

NSW EPA

Annual Return

WOLLONGONG CITY COUNCIL

Licence 5862

A. Statement of Compliance - Licence Details

ALL Licence holders must check that the Licence details in Section A are correct.

If there are changes to any of these details, **you must advise Environment Protection Authority (EPA) and apply as soon as possible for a variation to your Licence or for a Licence transfer.**

Licence variation and transfer application forms are available on the EPA website at: http://www.epa.nsw.gov.au/licensing-and-regulation/licensing or from regional offices of the EPA, or by contacting by telephone 02 9995 5700.

If you are applying to vary or transfer your Licence, you must still complete and submit this Annual Return.

A1. Licence holder

Licence number : 5862

Licence holder : WOLLONGONG CITY COUNCIL

Trading name *(if applicable)* :

ABN : 63 139 525 939

ACN :

Reporting period : From: 29-5-2019 To: 28-5-2020

A2. Premises to which Licence Applies (if applicable)

Common name (if any) : WHYTES GULLY WASTE DISPOSAL FACILITY

Premises : REDDALLS ROAD KEMBLA GRANGE 2526 NSW

A3. Activities to which Licence Applies

Waste disposal (application to land)

A4. Other Activities (if applicable)

A5. Fee-Based Activity Classifications

Note that the fee based activity classification is used to calculate the administrative fee.

Fee-based activity	Activity scale	Unit of measure
Waste disposal by application to land	> 0.00	capacity

A6. Assessable Pollutants (if applicable)

Note that the identification of assessable pollutants is used to calculate the **load-based fee.**
The following assessable pollutants are identified for the fee-based activity classifications in the licence:

B. Monitoring and Complaints Summary

B1. Number of Pollution Complaints

Pollution Complaint Category	Complaints
Air	20
Water	0
Noise	0
Waste	0
Other	0
Total complaints recorded by the licensee during the reporting period	**20**

B2. Concentration Monitoring Summary

For each concentration monitoring point identified in your licence, details are displayed below. If concentration monitoring is not required by your licence, **no data** will appear below.
If data was provided from an uploaded file, the file name will be displayed below instead of any data.
Note that this does not exclude the need to conduct appropriate concentration monitoring of assessable pollutants as required by load-based licensing (if applicable).

Discharge & Monitoring Point 1

Stormwater monitoring and discharge point, Outlet at Reddalls Road - Monitoring point labelled 1 on Figure 13 titled "Proposed Surface Water Monitoring Locations" dated 26 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297777 N6183972

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Ammonia	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Conductivity	microsiemens per centimetre					
Dissolved Oxygen	milligrams per litre					

Filterable iron	milligrams per litre					
Fluoride	milligrams per litre					
Magnesium	milligrams per litre					
Nitrate	milligrams per litre					
pH	pH					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Sulfate	milligrams per litre					
Temperature	degrees Celsius					
Total organic carbon	milligrams per litre					
Total Phenolics	milligrams per litre					
Total suspended solids	milligrams per litre					

Monitoring Point 3

Surface gas monitoring, Areas where intermediate or final cover has been placed.

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 4

Gas accumulation monitoring, Inside all buildings within 250 metres of deposited waste.

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 5

Groundwater quality monitoring , Monitoring point labelled GABH02 on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297754.9 N6184377

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					

Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 9

Groundwater quality monitoring. Monitoring point labelled GMW102 on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297952.6 N6184807

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					

Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					

Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 10

Groundwater quality monitoring, Monitoring point labelled GMW103 on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298470.2 N6184603

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					

Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					

Zinc	milligrams per kilogram					

Monitoring Point 11

Groundwater quality monitoring, Monitoring point labelled GMW104 on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297597.9 N6184508

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					

Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 12

Groundwater quality monitoring, Monitoring point labelled GMW105 on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298433.3 N6184397

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					

Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					

Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 13

Groundwater quality monitoring, Monitoring point labelled GMW106 on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298356.8 N6184294

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					

Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					

Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 14

Groundwater quality monitoring, Monitoring point labelled GMW108S on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297870.2 N6184262

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					

Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 15

Groundwater quality monitoring, Monitoring point labelled GMW108D on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297871.4 N6184262

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					

Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 16

Groundwater quality monitoring. Monitoring point labelled GMW109S on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297605.7 N6184068

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					

Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					

Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 17

Groundwater quality monitoring, Monitoring point labelled GMW110 on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297572.6 N6184266

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					

Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 18

Groundwater quality monitoring, Monitoring point labelled GMW111 on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297588.6 N6184385

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					

Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 19

Groundwater quality monitoring. Monitoring point labelled GMW109D on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297604.9 N6184068

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					

Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					
Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					

Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					
Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 20

Groundwater quality monitoring, Monitoring point labelled BH6 on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297807.4 N6184052

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Aluminium	milligrams per litre					
Arsenic	milligrams per litre					
Barium	milligrams per litre					
Benzene	milligrams per litre					
Cadmium	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Chromium (hexavalent)	milligrams per litre					

Chromium (total)	milligrams per litre					
Cobalt	milligrams per litre					
Conductivity	microsiemens per centimetre					
Copper	milligrams per litre					
Ethyl benzene	micrograms per litre					
Fluoride	milligrams per litre					
Lead	milligrams per litre					
Magnesium	milligrams per litre					
Manganese	micrograms per litre					
Mercury	milligrams per litre					
Nitrate	milligrams per litre					
Nitrite	milligrams per litre					
Nitrogen (ammonia)	milligrams per litre					
Organochlorine pesticides	milligrams per litre					
Organophosphate pesticides	milligrams per litre					
pH	pH					
Polycyclic aromatic hydrocarbons	milligrams per litre					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Standing Water Level	metres					
Sulfate	milligrams per litre					
Toluene	milligrams per litre					
Total dissolved solids	milligrams per litre					
Total organic carbon	milligrams per litre					
Total petroleum hydrocarbons	milligrams per litre					

Total Phenolics	milligrams per litre					
Xylene	milligrams per litre					
Zinc	milligrams per kilogram					

Monitoring Point 21

Subsurface gas monitoring, Monitoring point labelled LFG MW1 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298084 N6184278

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 22

Subsurface gas monitoring, Monitoring point labelled LFG MW2 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298202 N6184228

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 23

Subsurface gas monitoring, Monitoring point labelled LFG MW3 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298297 N6184244

