PASPALEY

EPL 283 2023 - 2024 Monitoring Report

Reporting Period: 24th November 2023 – 24th November 2024
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Executive Summary

This report outlines the following in relation to Environmental Protection Licence 283 for the reporting period of November 24, 2023, until November 24, 2024:

- Monitoring objectives and plan
- Monitoring results
    - Presentation
        - Tabular representation
        - Graphical representation
        - Water discharge log
    - Quality assurance/Quality control evaluation
- Discussion and Interpretation of results
    - Exceedance report for Total Phosphorus – April 24
    - Exceedance report for Total Phosphorus – June 24
    - Exceedance report for Total Phosphorus – November 24
    - Exceedance report for Total Nitrogen – June 24
    - Exceedance report for Total Suspended Solids – July 24
    - Exceedance report for Total Suspended Solids – November 24
    - Non-compliance report for Total Suspended Solids – December 24
    - Non-compliance report for Ammonia – June 24
    - Non-compliance report for Phosphate – July 24
- Conclusion and proposed actions

Monitoring Plan and Objectives

The monitoring conditions are specified in sections 23, 24, 25, 26, 27, 28 and 29 in the Environmental Protection Licence (EPL 283). The specific details of the surface water monitoring plan are as follows:

				Sample Locations[1]			
	Site Code			**TSF Discharge 1** *(Discharge Pond - Monitoring point for assessment of discharge water quality)*	**TSF Ambient 1**[2] *(Compliance point – where discharge water enters the Blackmore River)*	**TSF Ambient 3** *(Monitoring point for assessment of background ambient water quality in Darwin Harbour)*	**INLET** *(Monitoring point for water being pumped into the facility)*
	Longitude			130.912222	130.910639	130.901938	130.908591
	Latitude			-12.568233	-12.575809	-12.591187	-12.565763
Parameter	**Abbreviation**	**Units**	**Trigger Values**[3]				
In situ (field) Measurements							
pH	pH	pH units	6.0-8.5	W	M	M	W
Electrical Conductivity	EC	µS/cm	NA	W	M	M	W
Dissolved Oxygen	DO	% saturation	80-100%	W	M	M	W
Turbidity	NTU	NTU	<4[4]	W	M	M	W
Temperature	T	°C	NA	W	M	M	W
Parameters to be assessed at a NATA accredited laboratory							
Biological Oxygen Demand	BOD	mg/L	NA	M	M	M	M
Total Suspended Solids	TSS	mg/L	<10	M	M	M	M
Filterable Reactive Phosphorous	FRP	µg/L	<10	M	M	M	M
Total Phosphorous	TP	µg/L	<30	M	M	M	M
Ammonia	NH_3	µg/L	<20	M	M	M	M
Total Nitrogen	TN	µg/L	<300	M	M	M	M
Total Oxidised Nitrogen	NO_x	µg N/L	<20	M	M	M	M
Nitrate	NO_3	µg/L	NA	M	M	M	M
Nitrite	NO_2	µg/L	NA	M	M	M	M
Chlorophyll-a	Chl-α	µg/L	<4	M	M	M	M

W = Weekly during operation, when actively discharging wastewater in accordance with Table 2.
M = Monthly during operation, when actively discharging wastewater in accordance with Table 2.
NA = Not Available

1 Monitoring Locations are shown in Attachment 3.

2 For monitoring at this location, the sample must be collected during an outgoing or turning tide (not an incoming tide).

3 Water Quality Objectives for the Darwin Harbour Region – Blackmore River Estuary, to be applied to the compliance point (TSF Ambient 1).

4 Only applies where the turbidity value at TSF Discharge 1 is greater than the INLET on same sampling occasion.

Monitoring Results - Presentation

Tabulation of Results

In situ (field) Measurements for the EPL 283 Surface Water Monitoring Plan November 2023 – November 2024

	TSF Ambient 1							TSF Ambient 3							TSF Inlet 1							TSF Discharge 1						
Date	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	pH	Electrical Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Salinity (ppt)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	pH	Electrical Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Salinity (ppt)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	pH	Electrical Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Salinity (ppt)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	pH	Electrical Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Salinity (ppt)
1/12/2023	5.24	83.5	8.24	57.24	31.7	0.09	37.9	5.23	82.4	8.33	57	31.9	0	37.71	4.37	73.6	8.02	57.62	32	21.8	38.17	6.44	111.7	8.63	57.87	34.2	6.17	38.27
8/12/2023	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
15/12/2023	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
22/12/2023	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
29/12/2023	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
5/01/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
12/01/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
19/01/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
26/01/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
2/02/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
9/02/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
16/02/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
23/02/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
1/03/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
8/03/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
15/03/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
22/03/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
29/03/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
5/04/2024	Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.							Ponds empty. No discharge.						
12/04/2024															4.85	74.1	8.28	48.7	28.2	18.4	31.53	6.01	104	8.35	37.31	26.4	9.1	23.59
19/04/2024															5.11	80.3	8.13	49.91	29.1	9.57	32.4	5.9	102.4	8.42	39.45	28.9	5.12	25.8
26/04/2024	5.91	95.1	8.29	48.91	28.6	19.6	31.84	5.95	99.1	8.36	50.67	29.4	0	33.1	4.32	68.4	7.9	50.46	27.7	29.25	33	5.84	98.2	8.67	41.28	30.8	2.42	26.28
3/05/2024															4.3	66.2	8.05	51.04	27.9	43.81	33.15	5.91	100.5	8.51	44.73	28.4	0.88	28.75
10/05/2024															4.66	73	7.98	51.8	30.5	8.86	33.92	5.76	96.1	8.41	47.11	30.5	2.49	30.41
17/05/2024															3.95	62.9	8.14	52.44	28.5	61.42	34.32	5.66	92.7	8.39	48.95	28.7	8.35	32.1
24/05/2024															4.92	80.1	7.99	52.74	28.5	40.5	34.66	6.04	106.8	8.49	49.43	29.9	4.01	32.18
31/05/2024	5.77	92.3	8.32	52.65	28	0	34.61	5.81	93.9	8.37	52.83	28	0	34.74	5.46	82.1	8.28	52.8	27.9	5.17	34.72	5.89	97.4	8.47	51.02	29.4	3.2	33.36
7/06/2024															5.12	79.2	8.3	53.06	27.6	18.69	34.91	6.11	110.5	8.45	53.72	28	2.27	33.97
14/06/2024															5.23	82.5	8.18	53.29	26	11.65	35.22	6.02	102.9	8.38	53.18	25.5	0.91	34.92
21/06/2024															4.71	70.6	8.27	53.66	25.4	4.48	35.43	5.78	95.4	8.44	53.98	24.6	1.92	35.68
28/06/2024	5.84	94.6	8.34	53.98	25.6	8.02	35.66	5.81	93.1	8.4	54.83	25.7	10.92	35.69	4.16	67.8	8.31	54.23	24.7	9.03	35.87	5.82	96.1	8.47	54.94	26.1	0.29	36.36
5/07/2024															4.87	74.8	8.64	55.4	22.5	7.81	36.78	5.77	93.1	8.64	55.39	22.5	6	36.78
12/07/2024															4.52	70.9	8.28	54.79	25.3	12.64	36.27	5.64	88.4	8.49	55.77	25.7	5.54	36.99
19/07/2024															4.06	66.7	8.2	54.54	22.1	22.8	36.14	6.11	109.6	8.53	56.14	20.9	3.69	37.35
26/07/2024	6	96.6	8.43	55.15	25.6	0.16	36.53	6.05	100.3	8.46	54.02	25.7	0	36.42	4.83	75.2	8.26	55.63	24.7	17.98	36.9	6.01	101.4	8.53	56.36	26.5	5	37.41
2/08/2024															3.91	63.6	8.33	55.83	25.8	7.38	37.06	5.94	102.6	8.5	56.84	27.1	7.12	37.52
9/08/2024															3.54	58.5	8.28	56.148	27.8	51.1	37.22	5.74	90.9	8.55	57.071	28.9	4.62	37.87
16/08/2024															3.05	52	8.03	56.909	29.6	115.9	37.73	5.59	88.4	8.41	57.783	30.6	12.47	38.35
23/08/2024															4.79	72.6	8.12	56.274	29	41.3	37.27	6.1	108.6	8.35	57.958	31.6	9.36	38.44
30/08/2024															4.06	65.5	8.26	56.302	30.1	39.74	37.31	6.05	106.1	8.39	58.026	29.9	7.59	38.5
6/09/2024	5.9	95.5	8.2	56.238	29.4	1.51	37.23	5.92	97.1	8.3	55.876	29.3	2.98	36.97	5.1	81.2	8.18	56.368	29.3	12.81	37.34	6.11	110.3	8.35	58.132	30.4	2.01	38.62
13/09/2024															4.83	76.1	8.19	56.497	28.9	5.85	37.46	5.84	95.6	8.35	58.254	31	9.84	38.67
20/09/2024															4.22	69.3	8.01	56.679	29.4	27.4	37.56	6.05	105.9	8.33	58.081	30.7	14.49	38.57
27/09/2024															3.24	54.9	8.2	56.781	30.5	44.96	37.6	6.09	108.6	8.31	58.171	31.2	5.41	38.64
4/10/2024	6.1	97	8.2	56.279	30.8	0.5	37.21	5.95	96.6	8.32	55.932	30.7	1.13	36.96	3.68	60.2	8.09	56.759	31.1	36.9	37.56	5.9	99.4	8.4	58.299	32	8.57	38.68
11/10/2024															3.49	58.4	8.08	56.81	31.8	11.27	37.61	5.74	91.8	8.37	58.49	30.9	3.27	38.72
18/10/2024															5.21	83	8.15	57.242	30.7	91.43	37.84	6.1	109.5	8.49	58.944	30.5	4.81	38.8
25/10/2024															4.48	70.1	8.09	57.199	31.2	50.82	37.82	6.09	108.7	8.5	58.501	31.4	2.73	38.72
1/11/2024	5.58	84.2	8.13	56.55	30.6	17.43	37.42	5.62	86.2	8.26	56.208	31.3	9.15	37.14	5.02	81.1	8.04	56.955	30	23.8	37.75	6.12	111.8	8.57	57.876	29.6	4.32	38.46
8/11/2024															4.41	77.3	7.72	58.874	34.4	92	39.01	5.3	92.9	8.51	58.508	34.4	13.99	38.74
15/11/2024															6.69	110.6	8	57.115	31	47.4	37.83	12.65	210.5	8.45	58.277	31.1	12.26	38.7
22/11/2024															11.2	191.7	7.99	56.621	33.4	33.5	37.37	11.91	206.8	8.51	55.903	34.5	11.55	36.78

Parameters to be assessed at a NATA accredited laboratory for the EPL 283 Surface Water Monitoring Plan November 2023 – November 2024

