

<b>Corrib Gas Pipeline Environmental Report</b>	Period Ending:	31 <sup>st</sup> December 2011
Compiled By:	Siobhan Sheridan & Catriona King	
Approved By:	Aoife Reynolds	

## 1 Monitoring Data

### 1.1 Monitoring Equipment

Noise	Four noise monitoring locations currently being used- AN1, AN2, NSR1 and NSR3. The sound meters record in the 1/3 octave band.
Vibration	There is a single vibration monitoring point being used- V3
Weather Station	The data used for this reporting period was taken from the Aughoose construction site meteorological station.
TSS	The TSS analysers was operational during the reporting period
Sonde	The results are displayed graphically.
Discharge pipe flow	The results are displayed graphically.

### 1.2 Rainfall Data

Date	Rainfall mm	Date	Rainfall mm	Date	Rainfall mm
01/12/11	7.0	12/12/11	5.2	23/12/11	11.0
02/12/11	14.2	13/12/11	18.4	24/12/11	4.6
03/12/11	3.6	14/12/11	8.8	25/12/11	2.2
04/12/11	7.0	15/12/11	8.4	26/12/11	15.2
05/12/11	7.0	16/12/11	7.0	27/12/11	11.2
06/12/11	2.8	17/12/11	4.8	28/12/11	6.6
07/12/11	4.2	18/12/11	2.4	29/12/11	3.8
08/12/11	12.6	19/12/11	17.0	30/12/11	8.8
09/12/11	4.6	20/12/11	12.8	31/12/11	10.8
10/12/11	5.0	21/12/11	0.4		
11/12/11	12.6	22/12/11	3.0		
Total rainfall 243mm					

### 1.3 Summary

Environment	Comments
Vibration	There were a number of vibration elevations during the reporting period. This was due to a technical fault with the Vibrock meter at the onset of the month. A replacement meter was subsequently installed on the 16 <sup>th</sup> December and results yielded were within the assigned limit.
Weather	There was a total of 243mm of rainfall during the reporting period, with a temperature range of 3.7°C to 11.9°C
Noise	There have been ongoing power and technical issues in relation to noise meters which are currently being resolved. Monitoring at AN1 commenced on 23 <sup>rd</sup> December. Hourly wind speeds are provided where noise levels exceed

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Environment	Comments
	65dB. There were noise exceedances on the 21 <sup>st</sup> December during the reporting period at AN2. This is due to road traffic noise as the meter is in close proximity to the roadside.
Surface Water	<ul style="list-style-type: none"> <li>There were no surface water exceedances during the month in accordance with the surface water look up table surface water discharge criteria.</li> <li>There was no composite sample available at SB1 on the 8<sup>th</sup> and at SB2 on the 10<sup>th</sup> and 11<sup>th</sup> due to an issue with the sampler which has since been resolved.</li> <li>The site was closed on December 13<sup>th</sup> due to bad weather so DL2 sample was not taken.</li> <li>Elevated conductivity readings on 5<sup>th</sup> and 6<sup>th</sup> of Dec which was due to a technical fault with the dosing system. This has since been rectified.</li> </ul>
Groundwater Monitoring	Monitoring of groundwater undertaken during the reporting period does not show any unusual results.

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

## 2 Environmental Exceedances / Incidents / Complaint

### 2.1 Complaints

There were no complaints in December.

### 2.2 Exceedance

There was 1 number environmental exceedance during the reporting period.

Date and Time	December
Location	AN2
Nature of Incident	<p>Noise levels exceeded the limit of 65dB(A) at the following times:</p> <ul style="list-style-type: none"> <li>December 21<sup>st</sup> at 12pm - 66.2bB(A) <math>L_{Aeq(1hr)}</math>.</li> </ul> <p>The elevated noise levels are thought to be due to road haulage noise as the meter is approximately 50m from the roadside. On December 21<sup>st</sup> there was a total of 151 truck movements.</p>
Actions Taken	<ul style="list-style-type: none"> <li>Truck movements will be checked against noise results on an ongoing basis.</li> <li>Additional visual screen will be erected along the eastern boundary fence in the coming weeks which will marginally reduce noise migration from the site.</li> </ul>
Category	Environmental Exceedance
Status	In progress

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## **2.3 Incidents**

There were no incidents during the reporting period.

### Surface Water Monitoring Results - Accredited Laboratory

Surface Water Monitoring Results - Accredited Laboratory													
	Date	Cond.	Turbidity	DO %	pH	TSS	Orthophosphate as PO4	Extractable HC/ DRO (C8-C40) total and dissolved	PRO (C5 - C12) total and dissolved	TOC	DIN (TON as N + Ammonia as N)	COD	
		µS/cm	NTU	mg/l		mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	
Composites													
SB1	01/12/2011	248	0.9	67.5	7.4	2	<0.03	106	<100	3.12	0.161	15	
SB2	01/12/2011	307	1.7	62.4	6.6	2	<0.03	186	134	3.12	0.178	43	
SB1	02/12/2011	307	0.9	86.5	6.9	2	<0.03	<100	<100	4.04	0.015	17	
SB2	02/12/2011	302	1.8	86.5	6.8	4	<0.03	<100	<100	3.19	0.213	77	
SB1	03/12/2011	310	0.6	56.8	6.9	2	<0.03	<100	<100	5.41	0.015	16	
SB2	03/12/2011	248	1.7	58.6	6.9	2	<0.03	<100	<100	2.48	0.012	50	
SB1	04/12/2011	328	0.9	86.3	6.8	2	<0.03	<100	<100	3.47	0.041	19	
SB2	04/12/2011	334	3.6	65.3	6.8	2	<0.03	<100	<100	3.37	0.048	32	
SB1	05/12/2011	793	3.4	56.9	4.3	7	0.34	<100	<100	4.29	0.024	19	
SB2	05/12/2011	314	1.7	62.5	6.6	5	<0.03	<100	<100	4.74	0.025	<10	
SB1	06/12/2011	743	2.4	64.5	4.3	7	0.31	<100	<100	5.29	0.028	37	
SB2	06/12/2011	328	0.3	59.8	6.7	4	<0.03	<100	<100	2.61	0.029	<10	
SB1	07/12/2011	420	10.4	58.5	5.0	22	0.05	<100	<100	8.12	0.191	23	
SB2	07/12/2011	366	3.9	58.4	6.7	7	<0.03	<100	<100	10.10	0.166	28	
SB2	08/12/2011	371	0.8	57.8	6.1	4	<0.03	119	<100	6.81	0.285	32	
SB1	09/12/2011	376	0.8	68.5	7.1	6	<0.03	<100	<100	4.12	0.196	14	
SB2	09/12/2011	393	1.3	64.1	7.0	3	<0.03	<100	<100	3.66	0.199	<10	
SB1	10/12/2011	376	0.8	65.2	7.2	2	<0.03	<100	<100	4.72	0.197	<10	
SB1	11/12/2011	380	1.7	65.4	7.2	2	<0.03	<100	<100	3.89	0.222	<10	
SB1	12/12/2011	399	0.6	63.5	7.0	3	<0.03	<100	<100	7.47	0.137	<10	
SB2	12/12/2011	388	1.1	62.5	6.9	5	<0.03	<100	<100	7.07	0.158	23	
SB1	13/12/2011	394	1.4	63.2	7.1	2	<0.03	<100	<100	6.83	0.111	<10	
SB2	13/12/2011	387	0.7	62.5	7.0	5	<0.03	<100	<100	6.76	0.156	14	
SB1	14/12/2011	406	0.3	63.5	7.1	2	<0.03	<100	<100	4.59	0.141	24	
SB2	14/12/2011	399	0.2	64.5	7.0	2	<0.03	<100	<100	8.34	0.140	19	
SB1	15/12/2011	397	0.4	64.5	7.0	4	<0.03	<100	<100	5.36	0.136	<10	
SB2	15/12/2011	402	0.2	63.5	7.0	3	<0.03	<100	<100	4.23	0.139	<10	
SB1	16/12/2011	424	0.4	61.2	7.5	3	<0.03	<100	<100	3.14	0.313	17	
SB2	16/12/2011	417	0.4	65.3	7.2	2	<0.03	<100	<100	3.62	0.261	<10	
SB1	17/12/2011	433	0.5	59.8	7.3	2	<0.03	<100	<100	4.78	0.272	<10	
SB2	17/12/2011	435	0.5	64.3	7.2	2	<0.03	<100	<100	4.78	0.262	22	
SB1	18/12/2011	429	0.4	58.7	7.3	2	<0.03	<100	<100	2.84	0.260	18	
SB2	18/12/2011	428	0.5	64.3	7.2	2	<0.03	<100	<100	4.49	0.250	10	
SB1	19/12/2011	421	1.1	64.3	7.2	2	<0.03	<100	<100	3.18	0.117	<10	
SB2	19/12/2011	423	0.7	65.3	7.2	2	<0.03	<100	<100	4.20	0.119	<10	
SB1	20/12/2011	415	0.8	65.3	7.2	2	<0.03	<100	<100	3.05	0.199	<10	
SB2	20/12/2011	412	0.8	65.3	7.3	2	<0.03	<100	<100	3.89	0.107	15	
SB1	21/12/2011	399	0.2	66.5	7.2	2	<0.03	<100	<100	3.23	0.248	<10	
SB2	21/12/2011	407	0.4	68.7	7.3	2	<0.03	<100	<100	3.47	0.270	28	
SB1	22/12/2011	393	0.3	59.9	7.2	2	<0.03	<200	<100	3.22	0.048	<10	
SB2	22/12/2011	407	0.4	67.5	7.2	2	<0.03	<100	<100	3.28	0.280	<10	
SB3	22/12/2011	371	1.0	67.9	7.1	2	<0.03	112	<100	4.96	0.246	<10	
SB3	23/12/2011	348	1.0	66.9	7.1	2	<0.03	196	<100	4.69	0.218	<10	
SB3	24/12/2011	356	1.0	67.5	7.1	2	<0.03	<100	<100	4.29	0.284	<10	
SB3	25/12/2011	350	0.6	66.6	7.1	2	<0.03	171	<100	4.42	0.232	<10	
SB3	26/12/2011	352	0.8	65.3	7.1	2	<0.03	133	<100	3.99	0.209	<10	
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.												

