

Final Environmental Report	Period Ending: 1st Oct. 2008
Compiled By: Siobhán Quinn & Aoife Reynolds	
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

18/09/08	11.115	25/09/08	0.000
19/09/08	2.535	26/09/08	0.195
20/09/08	0.000	27/09/08	1.170
21/09/08	0.390	28/09/08	2.145
22/09/08	0.000	29/09/08	8.385
23/09/08	0.000	30/09/08	15.795
24/09/08	0.195	01/10/08	6.630
Total Rainfall 48.560mm			

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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.
Dust	All dust levels were within the set limits.
Weather	There was a total of 48.560mm of rainfall during the reporting period, with a temperature range of 3.1°C to 19.4°C
Noise	All noise levels were within the set limits.
Vibration	No vibration exceedances were recorded during the reporting period, based on available results.

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																									
MP 2																									
MP 3																									
MP 4																									
MP 5																									
MP 6																									
MP 7																									
MP 8																									
MP 10a																									
MP 11																									

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

No Groundwater Monitoring undertaken During The Reporting Period.

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	25/04/2008	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	
D1	25/08/2008	25/09/2008	185830	26/09/2008	30/09/2008	135	
D2	25/08/2008	25/09/2008	185831	26/09/2008	30/09/2008	92	
D3	25/08/2008	25/09/2008	185832	26/09/2008	30/09/2008	102	
D4	25/08/2008	25/09/2008	185833	26/09/2008	30/09/2008	83	
NDP = No Determination Possible							
Monitoring Points are numbered clockwise through the Cardinal Marks (N, E, S, W)							
Monitoring Results will be presented monthly							

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

Monitoring Results will be presented monthly

Day Time Noise Monitoring Record Sheet

Determinant Results

Location	Air Temp. (Min)	Air Temp. (Max)	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	11.1	14.8	18/09/2008	08:00:00	14:00:00	2539533	5.2	27.3	52.9	85.7	32.1	
N1	13.3	15.8	19/09/2008	08:00:00	14:00:00	2539533	4.2	26.6	50.1	85.2	36.0	
N1	3.1	17.5	22/09/2008	08:00:00	14:00:00	2539533	1.4	196.8	48.7	83.2	33.4	
N1	4.8	19.4	23/09/2008	08:00:00	14:00:00	2539533	1.1	230.1	50.0	78.8	30.0	
N1	4.7	18.0	24/09/2008	08:00:00	14:00:00	2539533	1.6	186.3	45.7	79.4	36.9	
N1	5.7	16.9	25/09/2008	08:00:00	14:00:00	2539533	1.1	136.7	50.4	86.1	30.0	
N1	7.8	16.2	26/09/2008	08:00:00	14:00:00	2539533	3.1	61.1	49.6	80.5	30.0	
N1	10.8	13.5	29/09/2008	08:00:00	14:00:00	2539533	4.3	93.4	52.5	83.2	33.1	
N1	11.3	14.4	30/09/2008	08:00:00	14:00:00	2539533	5.7	98.6	50.2	86.1	35.8	
N1	5.7	11.6	01/10/2008	08:00:00	14:00:00	2539533	5.9	137.5	48.7	81.8	36.1	

* 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

[illegible]

Location	Air Temp. (Min)	Air Temp. (Max)	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	11.1	14.8	18/09/2008	22:00:00	10:00:00	2539533	5.2	27.3	48.7	81.8	36.1	
N1	13.3	15.8	19/09/2008	22:00:00	10:00:00	2539533	4.2	26.6	40.2	66.0	30.0	
N1	3.1	17.5	22/09/2008	22:00:00	10:00:00	2539533	1.4	196.8	43.4	74.3	31.2	
N1	4.8	19.4	23/09/2008	22:00:00	10:00:00	2539533	1.1	230.1	45.2	82.9	30.0	
N1	4.7	18.0	24/09/2008	22:00:00	10:00:00	2539533	1.6	186.3	42.4	73.0	31.3	
N1	5.7	16.9	25/09/2008	22:00:00	10:00:00	2539533	1.1	136.7	42.2	64.1	30.0	
N1	7.8	16.2	26/09/2008	22:00:00	10:00:00	2539533	3.1	61.1	42.6	68.4	30.0	
N1	10.8	13.5	29/09/2008	22:00:00	10:00:00	2539533	4.3	93.4	46.3	71.0	34.0	
N1	11.3	14.4	30/09/2008	22:00:00	10:00:00	2539533	5.7	98.6	49.6	80.2	40.2	
N1	5.7	11.6	01/10/2008	22:00:00	10:00:00	2539533	5.9	137.5	45.7	79.4	36.9	

* 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)
18/09/2008	24.72	5.60	8.42	8.23	1.58	3.14
19/09/2008	28.92	13.33	21.57	9.83	3.47	6.19
20/09/2008	12.91	7.69	9.95	5.35	2.21	2.88
21/09/2008	7.69	6.12	6.91	2.21	1.58	1.94
22/09/2008	17.74	2.47	7.86	14.81	1.58	4.92
23/09/2008	17.74	0.55	7.69	21.85	1.58	7.16
24/09/2008	11.90	2.96	6.26	9.02	1.89	3.00
25/09/2008	8.32	3.41	6.97	5.35	2.21	3.95
26/09/2008	7.69	3.32	6.64	4.48	1.89	3.73
27/09/2008	7.85	7.10	7.55	4.69	4.27	4.51
28/09/2008	7.69	5.99	6.96	4.48	3.10	3.83
29/09/2008	10.74	5.23	7.04	6.74	2.05	3.72
30/09/2008	58.67	7.69	23.48	100.83	4.91	9.83
01/10/2008	36.16	9.31	18.54	5.13	1.89	3.21

Note: Negative values indicate low flow conditions.

