

CORRIB GAS DEVELOPMENT

Report for PMC (Terminal) Meeting on 5th March 2014.

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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, which 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 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 substantially complete and the facility is now in preservation mode. Work is ongoing on snagging and modification programmes.
- 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.
- Surface water monitoring undertaken by the Developer has not identified any exceedances during this reporting period.

Results of sampling of surface waters carried out by Mayo County Council during this period identified one exceedance of the total aluminium parameter at SP1 on 13/02/14 when a level of 307µg/l was recorded against a limit of 200µg/l. The exceedance occurred during a period of heavy rain and subsequent sampling results were within limits.

Community Fund

- Works have been completed on all projects for which funding was allocated.

Transportation/Roads

There are no roadworks underway at present and there have been no transportation issues since the last meeting.

CARROWMORE LAKE
Results for January and February 2014 (2 samples taken)
Analysis by Environmental Laboratory Services, Cork

Parameter	Units	Average	Max	Min
Suspended Solids	mg/l	6	7	<5
Turbidity	N.T.U	2.9	3.7	2
pH	pH units	7	7.1	7
Conductivity	uS/cm	134	148	119
Phosphate	mg/l P	0.015	0.02	<0.009
Ammonia	mg/l NH ₃ -N	0.015	0.024	<0.007
Nitrate	mg/l NO ₃ -N	<0.12	<0.12	<0.12
Nitrite	mg/l NO ₂ -N	<0.013	<0.013	<0.013
Total Aluminium	ug/l Al	79	88	69

ERRIS REGIONAL WATERWORKS (Final Treated Water)
Results from 01/01/2014 to 14/02/2014 (35 Samples)
Analysis carried out at Erris Regional Waterworks

Parameter	Units	Average	Max	Min	Drinking Water Limits
Colour	mg/l	0.8	5	0	<10 Haz
Turbidity	N.T.U	0.12	0.28	0.01	<2.0 NTU
pH	pH units	7.2	7.7	6.4	6.5 – 8.5
Free Chlo/Res	mg/l	1.4	1.7	1.2	>0.3
Total Chlo/Res	mg/l	1.5	1.9	1.3	>0.3
Flourine	ppm	0.7	0.8	0.6	0.6-0.8
Total Aluminium	ug/l	41	78	3	200

BELLANABOY TERMINAL DEVELOPMENT

BELLANABOY RIVER

(Upstream and Downstream of discharge from Terminal site – to be monitored on a quarterly basis for 2014. Results will be reported as completed.)

SP1 (Discharge point from terminal site)
Results for January and February 2014 (2 Samples)
Analysis by Environmental Laboratory Services, Cork

SP 1				
Parameter	Units	Average	Max	Min
Suspended Solids	mg/l	<5	<5	<5
Turbidity	N.T.U	7.5	12.1	2.8
pH	pH units	7	7	7
Conductivity	uS/cm	234	236	233
Phosphate	mg/l P	<0.009	<0.009	<0.009
Ammonia	mg/l NH ₃ -N	0.027	0.031	0.023
Nitrate	mg/l NO ₃ -N	0.15	0.17	<0.12
Nitrite	mg/l NO ₂ -N	<0.013	<0.013	<0.013
Total Aluminium	ug/l Al	245	307	182

* Exceedance for Total Aluminium on 11/02/14 of 307ug/l.

Axonics Water Treatment Units (Post-treatment Results)
Results from January and February 2014 (2 samples)
Analysis by Environmental Laboratory Services, Cork

Post-Treatment (2 Samples)				
Parameter	Units	Result	Max	Min
Suspended Solids	mg/l	<5	<5	<5
Turbidity	N.T.U	4.6	5.7	3.4
pH	pH units	7	7	7.1
Conductivity	uS/cm	274	278	270
Phosphate	mg/l P	<0.009	<0.009	<0.009
Ammonia	NH ₃ -N	0.021	0.024	0.018
Nitrate	mg/l NO ₃ -N	0.12	0.13	<0.12
Nitrite	mg/l NO ₂ -N	<0.013	<0.013	<0.013
Total Aluminium	ug/l Al	210	257	162

Bellanaboy Bridge Terminal Site

Report to the Project Monitoring Committee

5th March 2014

Works Undertaken

The following construction and related operations are ongoing:

- Operation of Axonics plant, environmental and geotechnical monitoring.
- Maintenance of Temporary Construction Facility (TCF).
- Construction work which mainly involves ongoing modifications of an electrical and mechanical nature.