### Surface Water Monitoring Results - Accredited Laboratory

[illegible]

## Groundwater Monitoring Results Accredited Laboratory

Groundwater Monitoring Results Accredited Laboratory														
Location	Date	DO	Temp	Cond.	pH	TDS	BOD	Suspended Solids	Turbidity	Orthophosphate as PO4 -P	Ammonia as NH3-N	Total Phosphorus as P	Nitrate as NO3	
		% Sat	°C	uS/cm	pH Units	mg/l	mg/l	mg/l	N.T.U	mg/l	mg/l	mg/l	mg/l	
GW1	08/12/2011	33	9.9	421	6.3	233	<1	1036	158.0	<0.01	0.33	0.14	<0.44	
GW2	08/12/2011	22	9.3	475	6.4	263	<1	142	172.0	0.34	2.40	0.48	<0.44	
GW3	08/12/2011	24	9.5	398	6.2	217	<1	190	78.0	0.19	3.04	0.26	<0.44	
GW4	08/12/2011	33	9.6	433	6.4	238	<1	233	44.8	<0.01	0.80	0.07	<0.44	
Location	Date	Nitrite as NO2	Phosphate as PO4	COD	Copper	Arsenic, total	Chromium, total	Lead, total	Cadmium, total	Tin, total	Iron, total	Mercury	TOC	
		mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	
GW1	08/12/2011	<0.017	<0.03	50	119	16	21	30	8	<0.5	31500	<0.05	6.16	
GW2	08/12/2011	0.034	1.05	46	4	3	5	12	<0.5	<0.5	25980	<0.05	9.89	
GW3	08/12/2011	<0.017	0.60	22	5	7	7	8	<0.5	<0.5	67010	<0.05	6.78	
GW4	08/12/2011	<0.017	<0.03	32	4	3	2	1	<0.5	<0.5	43120	<0.05	3.73	
Location	Date	Total Hardness	Extractable HC/ DRO (C8-C40) total and dissolved	PRO (C5 - C12) total and dissolved	Total Phosphorus as P	Manganese	Zinc	Chloride	Sulphate	Calcium Total	Magnesium Total	Potassium Total	Sodium Total	Water Level
		mg/l	ug/l	ug/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	m
GW1	08/12/2011	145	<100	<100	0.14	2749	11	54.0	<5	87	17	23	22	3.3
GW2	08/12/2011	108	<100	<100	0.48	541	5	53.6	<5	127	8	23	23	2.5
GW3	08/12/2011	42	<100	<100	0.26	241	<5	56.7	<5	52	8	23	24	1.7
GW4	08/12/2011	95	<100	<100	0.07	892	35	57.6	<5	70	10	21	26	3.7
	Grey shaded areas denote parameters that cannot or were not analysed on-site or at the lab.													

Day Time Noise Monitoring/Maximum hourly LAeq reported											
Location	Air Temp. (Min)	Air Temp. (Max)	Start Date and Time	Duration	Wind		Results dB			*Comments	
					Speed (m/s)*	Direction (Degrees)	L <sub>Aeq</sub>	L <sub>Amax</sub>	L <sub>Amin</sub>		
Action Limit							60.0				
Target Limit							65.0				
AN2	02/01/1900	9.3	1/12/2011	1:00							
NSR1			01/12/2011 14:00:00	1:00	2.3	214.6	50.1	71.4	30.9	Loss of data due to technical error	
AN2			2/12/2011	1:00							
NSR1	3.3	10.7	02/12/2011 13:00:00	1:00	4.2	223.8	54.7	68.8	38.4	Loss of data due to technical error	
AN2			5/12/2011	1:00							
NSR1			05/12/2011 08:00:00	1:00	4.8	267.5	56.4	80.8	33.0	Loss of data due to technical error	
AN2	4.0	8.7	06/12/2011 15:00:00	1:00							
NSR1			06/12/2011 10:00:00	1:00	4.1	243.6	50.1	73.3	29.6	Loss of data due to technical error	
AN2			7/12/2011	1:00							
NSR1	3.8	7.6	07/12/2011 08:00:00	1:00	6.0	253.4	56.9	77.9	39.2	Elevated noise levels due to high winds	
AN2	4.3	11.6	08/12/2011 08:00:00	1:00			79.4	93.0	50.6		
			08/12/2011 09:00:00	1:00			69.7	86.5	49.8		
			08/12/2011 10:00:00	1:00			68.5	83.2	47.7		
			08/12/2011 11:00:00	1:00			70.9	87.6	49.8		
			08/12/2011 12:00:00	1:00			67.4	82.6	50.4		
			08/12/2011 13:00:00	1:00			70.3	84.0	48.4		
			08/12/2011 14:00:00	1:00			72.0	87.4	47.7		
			08/12/2011 15:00:00	1:00			71.4	88.0	52.1		
			08/12/2011 16:00:00	1:00			72.5	84.7	50.7		
			NSR1	8/12/2011	1:00						
AN2	1.8	6.0	09/12/2011 08:00:00	1:00			65.2	80.5	51.0		
			09/12/2011 09:00:00	1:00	4.2	267.6	64.4	82.4	51.0		
			09/12/2011 10:00:00	1:00			63.2	80.2	46.4		
			09/12/2011 11:00:00	1:00	5.4	294.5	66.1	81.7	50.5	Elevated wind speed	
			09/12/2011 12:00:00	1:00			61.7	78.2	49.9		
			09/12/2011 13:00:00	1:00			63.0	75.5	45.5		
			09/12/2011 14:00:00	1:00	4.2	267.6	60.5	78.2	45.3		
			09/12/2011 15:00:00	1:00			64.1	80.8	50.9		
			09/12/2011 16:00:00	1:00			60.3	79.6	43.8		
			NSR1	09/12/2011 15:00:00	1:00			52.2	71.0	30.2	
AN2	3.4	8.2	12/12/2011 10:00:00	1:00	3.8	203.9	60.2	74.2	39.2		
			12/12/2011 13:00:00	1:00	6.0	137.7	65.6	83.8	44.3	Elevated wind speed	
			12/12/2011 14:00:00	1:00			61.2	75.8	41.5		
			12/12/2011 15:00:00	1:00			60.0	75.9	43.5		
			12/12/2011 16:00:00	1:00	3.8	203.9	60.0	76.4	40.9		
			12/12/2011 13:00:00	1:00			60.5	74.6	46.1		
AN2	2.3	6.5	13/12/2011 08:00:00	1:00			78.4	92.7	52.1		
			13/12/2011 09:00:00	1:00			79.2	94.3	50.5		
			13/12/2011 10:00:00	1:00			79.5	92.5	52.3		
			13/12/2011 11:00:00	1:00			80.8	96.0	50.5		
			13/12/2011 12:00:00	1:00			80.8	93.9	50.0		
			13/12/2011 13:00:00	1:00			81.0	93.6	53.3		
			13/12/2011 14:00:00	1:00			77.7	90.0	50.0		
			13/12/2011 15:00:00	1:00			80.0	96.1	48.8		
			13/12/2011 16:00:00	1:00			79.2	92.1	49.9		
			NSR1	13/12/2011 08:00:00	1:00	7.9	234.5	67.2	86.6	43.1	Site closed due to high wind speeds
NSR1		13/12/2011 09:00:00	1:00			69.3	85.1	49.1			
	13/12/2011 10:00:00	1:00			68.7	85.3	46.0				
	13/12/2011 11:00:00	1:00			70.2	91.9	48.4				
	13/12/2011 12:00:00	1:00			71.8	87.4	50.0				
	13/12/2011 13:00:00	1:00			70.4	86.0	49.8				
	13/12/2011 14:00:00	1:00			68.4	86.4	45.4				
	13/12/2011 15:00:00	1:00			70.1	87.2	45.6				
	13/12/2011 16:00:00	1:00			68.2	87.6	47.9				
	AN2	1.2	7.1	14/12/2011 08:00:00	1:00			60.9	75.4	44.6	
	14/12/2011 09:00:00			1:00	3.0	205.5	61.1	78.6	41.5		
14/12/2011 15:00:00	1:00					61.5	77.5	40.4			
NSR1			14/12/2011 16:00:00	1:00			51.7	75.1	34.6		
AN2	0.4	6.7	15/12/2011:09:00	1:00			61.5	80.0	45.3		
			15/12/2011:10:00	1:00			65.5	86.3	43.4	Elevation noise level may have been due to 0.6mm of rainfall in a 15min period.	
			15/12/2011:11:00	1:00	2.7	226.1	61.8	77.6	47.6		
			15/12/2011:12:00	1:00			60.8	75.9	42.4		
			15/12/2011:13:00	1:00			61.5	78.1	44.2		
			15/12/2011:14:00	1:00			61.2	76.8	42.5		
			15/12/2011:12:00	1:00			50.3	72.7	32.7		
NSR1			15/12/2011:08:00	1:00			54.2	64.0	39.5		
NSR3	0.7	7.2	16/12/2011:14:00	1:00			56.6	78.4	36.6		
16/12/2011:14:00			1:00	4.0	284.1	59.3	81.9	38.6			
16/12/2011:15:00			1:00			59.3	81.9	38.6			
NSR1	1.9	7.6	17/12/2011:10:00	1:00			52.4	73.1	29.5		
17/12/2011:12:00			1:00	4.2	294.1	63.7	86.7	27.7			
19/12/2011:14:00			1:00	4.0		48.2	70.9	32.3			
NSR1	6.2	10.5	19/12/2011:08:00	1:00			46.4	69.6	33.5		
20/12/2011 15:00			1:00			58.9	75.7	41.5			
NSR1			20/12/2011:15:00	1:00	3.1	230.9	50.7	72.5	39.7		
NSR3			20/12/2011:16:00	1:00			47.8	65.2	41.8		
* Wind speeds in excess of 5 m/s negatively impact noise readings (as per EPA Guidance Note on Noise Measurement).											
**Allowance of +/- 1.5dB accuracy of sound level meter (ref: IEC 61672 (2002-2005))											
The results show LAeq(1hr) for maximum daily values or values over 60dB for each day of monitoring											
AN1 noise monitoring location is situated along the northern edge of the Aughoose site											
AN2 noise monitoring location is situated at the unoccupied house south west of the Aughoose site											
NSR1 noise monitoring location is situated at the nearest sensitive receptor south-west of Aughoose site											
NSR3 noise monitoring location is situated in Rossport											

