

Final Environmental ReportPeriod Ending: 25th June 2008

Compiled By: Siobhan Quinn & Thomas McGlynn

Approved By: Tony Doyle

1 Monitoring Data

1.1 Monitoring Equipment

Axonics	<ul style="list-style-type: none">– Axonics plant operated as required for the majority of the reporting period.
PO ₄	<ul style="list-style-type: none">– Due to little or no flow the PO₄ analyser was operational for only a minority of the reporting period.– The composite sampler is in place to cover any shortfalls in the PO₄ analyser.– Due to little or no flow, the pump feeding this equipment was turned off for the majority of the reporting period.– To facilitate the SP1 drain re-lining works, this equipment was disconnected on the 19th of June
TSS	<ul style="list-style-type: none">– Due to little or no flow the TSS analyser was operational for only a minority of the reporting period.– The composite sampler is in place to cover any shortfalls in the TSS analyser.– Due to little or no flow, the pump feeding this equipment was turned off for the majority of the reporting period.– To facilitate the SP1 drain re-lining works, this equipment was disconnected on the 19th of June.
Composite	<ul style="list-style-type: none">– The composite sampler was operational during the reporting period.– To facilitate the SP1 drain re-lining works, the composite sampler was disconnected on the 19th of June as there was insufficient water to sustain the equipment. It was repositioned on the 23rd of June.
Noise	<ul style="list-style-type: none">– There is a single noise monitoring location currently being used – N1.– The other location is visible from off-site and because of current protestor action it cannot be guaranteed that the equipment remains undisturbed.
Vibration	<ul style="list-style-type: none">– There is a single vibration monitoring location currently being used – V1.– The other location is visible from off-site and because of current protestor action it cannot be guaranteed that the equipment remains undisturbed.
Sondes	<ul style="list-style-type: none">– The results are displayed graphically.<ul style="list-style-type: none">○ Any unusual values are explained on the relevant graph.○ Due to little or no flow at D22 & D62 both sondes were disconnected for the majority of the reporting period. They were re-instated on the 23rd of June.○ SP1 was positioned at the corner of the southern pond for the majority of the reporting period. It was disconnected on the 19th of June as the levels had been dropped in the pond to facilitate the re-lining works.○ MP7 disconnected for the reporting period to facilitate maintenance/upgrade works on the borehole.
Weather Station	<ul style="list-style-type: none">– The data used for this reporting period was taken from the on-site meteorological station.
Weirs	<ul style="list-style-type: none">– SP1 weir decommissioned for the drain relining works.

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1.2 Rainfall Data

12/06/08	0.2		19/06/08	3.3
13/06/08	1.4		20/06/08	0.0
14/06/08	0.8		21/06/08	9.8
15/06/08	1.4		22/06/08	30.6
16/06/08	0.4		23/06/08	0.0
17/06/08	10.1		24/06/08	4.1
18/06/08	1.6		25/06/08	11.3
Total Rainfall 75.0mm				

1.3 Summary

Environment	Comments
Surface Water	There was no exceedance during the reporting period.
Groundwater	The groundwater data (Sonde) is within anticipated ranges.
Dust	There was an elevated dust deposition value at D3. From examination, peat had been placed on the frisbee and into the dust pot. This was reported to Mayo County Council and the sample was held for inspection prior to dispatch to the laboratory.
Weather	There was a total of 75.0mm of rainfall during the reporting period, with a temperature range of 5.2°C to 18.3°C
Noise	A reading of 67.1 L _{aeq} was recorded on the 24 th of June, which exceeds the limit of 65 L _{aeq} . However, the average wind speeds exceeded 5 m/s on this day. Wind speeds in excess of 5 m/s negatively impact noise readings (as per EPA Guidance Note on Noise Measurement).
Vibration	No vibration exceedances were recorded during the reporting period, based on the available results

Note: All laboratory data generated on site should be considered indicative only.**2 Environmental Exceedences / Incidents / Complaints**

There was no exceedance during the reporting period.

Surface Water Monitoring Record Sheet: Accredited Laboratory Results

	Date	Cond. µS/cm	Temp °C	Turbidity NTU	DO % Sat	pH pH units	TSS mg l ⁻¹	Ortho- phosphate as P µg l ⁻¹	Nitrate as N mg l ⁻¹	Nitrate as NO ₃ mg l ⁻¹	Total Phosphorus as P mg l ⁻¹	Ammonia as NH ₃ -N mg l ⁻¹	Nitrite as NO ₂ mg l ⁻¹	Aluminium (dissolved) µg l ⁻¹	Aluminium (total) µg l ⁻¹	Phosphate as PO ₄ -P mg l ⁻¹	TDS mg l ⁻¹
Action Limits		400		150		<3.5 or >7.5	25	40	1.5	4.0		0.2	0.025	100	135		
Target Limits		500		200		<3 or >8	35	70	2.6	6.0		0.5	0.05	150	200		
SP1	19/06/2008	270		1.4		7.9	2	<10		<0.44	0.022	0.017	0.039	<20	23	<0.03	202
SP3	19/06/2008	270		1.7		7.3	<2	<10		<0.44	0.022	0.015	0.034	<20	24	<0.03	197
SP1	24/06/2008	272		6.3		7.0	13	20		<0.44	0.082	0.030	0.030	126	172	0.06	190
SP3	24/06/2008	272		2.3		7.0	<2	34		<0.44	0.047	0.022	0.031	<20	30	0.10	186
Additional Monitoring																	
D22	24/06/2008	273		5.3		6.8	6	68		<0.44	0.082	0.059	0.025	27	32	0.21	173
D62	24/06/2008	237		0.6		4.2	<2	16		<0.44	0.032	0.027	0.037	36	43	0.05	116
Axonics Monitoring																	
Pre Axonics	19/06/2008	268		6.9		6.9	10	<10		<0.44	0.026	0.019	0.031	424	701	<0.03	193
Post Axonics	19/06/2008	269		0.5		6.6	<2	<10		<0.44	0.012	0.006	0.056	<20	198	<0.03	198
Pre Axonics	24/06/2008	271		18.3		6.9	17	17		0.79	0.046	0.083	0.041	41	1141	0.05	168
Post Axonics	24/06/2008	272		0.5		6.3	<2	39		0.75	0.067	0.140	0.050	<20	271	0.12	179

I.P. = In Progress

< LOD = Below Limit of Detection

> LOD = Above Limit of Detection

On site laboratory results included in Appendix 1

Grey shaded areas denote parameters that cannot or were not analysed on-site or the lab

Groundwater Monitoring Record Sheet

[illegible]

Graphs provided for MP1, MP2,MP4, MP6 and MP7 for: Temperature, Conductivity, and pH.
NO ground water monitoring during the reporting period

Determinant Results							
	Date Positioned	Date Removed	Ref. Number	Date Dispatched	Date Returned	Weight (mg/sq.m/day)	Comments
Target (Consent) Limit: 350 mg m² d⁻¹ on as a 30 day average							
D1	25/04/2008	26/05/2008	172506	28/05/2008	09/06/2008	134	
D2	25/04/2008	26/05/2008	172507	28/05/2008	09/06/2008	121	
D3	25/04/2008	26/05/2008	172508	28/05/2008	09/06/2008	209	
D4	25/04/2008	26/05/2008	172509	28/05/2008	09/06/2008	119	
D1	26/05/2008	26/06/2008	177618	02/07/2008	11/07/2008	191	
D2	26/05/2008	26/06/2008	177619	02/07/2008	11/07/2008	159	
D3	26/05/2008	26/06/2008	177620	02/07/2008	11/07/2008	1046	Peaty material placed in pot and on the top of the frisbee.
D4	26/05/2008	26/06/2008	177621	02/07/2008	11/07/2008	151	

