

CORRIB GAS DEVELOPMENT

Report for PMC Meeting dated 16th April, 2008.

**Prepared by Mr. Kieran Lynn, A/Senior Engineer,
Project Manager for Mayo County Council.**

Water Quality – Carrowmore Lake

- Mayo County Council's Project Team has continued to monitor the surface waters in and around the Bellanaboy site. Summaries of the most recent verified results are attached. These results are available on Mayo County Council Website www.mayococo.ie.
- The results show that in the last monitoring period the discharge of surface water from the Terminal Site has had no significant impact on the water quality of the Bellanaboy River and/or Carrowmore Lake.
- The results also show that the discharge of surface water from the Terminal Site has had no adverse impact on the quality of drinking water produced at the Erris Regional Water Supply Scheme at Barnatra.

Environmental Issues at the Bellanaboy Site

- Construction work at the terminal site is ongoing.
- Surface water runoff from the terminal footprint, the carrier drain road and other roads outside the terminal footprint, is treated by the axonics unit prior to discharge to the site drainage system.
- During the first two months of this year the site experienced significant rainfall which resulted in some exceedances in water quality parameters. As outlined above, these exceedances have had no significant impact on the water quality of the Bellanaboy River and Carrowmore Lake.

A number of modifications to improve the management of surface water on site for the remainder of the construction period are being considered.

These include;

- ⤴ Change operation of settlement ponds from parallel operation to one duty, one standby.
- ⤴ Provide additional storage capacity for increased surface and groundwater run-off within terminal footprint.
- ⤴ Operate axonics water treatment plant at a revised discharge set point of 300ug/l.
- ⤴ Alterations in the surfacewater/groundwater drainage system within the footprint area.

Community Fund

- **Attavally** – The Village Enhancement Project for Attavally funded from the Community Fund relating to Condition No. 42 of An Bord Pleanala's schedule of planning conditions is complete - (Budget €60,000).
- **Bellanaboy Community Group Scheme** will commence week starting 21/04/2008 – (Budget €145,000).
- **The Glencullen River Scheme** – A plan has been completed and Glencullen Community Development intend commencing work in early May 2008 – (Budget €60,000). Some farmers are looking for further works to be carried out. Estimate of these works will be prepared and benefit will be assessed.
- **The Bangor Angling Scheme** – Mr. Gerard McDonnell has been appointed Project Manager and it is expected that matching funds will be confirmed by June 2008. Planning and Foreshore applications are pending – (Budget €185,000). Mr. McDonnell will report on progress.

Transportation/Roads

- Deliveries of heavy/long loads are continuing.
- L1202 & R314 – Works on above roads are due to commence week starting 14/04/2008.

K. Lynn
A/SE.

KL/AM

CARROWMORE LAKE
Results from 17/01/2008 to 18/03/2008 (10 Samples taken)
Analysis by Bord na Mona Laboratory Newbridge, Co. Kildare

Parameter	Units	Average	Max	Min
Suspended Solids	mg/l	11	19	5
Turbidity	N.T.U	7	13	4
pH	pH units	7.29	7.6	7
Conductivity	uS/cm	163	199	140
Phosphate	mg/l P	0.01	0.01	0.01
Total Phosphorous	mg/l P	0.05	0.06	0.05
Ammonia	mg/l NH ₃ -N	0.03	0.05	0.02
Nitrate	mg/l NO ₃ -N	0.95	1.51	0.89
Nitrite	mg/l NO ₂ -N	0.07	0.07	0.07
Total Aluminium	ug/l Al	104	207	55

ERRIS REGIONAL WATERWORKS (Final Treated Water)
Results from 9/02/2008 to 31/03/2008 (52 Samples)
Analysis carried out at Erris Regional Waterworks

Parameter	Units	Average	Max	Min	Drinking Water Limits
Colour	mg/l	2.5	8	0	<10 Haz
Turbidity	N.T.U	0.06	0.99	0	<2.0 NTU
Ph	pH units	7.5	7.9	6.7	6.5 - 8.5
Free Chlo/Res	mg/l	0.78	0.95	0.58	>0.3
Total Chlo/Res	mg/l	0.88	0.99	0.67	>0.3
Flourine	ppm	0.74	1.08	0.64	0.6-0.8
Total Aluminium	ug/l	8	26	5	200