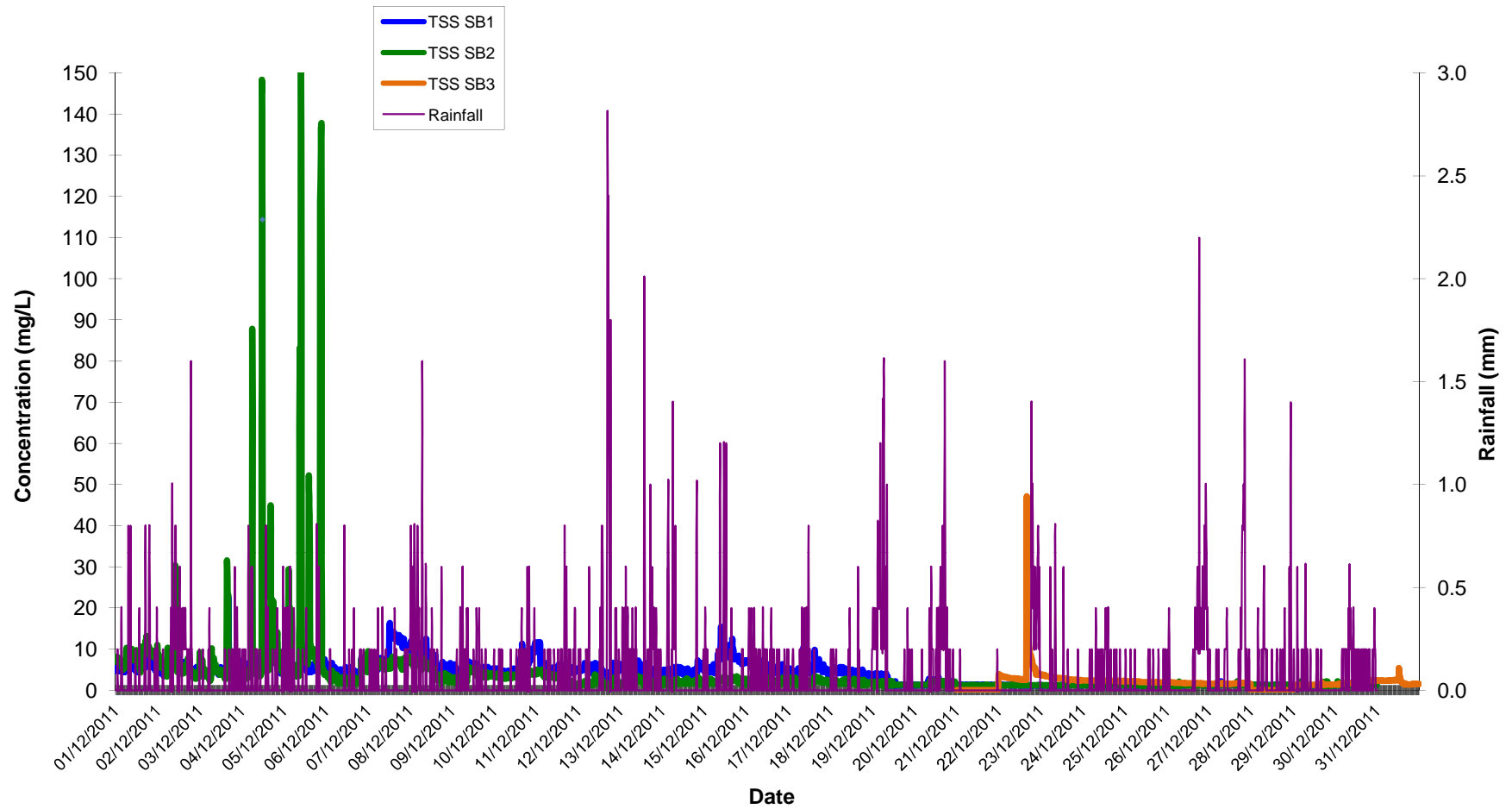
Day Time Noise Monitoring/Maximum hourly LAeq reported															
Location	Air Temp. (Min)	Air Temp. (Max)	Start Date and Time	Duration	Wind		Results dB			*Comments					
					Speed (m/s)*	Direction (Degrees)	L <sub>Aeq</sub>	L <sub>Amax</sub>	L <sub>Amin</sub>						
Action Limit							60.0								
AN2	10.6	12.0	21/12/2011 08:00:00	1:00	5.1	233.5	60.9	76.2	44.8						
			21/12/2011 09:00:00	1:00	2.7	205.7	60.3	77.9	43.4						
			21/12/2011 10:00:00	1:00	5.7	202.7	60.1	75.4	41.5						
			21/12/2011 11:00:00	1:00	5.3	211.0	63.9	75.4	45.8						
			21/12/2011 12:00:00	1:00	4.5	221.5	66.2	77.8	50.4	Elevated results due to road traffic noise					
			21/12/2011 13:00:00	1:00	3.9	227.5	65.3	85.8	44.9	Elevated results due to road traffic noise					
			21/12/2011 14:00:00	1:00	4.2	198.7	63.5	82.7	43.6						
			21/12/2011 15:00:00	1:00	3.6	203.7	62.8	79.1	44.5						
			21/12/2011 16:00:00	1:00	3.6	212.5	63.4	75.0	44.5						
			NSR1		21/12/2011 12:00:00	1:00	4.5	221.5	52.5	68.9	37.7				
NSR3		21/12/2011 16:00:00	1:00	3.6	212.5	50.8	63.6	46.8							
AN2	8.0	12.7	22/12/2011 10:00:00	1:00	5.7	202.7	61.3	77.6	42.5						
			22/12/2011 11:00:00	1:00	5.3	211.0	63.6	80.2	44.5						
			22/12/2011 12:00:00	1:00	7.8	212.3	65.3	82.3	44.4	Elevated hourly wind speed					
			22/12/2011 13:00:00	1:00	5.8	199.4	66.6	83.9	45.5	No Construction Onsite					
			22/12/2011 14:00:00	1:00			67.8	84.2	46.5						
			22/12/2011 15:00:00	1:00			68.2	83.5	45.2						
			22/12/2011 16:00:00	1:00			68.5	84.9	47.0						
			NSR1		22/12/2011 14:00:00	1:00			58.6	78.3	42.0				
			NSR3		22/12/2011 16:00:00	1:00			60.4	78.8	53.0				
			AN2	3.5	8.2	23/12/2011 08:00:00	1:00	3.5	254.9	61.5	81.1	42.7	No Construction onsite		
23/12/2011 12:00:00	1:00	60.5				80.1	41.9								
23/12/2011 13:00:00	1:00	60.8				75.2	42.9								
23/12/2011 14:00:00	1:00	61.9				77.2	42.4								
NSR1		23/12/2011 13:00:00				1:00	52.2			74.5	31.4				
NSR3		23/12/2011 15:00:00				1:00	53.2			76.0	37.8				
AN1	6.9	10.9	24/12/2011 08:00:00	1:00	6.4	210.3	59.4	73.6	43.1	No Construction Onsite					
24/12/2011 08:00:00			1:00	72.9			86.0	48.3							
24/12/2011 09:00:00			1:00	72.0			85.7	48.2							
24/12/2011 10:00:00			1:00	71.6			85.2	48.7							
24/12/2011 11:00:00			1:00	69.7			81.5	45.3							
24/12/2011 12:00:00			1:00	69.4			82.4	46.4							
24/12/2011 13:00:00			1:00	67.6			80.8	44.8							
24/12/2011 14:00:00			1:00	66.2			79.3	45.5							
24/12/2011 15:00:00			1:00	65.7			78.8	43.7							
24/12/2011 16:00:00			1:00	63.7			75.4	42.9							
NSR1				24/12/2011 08:00:00			1:00	60.8	78.6		43.4				
			24/12/2011 09:00:00	1:00			61.4	78.7	44.2						
			24/12/2011 10:00:00	1:00			59.9	75.9	42.7						
			24/12/2011 11:00:00	1:00			59.2	74.4	42.4						
NSR3				24/12/2011 10:00:00			1:00	58.3	75.9		51.6				
AN1			6.6	12.8			26/12/2011 08:00:00	1:00	7.3		200.8	60.3	73.3	45.5	No Construction Onsite
							26/12/2011 09:00:00	1:00				60.6	75.1	43.1	
							26/12/2011 10:00:00	1:00				61.7	74.4	45.8	
	26/12/2011 11:00:00	1:00			61.6	74.5	45.5								
	26/12/2011 12:00:00	1:00			67.7	96.0	45.6								
	26/12/2011 13:00:00	1:00			64.7	75.5	45.6								
	26/12/2011 14:00:00	1:00			65.3	75.1	45.1								
	26/12/2011 15:00:00	1:00			62.2	73.8	44.7								
AN2	26/12/2011 08:00:00	1:00			70.4	88.8	47.2								
	26/12/2011 09:00:00	1:00			72.1	86.5	50.4								
	26/12/2011 10:00:00	1:00			73.7	90.4	51.6								
	26/12/2011 11:00:00	1:00			73.3	86.1	50.4								
	26/12/2011 12:00:00	1:00			73.1	88.2	51.1								
	26/12/2011 13:00:00	1:00			74.5	91.3	50.7								
	26/12/2011 14:00:00	1:00			74.4	88.4	51.4								
	26/12/2011 15:00:00	1:00			71.1	85.3	48.4								
NSR1	26/12/2011 16:00:00	1:00	70.7	85.1	46.2										
	26/12/2011 08:00:00	1:00	62.8	80.7	43.5										
	26/12/2011 09:00:00	1:00	63.9	83.3	45.0										
	26/12/2011 10:00:00	1:00	65.4	80.2	45.9										
	26/12/2011 11:00:00	1:00	63.9	82.0	44.4										
	26/12/2011 12:00:00	1:00	65.9	80.5	47.6										
	26/12/2011 13:00:00	1:00	67.0	82.1	47.0										
	26/12/2011 14:00:00	1:00	65.7	82.9	45.7										
NSR3	26/12/2011 15:00:00	1:00	62.2	78.1	43.4										
	26/12/2011 16:00:00	1:00	62.0	77.1	43.9										
	26/12/2011 08:00:00	1:00	60.9	79.4	54.0										
	26/12/2011 09:00:00	1:00	62.2	77.2	53.5										
	26/12/2011 10:00:00	1:00	63.1	79.8	55.2										
	26/12/2011 11:00:00	1:00	65.7	86.6	55.8										
	26/12/2011 12:00:00	1:00	65.9	84.6	56.7										
	26/12/2011 13:00:00	1:00	65.6	84.5	55.3										
	26/12/2011 14:00:00	1:00	64.7	81.8	54.7										
	26/12/2011 15:00:00	1:00	66.5	87.0	57.1										
	26/12/2011 16:00:00	1:00	63.3	80.2	55.0										
* Wind speeds in excess of 5 m/s negatively impact noise readings (as per EPA Guidance Note on Noise Measurement).															
**Allowance of +/- 1.5dB accuracy of sound level meter (ref: IEC 61672 (2002-2005))															
The results show LAeq(1hr) for maximum daily values or values over 60dB for each day of monitoring															
AN1 noise monitoring location is situated along the northern edge of the Aughooose site															
AN2 noise monitoring location is situated at the unoccupied house south west of the Aughooose site															
NSR1 noise monitoring location is situated at the nearest sensitive receptor south-west of Aughooose site															
NSR3 noise monitoring location is situated in Rossport															