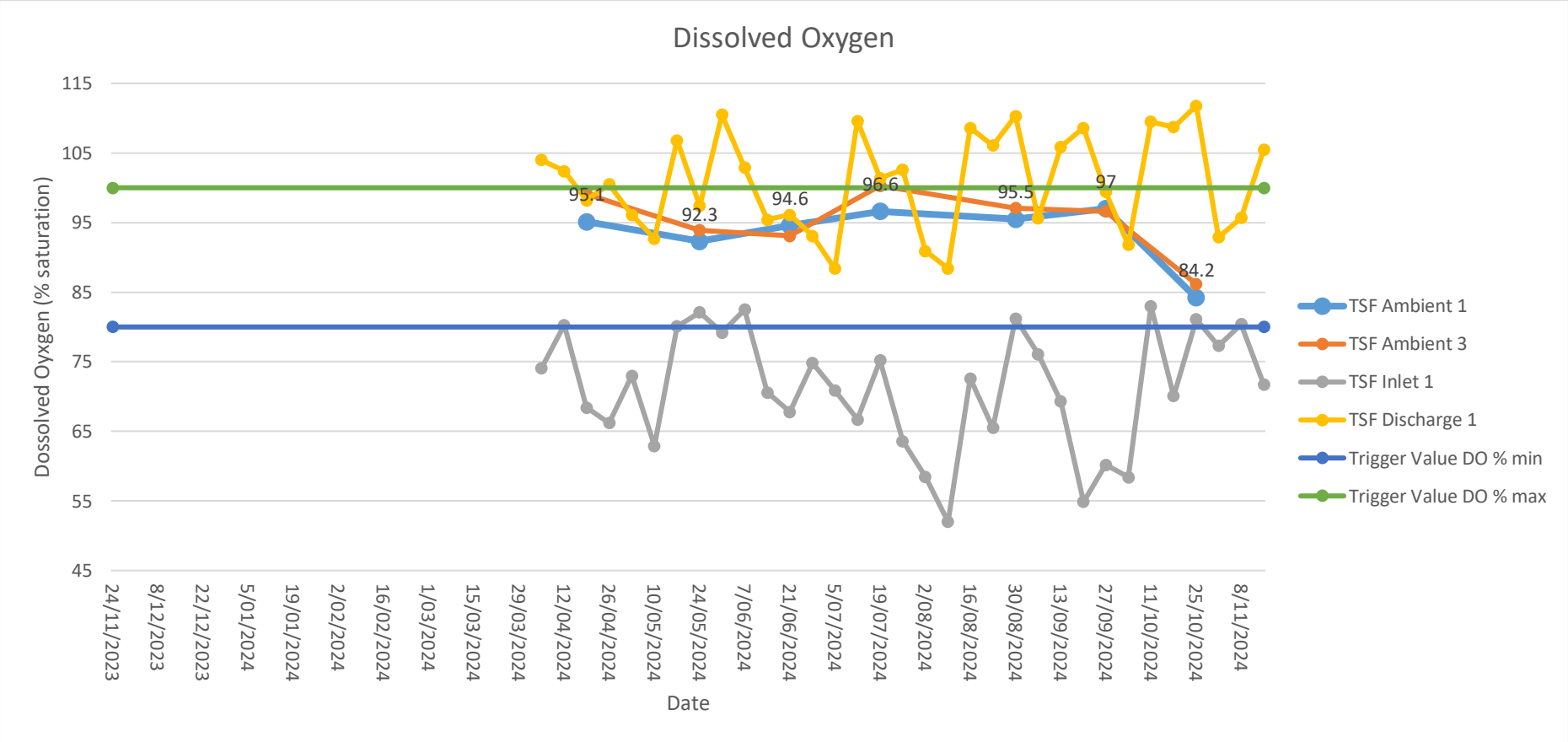
Reference Units	TSF Ambient 1									
	Total Suspended Solids mg/L	Biological Oxygen Demand mg/L	Chlorophyll a µg/L	Ammonia as N mg/L	Nitrate as N mg/L	Nitrite as N mg/L	NOx as N mg/L	Total Nitrogen mg/L	Phosphate as P mg/L	Phosphorus - Total mg/L
Trigger Values	**<10**		**<4**	**<0.02**			**<0.02**	**<0.3**	**<0.01**	**<0.03**
1/12/2023	68	<5	1	<0.005	<0.005	<0.005	<0.005	<0.1	<0.005	0.03
8/12/2023	Ponds empty. No discharge.									
15/12/2023	Ponds empty. No discharge.									
22/12/2023	Ponds empty. No discharge.									
29/12/2023	Ponds empty. No discharge.									
5/01/2024	Ponds empty. No discharge.									
12/01/2024	Ponds empty. No discharge.									
19/01/2024	Ponds empty. No discharge.									
26/01/2024	Ponds empty. No discharge.									
2/02/2024	Ponds empty. No discharge.									
9/02/2024	Ponds empty. No discharge.									
16/02/2024	Ponds empty. No discharge.									
23/02/2024	Ponds empty. No discharge.									
1/03/2024	Ponds empty. No discharge.									
8/03/2024	Ponds empty. No discharge.									
15/03/2024	Ponds empty. No discharge.									
22/03/2024	Ponds empty. No discharge.									
29/03/2024	Ponds empty. No discharge.									
5/04/2024	Ponds empty. No discharge.									
12/04/2024										
19/04/2024										
26/04/2024	<5	<5	2	0.12	0.006	<0.005	0.007	0.1	0.01	0.04
3/05/2024										
10/05/2024										
17/05/2024										
24/05/2024										
31/05/2024	6	10	2	0.068	<0.005	<0.005	<0.005	<0.1	0.02	0.03
7/06/2024										
14/06/2024										
21/06/2024										
28/06/2024	8	<5	1	0.15	0.007	<0.005	0.008	0.4	0.02	0.05
5/07/2024										
12/07/2024										
19/07/2024										
26/07/2024	18	<5	<1	<0.005	<0.005	<0.005	<0.005	0.1	0.02	0.03
2/08/2024										
9/08/2024										
16/08/2024										
23/08/2024										
30/08/2024										
6/09/2024	7	<5	2	<0.005	<0.005	<0.005	0.007	0.1	0.01	0.03
13/09/2024										
20/09/2024										
27/09/2024										
4/10/2024	8	8	1	<0.005	<0.005	<0.005	<0.005	<0.1	0.01	0.03
11/10/2024										
18/10/2024										
25/10/2024										
1/11/2024	24	10	1	0.006	<0.005	<0.005	<0.005	0.1	0.01	0.04
8/11/2024										
15/11/2024										
22/11/2024										

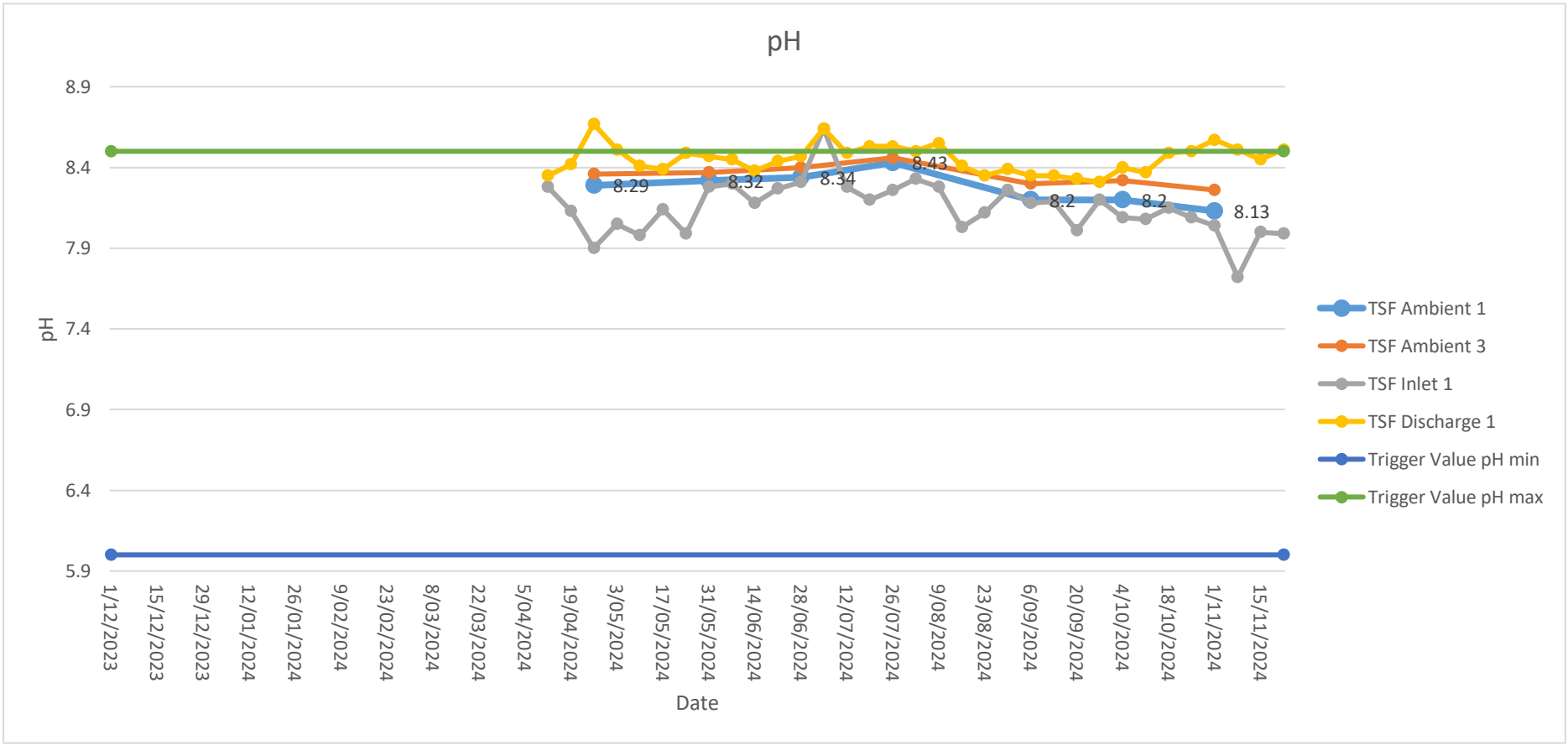
Reference Units	TSF Ambient 3									
	Total Suspended Solids mg/L	Biological Oxygen Demand mg/L	Chlorophyll a µg/L	Ammonia as N mg/L	Nitrate as N mg/L	Nitrite as N mg/L	NOx as N mg/L	Total Nitrogen mg/L	Phosphate as P mg/L	Phosphorus - Total mg/L
1/12/2023	64	<5	<1	0.008	<0.005	<0.005	<0.005	<0.1	<0.005	0.04
8/12/2023	Ponds empty. No discharge.									
15/12/2023	Ponds empty. No discharge.									
22/12/2023	Ponds empty. No discharge.									
29/12/2023	Ponds empty. No discharge.									
5/01/2024	Ponds empty. No discharge.									
12/01/2024	Ponds empty. No discharge.									
19/01/2024	Ponds empty. No discharge.									
26/01/2024	Ponds empty. No discharge.									
2/02/2024	Ponds empty. No discharge.									
9/02/2024	Ponds empty. No discharge.									
16/02/2024	Ponds empty. No discharge.									
23/02/2024	Ponds empty. No discharge.									
1/03/2024	Ponds empty. No discharge.									
8/03/2024	Ponds empty. No discharge.									
15/03/2024	Ponds empty. No discharge.									
22/03/2024	Ponds empty. No discharge.									
29/03/2024	Ponds empty. No discharge.									
5/04/2024	Ponds empty. No discharge.									
12/04/2024										
19/04/2024										
26/04/2024	8	<5	<1	0.12	0.008	<0.005	0.009	<0.1	0.007	0.04
3/05/2024										
10/05/2024										
17/05/2024										
24/05/2024										
31/05/2024	20	<5	1	0.083	<0.005	<0.005	<0.005	<0.1	0.009	0.03
7/06/2024										
14/06/2024										
21/06/2024										
28/06/2024	8	<5	4	0.16	0.009	<0.005	0.01	0.2	0.02	0.11
5/07/2024										
12/07/2024										
19/07/2024										
26/07/2024	10	<5	1	0.096	<0.005	<0.005	0.007	0.1	0.01	0.02
2/08/2024										
9/08/2024										
16/08/2024										
23/08/2024										
30/08/2024										
6/09/2024	61	<5	2	<0.005	<0.005	<0.005	0.006	0.1	0.009	0.03
13/09/2024										
20/09/2024										
27/09/2024										
4/10/2024	12	6	2	0.097	0.055	<0.005	0.06	0.1	0.01	0.03
11/10/2024										
18/10/2024										
25/10/2024										
1/11/2024	16	9	<1	0.005	<0.005	<0.005	<0.005	0.1	0.01	0.04
8/11/2024										
15/11/2024										
22/11/2024										

