

Interim Environmental Report	Period Ending: 7th January 2009
Compiled By: Siobhán Quinn & Aoife Reynolds	
Approved By: Tony Doyle	

1 Monitoring Data

1.1 Monitoring Equipment

Axonics	<ul style="list-style-type: none"> – Axonics plant operated as required during the reporting period.
PO ₄	<ul style="list-style-type: none"> – The PO₄ analyser was operational during the reporting period. – The composite sampler was in place to cover any shortfalls in the PO₄ analyser.
TSS	<ul style="list-style-type: none"> – The TSS analyser was operational during the reporting period. – The composite sampler was in place to cover any shortfalls in the TSS analyser.
Aluminium	<ul style="list-style-type: none"> – There were technical issues with the aluminium analyser during the reporting period, these have since been rectified. – The composite sampler was in place to cover any shortfalls in the aluminium analyser
Composite	<ul style="list-style-type: none"> – The composite sampler was operational during the reporting period. – Where there is loss of continuous monitoring data due to instrument faults or other issues composite sample data is provided on the graphs.
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. – Telemetry is currently being set up at the noise monitoring station.
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.
Weather Station	<ul style="list-style-type: none"> – The majority of data used for this reporting period was taken from the on-site meteorological station. Data for the 20th of December through to the 27th of December was taken from Belmullet weather station. There was a technical fault with the on site station, which has since been rectified.
Weirs	<ul style="list-style-type: none"> – Weirs were operational during the reporting period.

1.2 Rainfall Data

18/12/2008	3.900	25/12/2008	0.000	01/01/2009	0.000
19/12/2008	6.630	26/12/2008	0.000	02/01/2009	0.000
20/12/2008	8.100	27/12/2008	0.000	03/01/2009	0.000
21/12/2008	1.200	28/12/2008	0.195	04/01/2009	0.195
22/12/2008	0.000	29/12/2008	0.000	05/01/2009	0.195
23/12/2008	0.100	30/12/2008	0.195	06/01/2009	0.000
24/12/2008	0.000	31/12/2008	0.000	07/01/2009	0.195
Total Rainfall 20.905 mm					

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1.3 Summary

Environment	Comments
Surface Water	There was 1 no. reportable exceedance during the reporting period.
Groundwater	The groundwater data (Sonde) is within anticipated ranges.
Dust	Dust monitoring in progress.
Weather	There was a total of 20.905mm of rainfall during the reporting period, with a temperature range of -4.1°C to 12.1°C.
Noise	All noise levels were within the set limits.
Vibration	No vibration exceedances were recorded during the reporting period.

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

2 Environmental Exceedances / Incidents / Complaints

There was 1 no. reported exceedance during the reporting period.

Date and Time	22 nd of December
Location	SP1
Nature of Incident	A value of 226µg/l was recorded for total aluminium at SP1 on the 22 nd of December 2008. This value is in exceedance of the site discharge limit for total aluminium of 200µg/l. During the week previous there was a total of 45.055mm of rainfall, which contributes to this excessive values.
Actions Taken	<ul style="list-style-type: none"> On going surveillance and maintenance of site drainage outside the main footprint area. Close monitoring of Total Aluminium will be carried out at SP1. Storage and pumping back to Axonic's of footprint waters. Continued implementation of agreed surface water actions.
Category	Environmental Exceedance
Status	Open

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 CaCO3	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	07/01/2008	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
MP 2	07/01/2008	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
MP 3	07/01/2008	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
MP 4	07/01/2008	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
MP 5	07/01/2008	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
MP 6	07/01/2008	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
MP 7	07/01/2008	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
MP 8	07/01/2008	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
MP 10a	07/01/2008	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
MP 11	07/01/2008	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.

Graphs provided for MP1, MP2,MP4, MP6 and MP7: 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	24/10/2008	21/11/2008	191474	21/11/2008	27/11/2008	174	
D2	24/10/2008	21/11/2008	191475	21/11/2008	27/11/2008	167	
D3	24/10/2008	21/11/2008	191476	21/11/2008	27/11/2008	171	
D4	24/10/2008	21/11/2008	191477	21/11/2008	27/11/2008	180	
D1	21/11/2008	22/12/2008	194862	22/12/2008	05/01/2009	172	
D2	21/11/2008	22/12/2008	194863	22/12/2008	05/01/2009	37	
D3	21/11/2008	22/12/2008	194864	22/12/2008	05/01/2009	144	
D4	21/11/2008	22/12/2008	194865	22/12/2008	05/01/2009	39	
D1	22/12/2008	I.P.	I.P.	I.P.	I.P.	I.P.	
D2	22/12/2008	I.P.	I.P.	I.P.	I.P.	I.P.	
D3	22/12/2008	I.P.	I.P.	I.P.	I.P.	I.P.	
D4	22/12/2008	I.P.	I.P.	I.P.	I.P.	I.P.	
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)

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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	5.1	11.8	18/12/2008	08:00:00	14:00:00	2539533	5.9	71.9	50.2	82.2	38.7	
N1	3.6	12.1	19/12/2008	08:00:00	14:00:00	2539533	6.1	65.9	47.0	75.0	36.5	
N1	7.0	11.5	20/12/2008	08:00:00	14:00:00	2539533	7.9		52.2	79.2	38.7	
N1	9.6	11.7	21/12/2008	08:00:00	14:00:00	2539533	9.8		40.5	56.8	35.1	
N1	9.0	11.0	22/12/2008	08:00:00	14:00:00	2539533	8.5		51.1	73.5	34.2	
N1	8.9	10.4	23/12/2008	08:00:00	14:00:00	2539533	7.8		49.8	73.4	30.0	
N1	-2.4	5.8	05/01/2009	08:00:00	14:00:00	2539533	2.0	201.8	48.5	74.3	30.0	
N1	-4.1	3.8	06/01/2009	08:00:00	14:00:00	2539533	1.6	44.5	46.7	72.7	30.0	
N1	-0.5	6.7	07/01/2009	08:00:00	14:00:00	2539533	2.3	108.6	59.9	100.2	30.0	
* 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).

Note: Site weather data not available from the 24/12/2008 to 04/01/2009. Belmullet data used where available.

Night Time Noise Monitoring Record Sheet

Determinant Results

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									50			
Target Limit									55			
N1	5.1	11.8	18/12/2008	22:00:00	10:00:00	2539533	5.9	71.9	47.0	75.0	36.5	
N1	3.6	12.1	19/12/2008	22:00:00	10:00:00	2539533	6.1	65.9	42.0	69.0	36.7	
N1	7.0	11.5	20/12/2008	22:00:00	10:00:00	2539533	7.9		44.5	69.8	30.0	
N1	9.6	11.7	21/12/2008	22:00:00	10:00:00	2539533	9.8		55.9	78.5	45.8	Values impacted by high wind speeds
N1	9.0	11.0	22/12/2008	22:00:00	10:00:00	2539533	8.5		44.3	68.9	34.2	
N1	-2.4	5.8	05/01/2009	22:00:00	10:00:00	2539533	2.0	201.8	40.6	65.4	30.0	
N1	-4.1	3.8	06/01/2009	22:00:00	10:00:00	2539533	1.6	44.5	50.3	61.9	32.6	
N1	-0.5	6.7	07/01/2009	22:00:00	10:00:00	2539533	2.3	108.6	50.1	64.6	34.8	