Day Time Noise Monitoring/Maximum hourly LAeq reported										
Location	Air Temp. (Min)	Air Temp. (Max)	Start Date and Time	Duration	Wind		Results dB			*Comments
					Speed (m/s)*	Direction (Degrees)	L <sub>Aeq</sub>	L <sub>Amax</sub>	L <sub>Amin</sub>	
Action Limit										
AN1	6.2	10.9	27/12/2011 16:00:00	1:00	4.0	158.0	60.0	74.8	44.5	No Construction Onsite
AN2			27/12/2011 14:00:00	1:00			63.2	80.0	38.6	
			27/12/2011 15:00:00	1:00			69.8	87.9	44.8	
NSR1			27/12/2011 16:00:00	1:00			67.3	83.3	43.4	
			27/12/2011 15:00:00	1:00			60.9	80.2	41.3	
NSR3			27/12/2011 16:00:00	1:00			60.9	79.5	42.8	
AN1	5.3	8.3	27/12/2011 16:00:00	1:00	6.8	254.1	59.9	79.6	51.7	No Construction Onsite
			28/12/2011 08:00:00	1:00			61.1	74.2	48.1	
			28/12/2011 09:00:00	1:00			62.3	80.4	49.7	
			28/12/2011 10:00:00	1:00			63.2	79.2	50.1	
			28/12/2011 11:00:00	1:00			62.9	77.5	49.3	
			28/12/2011 12:00:00	1:00			63.0	78.5	49.1	
			28/12/2011 13:00:00	1:00			64.0	78.3	48.2	
			28/12/2011 14:00:00	1:00			64.7	77.7	48.8	
			28/12/2011 15:00:00	1:00			64.1	79.6	48.0	
			28/12/2011 16:00:00	1:00			65.7	79.9	48.3	
AN2			28/12/2011 08:00:00	1:00			71.1	87.8	46.8	
			28/12/2011 09:00:00	1:00			70.3	84.3	46.7	
			28/12/2011 10:00:00	1:00			71.6	83.8	46.9	
			28/12/2011 11:00:00	1:00			72.4	85.2	47.4	
NSR1			28/12/2011 12:00:00	1:00			72.9	88.1	47.1	
			28/12/2011 13:00:00	1:00			72.6	86.3	47.2	
			28/12/2011 14:00:00	1:00			72.7	89.5	47.0	
			28/12/2011 15:00:00	1:00			72.9	87.2	45.9	
	28/12/2011 16:00:00	1:00	72.6	87.5	47.5					
	28/12/2011 08:00:00	1:00	60.6	78.6	43.1					
NSR3	28/12/2011 09:00:00	1:00	60.5	79.8	42.7					
	28/12/2011 10:00:00	1:00	61.8	82.5	44.0					
	28/12/2011 11:00:00	1:00	63.0	86.9	45.2					
	28/12/2011 12:00:00	1:00	60.0	80.1	42.5					
	28/12/2011 13:00:00	1:00	61.5	84.7	43.7					
	28/12/2011 14:00:00	1:00	62.6	82.6	41.8					
NSR1	28/12/2011 15:00:00	1:00	62.3	85.1	41.0					
	28/12/2011 16:00:00	1:00	62.8	82.5	40.4					
	28/12/2011 08:00:00	1:00	61.1	76.8	49.5					
	28/12/2011 09:00:00	1:00	62.2	77.7	52.8					
	28/12/2011 10:00:00	1:00	61.5	83.0	52.0					
	28/12/2011 11:00:00	1:00	60.5	76.7	50.6					
NSR3	28/12/2011 14:00:00	1:00	60.8	81.1	49.2					
	28/12/2011 16:00:00	1:00	61.4	81.6	47.3					
	29/12/2011 09:00:00	1:00	58.7	79.7	46.1					
	29/12/2011 08:00:00	1:00	61.5	76.3	44.6					
	29/12/2011 09:00:00	1:00	64.1	77.9	44.7					
	29/12/2011 10:00:00	1:00	62.6	76.6	43.5					
AN2	7.1	9.6	29/12/2011 11:00:00	1:00	5.7	270.4	63.8	81.2	42.6	No Construction Onsite
			29/12/2011 12:00:00	1:00			65.9	81.6	44.4	
			29/12/2011 13:00:00	1:00			64.5	77.6	44.1	
			29/12/2011 14:00:00	1:00			61.8	74.4	43.1	
			29/12/2011 15:00:00	1:00			62.1	75.7	42.1	
			29/12/2011 16:00:00	1:00			60.4	75.4	42.0	
NSR1	29/12/2011 09:00:00	1:00	55.5	75.3	39.7					
NSR3	29/12/2011 08:00:00	1:00	56.7	73.1	46.6					
AN1	7.9	11.7	30/12/2011 10:00:00	1:00	3.7	214.6	54.9	81.7	42.0	No Construction Onsite
AN2			30/12/2011 12:00:00	1:00			62.7	75.8	43.7	
			30/12/2011 13:00:00	1:00			63.5	78.5	43.3	
			30/12/2011 14:00:00	1:00			63.1	74.8	42.4	
			30/12/2011 15:00:00	1:00			63.8	80.0	43.0	
NSR1			30/12/2011 16:00:00	1:00			61.9	75.2	42.0	
NSR3	30/12/2011 12:00:00	1:00	53.8	70.4	37.4					
NSR3			30/12/2011 16:00:00	1:00			52.6	77.6	41.0	
* Wind speeds in excess of 5 m/s negatively impact noise readings (as per EPA Guidance Note on Noise Measurement).										
**Allowance of +/- 1.5dB accuracy of sound level meter (ref: IEC 61672 (2002-2005))										
The results show LAeq(1hr) for maximum daily values or values over 60dB for each day of monitoring										
AN1 noise monitoring location is situated along the northern edge of the Aughooose site										
AN2 noise monitoring location is situated at the unoccupied house south west of the Aughooose site										
NSR1 noise monitoring location is situated at the nearest sensitive receptor south-west of Aughooose site										
NSR3 noise monitoring location is situated in Rosspart										

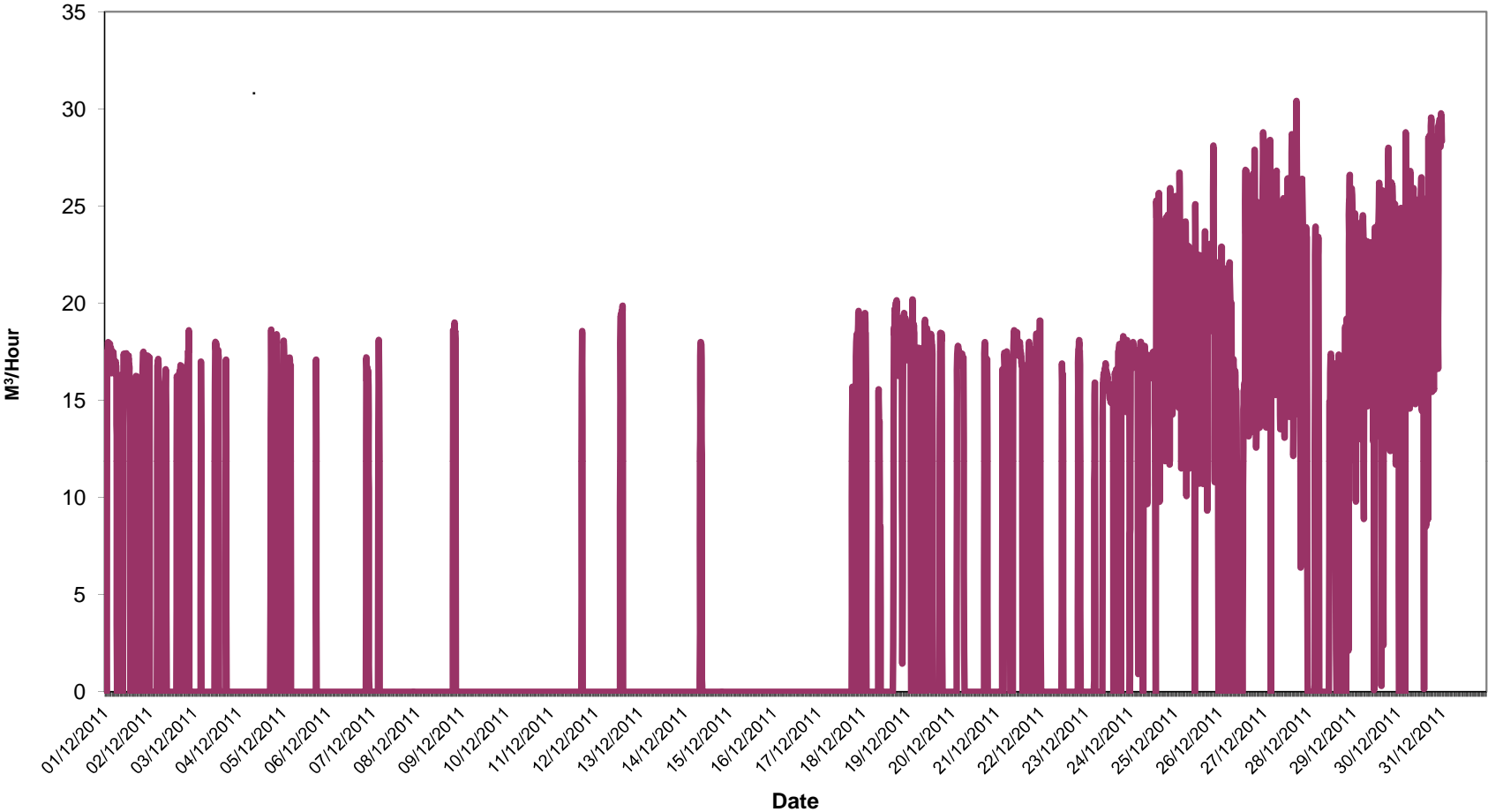
Vibration Monitoring Record Sheet			
Location	Date	PPV max (mm/s)	Comment
Minimum Criterion 8mm/s			
V3	12/01/2011	10.67	Elevated readings due to technical error with meter
V3	12/02/2011	12.77	Elevated readings due to technical error with meter
V3	12/03/2011	11.32	Elevated readings due to technical error with meter
V3	12/05/2011	12.77	Elevated readings due to technical error with meter
V3	06/12/2011	8.43	Elevated readings due to technical error with meter
V3	07/12/2011	11.49	Elevated readings due to technical error with meter
V3	08/12/2011	12.61	Elevated readings due to technical error with meter
V3	09/12/2011	10.36	Elevated readings due to technical error with meter
V3	10/12/2011		Loss of data due to technical error with meter
V3	12/12/2011		Loss of data due to technical error with meter
V3	13/12/2011	8.53	Elevated readings due to technical error with meter
V3	14/12/2011	8.91	Elevated readings due to technical error with meter
V3	15/12/2011	9.96	Elevated readings due to technical error with meter
V3	16/12/2011	7.39	
V3	17/12/2011	1.91	
V3	19/12/2011	0.42	
V3	20/12/2011	1.11	
V3	21/12/2011	0.80	
V3	22/12/2011	0.72	Site closed. No Construction
V3	23/12/2011	1.53	Site closed. No Construction
V3	24/12/2011	1.21	Site closed. No Construction
V3	26/12/2011	0.40	Site closed. No Construction
V3	27/12/2011	0.40	Site closed. No Construction
V3	28/12/2011	2.49	Site closed. No Construction
V3	29/12/2011	1.85	Site closed. No Construction
V3	30/12/2011	0.40	Site closed. No Construction
V3	31/12/2011	1.12	Site closed. No Construction