Monitoring Points are numbered clockwise through the Cardinal Marks (N, E, S, W)

Monitoring Results will be presented monthly

Determinant Results												
Location	Air Temp. (Max)	Air Temp. (Min)	Start Date	Time	Duration	Serial No.	Wind		Results dB			*Comments
							Speed (m/s)*	Direction (Degrees)	L _{Aeq}	L _{Amin}	L _{Amax}	
Action Limit									60			
Target Limit									65			
N1	15.6	8.3	12/06/2008	07:00:00	11:00:00	2539533	2.8	174.2	49.0	35.1	82.6	
N1	15.9	8.8	13/06/2008	07:00:00	11:00:00	2539533	3.6	156.6	45.9	<LOD	83.9	
N1	15.4	5.2	16/06/2008	07:00:00	11:00:00	2539533	2.5	106.5	47.4	<LOD	73.0	
N1	15.0	11.0	17/06/2008	07:00:00	11:00:00	2539533	4.7	43.0	63.7	34.9	94.1	
N1	15.7	10.9	18/06/2008	07:00:00	11:00:00	2539533	4.5	67.5	51.0	32.0	68.8	
N1	15.0	9.1	19/06/2008	07:00:00	11:00:00	2539533	4.1	115.0	49.0	32.9	68.6	
N1	15.4	5.3	20/06/2008	08:00:00	10:00:00	2539533	2.6	117.3	48.3	<LOD	80.9	
N1	18.3	7.4	23/06/2008	07:00:00	11:00:00	2539533	1.1	141.8	64.6	<LOD	92.5	Machines working in close proximity
N1	14.9	11.9	24/06/2008	07:00:00	11:00:00	2539533	5.2	317.0	67.1	43.1	93.1	Machines working in close proximity
N1	16.2	11.7	25/06/2008	07:00:00	11:00:00	2539533	6.5	71.3	59.8	46.2	89.3	Machines working in close proximity
* Wind speeds in excess of 5 m/s negatively impact noise readings (as per EPA Guidance Note on Noise Measureme												

* Wind speeds in excess of 5 m/s negatively impact noise readings (as per EPA Guidance Note on Noise Measurement)

Flow Weir Record Sheet						
Determinant Results						
Date	SP1			SP3		
	Max (l/s)	Min (l/s)	Avg (l/s)	Max (l/s)	Min (l/s)	Avg (l/s)
12/06/2008				0.36	0.20	0.25
13/06/2008				0.56	-0.28	0.20
14/06/2008				-0.28	-0.58	-0.52
15/06/2008				-0.58	-0.63	-0.60
16/06/2008				0.13	-0.68	-0.56
17/06/2008				6.26	0.13	1.18
18/06/2008				2.21	0.67	1.21
19/06/2008				1.30	0.13	0.74
20/06/2008				0.13	-0.38	-0.14
21/06/2008				2.91	-0.18	0.11
22/06/2008				21.49	2.56	11.02
23/06/2008				2.91	0.20	1.66
24/06/2008				2.91	0.28	1.61
25/06/2008				8.23	1.74	3.92

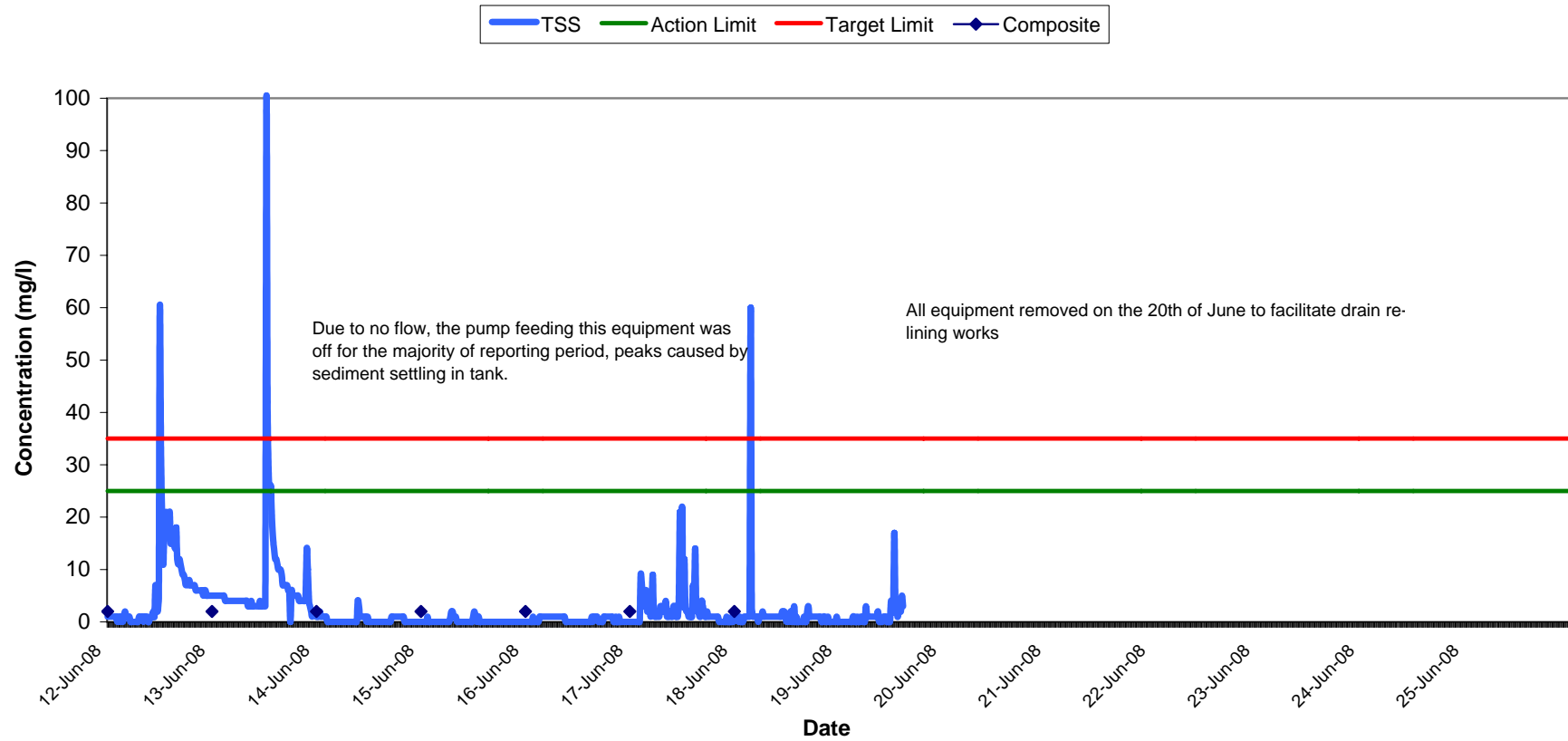
Note: Negative values indicate low flow conditions.
SP1 weir temporarily removed to facilitate drain lining works.

