

<b>Corrib Gas Pipeline Environmental Report</b>	Period Ending:	31 <sup>st</sup> January 2012
Compiled By:	Carmel Carey and Catriona King	
Approved By:	Aoife Reynolds	

## 1 Monitoring Data

### 1.1 Monitoring Equipment

Noise	Five noise monitoring locations currently being used- AN1, AN2, AN3, NSR1 and RN1. The noise 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 were 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
01/01/2012	8.6	12/01/2012	1.2	23/01/2012	5.6
02/01/2012	10.4	13/01/2012	0.4	24/01/2012	12.4
03/01/2012	5.2	14/01/2012	0.0	25/01/2012	15.8
04/01/2012	2.4	15/01/2012	0.0	26/01/2012	11.0
05/01/2012	0.2	16/01/2012	0.0	27/01/2012	2.4
06/01/2012	3.8	17/01/2012	3.2	28/01/2012	21.0
07/01/2012	0.0	18/01/2012	1.2	29/01/2012	8.6
08/01/2012	1.8	19/01/2012	2.4	30/01/2012	0.2
09/01/2012	4.2	20/01/2012	3.4	31/01/2012	0.2
10/01/2012	2.6	21/01/2012	1.0		
11/01/2012	2.8	22/01/2012	0.4		
Total rainfall 130.0mm					

### 1.3 Summary

Environment	Comments
Vibration	There were no vibration exceedances during the reporting period
Weather	There was a total of 130.0mm of rainfall during the reporting period, with a temperature range of 1.6°C to 12.7°C
Noise	<ul style="list-style-type: none"> <li>There was occurrences of elevated noise readings during the reporting period at: <ul style="list-style-type: none"> <li>AN2 which was most likely caused by traffic movements and installation of visual screens on eastern perimeter fence.</li> <li>AN1 due to works onsite in close proximity to the noise meter</li> </ul> </li> <li>A loss of data occurred at NSR1 on 24<sup>th</sup> and 26<sup>th</sup> January, and at RN1 on 24<sup>th</sup>, 25<sup>th</sup> and 30<sup>th</sup> January due to mains power failure and file corruption.</li> </ul>

<b>Corrib Gas Pipeline Environmental Report</b>	Period Ending:	31 <sup>st</sup> January 2012
Compiled By:	Carmel Carey and Catriona King	
Approved By:	Aoife Reynolds	

Environment	Comments
	<ul style="list-style-type: none"> <li>Monitoring at AN3 commenced on 26<sup>th</sup> January.</li> <li>Installation of the noise meter at GN1 in Glengad began in mid January.</li> </ul>
Surface Water - Aughoose	There were no surface water exceedences during January. The sondes at siltbuster SB1 and SB2 were decommissioned on January 12 <sup>th</sup> . Surface water discharge from treatment system is referred to as SB3, results are displayed graphically.
Surface Water - Glengad	Weekly visits to Glengad for pre-mobilisation monitoring. No surface water was available for sample collection.
Groundwater Monitoring	Monitoring of groundwater undertaken during the reporting period were within the anticipated results range.

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

## 2 Environmental Exceedances / Incidents / Complaints / Highlights

### 2.1 Complaints

Date & time of complaint	Nature of complaint	Actions taken as a result of the complaint
12 <sup>th</sup> Jan 2012	Complaint about Shell not standing down traffic mornings and evenings to accommodate secondary school bus	Communication issued to the complainant.
30 <sup>th</sup> Jan 2012	Insufficient local employment on project	Communication issued to the complainant.
30 <sup>th</sup> Jan 2012	Complaint in relation to high peat contents in water and shore at Rosspoint shore of bay	Communication issued to the complainant. Surface water management in accordance with discharge criteria at the Aughoose Compound.
30 <sup>th</sup> Jan 2012	Complaint in relation to noise on morning of 30 <sup>th</sup> Jan	Site activities taking place on date reviewed, noise monitoring results indicate that SEPIL were in compliance with permitted noise levels. Communication issued to complainant.
31 <sup>th</sup> Jan 2012	Damage to footpath	Structural survey undertaken and further communication planned with Complainant.
31 <sup>th</sup> Jan 2012	Complaint about traffic speed limit along haul route seeking reduction from 50km to 30km.	Traffic speeds at the premises in accordance with the approved traffic management plan.

<b>Corrib Gas Pipeline Environmental Report</b>	Period Ending:	31 <sup>st</sup> January 2012
Compiled By:	Carmel Carey and Catriona King	
Approved By:	Aoife Reynolds	

None of the complaints recorded in this report constitute an environmental incident such as those referred to in Environ's report of 16<sup>th</sup> December 2011 (JJH/JJH/L\_UK2216942\_2 Issue 1), and as set out in Section 3.4 of the EMP (approved 3<sup>rd</sup> February 2012).

## 2.2 Exceedance

There were no exceedances during the reporting period.

## 2.3 Incidents

<b>Date and Time</b>	5 <sup>th</sup> January to 12 <sup>th</sup> January
<b>Location</b>	Aughoose site
<b>Nature of Incident</b>	An impact piling hammer was mobilised for use at Aughoose on January 4 <sup>th</sup> to conduct piling operations for the foundations of the permanent water treatment system. It was in operation during the following times: <ul style="list-style-type: none"> <li>• January 5<sup>th</sup> – 12pm – 5pm</li> <li>• January 6<sup>th</sup> – 8am – 5pm</li> <li>• January 9<sup>th</sup> – 8am – 5pm</li> <li>• January 12<sup>th</sup> – 10am -2pm</li> </ul>
<b>Actions taken</b>	The piling hammer ceased operation when the issue was noted. An investigation was undertaken and the following actions will be implemented: <ul style="list-style-type: none"> <li>• Update the On-land (Earth works) contractor ECP's to address any constraints activities and associated controls.</li> <li>• Update the "pre-mobilisation of equipment" process to include compliance checks against the Contractors ECP and SEPIL EMP for specialist equipment.</li> <li>• Continue to provide training (awareness and understanding) on EMP/ECP compliance to key personnel.</li> </ul>
<b>Category</b>	Incident
<b>Status</b>	Closed

## 2.4 Environmental Highlights

<b>Environment</b>	<b>Comments</b>
Surface Water Treatment	The surface water treatment system was fully installed and commissioning was completed in January. The commissioning also included and extensive training programme on the operation of the upgraded system.
Noise / Visual impact	Visual screens were installed on the entire fence (except for road frontage) during January.

	Date	Cond.	Turbidity	DO %	pH	TSS	Orthophos phate 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
<b>Composites</b>												
SB3	01/01/2012	386	0.3	61.3	7.0	2	<0.03	<200	<100	3.60	0.24	10
SB3	02/01/2012	329	0.8	65.3	7.1	3	<0.03	<100	<100	3.07	0.22	<10
SB1	03/01/2012	415	1.1	65.4	7.3	2	<0.03	<200	<100	2.75	0.25	<10
SB2	03/01/2012	419	1.1	68.6	7.4	2	<0.03	<200	<100	2.76	0.24	<10
SB3	03/01/2012	329	0.3	64.2	7.0	2	<0.03	<500	<100	2.66	0.20	<10
SB3	04/01/2012	377	0.8	61.4	7.0	2	0.35	138	<100	2.97	0.09	16
SB3	05/01/2012	412	3.5	62.8	7.1	10	<0.03	<100	<100	4.05	0.01	17
SB1	06/01/2012	393	0.9	64.5	6.9	2	<0.03	<100	<100	1.12	0.06	<10
SB2	06/01/2012	372	1.1	63.5	7.0	2	<0.03	<100	<100	2.68	0.06	<10
SB3	06/01/2012	392	1.2	65.4	7.1	2	<0.03	138	<100	4.02	<0.1	<10
SB3	07/01/2012	413	1.1	64.8	7.1	2	<0.03	118	<100	6.06	0.35	25
SB3	08/01/2012	435	1.4	66.4	7.1	2	<0.03	<100	<100	5.54	0.39	24
SB1	09/01/2012	434	0.6	66.8	7.2	2	<0.03	<100	<100	3.76	0.12	25
SB2	09/01/2012	432	0.7	65.3	7.2	2	<0.03	116	<100	2.92	0.20	21
SB3	09/01/2012	466	2.3	64.5	7.2	2	<0.03	148	<100	5.64	0.37	28
SB3	10/01/2012	457	2.6	63.4	7.2	2	<0.03	109	<100	5.88	0.33	37
SB3	11/01/2012	451	3.5	81.0	7.4	2	<0.03	<100	<100	7.07	0.40	22
SB3	12/01/2012	440	6.2	78.0	7.3	5	<0.03	<100	<100	9.40	0.49	36
SB3	13/01/2012	438	8.4	68.5	7.4	10	<0.03	248	<100	8.26	0.45	48
SB3	14/01/2012	428	0.4	68.3	7.2	2	<0.03	<100	<100	3.17	0.27	20
SB3	15/01/2012	438	0.5	68.5	7.1	3	<0.03	162	<100	4.08	0.24	<10
SB3	16/01/2012	440	3.8	65.6	7.3	4	0.04	<200	<100	6.29	0.51	39
SB3	17/01/2012	443	3.8	64.8	7.4	5	0.04	<200	<100	6.02	0.55	47
SB3	18/01/2012	449	3.1	66.5	7.3	5	0.04	<100	<100	6.58	0.64	<10
SB3	19/01/2012	457	3.2	64.3	7.1	5	0.04	<100	<100	10.20	0.64	<10
SB3	20/01/2012	459	2.9	63.5	7.2	3	<0.03	<100	<100	10.30	0.63	35
SB3	21/01/2012	441	3.8	67.8	7.2	2	<0.03	<100	<100	9.53	0.41	25
SB3	22/01/2012	427	2.7	67.4	7.2	2	<0.03	<100	<100	7.48	0.32	20
SB3	23/01/2012	442	2.0	56.8	7.2	2	<0.03	<100	<100	6.13	0.31	22
SB3	24/01/2012	416	2.5	55.8	7.3	2	<0.03	<100	<100	6.07	0.75	22
SB3	25/01/2012	386	2.3	65.3								

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

Location	Date	DO	Temp	Cond.	pH	TDS	BOD	Suspend ed Solids	Turbidity	Orthophos phate as PO4 -P	Ammonia as NH3-N	Total Phosphor us as P	Nitrate as NO <sub>3</sub>	Nitrite as NO <sub>2</sub>	Phosphate as PO4	COD	Copper
		% Sat	°C	uS/cm	pH Units	mg/l	mg/l	mg/l	N.T.U	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
GW1	19/01/2012	14	9.7	407	6.3	227	<1	61	24.5	0.916	0.29	1.13	<0.44	<0.017	2.81	24	36
GW2	19/01/2012	9	9.1	488	6.4	275	<1	380	260.0	0.270	2.38	1.06	<0.44	<0.017	0.83	36	9
GW3	19/01/2012	11	9.2	389	6.2	217	<1	37	17.3	0.253	2.97	0.35	<0.44	<0.017	0.78	38	2
GW4	19/01/2012	32	9.0	398	6.3	225	<1	27	43.9	0.236	0.57	0.37	<0.44	<0.017	0.73	22	8
Location	Date	Arsenic, total	Chromium, total	Lead, total	Cadmium , total	Tin, total	Iron, total	Mercury	TOC	Total Hardness	Zinc	Extractable HC/ DRO (C8- C40) total and dissolved	PRO (C5 - C12) total and dissolved	Total Phosphorus as P	Manganese	Chloride	Water Level
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	m
GW1	19/01/2012	15	5	10	2.0	<0.5	32070	<0.05	7.68	145	25	<100	<100	1.13	3126	55.1	3.2
GW2	19/01/2012	3	7	20	<0.5	<0.5	32550	<0.05	12.30	173	18	<100	<100	1.06	654	64.1	2.2
GW3	19/01/2012	7	3	1	<0.5	<0.5	68210	<0.05	10.10	29	12	<100	<100	0.35	214	60.3	2.5
GW4	19/01/2012	3	2	1	<0.5	<0.5	43570	<0.05	7.34	103	18	<100	<100	0.37	1115	63.6	2.7
Grey shaded areas denote parameters that cannot or were not analysed on-site or at the lab.																	