* 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)
18/12/2008	21.20	12.50	18.70	12.98	4.07	10.85
19/12/2008	42.23	13.98	23.93	19.06	5.57	11.55
20/12/2008	45.71	18.25	28.55	18.39	8.49	12.73
21/12/2008	24.72	11.70	17.70	12.98	3.67	9.29
22/12/2008	13.33	4.65	9.35	6.98	0.07	3.82
23/12/2008	6.12	5.11	5.57	1.30	0.56	0.99
24/12/2008	8.00	4.43	6.17	4.27	0.56	2.37
25/12/2008	8.00	4.99	6.03	4.07	1.44	2.00
26/12/2008	6.99	7.54	4.88	4.27	1.03	2.54
27/12/2008	7.54	4.32	6.99	4.27	1.03	3.71
28/12/2008	7.54	4.32	6.12	4.27	1.30	2.74
29/12/2008	4.65	2.47	3.59	1.58	-0.08	0.68
30/12/2008	3.23	2.39	2.90	0.28	-0.08	0.14
31/12/2008	3.90	1.71	2.55	0.90	-0.43	0.12
01/01/2009	4.21	3.80	3.89	1.03	0.90	0.99
02/01/2009	4.10	1.41	3.50	1.30	-0.38	0.82
03/01/2009	4.21	3.23	3.86	1.30	0.20	0.92
04/01/2009	3.80	3.60	3.65	0.67	0.46	0.56
05/01/2009	3.80	2.10	3.40	0.78	-0.28	0.44
06/01/2009	3.90	0.59	2.63	0.90	-0.73	0.15
07/01/2009	2.39	0.84	1.45	-0.08	-0.83	-0.49

Note: Negative values indicate low flow conditions.