Vibration Monitoring Record Sheet

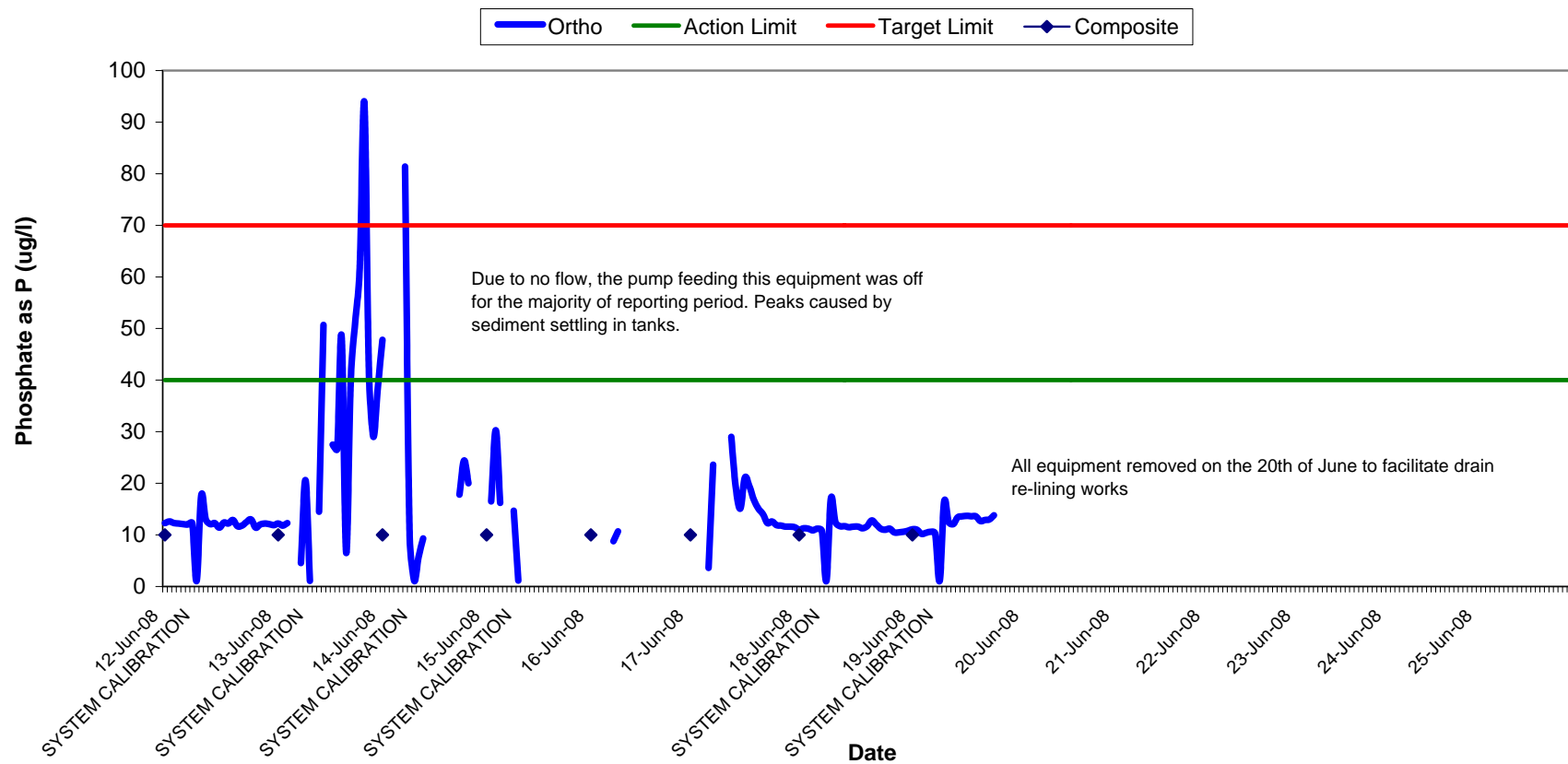
Determinant Results									
Location	Date Positioned	Date Removed	Event Date	Event Time	Peak Vector Sum	Tran PPV	Vert PPV	Long PPV	Comments
V1	12-Jun-08		12:00						Monitor Started
			12-Jun-08	12:05	8.23	4.95	6.73	1.40	Sensor check
		13/06/2008		11:40					Monitor Stopped
	13-Jun-08			11:49					Monitor Started
			20-Jun-08	8:29	7.05	4.32	5.84	2.92	Sensor check
		23-Jun-08		7:46					Monitor Stopped
	23-Jun-08			7:53					Monitor Started
			24-Jun-08	16:58	28.9	27.6	22.9	23.9	Sensor check
		26-Jun-08		14:05					Monitor Stopped

Vibration meter was located at V1 only.

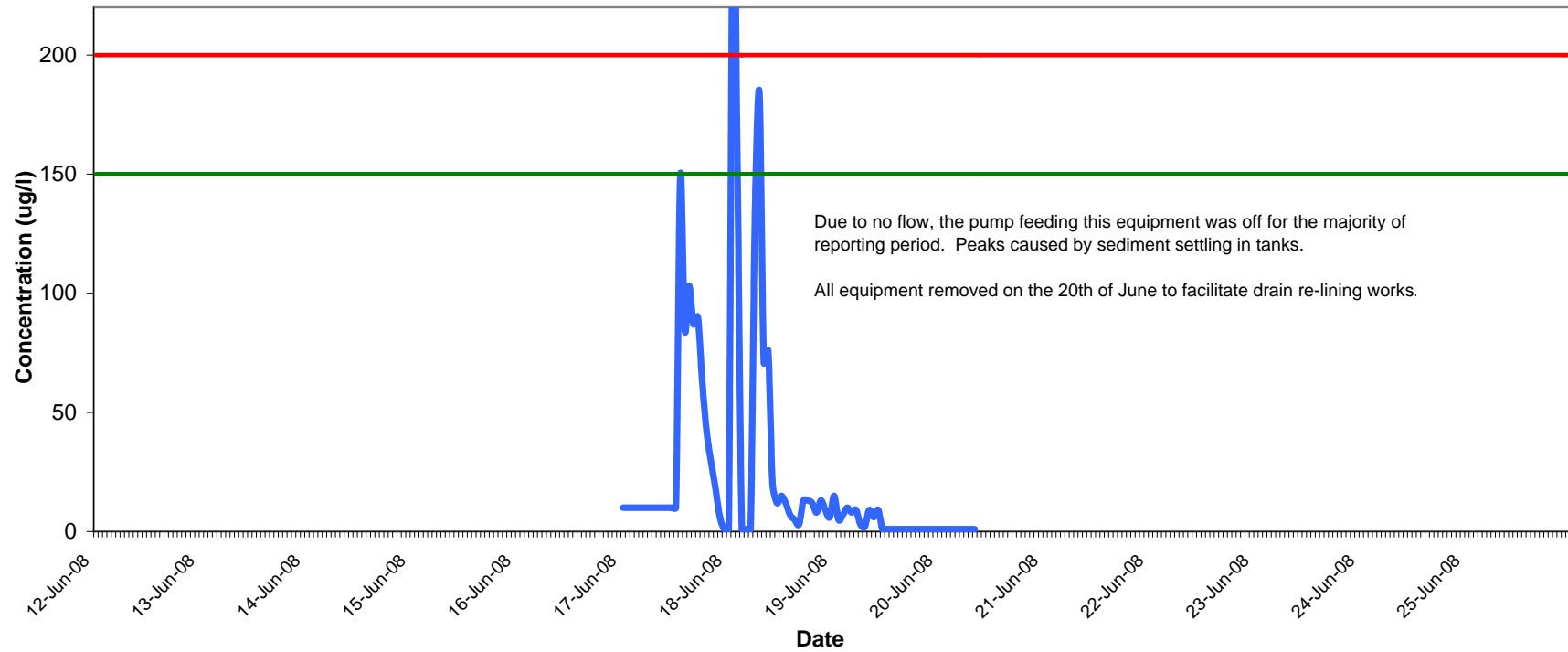
Total Suspended Solids Results at SP1 Wk 25-26