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 24

Subsurface gas monitoring, Monitoring point labelled LFG MW4 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298376 N6184303

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 25

Subsurface gas monitoring, Monitoring point labelled LFG MW5 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298438 N6184381

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 26

Subsurface gas monitoring, Monitoring point labelled LFG MW6 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298376 N6184303

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 27

Subsurface gas monitoring, Monitoring point labelled LFG MW7 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298470 N6184553

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 28

Subsurface gas monitoring, Monitoring point labelled LFG MW8 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298376 N6184303

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 29

Subsurface gas monitoring, Monitoring point labelled LFG MW9 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298465 N6184645

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 30

Subsurface gas monitoring, Monitoring point labelled LFG MW10 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298448 N6184684

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 31

Subsurface gas monitoring, Monitoring point labelled LFG MW11 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298400 N6184695

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 32

Subsurface gas monitoring, Monitoring point labelled LFG MW12 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E298351 N6184701

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume					

Monitoring Point 33

Stormwater monitoring point, Downstream monitoring point labelled 4 on Figure 13 titled "Proposed Surface Water Monitoring Locations" dated 26 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297767 N6183396

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Ammonia	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Conductivity	microsiemens per centimetre					
Dissolved Oxygen	milligrams per litre					
Filterable iron	milligrams per litre					
Fluoride	milligrams per litre					
Magnesium	milligrams per litre					

Nitrate	milligrams per litre					
pH	pH					
Potassium	milligrams per litre					
Sodium	milligrams per litre					
Sulfate	milligrams per litre					
Temperature	degrees Celsius					
Total organic carbon	milligrams per litre					
Total Phenolics	milligrams per litre					
Total suspended solids	milligrams per litre					

Monitoring Point 34

Stormwater monitoring point, Upstream monitoring point labelled 6 on Figure 13 titled "Proposed Surface Water Monitoring Locations" dated 26 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297495 N6184504

Pollutant	Unit of measure	No. of samples required	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre					
Ammonia	milligrams per litre					
Calcium	milligrams per litre					
Chloride	milligrams per litre					
Conductivity	microsiemens per centimetre					
Dissolved Oxygen	milligrams per litre					
Filterable iron	milligrams per litre					
Fluoride	milligrams per litre					
Magnesium	milligrams per litre					
Nitrate	milligrams per litre					
pH	pH					

Potassium	milligrams per litre					
Sodium	milligrams per litre					
Sulfate	milligrams per litre					
Temperature	degrees Celsius					
Total organic carbon	milligrams per litre					
Total Phenolics	milligrams per litre					
Total suspended solids	milligrams per litre					

Name of the uploaded file containing point data ▼
Annuat Return Whytes Gully EPL 5862 2019-2020.pdf

B3. Volume or Mass Monitoring Summary

For each volume or mass monitoring point identified in your licence, details are displayed below. If volume or mass monitoring is not required by your licence, **no data** will appear below.
If data was provided from an uploaded file, the file name will be displayed below instead of any data.
Note that this does not exclude the need to conduct appropriate volume or mass monitoring of assessable pollutants are required by load-based licensing (if applicable).

C. Statement of Compliance - Licence Conditions

C1. Compliance with Licence Conditions

Were all conditions of the licence complied with (including monitoring and reporting requirements)?	**No**

C2. Details of Non-Compliance with Licence

Licence condition number not complied with ▼
Stormwater monitoring and discharge Point 1 (EPL 5862.1)
Summary of particulars of the non-compliance ▼
TSS exceeded license condition
Further details on particulars of non-compliance, if required ▼
Number of times occurred ▼
14

Date(s) when the non-compliance occurred, if applicable ▼
Various dates from 9/2/2020 to 10/5/2020
Cause of non-compliance ▼
Heavy rainfall event
Action taken or that will be taken to mitigate any adverse effects of the non-compliance ▼
Stormwater held on site until water quality is suitable for discharge.
Action taken or that will be taken to prevent a recurrence of the non-compliance ▼
Controllled discharge to provide freeboard for next rainfall event once water quality was suitable.
Uploaded Document Name ▼
Uploaded Document Description ▼

Licence condition number not complied with ▼
Stormwater MP1
Summary of particulars of the non-compliance ▼
pH below 6.5
Further details on particulars of non-compliance, if required ▼
Number of times occurred ▼
1
Date(s) when the non-compliance occurred, if applicable ▼
8th March 2020
Cause of non-compliance ▼
Anomaly in data suspected.
Action taken or that will be taken to mitigate any adverse effects of the non-compliance ▼
Follow up testing undertaken was within pH limits for the rest of the reporting period.
Action taken or that will be taken to prevent a recurrence of the non-compliance ▼
Previous test showed it was within limit.
Uploaded Document Name ▼
Uploaded Document Description ▼

D. Statement of Compliance - Load Based Fee Calculation

If you are not required to monitor assessable pollutants by your licence, **no data** will appear below.

If assessable pollutants have been identified on your licence, the following worksheets for each assessable pollutant will determine your load based fee for the licence fee period to which this Annual Return relates.

Loads of assessable pollutants must be calculated using any of the methods provided in EPA's Load Calculation Protocol for the relevant activity. A Load Calculation Protocol would have been already sent to you with your licence. If you require additional copies, you can download the Protocol from the EPA's website or you can contact us on telephone 02 9995 5700.

You are required to keep all records used to calculate licence fees for four years after the licence fee was paid or became payable, whichever is the later date.