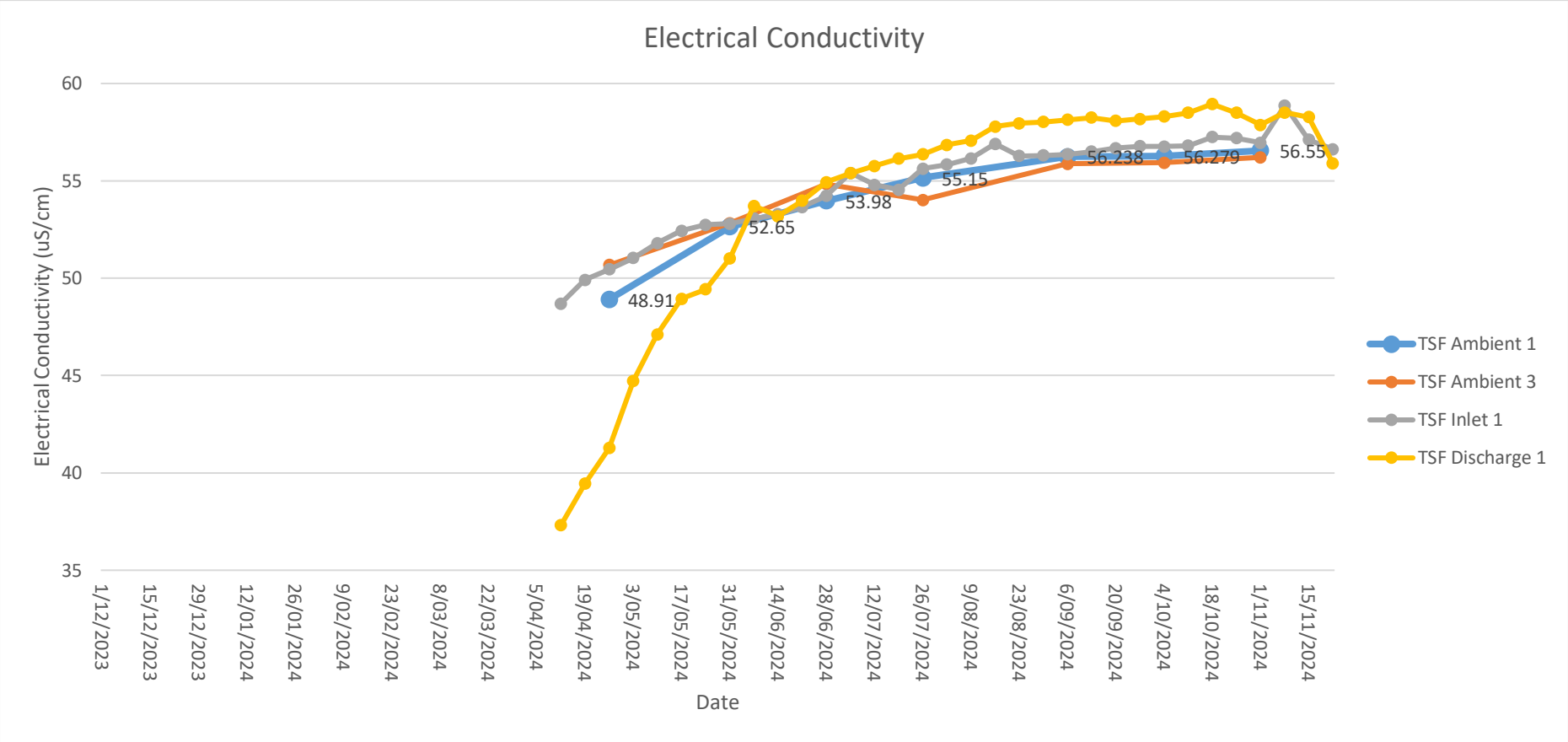
Reference Units	TSF Inlet 1									
	Total Suspended Solids mg/L	Biological Oxygen Demand mg/L	Chlorophyll a µg/L	Ammonia as N mg/L	Nitrate as N mg/L	Nitrite as N mg/L	NOx as N mg/L	Total Nitrogen mg/L	Phosphate as P mg/L	Phosphorus - Total mg/L
1/12/2023	90	5	<1	0.051	<0.005	<0.005	0.008	0.5	<0.005	0.06
8/12/2023	Ponds empty. No discharge.									
15/12/2023	Ponds empty. No discharge.									
22/12/2023	Ponds empty. No discharge.									
29/12/2023	Ponds empty. No discharge.									
5/01/2024	Ponds empty. No discharge.									
12/01/2024	Ponds empty. No discharge.									
19/01/2024	Ponds empty. No discharge.									
26/01/2024	Ponds empty. No discharge.									
2/02/2024	Ponds empty. No discharge.									
9/02/2024	Ponds empty. No discharge.									
16/02/2024	Ponds empty. No discharge.									
23/02/2024	Ponds empty. No discharge.									
1/03/2024	Ponds empty. No discharge.									
8/03/2024	Ponds empty. No discharge.									
15/03/2024	Ponds empty. No discharge.									
22/03/2024	Ponds empty. No discharge.									
29/03/2024	Ponds empty. No discharge.									
5/04/2024	Ponds empty. No discharge.									
12/04/2024										
19/04/2024										
26/04/2024	25	<5	4	0.18	<0.005	<0.005	<0.005	0.7	0.01	0.06
3/05/2024										
10/05/2024										
17/05/2024										
24/05/2024										
31/05/2024	20	10	2	0.11	0.005	<0.005	0.005	0.4	0.01	0.04
7/06/2024										
14/06/2024										
21/06/2024										
28/06/2024	14	<5	1	0.12	<0.005	<0.005	<0.005	<0.1	0.01	0.05
5/07/2024										
12/07/2024										
19/07/2024										
26/07/2024	38	<5	3	0.043	0.005	<0.005	0.008	0.6	0.04	0.04
2/08/2024										
9/08/2024										
16/08/2024										
23/08/2024										
30/08/2024										
6/09/2024	32	<5	3	0.053	0.01	<0.005	0.01	0.6	0.02	0.05
13/09/2024										
20/09/2024										
27/09/2024										
4/10/2024	51	8	5	0.28	0.09	<0.005	0.09	0.8	0.02	0.05
11/10/2024										
18/10/2024										
25/10/2024										
1/11/2024	26	8	4	0.16	0.007	<0.005	0.008	0.5	0.02	0.04
8/11/2024										
15/11/2024										
22/11/2024										

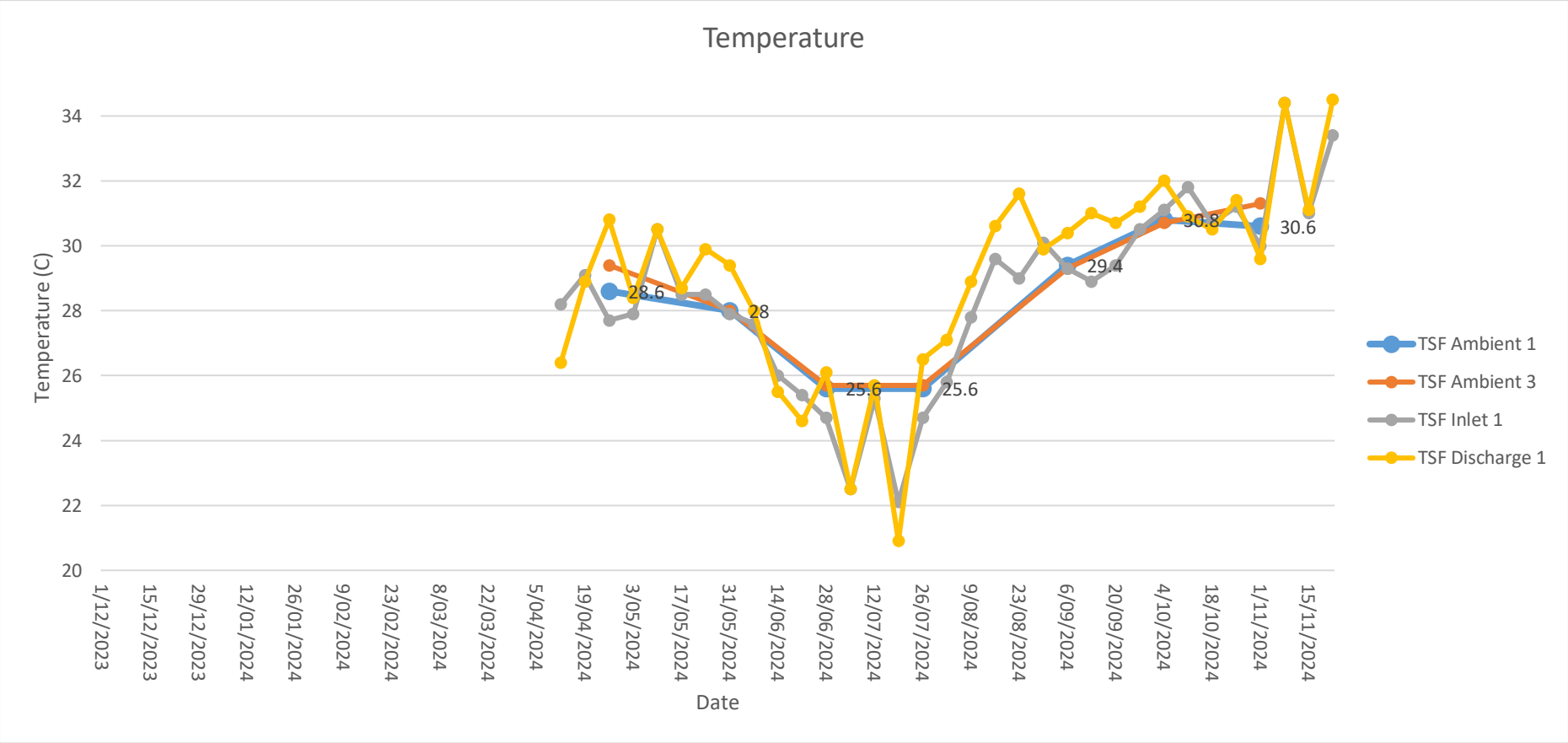
Reference Units	TSF Discharge 1									
	Total Suspended Solids mg/L	Biological Oxygen Demand mg/L	Chlorophyll a µg/L	Ammonia as N mg/L	Nitrate as N mg/L	Nitrite as N mg/L	NOx as N mg/L	Total Nitrogen mg/L	Phosphate as P mg/L	Phosphorus - Total mg/L
1/12/2023	92	<5	1	0.024	<0.005	<0.005	<0.005	0.3	<0.005	0.03
8/12/2023	Ponds empty. No discharge.									
15/12/2023	Ponds empty. No discharge.									
22/12/2023	Ponds empty. No discharge.									
29/12/2023	Ponds empty. No discharge.									
5/01/2024	Ponds empty. No discharge.									
12/01/2024	Ponds empty. No discharge.									
19/01/2024	Ponds empty. No discharge.									
26/01/2024	Ponds empty. No discharge.									
2/02/2024	Ponds empty. No discharge.									
9/02/2024	Ponds empty. No discharge.									
16/02/2024	Ponds empty. No discharge.									
23/02/2024	Ponds empty. No discharge.									
1/03/2024	Ponds empty. No discharge.									
8/03/2024	Ponds empty. No discharge.									
15/03/2024	Ponds empty. No discharge.									
22/03/2024	Ponds empty. No discharge.									
29/03/2024	Ponds empty. No discharge.									
5/04/2024	Ponds empty. No discharge.									
12/04/2024										
19/04/2024										
26/04/2024	8	<5	4	0.13	<0.005	<0.005	0.005	0.2	<0.005	0.04
3/05/2024										
10/05/2024										
17/05/2024										
24/05/2024										
31/05/2024	16	10	2	0.057	<0.005	<0.005	<0.005	0.2	<0.005	0.02
7/06/2024										
14/06/2024										
21/06/2024										
28/06/2024	17	<5	2	0.15	<0.005	<0.005	0.006	0.2	<0.005	0.04
5/07/2024										
12/07/2024										
19/07/2024										
26/07/2024	12	<5	2	0.018	<0.005	<0.005	<0.005	0.3	<0.005	0.02
2/08/2024										
9/08/2024										
16/08/2024										
23/08/2024										
30/08/2024										
6/09/2024	14	<5	1	0.019	0.006	<0.005	0.007	0.3	<0.005	0.03
13/09/2024										
20/09/2024										
27/09/2024										
4/10/2024	20	6	2	0.12	0.063	<0.005	0.06	0.2	<0.005	0.03
11/10/2024										
18/10/2024										
25/10/2024										
1/11/2024	6	8	<1	0.021	<0.005	<0.005	<0.005	0.2	<0.005	0.03
8/11/2024										
15/11/2024										
22/11/2024										