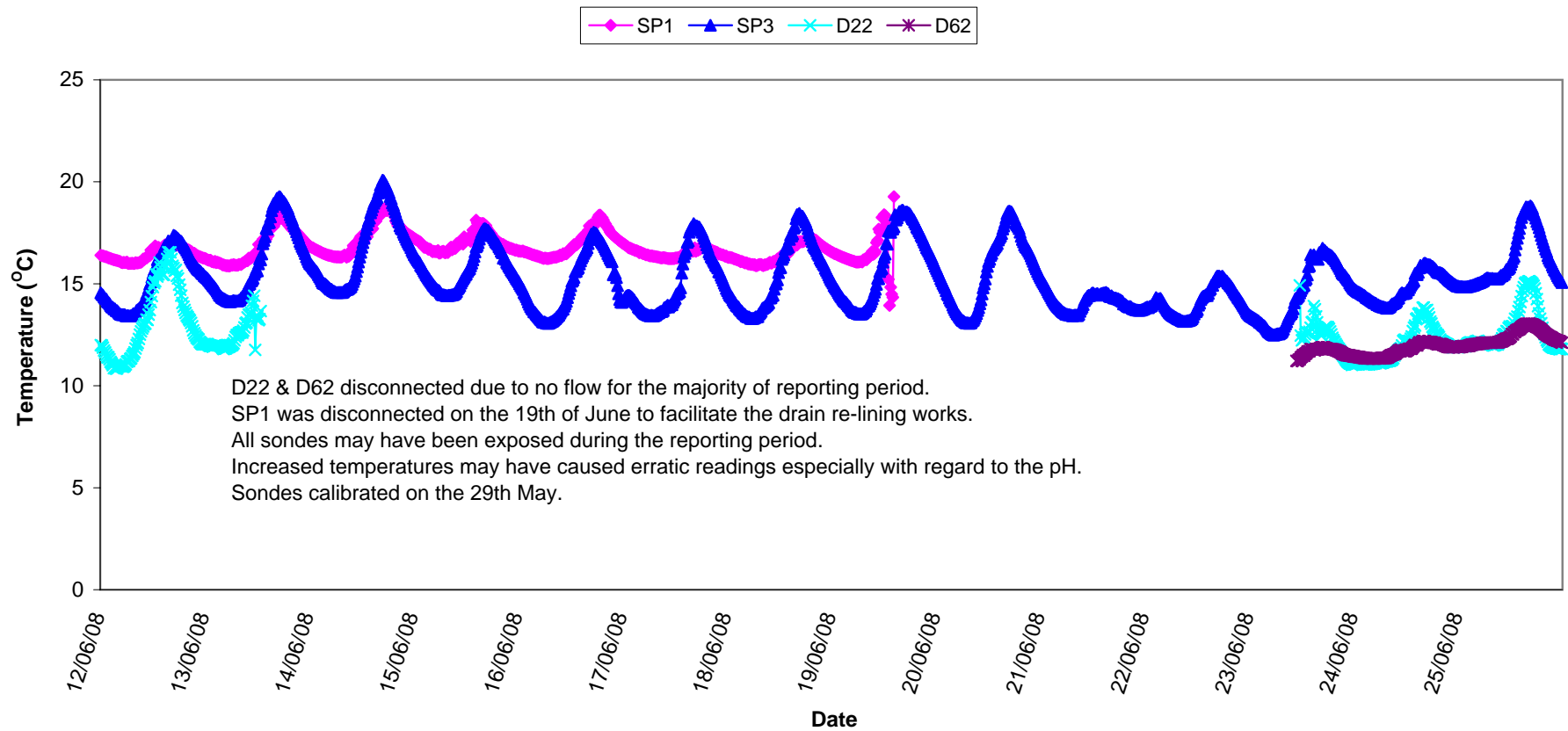
Orthophosphate Results at SP1 Wk 25-26



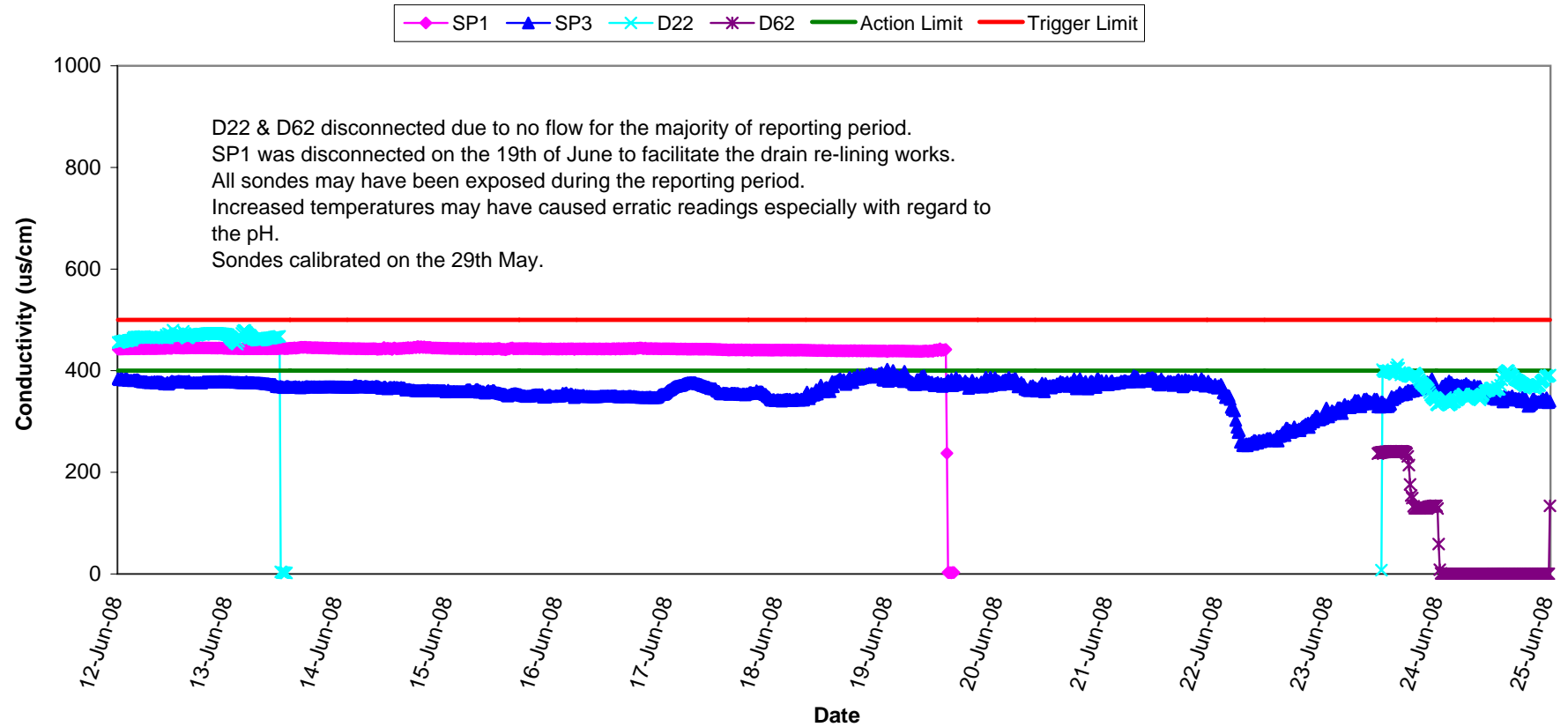
Aluminium Concentration at SP1 Wk 25-26