Vibration Monitoring Record Sheet

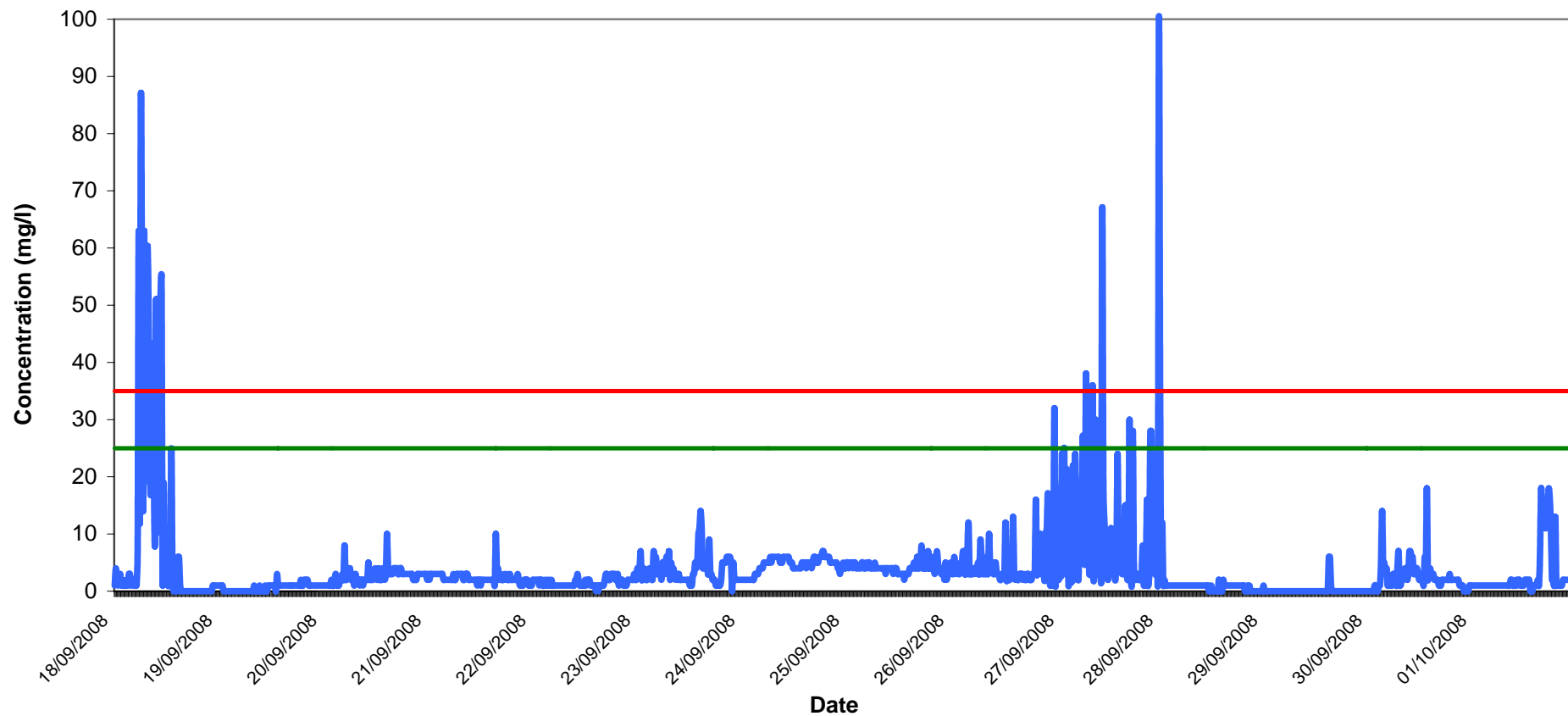
Determinant Results	
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99	99
100	100

Location	Date Positioned	Date Removed	Event Date	Event Time	Peak Vector Sum	Tran PPV	Vert PPV	Long PPV	Comments
V1	18-Sep-08			08:55					Monitor Started
			18-Sep-08	9:00	3.63	2.16	2.92	1.27	Sensor Check
		18-Sep-08		10:21					Monitor Stopped
	18-Sep-08			10:23					Monitor Started
			19-Sep-08	7:13	4.85	2.79	3.94	1.4	Sensor Check
		22-Sep-08		9:45					Monitor Stopped
	22-Sep-08			9:49					Monitor Started
			22-Sep-08	10:19	3.58	2.67	2.41	3.3	Sensor Check
		23-Sep-08		11:06					Monitor Stopped
	23-Sep-08			11:16					Monitor Started
			23-Sep-08	11:21	5.88	3.68	4.57	2.29	Sensor Check
		03-Oct-08		14:10					Monitor Stopped

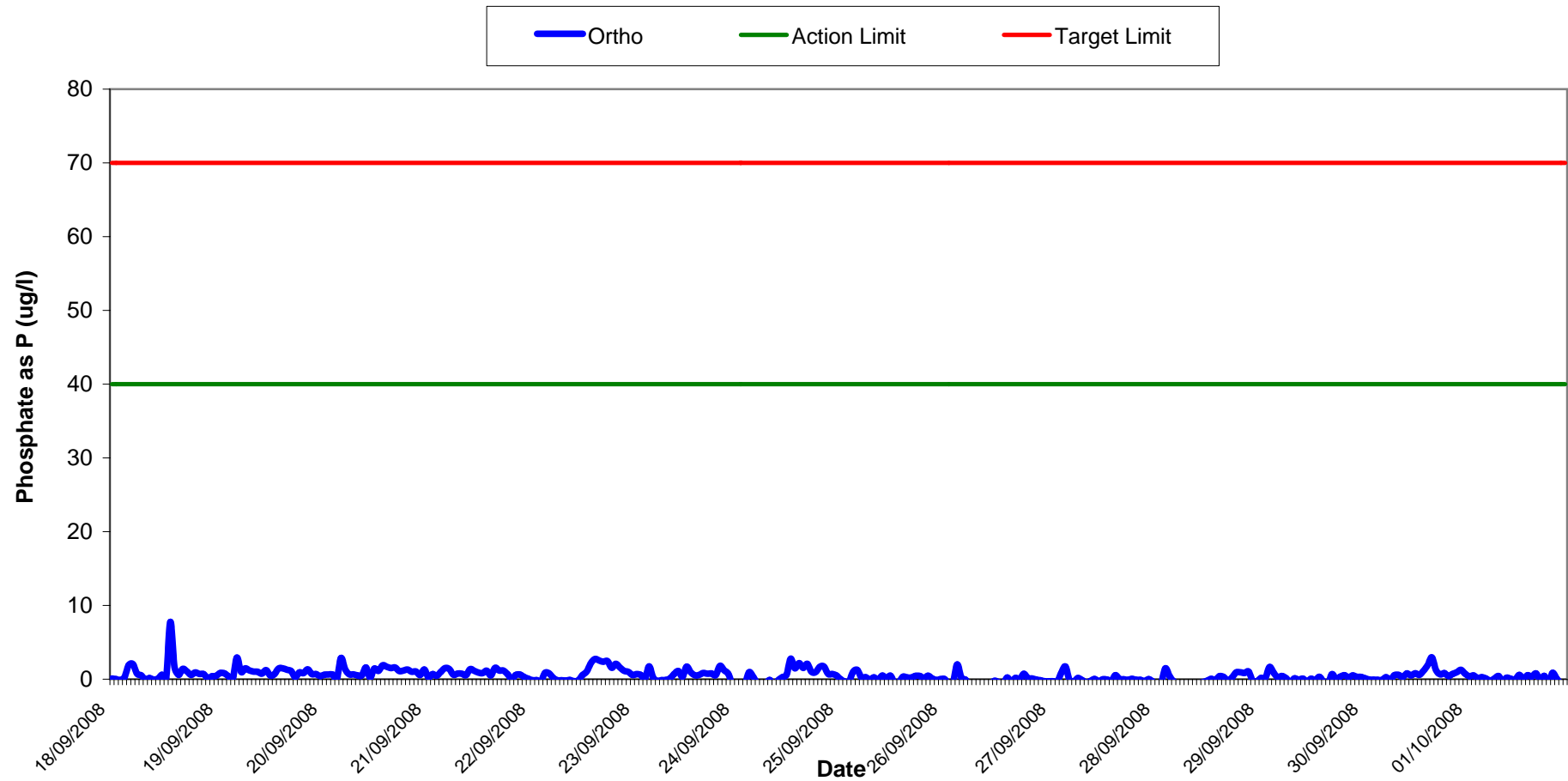
Vibration meter was located at V1 only.