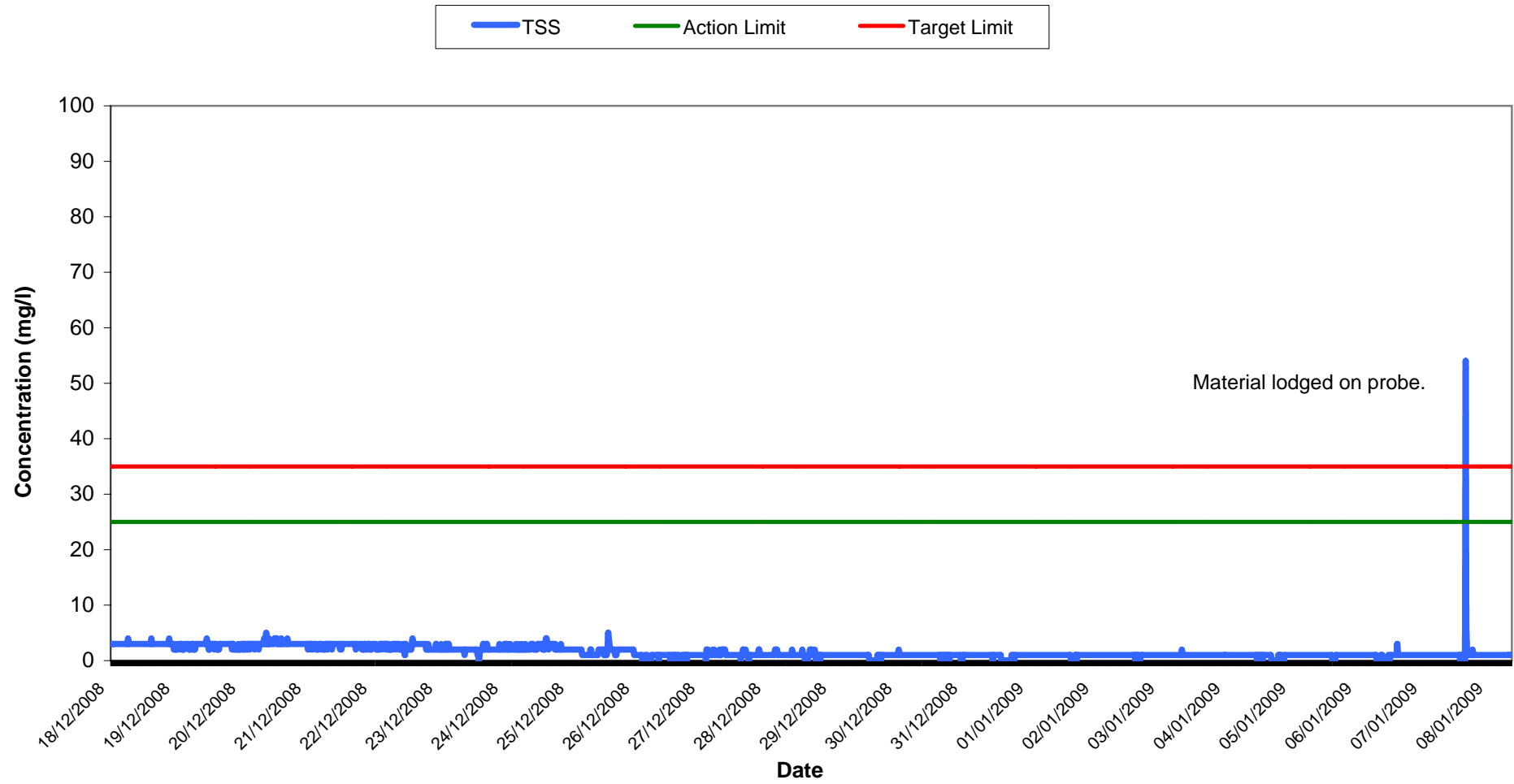
Vibration Monitoring Record Sheet

Determinant Results

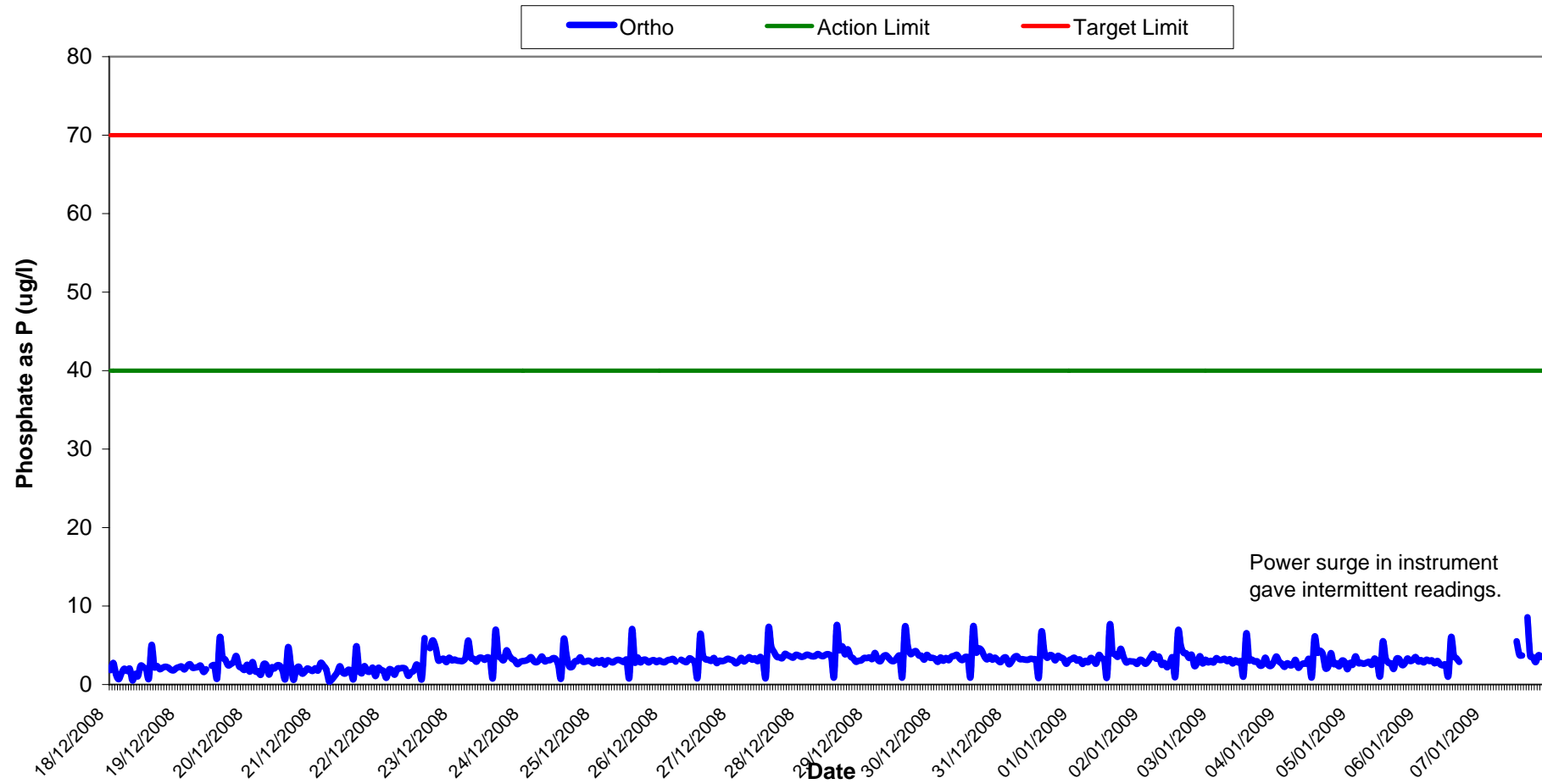
[illegible]

Vibration meter was located at V1 only.

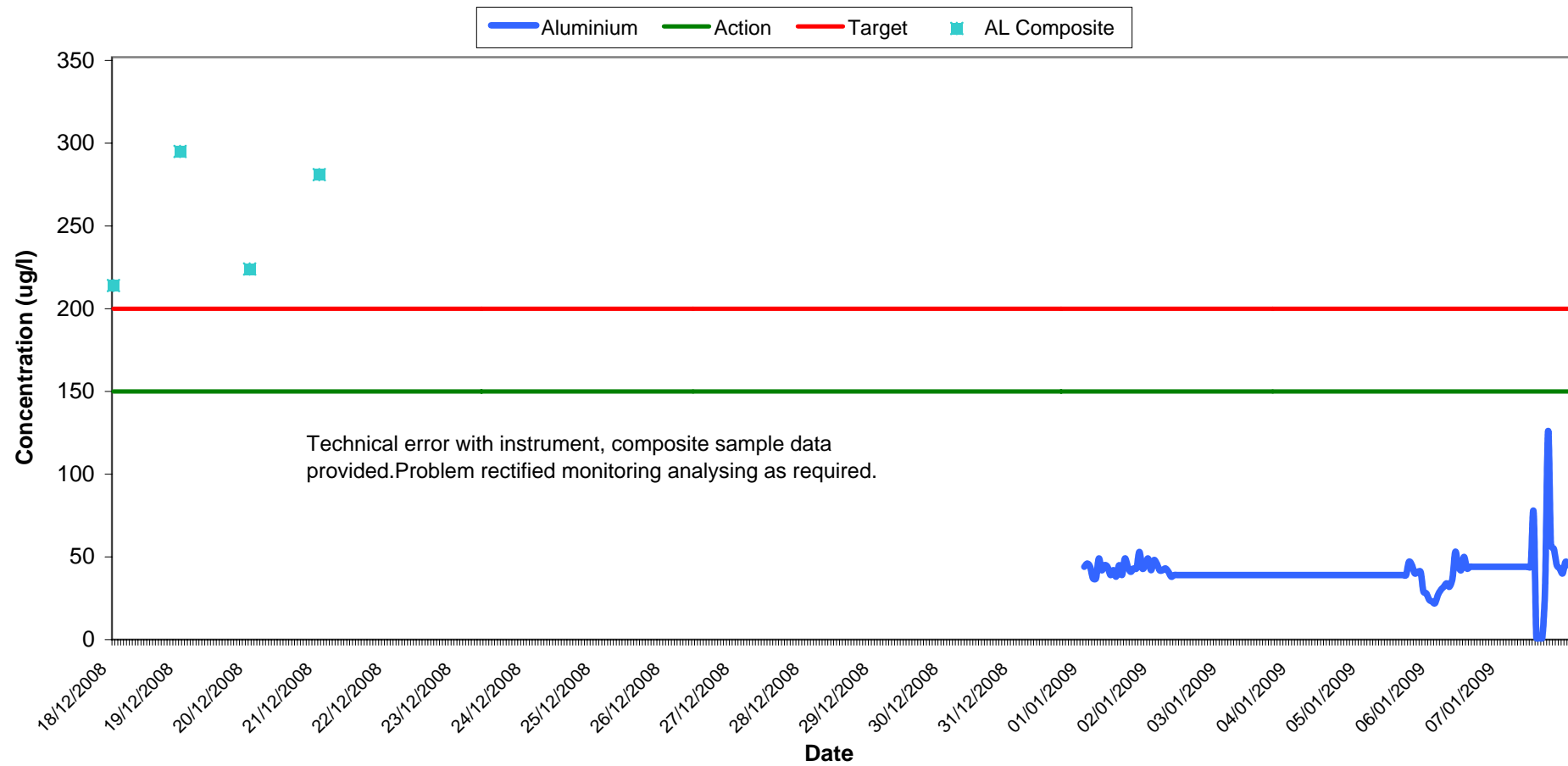
Total Suspended Solids Results at SP1 Wk 51-01