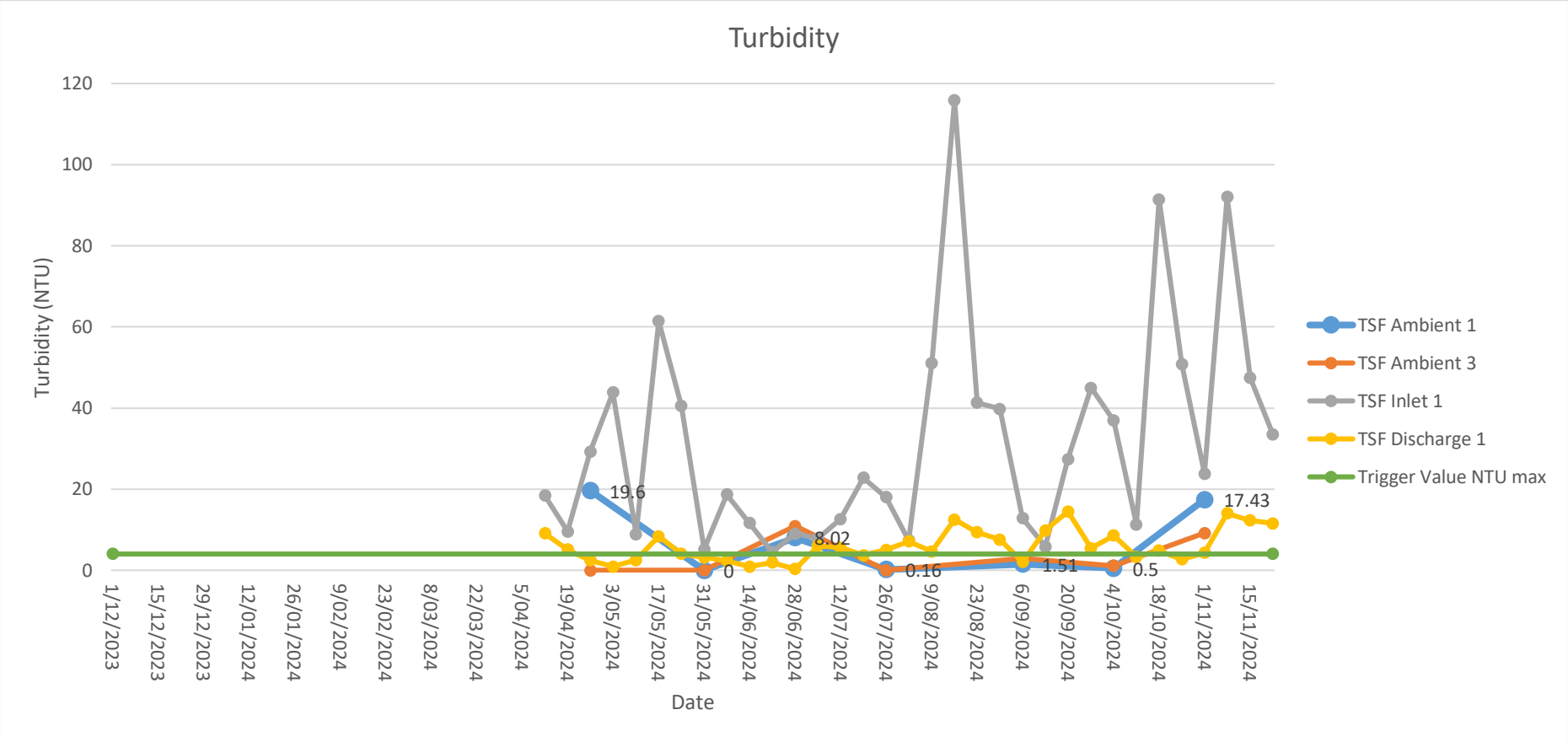
Graphs of Results

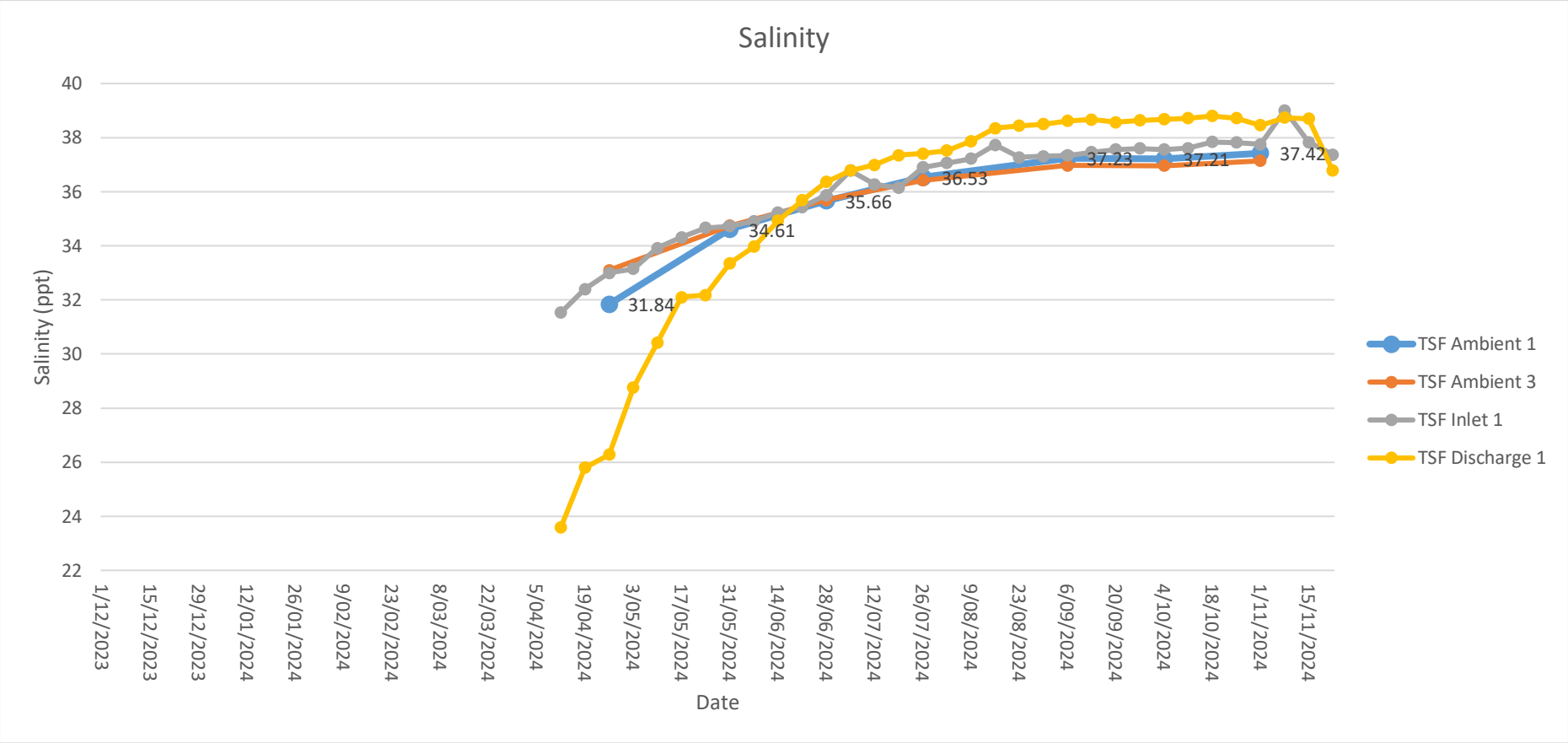


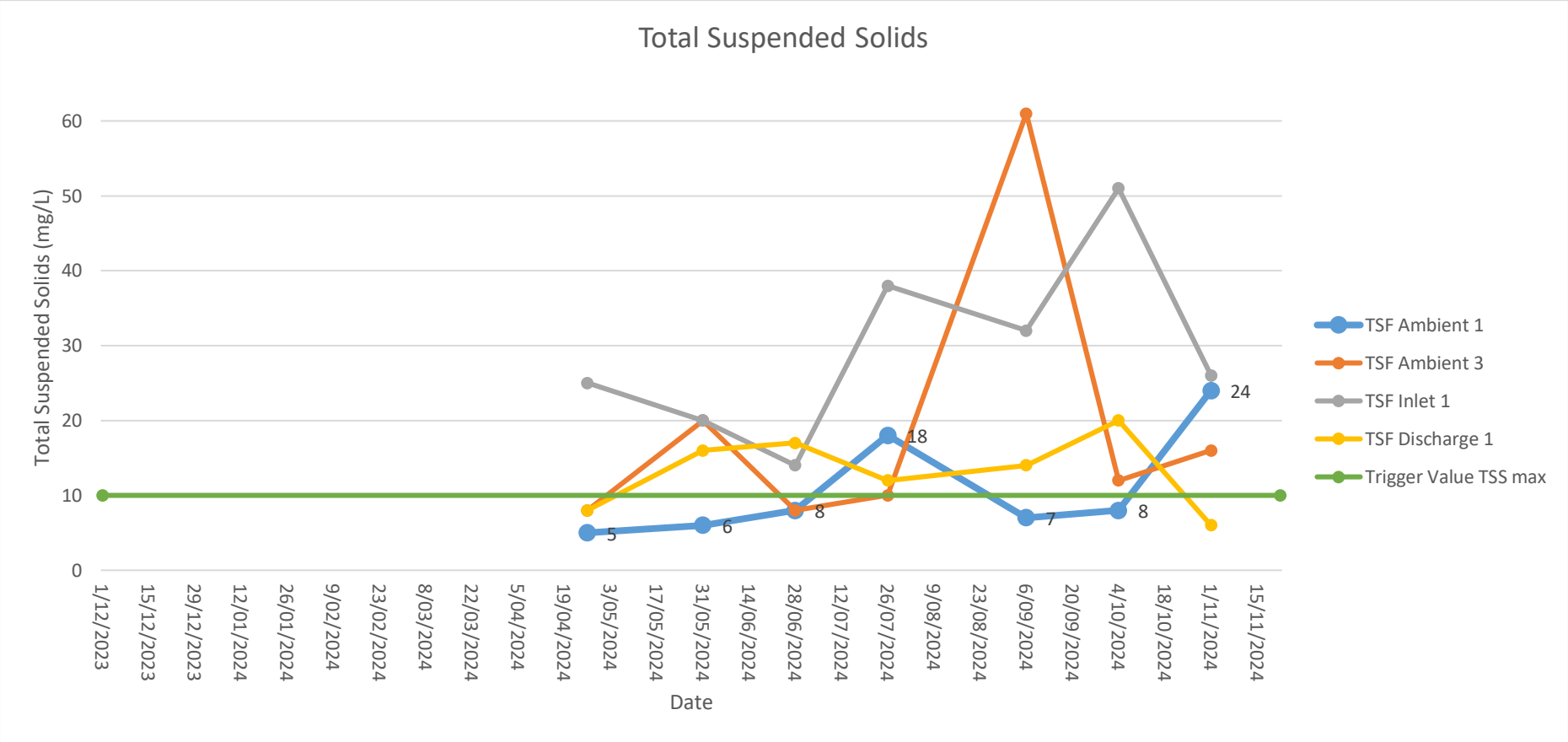

pH
8.9
8.4
7.9
7.4
6.9
6.4
5.9
pH
8.29
8.32
8.34
8.43
8.2
8.2
8.13
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1
Trigger Value pH min
Trigger Value pH max

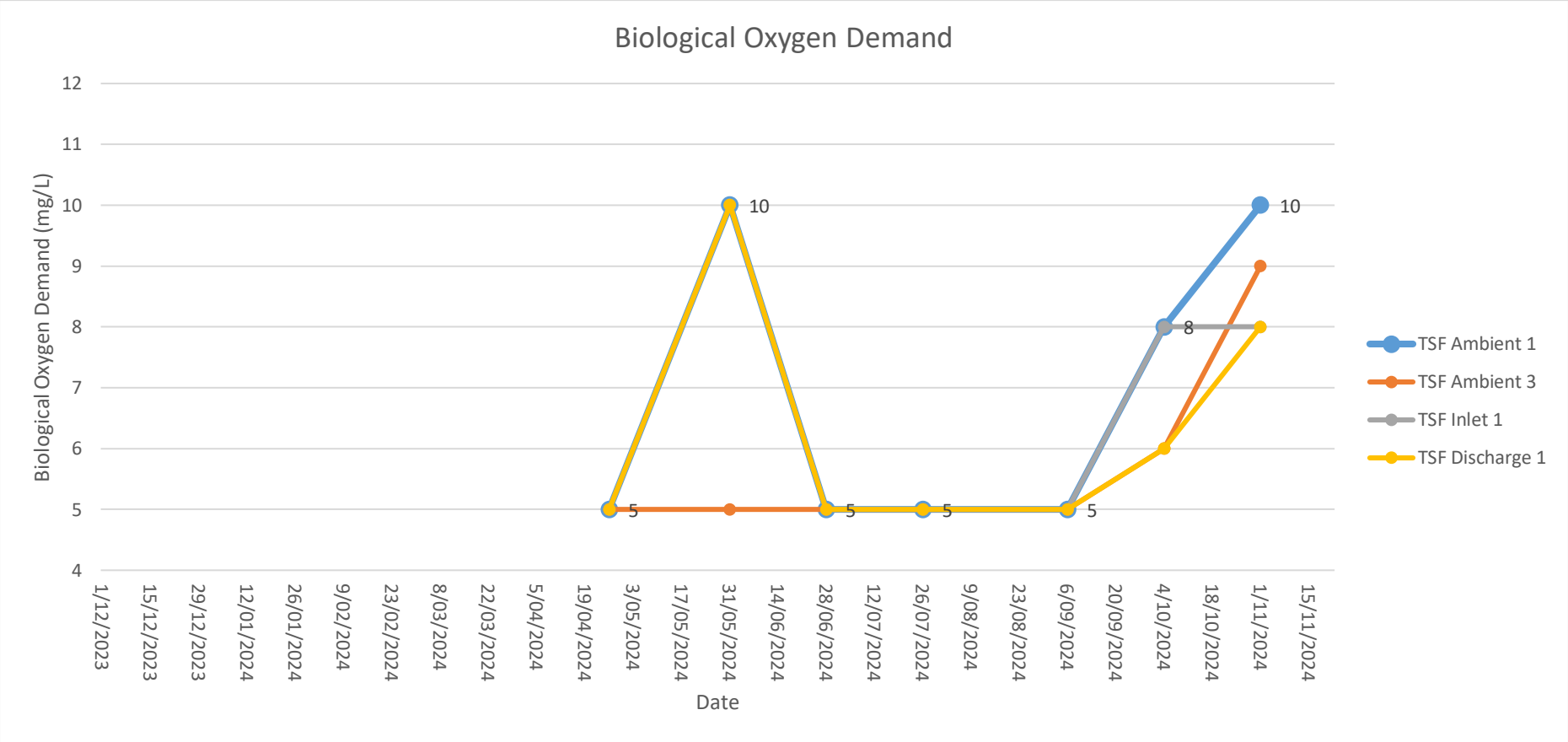

Electrical Conductivity
Electrical Conductivity (uS/cm)
60
55
50
45
40
35
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
48.91
52.65
53.98
55.15
56.238
56.279
56.55
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1