Total Suspended Solids Results at SP1 Wk 39-40

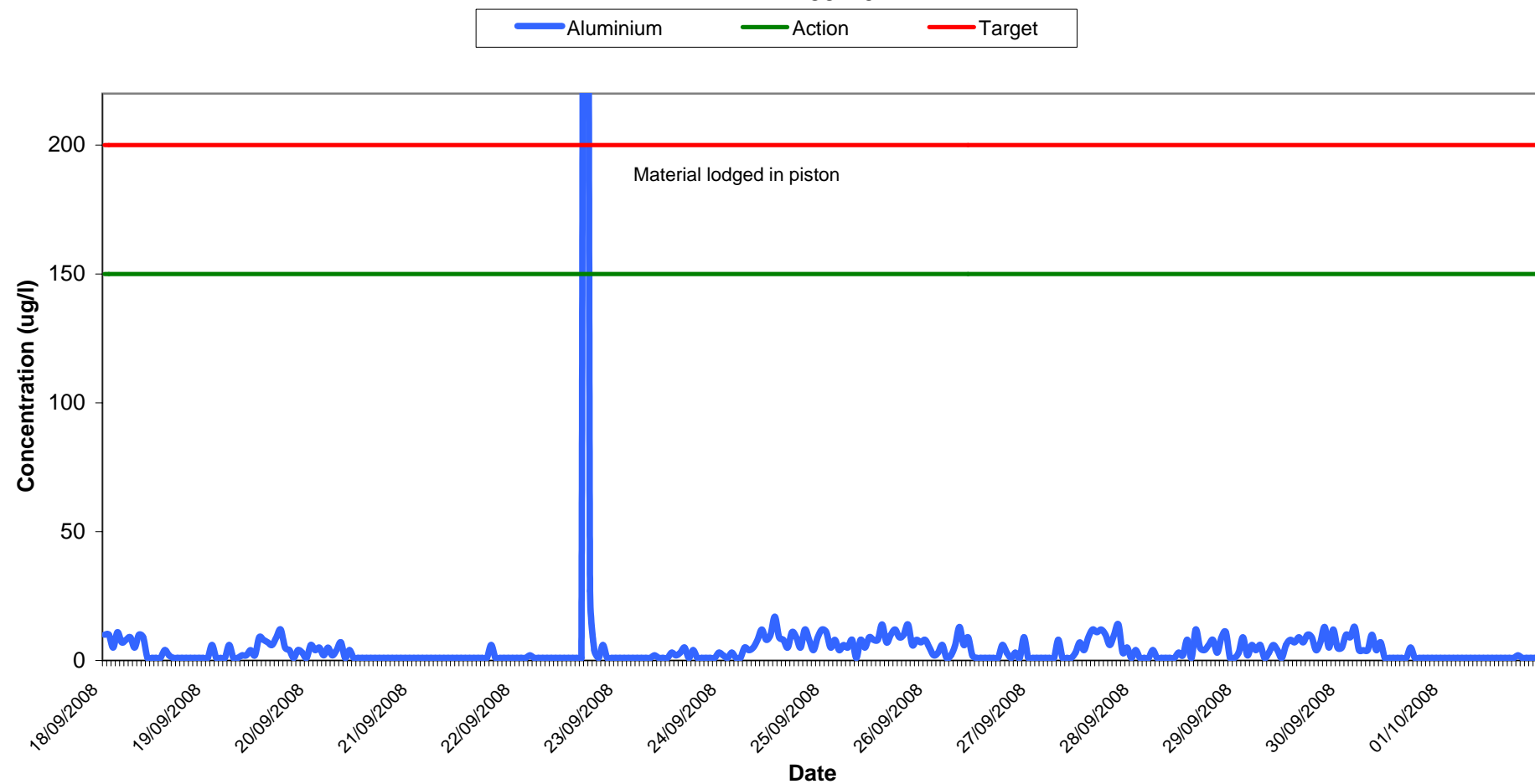
TSS Action Limit Target Limit Composite



Orthophosphate Results at SP1 Wk 39-40