E. Statement of Compliance - Requirement to Prepare PIRMP

Have you prepared a Pollution Incident Response Management Plan (PIRMP) as required under section 153A of the Protection of the Environment Operations (POEO) Act 1997?	**Yes**
Is the PIRMP available at the premises?	**Yes**
Is the PIRMP available in a prominent position on a publicly accessible website?	**Yes**
Address of the web page where the PIRMP can be accessed ▼	
https://wollongong.nsw.gov.au/your-council/plans-and-reports/waste-site-reports	
Has the PIRMP been tested?	**Yes**
The PIRMP was last tested on	**6-3-2020**
Has the PIRMP been updated?	**Yes**
The PIRMP was last updated on	**4-3-2020**
Number of times the PIRMP was activated in this reporting period?	**1**
The PIRMP was activated on	**09/02/2020**

F. Statement of Compliance - Requirement to Publish Pollution Monitoring Data

Are there any conditions attached to your licence that require pollution monitoring to be undertaken as required under section 66(6) of the Protection of the Environment Operations (POEO) Act 1997?	**Yes**
Do you operate a website?	**Yes**
Is the pollution monitoring data published on your website in accordance with the EPA's written requirements for publishing pollution monitoring data?	**Yes**
Address of the web page where the pollution monitoring data can be accessed ▼	
https://wollongong.nsw.gov.au/your-council/plans-and-reports/waste-site-reports	

G. Statement of Compliance - Environment Management System and Practices

Do you have an ISO 14001 certified Environmental Management System (EMS) OR any other system that EPA considers is equivalent to the accountability, procedures, documentation and record keeping requirements of an ISO 14001 certified EMS?	**No**
Have you conducted an assessment of your activities and operations to identify the aspects that have a potential to cause environmental impacts and implemented operational controls to address these aspects?	**Yes**
Have you established and implemented an operational maintenance program, including preventative maintenance?	**Yes**
Do you keep records of regular inspections and maintenance of plant and equipment?	**Yes**
Do you conduct regular (at least yearly) environmental audits at the premises that are conducted by a competent and independent person?	**Yes**
Have you undertaken an independent environmental audit covering documented environmental practices, procedures and systems in place during the annual return period?	**No**
Have you established and implemented an environmental improvement or management plan?	**Yes**
Do you train staff in environmental issues that may arise from your activities and operations at the premises and keep records of this?	**Yes**

H. Signature and Certification

This Annual Return may only be signed by person(s) with legal authority to sign it as set out in following categories: an Individual, a Company, a Public authority or a Local council.

It is an offence under section 66 of the Protection of the Environment Operations Act 1997 to supply any information in this form that is false or misleading in a material respect, or to certify a statement that is false or misleading in a material respect. There is a maximum penalty of $250,000 for a corporation and $120,000 for an individual.

I/We

- declare that the information in the Monitoring and Complaints Summary in Section B of this Annual Return application is correct and not false or misleading in a material respect, and
- certify that the information in the Statement and Compliance in sections A, C, D, E, F, G and H and any other pages attached to Section C is correct and not false or misleading in a material respect.

Signature	
Name	Kerry Hunt

Position	General Manager (Acting)
Date	30 / 09 / 2020

Declaration

I declare that the information in the Monitoring and Complaints Summary in section B of this Annual Return is correct and not false or misleading in a material respect, and

I certify that the information in the Statement of Compliance in section A,C,D,E,F and G and any pages attached to Section C is correct and not false or misleading in a material respect.

WG Concentration
Monitoring Summary
B2 29/5/2019-28/5/2020
For each monitoring point identified in your licence complete all the details for each pollutants listed in the tables provided below

Discharge & Monitoring Point 1

Stormwater monitoring and discharge point, Outlet at Reddalls Road - Monitoring point labelled 1 on Figure 13 titled 'Proposed Surface Water Monitoring Locations' dated 26 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV) E297777 N6183972

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre	1	64	120	236.32	377
Ammonia	milligrams per litre	1	64	0.07	2.43	54.7
Calcium	milligrams per litre	1	64	28	58.7	95
Chloride	milligrams per litre	1	64	28	126.52	390
Conductivity	microsiemens per centimeter	1	64	367	877.38	2540
Dissolved Oxygen	milligrams per litre	1	64	0.68	5.2	10.1
Filterable Iron	milligrams per litre	1	64	0.05	0.64	6.18
Fluoride	milligrams per litre	1	64	0.2	0.36	0.4
Magnesium	milligrams per litre	1	64	12	25.68	45
Nitrate	milligrams per litre	1	64	0.01	0.21	0.81
pH	pH	1	64	6.3	7.15	7.8
Potassium	milligrams per litre	1	64	3	10.56	135
Sodium	milligrams per litre	1	64	36	81.59	167
Sulfate	milligrams per litre	1	64	1	48.3	178
Temperature	milligrams per litre	1	64	13.1	19.81	25.7
Total Organic Carbon	milligrams per litre	1	64	4	16.03	34
Total Phenolics	milligrams per litre	1	64	0.05	0.05	0.05
Total suspended solids	milligrams per litre	1	64	7	35.97	118

Monitoring Point 10

Groundwater quality monitoring, Monitoring point labelled GMW103 on Figure 15 titled "Current Site Investigation Locations" dated 6 March

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	416	538.75	736
Aluminium	milligrams per litre	1	1	8.02	8.02	8.02
Arsenic	milligrams per litre	1	1	0.001	0.001	0.001
Barium	milligrams per litre	1	1	0.054	0.054	0.054
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	1	0.0001	0.0001	0.0001
Calcium	milligrams per litre	4	4	149	149	149
Chloride	milligrams per litre	4	4	107	266	356
Chromium (hexavalent)	milligrams per litre	1	1	0.01	0.01	0.01
Chromium (total)	milligrams per litre	1	1	0.011	0.011	0.011
Cobalt	milligrams per litre	1	1	0.008	0.008	0.008
Conductivity	microsiemens per centimeter	4	4	1660	1875	1980
Copper	milligrams per litre	1	1	0.023	0.023	0.023
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.3	0.3	0.3
Lead	milligrams per litre	1	1	0.012	0.012	0.012
Magnesium	milligrams per litre	4	4	63	63	63
Manganese	micrograms per litre	1	1	0.282	0.282	0.282
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	0.03	0.03	0.03
Nitrite	milligrams per litre	1	1	0.01	0.01	0.01
Nitrogen (ammonia)	milligrams per litre	4	4	0.01	0.02	0.03
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5

Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5
pH	pH	4	4	6.9	7.03	7.2
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	1	1.25	2
Sodium	milligrams per litre	4	4	152	169.5	179
Standing Water Level	meters	4	4	5.66	7.57	8.9
Sulfate	milligrams per litre	4	4	128	140.5	151
Toluene	milligrams per litre	1	1	2		
Total dissolved solids	milligrams per litre	4	4	964	1108	1180
Total organic carbon	milligrams per litre	4	4	1	3.25	8
Total petroleum hydrocarbons	milligrams per litre	1	1	30	30	30
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05
Xylene	milligrams per litre	1	1	2	2	2
Zinc	milligrams per kilogram	1	1	0.058	0.058	0.058

