

Final Environmental Report	Period Ending: 17th Sept. 2008
Compiled By: Aoife Reynolds, Siobhán Quinn & Catriona King	
Approved By: Tony Doyle	

1 Monitoring Data

1.1 Monitoring Equipment

Axonics	– Axonics plant operated as required for the majority of the reporting period.
PO ₄	– The PO ₄ analyser was operational during the reporting period. – The composite sampler was in place to cover any shortfalls in the PO ₄ analyser.
TSS	– The TSS analyser was operational during the reporting period. – The composite sampler was in place to cover any shortfalls in the TSS analyser.
Composite	– The composite sampler was operational during the reporting period.
Noise	– 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	– 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	– The results are displayed graphically. ○ Any unusual values are explained on the relevant graph.
Weather Station	– The data used for this reporting period was taken from the on-site meteorological station.
Weirs	– Weirs were operational during the reporting period.

1.2 Rainfall Data

04/09/08	1.56	11/09/08	5.46
05/09/08	9.95	12/09/08	6.63
06/09/08	0.00	13/09/08	1.56
07/09/08	0.00	14/09/08	12.09
08/09/08	1.56	15/09/08	0.20
09/09/08	16.58	16/09/08	0.00
10/09/08	11.31	17/09/08	0.00
Total Rainfall 66.90mm			

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1.3 Summary

Environment	Comments
Surface Water	There were no exceedances during the reporting period.
Groundwater	The groundwater data (Sonde) is within anticipated ranges. Due to a technical problem, the results for MP4 are not available at present. The results will be included in the final report.
Dust	Awaiting dust results.
Weather	There was a total of 66.90mm of rainfall during the reporting period, with a temperature range of 4.9°C to 18.7°C
Noise	All noise levels were within the set limits.
Vibration	Due to a technical problem, data is not available for this period. The problem has subsequently been rectified.

Note: All laboratory data generated on site should be considered indicative only.

2 Environmental Exceedences / Incidents / Complaints

There were no exceedances during the reporting period.

Surface Water Monitoring Record Sheet: Accredited Laboratory Results

[illegible]

Groundwater Monitoring Record Sheet																									
Location	Date	DO	Temp	Cond.	pH	TDS	BOD	TSS	Total Hardness	Nitrite as NO ₂	Nitrate as NO ₃	Phosphate as PO ₄	Arsenic	Mercury	Lead	Aluminium (total)	Zinc	Chromium	Copper	Cadmium	Iron	Tin	Ammonia	Aluminium, dissolved	Manganese, total
		% Sat	°C	uS/cm		mg l ⁻¹	mg l ⁻¹	mg l ⁻¹	mg/l CaCO ₃	mg l ⁻¹	mg l ⁻¹	mg l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	mg l ⁻¹		
MP 1	04/09/2008	30.2	12.1	337	6.0	156	19	3	48.8	<0.017	<0.44	1.935	0.6	<0.05	<0.5	<20	<5	<0.5	<1	<0.5	2154	<0.5	1.929	<20	82
MP 2	04/09/2008	31.8	12.3	284	6.1	132	5	120	61.6	<0.017	<0.44	0.683	<0.5	<0.05	<0.5	114.0	<5	<0.5	<1	<0.5	995	<0.5	2.454	46	29
MP 3	04/09/2008	65.3	12.5	379	5.8	176	13	33	61.1	<0.017	<0.44	1.690	<0.5	<0.05	<0.5	54.0	<5	<0.5	<1	<0.5	11080	<0.5	2.296	92	27
MP 4	04/09/2008	39.0	12.0	459	6.1	214	15	169	59.6	<0.017	<0.44	0.283	<0.5	<0.05	2.0	917.0	6.0	1.0	2	<0.5	14500	<0.5	0.396	<20	206
MP 5	04/09/2008	43.7	13.0	300	5.8	139	15	106	64.6	<0.017	<0.44	0.491	<0.5	<0.05	<0.5	109.0	<45	<0.5	<1	<0.5	15180	<0.5	2.087	30	37
MP 6	04/09/2008	27.0	12.3	474	6.5	220	11	18	87.3	<0.017	<0.44	1.560	2.00	<0.05	<0.5	<20	<5	<0.5	<1	<0.5	5048	<0.5	1.924	<20	114
MP 7	04/09/2008	32.7	12.2	387	6.0	179	18	12	40.6	<0.017	<0.44	0.699	<0.5	<0.05	<0.5	<20	<5	<0.5	<1	<0.5	1119	<0.5	2.772	<20	32
MP 8	04/09/2008	108.7	13.8	184	5.7	86	10	229	43.1	<0.017	<0.44	0.050	<0.5	<0.05	<0.5	168.0	<5	<0.5	<1	<0.5	1500	<0.5	0.211	168	<5
MP 10a	04/09/2008	75.8	12.3	521	6.1	242	6	364	174.2	<0.017	<0.44	0.150	<0.5	<0.05	<0.5	107.0	<5	<0.5	<1	<0.5	17000	<0.5	0.463	<20	5
MP 11	04/09/2008	42.1	12.1	213	5.8	101	1	<2	29.9	<0.017	<0.44	0.062	<0.5	<0.05	0.6	110.0	<5	<0.5	<1	<0.5	1115	<0.5	<0.005	<20	417

Graphs provided for MP1, MP2,MP4, MP6 and MP7 for: Temperature, Conductivity, and pH.

Graphs provided for MP1, MP2,MP4, MP6 and MP7 for: Temperature, Conductivity, and pH.

Determinant Results							
	Date Positioned	Date Removed	Ref. Number	Date Dispatched	Date Returned	Weight (mg/m ² /day)	Comments
Target (Consent) Limit: 350 mg m² d⁻¹ on as a 30 day average							
D1	25/03/2008	25/04/2008	170574	28/03/2008	16/05/2008	186	
D2	25/03/2008	25/04/2008	170575	28/03/2008	16/05/2008	281	
D3	25/03/2008	25/04/2008	170576	28/03/2008	16/05/2008	373	
D4	25/03/2008	25/04/2008	170577	28/03/2008	16/05/2008	158	
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	Very heavy peat like substance in jar
D4	26/05/2008	26/06/2008	177621	02/07/2008	11/07/2008	151	
D1	26/06/2008	25/07/2008	179466	30/07/2008	20/08/2008	52	
D2	26/06/2008	25/07/2008	179467	30/07/2008	20/08/2008	347	
D3	26/06/2008	25/07/2008	179464	30/07/2008	20/08/2008	87	
D4	26/06/2008	25/07/2008	179465	30/07/2008	20/08/2008	33	
D1	25/07/2008	25/08/2008	182830	29/08/2008	04/09/2008	86	
D2	25/07/2008	25/08/2008	182831	29/08/2008	04/09/2008	166	
D3	25/07/2008	25/08/2008	182833	29/08/2008	04/09/2008	41	
D4	25/07/2008	25/08/2008	182834	29/08/2008	04/09/2008	76	
NDP = No Determination Possible							
Monitoring Points are numbered clockwise through the Cardinal Marks (N, E, S, W)							
Monitoring Results will be presented monthly							