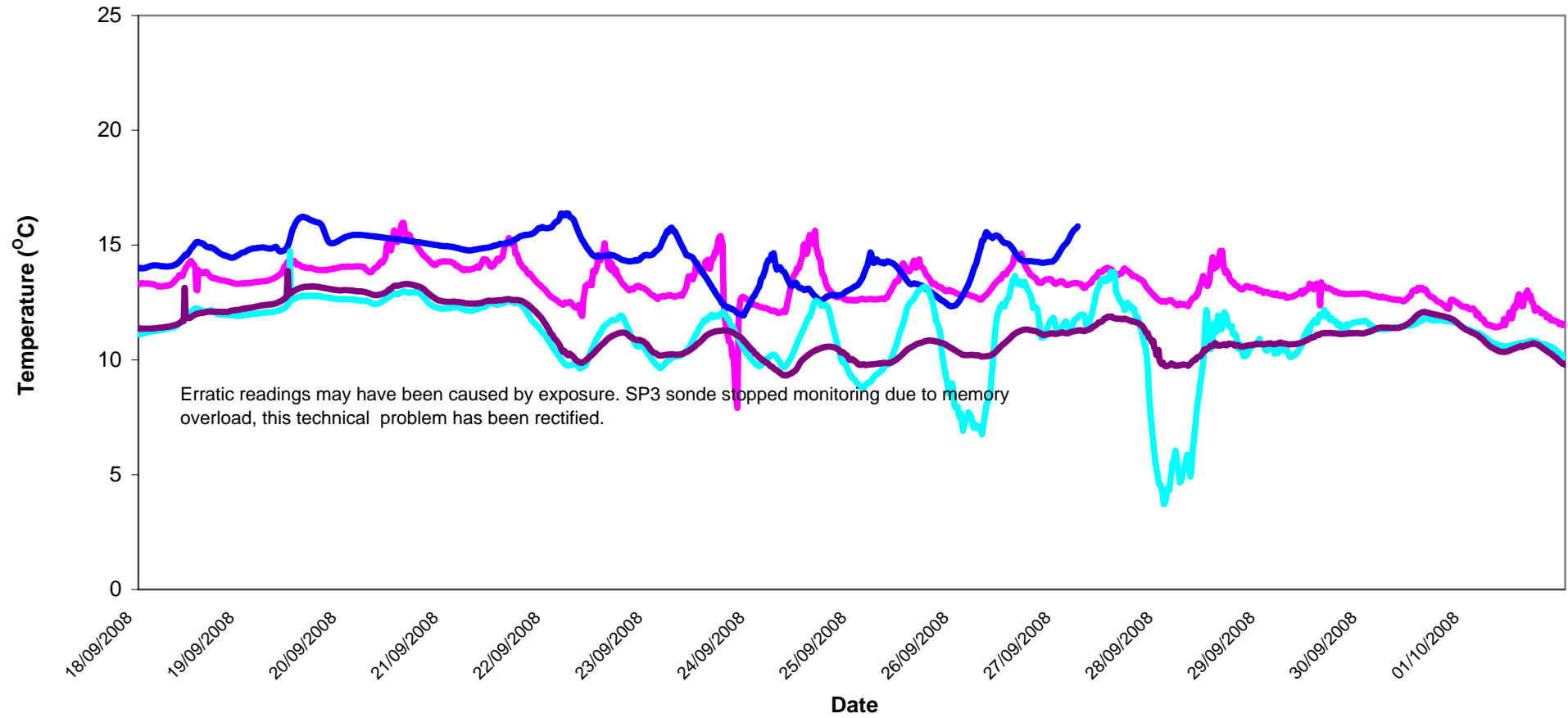


Aluminium Concentration at SP1 Wk 39-40

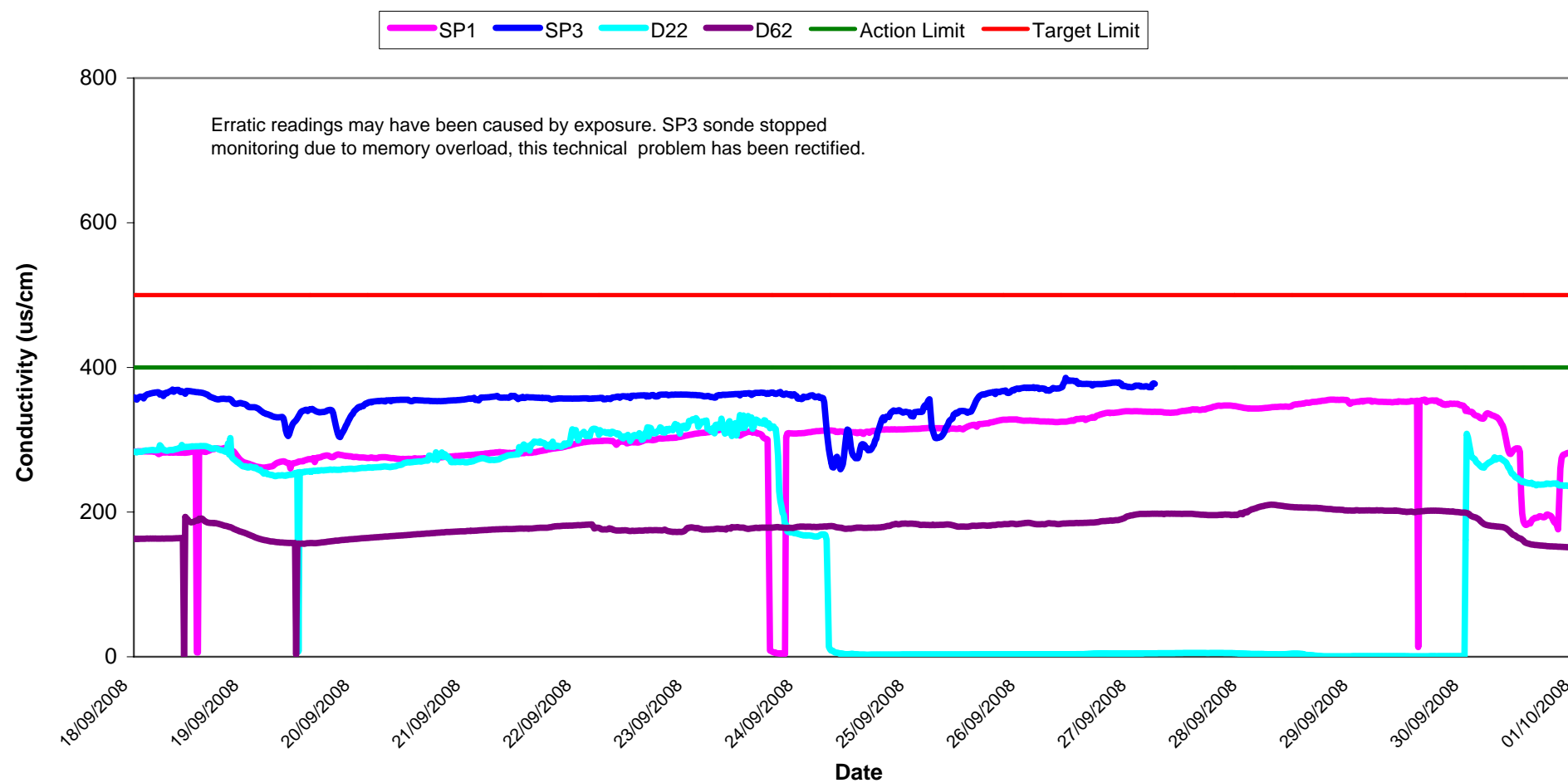


Temperature - Surface Waters Wk 39-40