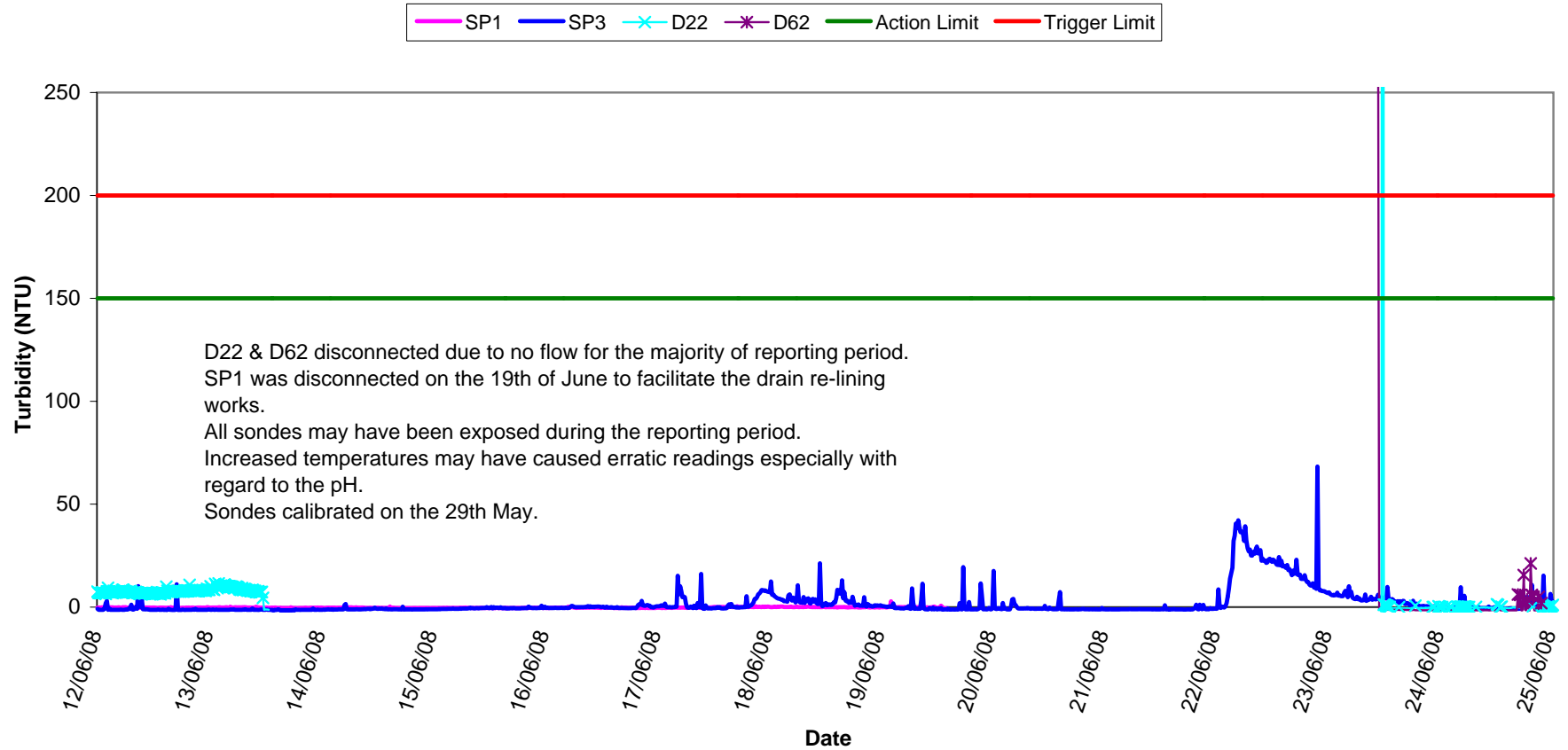
Temperature - Surface Waters, Wk 25-26



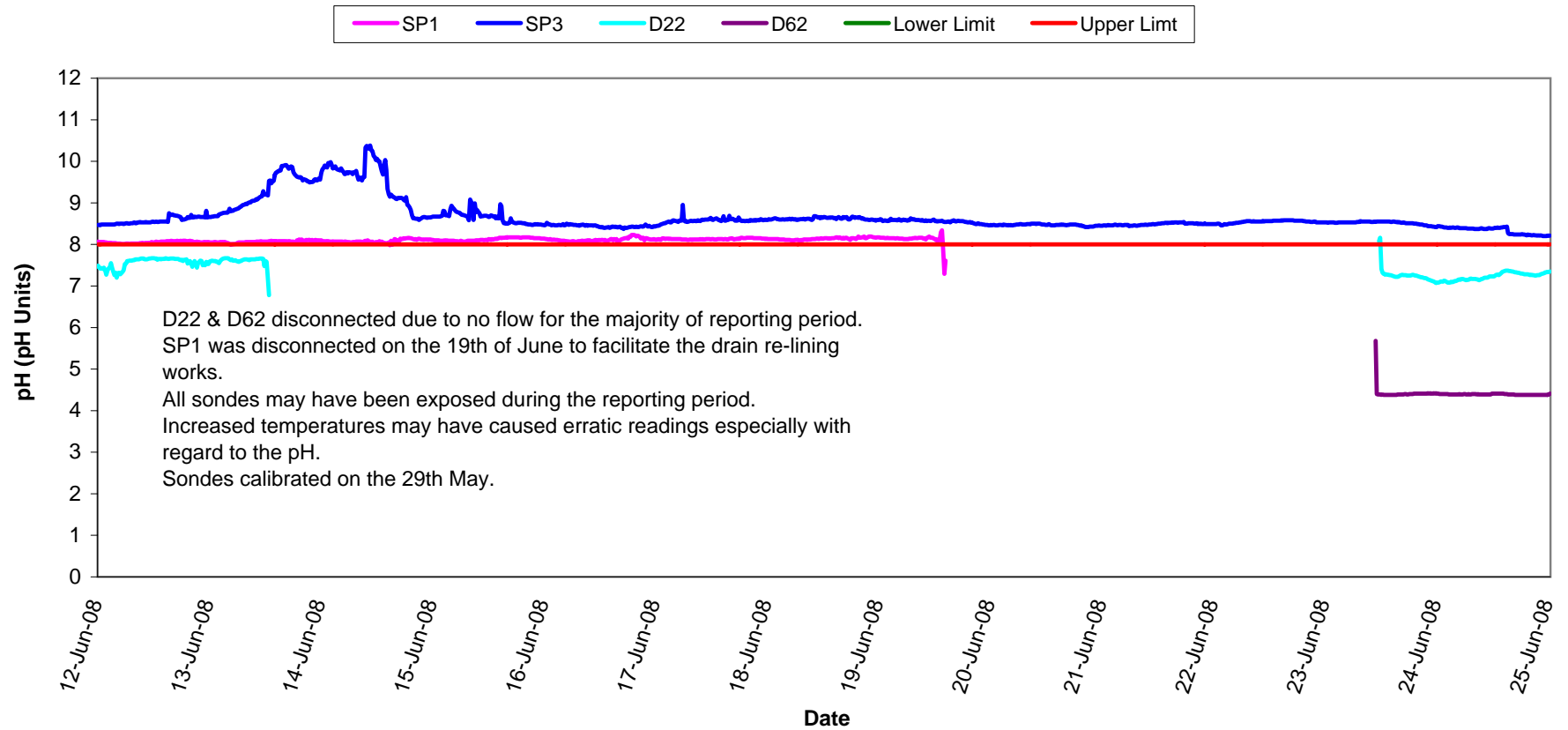
Conductivity - Surface Waters, Wk 25-26