Monitoring Point 11

Groundwater quality monitoring, Monitoring point labelled GMW104 on Figure 15 titled "Current Site Investigation Locations" dated 6 March

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	167	331.5	399
Aluminium	milligrams per litre	1	4	6.24	7.15	8.89
Arsenic	milligrams per litre	1	1	0.001	0.001	0.001
Barium	milligrams per litre	1	4	0.03	0.04	0.038
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	4	0	0	0
Calcium	milligrams per litre	4	4	50	52.75	56
Chloride	milligrams per litre	4	4	66	67.5	70
Chromium (hexavalent)	milligrams per litre	1	1	0.01	0.01	0.01
Chromium (total)	milligrams per litre	1	4	0	0.1	0.1
Cobalt	milligrams per litre	1	4	0	0.01	0.01
Conductivity	microsiemens per centimeter	4	4	934	1057.5	1180
Copper	milligrams per litre	1	4	0.01	0.01	0.02
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.6	0.6	0.6
Lead	milligrams per litre	1	4	0	0.01	0.01
Magnesium	milligrams per litre	4	4	31	32.25	40
Manganese	micrograms per litre	1	4	0.28	0.46	0.66
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	0.45	0.45	0.45
Nitrite	milligrams per litre	1	1	0.01	0.01	0.01
Nitrogen (ammonia)	milligrams per litre	4	4	0.01	0.04	0.09
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5
Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5
pH	pH	4	4	7	7.13	7.2
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	1	1	1
Sodium	milligrams per litre	4	4	125	142	170
Standing Water Level	meters	4	4	7.25	7.69	8.35
Sulfate	milligrams per litre	4	4	38	44	52
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	584	633	713
Total organic carbon	milligrams per litre	4	4	1	2.25	4
Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05

Xylene	milligrams per litre	1	1	1	1	1
Zinc	milligrams per kilogram	1	4	0.02	0.03	0.04

Monitoring Point 12

Groundwater quality monitoring. Monitoring point labelled GMW105 on Figure 15 titled "Current Site Investigation Locations" dated 6 March

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	26	38.5	51
Aluminium	milligrams per litre	1	1	0.7	0.7	0.7
Arsenic	milligrams per litre	1	1	0.001	0.001	0.001
Barium	milligrams per litre	1	1	0.004	0.004	0.004
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	1	0.0001	0.0001	0.0001
Calcium	milligrams per litre	4	4	9	13	17
Chloride	milligrams per litre	4	4	67	70.5	74
Chromium (hexavalent)	milligrams per litre	1	1	0.01	0.01	0.01
Chromium (total)	milligrams per litre	1	1	0.002	0.002	0.002
Cobalt	milligrams per litre	1	1	0.001	0.001	0.001
Conductivity	microsiemens per centimeter	4	4	356	386.5	417
Copper	milligrams per litre	1	1	0.002	0.002	0.002
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.1	0.1	0.1
Lead	milligrams per litre	1	1	0.001	0.001	0.001
Magnesium	milligrams per litre	4	4	5	6.5	8
Manganese	micrograms per litre	1	1	0.02	0.02	0.02
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	6.43	6.43	6.43
Nitrite	milligrams per litre	1	1	0.01	0.01	0.01
Nitrogen (ammonia)	milligrams per litre	4	4	0.01	0.01	0.01
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5
Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5
pH	pH	4	4	5.5	5.5	5.5
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	1	1	1
Sodium	milligrams per litre	4	4	45	47.5	50
Standing Water Level	meters	4	4	10.99	11.045	11.1
Sulfate	milligrams per litre	4	4	9	12	15
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	290	292	294
Total organic carbon	milligrams per litre	4	4	1	1.5	2
Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05
Xylene	milligrams per litre	1	1	2	2	2
Zinc	milligrams per kilogram	1	1	0.005	0.005	0.005

Monitoring Point 13

Groundwater quality monitoring. Monitoring point labelled GMW106 on Figure 15 titled "Current Site Investigation Locations" dated 6 March

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	Dry	Dry	Dry
Aluminium	milligrams per litre	1	1	Dry	Dry	Dry
Arsenic	milligrams per litre	1	1	Dry	Dry	Dry
Barium	milligrams per litre	1	1	Dry	Dry	Dry
Benzene	milligrams per litre	1	1	Dry	Dry	Dry
Cadmium	milligrams per litre	1	1	Dry	Dry	Dry
Calcium	milligrams per litre	4	4	Dry	Dry	Dry
Chloride	milligrams per litre	4	4	Dry	Dry	Dry

Chromium (hexavalent)	milligrams per litre	1	1	Dry	Dry	Dry
Chromium (total)	milligrams per litre	1	1	Dry	Dry	Dry
Cobalt	milligrams per litre	1	1	Dry	Dry	Dry
Conductivity	microsiemens per centimeter	4	4	Dry	Dry	Dry
Copper	milligrams per litre	1	1	Dry	Dry	Dry
Ethyl benzene	micrograms per litre	1	1	Dry	Dry	Dry
Fluoride	milligrams per litre	1	1	Dry	Dry	Dry
Lead	milligrams per litre	1	1	Dry	Dry	Dry
Magnesium	milligrams per litre	4	4	Dry	Dry	Dry
Manganese	micrograms per litre	1	1	Dry	Dry	Dry
Mercury	milligrams per litre	1	1	Dry	Dry	Dry
Nitrate	milligrams per litre	1	1	Dry	Dry	Dry
Nitrite	milligrams per litre	1	1	Dry	Dry	Dry
Nitrogen (ammonia)	milligrams per litre	4	4	Dry	Dry	Dry
Organochlorine pesticides	milligrams per litre	1	1	Dry	Dry	Dry
Organophosphate pesticides	milligrams per litre	1	1	Dry	Dry	Dry
pH	pH	4	4	Dry	Dry	Dry
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	Dry	Dry	Dry
Potassium	milligrams per litre	4	4	Dry	Dry	Dry
Sodium	milligrams per litre	4	4	Dry	Dry	Dry
Standing Water Level	meters	4	4	Dry	Dry	Dry
Sulfate	milligrams per litre	4	4	Dry	Dry	Dry
Toluene	milligrams per litre	1	1	Dry	Dry	Dry
Total dissolved solids	milligrams per litre	4	4	Dry	Dry	Dry
Total organic carbon	milligrams per litre	4	4	Dry	Dry	Dry
Total petroleum hydrocarbons	milligrams per litre	1	1	Dry	Dry	Dry
Total Phenolics	milligrams per litre	1	1	Dry	Dry	Dry
Xylene	milligrams per litre	1	1	Dry	Dry	Dry
Zinc	milligrams per kilogram	1	1	Dry	Dry	Dry