BELLANABOY RIVER

(Upstream and Downstream of discharge from Terminal site)

Results from 17/01/2008 to 18/03/2008 (10 Samples taken)

Analysis by Bord na Mona Laboratory Newbridge, Co. Kildare

Parameter	Units	BEL 1 (upstream)			BEL 2 (downstream)		
		Average	Max	Min	Average	Max	Min
Temp.	°C	4.91	6.4	3.2	4.95	6.4	3.4
Dissolved Oxygen	% Sat.	93	99	81	92	99	84
Suspended Solids	mg/l	10	30	5	11	38	5
Turbidity	N.T.U	5	11	2	6	14	2
pH	pH units	6.95	7.8	6.4	6.9	7.5	6.6
Conductivity Total	uS/cm	185	283	126	194	296	136
Dissolved Solids	mg/l	105	201	70	98	170	66
Phosphate Total	mg/l P	0.02	0.03	0.01	0.02	0.03	0.01
Phosphorus	mg/l P	0.06	0.13	0.05	0.06	0.01	0.05
Ammonia	mg/l NH ₃ -N	0.04	0.13	0.02	0.04	0.13	0.02
Nitrate	mg/l NO ₃ -N	0.89	0.89	0.89	0.99	1.59	0.89
Nitrite	mg/l NO ₂ -N	0.07	0.07	0.07	0.07	0.07	0.07
Total Aluminium	ug/l Al		249	19	145	237	82

SP1 (Discharge point from terminal site)
 Results from 17/01/2008 to 18/03/2008 (10 Samples taken)
 Analysis by Bord na Mona Laboratory Newbridge, Co. Kildare

Parameter	Units	SP 1		
		Average	Max	Min
Suspended Solids	mg/l	15	43	5
Turbidity	N.T.U	23	65	7
pH	pH units	7.5	7.9	7.2
Conductivity Total	uS/cm	304	447	233
Dissolved Solids	mg/l	171	254	76
Phosphate Total	mg/l P	0.01	0.03	0.01
Phosphorus	mg/l P	0.08	0.17	0.05
Ammonia	mg/l NH ₃ -N	0.02	0.07	0.02
Nitrate	mg/l NO ₃ -N	1.57	2.88	0.89
Nitrite	mg/l NO ₂ -N	0.07	0.07	0.07
Total Aluminium	ug/l Al	779	1836	263

Axonics Water Treatment Units (Post-treatment Results)
 Results from 17/01/2008 to 18/03/2008 (9 Samples taken)
 Analysis by Bord na Mona Laboratory Newbridge, Co. Kildare

Parameter	Units	Post-Treatment (Samples)		
		Average	Max	Min
Suspended Solids	mg/l	5	6	5
Turbidity	N.T.U	1	3	1
pH	pH units	6.7	6.8	6.6
Conductivity Total	uS/cm	381	452	335
Dissolved Solids	mg/l	213	308	176
Phosphate Total	mg/l P	6.72	6.8	6.6
Phosphorus	mg/l P	<0.01	<0.01	<0.01
Ammonia	mg/l NH ₃ -N	0.15	0.27	0.02
Nitrate	mg/l NO ₃ -N	2.00	3.59	1.33
Nitrite	mg/l NO ₂ -N	0.07	0.07	0.07
*Total Aluminium	ug/l Al	386	676	218

Srahmore Peat Repository
WL 0199-01

Environmental Management System Up-Date No. 30(14/04/08)