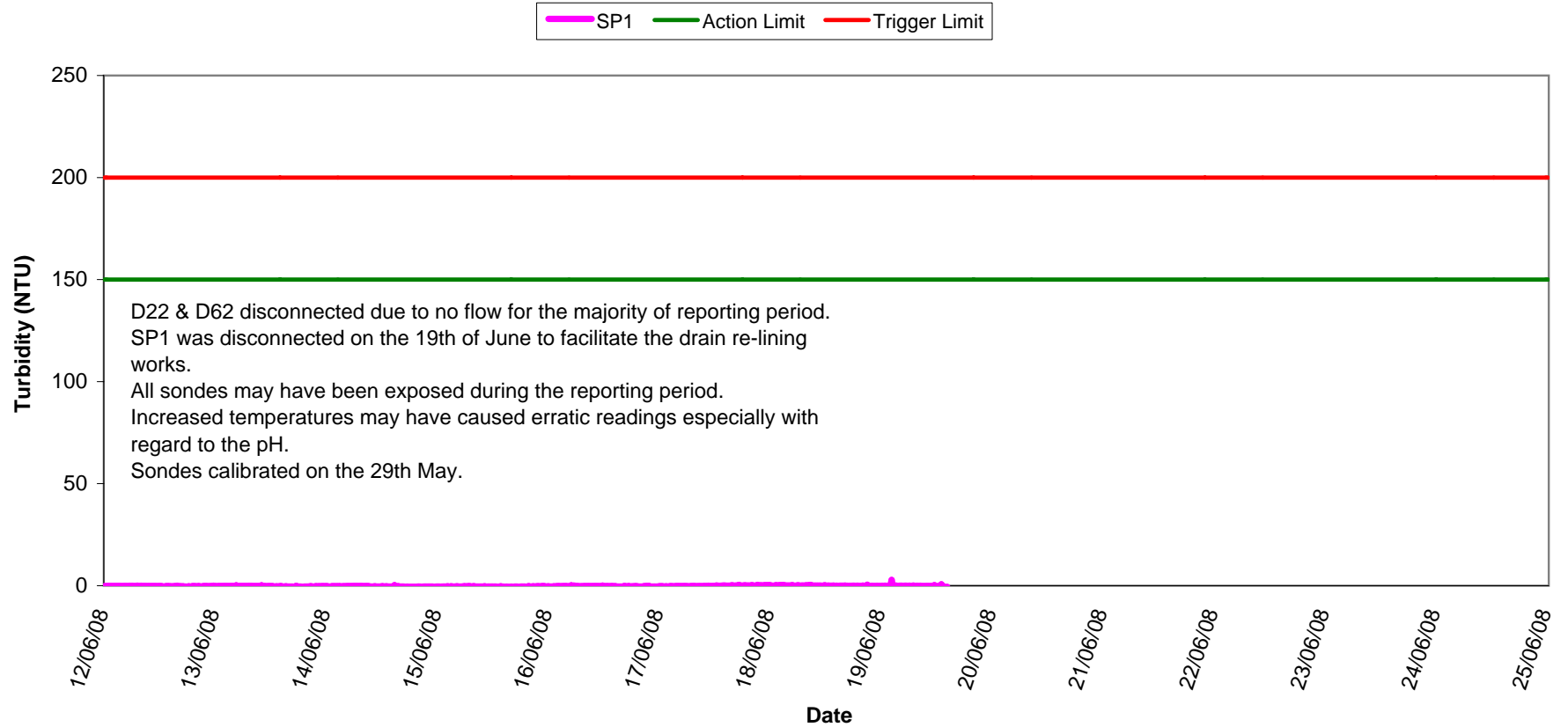
Turbidity - Surface Waters, Wk 25-26



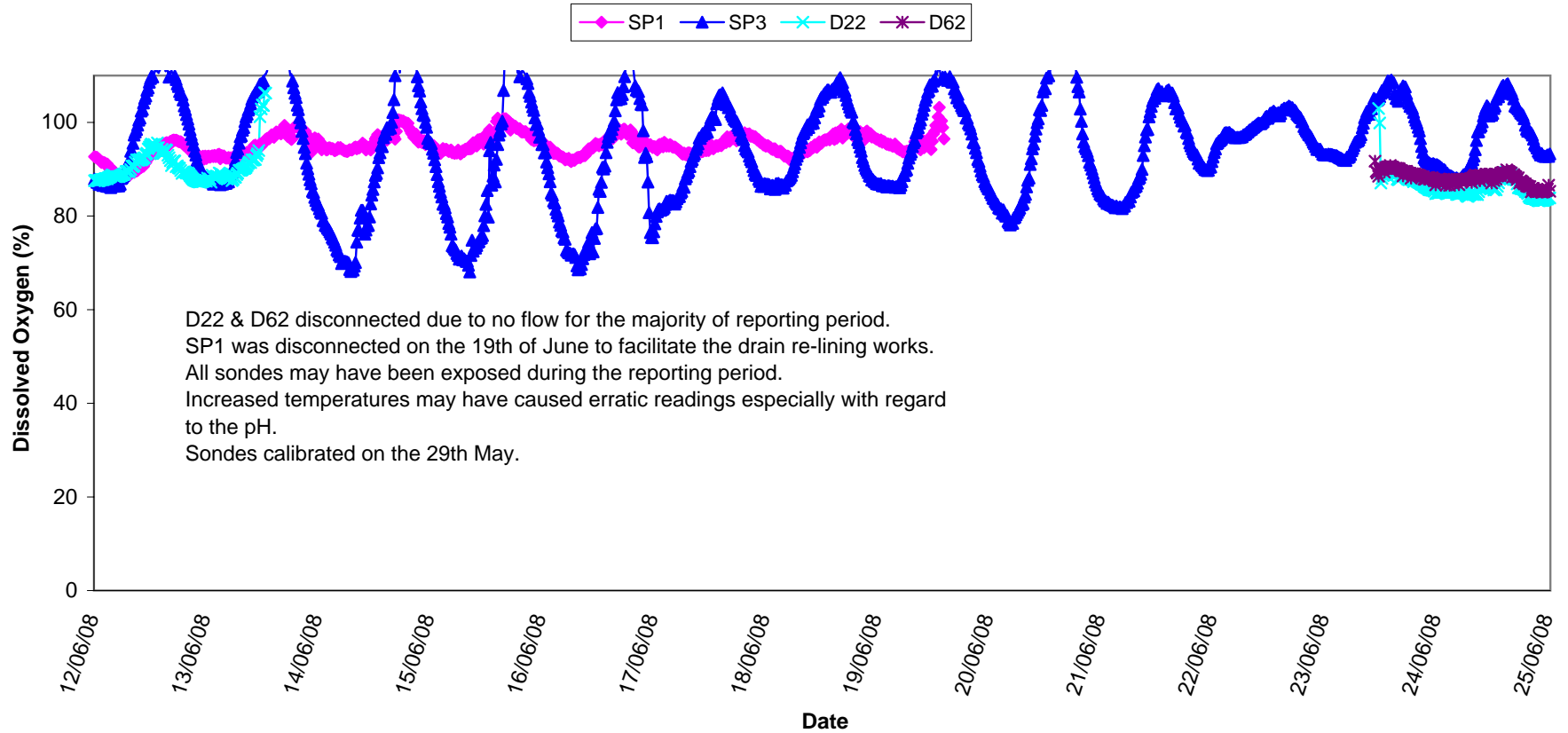
pH - Surface Waters, Wk 25-26