Day Time Noise Monitoring / Max Hourly or above 60dB L <sub>max</sub> Record Sheet										
Determinant Results										
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>	
AN1	3.2	8.3	02/01/2012 12:00:00	1:00	4.3	219.0	63.8	92.4	43.0	No Construction Onsite
AN2			02/01/2012 08:00:00	1:00			60.4	74.5	41.0	
			02/01/2012 09:00:00	1:00			63.0	82.5	41.5	
			02/01/2012 10:00:00	1:00			64.5	81.0	39.0	
			02/01/2012 11:00:00	1:00			65.1	82.8	40.6	
			02/01/2012 12:00:00	1:00			60.0	75.2	40.4	
			02/01/2012 13:00:00	1:00			62.3	79.4	39.5	
			02/01/2012 14:00:00	1:00			61.0	78.4	40.1	
			02/01/2012 15:00:00	1:00			63.6	80.9	40.6	
			02/01/2012 16:00:00	1:00			62.2	79.8	41.1	
NSR1			02/01/2012 13:00:00	1:00			55.2	76.4	33.4	
RN1			02/01/2012 13:00:00	1:00			53.0	75.7	38.5	
AN1	4.4	12.7	03/01/2012 08:00:00	1:00	8.6	269.2	60.1	75.4	47.8	
AN2			03/01/2012 09:00:00	1:00	6.4	258.2	62.4	81.1	47.4	
			03/01/2012 11:00:00	1:00	7.4	278.2	63.7	78.4	49.2	
			03/01/2012 12:00:00	1:00	7.1	259.5	64.8	82.9	50.4	
			03/01/2012 13:00:00	1:00	6.9	247.2	64.0	77.6	47.7	
			03/01/2012 14:00:00	1:00	8.3	266.0	65.3	79.8	46.6	
			03/01/2012 15:00:00	1:00	11.7	258.7	69.6	81.7	52.3	
			03/01/2012 16:00:00	1:00	8.6	285.7	68.3	80.0	49.5	
			03/01/2012 08:00:00	1:00	8.6	269.2	68.2	82.1	45.7	
			03/01/2012 09:00:00	1:00	6.4	258.2	66.8	83.6	44.3	
03/01/2012 10:00:00			1:00	5.1	253.5	68.4	84.9	43.3		
03/01/2012 11:00:00			1:00	7.4	278.2	69.8	82.0	49.1		
03/01/2012 12:00:00			1:00	7.1	259.5	72.2	86.9	48.0		
03/01/2012 13:00:00			1:00	6.9	247.2	69.0	88.9	47.3		
03/01/2012 14:00:00			1:00	8.3	266.0	74.0	88.9	46.7		
03/01/2012 15:00:00			1:00	11.7	258.7	78.2	91.8	53.3		
03/01/2012 16:00:00			1:00	8.6	285.7	76.8	88.8	49.6		
NSR1			03/01/2012 11:00:00	1:00	7.4	278.2	61.1	80.7	42.3	
			03/01/2012 12:00:00	1:00	7.1	259.5	62.1	82.7	41.0	
			03/01/2012 13:00:00	1:00	6.9	247.2	60.6	79.8	37.7	
			03/01/2012 14:00:00	1:00	8.3	266.0	64.8	84.6	40.0	
			03/01/2012 15:00:00	1:00	11.7	258.7	68.1	84.7	49.6	
			03/01/2012 16:00:00	1:00	8.6	285.7	65.9	84.5	44.9	
RN1			03/01/2012 08:00:00	1:00	8.6	269.2	60	76.3	49.8	
			03/01/2012 11:00:00	1:00	7.4	278.2	60.8	78.6	49.2	
			03/01/2012 12:00:00	1:00	7.1	259.5	62	87.8	48.9	
			03/01/2012 14:00:00	1:00	8.3	266.0	62.3	80.8	50.6	
			03/01/2012 15:00:00	1:00	11.7	258.7	65.9	82.1	53.8	
			03/01/2012 16:00:00	1:00	8.6	285.7	65.9	82.1	53.8	
AN1	5.6	10.7	04/01/2012 12:00:00	1:00	9.0	220.5	64.2	80.7	47.9	
AN2			04/01/2012 13:00:00	1:00	5.9	234.5	61.4	78.1	46.8	
			04/01/2012 14:00:00	1:00	7.4	212.5	62.1	77.6	47.4	
			04/01/2012 15:00:00	1:00	5.8	235.5	66.3	81.9	52.4	
			04/01/2012 16:00:00	1:00	6.7	228.2	61.8	76.6	46.5	
			04/01/2012 08:00:00	1:00	4.8	247.5	65.0	81.3	47.0	
			04/01/2012 09:00:00	1:00	4.0	241.7	67.9	82.6	46.4	
			04/01/2012 10:00:00	1:00	4.2	235.2	67.2	82.5	45.8	
			04/01/2012 11:00:00	1:00	6.2	227.5	68.4	80.1	50.0	
			04/01/2012 12:00:00	1:00	9.0	220.5	72.5	85.1	51.8	
04/01/2012 13:00:00			1:00	5.9	234.5	72.2	84.6	50.4		
04/01/2012 14:00:00			1:00	7.4	212.5	73.2	85.5	50.5		
04/01/2012 15:00:00			1:00	5.8	235.5	72.4	83.1	52.2		
04/01/2012 16:00:00			1:00	6.7	228.2	73.6	87.7	51.2		
NSR1			04/01/2012 12:00:00	1:00	9.0	220.5	61.3	76.6	44.5	
			04/01/2012 13:00:00	1:00	5.9	234.5	60.8	79.0	45.0	
			04/01/2012 14:00:00	1:00	7.4	212.5	61.8	76.5	47.4	
			04/01/2012 15:00:00	1:00	5.8	235.5	63.2	78.8	46.8	
			04/01/2012 16:00:00	1:00	6.7	228.2	62.7	78.4	46.5	
			04/01/2012 15:00:00	1:00	5.8	235.5	59.7	81.1	51.3	
AN1	6.3	10.3	05/01/2012 08:00:00	1:00:00	7.8	285.0	65.0	78.0	51.9	Elevated hourly wind speed
AN2			05/01/2012 09:00:00	1:00:00	7.5	293.5	62.3	75.9	48.3	
			05/01/2012 11:00:00	1:00:00	7.2	279.3	69.1	89.2	48.2	
			05/01/2012 12:00:00	1:00:00	7.0	295.8	62.2	77.0	48.9	
			05/01/2012 16:00:00	1:00:00	4.4	294.8	63.2	88.5	44.0	
			05/01/2012 08:00:00	1:00:00	7.8	285.0	73.7	86.7	52.6	
05/01/2012 09:00:00			1:00:00	7.5	293.5	71.1	85.7	48.5		
05/01/2012 10:00:00			1:00:00	7.7	297.3	69.8	82.6	48.6		
05/01/2012 12:00:00			1:00:00	7.0	295.8	66.9	78.5	51.0		
05/01/2012 13:00:00			1:00:00	7.1	298.8	65.1	79.7	47.4		
05/01/2012 14:00:00			1:00:00	6.0	284.3	62.3	76.3	44.4		
05/01/2012 15:00:00			1:00:00	6.5	282.0	64.6	77.4	49.9		
05/01/2012 16:00:00			1:00:00	4.4	294.8	62.5	79.0	45.7		
NSR1			05/01/2012 08:00:00	1:00:00	7.8	285.0	62.7	80.9	46.0	
RN1			05/01/2012 12:00:00	1:00:00	7.0	295.8	59.1	83.8	43.4	
AN1	5.7	11.2	06/01/2012 08:00:00	1:00:00	2.1	212.8	60.4	75.5	46.7	Elevated hourly wind speed
AN2			06/01/2012 11:00:00	1:00:00	7.0	203.5	61.6	74.8	48.2	
			06/01/2012 12:00:00	1:00:00	4.4	222.8	62.2	86.1	46.6	
			06/01/2012 13:00:00	1:00:00	5.3	219.8	65.6	88.1	44.1	
			06/01/2012 15:00:00	1:00:00	2.5	219.0	60.8	78.1	48.4	
			06/01/2012 08:00:00	1:00:00	2.1	212.8	60.8	78.5	42.6	
			06/01/2012 11:00:00	1:00:00	7.0	203.5	62.5	74.6	45.6	
			06/01/2012 12:00:00	1:00:00	4.4	222.8	62.4	74.9	46.6	
			06/01/2012 13:00:00	1:00:00	5.3	219.8	64.2	78.1	42.3	
			06/01/2012 14:00:00	1:00:00	4.4	206.3	62.8	73.9	42.6	
06/01/2012 15:00:00			1:00:00	2.5	219.0	62.9	74.5	45.7		
06/01/2012 16:00:00			1:00:00	5.9	224.3	62.8	77.1	43.1		
NSR1			06/01/2012 11:00:00	1:00:00	7.0	203.5	52.8	70.4	38.7	
RN1			06/01/2012 11:00:00	1:00:00	7.0	203.5	50.8	76.0	41.6	
AN1	8	9.1	07/01/2012 12:00:00	1:00:00	3.0	258.8	60.7	77.9	42.8	
AN2			07/01/2012 11:00:00	1:00:00	3.7	258.5	60.1	80.9	43.9	
NSR1			07/01/2012 12:00:00	1:00:00	3.0	258.8	60.2	77.7	46.4	
NSR1			07/01/2012 16:00:00	1:00:00	5.7	209.8	48.7	72.3	26.3	
RN1			07/01/2012 08:00:00	1:00:00	2.6	238.0	47.8	62.4	41.3	