# Total Suspended Solids December 2011

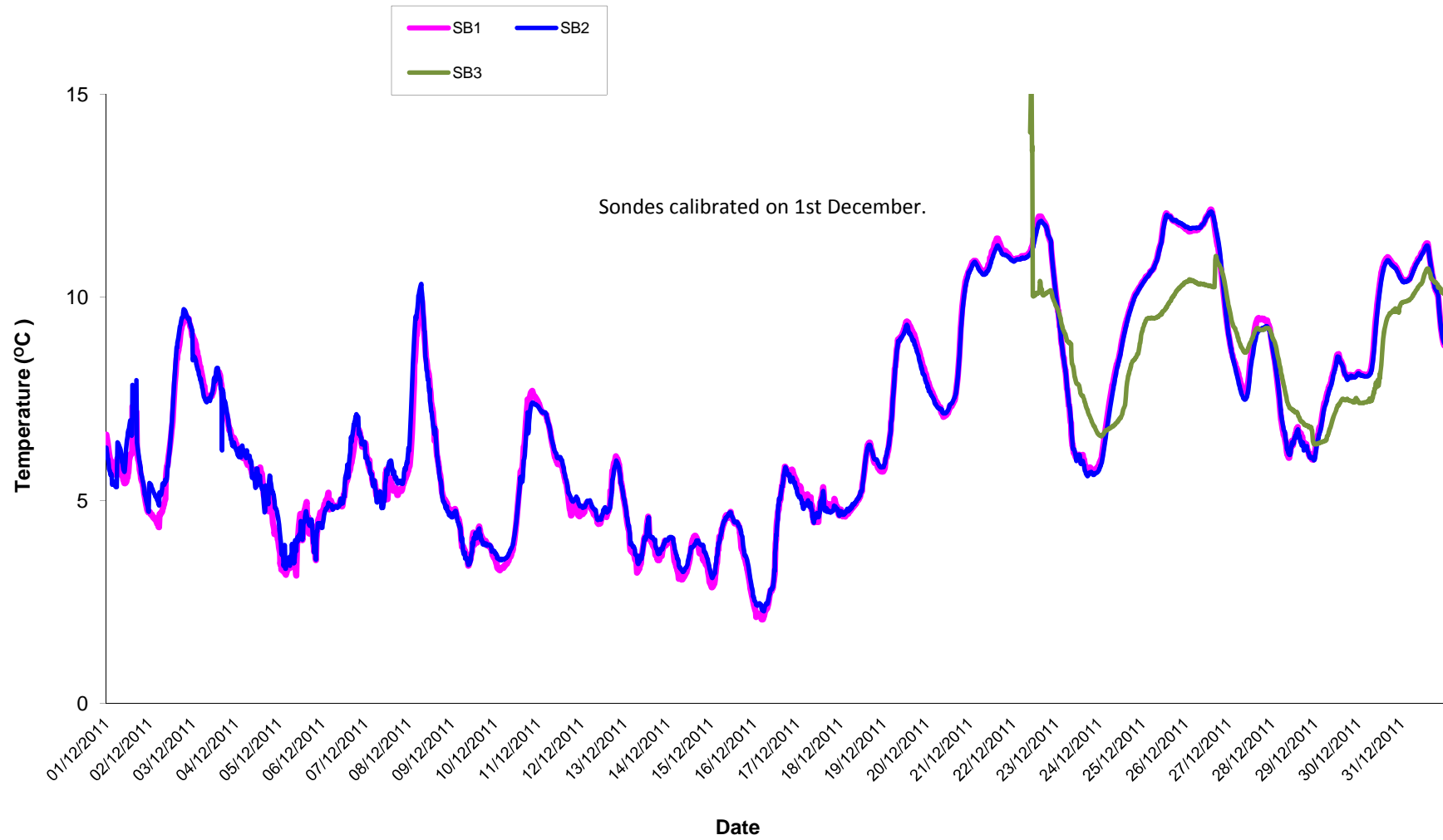


Surface Water Discharge  
December 2011

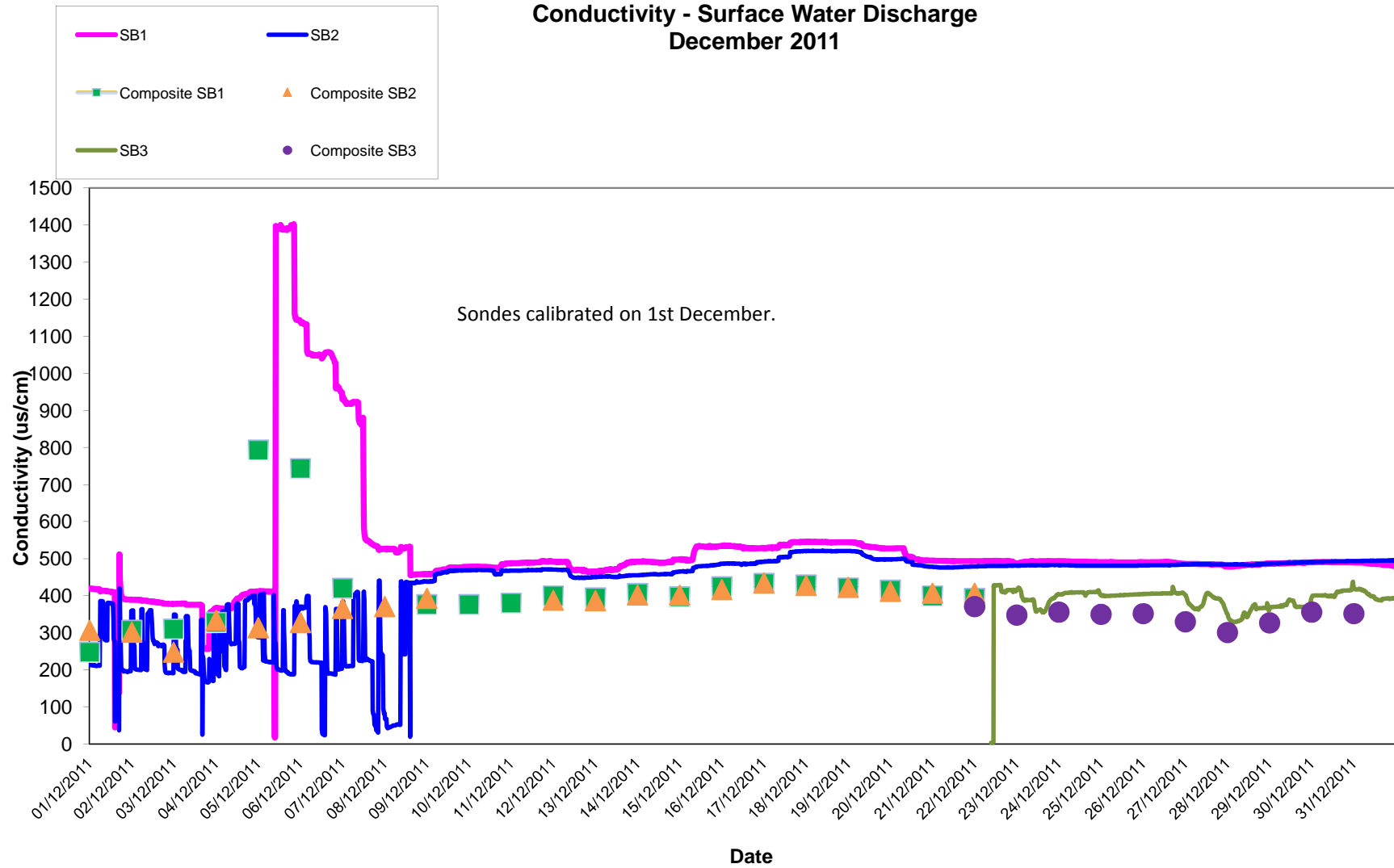
Water Discharge



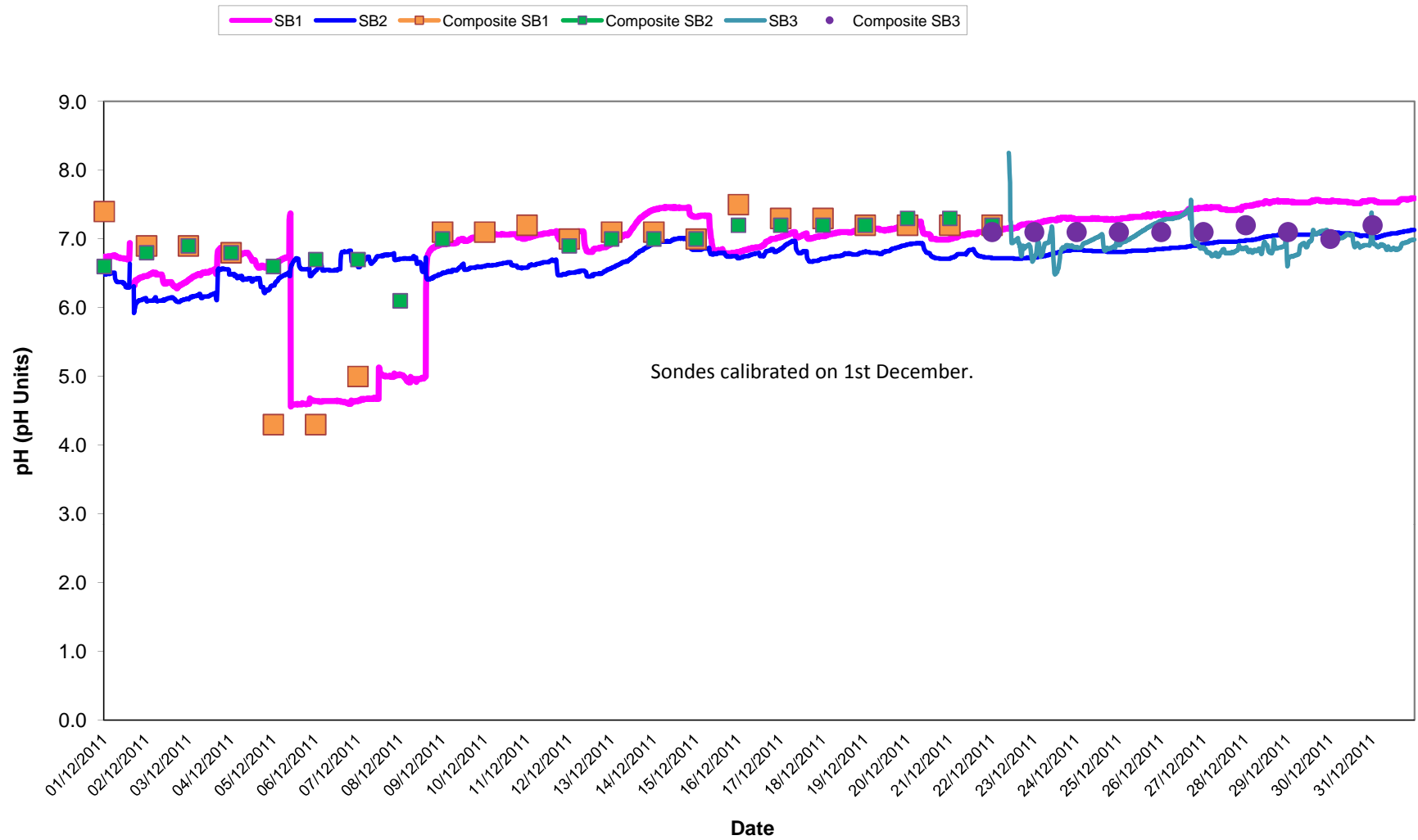
# Temperature - Surface Water Discharge December 2011