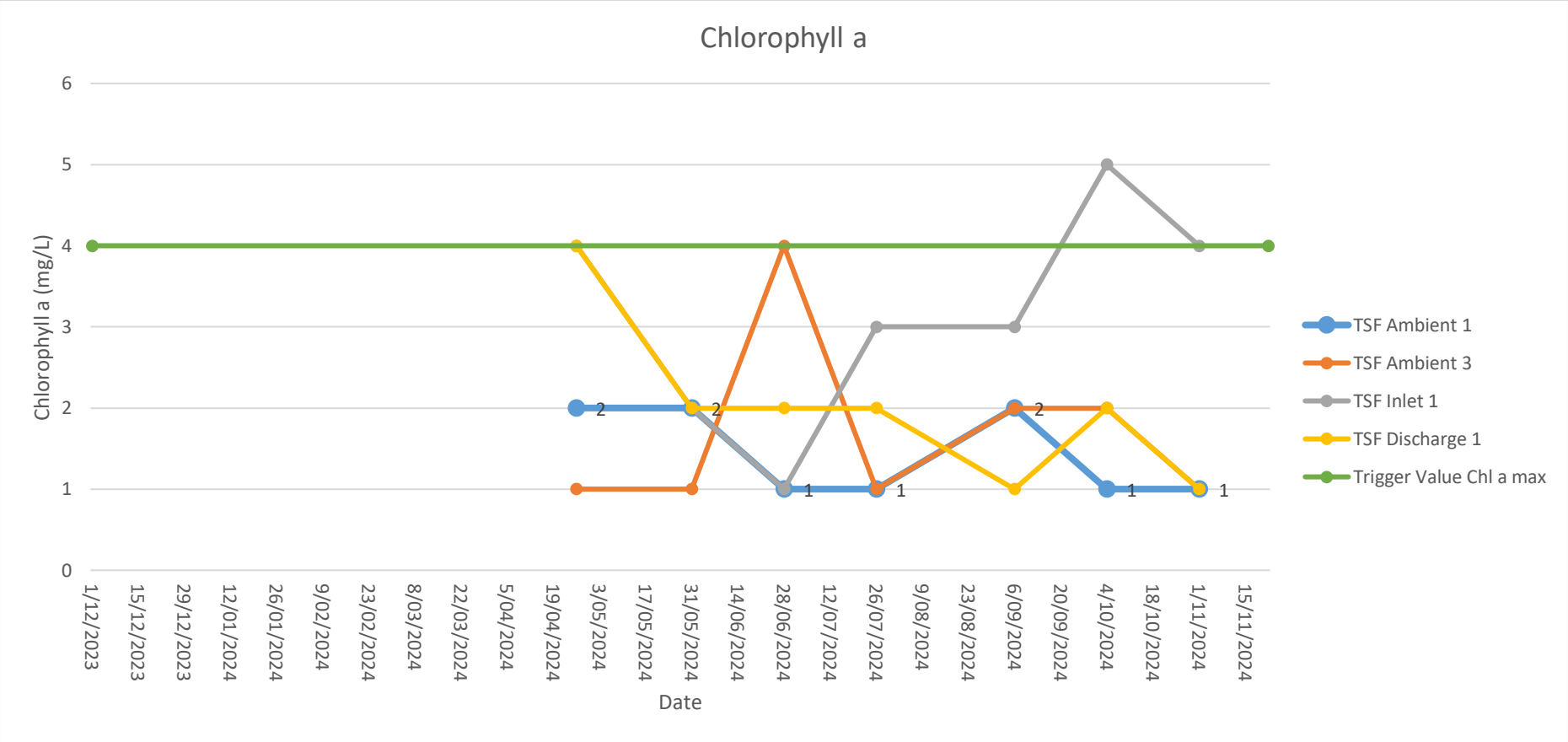

Temperature
Temperature (C)
34
32
30
28
26
24
22
20
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
28.6
28
25.6
25.6
29.4
30.8
30.6
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1

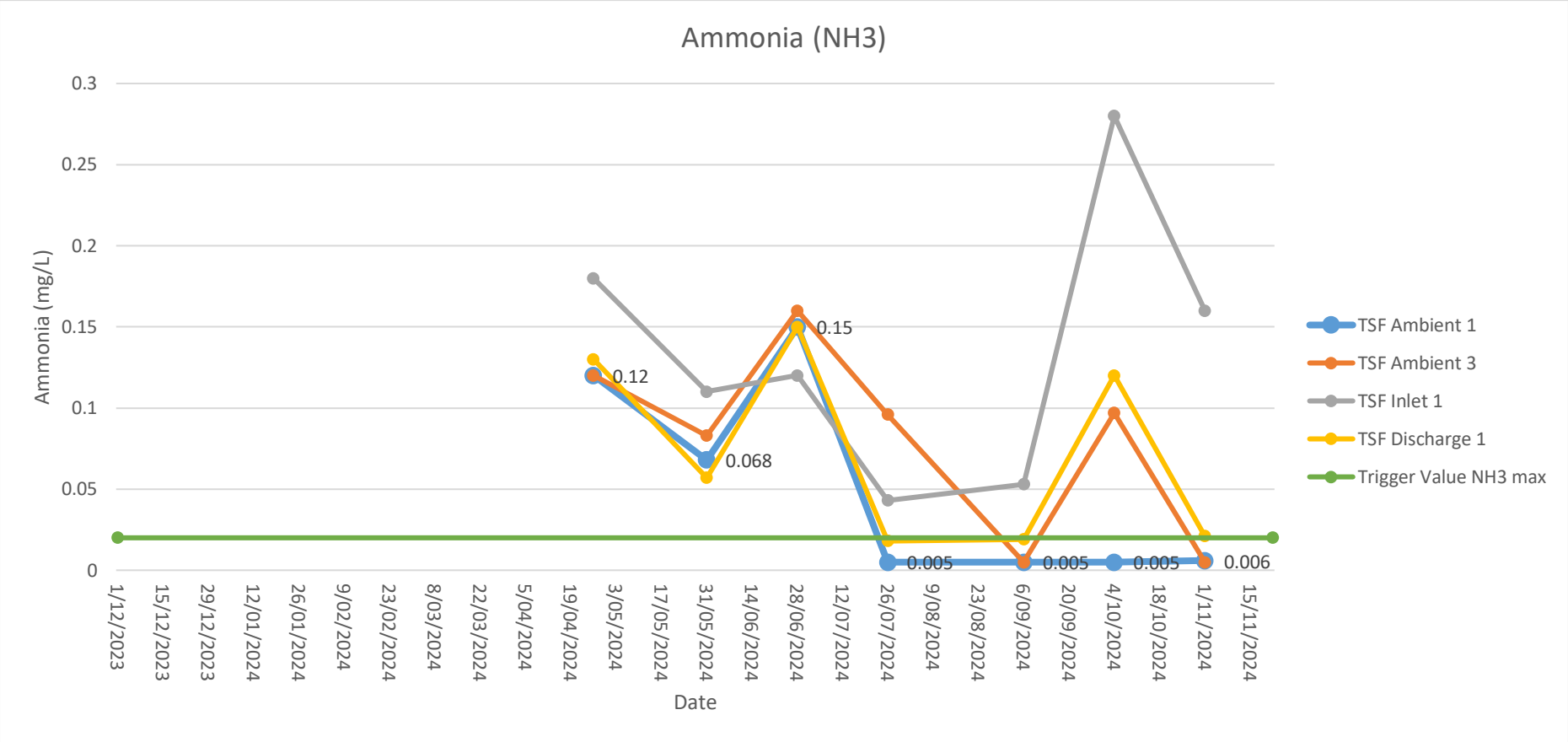

Turbidity
Turbidity (NTU)
120
100
80
60
40
20
0
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
19.6
0
8.02
0.16
1.51
0.5
17.43
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1
Trigger Value NTU max

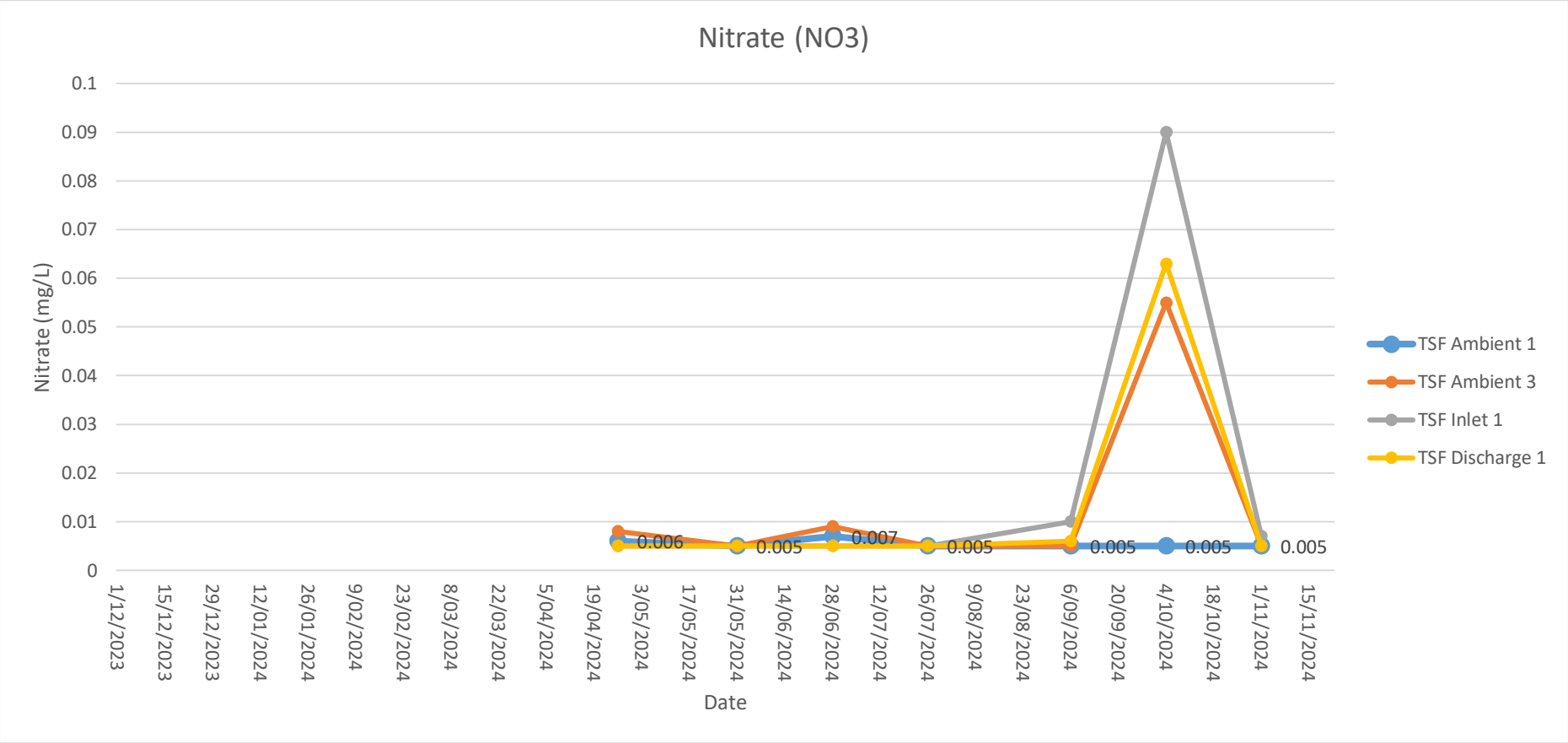

Salinity
Salinity (ppt)
40
38
36
34
32
30
28
26
24
22
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
31.84
34.61
35.66
36.53
37.23
37.21
37.42
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1