Outlook March 2014 Onwards:

- Continuation of environmental monitoring, geotechnical monitoring and Axonics plant operation.
- Continuation of construction work on both footprint and Temporary Construction Facility (TCF) mainly by EMMSC contractor. This work includes civils, instrumentation, mechanical and electrical.
- Use of rock breaking and sheet piling equipment during civil works on an intermittent frequency.
- Landscaping and supplementary reinstatement of temporary support areas to commence.

ENVIRONMENTAL REPORT

Dust

Dust deposition results for January.

D1	D2	Comment
January Dust Results		
*541	335	*Salt like residue

Noise – All construction related noise levels recorded were below the agreed noise limits and any unusual values were attributed to instrumentation or weather conditions.

Traffic – traffic movements are given in the below table.

Traffic Movements	
January	February
1,165	1,221

Fuel – Approximately 185.65m³ of fuel was delivered to site during January and February.

Waste – The following non-hazardous waste quantities were removed from site during January and February: 6 skips of cardboard/plastics, 3 skips of timber, 2 skips of organic waste, 1 skip of metal and 2 skips of residual waste.

There were 6 collections for the removal of oily waste and chemical waste for the period. The effluent holding tanks were emptied of approximately 1,372m³ of sewage during the same period.

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

pH (pH Units)

6.7 – 6.8

Suspended Solids (mg/l)

<2 - 6

Orthophosphate (µg/l P)

<10 (detection limit)

Nitrite (mg/l NO₂)

<0.017 (detection limit)

Conductivity (µS/cm)

239 - 241

Turbidity (NTU)

2.6 – 6.8

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

pH (pH Units) 5.1 to 6.7

Conductivity (µS/cm) 253 to 466

Nitrate (mg/l NO₃) <0.44 (detection limit)

Total Dissolved Solids (mg/l) 158 to 253

Complaints – There were no written construction activity related environmental complaints logged with SEPIL during the reporting period.

Incidents – There were no environmental incidents during the reporting period.

Exceedances – There were no exceedances during the reporting period.

Update on pH exceedance incident:

Subsequent to the high pH elevations encountered at SP1 in November 2012 additional control measures were implemented to ensure that surface water discharged from the site remains within the permitted pH limits. To establish a permanent solution an engineering study was undertaken. This concluded with a recommendation to partially remove (the section downstream of the settlement ponds) the concrete from the channel. A continuous HDPE liner with stone ballast will replace the concrete and line the channel. A subsequent review will be carried out after works have been completed. This will determine if further works will be required. Continuous monitoring of pH at SP1 will remain in place until threshold level for pH has been achieved.

Necessary Environmental Works

- Continue operation of on-site surface water treatment plant. The treatment plant has operated with good performance over the period of adverse weather conditions.
- Removal of all waste and effluent from site as required.

- Inspect, repair (when required) and recalibrate all in situ monitoring equipment.
- Monitor/sample and download water (surface and ground) quality monitoring devices.

Water Quality Monitoring Graphs

Graphs are attached for monthly continuous monitoring data at SP1 for total suspended solids, turbidity, and orthophosphate. Please see commentary below for each graph.