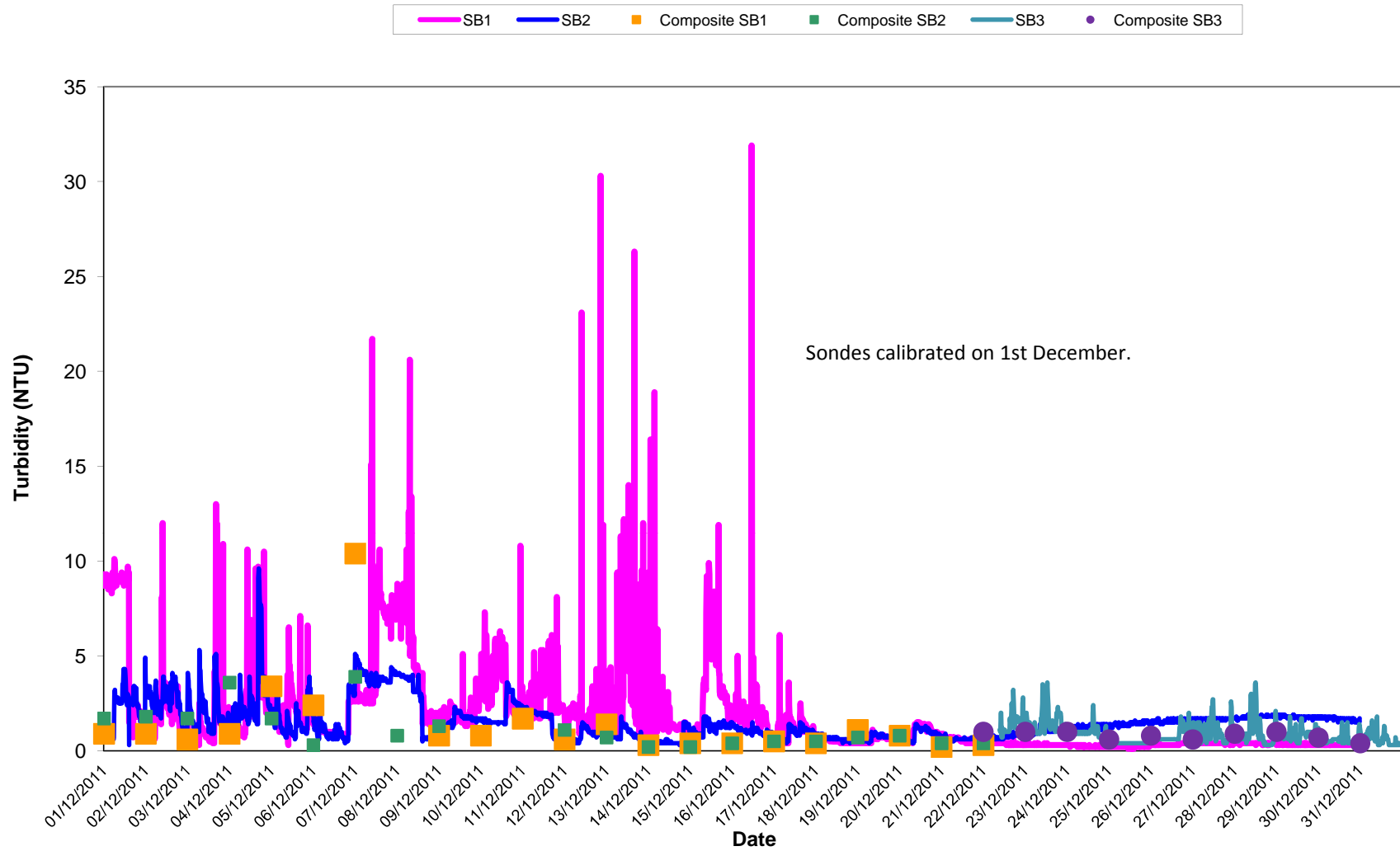
# Conductivity - Surface Water Discharge December 2011