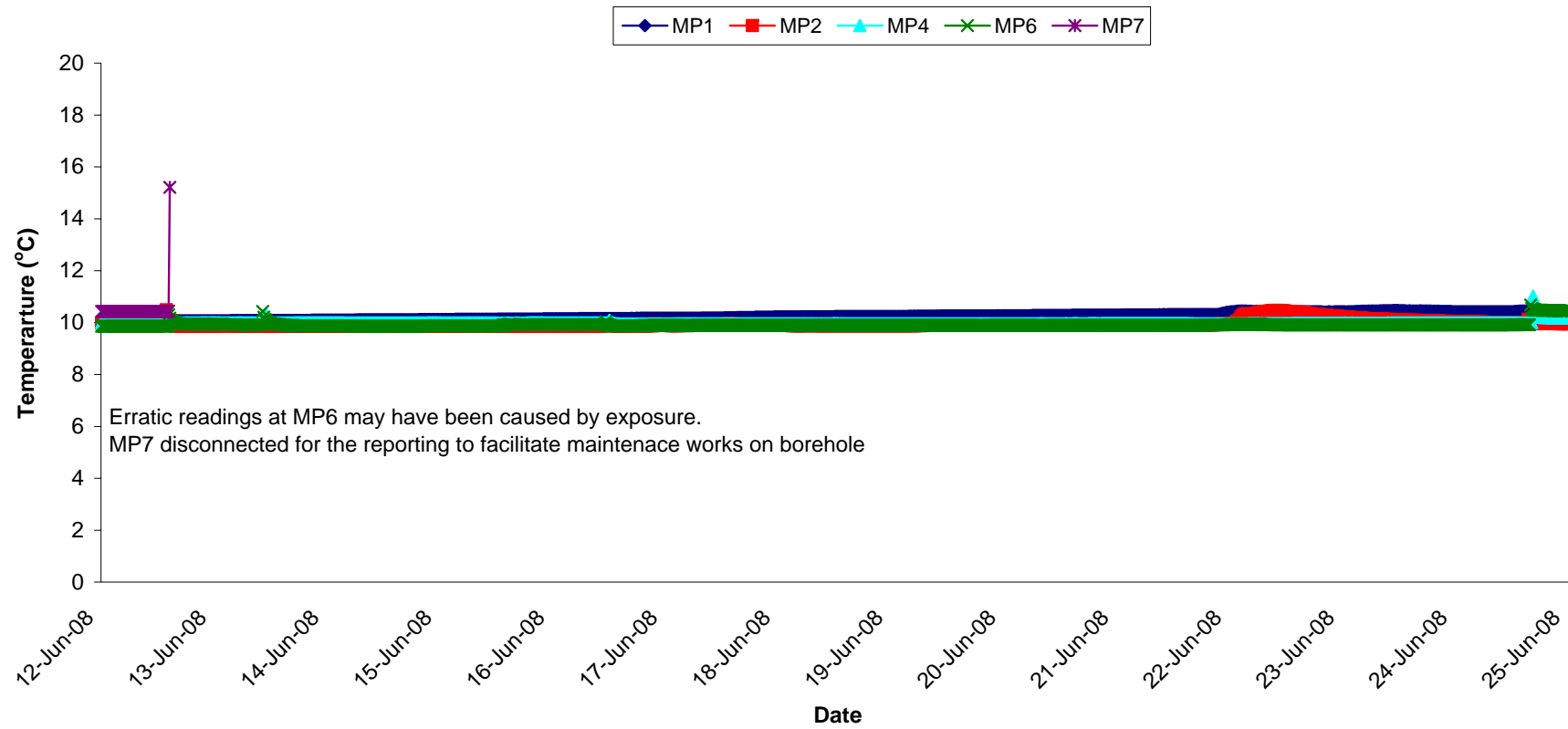
Turbidity - Surface Waters @ SP1, Wk 25-26



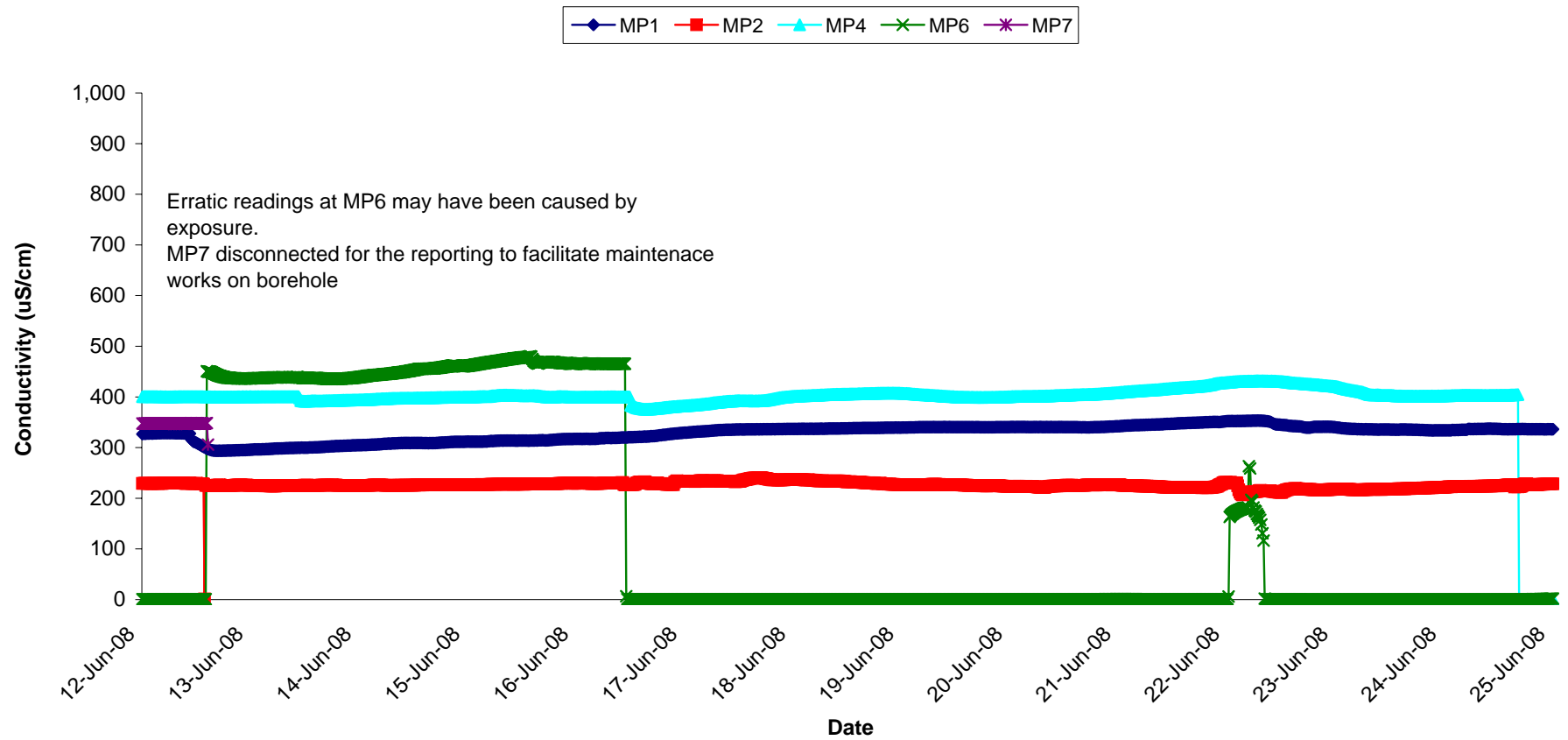
Dissolved Oxygen - Surface Waters, Wk 25-26