Orthophosphate Results at SP1 Wk 51-01

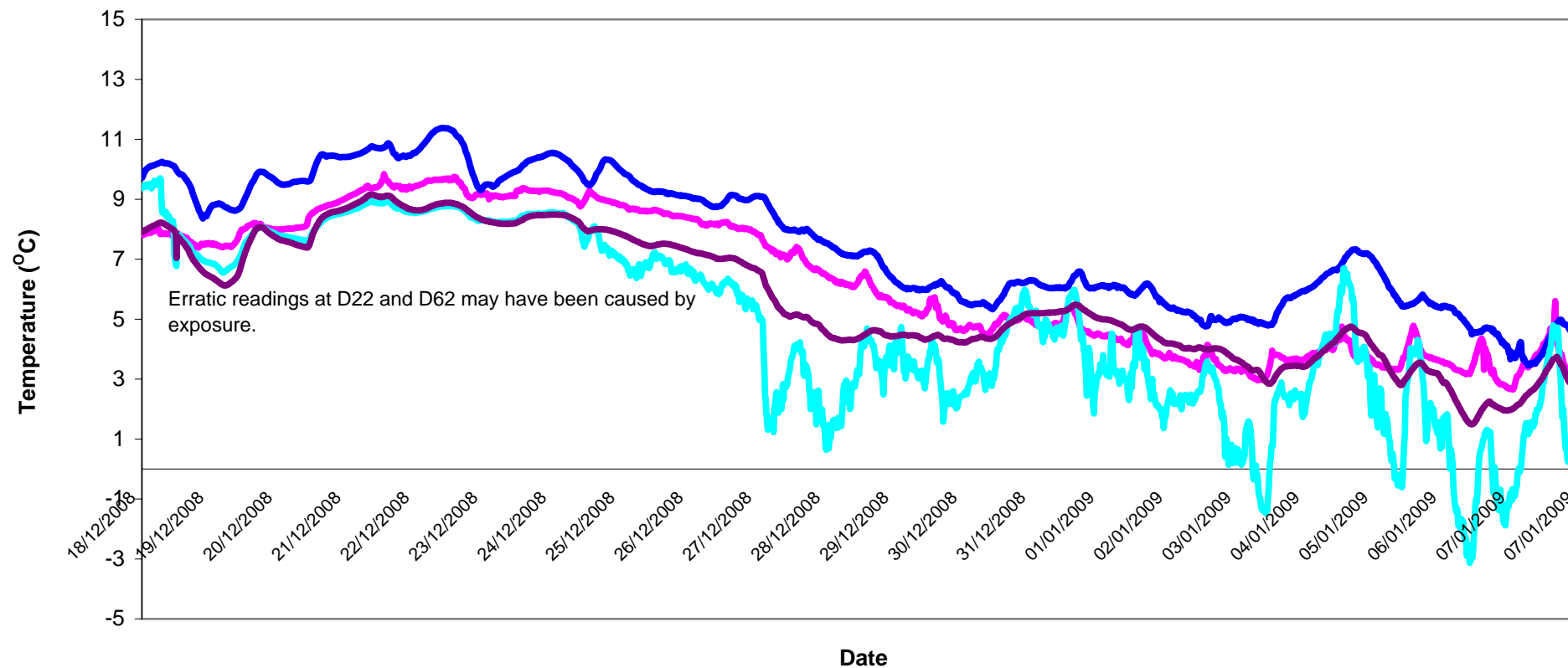


Aluminium Concentration at SP1 Wk 51-01

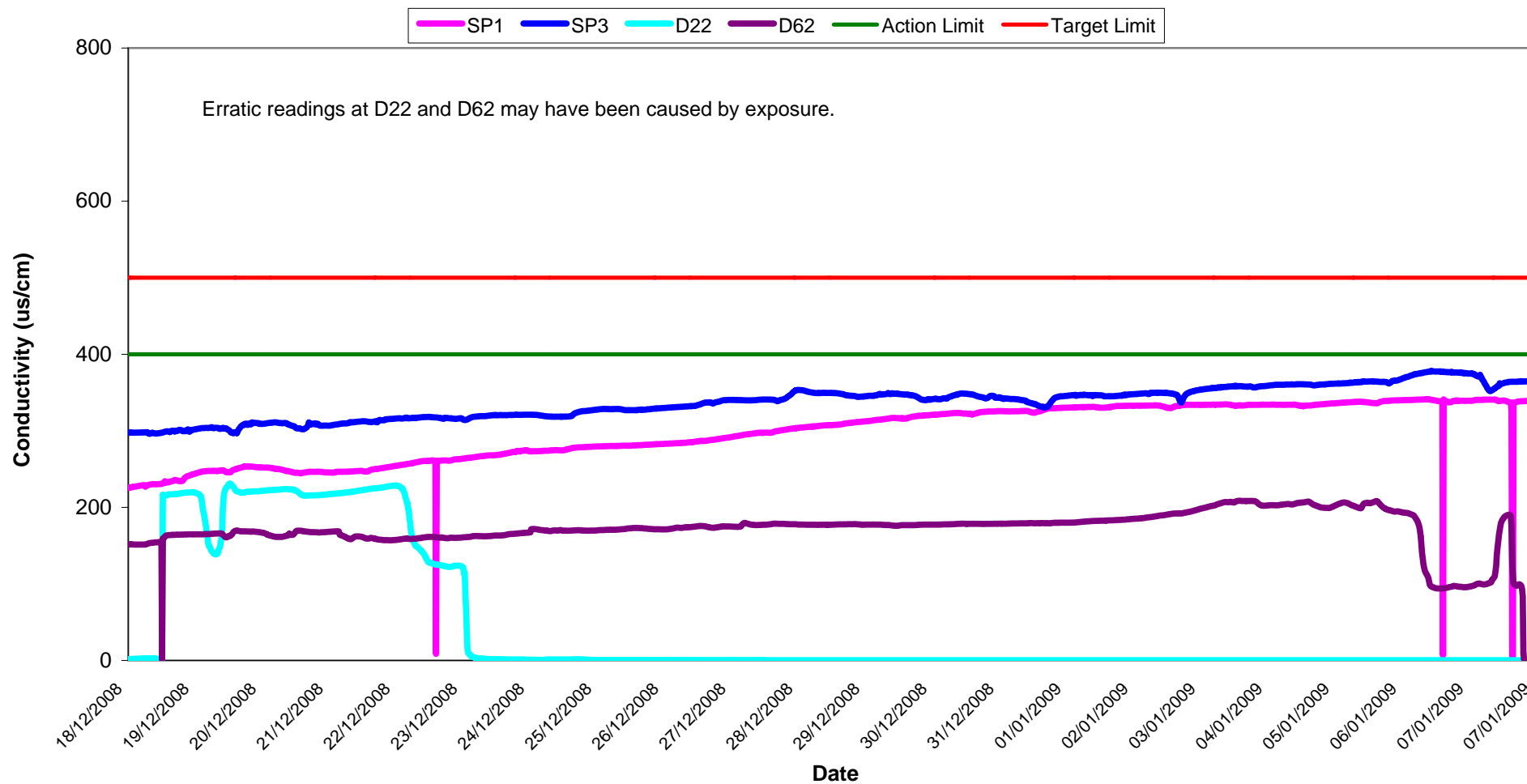