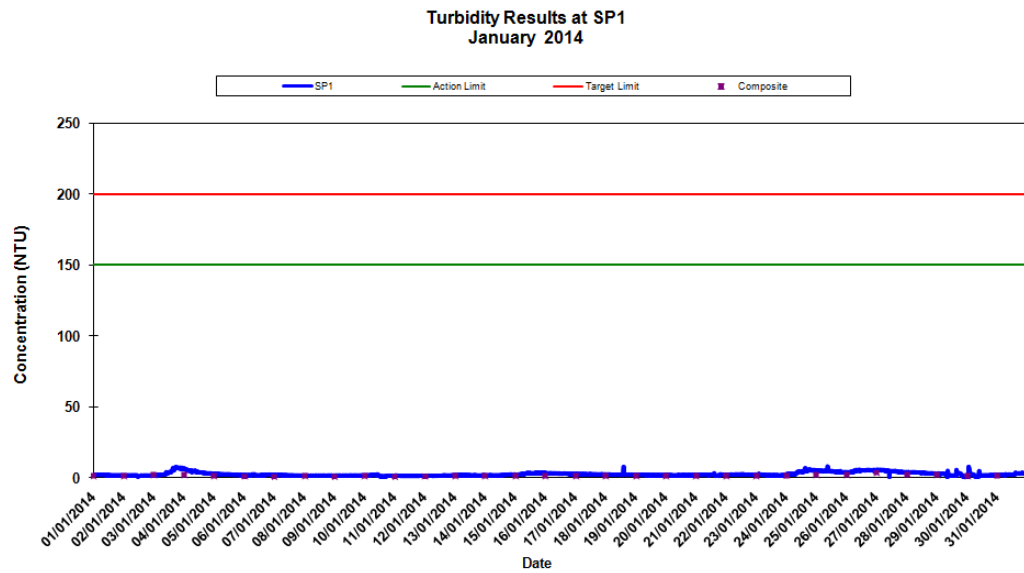
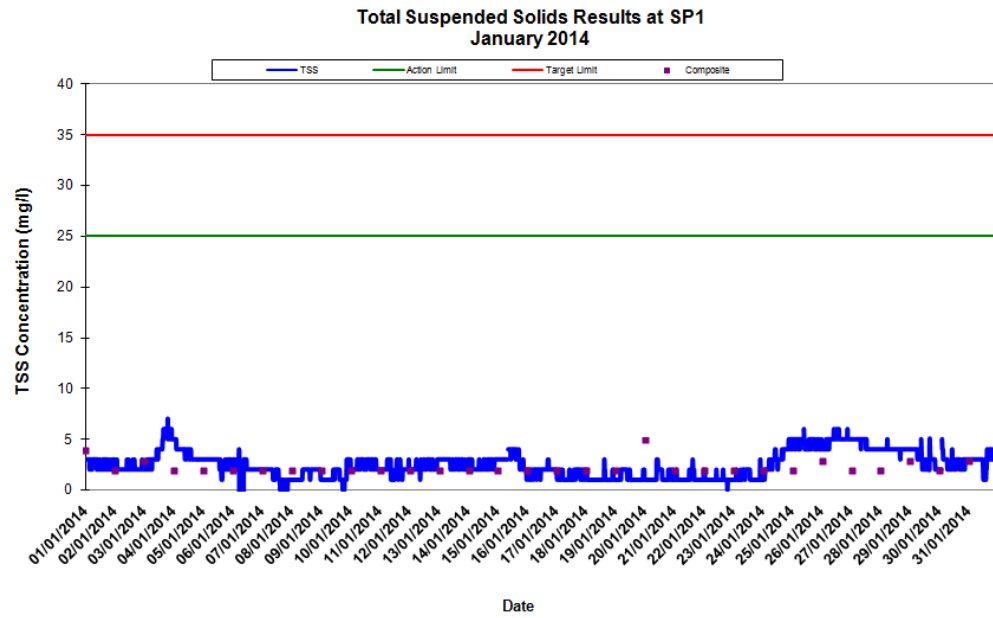
Total Suspended Solids: The TSS graphs for January and February all show levels lower than the action limit. Spikes in the chart are evident during periods of heavy rainfall.

Turbidity: All values for January and February are all lower than the action limit.

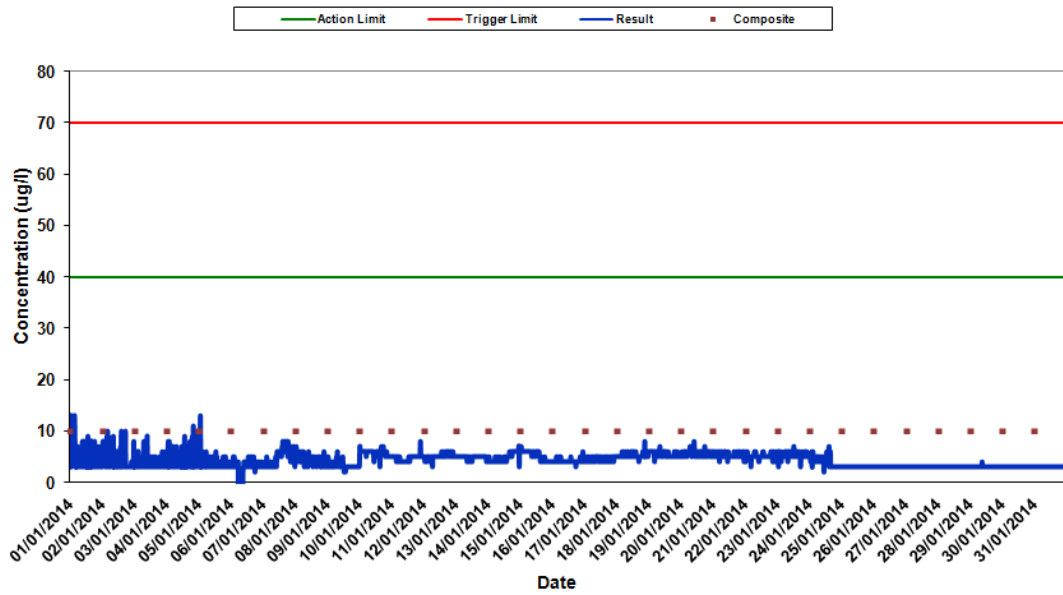
Orthophosphate: The results yielded for January and February were below the action limit.