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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 _{Amax}	L _{Amin}	
Action Limit									60			
Target Limit									65			
N1	18.7	6.3	04/09/2008	08:00:00	14:00:00	2539533	1.9	162.0	46.2	84.9	31.5	
N1	16.4	5.7	05/09/2008	08:00:00	14:00:00	2539533	3.5	203.7	52.3	76.8	36.2	
N1	17.9	9.7	08/09/2008	08:00:00	14:00:00	2539533	2.9	254.2	49.3	76.8	31.5	
N1	14.5	11.7	09/09/2008	08:00:00	14:00:00	2539533	3.6	192.2	49.1	73.7	37.7	
N1	16.4	9.6	10/09/2008	08:00:00	14:00:00	2539533	5.2	214.8	53.6	82.5	39.0	
N1	15.9	12.6	11/09/2008	08:00:00	14:00:00	2539533	4.4	69.9	48.1	77.1	36.0	
N1	16.9	8.1	12/09/2008	08:00:00	14:00:00	2539533	2.6	123.1	47.2	79.2	35.5	
N1	15.8	10.2	15/09/2008	08:00:00	14:00:00	2539533	3.5	162.9	46.2	82.2	35.9	
N1	17.2	7.5	16/09/2008	08:00:00	14:00:00	2539533	2.8	170.8	50.2	86.3	32.1	
N1	16.5	4.9	17/09/2008	08:00:00	14:00:00	2539533	1.6	101.1	47.4	80.9	<LOD	

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

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

Night Time Noise Monitoring Record Sheet

Determinant Results	
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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 _{Amax}	L _{Amin}	
Action Limit									50			
Target Limit									55			
N1	18.7	6.3	04/09/2008	22:00:00	10:00:00	2539533	1.9	162.0	43.2	66.7	32.0	
N1	16.4	5.7	05/09/2008	22:00:00	10:00:00	2539533	3.5	203.7	47.3	74.2	36.8	
N1	17.9	9.7	08/09/2008	22:00:00	10:00:00	2539533	2.9	254.2	42.7	70.0	<LOD	
N1	14.5	11.7	09/09/2008	22:00:00	10:00:00	2539533	3.6	192.2	44.9	72.0	35.1	
N1	16.4	9.6	10/09/2008	22:00:00	10:00:00	2539533	5.2	214.8	48.5	72.7	37.5	
N1	15.9	12.6	11/09/2008	22:00:00	10:00:00	2539533	4.4	69.9	41.6	67.2	34.8	
N1	16.9	8.1	12/09/2008	22:00:00	10:00:00	2539533	2.6	123.1	43.7	69.3	36.5	
N1	15.8	10.2	15/09/2008	22:00:00	10:00:00	2539533	3.5	162.9	40.1	67.7	35.4	
N1	17.2	7.5	16/09/2008	22:00:00	10:00:00	2539533	2.8	170.8	44.1	69.2	31.7	
N1	16.5	4.9	17/09/2008	22:00:00	10:00:00	2539533	1.6	101.1	45.0	80.6	<LOD	

* 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)
04/09/2008	13.76	6.39	10.71	6.74	2.05	4.35
05/09/2008	27.92	2.63	9.49	11.51	2.56	4.24
06/09/2008	23.51	9.31	13.93	8.49	3.67	5.58
07/09/2008	10.74	7.85	8.80	6.50	3.28	4.30
08/09/2008	9.31	3.70	7.77	5.80	3.28	4.24
09/09/2008	48.42	7.69	22.29	13.88	4.48	7.67
10/09/2008	47.05	16.03	30.41	21.49	6.50	10.12
11/09/2008	33.51	16.03	25.60	12.09	4.48	8.90
12/09/2008	39.33	15.56	22.96	12.68	6.50	9.68
13/09/2008	20.92	12.50	16.01	12.09	5.35	8.25
14/09/2008	74.22	11.90	22.60	16.08	5.13	7.49
15/09/2008	48.88	10.74	21.98	11.51	3.87	7.31
16/09/2008	13.55	3.41	9.46	5.35	0.20	2.81
17/09/2008	8.48	2.71	6.93	4.48	1.30	2.30

Note: Negative values indicate low flow conditions.

Vibration Monitoring Record Sheet

Determinant Results	
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[illegible]

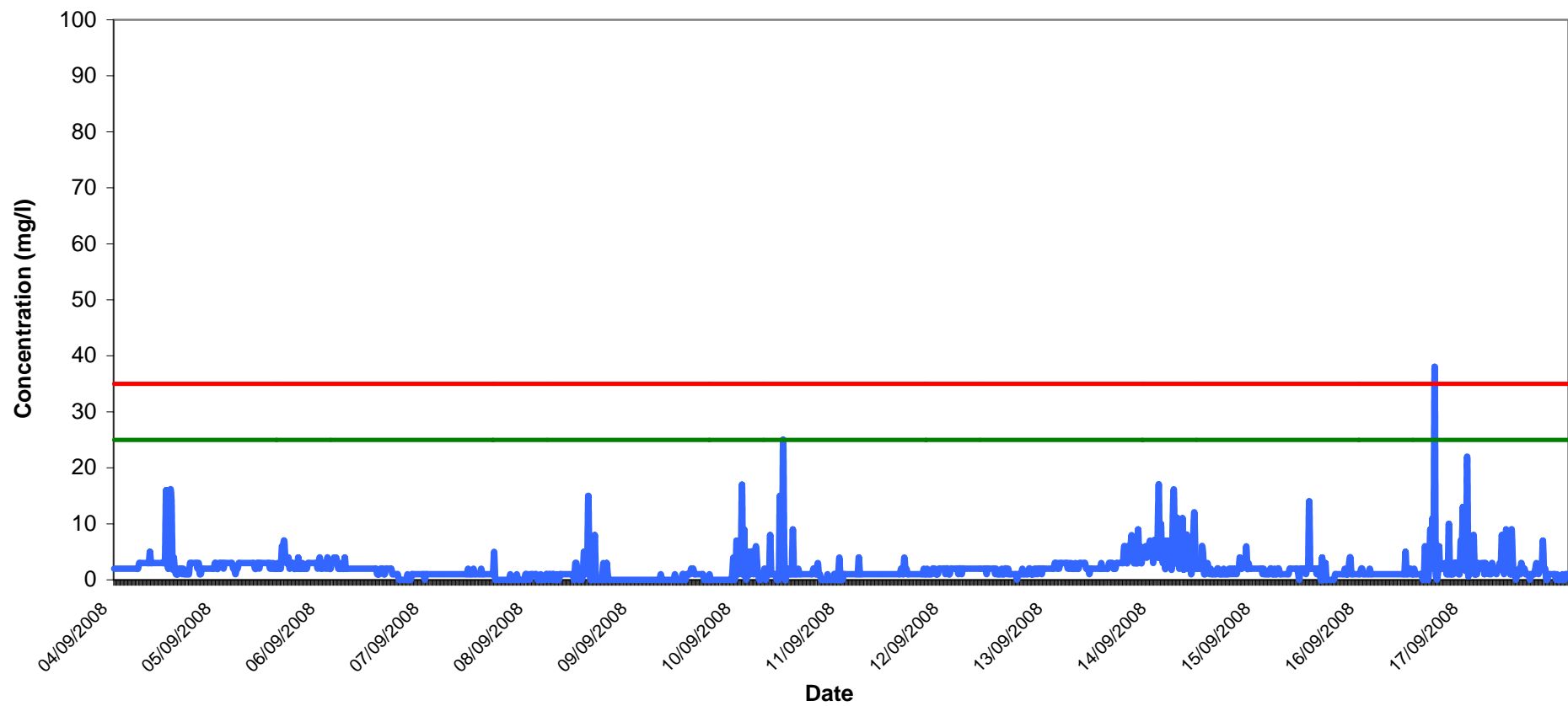
Vibration meter was located at V1 only.