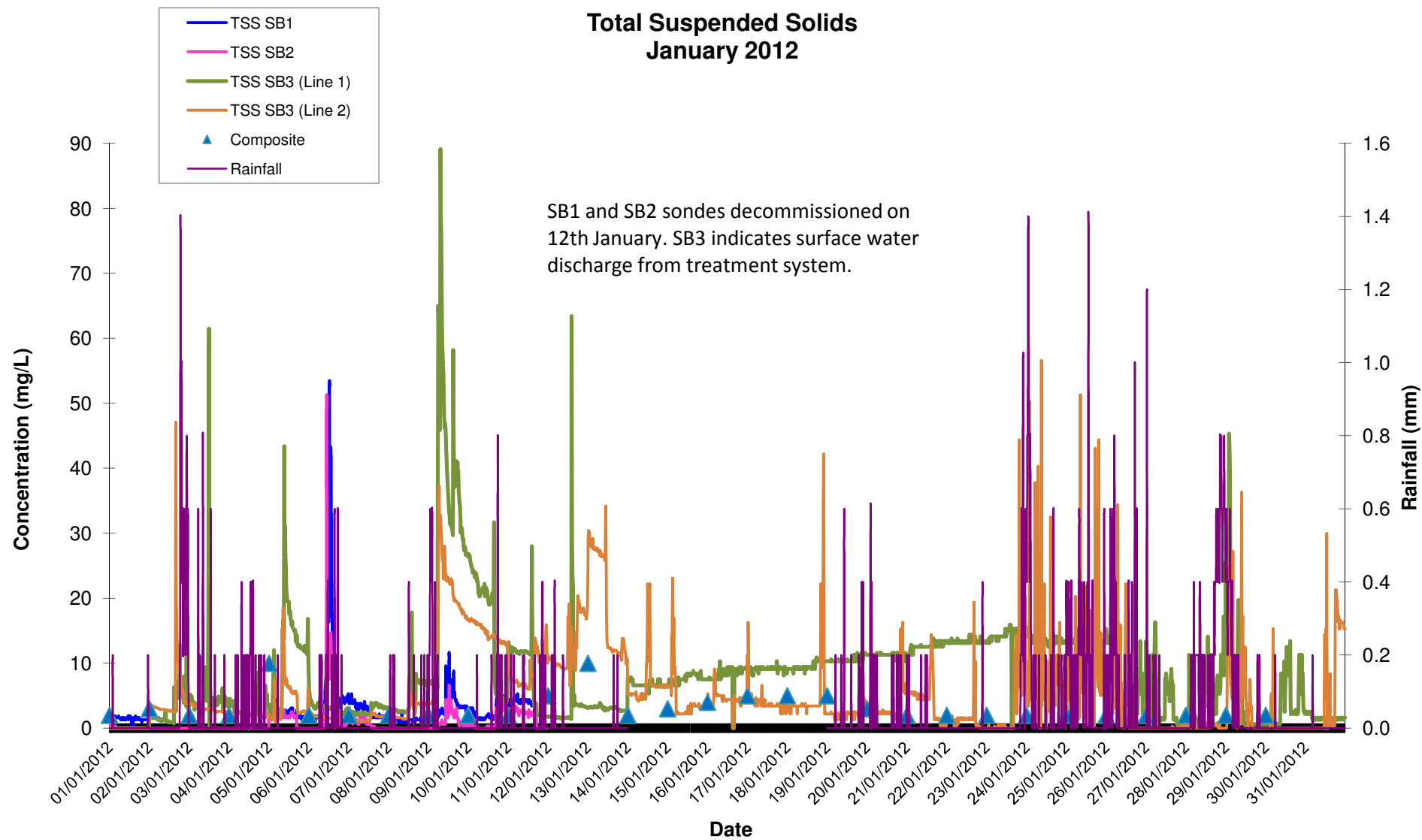
Day Time Noise Monitoring / Max Hourly or above 60dB L <sub>max</sub> Record Sheet										
Determinant Results										
Location	Air Temp. (Min)	Air Temp. (Max)	Start Date and Time	Duration	Wind		Results dB			Comments
					Speed (m/s)*	Direction (Degrees)	L <sub>Aeq</sub>	L <sub>Amax</sub>	L <sub>Amin</sub>	
AN1	5.2	10.3	09/01/2012 09:00:00	1:00:00	1.5	217.0	60.4	76.1	38.0	
			09/01/2012 10:00:00	1:00:00	0.8	204.5	60.6	77.3	36.5	
			09/01/2012 11:00:00	1:00:00	1.9	233.5	61.1	75.8	45.4	
			09/01/2012 13:00:00	1:00:00	1.9	172.3	60.1	73.8	40.4	
			09/01/2012 15:00:00	1:00:00	2.6	209.3	62.3	76.0	46.1	
AN2			09/01/2012 08:00:00	1:00:00	1.9	259.0	62.0	78.4	45.7	
			09/01/2012 09:00:00	1:00:00	1.5	217.0	63.5	81.0	43.4	
			09/01/2012 11:00:00	1:00:00	1.9	233.5	60.7	75.0	42.2	
			09/01/2012 12:00:00	1:00:00	2.9	233.0	61.9	77.1	40.5	
			09/01/2012 15:00:00	1:00:00	2.6	209.3	63.5	80.2	40.7	
NSR1			09/01/2012 16:00:00	1:00:00	2.6	194.8	61.0	78.2	38.2	
RN1			09/01/2012 09:00:00	1:00:00	1.5	217.0	48.6	75.6	27.9	
			09/01/2012 10:00:00	1:00:00	0.8	204.5	50.9	79.5	26.2	
AN1	7.8	11.0	10/01/2012 08:00:00	1:00:00	3.9	200.0	62.3	77.2	42.5	
10/01/2012 10:00:00			1:00:00	5.3	202.5	63.3	81.9	38.0		
10/01/2012 12:00:00			1:00:00	6.6	210.8	65.1	85.7	45.7	Elevated hourly wind speed	
10/01/2012 11:00:00			1:00:00	5.6	212.3	62.9	75.9	44.6		
10/01/2012 12:00:00			1:00:00	6.6	210.8	64.3	78.5	45.4		
10/01/2012 13:00:00			1:00:00	4.3	207.3	68.6	82.0	41.6	Elevated noise levels due to road traffic	
10/01/2012 15:00:00			1:00:00	4.2	201.8	70.3	90.2	45.9	Elevated noise levels due to road traffic	
10/01/2012 16:00:00			1:00:00	2.8	206.3	67.3	87.4	39.7	Elevated noise levels due to road traffic	
NSR1			10/01/2012 09:00:00	1:00:00	4.9	201.5	50.8	79.6	33.2	
RN1			10/01/2012 10:00:00	1:00:00	5.3	202.5	52.3	78.9	41.5	
AN1	7.4	11.0	11/1/2012 10:00:00	1:00:00	6.4	192.3	68.8	91.7	39.6	Elevated hourly wind speed
11/1/2012 11:00:00			1:00:00	4.8	194.8	60.0	78.5	45.9		
11/01/2012 08:00:00			1:00:00	4.2	177.3	70.0	83.5	38.4	Elevated noise levels due to road traffic	
11/01/2012 09:00:00			1:00:00	6.0	182.0	75.2	92.4	41.9	Elevated hourly wind speed	
11/01/2012 10:00:00			1:00:00	6.4	192.3	68.0	88.2	40.5	Elevated hourly wind speed	
11/01/2012 11:00:00			1:00:00	4.8	194.8	76.1	94.1	44.1	Elevated noise levels due to road traffic	
11/01/2012 12:00:00			1:00:00	8.4	198.5	72.6	86.6	45.9	Elevated hourly wind speed	
11/01/2012 13:00:00			1:00:00	6.4	188.0	74.0	87.1	46.1	Elevated hourly wind speed	
11/01/2012 14:00:00			1:00:00	6.9	188.5	71.1	88.1	44.2	Elevated hourly wind speed	
11/01/2012 15:00:00			1:00:00	7.2	199.5	73.5	92.1	48.6	Elevated hourly wind speed	
11/01/2012 16:00:00			1:00:00	7.3	207.3	69.9	84.8	41.0	Elevated hourly wind speed	
NSR1			11/01/2012 13:00:00	1:00:00	6.9	188.5	57.7	72.3	36.4	
RN1			11/01/2012 13:00:00	1:00:00	6.9	188.5	52.4	61.0	46.5	
AN1	3.4	8.2	12/01/2012 10:00:00	1:00:00	0.9	284.5	64.6	89.0	33.8	
12/01/2012 11:00:00			1:00:00	1.4	280.0	68.9	79.7	45.2		
12/01/2012 12:00:00			1:00:00	1.4	274.5	65.5	78.6	41.7		
12/01/2012 13:00:00			1:00:00	1.6	270.3	66.7	81.1	33.8		
12/01/2012 14:00:00			1:00:00	1.1	270.5	65.6	80.6	34.1		
12/01/2012 15:00:00			1:00:00	1.0	258.3	68.3	83.3	42.1		
12/01/2012 08:00:00			1:00:00	2.4	300.8	68.0	87.9	43.8		
12/01/2012 09:00:00			1:00:00	1.2	265.8	70.6	86.8	43.5	Elevated noise levels due to construction works in close proximity to meter	
12/01/2012 10:00:00			1:00:00	0.9	284.5	68.9	86.6	40.3		
12/01/2012 11:00:00			1:00:00	1.4	280.0	71.4	88.2	47.0		
12/01/2012 12:00:00			1:00:00	1.4	274.5	66.6	88.2	44.3		
12/01/2012 13:00:00			1:00:00	1.6	270.3	71.4	90.2	41.4		
12/01/2012 14:00:00			1:00:00	1.1	270.5	66.0	83.3	39.4		
12/01/2012 15:00:00			1:00:00	1.0	258.3	72.0	86.6	48.8		
12/01/2012 16:00:00			1:00:00	0.9	250.8	63.4	82.8	41.8		
NSR1			12/01/2012 10:00:00	1:00:00	0.9	284.5	51.5	84.3	26.3	
RN1			12/01/2012 16:00:00	1:00:00	0.9	250.8	47.2	72.8	22.0	
AN1	2.3	6.5	13/01/2012 14:00:00	1:00:00	0.9	165.3	58.8	73.3	36.5	
AN2			13/01/2012 08:00:00	1:00:00	1.2	178.3	59.8	80.9	39.2	
NSR1			13/01/2012 13:00:00	1:00:00	2.1	174.8	48.4	78.9	28.5	
RN1			13/01/2012 15:00:00	1:00:00	1.0	164.0	54.8	29.6	83.9	
AN1			14/01/2012 09:00:00	1:00:00	3.9	120.5	47.6	59.5	35.6	
AN2	1.2	7.1	14/01/2012 13:00:00	1:00:00	4.5	111.5	55.8	71.5	34.6	
NSR1			14/01/2012 09:00:00	1:00:00	3.9	120.5	50.9	70.9	29.1	
RN1			14/01/2012 09:00:00	1:00:00	3.9	120.5	59.6	76.6	32.5	
AN1	0.7	7.2	16/01/2012 12:00:00	1:00:00	2.7	135.5	63.8	85.0	46.2	
			16/01/2012 15:00:00	1:00:00	6.1	126.0	60.5	77.5	48.0	
			16/01/2012 12:00:00	1:00:00	2.7	135.5	60.0	74.9	39.2	
			16/01/2012 15:00:00	1:00:00	6.1	126.0	60.7	75.3	39.1	
			16/01/2012 16:00:00	1:00:00	3.0	118.8	63.5	90.3	37.7	
NSR1			16/01/2012 11:00:00	1:00:00	3.9	129.3	53.7	70.6	37.5	
RN1			16/01/2012 09:00:00	1:00:00	2.9	144.5	53.0	81.1	36.3	
AN1	1.9	7.6	17/01/2012 08:00:00	1:00:00	2.8	130.3	60.5	77.5	46.2	
			17/01/2012 09:00:00	1:00:00	3.4	137.3	60.6	74.4	42.3	
			17/01/2012 12:00:00	1:00:00	3.2	164.8	61.2	82.2	47.9	
			17/01/2012 15:00:00	1:00:00	2.0	155.3	60.2	76.4	48.2	
			17/01/2012 09:00:00	1:00:00	3.4	137.3	60.6	80.6	41.2	
			17/01/2012 11:00:00	1:00:00	3.1	136.3	63.3	86.6	42.7	
			17/01/2012 12:00:00	1:00:00	3.2	164.8	63.8	91.1	41.7	
			17/01/2012 15:00:00	1:00:00	2.0	155.3	61.9	74.7	37.9	
NSR1			17/01/2012 08:00:00	1:00:00	2.8	130.3	51.8	80.4	40.8	
RN1			17/01/2012 08:00:00	1:00:00	2.8	130.3	49.9	72.1	39.8	
AN1	3.5	8.4	18/01/2012 08:00:00	1:00:00	2.0	240.8	61.0	76.2	46.8	
			18/01/2012 09:00:00	1:00:00	2.0	192.5	60.3	76.9	43.0	
			18/01/2012 10:00:00	1:00:00	3.1	225.8	61.9	85.0	38.3	
			18/01/2012 11:00:00	1:00:00	1.7	242.3	63.7	84.9	50.9	
			18/01/2012 12:00:00	1:00:00	1.4	222.1	62.2	79.4	42.7	
			18/01/2012 14:00:00	1:00:00	2.3	202.8	66.7	88.7	35.9	Sheetpiling activity in close proximity to the noise meter
			18/01/2012 15:00:00	1:00:00	3.9	216.0	63.1	84.4	49.9	
			18/01/2012 08:00:00	1:00:00	2.0	240.8	69.0	88.3	47.3	Elevated noise levels due to road traffic and screening works at eastern perimeter fence
			18/01/2012 09:00:00	1:00:00	2.0	192.5	62.4	76.8	45.2	
			18/01/2012 10:00:00	1:00:00	3.1	225.8	62.4	84.0	39.9	
			18/01/2012 11:00:00	1:00:00	1.7	242.3	64.3	82.2	53.1	
			18/01/2012 12:00:00	1:00:00	1.4	222.1	65.0	82.0	53.2	Elevated noise levels due to road traffic and screening works at eastern perimeter fence
			18/01/2012 13:00:00	1:00:00	2.6	233.5	67.1	83.1	52.8	Elevated noise levels due to road traffic and screening works at eastern perimeter fence
			18/01/2012 14:00:00	1:00:00	2.3	202.8	64.1	84.6	40.9	
			18/01/2012 15:00:00	1:00:00	3.9	216.0	66.3	83.4	42.2	Elevated noise levels due to road traffic and screening works at eastern perimeter fence
			18/01/2012 16:00:00	1:00:00	2.2	225.0	61.7	82.3	39.5	
NSR1			18/01/2012 10:00:00	1:00:00	3.1	225.8	49.8	81.0	28.9	
RN1			18/01/2012 08:00:00	1:00:00	2.0	240.8	48.3	73.4	28.7	