# pH - Surface Water Discharge December 2011

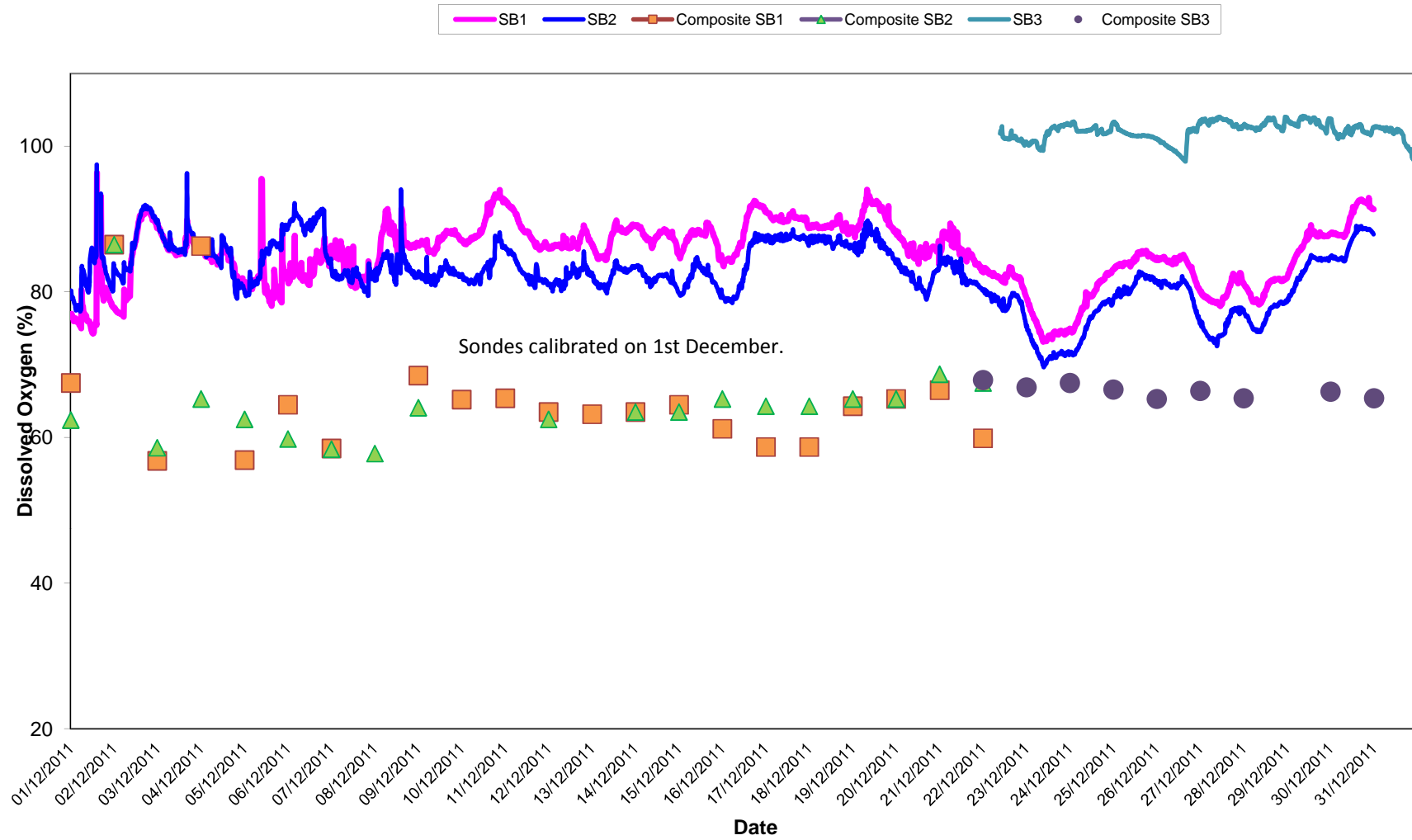


# Turbidity- Surface Water Discharge December 2011

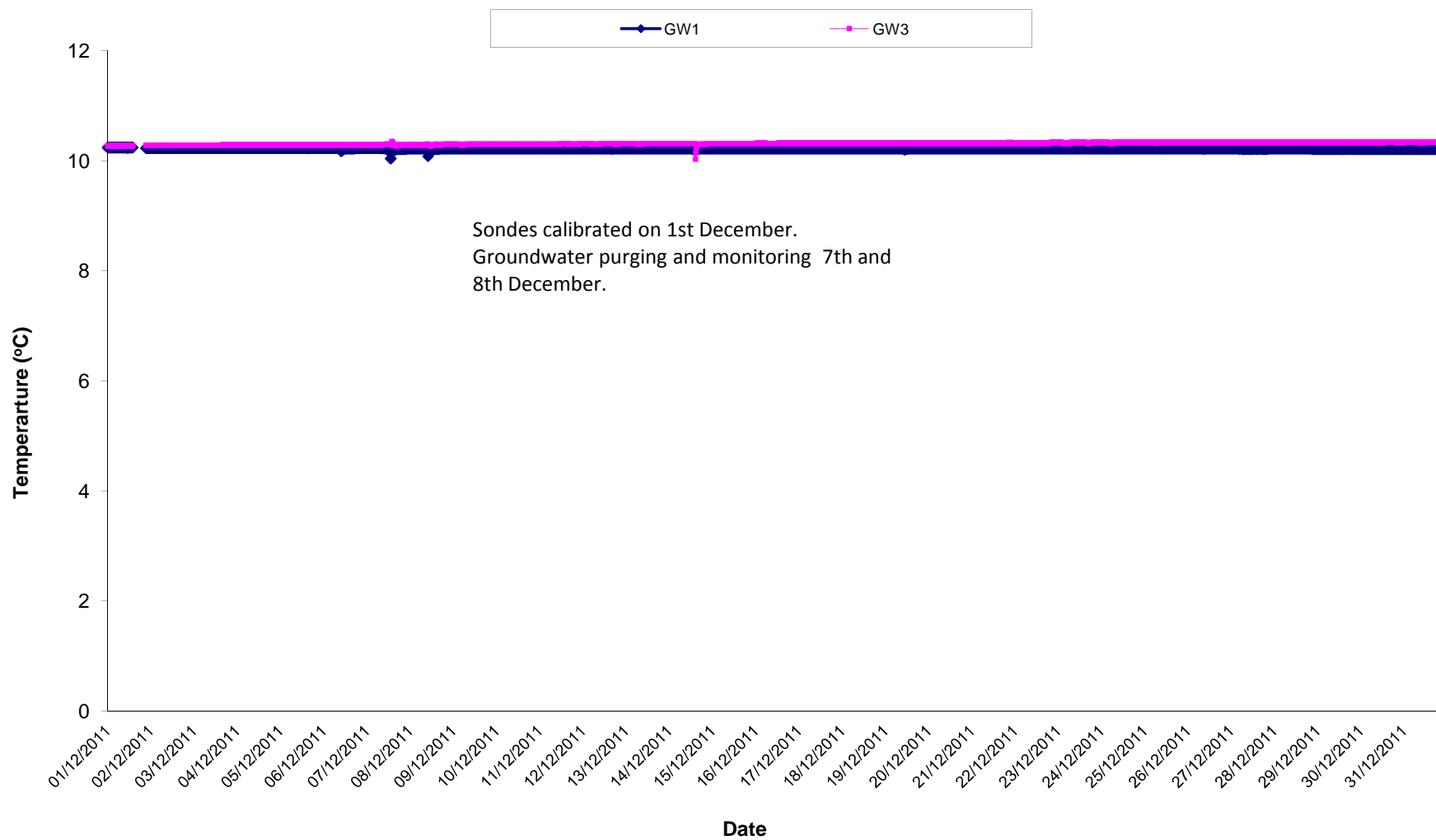




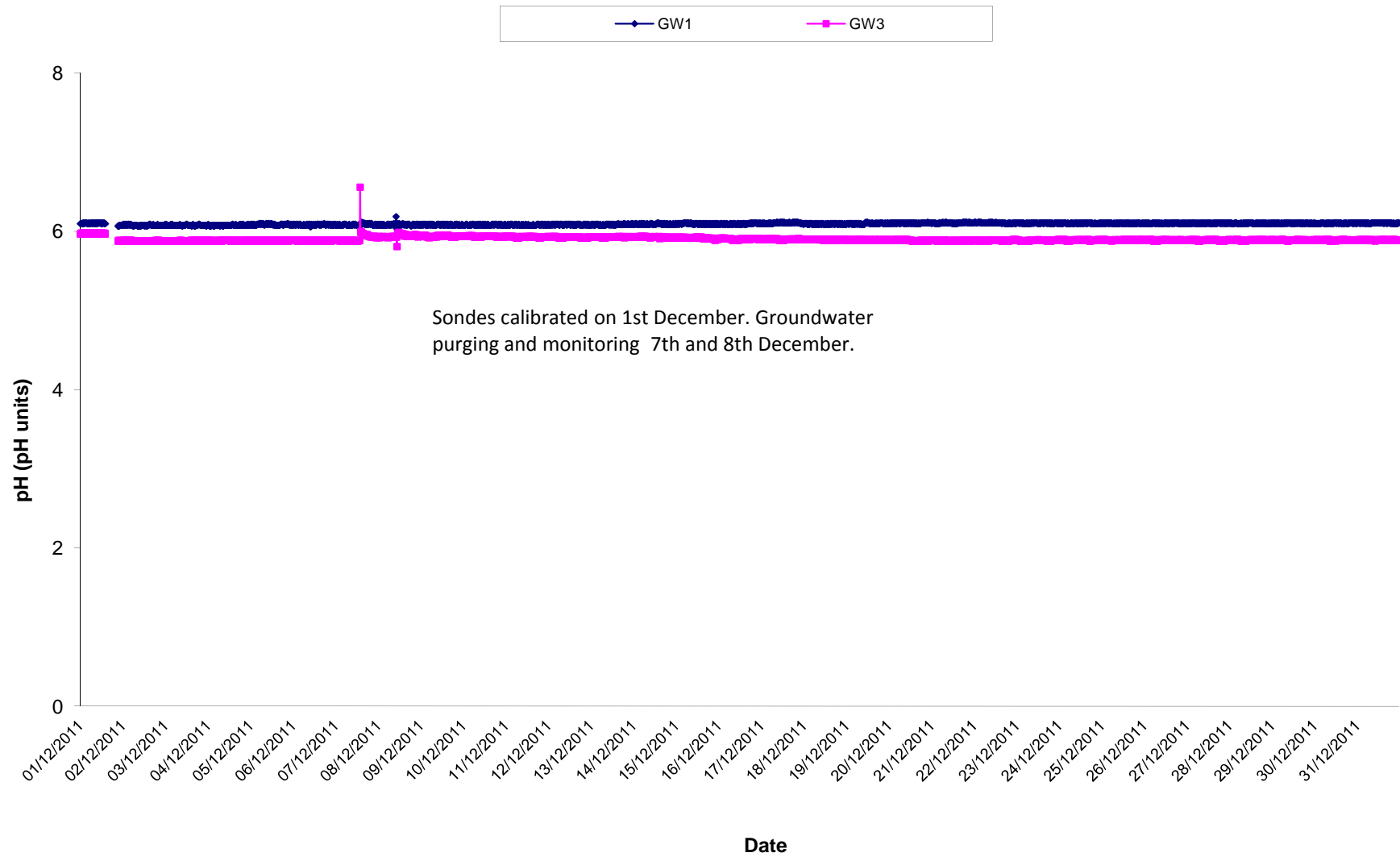
# Dissolved Oxygen - Surface Water Discharge December 2011



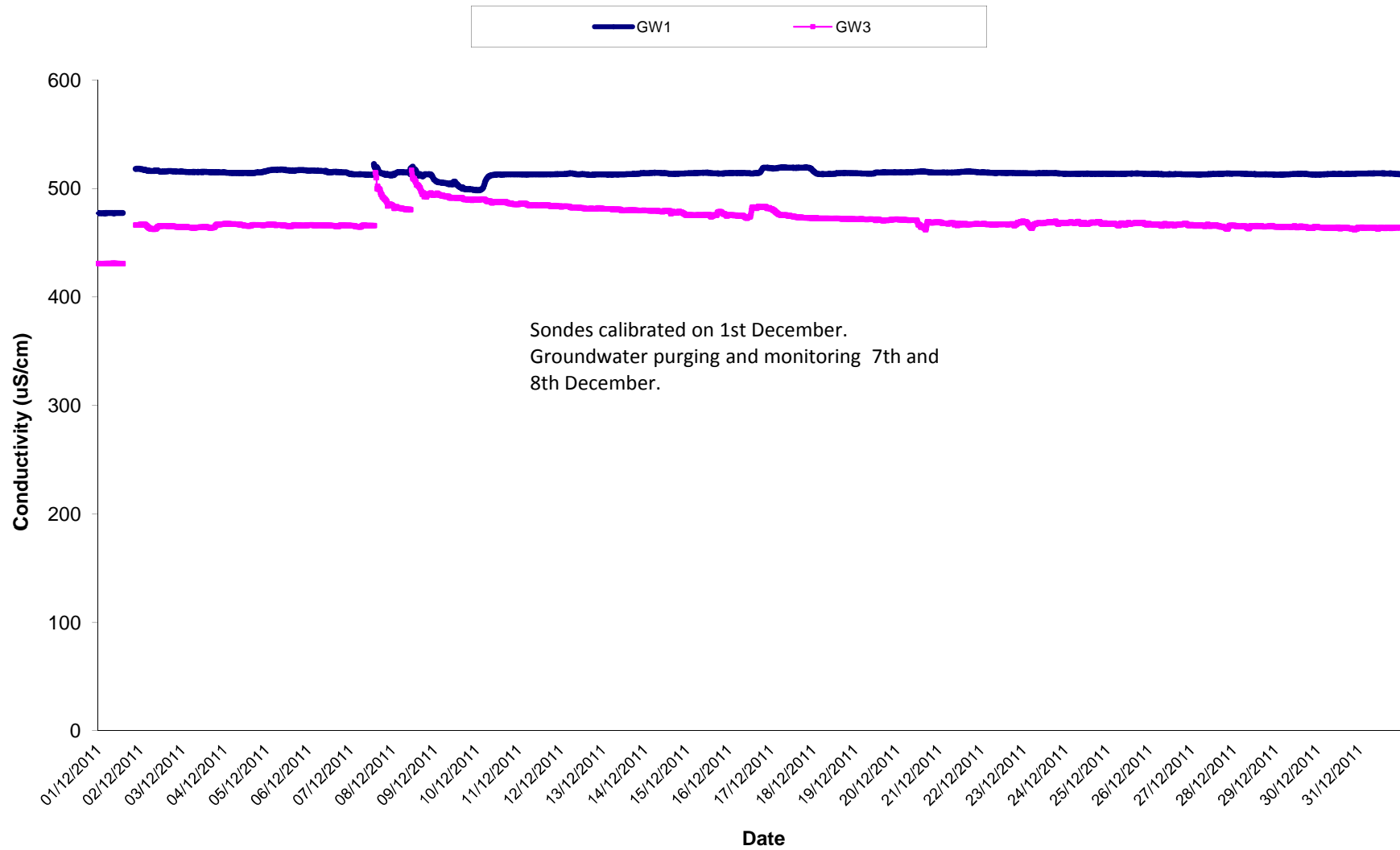
# Temperature - Groundwaters December 2011