Due to a technical fault, information is not available at present, assistance is being sought from manufacturer

Total Suspended Solids Results at SP1

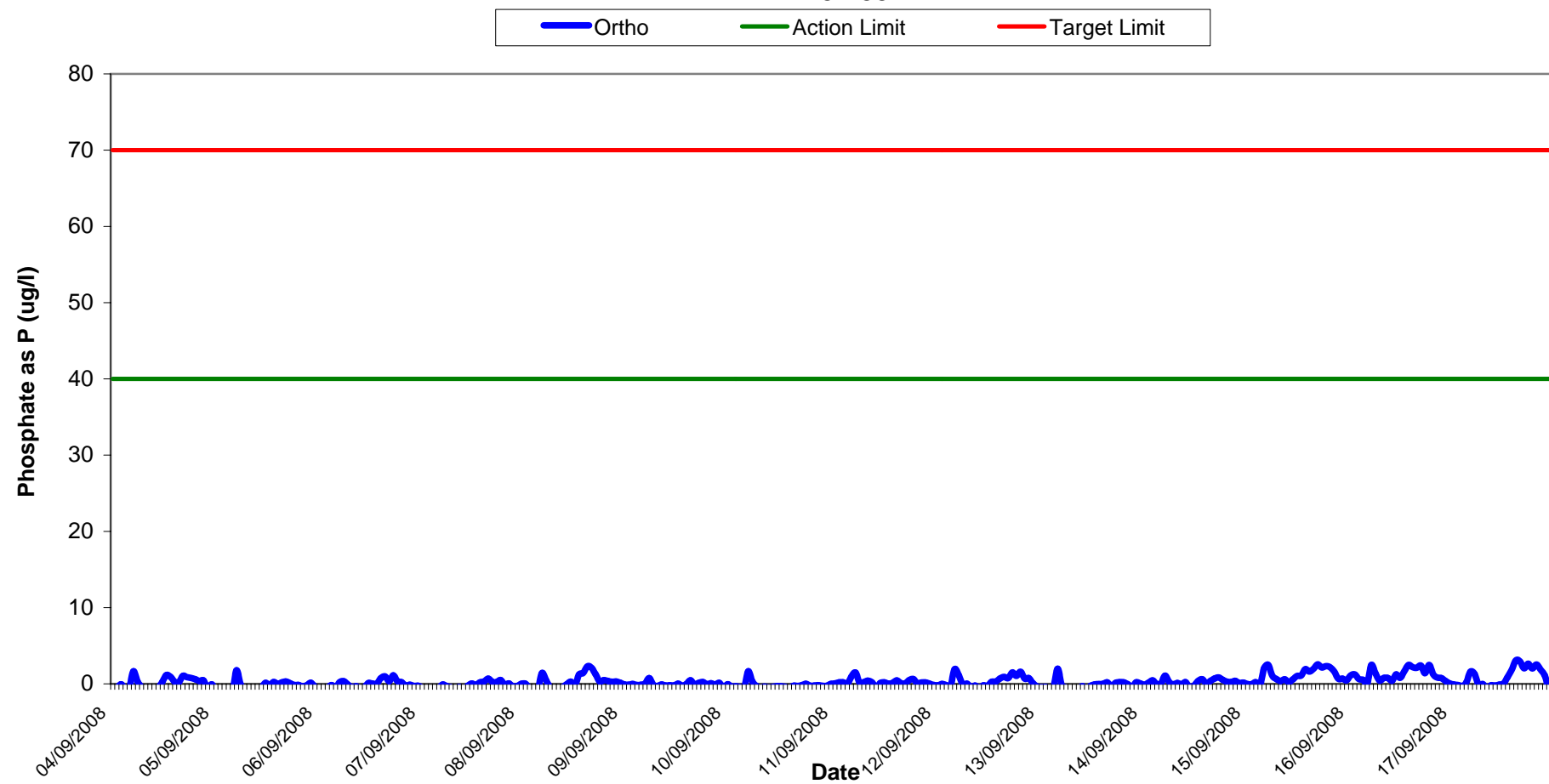
Wk 37-38

TSS Action Limit Target Limit Composite



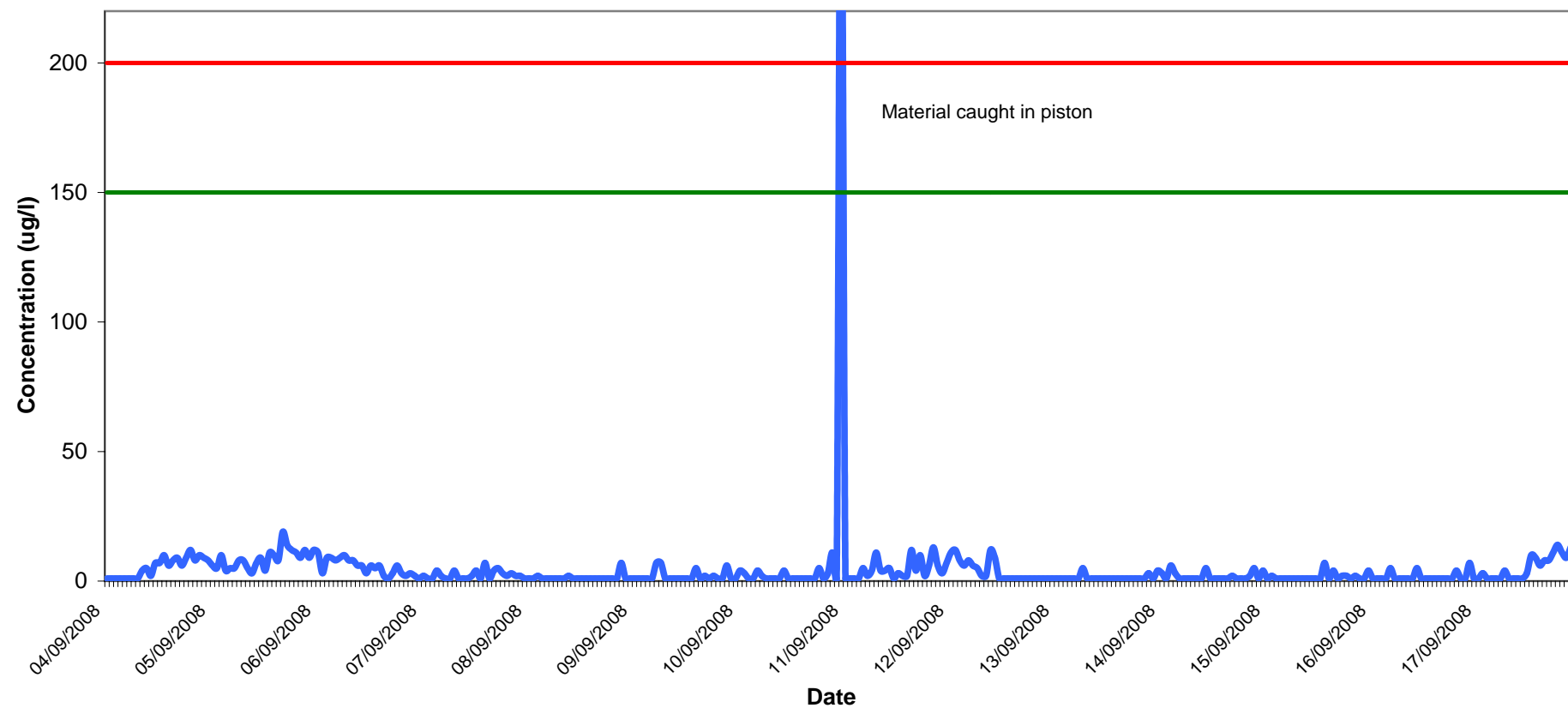
Orthophosphate Results at SP1

Wk 37-38



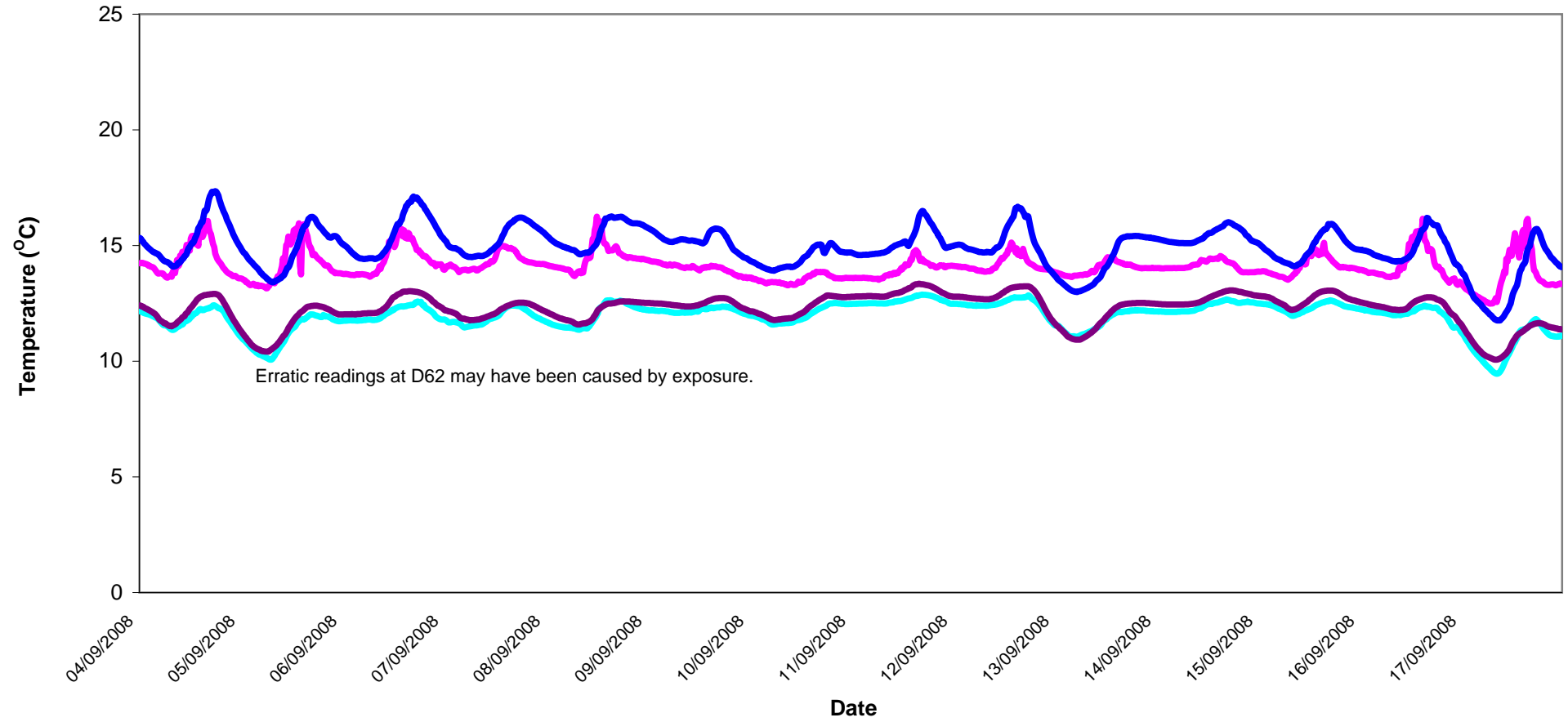
Aluminium Concentration at SP1 Wk 37-38

Aluminium Action Target

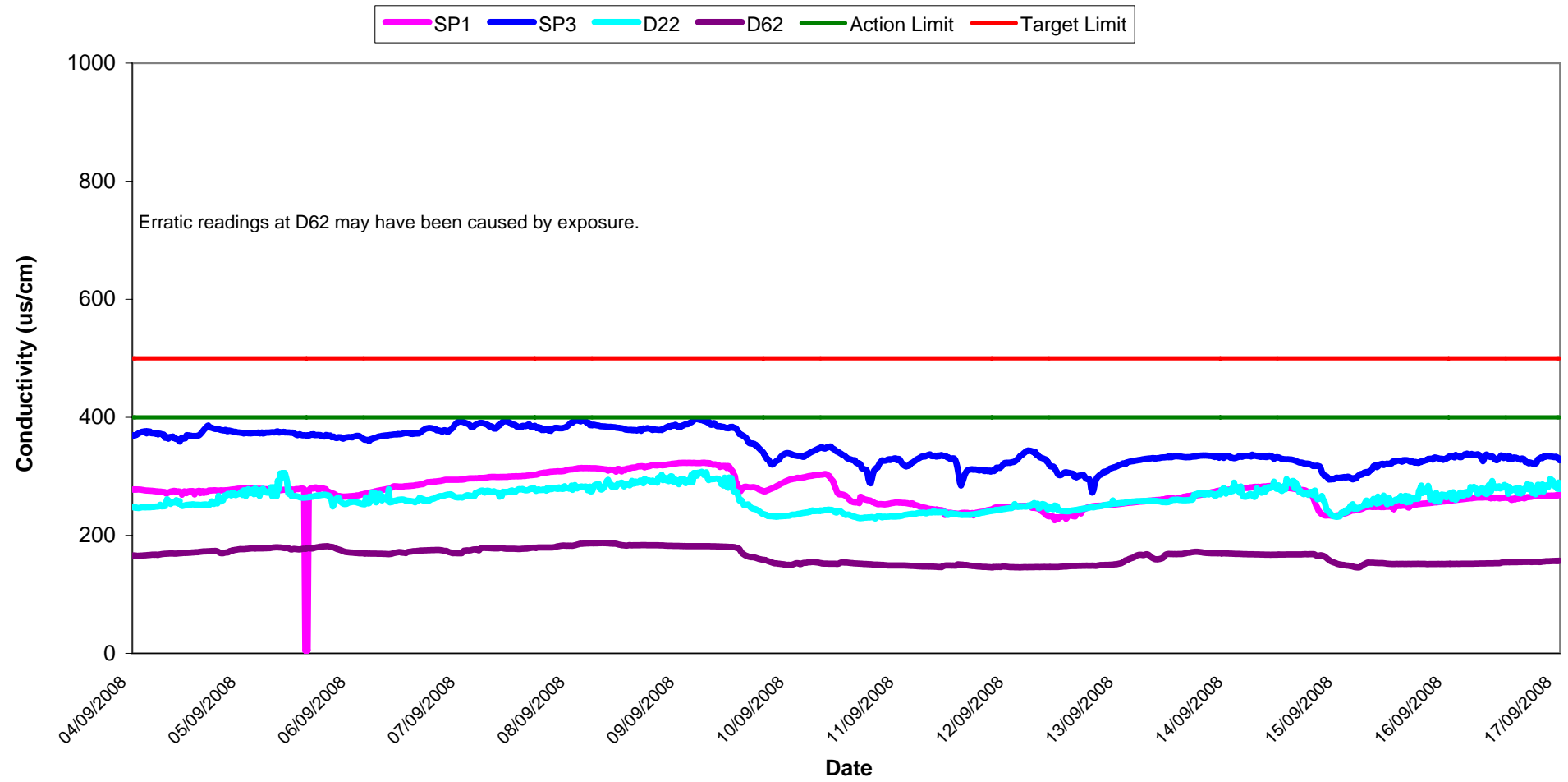


Temperature - Surface Waters Wk 37-38

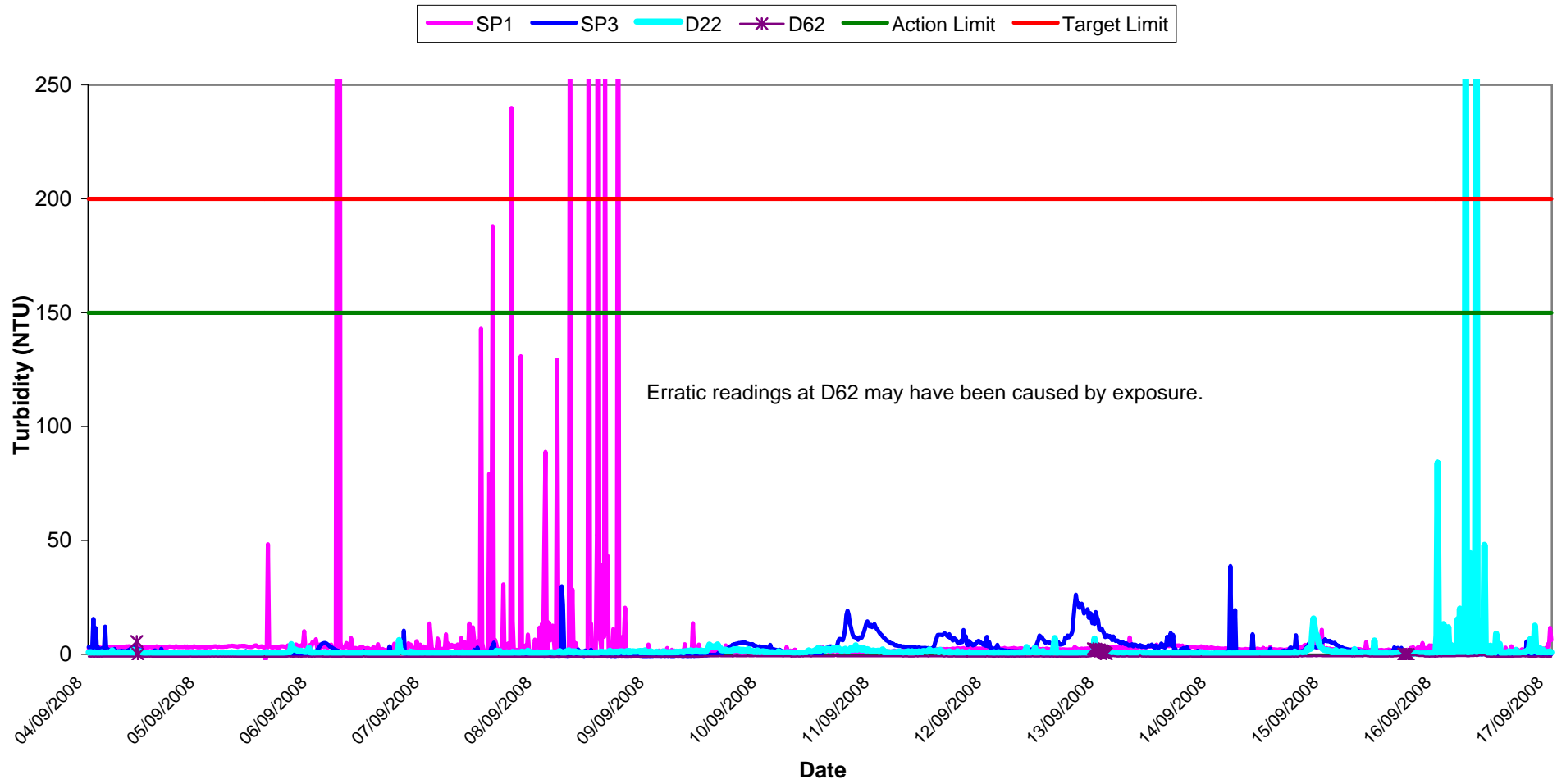
SP1 SP3 D22 D62



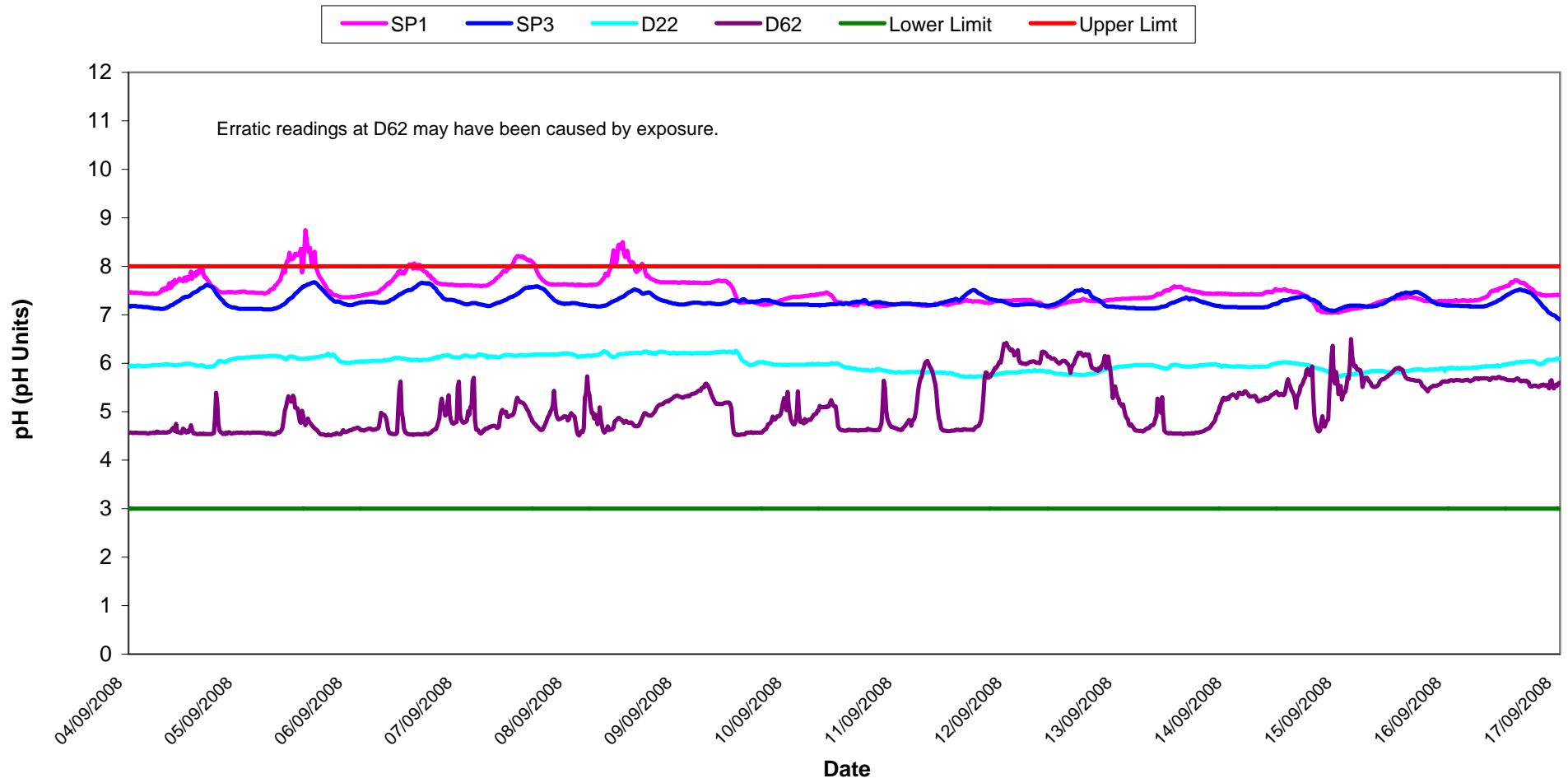
Conductivity - Surface Waters, Wk 37-38



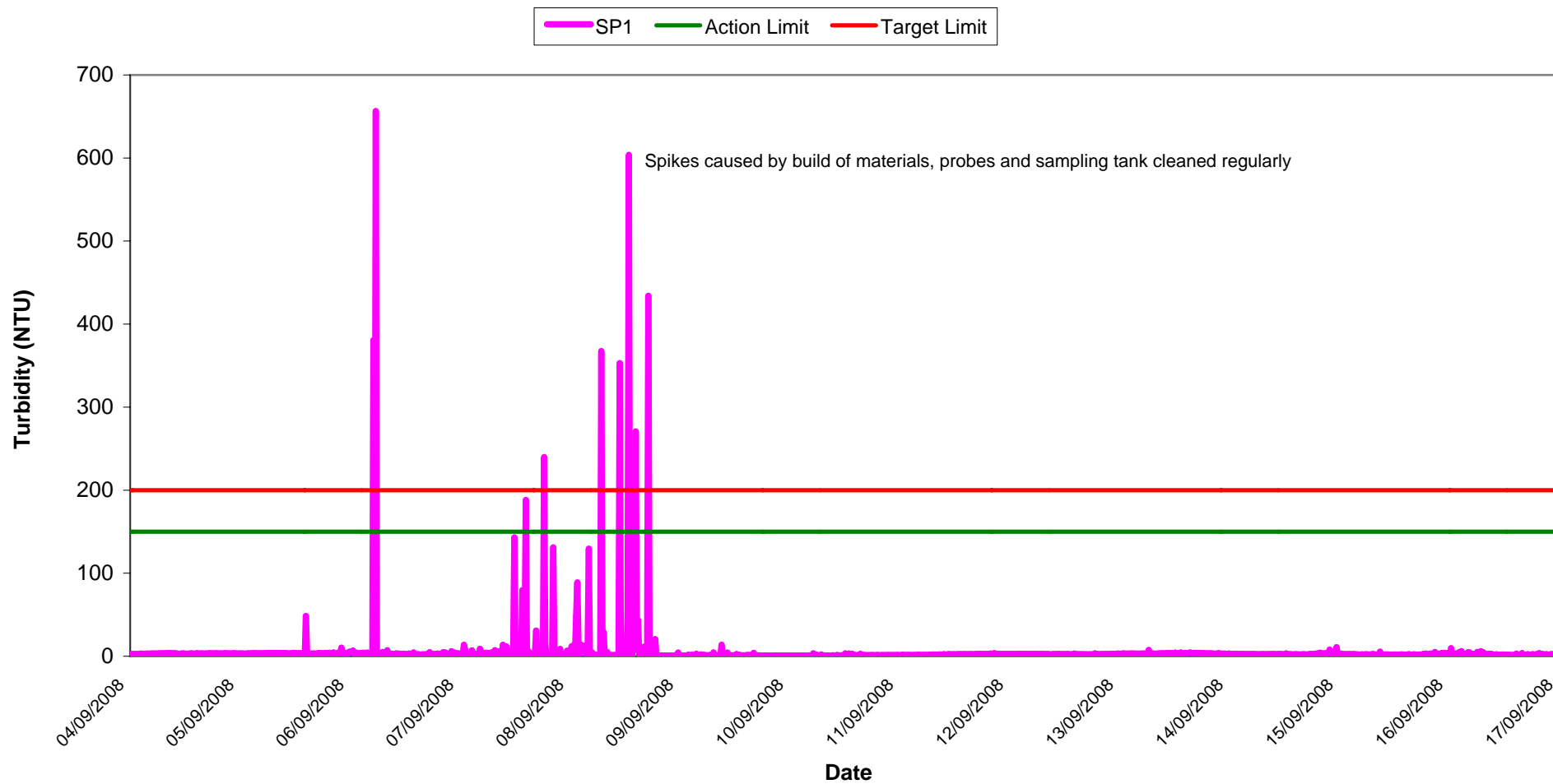