Temperature - Surface Waters Wk 51-01

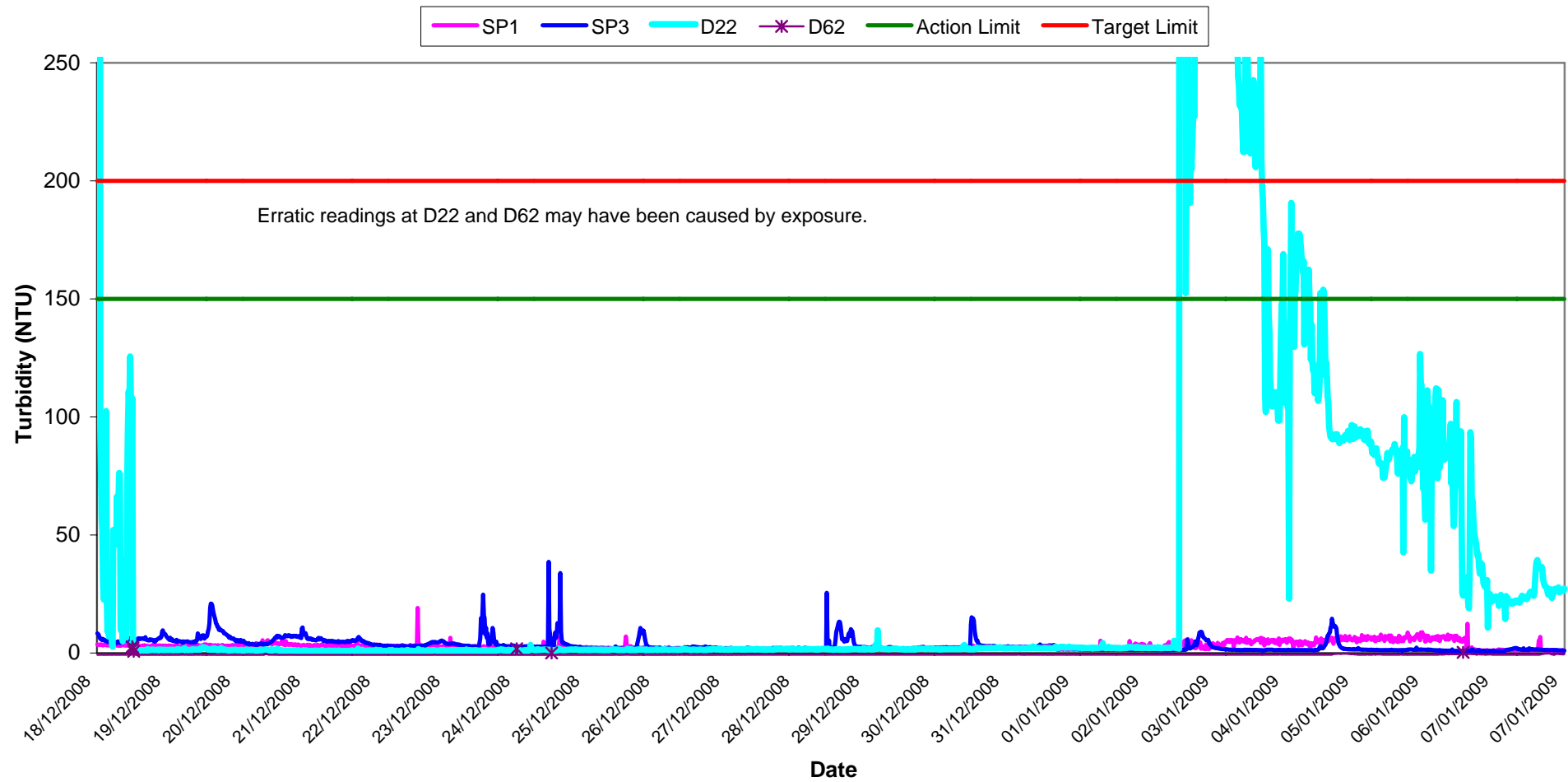
SP1 SP3 D22 D62



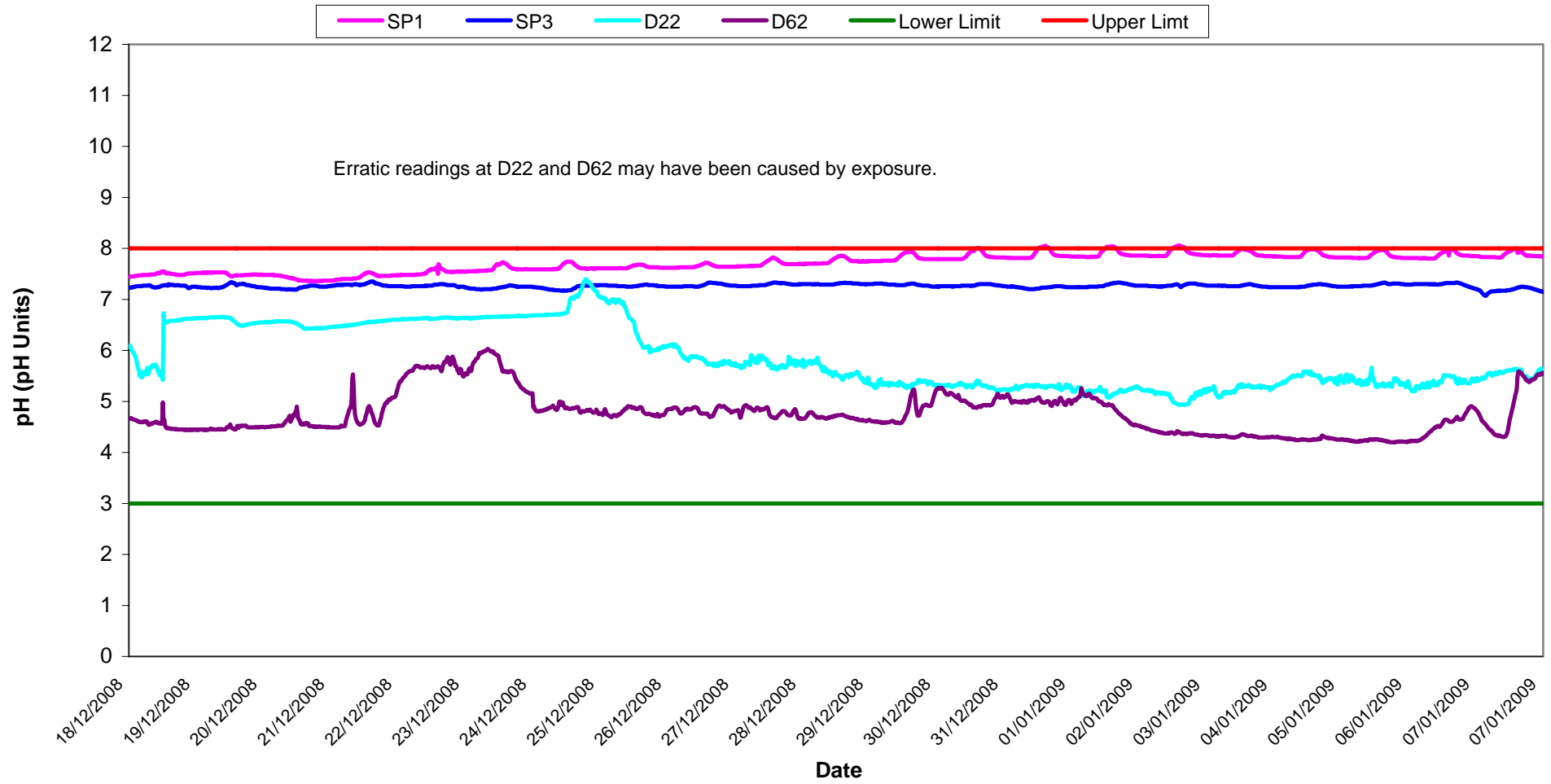
Conductivity - Surface Waters, Wk 51-01