Monitoring Point 14

Groundwater quality monitoring. Monitoring point labelled GMW108S on Figure 15 titled "Current Site Investigation Locations" dated 6

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	192	232	282
Aluminium	milligrams per litre	1	1	6.6	6.6	6.6
Arsenic	milligrams per litre	1	1	0.001	0.001	0.001
Barium	milligrams per litre	1	1	0.105	0.105	0.105
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	1	0.0001	0.0001	0.0001
Calcium	milligrams per litre	4	4	23	35	50
Chloride	milligrams per litre	4	4	20	66.5	113
Chromium (hexavalent)	milligrams per litre	1	1	0.05	0.05	0.05
Chromium (total)	milligrams per litre	1	1	0.005	0.005	0.005
Cobalt	milligrams per litre	1	1	0.003	0.003	0.003
Conductivity	microsiemens per centimeter	4	4	417	709.75	912
Copper	milligrams per litre	1	1	0.015	0.015	0.015
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.2	0.2	0.2
Lead	milligrams per litre	1	1	0.004	0.004	0.004
Magnesium	milligrams per litre	4	4	14	17.75	26
Manganese	micrograms per litre	1	1	**0.115**	**0.115**	**0.115**
Mercury	milligrams per litre	1	1	**0.0001**	**0.0001**	**0.0001**
Nitrate	milligrams per litre	1	1	0.03	0.03	0.03
Nitrite	milligrams per litre	1	1	0.06	0.06	0.06
Nitrogen (ammonia)	milligrams per litre	4	4	0.06	0.1175	0.17
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5

Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5
pH	pH	4	4	6.6	6.75	6.9
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	3	4.5	8
Sodium	milligrams per litre	4	4	38	90.25	120
Standing Water Level	meters	4	4	2.87	3.1725	3.35
Sulfate	milligrams per litre	4	4	3	22.25	34
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	284	509.25	666
Total organic carbon	milligrams per litre	4	4	7	7.75	8
Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05
Xylene	milligrams per litre	1	1	2	2	2
Zinc	milligrams per kilogram	1	1	0.018	0.018	0.018

Monitoring Point 15						
Groundwater quality monitoring. Monitoring point labelled GMW108D on Figure 15 titled "Current Site Investigation Locations" dated 6						
Pollutant	**Unit of Measure**	**No of samples required by licence**	**No. of samples collected and analysed**	**Lowest sample value**	**Mean of sample**	**Highest sample value**
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	437	499	527
Aluminium	milligrams per litre	1	1	0.17	0.17	0.17
Arsenic	milligrams per litre	1	1	0.001	0.001	0.001
Barium	milligrams per litre	1	1	0.016	0.016	0.016
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	1	0.0001	0.0001	0.0001
Calcium	milligrams per litre	4	4	124	134	145
Chloride	milligrams per litre	4	4	644	674.5	723
Chromium (hexavalent)	milligrams per litre	1	1	0.01	0.01	0.01
Chromium (total)	milligrams per litre	1	1	0.001	0.001	0.001
Cobalt	milligrams per litre	1	1	0.001	0.001	0.001
Conductivity	microsiemens per centimeter	4	4	3220	3247.5	3280
Copper	milligrams per litre	1	1	0.001	0.001	0.001
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	**0.6**	**0.6**	**0.6**
Lead	milligrams per litre	1	1	0.001	0.001	0.001
Magnesium	milligrams per litre	4	4	89	93	98
Manganese	micrograms per litre	1	1	0.046	0.046	0.046
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	**0.01**	**0.01**	**0.01**
Nitrite	milligrams per litre	1	1	**0.01**	**0.01**	**0.01**
Nitrogen (ammonia)	milligrams per litre	4	4	0.01	0.04	0.1
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5
Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5
pH	pH	4	4	6.6	6.75	6.9
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	1	1	1
Sodium	milligrams per litre	4	4	410	448	483
Standing Water Level	meters	4	4	2.42	2.675	2.81
Sulfate	milligrams per litre	4	4	202	206.75	219
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	1600	1757.5	1870
Total organic carbon	milligrams per litre	4	4	1	2.75	6
Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05

Xylene	milligrams per litre	1	1	2	2	2
Zinc	milligrams per kilogram	1	1	0.005	0.005	0.005

Monitoring Point 16						
Groundwater quality monitoring, Monitoring point labelled GMW109S on Figure 15 titled "Current Site Investigation Locations" dated 6						
Pollutant	**Unit of Measure**	**No of samples required by licence**	**No. of samples collected and analysed**	**Lowest sample value**	**Mean of sample**	**Highest sample value**
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	217	252.5	321
Aluminium	milligrams per litre	1	4	6.48	50.30666667	137
Arsenic	milligrams per litre	1	1	0.001	0.001	0.001
Barium	milligrams per litre	1	4	0.188	1.632666667	2.52
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	4	0.0003	0.000833333	0.0019
Calcium	milligrams per litre	4	4	73	99.5	131
Chloride	milligrams per litre	4	4	341	384.5	430
Chromium (hexavalent)	milligrams per litre	1	1	0.01	0.01	0.01
Chromium (total)	milligrams per litre	1	4	0.009	0.07	0.191
Cobalt	milligrams per litre	1	4	0.041	0.091666667	0.187
Conductivity	microsiemens per centimeter	4	4	1640	1802.5	2150
Copper	milligrams per litre	1	4	0.018	0.177333333	0.479
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.3	0.3	0.3
Lead	milligrams per litre	1	4	0.014	0.100333333	0.187
Magnesium	milligrams per litre	4	4	52	63.25	77
Manganese	micrograms per litre	1	4	3.79	6.79	11.2
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	0.01	0.01	0.01
Nitrite	milligrams per litre	1	1	0.01	0.01	0.01
Nitrogen (ammonia)	milligrams per litre	4	4	0.4	0.4475	0.58
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5
Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5
pH	pH	4	4	6.2	6.375	6.8
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	2	2.25	3
Sodium	milligrams per litre	4	4	58	157.25	215
Standing Water Level	meters	4	4	2.7	3.29	3.71
Sulfate	milligrams per litre	4	4	109	150.75	186
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	862	1363	2130
Total organic carbon	milligrams per litre	4	4	2	7	12
Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	2	2	2
Xylene	milligrams per litre	1	1	0.005	0.005	0.005
Zinc	milligrams per kilogram	1	4	0.054	0.303666667	0.784