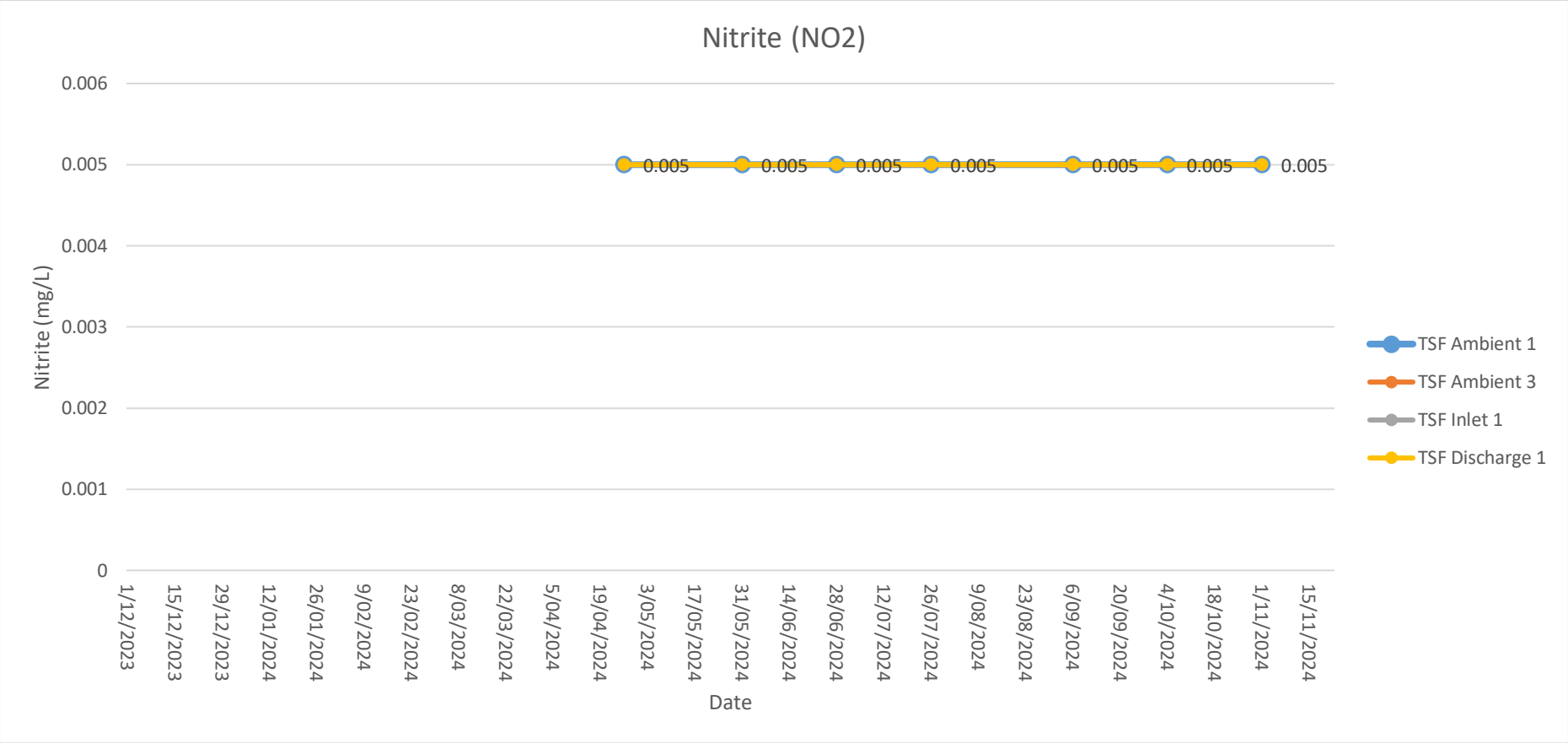

Total Suspended Solids
Total Suspended Solids (mg/L)
60
50
40
30
20
10
0
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
5
6
8
18
7
8
24
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1
Trigger Value TSS max

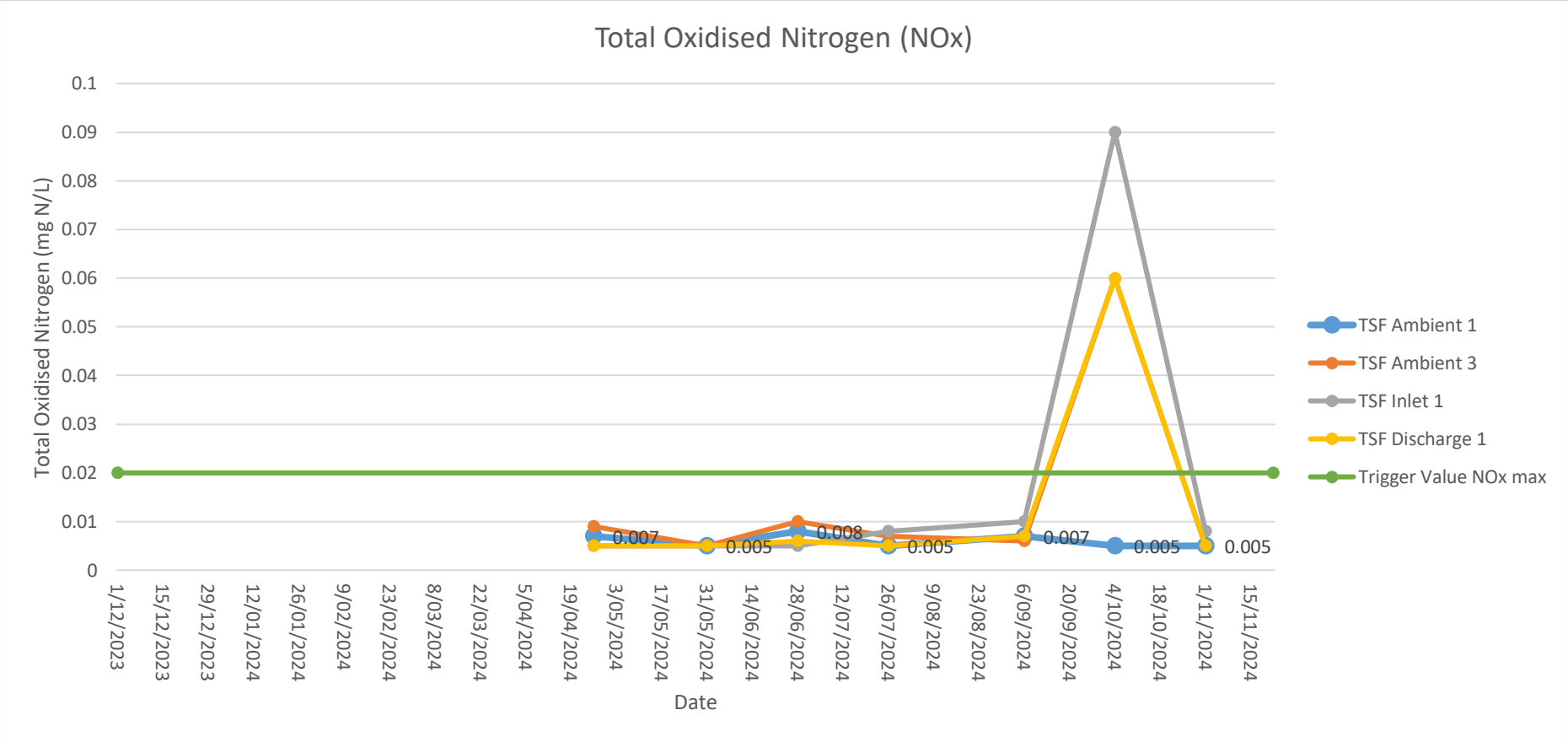

Biological Oxygen Demand
Biological Oxygen Demand (mg/L)
12
11
10
9
8
7
6
5
4
10
10
8
5
5
5
5
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1

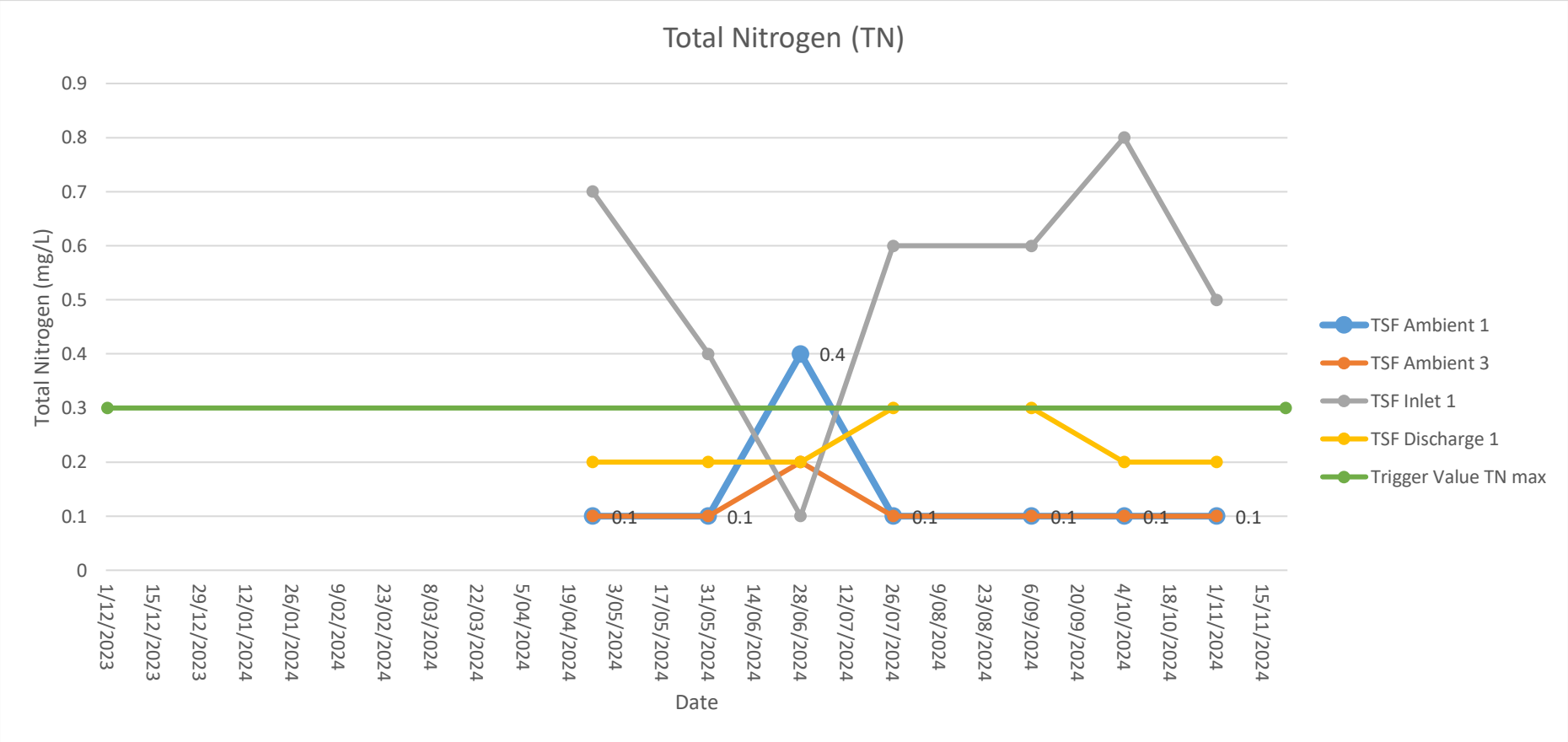

Chlorophyll a
Chlorophyll a (mg/L)
0
1
2
3
4
5
6
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1
Trigger Value Chl a max