Turbidity - Surface Waters Wk 51-01

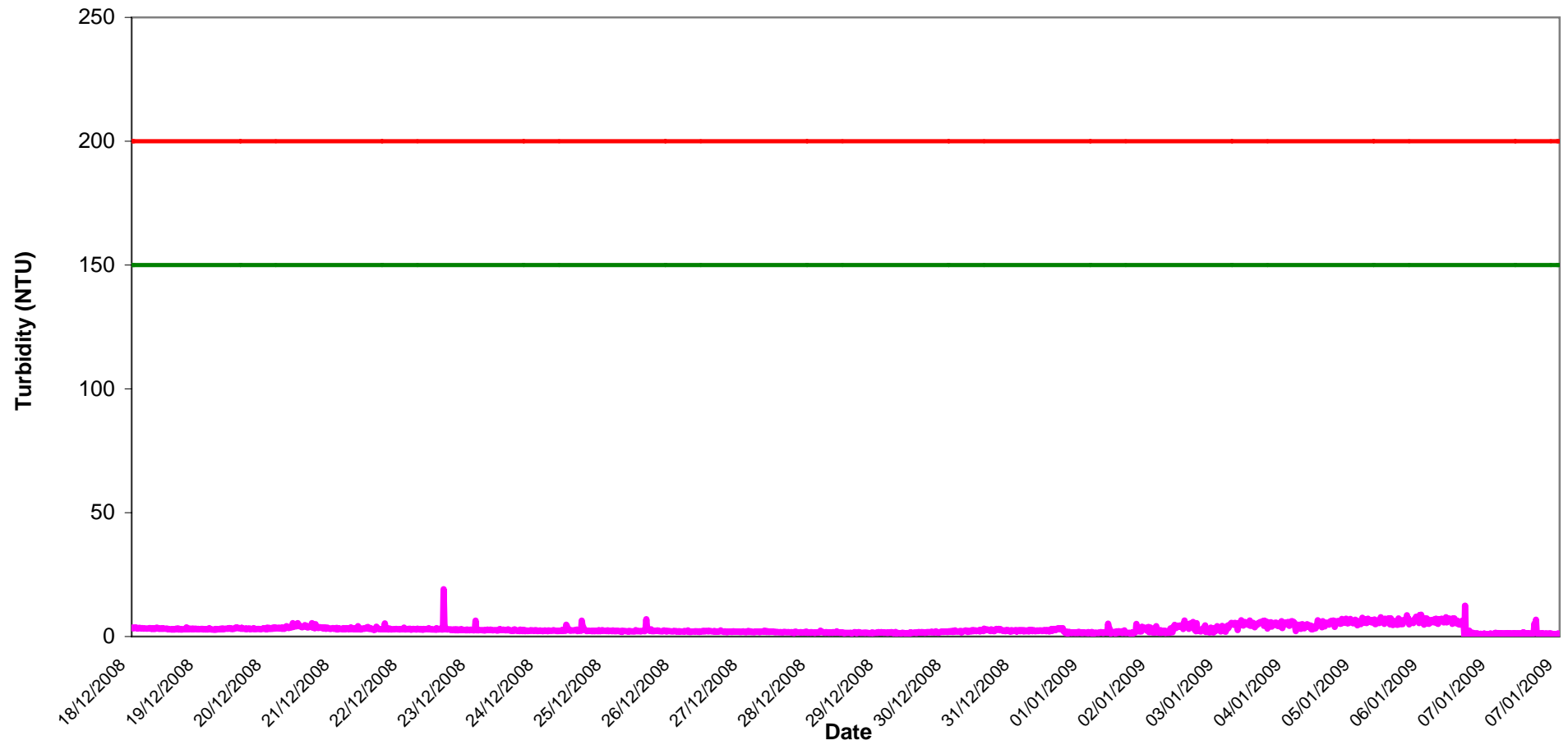


pH - Surface Waters Wk 51-01

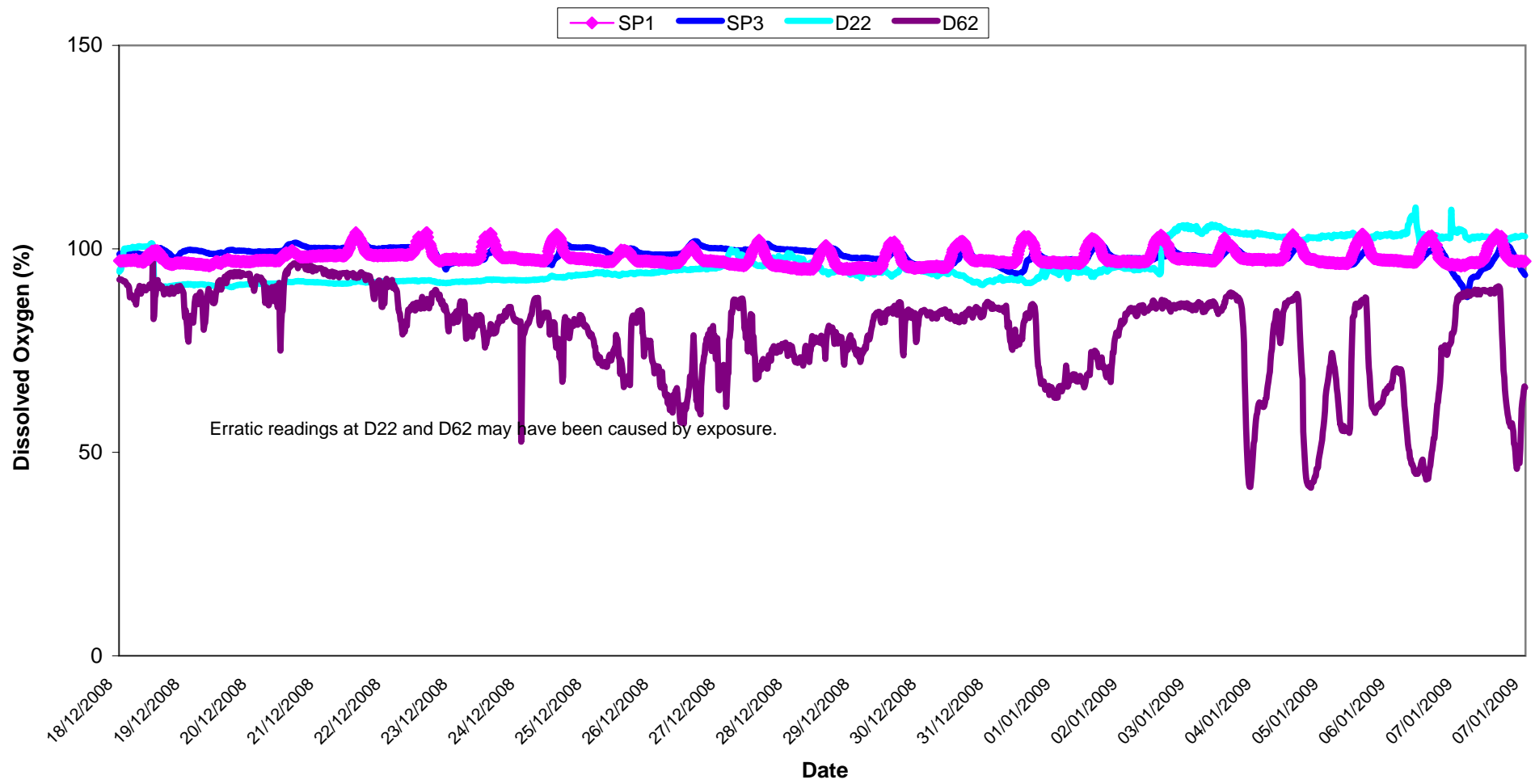


Turbidity - Surface Waters @ SP1, Wk 51-01