Day Time Noise Monitoring / Max Hourly or above 60dB L <sub>Aeq</sub> Record Sheet													
Determinant Results													
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>				
AN1	4.6	8.2	19/01/2012 10:00:00	1:00:00	4.5	246.0	61.0	79.7	38.5				
			19/01/2012 11:00:00	1:00:00	4.1	247.8	64.6	88.7	48.8				
			19/01/2012 12:00:00	1:00:00	6.3	276.8	62.8	77.5	50.5				
			19/01/2012 13:00:00	1:00:00	5.9	264.0	61.9	79.2	42.9				
			19/01/2012 14:00:00	1:00:00	7.0	264.0	62.4	81.1	39.9				
			19/01/2012 15:00:00	1:00:00	5.6	251.8	62.0	81.6	47.8				
AN2			19/01/2012 09:00:00	1:00:00	5.0	243.0	63.9	78.9	46.9				
			19/01/2012 10:00:00	1:00:00	4.5	246.0	63.4	81.7	42.7				
			19/01/2012 11:00:00	1:00:00	4.1	247.8	67.1	82.5	49.8	Elevated noise readings due to traffic			
			19/01/2012 12:00:00	1:00:00	6.3	276.8	69.5	86.8	49.7	Elevated noise readings due to high wind speeds			
			19/01/2012 13:00:00	1:00:00	5.9	264.0	69.3	87.6	47.6	Elevated noise readings due to high wind speeds			
			19/01/2012 14:00:00	1:00:00	7.0	264.0	66.6	82.5	44.0	Elevated noise readings due to high wind speeds			
NSR1			19/01/2012 15:00:00	1:00:00	5.6	251.8	71.8	87.0	49.7	Elevated noise readings due to high wind speeds			
			19/01/2012 16:00:00	1:00:00	5.1	264.0	67.6	87.6	45.6	Elevated noise readings due to high wind speeds			
			19/01/2012 15:00:00	1:00:00	5.6	251.8	56.3	78.7	38.0				
			19/01/2012 13:00:00	1:00:00	5.9	264.0	54.7	76.8	46.3				
			AN1	8.0	10.5	20/01/2012 08:00:00	1:00:00	4.4	244.0	60.0	79.9	44.8	
						20/01/2012 09:00:00	1:00:00	6.4	242.8	60.9	79.8	40.2	
20/01/2012 12:00:00	1:00:00	4.5				243.8	60.6	78.0	47.6				
20/01/2012 13:00:00	1:00:00	4.7				253.8	60.0	80.6	38.5				
20/01/2012 15:00:00	1:00:00	4.8				225.0	61.0	78.3	47.6				
20/01/2012 08:00:00	1:00:00	4.4				244.0	65.7	82.9	44.7	Elevated noise readings due to traffic			
AN2	20/01/2012 09:00:00	1:00:00	6.4			242.8	66.7	86.4	48.3	Elevated noise readings due to high wind speeds			
	20/01/2012 10:00:00	1:00:00	4.9			242.3	66.1	82.4	42.3	Elevated noise readings due to traffic			
	20/01/2012 11:00:00	1:00:00	3.4			244.5	68.3	87.4	46.8	Elevated noise readings due to traffic			
	20/01/2012 12:00:00	1:00:00	4.5			243.8	65.8	81.6	48.9	Elevated noise readings due to traffic			
	20/01/2012 13:00:00	1:00:00	4.7			253.8	67.3	85.4	44.8	Elevated noise readings due to traffic			
	20/01/2012 14:00:00	1:00:00	3.3			239.5	65.1	84.2	44.2	Elevated noise readings due to traffic			
NSR1	20/01/2012 15:00:00	1:00:00	4.8			225.0	69.7	87.6	47.3	Elevated noise readings due to traffic			
	20/01/2012 16:00:00	1:00:00	6.3			235.3	64.4	85.4	43.4				
	20/01/2012 13:00:00	1:00:00	4.7			253.8	56.9	73.4	34.5				
	20/01/2012 16:00:00	1:00:00	6.3			235.3	56.9	75.3	46.6				
	AN1	7.3	10.2			21/01/2012 10:00:00	1:00:00	6.9	272.3	61.0	75.1	44.1	
						21/01/2012 11:00:00	1:00:00	4.7	280.3	62.0	78.0	49.9	
21/01/2012 12:00:00				1:00:00	6.8	266.3	62.0	76.6	48.7				
21/01/2012 08:00:00				1:00:00	5.1	270.5	66.4	82.1	45.7	Elevated noise readings due to high wind speeds			
21/01/2012 09:00:00				1:00:00	6.2	283.3	67.0	80.2	44.4	Elevated noise readings due to high wind speeds			
21/01/2012 10:00:00				1:00:00	6.9	272.3	68.3	84.2	46.7	Elevated noise readings due to high wind speeds			
AN2	21/01/2012 11:00:00			1:00:00	4.7	280.3	68.1	82.1	47.1	Elevated noise readings due to traffic			
	21/01/2012 12:00:00			1:00:00	6.8	266.3	68.4	82.2	46.7	Elevated noise readings due to high wind speeds			
	21/01/2012 13:00:00			1:00:00	7.6	279.5	69.2	81.1	47.0	Elevated noise readings due to high wind speeds			
	21/01/2012 14:00:00			1:00:00	7.8	270.3	68.3	80.8	44.2	Elevated noise readings due to high wind speeds			
	21/01/2012 15:00:00			1:00:00	5.9	268.8	64.2	78.4	42.4				
	21/01/2012 16:00:00			1:00:00	8.6	276.0	65.0	77.7	41.3	Elevated noise readings due to high wind speeds			
NSR1	21/01/2012 12:00:00			1:00:00	6.8	266.3	58.0	77.9	37.5				
	21/01/2012 16:00:00			1:00:00	8.6	276.0	58.6	82.9	42.5				
	AN1			3.9	10.6	23/01/2012 10:00:00	1:00:00	1.4	240.8	60.3	84.3	33.5	
						23/01/2012 15:00:00	1:00:00	1.0	208.3	61.1	83.8	41.7	
						23/01/2012 16:00:00	1:00:00	1.6	197.5	60.1	80.0	38.5	
						23/01/2012 08:00:00	1:00:00	2.5	225.5	62.7	80.9	45.1	
23/01/2012 09:00:00		1:00:00	1.1			232.8	62.7	77.8	45.4				
23/01/2012 12:00:00		1:00:00	2.5			275.0	61.1	75.4	44.9				
AN2	23/01/2012 15:00:00	1:00:00	1.0			208.3	60.0	75.2	40.1				
	23/01/2012 15:00:00	1:00:00	1.0			208.3	47.0	71.8	27.6				
	23/01/2012 08:00:00	1:00:00	2.5			225.5	54.0	81.9	23.7				
	24/01/2012 08:00:00	1:00:00	2.5			228.3	60.2	80.5	44.0				
	24/01/2012 09:00:00	1:00:00	3.6			235.5	61.9	81.7	44.5				
	AN1	9.7	10.9			24/01/2012 11:00:00	1:00:00	2.2	204.3	67.1	89.1	45.6	Elevated noise readings due to construction works in close proximity to the noise meter
24/01/2012 12:00:00						1:00:00	2.7	191.5	61.1	81.3	45.2		
24/01/2012 15:00:00						1:00:00	4.2	184.3	60.6	84.0	47.0		
24/01/2012 16:00:00						1:00:00	7.0	192.0	62.1	84.1	46.6		
24/01/2012 13:00:00						1:00:00	3.2	204.0	63.8	84.3	40.3		
24/01/2012 14:00:00						1:00:00	3.3	179.5	62.7	83.3	36.5		
AN2	24/01/2012 15:00:00					1:00:00	4.2	184.3	66.7	91.3	38.4	Elevated noise readings due to traffic	
	24/01/2012 16:00:00			1:00:00	7.0	192.0	62.3	80.4	41.2				
	25/01/2012 08:00:00			1:00:00	6.4	158.5	60.4	77.3	47.9				
	25/01/2012 09:00:00			1:00:00	7.8	184.8	62.7	77.2	46.1				
	25/01/2012 10:00:00			1:00:00	7.2	184.5	60.9	79.1	44.8				
	25/01/2012 11:00:00			1:00:00	6.2	198.3	60.6	77.6	47.5				
AN2	25/01/2012 08:00:00			1:00:00	6.4	158.5	65.6	84.9	46.2	Elevated noise readings due to high wind speeds			
	25/01/2012 09:00:00			1:00:00	7.8	184.8	67.5	84.2	48.7	Elevated noise readings due to high wind speeds			
	25/01/2012 10:00:00			1:00:00	7.2	184.5	63.7	80.9	46.0				
	25/01/2012 11:00:00			1:00:00	6.2	198.3	62.8	80.6	44.4				
	25/01/2012 12:00:00			1:00:00	7.2	191.8	65.3	84.6	43.1	Elevated noise readings due to high wind speeds			
	25/01/2012 13:00:00			1:00:00	5.6	292.3	65.1	77.9	45.5	Elevated noise readings due to high wind speeds			
NSR1	25/01/2012 14:00:00	1:00:00	5.2	282.3	61.0	74.7	45.3						
	25/01/2012 15:00:00	1:00:00	5.1	274.8	65.5	84.7	48.0	Elevated noise readings due to high wind speeds					
	25/01/2012 16:00:00	1:00:00	1.8	222.3	69.3	87.3	41.5	Elevated noise readings due to traffic					
	25/01/2012 08:00:00	1:00:00	6.4	158.5	63.2	79.8	45.1						
	25/01/2012 10:00:00	1:00:00	7.2	184.5	62.4	78.3	43.8						
	AN1	2.1	7.2	26/01/2012 16:00:00	1:00:00	3.8	248.3	59.3	80.1	42.7			
26/01/2012 13:00:00				1:00:00	3.7	257.8	63.3	84.5	43.8				
26/01/2012 14:00:00				1:00:00	4.1	236.3	60.6	79.2	42.7				
26/01/2012 15:00:00				1:00:00	5.5	265.8	65.9	86.6	47.8	Elevated noise levels due to high wind speeds			
26/01/2012 16:00:00				1:00:00	3.8	248.3	63.7	85.9	45.9				
26/01/2012 16:00:00				1:00:00	3.8	248.3	63.1	79.9	41.2				
AN2	26/01/2012 09:00:00			1:00:00	3.2	279.0	52.2	75.1	37.2				
	27/01/2012 08:00:00			1:00:00	3.6	272.0	60.5	80.3	44.6				
	27/01/2012 08:00:00			1:00:00	3.6	272.0	63.9	81.5	46.3				
	27/01/2012 09:00:00			1:00:00	5.1	307.8	70.7	85.8	49.3	Elevated noise levels due to completion of fence erection			
	27/01/2012 10:00:00			1:00:00	4.9	301.5	69.1	89.2	45.6	Elevated noise levels due to completion of fence erection			
	27/01/2012 11:00:00			1:00:00	4.2	301.0	74.5	95.3	48.6	Elevated noise levels due to completion of fence erection			
AN3	27/01/2012 12:00:00			1:00:00	4.0	280.8	69.8	87.0	48.3	Elevated noise levels due to completion of fence erection			
	27/01/2012 13:00:00			1:00:00	3.8	307.0	62.7	79.2	45.5				
	27/01/2012 14:00:00			1:00:00	3.5	286.0	61.2	83.1	41.7				
	27/01/2012 15:00:00			1:00:00	3.1	319.8	63.4	83.0	48.8				
	27/01/2012 09:00:00			1:00:00	3.6	272.0	61.7	76.0	39.5				
	27/01/2012 10:00:00			1:00:00	5.1	307.8	60.5	78.3	39.0				
NSR1	27/01/2012 09:00:00	1:00:00	3.6	272.0	50.9	71.5	37.3						
	27/01/2012 09:00:00	1:00:00	3.6	272.0	52.8	76.5	36.1						
	AN1	1.8	10.1	28/01/2012 09:00:00	1:00:00	3.1	185.8	57.4	76.3	39.5			
				28/01/2012 11:00:00	1:00:00	2.4	187.5	56.7	77.3	39.0			
				28/01/2012 11:00:00	1:00:00	2.4	187.5	42.6	62.3	29.2			
				28/01/2012 10:00:00	1:00:00	3.1	185.8	47.9	69.7	32.0			
28/01/2012 11:00:00				1:00:00	2.4	187.5	51.4	85.8	35.8				
30/01/2012 12:00:00				1:00:00	1.6	162.3	58.8	80.0	46.2				
AN2	30/01/2012 14:00:00			1:00:00	2.5	148.0	60.3	82.4	37.6				
	30/01/2012 14:00:00			1:00:00	2.5	148.0	41.4	56.0	30.5				
	30/01/2012 15:00:00			1:00:00	1.3	245.5	52.3	72.0	40.9				
	31/01/2012 09:00:00			1:00:00	1.3	143.5	57.9	75.5	42.9				
	31/01/2012 11:00:00			1:00:00	2.6	168.8	60.4	74.7	39.3				
	31/01/2012 12:00:00			1:00:00	2.5	123.5	62.3	75.6	39.1				
AN3	31/01/2012 13:00:00			1:00:00	2.6	137.5	61.0	75.9	37.8				
	31/01/2012 16:00:00			1:00:00	1.5	122.8	42.5	63.5	28.7				
	31/01/2012 16:00:00			1:00:00	1.5	122.8	42.5	63.5	28.7				
	31/01/2012 11:00:00			1:00:00	2.6	168.8	53.8	72.5	42.6				
	* 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													