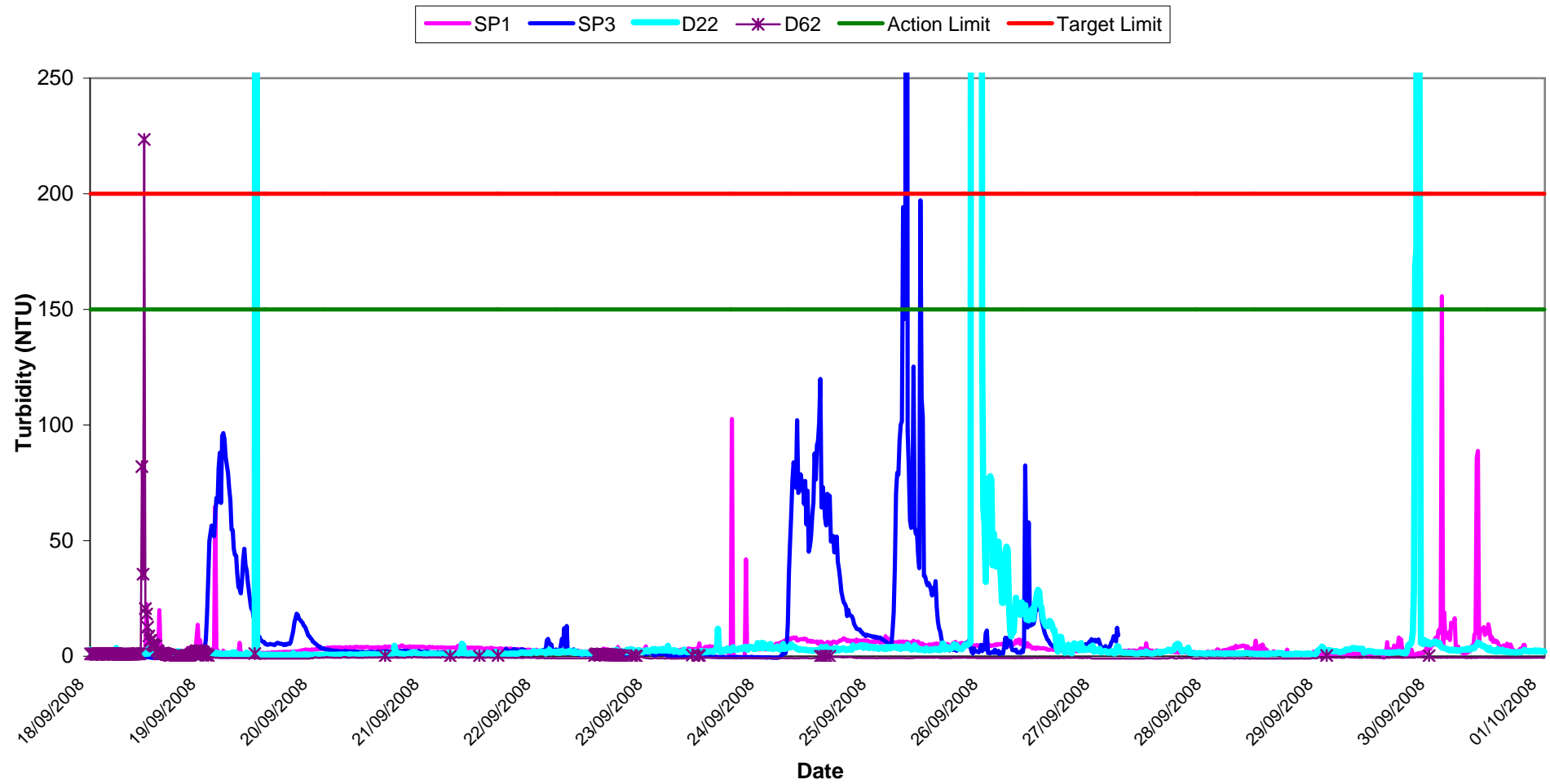
SP1 SP3 D22 D62



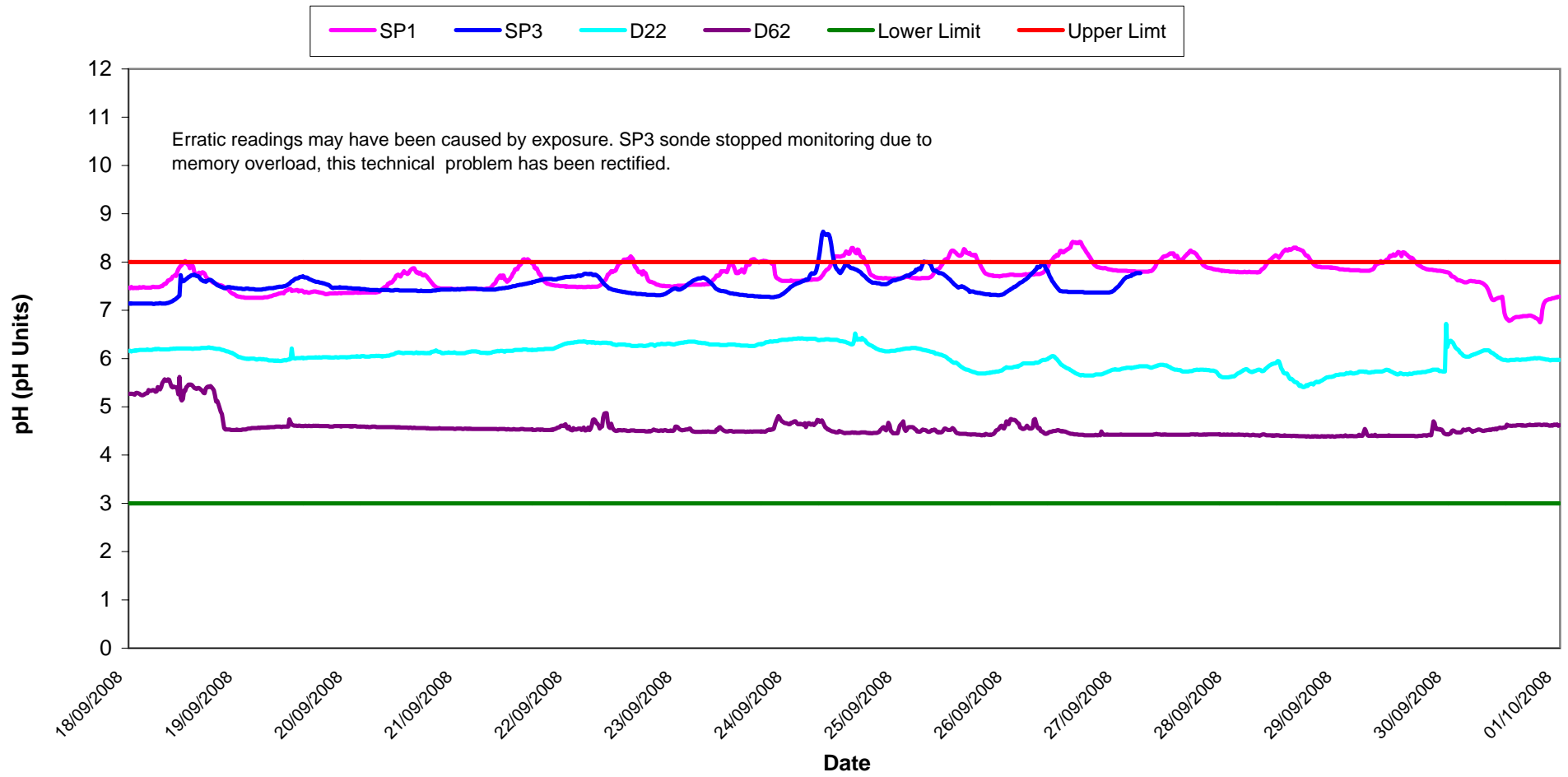
Conductivity - Surface Waters, Wk 39-40