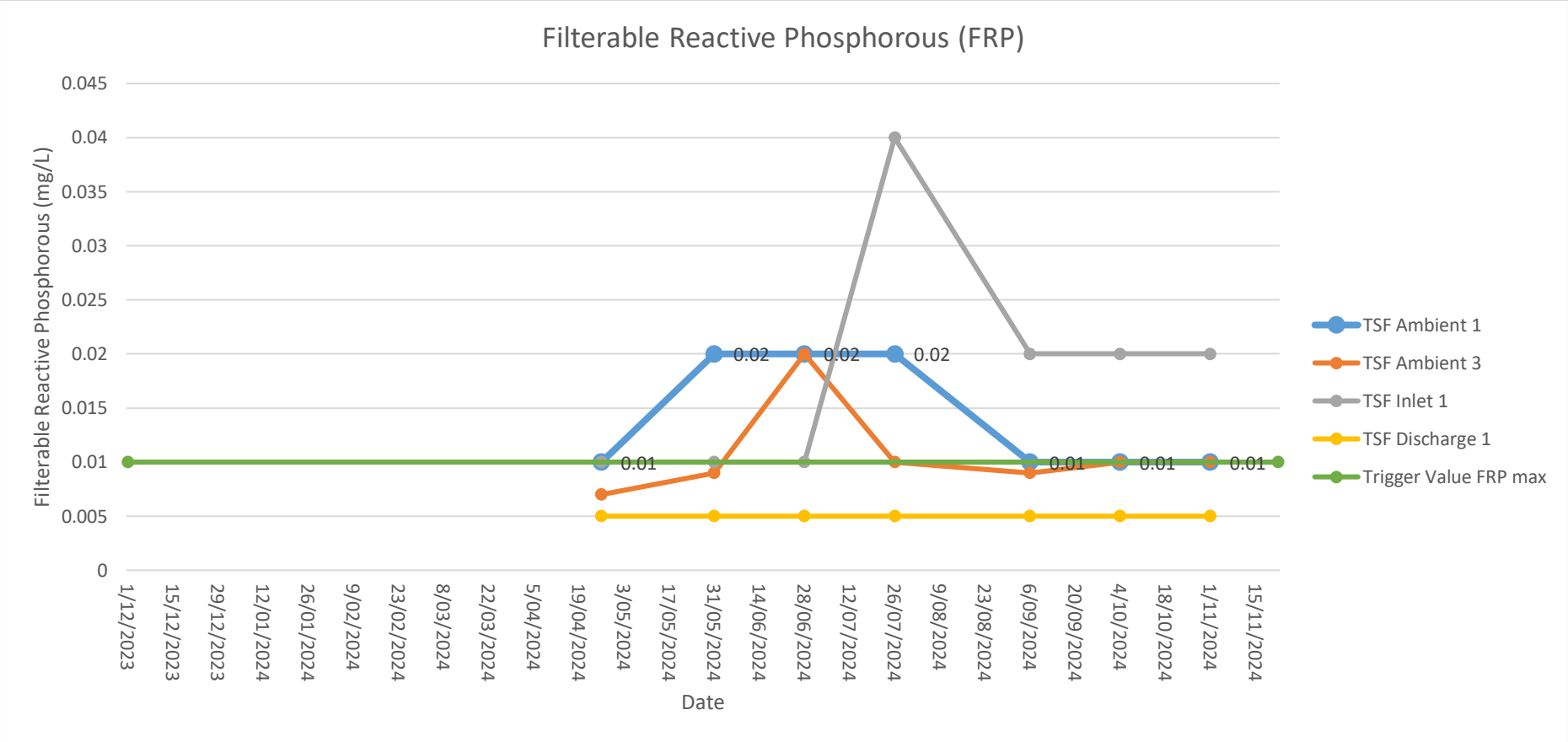

Ammonia (NH3)
Ammonia (mg/L)
0.3
0.25
0.2
0.15
0.1
0.05
0
0.12
0.068
0.15
0.005
0.005
0.005
0.006
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1
Trigger Value NH3 max

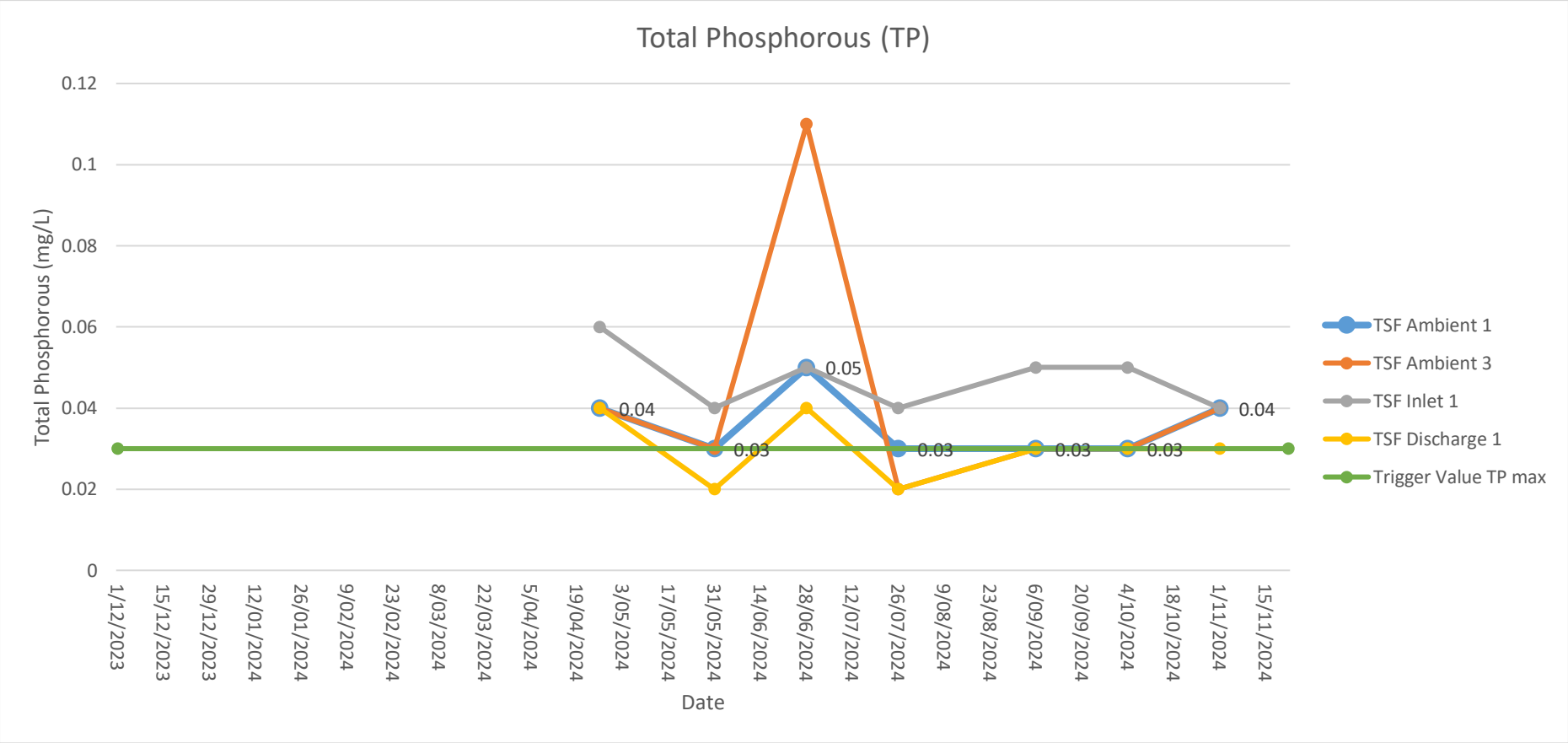

Nitrate (NO3)
Nitrate (mg/L)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
0.006
0.005
0.007
0.005
0.005
0.005
0.005
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1


Nitrite (NO2)
0.006
0.005
0.004
0.003
0.002
0.001
0
Nitrite (mg/L)
0.005
0.005
0.005
0.005
0.005
0.005
0.005
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1


Total Oxidised Nitrogen (NOx)
Total Oxidised Nitrogen (mg N/L)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
0.007
0.005
0.008
0.005
0.007
0.005
0.005
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1
Trigger Value NOx max


Total Nitrogen (TN)
Total Nitrogen (mg/L)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0.4
0.1
0.1
0.1
0.1
0.1
0.1
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1
Trigger Value TN max


Filterable Reactive Phosphorous (FRP)
Filterable Reactive Phosphorous (mg/L)
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
0.02
0.02
0.02
0.01
0.01
0.01
0.01
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1
Trigger Value FRP max


Total Phosphorous (TP)
Total Phosphorous (mg/L)
0.12
0.1
0.08
0.06
0.04
0.02
0
0.04
0.03
0.05
0.03
0.03
0.03
0.04
1/12/2023
15/12/2023
29/12/2023
12/01/2024
26/01/2024
9/02/2024
23/02/2024
8/03/2024
22/03/2024
5/04/2024
19/04/2024
3/05/2024
17/05/2024
31/05/2024
14/06/2024
28/06/2024
12/07/2024
26/07/2024
9/08/2024
23/08/2024
6/09/2024
20/09/2024
4/10/2024
18/10/2024
1/11/2024
15/11/2024
Date
TSF Ambient 1
TSF Ambient 3
TSF Inlet 1
TSF Discharge 1
Trigger Value TP max

Water Discharge Log

The water discharge meter at the TSF Discharge 1 monitoring point was destroyed by a fire in late July this year. The replacement is still pending. As such we have lost all data for the volume of water discharged from the pond's facility during this monitoring period.

The water usage during this time has been typical of the last few years. The first pond is filled and stocked in April/May and more ponds are commissioned into production as more pearl oysters are deployed to the site until they are emptied in Nov/Dec. The last 3 years total water usage is as follows:

Monitoring Period	**Discharge Volume (m^3)**
2022 – 2023	755744
2021 – 2022	213231
2020 – 2021	664071
Average	*544348*
Average excluding 2021 - 2022	*709908*

Without data from this years monitoring period it seems logical to use the average of the last 3 years discharge volume for the required calculations. However, the 2021 – 2022 season was shorter due to pump replacement, so excluding this, the average used to calculate should be from 2020 – 2021 and 2022 – 2023. Therefore, the discharge used for the 2023 – 2024 monitoring period is 709908m^3.

Monitoring Results – Quality Assurance / Quality Control Evaluation

In situ (field) measurements for the surface water monitoring plan for this reporting period were conducted weekly when discharging for the TSF Inlet 1 and TSF Discharge 1 sites, and monthly for the TSF Ambient 1 and TSF Ambient 3 sites.

Parameters to be assessed at a NATA accredited laboratory were sampled monthly for all 4 sites.

The site was not in operation from the 8-12-23 until the 12-04-24. No sampling occurred during this period as it is not required during when not discharging.

Discussion and Interpretation of Results

In situ (field) Measurements

The readings at the compliance point for the in situ (field) measurements all fell within the reportable trigger values for pH, dissolved oxygen, and turbidity.

Parameters to be assessed at a NATA accredited laboratory

The measurements at the compliance point for the NATA assessed parameters were within the trigger values for total oxidised nitrogen and chlorophyll a. Exceedances and Non-compliance are reported as follows:

- Non-compliance report for Total Suspended Solids – December 23
- Exceedance report for Total Phosphorus – April 24
- Exceedance report for Total Phosphorus – June 24
- Exceedance report for Total Nitrogen – June 24
- Non-compliance report for Ammonia – June 24
- Exceedance report for Total Suspended Solids – July 24
- Non-compliance report for Phosphate – July 24
- Exceedance report for Total Phosphorus – November 24
- Exceedance report for Total Suspended Solids – November 24

Non-compliance – Total Suspended Solids December 2023

	Total Suspended Solids (mg/L)			
Sampling Date	TSF Ambient 1 (compliance point)	TSF Ambient 3	TSF Inlet 1	TSF Discharge 1
30/11/2023	68	64	90	92
Key				
less than trigger value at compliance point				
exceedance of trigger value at compliance point				
non-compliance of trigger value at compliance point				
less than trigger value for compliance point				
exceedance of trigger value for compliance point				
non-compliance of trigger value for compliance point				
TSS trigger value: 10				
TSS exceedance range: 10 - 30				
TSS non-compliance range: > 30				

The results show a non-compliance of the trigger value for Total Suspended Solids (TSS) at the compliance point, TSF Ambient 1, as recorded on the 30-11-23.

Actual and potential causes and the contributing factors to the non-compliance.

TSS is at is non-compliance levels at all monitoring sites for this sampling period. Therefore, it is unlikely to be caused by any actions undertaken at the ponds but rather likely due to the onset of the wet season environmental conditions. It should also be noted that the value of TSS at the compliance point (68) is less that of the Inlet point (90).

Risk of environmental harm arising from the non-compliance.

Nil.

The action(s) that have or will be undertaken to mitigate any environmental harm arising from the non-compliance.

Nil.

Corrective actions that have or will be undertaken to ensure the non-compliance does not reoccur.

As mentioned in the annual monitoring reports for EPL 283 TSS is often higher than the trigger values. Perhaps we could look at removing TSS as a parameter for the licence or increasing the trigger value.

If no action was taken, why was no action taken.

As mentioned above the TSS value at the compliance point is lower than the inlet value to the ponds site. It is likely not to be an impact from the site operation but rather a wet season environmental issue.

Exceedance – Total Phosphorus April 2024

	Total Phosphorus (mg/L)			
Sampling Date	TSF Ambient 1 (compliance point)	TSF Ambient 3	TSF Inlet 1	TSF Discharge 1
2/05/2024	0.04	0.04	0.06	0.04
Key				
less than trigger value at compliance point				
exceedance of trigger value at compliance point				
non-compliance of trigger value at compliance point				
less than trigger value for compliance point				
exceedance of trigger value for compliance point				
non-compliance of trigger value for compliance point				
TSS trigger value: 0.3				
TSS exceedance range: 0.3 - 0.9				
TSS non-compliance range: > 0.9				

The results show an exceedance of the trigger value for Total Phosphorus (TP) at the compliance point, TSF Ambient 1, as recorded on the 2-5-24.

Actual and potential causes and the contributing factors to the exceedance.

TP is at exceedance levels at all monitoring sites for this sampling period. Therefore, it is unlikely to be caused by any actions undertaken at the ponds but rather likely due to broader environmental conditions. It should also be noted that the value of TSS at the compliance point (0.04) is less that of the Inlet point (0.06).

Risk of environmental harm arising from the exceedance.