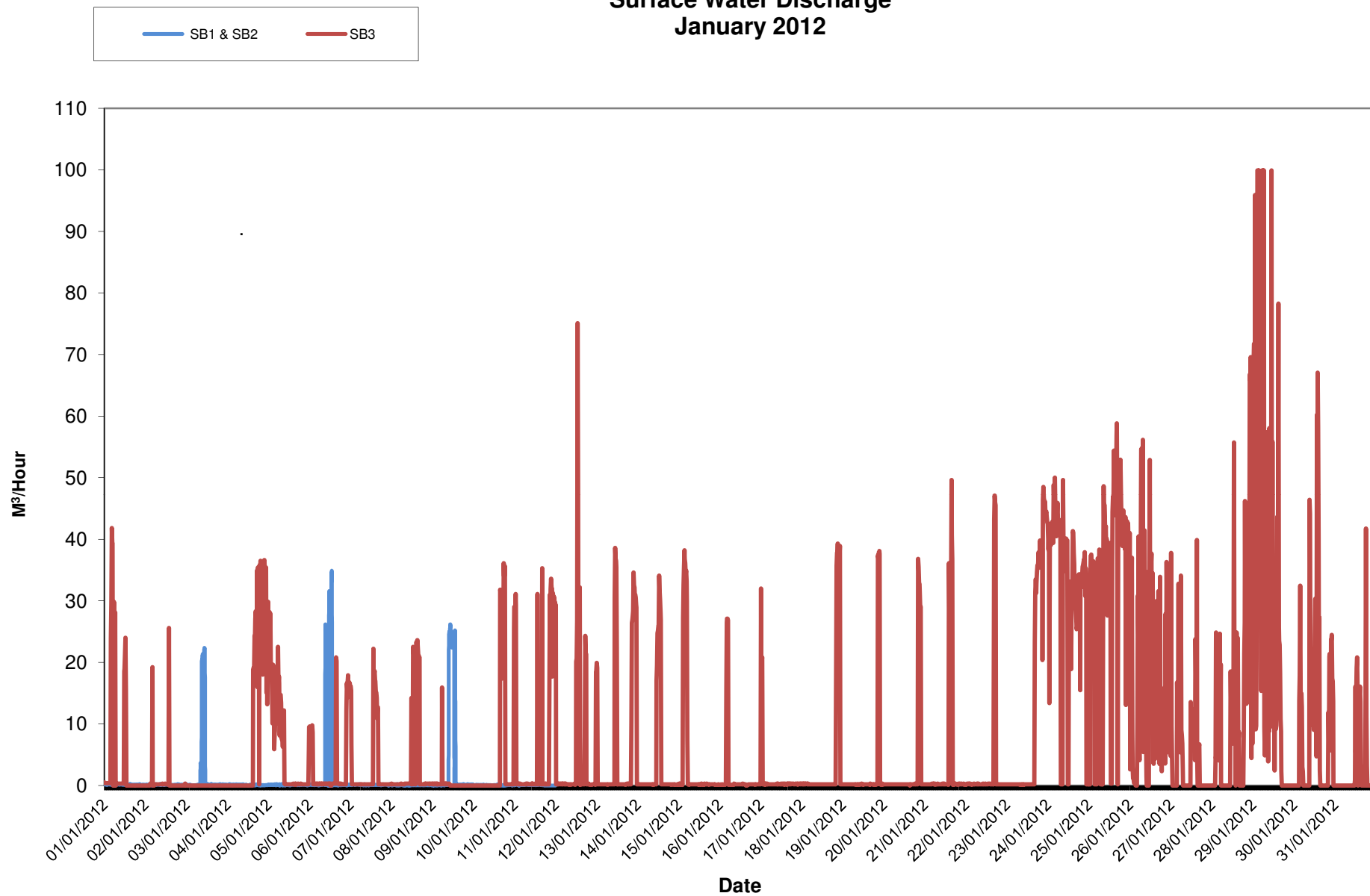


Vibration Monitoring Record Sheet		
Location	Date	PPV max (mm/s)
Minimum Criterion 8mm/s		
V3	02/01/2012	0.40
V3	03/01/2012	0.40
V3	04/01/2012	0.40
V3	05/01/2012	0.56
V3	06/01/2012	0.72
V3	07/01/2012	2.01
V3	09/01/2012	0.40
V3	10/01/2012	1.61
V3	11/01/2012	0.48
V3	12/01/2012	0.38
V3	13/01/2012	0.52
V3	14/01/2012	0.40
V3	16/01/2012	0.40
V3	17/01/2012	0.32
V3	18/01/2012	0.40
V3	19/01/2012	0.56
V3	20/01/2012	0.40
V3	21/01/2012	0.40
V3	23/01/2012	1.69
V3	24/01/2012	0.40
V3	25/01/2012	0.40
V3	26/01/2012	0.40
V3	27/01/2012	0.64
V3	28/01/2012	0.32
V3	30/01/2012	0.48
V3	31/01/2012	0.40