Temperature - Groundwaters Wk 25-26

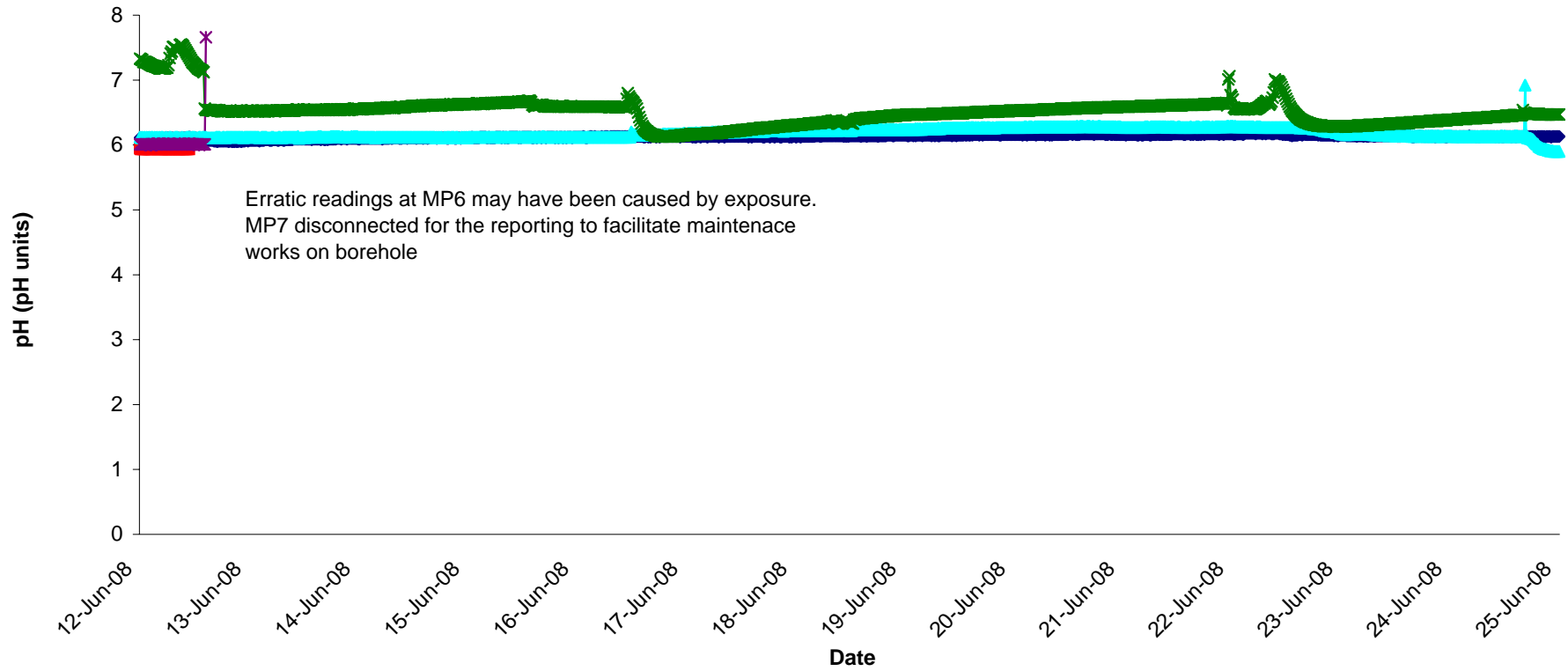


Conductivity - Groundwaters Wk 25-26



pH - Groundwaters Wk 25-26

MP1 MP2 MP4 MP6 MP7



Appendix 1

Appendix 1: Surface Water Monitoring Record Sheet- Onsite Monitoring

	Date	Cond. µS/cm	Temp °C	Turbidity NTU	DO % Sat	pH	TSS mg l ⁻¹	Ortho-phosphate as P µg l ⁻¹	Nitrate as N mg l ⁻¹	Nitrate as NO ₃ mg l ⁻¹	Total Phosphorus as P mg l ⁻¹	Ammonia as NH ₃ - N mg l ⁻¹	Nitrite as NO ₂ mg/l	Aluminium (dissolved) ug/l	Aluminium (total) ug/l	Phosphate as PO ₄ mg/l	Total dissolved solids mg/l
Settlement Pond Monitoring																	
SP1	12/06/2008	403	16.6	13	93.0	7.1			0.50			0.04		5	140	0.06	305
SP1	13/06/2008	370	15.8	7	89.3	7.4			0.20			0.03		17	265	0.25	283
SP1	16/06/2008	423	16.8	4	81.4	7.3			0.10			0.07		30	78	0.07	312
SP1	17/06/2008	402	16.1	4	87.9	7.4			0.10			<LOD		37	68	0.25	329
SP1	18/06/2008	412	16.1	3	91.0	7.0			0.10			<LOD		12	115	0.10	325
SP1	19/06/2008	408	14.6	2	89.1	7.2			0.10			<LOD		20	103	0.16	314
SP1	20/06/2008	No Flow															
SP1	23/06/2008	326	15.8	11	90.0	7.4			<LOD			0.19		6	305	0.22	251
SP1	24/06/2008	361	12.7	12	96.0	7.7			<LOD			0.10		12	207	0.06	2786
SP1	25/06/2008	321	14.5	65	89.4	7.8			0.10			0.04		52	307	<LOD	254
SP1	26/06/2008	342	16.5	14	90.2	7.3			0.10			<LOD		<LOD	101	0.07	262
SP3	12/06/2008	416	17.0	2	122.9	7.2			0.10			0.02		8		0.05	314
SP3	13/06/2008	414	15.9	4	120.3	7.3			<LOD			0.07		25		0.08	312
SP3	16/06/2008	402	15.4	5	85.6	6.9			<LOD			0.13		25		0.06	304
SP3	17/06/2008	410	14.5	3	92.9	7.1			<LOD			0.03		25		0.14	313
SP3	18/06/2008	401	15.9	2	89.0	7.3			<LOD			0.10		22		0.14	310
SP3	19/06/2008	426	15.1	3	91.5	7.6			0.10			0.18		22		0.05	327
SP3	20/06/2008	404	17.5	3	103.1	7.1			0.30			0.17		28		0.13	313
SP3	23/06/2008	370	14.8	8	95.5	7.4			0.10			0.03		<LOD		0.07	285
SP3	24/06/2008	400	14.9	3	94.6	7.3			<LOD			0.04		8		0.04	306
SP3	25/06/2008	359	19.6	5	100.1	7.2			0.20			0.02		<LOD		0.19	269
SP3	26/06/2008	360	17.6	6	100.9	7.3			<LOD			<LOD		<LOD		0.06	275
Additional Monitoring																	
D22	23/06/2008	387	13.2	4	83.8	7.3			0.06			0.10		15		0.06	296
D62	23/06/2008	241	12.3	2	81.8	5.7			0.04			0.03		29		0.04	185
Axonics Monitoring																	
Pre	12/06/2008	393		24		7.5			<LOD			0.03		362		0.02	298
Post	12/06/2008	422		4		6.8			<LOD			0.04		28	813	0.02	318
Pre	13/06/2008	402		30		7.6			<LOD			0.22		706		0.07	302
Post	13/06/2008	419		2		7.1			0.20			0.14		43	317	0.06	313
Pre	16/06/2008	401		27		7.8			<LOD			0.01		>LOD		0.06	306
Post	16/06/2008	447		5		7.3			0.20			0.20		46	179	0.06	344
Pre	17/06/2008	389		31		7.9			0.10			<LOD		571		0.04	297
Post	17/06/2008	416		2		6.9			0.30			<LOD		45	421	0.02	320
Pre	18/06/2008	384		70		7.6			<LOD			0.17		545		<LOD	302
Post	18/06/2008	411		3		7.1			0.10			0.09		49	516	0.05	314
Pre	19/06/2008	411		12		7.9			0.50			0.11		460		0.04	316
Post	19/06/2008	421		1		6.9			<LOD			0.01		38	338	0.02	324
Pre	20/06/2008	412		31		7.6			<LOD			0.08		900		0.02	314
Post	20/06/2008	437		1		7.0			0.20			0.07		42	295	0.04	330
Pre	23/06/2008	349		106		7.4			0.06			0.20		408		0.06	267
Post	23/06/2008	464		2		7.2			0.04			0.01		18	335	0.04	353
Pre	24/06/2008	357		25		7.3			<LOD			0.21		516		<LOD	273
Post	24/06/2008	392		2		7.1			0.40			0.02		17	387	0.02	298
Pre	25/06/2008	352		17		7.5			0.20			0.08		198		0.05	278
Post	25/06/2008	372		2		7.0			0.50			0.04		<LOD	>LOD	0.06	286
Pre	26/06/2008	365		25		7.4			0.10			0.06		91		0.04	280
Post	26/06/2008	379		3		6.6			0.50			0.08		97	>LOD	0.01	290
Grey shaded areas denote parameters that cannot or were not analysed on-site.																	
= Indicative Only																	
< LOD = Below Limit of Detection																	
> LOD = Above Limit of Detection																	