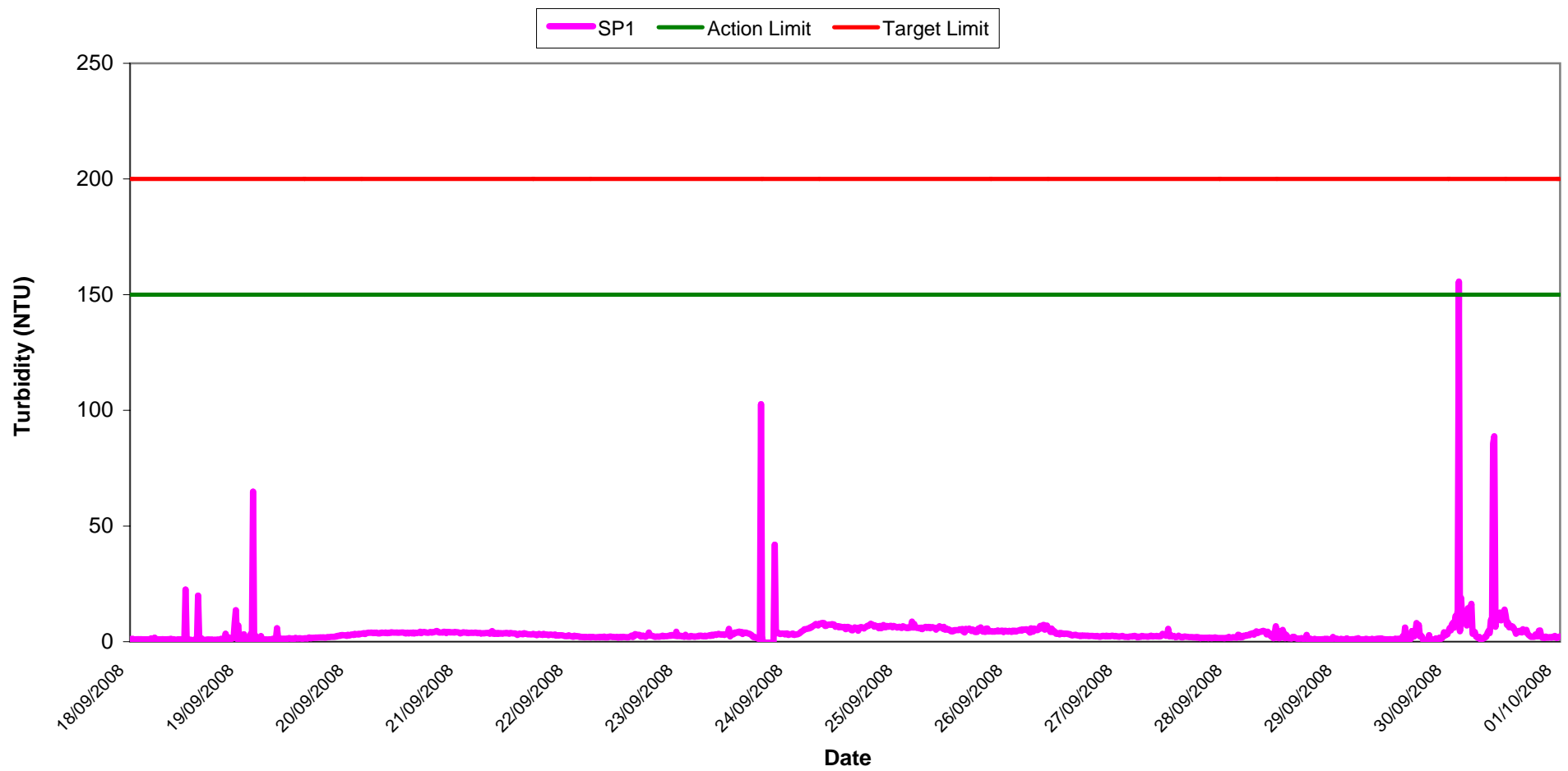
Turbidity - Surface Waters Wk 39-40



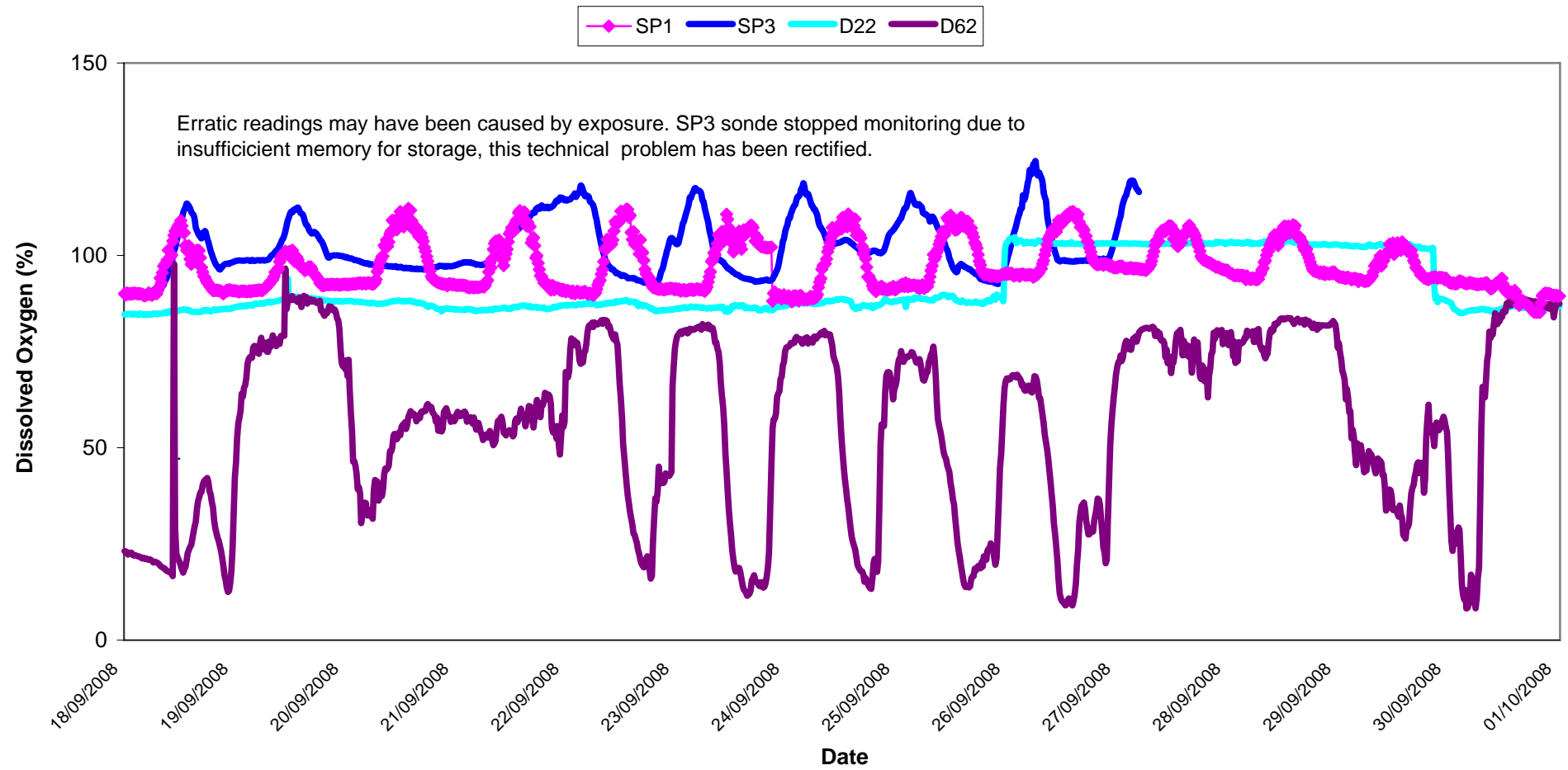
pH - Surface Waters Wk 39-40