Monitoring Point 17						
Groundwater quality monitoring. Monitoring point labelled GMW110 on Figure 15 titled "Current Site Investigation Locations" dated 6 March						
Pollutant	**Unit of Measure**	**No of samples required by licence**	**No. of samples collected and analysed**	**Lowest sample value**	**Mean of sample**	**Highest sample value**
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	561	627.25	675
Aluminium	milligrams per litre	1	1	6.08	6.08	6.08
Arsenic	milligrams per litre	1	1	0.001	0.001	0.001
Barium	milligrams per litre	1	1	0.019	0.019	0.019
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	1	0.0001	0.0001	0.0001
Calcium	milligrams per litre	4	4	202	209.75	230
Chloride	milligrams per litre	4	4	326	751.75	941
Chromium (hexavalent)	milligrams per litre	1	1	0.01	0.01	0.01
Chromium (total)	milligrams per litre	1	1	0.004	0.004	0.004
Cobalt	milligrams per litre	1	1	0.003	0.003	0.003
Conductivity	microsiemens per centimeter	4	4	4220	4307.5	4350
Copper	milligrams per litre	1	1	0.007	0.007	0.007
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.4	0.4	0.4
Lead	milligrams per litre	1	1	0.002	0.002	0.002
Magnesium	milligrams per litre	4	4	162	169.25	177
Manganese	micrograms per litre	1	1	0.175	0.175	0.175
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	0.44	0.44	0.44
Nitrite	milligrams per litre	1	1	0.01	0.01	0.01
Nitrogen (ammonia)	milligrams per litre	4	4	0.01	0.02	0.05
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5
Organophosphate pesticides	milligrams per litre	1	1	0.05	0.05	0.05
pH	pH	4	4	6.3	6.65	6.8
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	1	1.75	2
Sodium	milligrams per litre	4	4	455	493	521
Standing Water Level	meters	4	4	4.08	4.32	4.45
Sulfate	milligrams per litre	4	4	312	460.25	842
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	2400	2580	2680
Total organic carbon	milligrams per litre	4	4	1	3.75	9
Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05
Xylene	milligrams per litre	1	1	2	2	2
Zinc	milligrams per kilogram	1	1	0.02	0.02	0.02

Monitoring Point 18						
Groundwater quality monitoring. Monitoring point labelled GMW111 on Figure 15 titled "Current Site Investigation Locations" dated 6 March						
Pollutant	**Unit of Measure**	**No of samples required by licence**	**No. of samples collected and analysed**	**Lowest sample value**	**Mean of sample**	**Highest sample value**
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	8	408.25	646
Aluminium	milligrams per litre	1	1	10.7	10.7	10.7
Arsenic	milligrams per litre	1	1	0.004	0.004	0.004
Barium	milligrams per litre	1	1	0.054	0.054	0.054
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	1	0.0001	0.0001	0.0001
Calcium	milligrams per litre	4	4	94	108.5	125
Chloride	milligrams per litre	4	4	258	446.75	667
Chromium (hexavalent)	milligrams per litre	1	1	0.05	0.05	0.05
Chromium (total)	milligrams per litre	1	1	0.018	0.018	0.018

Cobalt	milligrams per litre	1	1	0.015	0.015	0.015
Conductivity	microsiemens per centimeter	4	4	2020	2707.5	3460
Copper	milligrams per litre	1	1	0.032	0.032	0.032
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.4	0.4	0.4
Lead	milligrams per litre	1	1	0.013	0.013	0.013
Magnesium	milligrams per litre	4	4	62	79.5	104
Manganese	micrograms per litre	1	1	1.34	1.34	1.34
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	0.01	0.01	0.01
Nitrite	milligrams per litre	1	1	0.01	0.01	0.01
Nitrogen (ammonia)	milligrams per litre	4	4	0.01	0.5325	1.11
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5
Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5
pH	pH	4	4	6.7	6.95	7.2
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	1	2.75	5
Sodium	milligrams per litre	4	4	338	414.75	487
Standing Water Level	meters	4	4	6.33	6.596666667	7.04
Sulfate	milligrams per litre	4	4	44	226.5	464
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	1140	1555	1780
Total organic carbon	milligrams per litre	4	4	11	17.25	26
Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05
Xylene	milligrams per litre	1	1	2	2	2
Zinc	milligrams per kilogram	1	1	0.046	0.046	0.046

Monitoring Point 19

Groundwater quality monitoring, Monitoring point labelled GMW109D on Figure 15 titled "Current Site Investigation Locations" dated 6 March 2012 (Whytes Gully New Landfill Cell EA - Volume IV). E297604.9 N6184068

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	42	189.75	253
Aluminium	milligrams per litre	1	1	0.18	0.18	0.18
Arsenic	milligrams per litre	1	1	0.001	0.001	0.001
Barium	milligrams per litre	1	1	0.156	0.156	0.156
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	1	0.0001	0.0001	0.0001
Calcium	milligrams per litre	4	4	87	121.75	197
Chloride	milligrams per litre	4	4	427	462.5	486
Chromium (hexavalent)	milligrams per litre	1	1	0.01	0.01	0.01
Chromium (total)	milligrams per litre	1	1	0.001	0.001	0.001
Cobalt	milligrams per litre	1	1	0.002	0.002	0.002
Conductivity	microsiemens per centimeter	4	4	1780	1850	1910
Copper	milligrams per litre	1	1	0.001	0.001	0.001
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.3	0.3	0.3
Lead	milligrams per litre	1	1	0.001	0.001	0.001
Magnesium	milligrams per litre	4	4	49	54	57
Manganese	micrograms per litre	1	1	0.849	0.849	0.849
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	0.01	0.01	0.01
Nitrite	milligrams per litre	1	1	0.01	0.01	0.01
Nitrogen (ammonia)	milligrams per litre	4	4	0.04	0.095	0.17
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5
Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5

pH	pH	4	4	6.5	6.775	7
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	1	1.25	2
Sodium	milligrams per litre	4	4	184	198.75	210
Standing Water Level	meters	4	4	2.78	3.135	3.4
Sulfate	milligrams per litre	4	4	20	23.25	25
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	1010	1102.5	1240
Total organic carbon	milligrams per litre	4	4	1	2.25	6
Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05
Xylene	milligrams per litre	1	1	2	2	2
Zinc	milligrams per kilogram	1	1	0.005	0.005	0.005