Decommissioning and Rehabilitation

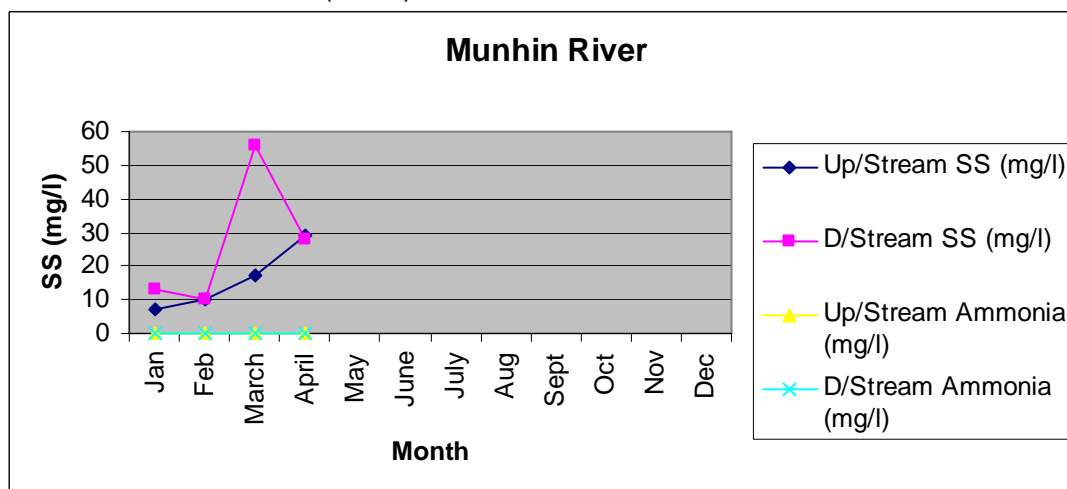
Environmental Monitoring:

- There was one non-compliance on the 27th March 2008 for the period. The sampler at SW4 (Location 7) returned a daily Suspended Solids result of 49mg/l which was 7 mg/l above the ELV of 42mg/l on 2/10 samples. The result for the same day at SW104, which is after SW4 and before discharge to the Munhin River, was 2 mg/l. Therefore, there was no discharge above the limits to the river.

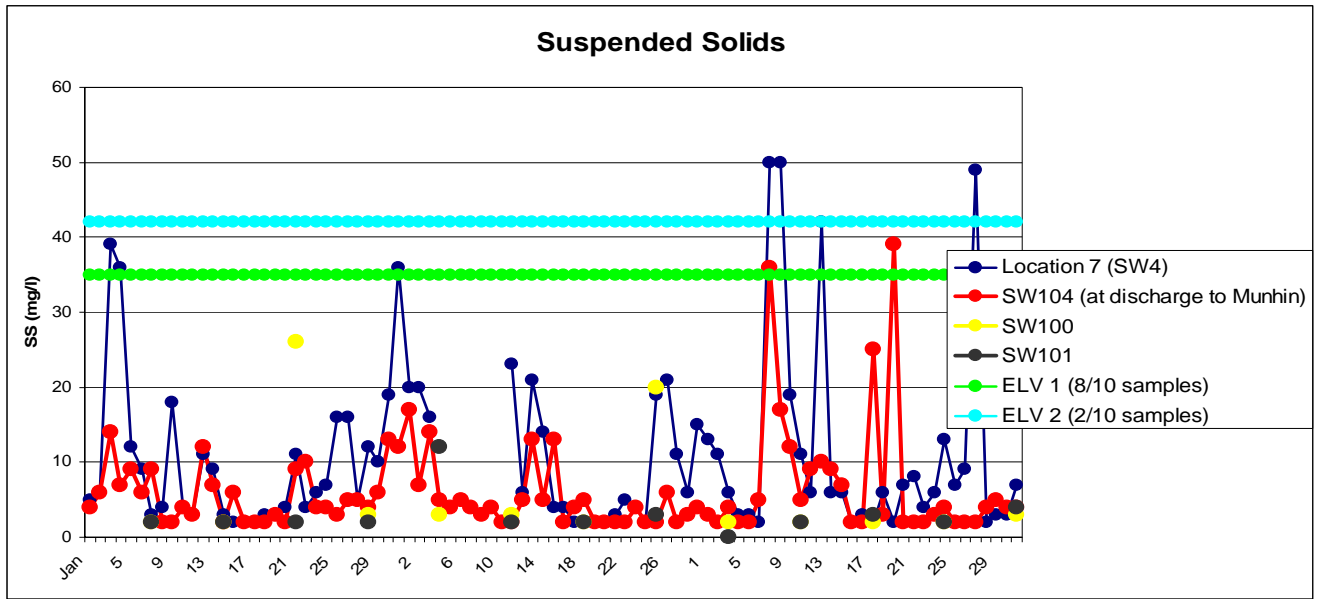
Notification and corrective action was submitted to the EPA.