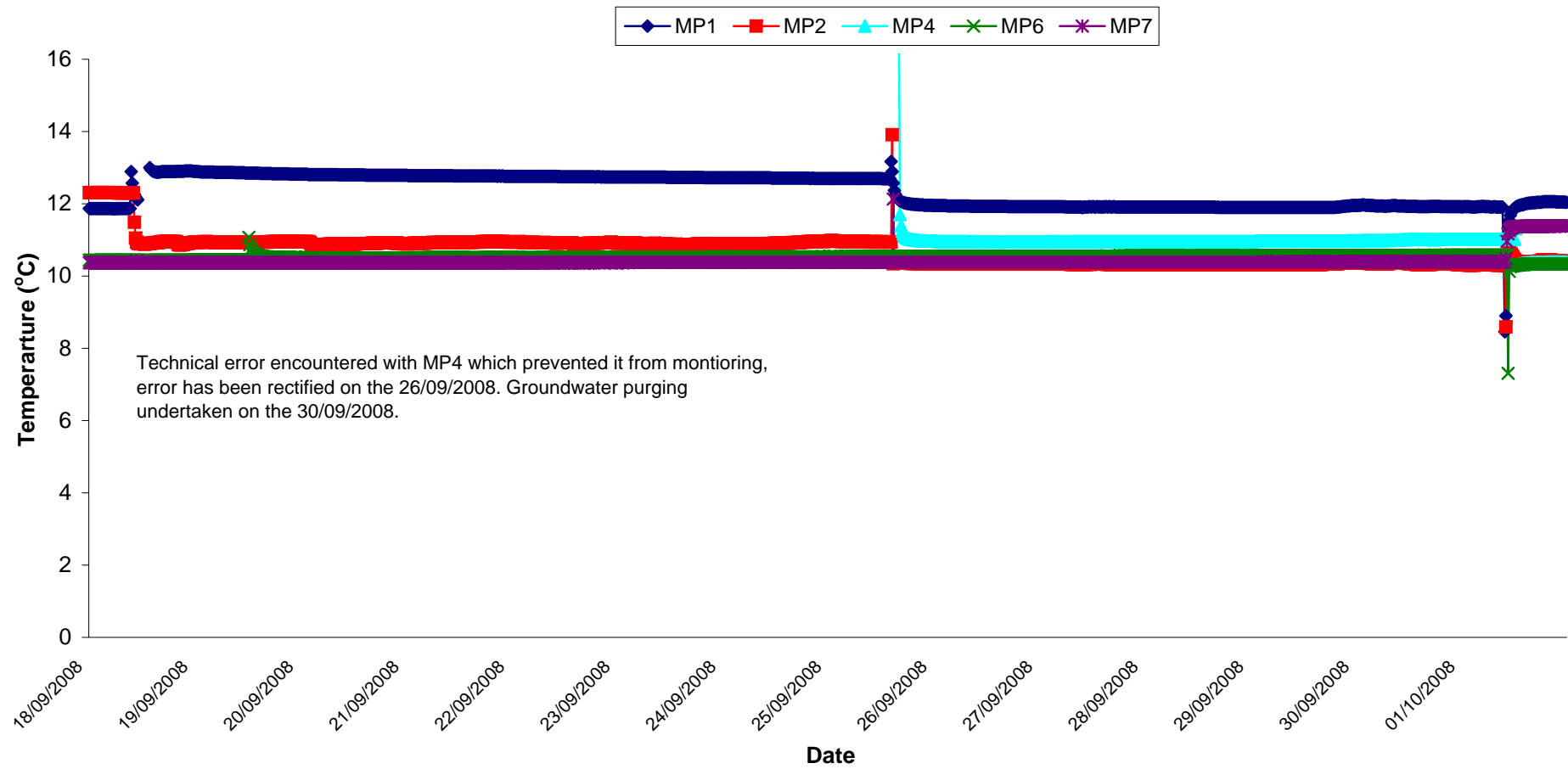
Turbidity - Surface Waters @ SP1, Wk 39-40



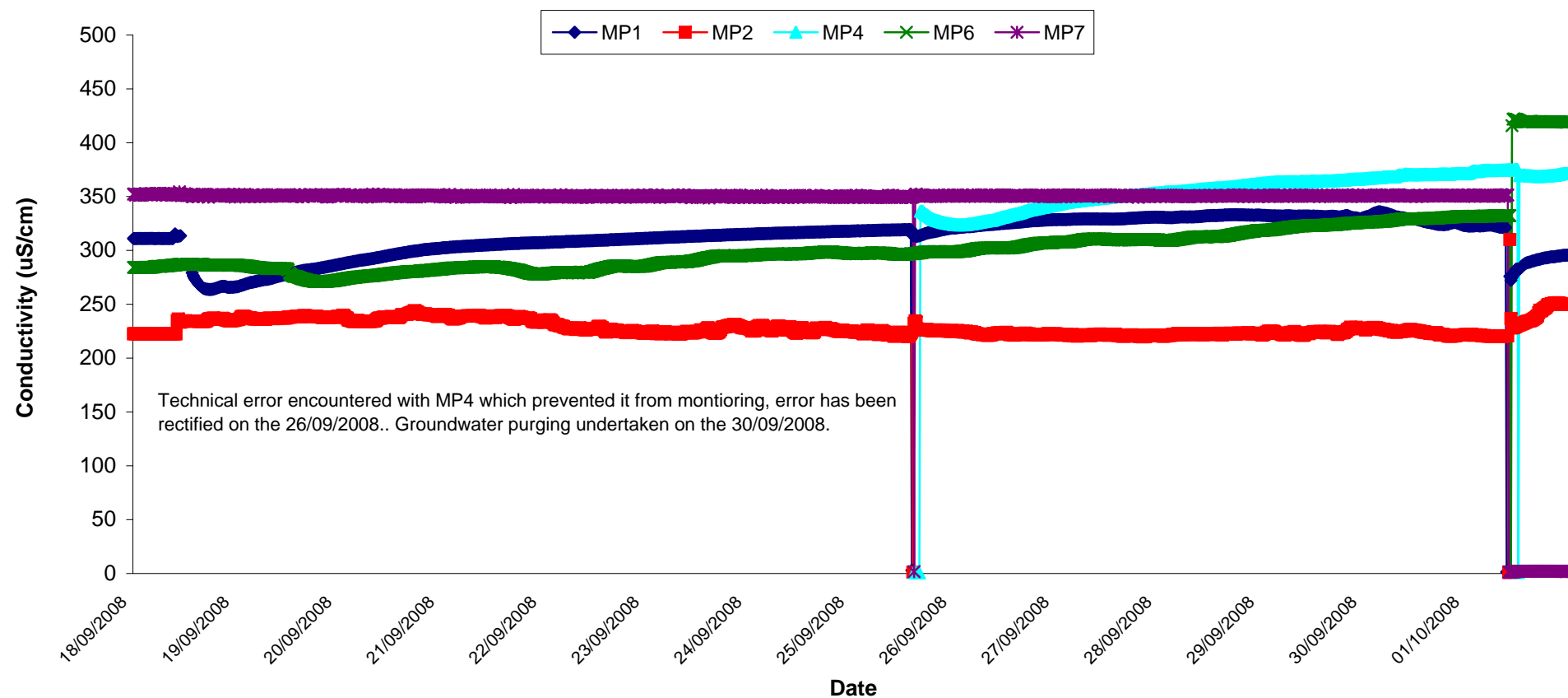
Dissolved Oxygen - Surface Waters, Wk 39-40