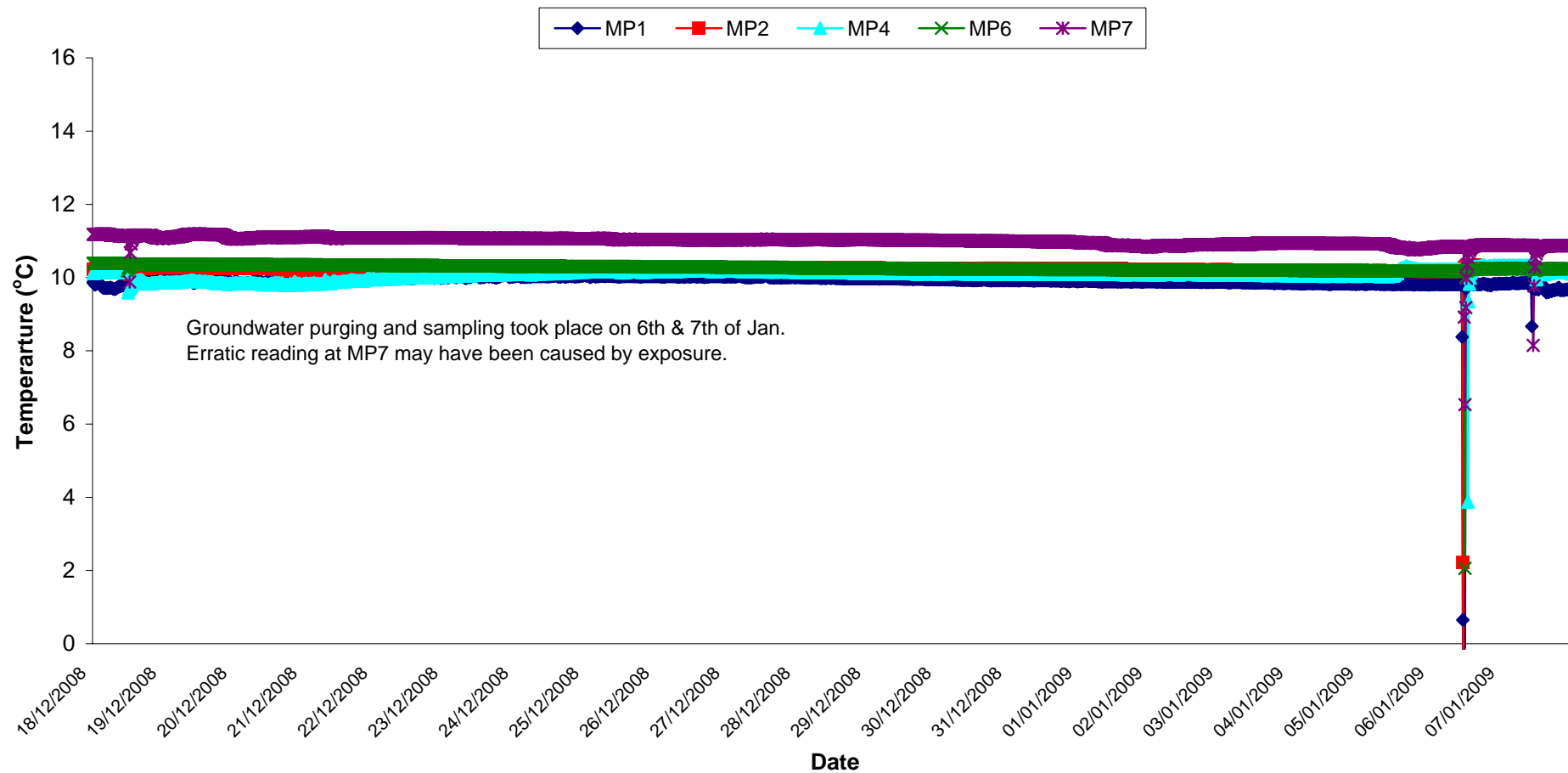
SP1 Action Limit Target Limit



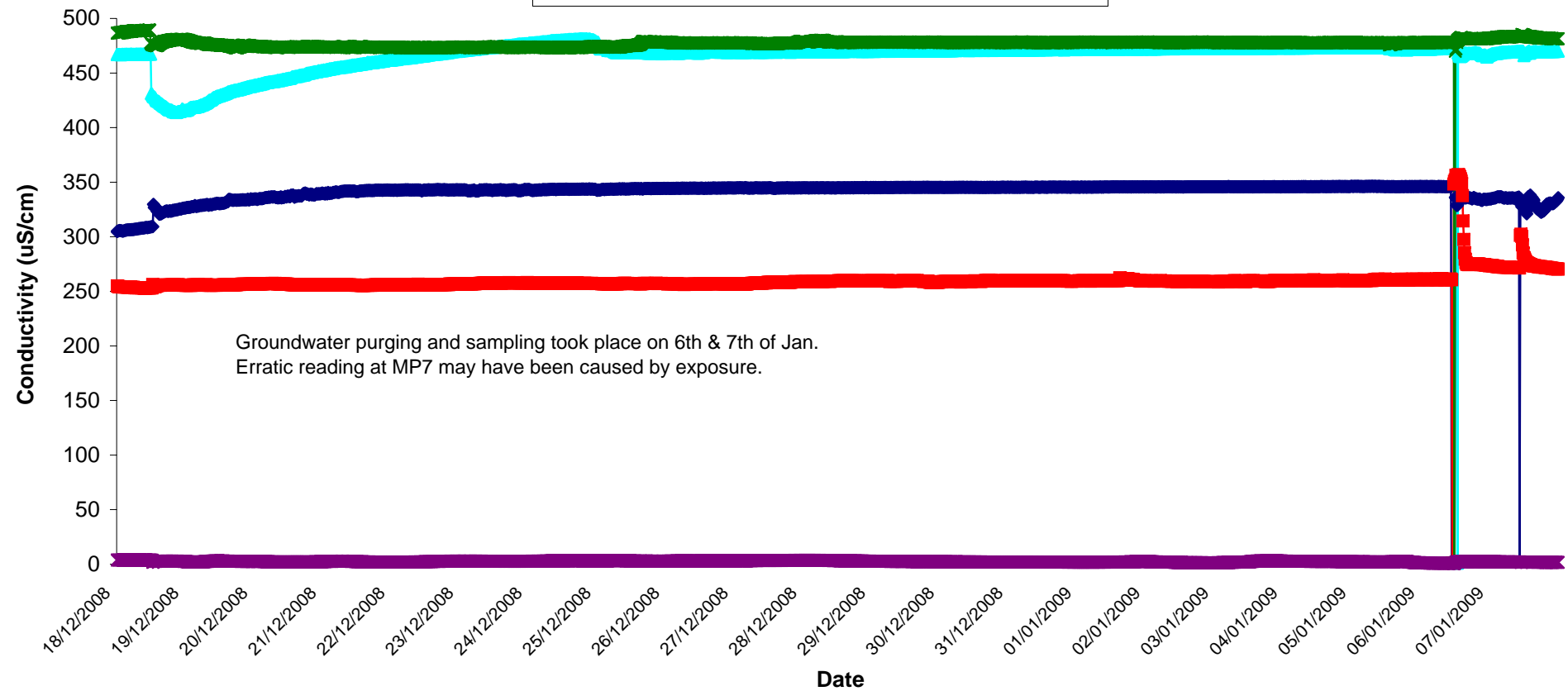
Dissolved Oxygen - Surface Waters, Wk 51-01