Nil.

The action(s) that have or will be undertaken to mitigate any environmental harm arising from the exceedance.

Nil.

Corrective actions that have or will be undertaken to ensure the exceedance does not reoccur.

Nil.

If no action was taken, why was no action taken.

As mentioned above the TP value at the compliance point is lower than the inlet value to the ponds site. It is likely not to be an impact from the site operation but rather a broader environmental issue.

Exceedance – Total Phosphorus June 2024

	Total Phosphorus (mg/L)			
Sampling Date	TSF Ambient 1 (compliance point)	TSF Ambient 3	TSF Inlet 1	TSF Discharge 1
27/06/2024	0.05	0.11	0.05	0.04

Key
less than trigger value at compliance point
exceedance of trigger value at compliance point
non-compliance of trigger value at compliance point
less than trigger value for compliance point
exceedance of trigger value for compliance point
non-compliance of trigger value for compliance point
TSS trigger value: 0.3
TSS exceedance range: 0.3 - 0.9
TSS non-compliance range: > 0.9

The results show an exceedance of the trigger value for Total Phosphorus (TP) at the compliance point, TSF Ambient 1, as recorded on the 27-6-24.

Actual and potential causes and the contributing factors to the exceedance.

TP is at exceedance levels at all monitoring sites for this sampling period. Therefore, it is unlikely to be caused by any actions undertaken at the ponds but rather likely due to broader environmental conditions. It should also be noted that the value of TSS at the compliance point (0.05) is equal to that of the Inlet point (0.05).

Risk of environmental harm arising from the exceedance.

Nil.

The action(s) that have or will be undertaken to mitigate any environmental harm arising from the exceedance.

Nil.

Corrective actions that have or will be undertaken to ensure the exceedance does not reoccur.

Nil.

If no action was taken, why was no action taken.

As mentioned above the TP value at the compliance point is equal to the inlet value to the ponds site. It is likely not to be an impact from the site operation but rather a broader environmental issue.

Exceedance – Total Nitrogen June 2024

	Total Nitrogen (mg/L)			
Sampling Date	TSF Ambient 1 (compliance point)	TSF Ambient 3	TSF Inlet 1	TSF Discharge 1
27/06/2024	0.4	0.2	<0.1	0.2
Key				
less than trigger value at compliance point				
exceedance of trigger value at compliance point				
non-compliance of trigger value at compliance point				
less than trigger value for compliance point				
exceedance of trigger value for compliance point				
non-compliance of trigger value for compliance point				
TSS trigger value: 0.3				
TSS exceedance range: 0.3 - 0.9				
TSS non-compliance range: > 0.9				

The results show an exceedance of the trigger value for Total Nitrogen (TN) at the compliance point, TSF Ambient 1, as recorded on the 27-6-24.

Actual and potential causes and the contributing factors to the exceedance.

TN is at is exceedance at the compliance point for this sampling period. There is only a small amount of stock in the ponds and there has been no fertilizer or feed inputs added. It seems this is linked to high ammonia levels observed during the same sampling period (see EPL Non-compliance report – Ammonia June 2023). These high ammonia levels were observed across all sample sites for a period of 3 months during the completion of the wet season.

Risk of environmental harm arising from the exceedance.

Nil.

The action(s) that have or will be undertaken to mitigate any environmental harm arising from the exceedance.

Nil.

Corrective actions that have or will be undertaken to ensure the exceedance does not reoccur.

Nil.

If no action was taken, why was no action taken.

As mentioned above, this TN exceedance seems to be caused by the high ammonia levels observed during the same sampling period. These ammonia levels were observed across all sample sites for a period of 3 months during the completion of the wet season. It is therefore likely that this is a result of a broader environmental issue, possibly from the closure of the wet season, and not a reflection of any impact from the use of the ponds.

Non-compliance – Ammonia June 2024

	Ammonia as N (mg/L)			
Sampling Date	TSF Ambient 1 (compliance point)	TSF Ambient 3	TSF Inlet 1	TSF Discharge 1
2/05/2024	0.12	0.12	0.18	0.13
29/05/2024	0.068	0.083	0.11	0.057
27/06/2024	0.15	0.16	0.12	0.15

Key
less than trigger value at compliance point
exceedance of trigger value at compliance point
non-compliance of trigger value at compliance point
less than trigger value for compliance point
exceedance of trigger value for compliance point
non-compliance of trigger value for compliance point

TSS trigger value: 0.02
TSS exceedance range: 0.02 - 0.06
TSS non-compliance range: > 0.06

The results show a non-compliance of the trigger value for Ammonia as N at the compliance point, TSF Ambient 1, as recorded on the 2-5-24, 29-5-24, and 27-6-24. This report serves as a non-compliance for both three times exceedance of the trigger value, and for exceedance of the trigger value three times in row.

Actual and potential causes and the contributing factors to the non-compliance.

Ammonia is at non-compliance and exceedance levels at all monitoring sites for the sampling periods listed above. Therefore, it is unlikely to be caused by any actions undertaken at the ponds but rather likely due to broader environmental conditions. It is possible that the ammonia levels are high due to the conclusion of the wet season conditions during this time. There is only a small amount of stock in the ponds and there has been no fertilizer or feed inputs added.

Risk of environmental harm arising from the non-compliance.

Nil.

The action(s) that have or will be undertaken to mitigate any environmental harm arising from the non-compliance.

Nil.

Corrective actions that have or will be undertaken to ensure the non-compliance does not reoccur.

Nil.

If no action was taken, why was no action taken.

As mentioned above, these ammonia levels were observed across all sample sites for a period of 3 months during the completion of the wet season. It is therefore likely that this is a result of a broader environmental issue, possibly from the closure of the wet season, and not a reflection of any impact from the use of the ponds.

Exceedance – Total Suspended Solids July 2024

	Total Suspended Solids (mg/L)			
Sampling Date	TSF Ambient 1 (compliance point)	TSF Ambient 3	TSF Inlet 1	TSF Discharge 1
31/07/2024	18	10	38	12

Key
less than trigger value at compliance point
exceedance of trigger value at compliance point
non-compliance of trigger value at compliance point
less than trigger value for compliance point
exceedance of trigger value for compliance point
non-compliance of trigger value for compliance point
TSS trigger value: 10
TSS exceedance range: 10 - 30
TSS non-compliance range: > 30

The results show an exceedance of the trigger value for Total Suspended Solids (TSS) at the compliance point, TSF Ambient 1, as recorded on the 31-7-24.

Actual and potential causes and the contributing factors to the exceedance.

TSS is at is exceedance or non-compliance levels at all monitoring sites for this sampling period. Therefore, it is unlikely to be caused by any actions undertaken at the ponds but rather likely due to broader environmental conditions. It should also be noted that the value of TSS at the compliance point (18) is less that of the Inlet point (38).

Risk of environmental harm arising from the exceedance.

Nil.

The action(s) that have or will be undertaken to mitigate any environmental harm arising from the exceedance.

Nil.

Corrective actions that have or will be undertaken to ensure the exceedance does not reoccur.

As mentioned in the annual monitoring reports for EPL 283 TSS is often higher than the trigger values. Perhaps we could look at removing TSS as a parameter for the licence or increasing the trigger value.

If no action was taken, why was no action taken.

As mentioned above the TSS value at the compliance point is lower than the inlet value to the ponds site. It is likely not to be an impact from the site operation but rather a broader environmental issue.

Non-compliance – Phosphate July 2024

	Phosphate as P (mg/L)			
Sampling Date	TSF Ambient 1 (compliance point)	TSF Ambient 3	TSF Inlet 1	TSF Discharge 1
29/05/2024	0.02	0.009	0.01	<0.005
27/06/2024	0.02	0.02	0.01	<0.005
31/07/2024	0.02	0.01	0.04	<0.005

Key
less than trigger value at compliance point
exceedance of trigger value at compliance point
non-compliance of trigger value at compliance point
less than trigger value for compliance point
exceedance of trigger value for compliance point
non-compliance of trigger value for compliance point
TSS trigger value: 0.01
TSS exceedance range: 0.01 - 0.03
TSS non-compliance range: > 0.03

The results show a non-compliance of the trigger value for Phosphate as P at the compliance point, TSF Ambient 1, as recorded on the 29-5-24, 27-6-24 and 31-7-24. This report serves as a non-compliance for exceedance of the trigger value three times in row.

Actual and potential causes and the contributing factors to the non-compliance.

Phosphate as P is at exceedance levels at the compliance point as shown in the table above. Phosphate as P at the discharge point for each of the sampling periods is less than 0.005 mg/l. It could therefore be assumed that the operations at the ponds is not a factor in the high phosphate readings.

Risk of environmental harm arising from the non-compliance.

Nil.

The action(s) that have or will be undertaken to mitigate any environmental harm arising from the non-compliance.

Nil.

Corrective actions that have or will be undertaken to ensure the non-compliance does not reoccur.

Nil.

If no action was taken, why was no action taken.

As mentioned above, these increased phosphate levels were observed at the compliance point, but they were very low at the discharge point. The increase in phosphate at the compliance point would therefore not have been a result of operations at the ponds facility. It is likely a result of a broader environmental issue.

Exceedance – Total Suspended Solids November 2024

	Total Suspended Solids (mg/L)			
Sampling Date	TSF Ambient 1 (compliance point)	TSF Ambient 3	TSF Inlet 1	TSF Discharge 1
1/11/2024	24	16	26	6

Key
less than trigger value at compliance point
exceedance of trigger value at compliance point
non-compliance of trigger value at compliance point
less than trigger value for compliance point
exceedance of trigger value for compliance point
non-compliance of trigger value for compliance point
TSS trigger value: 10
TSS exceedance range: 10 - 30
TSS non-compliance range: > 30

The results show an exceedance of the trigger value for Total Suspended Solids (TSS) at the compliance point, TSF Ambient 1, as recorded on the 1-11-24.

Actual and potential causes and the contributing factors to the exceedance.

TSS is at is exceedance levels at all monitoring sites for this sampling period except the discharge point. Therefore, it is unlikely to be caused by any actions undertaken at the ponds but rather likely due to broader environmental conditions. It should also be noted that the value of TSS at the compliance point (24) is less that of the inlet point (26) and higher than the discharge point (6).

Risk of environmental harm arising from the exceedance.

Nil.

The action(s) that have or will be undertaken to mitigate any environmental harm arising from the exceedance.

Nil.

Corrective actions that have or will be undertaken to ensure the exceedance does not reoccur.

As mentioned in the annual monitoring reports for EPL 283 TSS is often higher than the trigger values. Perhaps we could look at removing TSS as a parameter for the licence or increasing the trigger value.

If no action was taken, why was no action taken.

As mentioned above the TSS value at the compliance point is lower than the value at the inlet point, and higher than the value at the discharge point at the ponds site. It is likely not to be an impact from the site operation but rather a broader environmental issue.

Exceedance – Total Phosphorus November 2024

	Total Phosphorus (mg/L)			
Sampling Date	TSF Ambient 1 (compliance point)	TSF Ambient 3	TSF Inlet 1	TSF Discharge 1
1/11/2024	0.04	0.04	0.04	0.03

Key
less than trigger value at compliance point
exceedance of trigger value at compliance point
non-compliance of trigger value at compliance point
less than trigger value for compliance point
exceedance of trigger value for compliance point
non-compliance of trigger value for compliance point
TSS trigger value: 0.03
TSS exceedance range: 0.03 - 0.09
TSS non-compliance range: > 0.09

The results show an exceedance of the trigger value for Total Phosphorus (TP) at the compliance point, TSF Ambient 1, as recorded on the 1-11-24.

Actual and potential causes and the contributing factors to the exceedance.

TP is at exceedance levels at all monitoring sites except for the discharge point for this sampling period. Therefore, it is unlikely to be caused by any actions undertaken at the ponds but rather likely due to broader environmental conditions. It should also be noted that the value of TSS at the compliance point (0.04) is equal to that of the inlet point (0.04) and ambient 3 point (0.04). It is also higher than the actual point of discharge (0.03)

Risk of environmental harm arising from the exceedance.

Nil.

The action(s) that have or will be undertaken to mitigate any environmental harm arising from the exceedance.

Nil.

Corrective actions that have or will be undertaken to ensure the exceedance does not reoccur.

Nil.

If no action was taken, why was no action taken.

As mentioned above the TP value at the compliance point is equal to the values at the inlet and ambient 3 sites, and higher than the actual point of discharge. It is likely not to be an impact from the site operation but rather a broader environmental issue.

Conclusion and Proposed Actions

There are instances of exceedances and non-compliance as reported above. Reasonable explanations for each of these are outlined. It is of my opinion that none of these are caused by the operation of the ponds facility or would have caused any environmental harm.

A thought to review the trigger values for the Total Suspended Solids parameter should be considered as the water quality objectives are often exceeded in all monitoring locations.