- There were no complaints received at the site since the last meeting.
- There were no incidents recorded at the site since the last meeting.

Results: Munhin River (2008)



Results: SW4/100&101 (2008)



The average SS mg/l for SW4 for 2008 to-date has been 11mg/l and 6mg/l at the discharge from the site to the Munhin at SW104.

Srahmore Site Update:

Personnel:

On Site

		Tractor & General Oper.	0	Environmental	0
BnM (Engineering)	1	Fitters	0	Archaeological	0
Site Admin & Mgt.		Electricians	0		
		Site Supervisors	0		
		Excavator & Shovel	0		
TOTAL EMPLOYED					1

Contractors

Security	0	Catering	0		
TOTAL EMPLOYED					0

Off Site

Head Offices Staff	2			BnM (Support)	1
Environmental Officer	1				
TOTAL EMPLOYED					4

OVERALL TOTAL EMPLOYED					5
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On-going work:**Decommissioning:**

Decommissioning at the site is now complete. All waste's and recyclable items have been removed.

Bog Rehabilitation:

All of the 2007 peat deposited in Srahmore is 100% revegetated. A stability assessment was carried out by Tobin Consulting Engineers, as required by Condition 8.7. The assessment concluded that there was no indication of instability in the internal high fields, perimeter high fields, deposited peat bays or drainage system.

The Annual Environmental Report has been completed and submitted to the EPA. A copy of the report is available for inspection at the Srahmore Site Office.

As of the 14th April 2008, the Srahmore site is fully compliant.

End

Bellanaboy Bridge Site

Report to the Project Monitoring Committee

16th April 2008

Works Undertaken

The following construction operations are ongoing:

- Operation of Axonics plant
- Continuation of environmental and geotechnical monitoring
- Completion of earthworks / earth embankment
- Civil's and foundations works
- Erection of structural steel
- Scaffolding erection
- Piping installation on pipe racks and below ground.
- Building works
- Electrical works including containment on pipe racks.
- Roadworks within and around the terminal footprint.
- Process equipment deliveries.
- Tankage installation

Outlook from February 2008 Onwards

- Continuation of environmental monitoring and Axonics operation.
- Continuation of structural steel erection
- Mobilisation of additional mechanical, electrical and building works contractors to site
- Continuation of electrical works
- Continuation of scaffolding erection
- Continuation of piping installation
- Complete the erection of storage tanks.
- Continue of building works
- Continuation of roadwork's
- Testing of closed water drainage system.

ENVIRONMENTAL REPORT

Dust

The four dust deposition samples which were sent to our external laboratory for testing in February for the period 23rd January 2008 to

the 25th February 2008 were returned with the following results; D1: 471 mg/m²/day, D2: 426 mg/m²/day, D3: 765 mg/m²/day, D4: 398 mg/m²/day. All of these results are in exceedance of the agreed dust deposition limit of 350 mg/m²/day however the values do not appear to be representative of site dust levels for the monitoring period. An independent assessment and investigation of the results has been commissioned

Noise – All construction related noise levels recorded were below the L_{Aeq}65dB (A) threshold and any unusual values were attributed to activities adjacent to the monitoring location.

Vibration monitoring – All vibration-monitoring results were within guidance values.

Traffic – There were approximately 2131 HGV movements during February and March.

Fuel – Approximately 293.9m³ of fuel was delivered to site in February and March.