Turbidity - Surface Waters Wk 37-38



pH - Surface Waters Wk 37-38

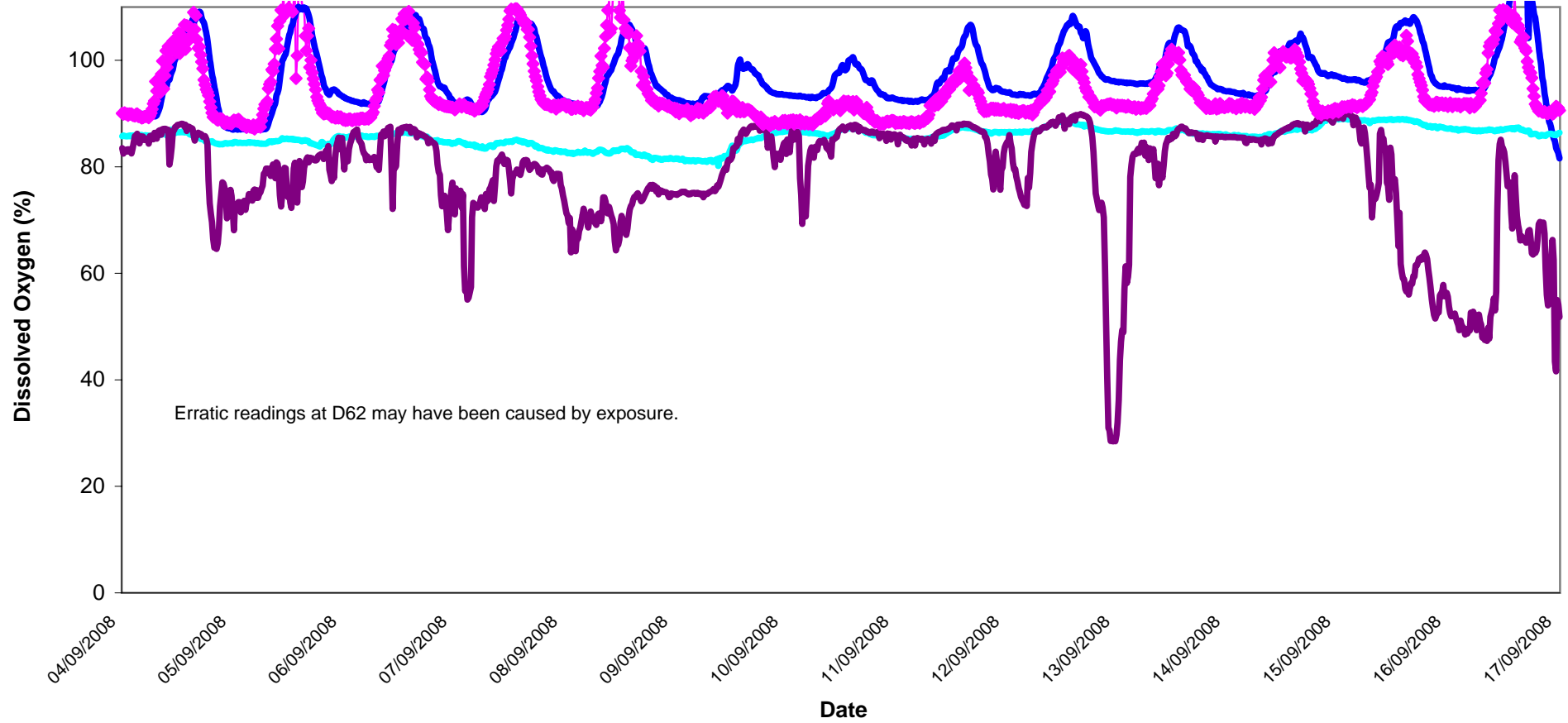


Turbidity - Surface Waters @ SP1, Wk 37-38

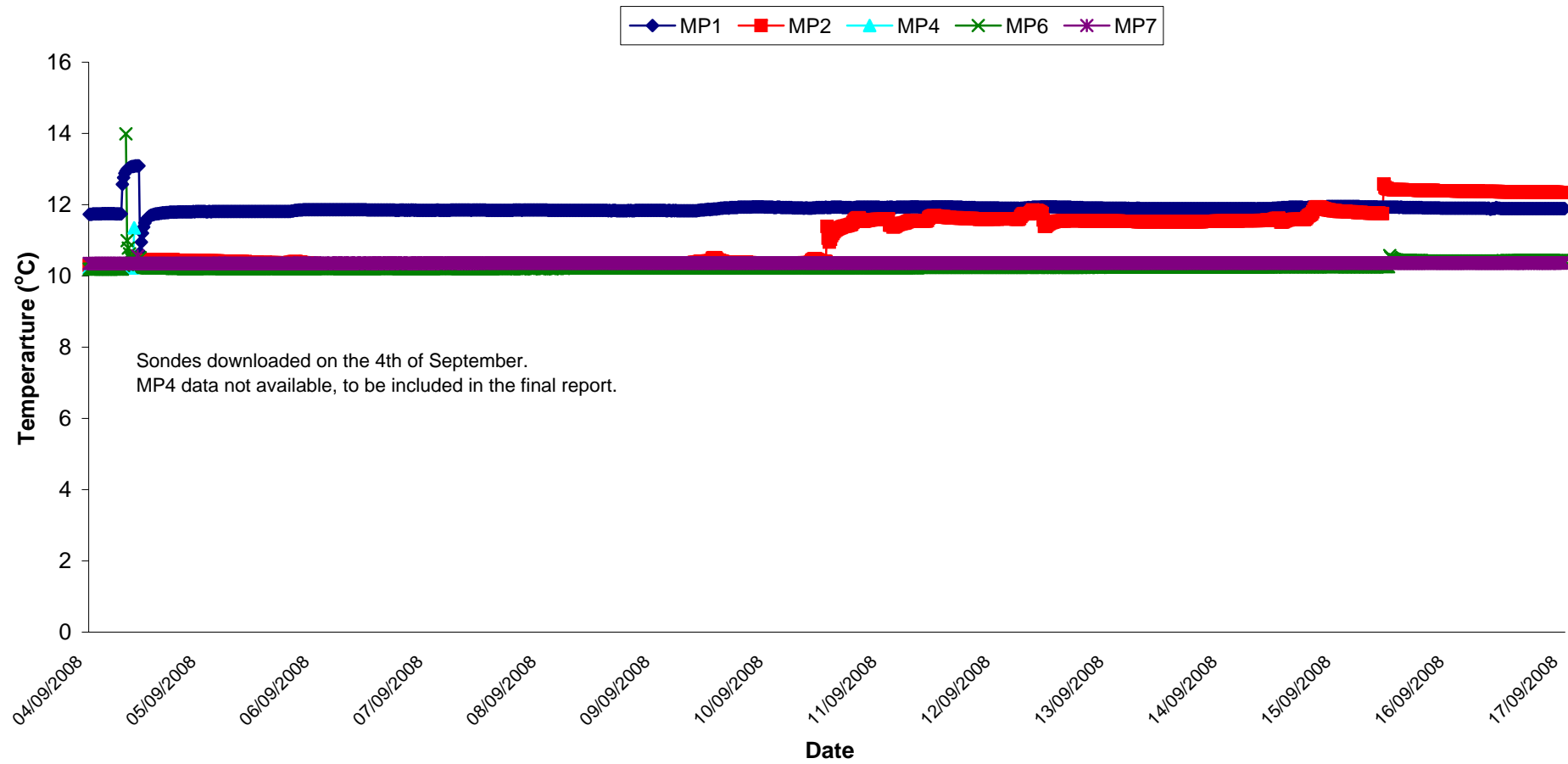


Dissolved Oxygen - Surface Waters, Wk 37-38

SP1 SP3 D22 D62

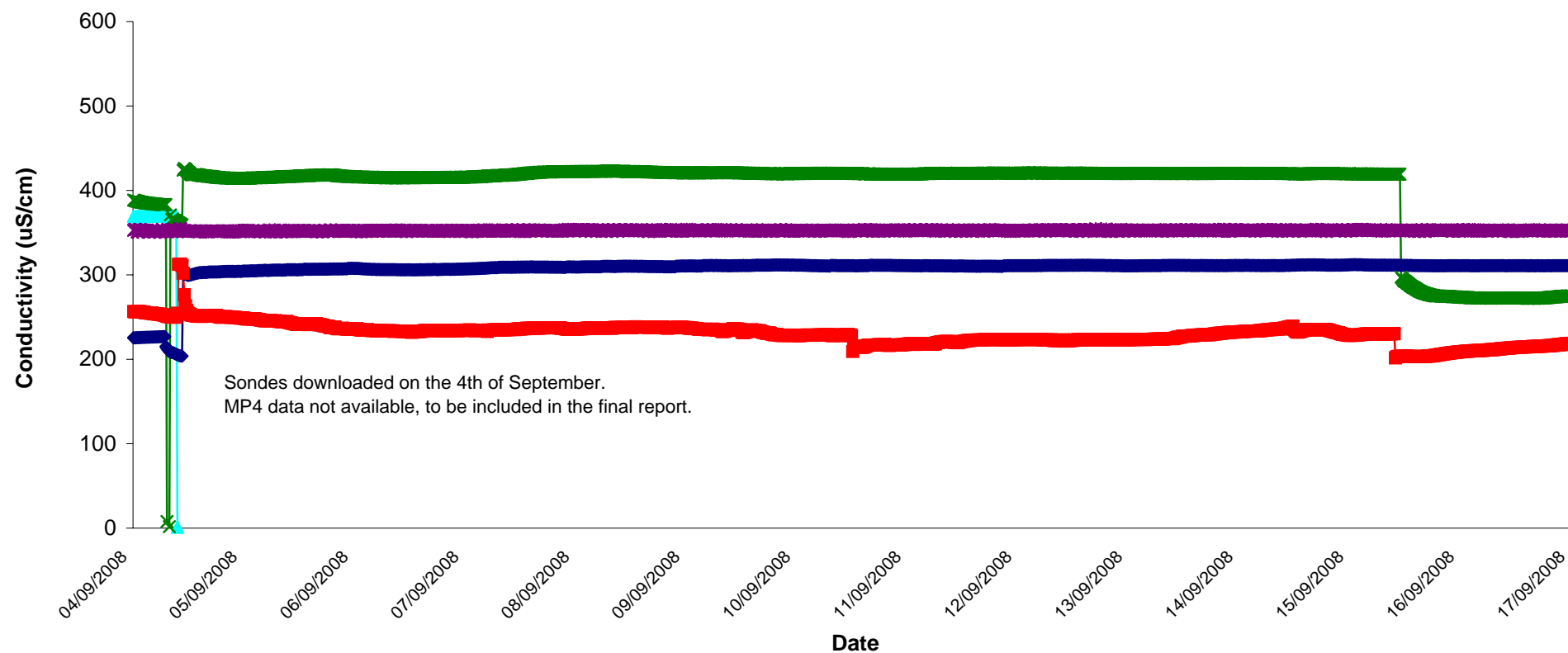


Temperature - Groundwaters Wk 37-38



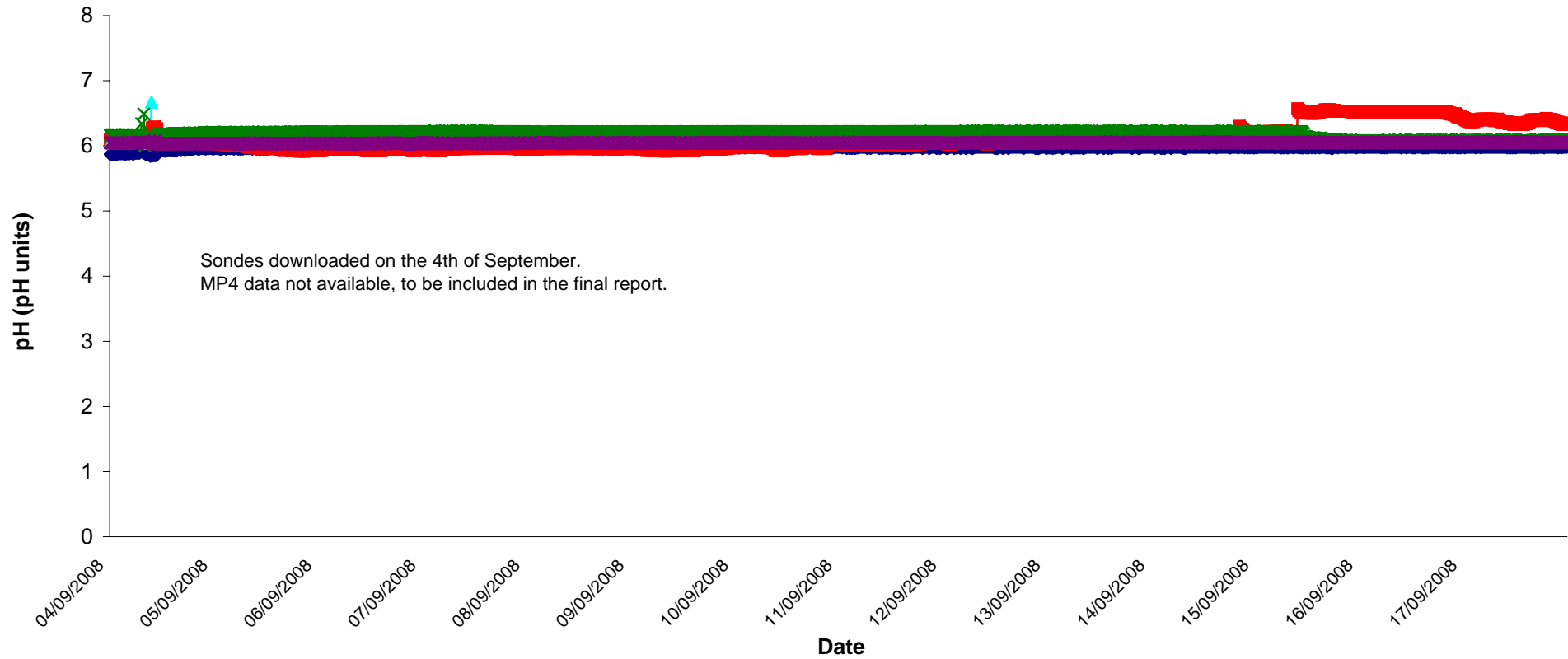
Conductivity - Groundwaters Wk 37-38

MP1 MP2 MP4 MP6 MP7



pH - Groundwaters Wk 37-38

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	04/09/2008	276	15.4	8.0	104.2	7.6			<LOD			0.20		28	104	0.06	188
SP1	05/09/2008	275	13.8	9.0	93.2	7.6			<LOD			0.04		26	118	0.01	188