# pH - Groundwaters December 2011



# Conductivity - Groundwaters December 2011



## **Appendix 1**

Appendix 1: Surface Water Monitoring Record Sheet- Onsite Monitoring						
	Date	Temp	DO	Cond.	Turbidity	pH
		oC	% Sat	µS/cm	NTU	
<b>Grab samples</b>						
DL 2	01/12/2011	7.3	93.5	371.0	8.4	6.2
DL 2	02/12/2011	7.0	89.5	277.0	19.60	5.97
DL 2	05/12/2011	5.7	94.8	376.0	7.50	6.09
DL 2	06/12/2011	6.3	71.0	172.5	24.40	5.97
DL 2	07/12/2011	5.6	55.8	189.3	10.00	5.52
DL 2	08/12/2011	8.5	89.8	328.0	11.40	6.26
DL 2	09/12/2011	4.0	91.0	430.0	10.00	6.08
DL 2	12/12/2011	6.7	88.5	410.0	12.00	6.04
DL 2	13/12/2011	Site closed. No sample taken				
DL 2	14/12/2011	5.2	90.8	443.0	4.00	6.14
DL 2	15/12/2011	5.5	99.2	521.0	9.00	6.27
DL 2	16/12/2011	6.5	86.6	419.0	11.80	6.28
DL 2	19/12/2011	8.0	88.5	284.0	13.50	6.35
DL 2	20/12/2011	8.0	89.5	408.0	27.70	6.33
DL 2	21/12/2011	10.4	92.8	363.0	34.60	5.93
DL 2	22/12/2011	11.4	88.7	405.0	3.10	6.30
DL 2	23/12/2011	7.7	84.9	330.0	3.00	6.74
DL 2	26/12/2011	10.4	42.9	215.0	3.00	6.27
DL 2	28/12/2011	11.0	104.9	362	2.7	5.9
DL 2	30/12/2011	8.6	62.1	230	1.9	5.9
<b>Sruwaddaon Bay</b>						
SBAY1	Monitoring not carried out due to adverse weather conditions					
SBAY3	Monitoring not carried out due to adverse weather conditions					
SBAY4	Monitoring not carried out due to adverse weather conditions					
SBAY6	Monitoring not carried out due to adverse weather conditions					
	Grey shaded areas denote parameters that cannot or were not analysed on-					
	= Indicative Only					

## **Appendix 2**

## 1. MONITORING PERIOD

Ecological monitoring activities undertaken during December 2011 included:

- Site inspections at the Aughooose compound;
- Ongoing weekly bird monitoring of the Sruwaddacon Bay area and onshore pipeline area in general;
- Ongoing non-avian faunal monitoring (general, pre-construction and during construction);

## 2. SITE INSPECTIONS - AUGHOOSE

A detailed inspection of the compound at Aughooose was undertaken by the Project ecologist on 14<sup>th</sup> December in the company of a SEPIL environmental officer and a SEPIL engineer. Additional site inspections, with regard to faunal mitigation measures in particular, were undertaken by other members of the Project ecologist's team during December, including a site walkover on 7<sup>th</sup> December to check on the progress of faunal (avian and non-avian) mitigation.

During each site inspection the interior walkways and perimeter fence were walked and note made of progress since the previous walkover, as well as any matter requiring attention.

The main purpose of these site inspections was to:

- Inspect the condition of the stored surface vegetation layer in the peat storage areas.
- Inspect the progress of removal of the vegetation layer to the peat storage areas.  
*(Note: Vegetation and peat storage was continuing on site during December, with excess peat being removed to Srahmore).*
- Check the progress of screening and wildlife proofing on the perimeter security fence in relation to required avian and non-avian mitigation measures.  
*(Note: Good progress was being made with regard to closing off gaps which would enable light spillage)*
- Discuss with site personnel any other measures which might have been required.

## 3. HABITATS/VEGETATION

The process of vegetation stripping and removal to the storage areas at Aughooose was noted as being ongoing, and effective during the December site visits.

No other habitat condition or vegetation surveys were undertaken during December



## 4. BIRDS

### 4.1 Sruwaddacon Bay area

Weekly low water and high water counts have continued in the Sruwaddacon Bay area as scheduled. The following is a brief summary of findings during December:

- Brent Geese:
  - At LW on 1<sup>st</sup> December 184 Brent Goose numbers were recorded.
  - Local numbers in the previous month had been somewhat higher than at this time in recent years, but through December the Brent Goose numbers dropped back to more typical levels (<100 individuals).
  - For two consecutive weeks (December 14<sup>th</sup>/15<sup>th</sup> & 22<sup>nd</sup>/23<sup>rd</sup>) Brent Geese were observed feeding on the intertidal strip along the northern side of the bay in Count Section 4. At low water on December 23<sup>rd</sup>, 17 Brent Geese were observed feeding on the shore immediately west of the boundary of Count Section 5. There have been very few previous observations of foraging geese as far upstream within Sruwaddacon Bay.
- Both Godwit species, Black-tailed and Bar-tailed, have persisted in the area in small numbers throughout December. Godwits, which were irregularly recorded in the bay in recent years, have been observed on most survey visits thus far in winter 2011/12.
- A single Peregrine Falcon was observed perched on a fence post close to the high-water roost in Count Section 4 on December 23<sup>rd</sup>.
- No avoidance or disturbance events were recorded from vicinity of works. The traditional low-water feeding areas for small wading birds in Count Sections 4 & 5 continued to be used as normal by species such as Ringed Plover, Dunlin & Sanderling
- Several pairs of the diving duck, Red-breasted Merganser were present within the bay during several of the December field surveys. There were also several observations of Great Northern Diver within Sruwaddacon Bay.

## 5. NON-AVIAN FAUNA

### 5.1 Monitoring surveys

The current phase of “during construction” and “pre-construction” faunal surveys commenced in October, and had been expected to be finish in December. However, adverse weather conditions during December prevented the final phase (a few days’ duration) of the otter surveys of shorelines.

Weather permitting; these will be completed during January. The current phase of surveys which commenced in October and followed on from those completed in July, has included

- 1 Ongoing fauna surveys of the entire Bay area, with particular emphasis on otters.
  - Following the methodology of previous surveys, otter activity is being monitored by search for otter spraints (droppings) and other signs, including checks on otter or other mammal activity at known burrows and continued search for additional or new burrows.
  - Results to date far (October to December) have confirmed continuing otter presence in all parts of the Bay as before.
  - Badger presence has also been confirmed, with badger presence at Glengad and the upper afforested reaches of Sruwaddacon Bay.
  - Monitoring of badger and otter activity at Glengad has continued.
- 2 Aughoose area
  - The surveys have also targeted the vicinity of the works at Aughoose where there has been no change in the patterns of otter activity, which remains the same as previously reported, with otters continuing to utilise the shoreline areas at Aughoose and the Leenamore River.
  - As reported previously, no active /breeding holts have been identified in the area adjacent to, or in the vicinity of, the works at Aughoose.
  - General fauna surveys have been conducted in conjunction with the otter surveys in the vicinity of the works at Aughoose.
  - Site inspections have continued at Aughoose in relation to faunal mitigation measures, including regular inspections of the outside of the perimeter fence.
- 3 Faunal monitoring was carried out along other sections of the pipeline route in December, including the route sections from Aughoose/Bellagelly towards the Terminal.

## **5.2 Non-avian faunal observations made during the bird surveys**

The following observations were made by ornithologists when using high quality optics during bird monitoring surveys of the Sruwaddacon Bay area:

- An adult Otter on Rinroe Strand (23/12/2011); and
- Several observations of both Grey and Common Seal in Broadhaven Bay.

## **Appendix 3**

**Corrib Onshore Pipeline**  
Monthly Archaeological Report  
Aughoose Site

DoAHAG Licence number: 11E0214  
DoAHAG Metal detection Licence ref: 11R0090  
Director: James Kyle

Month Ending: 31<sup>st</sup> December 2011

**COURTNEYDEERY**   
Heritage Consultancy

**IAC** Irish Archaeological  
Consultancy

## **1.0 General Review of Works**

### **1.1 Works**

Works commenced Monday the 25<sup>th</sup> of July 2011.

### **2.0 Staffing Levels**

The following licenced archaeologists are present to monitor all ground breaking and excavation:

Site Director – James Kyle,  
Archaeologist - David Bayley.

All plant machinery is provided by Roadbridge Ltd.

### **3.0 Areas Investigated**

Construction works were carried out on several areas of the Aughooose site these were monitored under strict archaeological supervision. These works (Figure 1) comprised:

- The construction of a further v-ditch (0.75-1m in depth) to assist drainage and link to the existing network of lagoons/silt ponds, in advance of the north-eastern shear key was carried out (Plate 3).
- The removal of the surface vegetation of peat into turves, this enabled its transport and safe storage. This activity took place in advance of the Veolia site access road works.
- The bulk excavation of peat within the footprint of the Veolia plant, located internal to the north-western shear key was carried out, to the base of the peat cover, which was 4m below present ground level in this location (Plates 1 & 6).
- Bulk excavation of peat for both the northeast and northwest shear keys continued, with a peat stone matrix employed as part of the construction of each shear key (between 0.30m and 0.50m of peat was left *in situ* at the base of the excavation) (Plates 4 & 5). The northwest shear key was completed Monday 19<sup>th</sup> December.
- Bulk excavation of 2.5-3m of peat along the footprint of Internal Road 3 (IR3) commenced, with a peat stone matrix employed as part of the construction of the road (0.50m of peat was left *in situ* at the base of the excavation (Plate 2).
- Auxiliary temporary drainage works and a drainage ditch, 1m in depth, to the east of the main site access road.

In addition to the above; all construction works which had any impact on the peat and the underlying residual ground substrate were monitored and nothing of archaeological significance was revealed.

#### **4.0 Projected Future Work and Staff**

Archaeological monitoring will be undertaken during the construction phase of the project to determine the presence (if any) of below ground archaeological features. This will be conducted by two licenced archaeologists, James Kyle and David Bayley, on a week on; week off rotational basis.

#### **5.0 Reporting**

The monthly report records the extent of works requiring archaeological monitoring and in the event of archaeological material being revealed will record, photograph and map any new discovery. As part of the licensing requirement a final report will be completed upon the cessation of ground breaking and excavation works. The final report will describe in detail the results of the archaeological monitoring programme and will be sent to the statutory authorities in accordance to the licensing agreement.

#### **6.0 Location of Artefacts and Samples**

To date no artefacts or samples have been retrieved from site.

#### **7.0 Information any Unforeseen Difficulties**

Bulk excavation was suspended on Friday the 2<sup>nd</sup> of December due to the relocation of the site compound. Additionally bulk excavation was suspended on Tuesday 13<sup>th</sup> of December due to inclement weather. Archaeological monitoring of the turving process continued throughout each of these days, excavation recommenced on the following day in each case. The site closed for Christmas on Thursday 22<sup>nd</sup> December.

#### **8.0 Health and Safety Issues**

Both on site archaeologists have been inducted after receiving the requisite conflict management training and manual handling training.

#### **Summary**

Nothing of an archaeological significance has been uncovered as a result of works on site to date.



Plate 1: Excavation along eastern edge of area for Veolia Plant, facing southeast



Plate 2: Excavation of Internal Road 3, facing northwest





Plate 3: V-ditch along eastern boundary of site, facing northwest



Plate 4: North-western shear key, facing east





Plate 5: North-western shear key, facing east



Plate 6: Bulk excavation along the southern edge of the Veolia plant, facing northeast