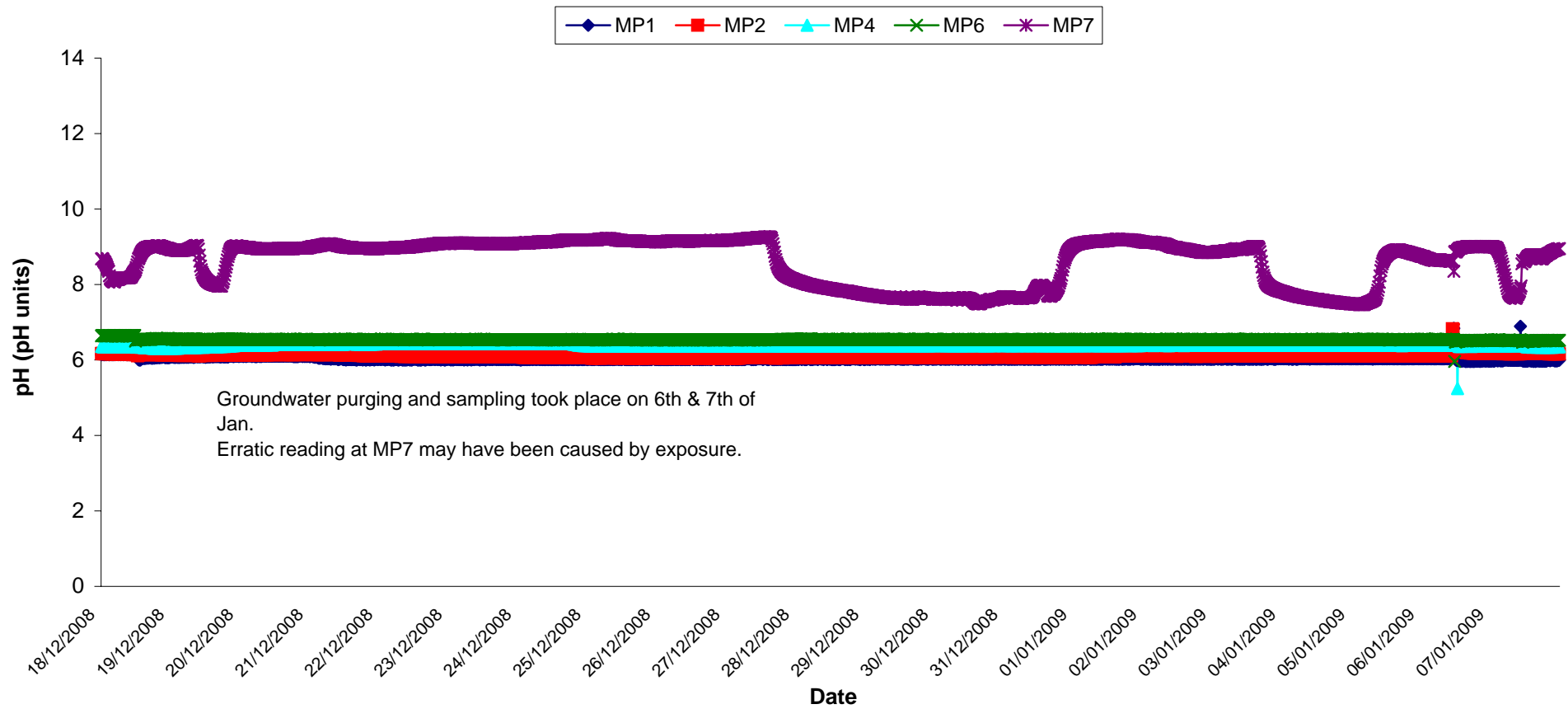
Temperature - Groundwaters Wk 51-01



 MP1
 MP2
 MP4
 MP6
 MP7



pH - Groundwaters Wk 51-01



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	18/12/2008	199	8.3	10.1	92.4	7.5			0.3			<LOD		38	194	0.08	127
SP1	19/12/2008	250	8.2	4.9	97.2	7.2	2	<0.01		<0.44	0.04	0.02	0.03	67	217	<0.03	121
SP1	22/12/2008	254	9.7	7.6	100.1	7.4			<LOD			0.12		53	217	0.07	182
SP1	23/12/2008	261	9.3	7.4	102.7	7.7			<LOD			0.06		60		0.19	185
SP1	26/12/2008	262	10.5	5.1	89.9	7.2			<LOD			0.10		42	199	0.03	185
SP1	28/12/2008	310	6.4	4.8	90.8	7.1			<LOD			0.21		33	110	0.01	207
SP1	31/12/2008	343	6.6	6.4	86.9	7.2			0.3			0.11		23	118	0.18	214
SP1	02/01/2009	244	6.0	4.7	90.5	7.2			<LOD			0.09		17	116	0.20	184
SP1	05/01/2009	369	5.3	7.6	89.0	6.9			0.2			0.12		<LOD	137	0.74	227
SP1	06/01/2009	365	4.6	9.6	95.6	7.0			0.1			0.06		<LOD	90	0.01	223
SP1	07/01/2009	353	5.7	6.9	93.1	7.1			0.4			I.P.		<LOD	116	0.19	221
SP3	18/12/2008	236	9.8	10.8	93.6	7.1			0.3			0.13		62		0.04	164
SP3	19/12/2008	313	9.6	6.4	99.7	7.2	4	<0.01		0.62	0.03	0.05	0.049	38	275	<0.03	146
SP3	22/12/2008	315	10.8	6.3	101.5	7.7			0.4			0.59		27		0.01	217
SP3	23/12/2008	323	10.0	6.4	99.5	7.8			0.2			0.09		13		0.07	222
SP3	05/01/2009	394	5.7	6.4	90.7	6.8			0.5			1.80		23		0.01	249
SP3	06/01/2009	405	6.0	3.8	93.3	6.9			<LOD			0.12		<LOD		0.01	254
SP3	07/01/2009	390	4.9	10.2	92.8	6.9			0.7			I.P.		<LOD		0.06	245
Additional Monitoring																	
D22	04/12/2008	201	6.8	6.3	87.0	6.3			<LOD			0.82		32		0.57	139
D62	04/12/2008	204	6.3	4.7	91.5	4.7			<LOD			0.86		24		0.04	116
Axonics Monitoring																	
Pre	18/12/2008	229		105.0		6.9			<LOD			0.32		199		0.05	160
Post	18/12/2008	237		10.2		6.7			0.3			0.29		45	508	0.03	163
Pre	19/12/2008	302		37.2		7.2	36	<0.01		<0.44	0.11	0.02	0.023	79	1589	<0.03	142
Post	19/12/2008	328		5.1		6.5	5	<0.01		1.01	0.04	0.07	0.022	<20	I.P.	<0.03	150
Pre	22/12/2008	312		41.2		7.8			<LOD			0.62		243		<LOD	212
Post	22/12/2008	165		8.3		6.5			0.5			1.07		26	910	<LOD	96
Pre	23/12/2008	322		37.1		7.7			<LOD			0.12		253		0.01	219