Waste – 3 skips of refuse (canteen waste, etc.), 3 skips of cardboard/plastics, 2 skips of metal and 10 skips of timber waste were removed off site during February and March. There were 2 shipments of hazardous waste (oily materials). The effluent holding tanks were emptied of approximately 977.4m³ during February and March. Approximately 0.6 m³ were removed from the on site portaloos in the same period.

Water Quality – All monitoring and sampling locations were accessible for download, recalibration and reinstallation during the months of February and March.

A summary of the main surface water parameters measured for grab sampling during February and March (available range of lowest to highest) at SP1 is presented below:

pH (pH Units)

6.3 to 7.9

Suspended Solids (mg/l)

2 to 23

Orthophosphate (µg/l P)

10 to 30

Nitrate (mg/l NO₃)

0.1 to 0.8

Conductivity (µS/cm)

210 to 414

Turbidity (NTU)

1 to 85

Groundwater samples were taken and borehole monitoring equipment was downloaded for the month of February and March. A summary of the main groundwater parameters measured (range of lowest to highest) follows:

pH

5.4 to 6.4

Conductivity (µS/cm)

183 to 462

Nitrate (mg/l NO₃)

Not Detectable

Total Dissolved Solids (mg/l)

101- 250

Complaints – There was one construction activity related complaint logged with SEPIL during the month of March. The complaint related to the

nighttime illumination of the construction site. The matter was investigated and a response was made to the complainant. Light emission controls are in place and will remain so throughout the construction phase.

Incidents – There were no environmental incidents during the months of February and March.

Exceedances – There were exceedances for Total Aluminium and Total Suspended Solids during February and March. These exceedances were mainly as a result of heavy rainfall during the period. Recent trends have shown a significant reduction in total aluminium and TSS levels and this is expected to continue.

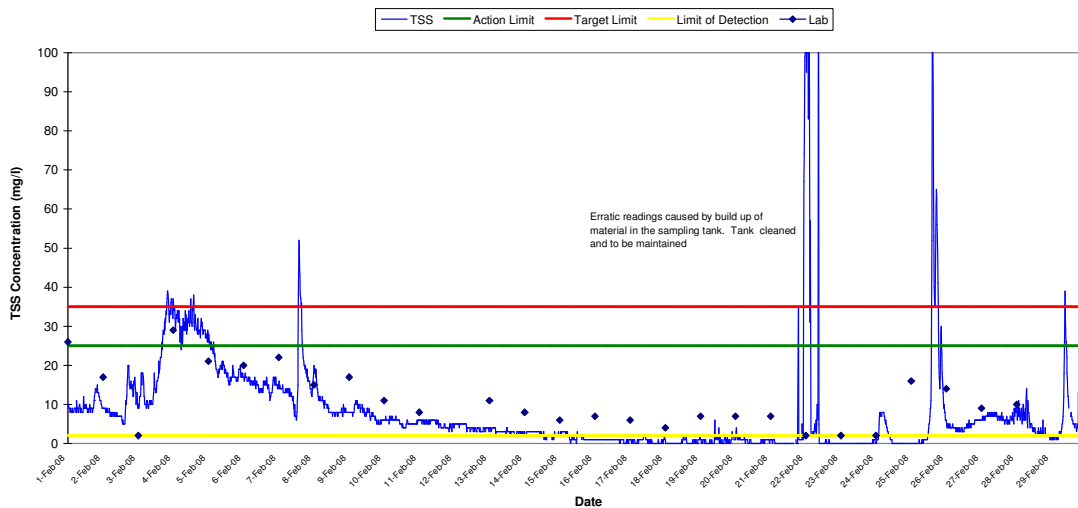
Necessary Environmental Works

- Continuous drainage maintenance.
- Continuous operation of on-site water treatment plant.
- Removal of all waste and effluent from site on an as needs basis.
- Inspect, repair (when required) and recalibrate all in situ monitoring equipment.
- Monitor/sample and download water (surface and ground) quality monitoring devices.