SP1	08/09/2008	316	14.9	4.0	103.5	7.5			0.6			0.25		<LOD	83	0.01	203
SP1	09/09/2008	375	14.8	5.1	94.5	7.3			<LOD			<LOD		<LOD	220	0.06	182
SP1	10/09/2008	304	13.5	4.4	92.8	7.4			<LOD			0.08		29	116	0.17	198
SP1	11/09/2008	242	14.0	6.0	95.7	7.3			<LOD			0.28		22	91	0.03	156
SP1	12/09/2008	239	14.5	6.3	95.0	7.5			0.2			0.40		24	118	0.05	155
SP1	15/09/2008	250	14.9	7.9	94.9	7.6			0.2			0.04		24	96	<LOD	164
SP1	16/09/2008	271	13.5	4.5	92.5	6.7			0.5			0.02		<LOD	97	<LOD	174
SP1	17/09/2008	284	12.5	4.7	90.4	7.1			<LOD			0.06		<LOD	93	0.07	190
SP3	04/09/2008	364	15.2	4.0	101.6	7.4			0.5			0.31		<LOD		0.04	258
SP3	05/09/2008	370	15.4	6.0	107.5	7.4			0.2			0.12		<LOD		<LOD	252
SP3	08/09/2008	388	14.9	2.0	97.8	7.4			0.6			0.15		<LOD		0.03	252