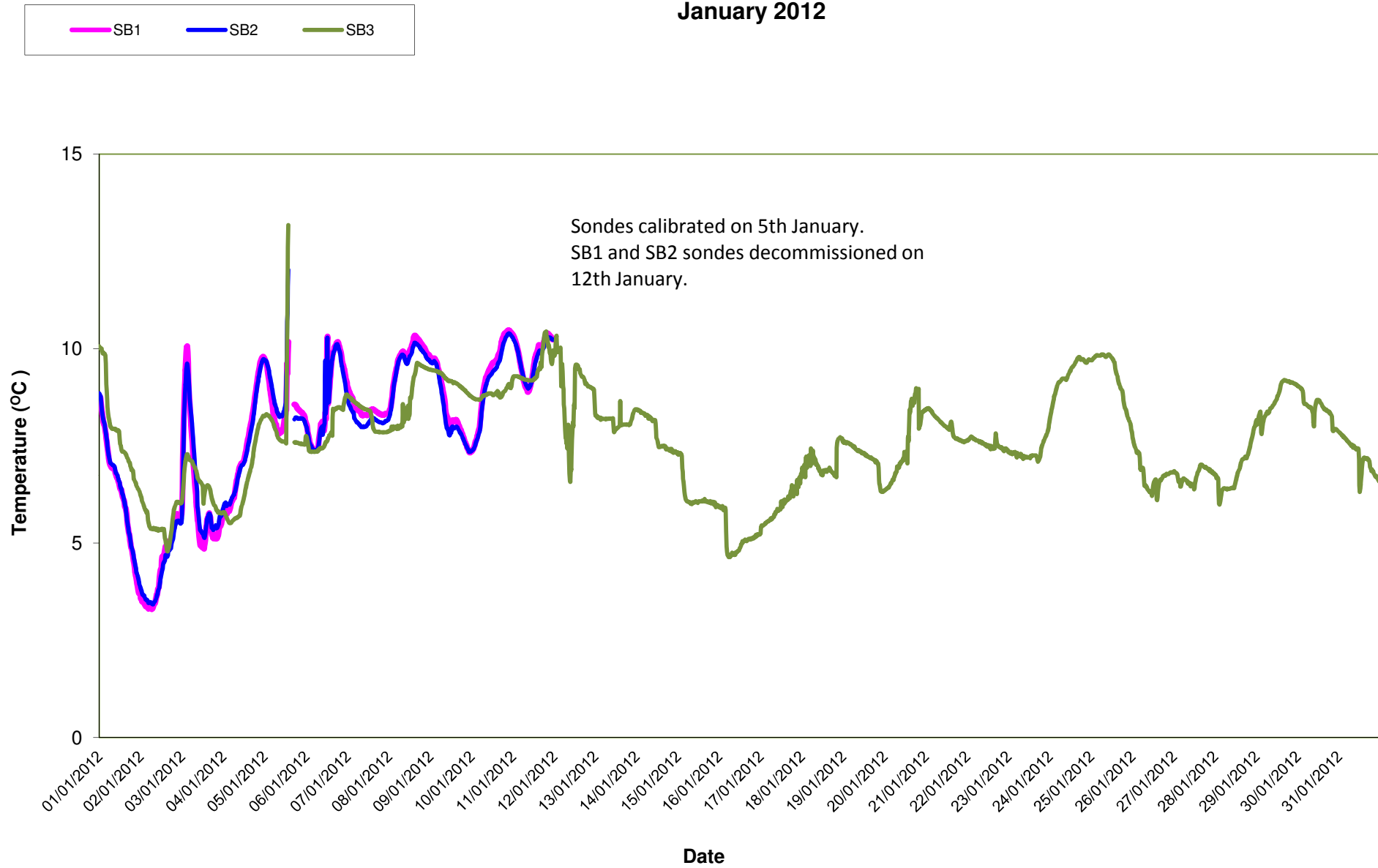
## Total Suspended Solids January 2012



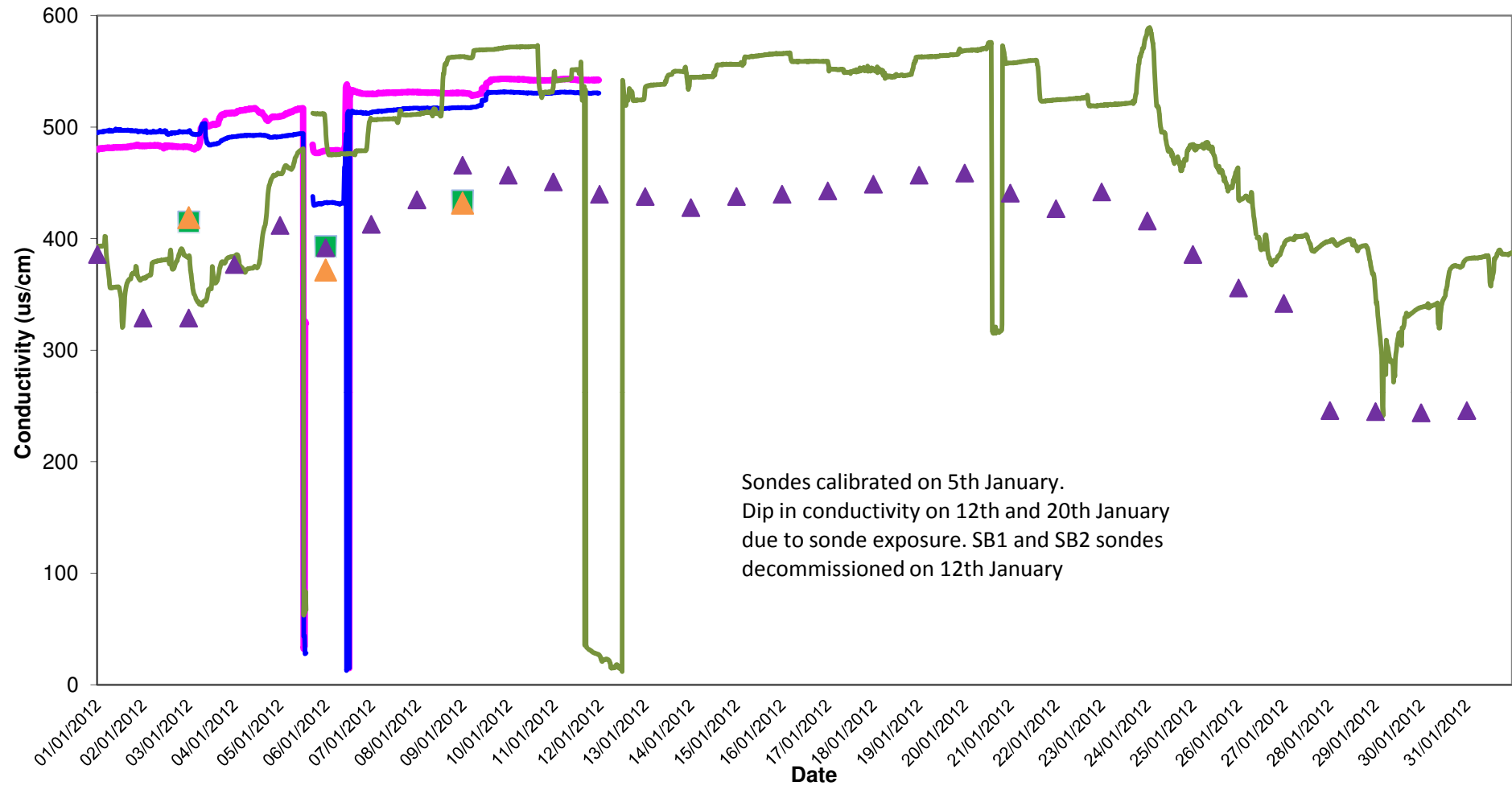
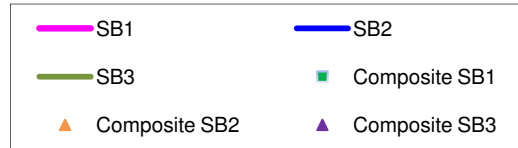
## Surface Water Discharge January 2012



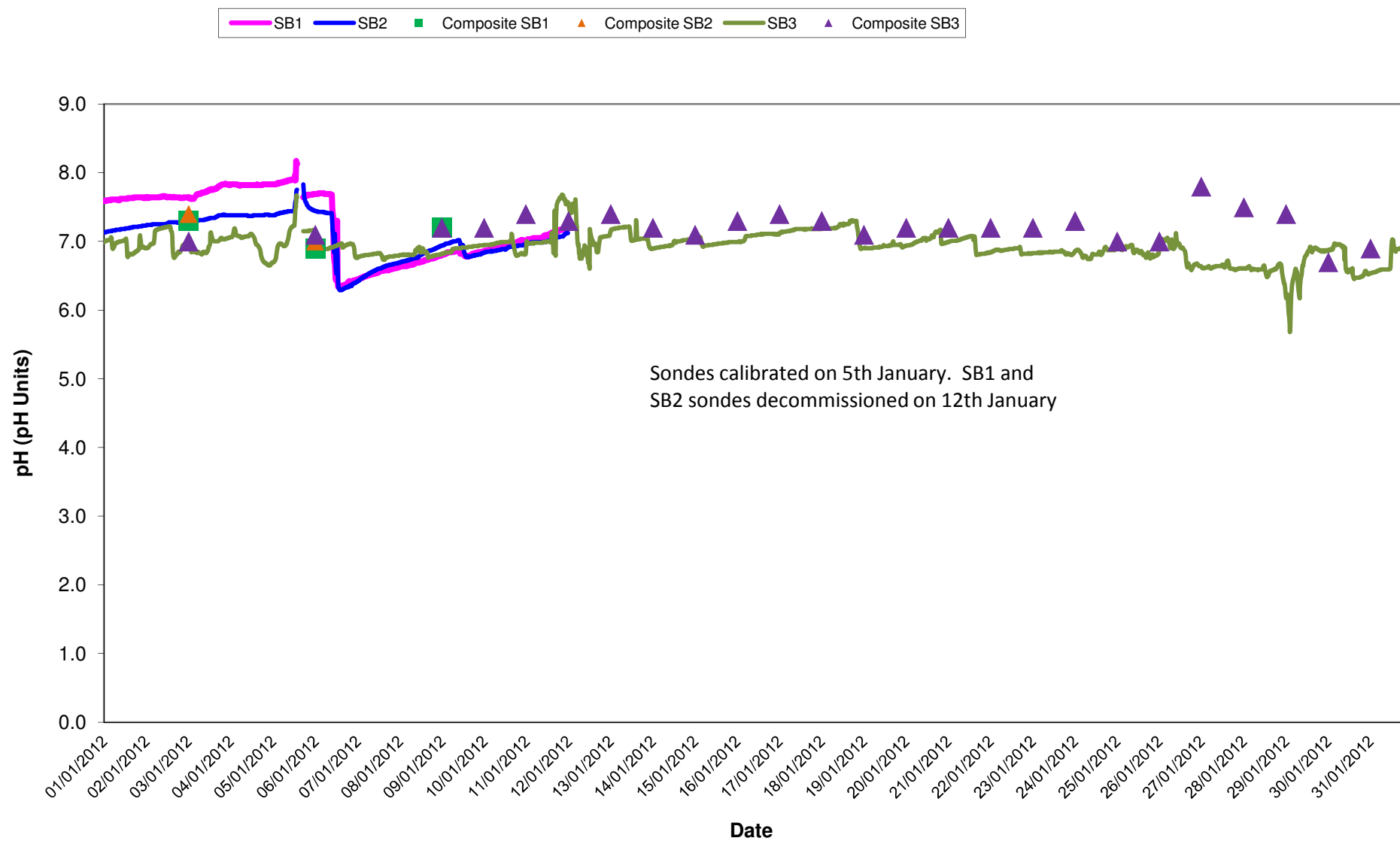
## Temperature - Surface Water Discharge January 2012



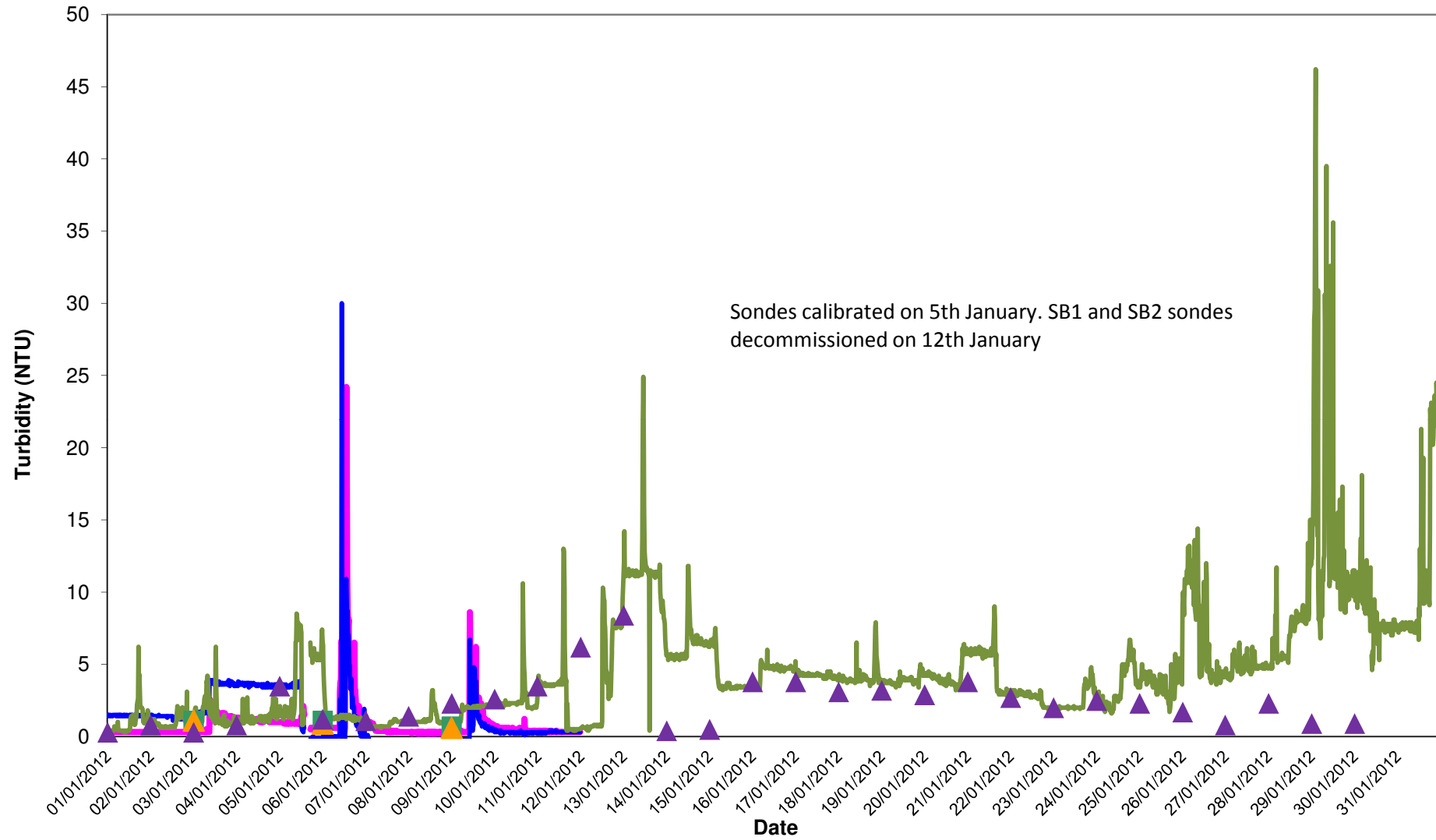
## Conductivity - Surface Water Discharge January 2012



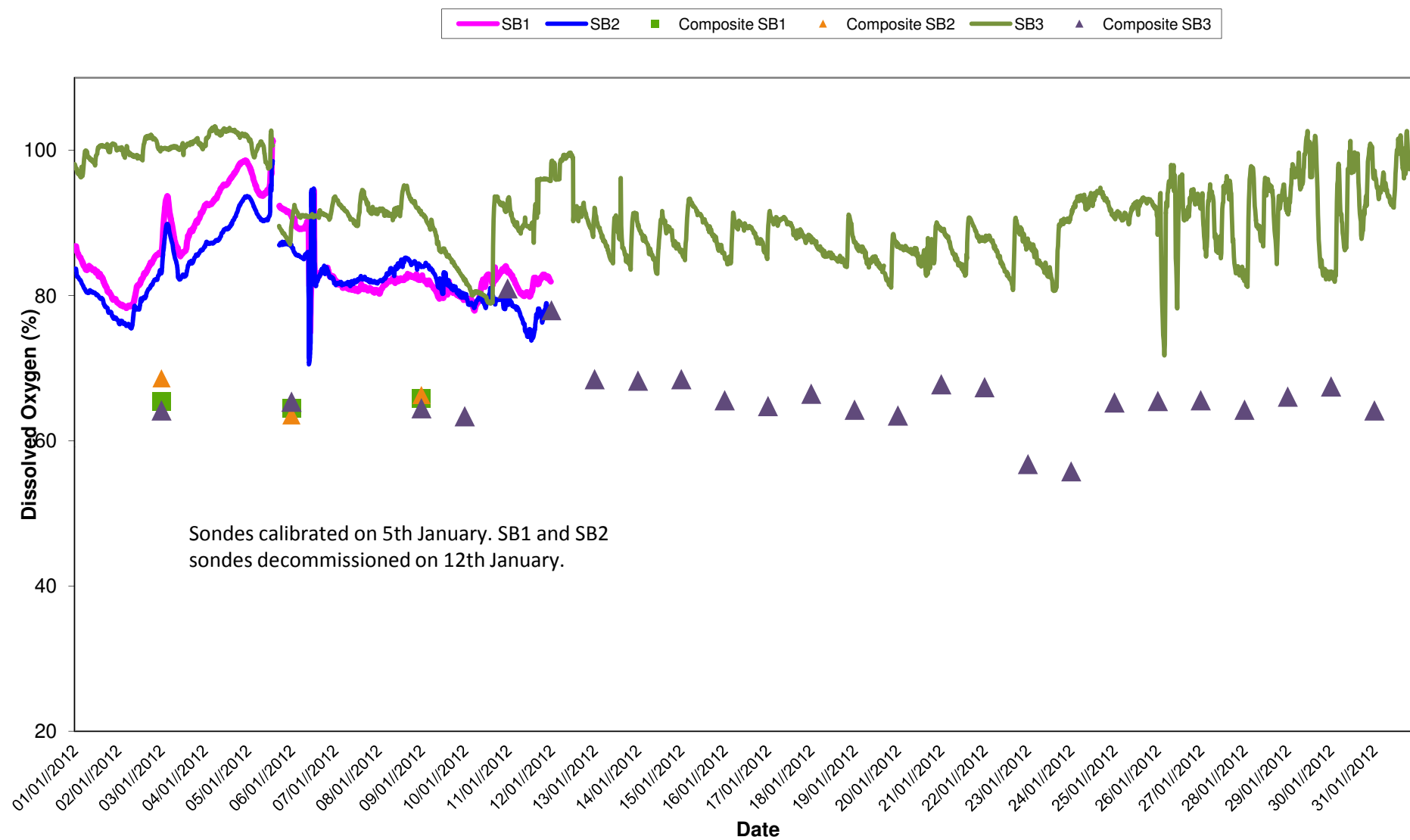
## pH - Surface Water Discharge January 2012