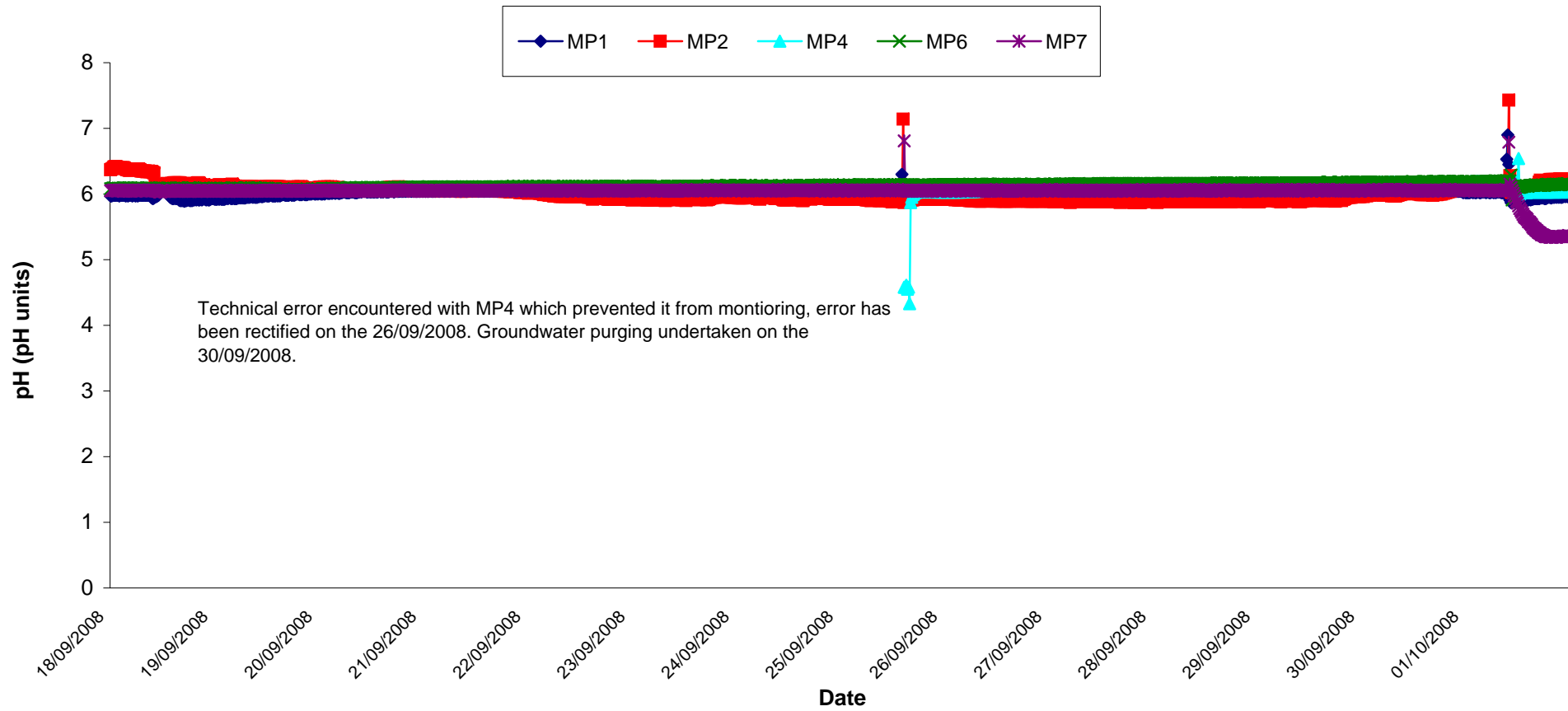
Temperature - Groundwaters Wk 39-40



Conductivity - Groundwaters Wk 39-40



pH - Groundwaters Wk 39-40



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	18/09/2008	287	14.4	4	95.3	6.4			<LOD			0.34		27	101	0.38	192
SP1	19/09/2008	273	14.9	6	92.2	7.1			0.1			0.03		36	223	0.05	183
SP1	22/09/2008	296	13.4	7	95.1	6.9			<LOD			0.04		25	54	0.06	192
SP1	23/09/2008	320	14.7	7	98.2	7.3			0.2			0.01		<LOD	120	0.06	200
SP1	24/09/2008	372	13.4	5	95.8	7.2			0.4			0.17		29	129	0.03	246
SP1	25/09/2008	320	13.6	10	101.3	7.5			0.3			0.13		<LOD	97	0.05	206
SP1	26/09/2008	333	13.7	10	91.1	7.2			0.1			<LOD		21	78	0.13	206
SP1	29/09/2008	372	13.9	4	91.3	7.0			<LOD			0.14		<LOD	64	0.94	243
SP1	30/09/2008	285	13.8	6	88.7	7.1			0.5			0.02		<LOD	137	0.19	189
SP1	01/10/2008	236	13.1	6	94.6	7.7			0.1			0.04		<LOD	64	0.54	186
SP3	18/09/2008	367	14.6	2	91.3	6.6			0.4			0.13		<LOD		0.04	240
SP3	19/09/2008	326	15.1	26	94.3	7.1			<LOD			0.08		26		0.07	214
SP3	22/09/2008	362	12.6	3	92.4	6.8			0.7			<LOD		<LOD		0.05	238
SP3	23/09/2008	344	14.6	15	98.0	7.1			0.1			0.09		<LOD		0.07	225
SP3	24/09/2008	312	13.0	14	91.0	7.3			0.3			0.12		31		0.02	205
SP3	25/09/2008	377	14.9	3	100.9	7.3			0.8			0.07		<LOD		0.05	246
SP3	26/09/2008	385	14.3	2	91.2	7.4			0.2			0.97		<LOD		0.03	250
SP3	29/09/2008	366	13.8	2	90.8	7.3			0.6			0.53		<LOD		0.03	249
SP3	30/09/2008	326	14.1	15	91.4	7.1			0.4			0.04		24		0.07	214
SP3	01/10/2008	340	13.8	8	99.3	7.8			0.1			0.03		<LOD		0.05	224
Additional Monitoring																	
D22	18/09/2008	241	14.9	2	83.6	6.9			0.3			0.05		51		0.13	160
D22	25/09/2008	311	12.3	8	71.5	6.9			<LOD			0.79		24		0.08	205
D62	18/09/2008	208	12.2	1	80.9	5.7			<LOD			0.15		60		<LOD	120
D62	25/09/2008	198	11.7	1	77.6	5.2			<LOD			1.37		29		0.09	127
Axonics Monitoring																	
Pre	18/09/2008	380		41		6.8			<LOD			0.31		80		<LOD	249
Post	18/09/2008	403		3		6.7			0.2			0.2		30	314	0.05	264
Pre	19/09/2008	378		36		6.9			<LOD			0.17		118		0.01	249
Post	19/09/2008	387		4		6.8			0.1			0.17		31	668	0.03	256
Pre	22/09/2008	376		10		6.8			0.5			0.15		183		0.04	246
Post	22/09/2008	386		7		6.7			0.4			0.09		43	320	0.03	253
Pre	23/09/2008	365		18		7.1			0.7			0.15		504		0.04	240
Post	23/09/2008	380		4		6.7			0.1			0.12		28	916	0.02	247
Pre	24/09/2008	374		77		7.2			0.1			0.24		710		0.09	245
Post	24/09/2008	381		3		6.9			0.2			0.09		<LOD	574	0.01	250
Pre	25/09/2008	387		324		7.2			<LOD			<LOD		78		0.02	253
Post	25/09/2008	396		2		6.9			0.4			0.13		<LOD	368	0.01	260
Pre	26/09/2008	390		>LOD		6.3			<LOD			>LOD		>LOD		0.21	255
Post	26/09/2008	376		3		6.7			0.5			0.03		34	266	0.01	246
Pre	29/09/2008	374		237		7.2			<LOD			>LOD		>LOD		0.02	245
Post	29/09/2008	378		4		7.0			0.8			0.15		42	237	0.04	378
Pre	30/09/2008	362		76		7.1			<LOD			0.21		469		0.04	236
Post	30/09/2008	383		7		6.9			0.4			0.16		62	265	0.04	249
Pre	01/10/2008	369		78		7.7			<LOD			0.18		733		0.03	241
Post	01/10/2008	383		3		7.2			0.7			0.12		<LOD	250	0.17	251
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																	