SP3	09/09/2008	361	15.0	2.8	94.9	7.3			0.3			0.01		<LOD		0.04	235
SP3	10/09/2008	351	14.0	4.9	95.4	7.3			0.1			<LOD		<LOD		<LOD	229
SP3	11/09/2008	333	15.0	6.1	99.5	7.1			0.1			0.53		<LOD		0.02	217
SP3	12/09/2008	302	15.1	9.4	99.4	7.3			<LOD			0.40		26		0.03	198
SP3	15/09/2008	320	15.2	4.9	99.1	7.4			0.1			0.25		24		<LOD	211
SP3	16/09/2008	341	13.8	2.8	94.0	6.7			0.3			0.03		<LOD		0.03	223
SP3	17/09/2008	343	12.0	262.0	88.2	7.0			<LOD			0.03		<LOD		0.02	229
Additional Monitoring																	
D22	04/09/2008	240	15.4	4.0	86.7	6.9			0.1			0.04		66		0.11	163
D62	04/09/2008	189	15.2	1.0	89.6	6.0			<LOD			0.07		48		0.05	109
D22	11/09/2008	223	13.4	3.2	87.6	5.9			<LOD			1.91		72		0.11	146
D62	11/09/2008	168	13.2	2.3	90.6	5.8			0.1			0.28		39		0.07	976
Axonics Monitoring																	
Pre	04/09/2008	377		39.0		7.1			0.2			0.14		106		0.04	259
Post	04/09/2008	400		3.0		6.9			2.2			0.17		26	505	0.03	273
Pre	05/09/2008	380		26.0		7.2			0.3			0.07		79		<LOD	258
Post	05/09/2008	390		2.0		6.7			0.7			0.17		23	462	<LOD	253
Pre	08/09/2008	389		33.0		7.2			<LOD			0.55		127		0.02	254
Post	08/09/2008	410		6.0		7.0			1.9			0.23		42	929	<LOD	266
Pre	09/09/2008	373		61.4		7.0			<LOD			0.63		52		0.03	243
Post	09/08/2008	396		3.3		6.8			0.2			0.14		44	707	0.02	257
Pre	10/09/2008	350		156.0		7.3			0.3			0.12		197		0.30	230
Post	10/09/2008	370		5.8		6.4			0.1			0.08		96	331	0.10	243
Pre	11/09/2008	342		143.0		6.9			<LOD			0.56		234		0.03	225
Post	11/09/2008	350		19.6		6.8			0.5			0.29		85	>LOD	0.04	229
Pre	12/09/2008	324		151.0		7.1			<LOD			>LOD		161		0.03	214
Post	12/09/2008	352		5.4		7.0			0.4			0.02		36	436	0.01	230
Pre	15/09/2008	357		37.2		7.1			<LOD			0.14		116		0.03	234
Post	15/09/2008	363		7.6		7.0			0.4			0.18		59	939	0.02	239
Pre	16/09/2008	368		20.9		6.6			0.3			0.13		111		0.03	241
Post	16/09/2008	371		6.0		6.6			0.5			0.14		40	>LOD	0.02	244
Pre	17/09/2008	383		101.0		6.9			<LOD			0.19		176		0.03	252
Post	17/09/2008	399		3.9		6.8			0.6			0.15		<LOD	448	0.02	262
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																	