## Turbidity- Surface Water Discharge January 2012

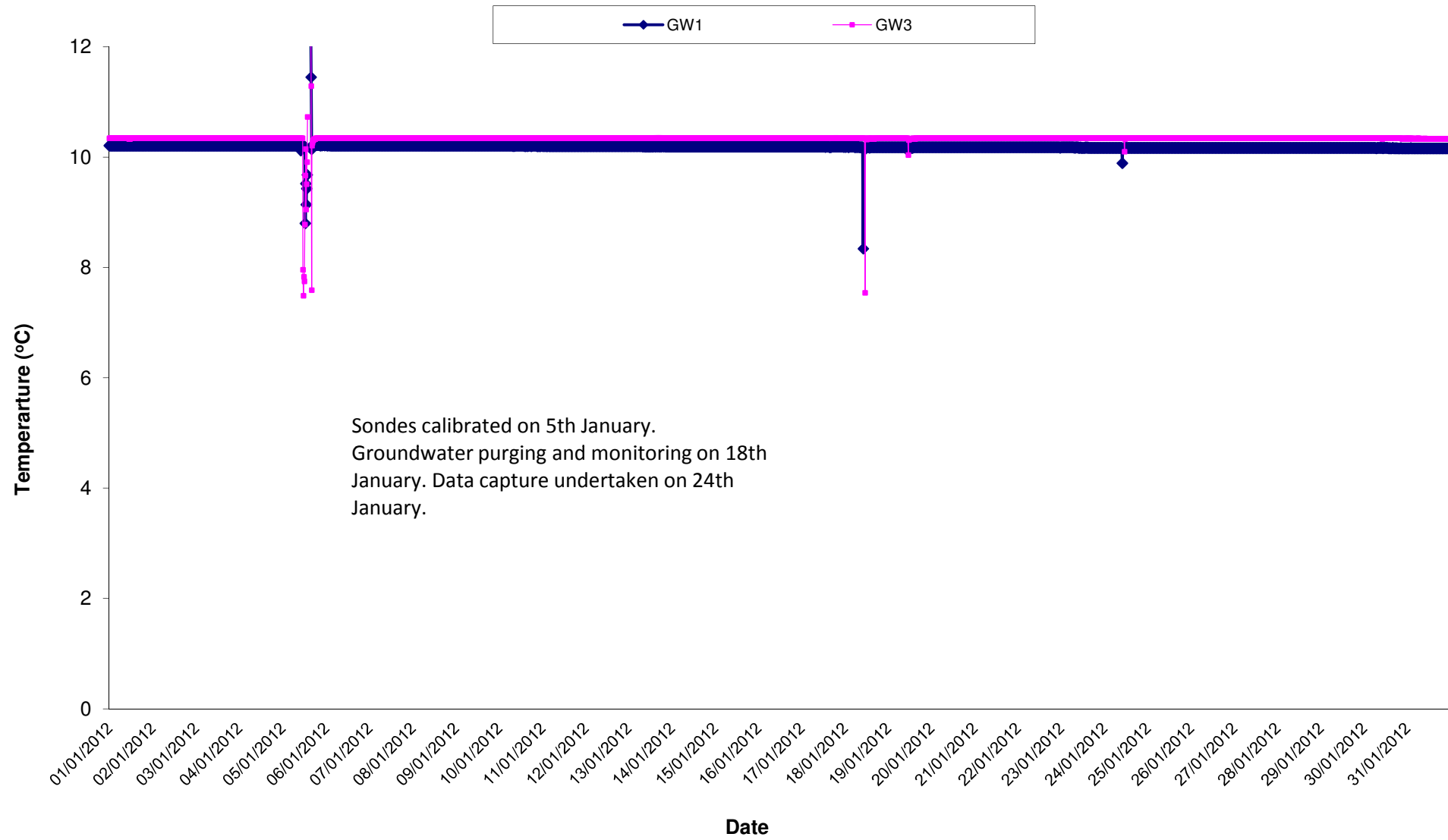


## Dissolved Oxygen - Surface Water Discharge January 2012

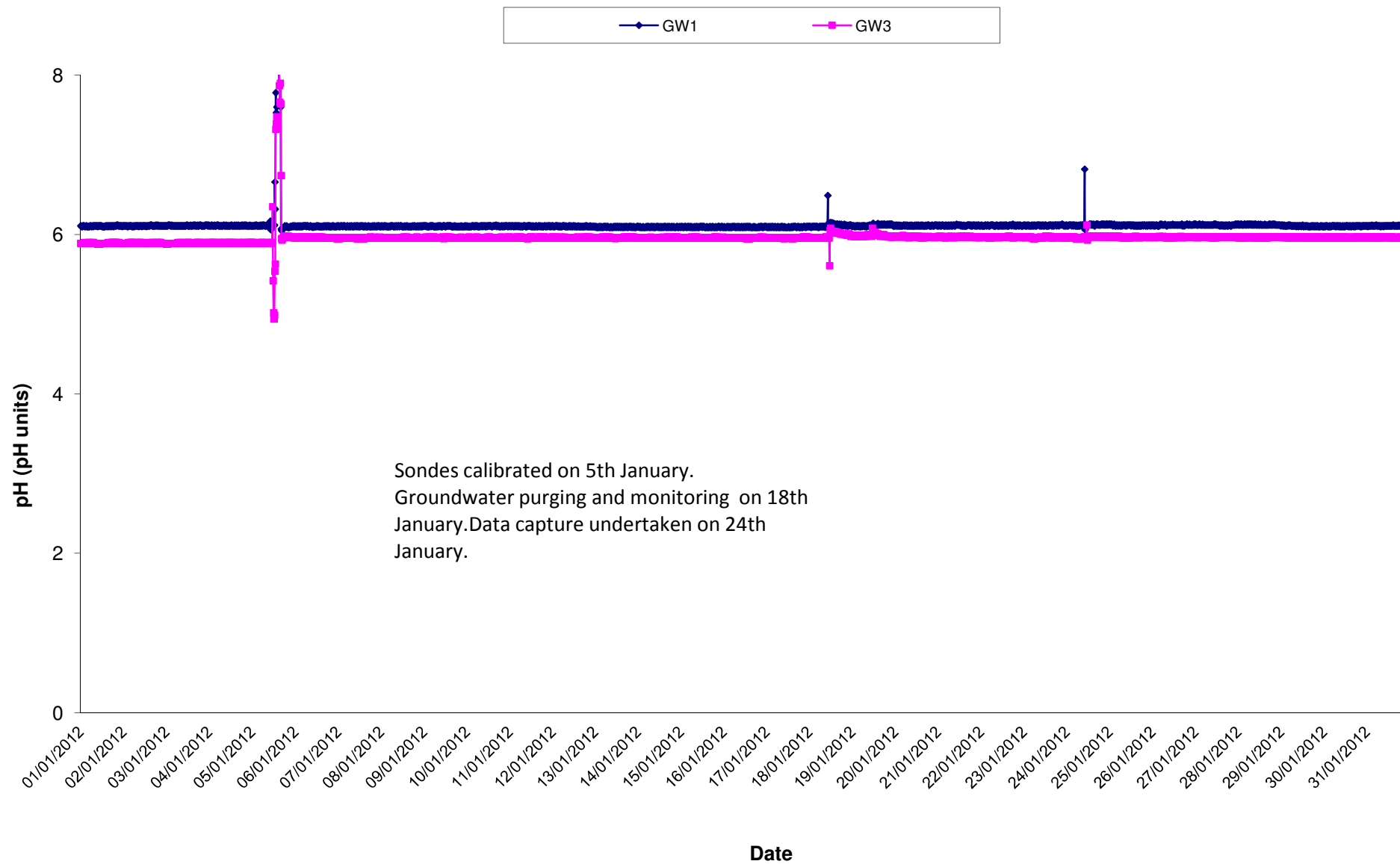




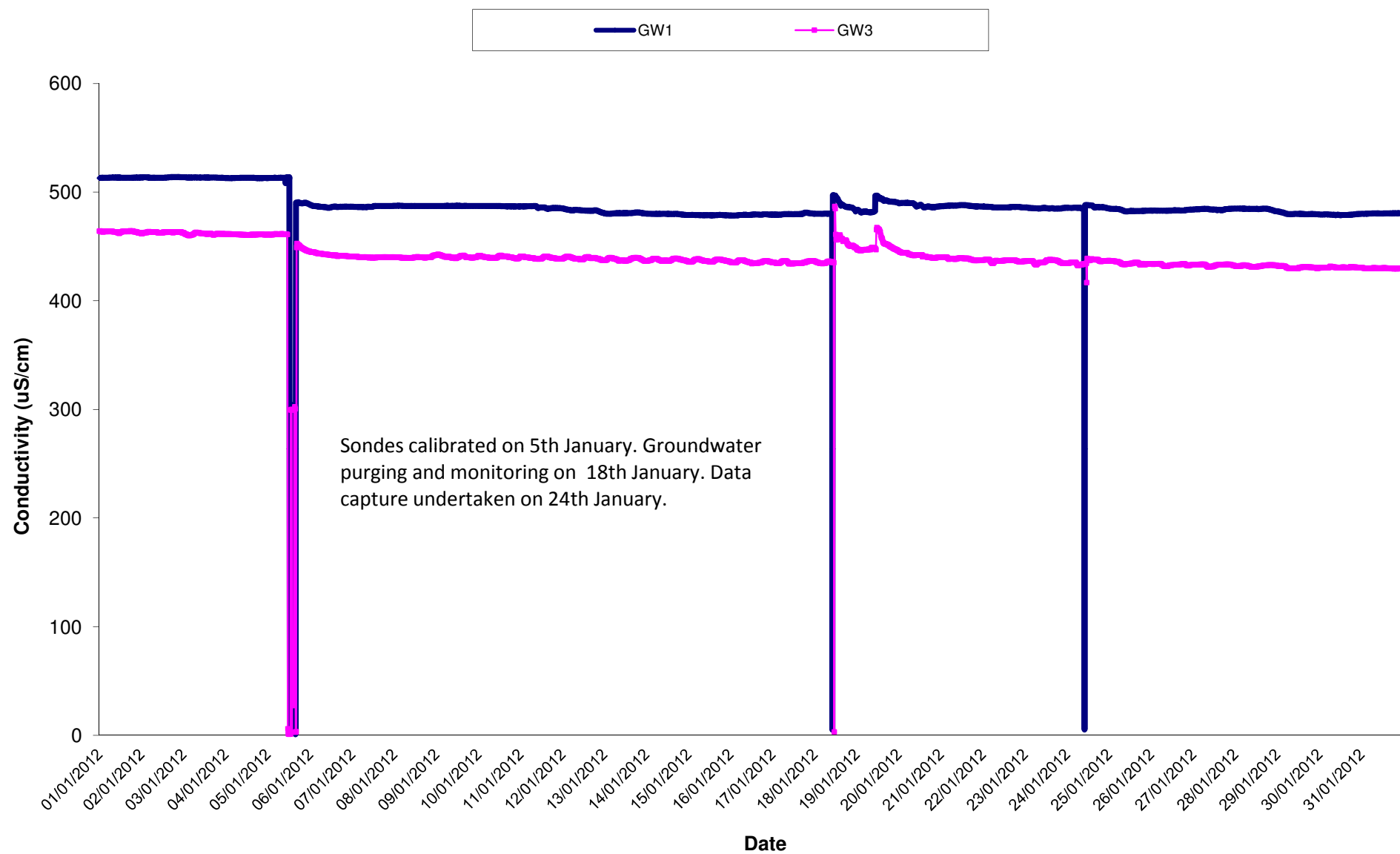
## Temperature - Groundwaters January 2012