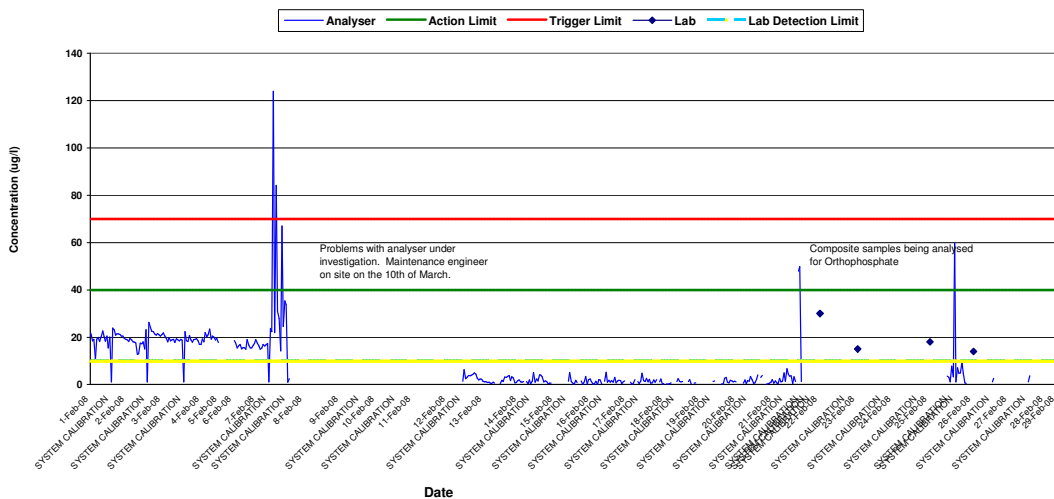
Environmental Improvements

- Annual maintenance of the site settlement ponds is underway.
- Discussions are on going with Mayo Co Co on measures to further reduce the risk of surfacewater exceedances during the construction phase.

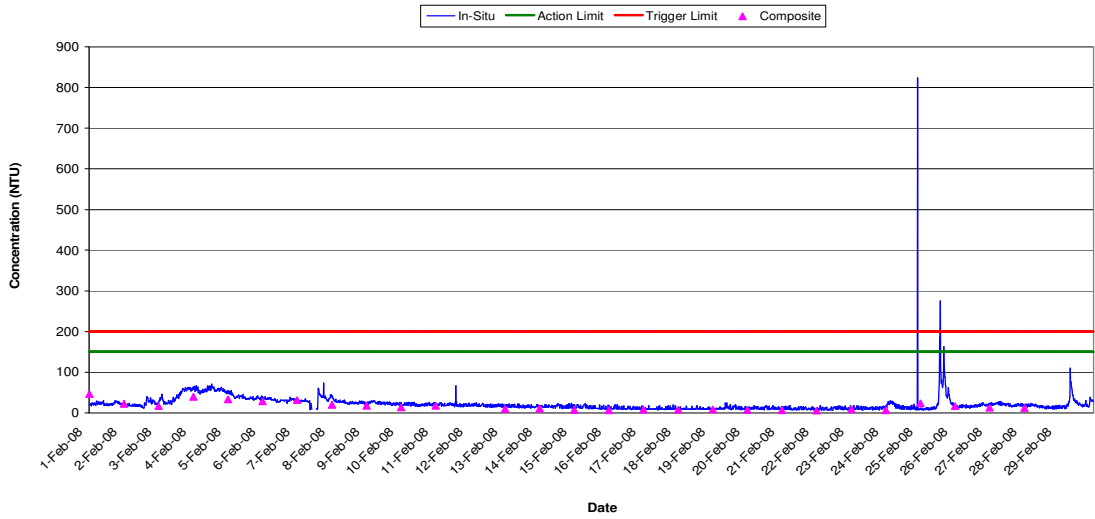
Total Suspended Solids Results at SP1 February 2008