Monitoring Point 20

Groundwater quality monitoring, Monitoring point labelled BH6 on Figure 15 titled "Current Site Investigation Locations" dated 6 March

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	273	558.5	822
Aluminium	milligrams per litre	1	1	0.92	0.92	0.92
Arsenic	milligrams per litre	1	1	0.003	0.003	0.003
Barium	milligrams per litre	1	1	0.064	0.064	0.064
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	1	0.0001	0.0001	0.0001
Calcium	milligrams per litre	4	4	69	77	86
Chloride	milligrams per litre	4	4	26	135	194
Chromium (hexavalent)	milligrams per litre	1	1	0.01	0.01	0.01
Chromium (total)	milligrams per litre	1	1	0.002	0.002	0.002
Cobalt	milligrams per litre	1	1	0.005	0.005	0.005
Conductivity	microsiemens per centimeter	4	4	656	1399	1690
Copper	milligrams per litre	1	1	0.006	0.006	0.006
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.5	0.5	0.5
Lead	milligrams per litre	1	1	0.005	0.005	0.005
Magnesium	milligrams per litre	4	4	18	41	50
Manganese	micrograms per litre	1	1	0.469	0.469	0.469
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	0.01	0.01	0.01
Nitrite	milligrams per litre	1	1	0.01	0.01	0.01
Nitrogen (ammonia)	milligrams per litre	4	4	0.1	0.2475	0.46
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5
Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5
pH	pH	4	4	6.6	6.925	7.2
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	3	4.25	6
Sodium	milligrams per litre	4	4	54	186.25	244
Standing Water Level	meters	4	4	1.38	1.71	1.92
Sulfate	milligrams per litre	4	4	46	87	117
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	414	874.75	1170
Total organic carbon	milligrams per litre	4	4	8	8	8

Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05
Xylene	milligrams per litre	1	1	2	2	2
Zinc	milligrams per kilogram	1	1	0.007	0.007	0.007

Monitoring Point 21

Subsurface gas monitoring. Monitoring point labelled LFG MW1 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 22

Subsurface gas monitoring. Monitoring point labelled LFG MW2 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 23

Subsurface gas monitoring. Monitoring point labelled LFG MW3 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 24

Subsurface gas monitoring. Monitoring point labelled LFG MW4 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 25

Subsurface gas monitoring. Monitoring point labelled LFG MW5 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 26

Subsurface gas monitoring. Monitoring point labelled LFG MW6 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 27

Subsurface gas monitoring. Monitoring point labelled LFG MW7 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 28

Subsurface gas monitoring. Monitoring point labelled LFG MW8 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 29

Subsurface gas monitoring. Monitoring point labelled LFG MW9 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 3

Surface Gas Monitoring. Areas where intermediate or final cover has been placed

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0.0001	0.000592	0.1253

Monitoring Point 30						
Subsurface gas monitoring, Monitoring point labelled LFG MW10 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6						
Pollutant	**Unit of Measure**	**No of samples required by licence**	**No. of samples collected and analysed**	**Lowest sample value**	**Mean of sample**	**Highest sample value**
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 31						
Subsurface gas monitoring, Monitoring point labelled LFG MW11 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6						
Pollutant	**Unit of Measure**	**No of samples required by licence**	**No. of samples collected and analysed**	**Lowest sample value**	**Mean of sample**	**Highest sample value**
Methane	percent by volume	12	12	0	0.325	3.8

Monitoring Point 32						
Subsurface gas monitoring, Monitoring point labelled LFG MW12 on Figure 14 titled "Proposed Landfill Gas Monitoring Locations" dated 6						
Pollutant	**Unit of Measure**	**No of samples required by licence**	**No. of samples collected and analysed**	**Lowest sample value**	**Mean of sample**	**Highest sample value**
Methane	percent by volume	12	12	0	0.008333333	0.1

Monitoring Point 33						
Stormwater monitoring point, Downstream monitoring point labelled 4 on Figure 13 titled "Proposed Surface Water Monitoring Locations"						
Pollutant	**Unit of Measure**	**No of samples required by licence**	**No. of samples collected and analysed**	**Lowest sample value**	**Mean of sample**	**Highest sample value**
Alkalinity (as calcium carbonate)	milligrams per litre	1	64	30	124.75	232
Ammonia	milligrams per litre	1	64	0.01	7.74	174
Calcium	milligrams per litre	1	64	0.02	32.21	52
Chloride	milligrams per litre	1	64	30	54.84	132
Conductivity	microsiemens per centimeter	1	64	41	442.43	821
Dissolved Oxygen	milligrams per litre	1	64	4.03	6.52	9.11
Filterable Iron	milligrams per litre	1	64	0.05	0.46	2.12
Fluoride	milligrams per litre	1	64	0.1	0.18	0.81
Magnesium	milligrams per litre	1	64	0.2	14.18	24
Nitrate	milligrams per litre	1	64	0.01	0.24	2.51
pH	pH	1	64	5	6.98	7.9
Potassium	milligrams per litre	1	64	2	3.81	10
Sodium	milligrams per litre	1	64	18	37.1	78
Sulfate	milligrams per litre	1	64	1	26.63	164
Temperature	milligrams per litre	1	64	13.2	19.62	34
Total Organic Carbon	milligrams per litre	1	64	0.05	4.99	12
Total Phenolics	milligrams per litre	1	64	0.05	0.05	0.05
Total suspended solids	milligrams per litre	1	64	2	15.21	489