## pH - Groundwaters January 2012



## Conductivity - Groundwaters January 2012



## **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	02/01/2012	5.9	64.0	213	4.0	5.8
DL 2	03/01/2012	6.5	93.3	349	6.0	6.1
DL 2	04/01/2012	6.7	93.1	364	4.6	6.5
DL 2	05/01/2011	7.9	60.1	359	6.0	6.7
DL 2	06/01/2011	7.9	73.5	383	6.0	6.5
DL 2	09/01/2011	8.5	59.4	496	6.0	6.4
DL 2	10/01/2011	8.7	32.3	314	4.4	6.6
DL 2	11/01/2011	9.3	40.4	318	4.0	6.9
DL 2	12/01/2012	8.9	43.1	310	3.7	6.6
DL 2	13/01/2012	8.2	32.2	350	11.2	6.6
DL 2	16/01/2012	5.7	41.4	426	5.0	7.0
DL 2	17/01/2012	7.4	30.7	414	3.2	6.9
DL 2	18/01/2012	8.0	44.8	306	0.9	7.1
DL 2	19/01/2012	6.8	30.3	360	6.0	7.3
DL 2	20/01/2012	8.3	45.6	386	1.4	6.9
DL 2	23/01/2012	7.0	15.7	374	1.1	6.9
DL 2	24/01/2012	10.3	89.6	439	4.7	7.2
DL 2	25/01/2012	9.9	90.2	421	8.0	7.1
DL 2	26/01/2012	6.7	91.9	412	6.0	6.8
DL 2	27/01/2012	7.6	95.5	386	4.0	6.6
DL 2	30/01/2012	9.3	94.8	383	2.8	6.8
DL 2	31/01/2012	7.1	32.7	380	10.2	6.7
<b>Sruwaddaon Bay</b>						
Sbay 1	09/01/2012	8.5	93.9	>LOD	8.0	6.1
Sbay 3	09/01/2012	8.4	94.3	1915	5.0	6.6
Sbay 4	09/01/2012	8.5	96.9	1324	5.0	6.7
Sbay 6	09/01/2012	8.3	94.2	>LOD	4.0	6.3
	= Indicative Only					
I.P.	= In Progress					
< LOD	= Below Limit of Detection					
> LOD	= Above Limit of Detection					

## **Appendix 2**

## 1. MONITORING PERIOD

Ecological monitoring activities undertaken during January 2012 included:

- Site inspections at the Aughooose compound;
- Glengad: preconstruction site checks and trainings;
- 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 11<sup>th</sup> January in the company of a SEPIL environmental officer and a SEPIL engineer. Additional site inspections, with regard to faunal (avian and non-avian) mitigation measures in particular, were undertaken by other members of the Project ecologist's team during January, including on 19th January to observe the installation Hexa-cover<sup>®</sup> for bird mitigation at the temporary settlement pond.

Interior walkways and the 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.
- Check the progress and adequacy of screening and wildlife proofing on the perimeter security fence in relation to required avian and non-avian mitigation measures. (*Note: Screening of the eastern section of the site was done in the second half of January*).
- Discuss with site personnel any other measures which might have been required.

## 3. HABITATS/VEGETATION

### 3.1 Aughooose

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

### **3.2 Areas of tree felling (Aughoose / Bellagelly)**

On 19<sup>th</sup> January, following tree felling for the onshore pipeline, a walkover of the felled areas was undertaken by members of the project ecologist's team accompanied by a SEPIL environmental officer, in order to make a visual assessment of the condition of the felled area. (See also 4.3 below).

### **3.3 Glengad**

On 26<sup>th</sup> January 2012, in preparation for commencement of fencing works at Glengad, a series of photographs were taken to record habitat condition and quality within the previously reinstated areas and immediately adjacent to same. For consistency, and ease of comparison, these photographs were taken from, and of, the same locations as those taken in November 2011. Vegetation/botanical assessment was deemed inappropriate because of the time of year and the inherent seasonal constraint.

## **4. BIRDS**

### **4.1 Sruwaddacon Bay area**

Weekly low water and high water counts have continued in the Sruwaddacon Bay area as scheduled, to summarise:

- Brent Goose numbers have fluctuated somewhat during the month with a peak count of 117 individuals on January 13<sup>th</sup> but generally less than 100 geese present.
  - The pattern noted pre-Christmas, of Brent Geese utilising intertidal margins within Sruwaddacon Bay has continued in January. Brent Geese have been recorded from Count Section 1 as far upstream as Count Section 5. Observations of feeding Brent Geese have shown concentrations along the northern shore of Count Section 4.
  - The preferred feeding areas (algal beds on shingle banks) just off Glengad strand appear to have been diminished in size this winter as a result of considerable sand accretion in this area. This area, where feeding Brent Geese had congregated in large numbers in previous years, is now irregularly used by them. At low water the numbers of Geese feeding here recently has ranged from 0-20. The erosion and deposition pattern in this area, where the channel from Sruwaddacon Bay enters Broadhaven Bay, is an extremely dynamic maritime habitat and significant changes can occur over a single season and indeed over a matter of weeks/months.
- As noted in December, both Godwit species (Black-tailed and Bar-tailed) have persisted in the area this winter with a combined total of 20-30 individuals normally present in the January counts.
- A female Sparrowhawk was observed hunting over the high water roost (Count Section 4) on January 13<sup>th</sup>.



- Numbers of small wading birds e.g. Ringed Plover and Dunlin were lower than in December but flocks of 20-30 Dunlin were recorded on several occasions feeding at preferred areas (west of Aughooose) at low water. In addition, a flock of 20 Golden Plover were observed in this area on 18<sup>th</sup> January 2012.
- Up to 9 Red-Breasted Mergansers were recorded within Sruwaddacon Bay and a pair of Little Grebes was consistently present during the month.

#### **4.2 Tidal observer training**

In preparation for fencing works at Glengad, tidal observer trainings were undertaken by members of the project ecologist's ornithological team on 18<sup>th</sup> and 19<sup>th</sup> January.

#### **4.3 Areas of tree felling (Aughooose / Bellagelly)**

On 19<sup>th</sup> January, a walkover of the felled areas was undertaken by members of the project ecologist's team accompanied by a SEPIL environmental officer, in order to assess the potential of the felled material as bird nesting habitat.

### **5. NON-AVIAN FAUNA**

#### **5.1 Monitoring surveys**

The latest phase of pre- and during construction faunal monitoring surveys was completed in January 2012. It had commenced in October, and followed on from surveys completed in July of 2011. Poor weather in December 2011 prevented the completion of the surveys before the end of December as had been planned. This phase of faunal surveys included:

##### *5.1.1 Ongoing fauna surveys of the entire Bay area, with particular emphasis on otters*

- Following the methodology of previous surveys, otter activity has been 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.
- There is apparent seasonal variation in the diet of otters and sprainting activity by otters in the Bay area. The results for this phase of the survey have confirmed continuing otter presence in all parts of the Bay as has been reported earlier.
- Badger presence has also been confirmed along various portions of the Bay area. There have been observations of badger presence in several areas, with badger presence at Glengad and the upper afforested reaches of Sruwaddacon Bay as noted earlier. In January, badger presence has also been confirmed on the northern side of the Bay area – at its upper reaches and in the Rossport area (west and east of Rossport pier) and also on the southern side of the Bay between Pollatomish and Aughooose.

- Presence of Irish Hare has been noted at several locations in the Bay area, with signs most frequent at the Bay's upper reaches. This species is widespread and has been noted in most portions of the Bay area.
- Monitoring of badger and otter activity at Glengad has continued.

#### *5.1.2 Aughooose area*

- General fauna surveys have been conducted in conjunction with the otter surveys in the vicinity of the works at Aughooose.
- No badger setts or otter holts were found during faunal monitoring in connection with the construction works.

#### *5.1.3 Tree felling (Aughooose/Bellagelly)*

- Prior to felling in January, a faunal survey was conducted along sections of the onshore pipeline route, including the sections from Aughooose/Bellagelly towards the Terminal.
  - No dwelling places or resting places of badgers or otters were found along the afforested areas due for felling, nor were any other signs of these mammals found to be present.
  - Signs were noted of Irish Hares and foxes along the sections to be felled.
- Tree-felling was monitored by faunal experts.
  - No badger setts or otter holts were found.

### **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:

- Adult Otter feeding upstream of Aughooose (in bird Count Section 6) on January 5<sup>th</sup>
- Several records of Common and Grey 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> January 2012

**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 Aughoose site these were monitored under strict archaeological supervision. These works (Figure 1) comprised:

- The removal of the surface vegetation of peat into turves, this enabled its transport and safe storage. This activity took place in advance of all bulk peat excavation works (Plate 1).
- Bulk excavation of 3.5-4m of peat for Internal Road 5 (IR5) and the preliminary section of IR2 (3.5-4m depth of peat) was completed, thus facilitating the excavation of Area 2, which is bound to the northeast and northwest by the aforementioned roads. The peat (3-3.5m in depth) was completely excavated from within Area 2 (Plate 2) to mineral soil level. A peat stone matrix was employed as part of the construction of both IR2 & IR5 (between 0.30m and 0.50m of peat was left *in situ* at the base of the excavation). The excavation of peat from Area 2 was completed Friday 13<sup>th</sup> January.
- Bulk excavation of peat from IR6 and the settlement lagoon (Plate 3) in the northwest corner of the site was undertaken. A trench box (Plate 4) was used in the excavation of the peat from IR6 (2.5m in depth) in the exclusion zone where the line of the tunnel exits the site compound as sheet piles could not be used. While 0.50m of peat was left *in situ* for the peat/stone matrix on IR6, the peat was excavated to solid ground (3m in depth) in the footprint of the settlement lagoon. Works in this area were completed on Wednesday 18<sup>th</sup> January.
- The bulk excavation of peat occurred in 2 further locations, firstly for a lay-down area located in the corner of IR1 and IR3, parallel to IR3, this work has yet to be completed. Secondly, in an area parallel and to the north of IR3, located at the corner of Area 2 an area of peat was excavated (Plate 5) to facilitate the installation of the tunnel compound. These excavations were carried out to the base of the peat cover, which was 1.2-2.6m below present ground level in this location. Works are on-going in both of these areas and will continue into February.

- The bulk excavation of mineral soil (Plate 6) from within the footprint of the Veolia plant commenced. This involved the removal of the 0.6m of residual soils and the subsequent excavation of 4m of mineral soil from within the footprint of the Veolia plant.

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. This 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 resumed on site on Tuesday 3<sup>rd</sup> January 2012 following the Christmas break, there were no disruptions to excavation works this month.

#### **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: Turfed area in advance of bulk excavation, facing north.



Plate 2: Excavation Area 2, facing northwest.





Plate 3: Excavation of peat to solid ground for the settlement lagoon in the northwest corner of the site, facing southeast.



Plate 4: Excavation of peat for Internal Road 6, using a trench box, facing northwest.





Plate 5: Northwestern shear key, facing east.



Plate 6: Bulk Excavation of mineral soil from the Veolia plant, facing southeast.