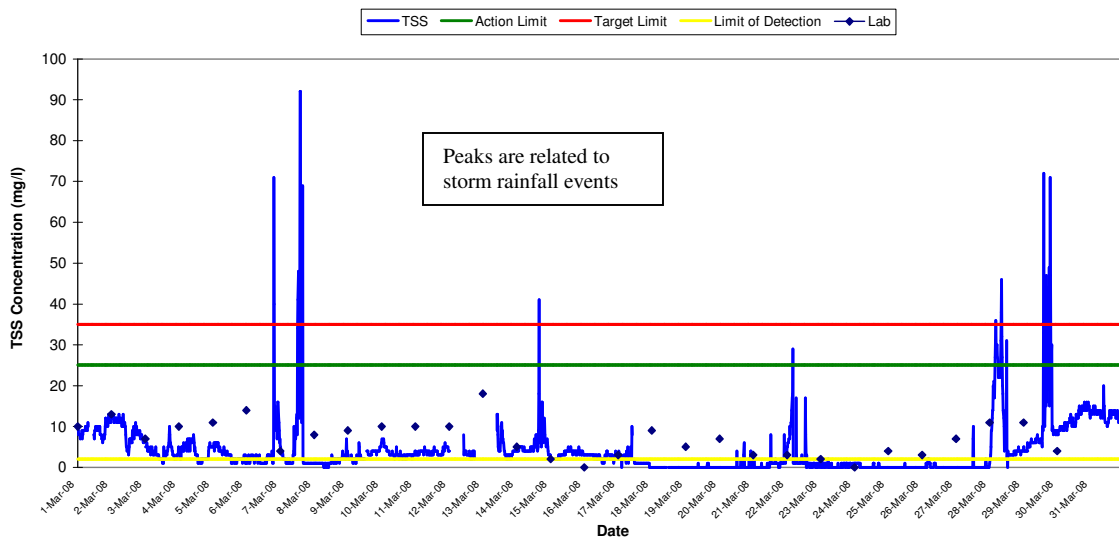
Orthophosphate Results at SP1 February 2008



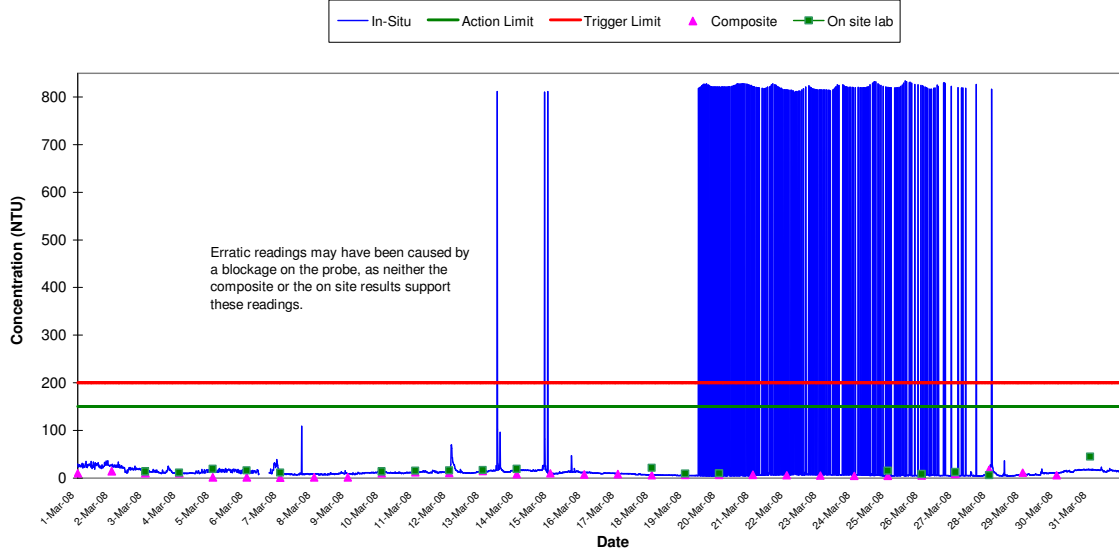
**Turbidity Results at SP1
February 2008**



**Total Suspended Solids Results at SP1
March 2008**



Turbidity Results at SP1 March 2008



Orthophosphate Results at SP1 March 2008