Monitoring Point 34						
Stormwater monitoring point, Upstream monitoring point labelled 6 on Figure 13 titled "Proposed Surface Water Monitoring Locations"						
Pollutant	**Unit of Measure**	**No of samples required by licence**	**No. of samples collected and analysed**	**Lowest sample value**	**Mean of sample**	**Highest sample value**
Alkalinity (as calcium carbonate)	milligrams per litre	1	64	30	139.95	212
Ammonia	milligrams per litre	1	64	0.01	0.08	1.34
Calcium	milligrams per litre	1	64	12	36.52	51
Chloride	milligrams per litre	1	64	25	48.52	60
Conductivity	microsiemens per centimeter	1	64	179	478.98	772
Dissolved Oxygen	milligrams per litre	1	64	3.99	6.41	9.07
Filterable Iron	milligrams per litre	1	64	0.05	0.42	2
Fluoride	milligrams per litre	1	64	0.1	0.15	0.3
Magnesium	milligrams per litre	1	64	5	16.14	24
Nitrate	milligrams per litre	1	64	0.01	0.18	2.2
pH	pH	1	64	5.9	6.98	7.9

Potassium	milligrams per litre	1	64	0.08	3.6	8
Sodium	milligrams per litre	1	64	17	34.56	46
Sulfate	milligrams per litre	1	64	14	30.7	52
Temperature	milligrams per litre	1	64	12.4	19.66	25.4
Total Organic Carbon	milligrams per litre	1	64	1	5.26	23
Total Phenolics	milligrams per litre	1	64	0.05	0.05	0.05
Total suspended solids	milligrams per litre	1	64	5	9.76	141

Monitoring Point 4

Gas accumulation monitoring, Inside all buildings within 250 meters of deposited waste

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Methane	percent by volume	12	12	0.00012	0.00	0.00039

Monitoring Point 5

Groundwater quality monitoring , Monitoring point labelled GABH02 on Figure 15 titled "Current Site Investigation Locations" dated 6 March

Pollutant	Unit of Measure	No of samples required by licence	No. of samples collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	1170	1190	1210
Aluminium	milligrams per litre	1	1	2.01	2.01	2.01
Arsenic	milligrams per litre	1	1	0.001	0.001	0.001
Barium	milligrams per litre	1	1	0.06	0.06	0.06
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	1	0.0001	0.0001	0.0001
Calcium	milligrams per litre	4	4	260	290.33	320
Chloride	milligrams per litre	4	4	996	1065.33	1160
Chromium (hexavalent)	milligrams per litre	1	1	0.01	0.01	0.01
Chromium (total)	milligrams per litre	1	1	0.004	0.004	0.004
Cobalt	milligrams per litre	1	1	0.002	0.002	0.002
Conductivity	microsiemens per centimeter	4	4	4970	5153.33	5400
Copper	milligrams per litre	1	1	0.006	0.006	0.006
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.4	0.4	0.4
Lead	milligrams per litre	1	1	0.004	0.004	0.004
Magnesium	milligrams per litre	4	4	179	194.6666667	208
Manganese	micrograms per litre	1	1	0.752	0.752	0.752
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	0.01	0.01	0.01
Nitrite	milligrams per litre			0.01	0.01	0.01
Nitrogen (ammonia)	milligrams per litre	4	4	0.07	0.08	0.09
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5
Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5
pH	pH	4	4	6.3	6.7	7
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	3	3.33	4
Sodium	milligrams per litre	4	4	557	616.33	678
Standing Water Level	meters	4	4	5.22	5.583	5.85
Sulfate	milligrams per litre	4	4	157	161.6666667	169
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	2920	3103.33	3320
Total organic carbon	milligrams per litre	4	4	7	8.33	10
Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05
Xylene	milligrams per litre	1	1	2	2	2
Zinc	milligrams per kilogram	1	1	0.026	0.026	0.026

Monitoring Point 9

Groundwater quality monitoring. Monitoring point labelled GMW102 on Figure 15 titled "Current Site Investigation Locations" dated 6 March						
Pollutant	**Unit of Measure**	**No of samples required by licence**	**No. of samples collected and analysed**	**Lowest sample value**	**Mean of sample**	**Highest sample value**
Alkalinity (as calcium carbonate)	milligrams per litre	4	4	139	139	139
Aluminium	milligrams per litre	1	1	1.83	1.83	1.83
Arsenic	milligrams per litre	1	1	0.001	0.001	0.001
Barium	milligrams per litre	1	1	0.027	0.027	0.027
Benzene	milligrams per litre	1	1	1	1	1
Cadmium	milligrams per litre	1	1	0.0001	0.0001	0.0001
Calcium	milligrams per litre	4	4	30	30	30
Chloride	milligrams per litre	4	4	28	28	28
Chromium (hexavalent)	milligrams per litre	1	1	0.01	0.01	0.01
Chromium (total)	milligrams per litre	1	1	0.001	0.001	0.001
Cobalt	milligrams per litre	1	1	0.001	0.001	0.001
Conductivity	microsiemens per centimeter	4	4	376	376	376
Copper	milligrams per litre	1	1	0.007	0.007	0.007
Ethyl benzene	micrograms per litre	1	1	2	2	2
Fluoride	milligrams per litre	1	1	0.4	0.4	0.4
Lead	milligrams per litre	1	1	0.002	0.002	0.002
Magnesium	milligrams per litre	4	4	11	11	11
Manganese	micrograms per litre	1	1	0.042	0.042	0.042
Mercury	milligrams per litre	1	1	0.0001	0.0001	0.0001
Nitrate	milligrams per litre	1	1	1.48	1.48	1.48
Nitrite	milligrams per litre	1	1	0.01	0.01	0.01
Nitrogen (ammonia)	milligrams per litre	4	4	0.06	0.06	0.06
Organochlorine pesticides	milligrams per litre	1	1	0.5	0.5	0.5
Organophosphate pesticides	milligrams per litre	1	1	0.5	0.5	0.5
pH	pH	4	4	7.3	7.3	7.3
Polycyclic aromatic hydrocarbons	milligrams per litre	1	1	1	1	1
Potassium	milligrams per litre	4	4	1	1	1
Sodium	milligrams per litre	4	4	35	35	35
Standing Water Level	meters	4	4	4.02	4.02	4.02
Sulfate	milligrams per litre	4	4	9	9	9
Toluene	milligrams per litre	1	1	2	2	2
Total dissolved solids	milligrams per litre	4	4	226	226	226
Total organic carbon	milligrams per litre	4	4	1	1	1
Total petroleum hydrocarbons	milligrams per litre	1	1	50	50	50
Total Phenolics	milligrams per litre	1	1	0.05	0.05	0.05
Xylene	milligrams per litre	1	1	2	2	2
Zinc	milligrams per kilogram	1	1	0.016	0.016	0.016