Composite sample data is also presented on the graphs for reference.

January Graphs

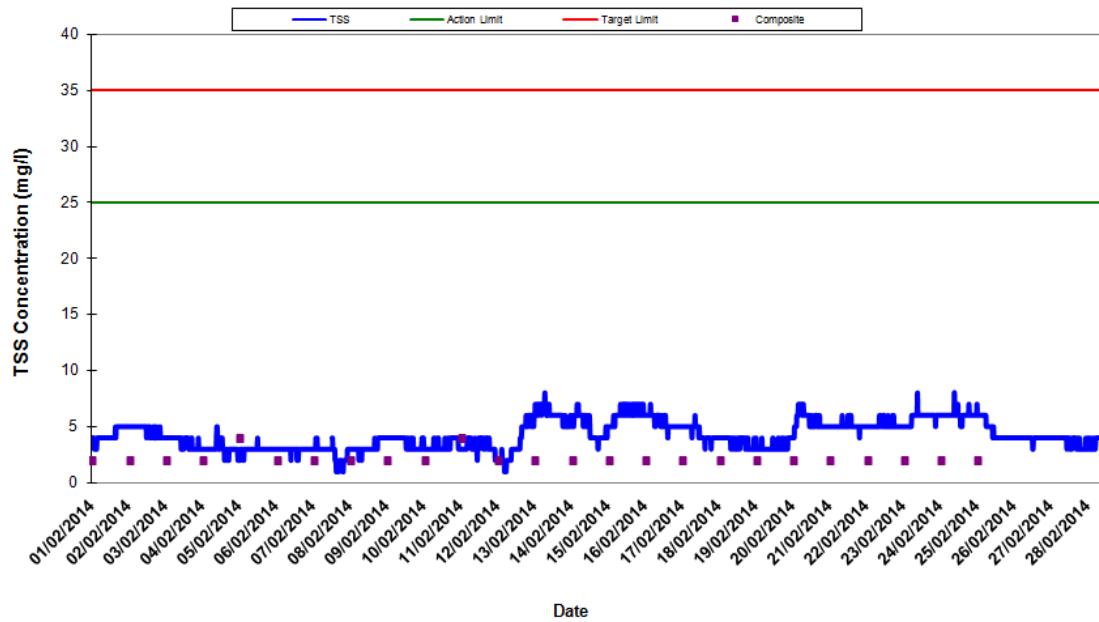


Orthophosphate Results at SP1 January 2014

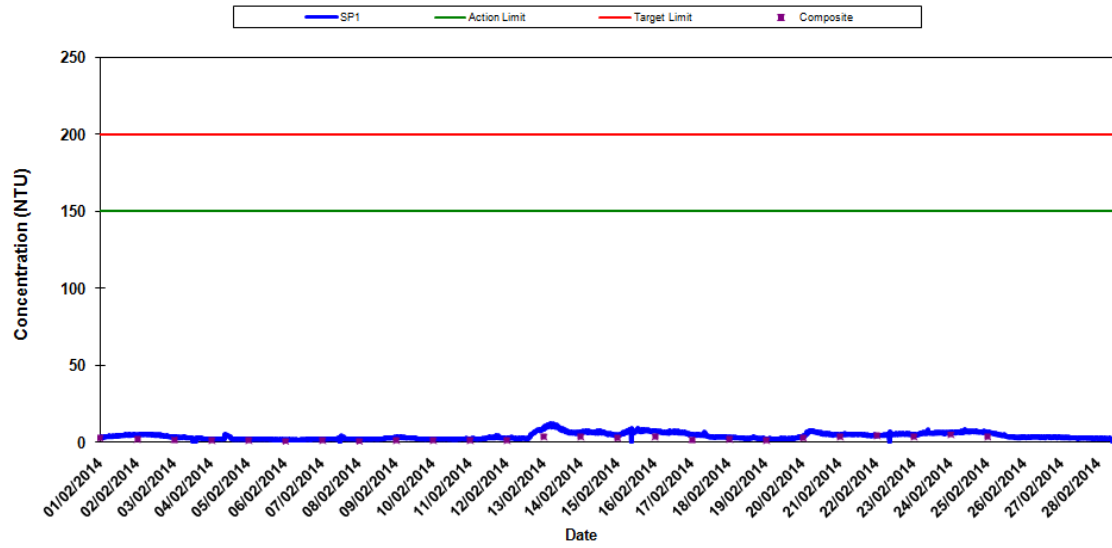


February Graphs

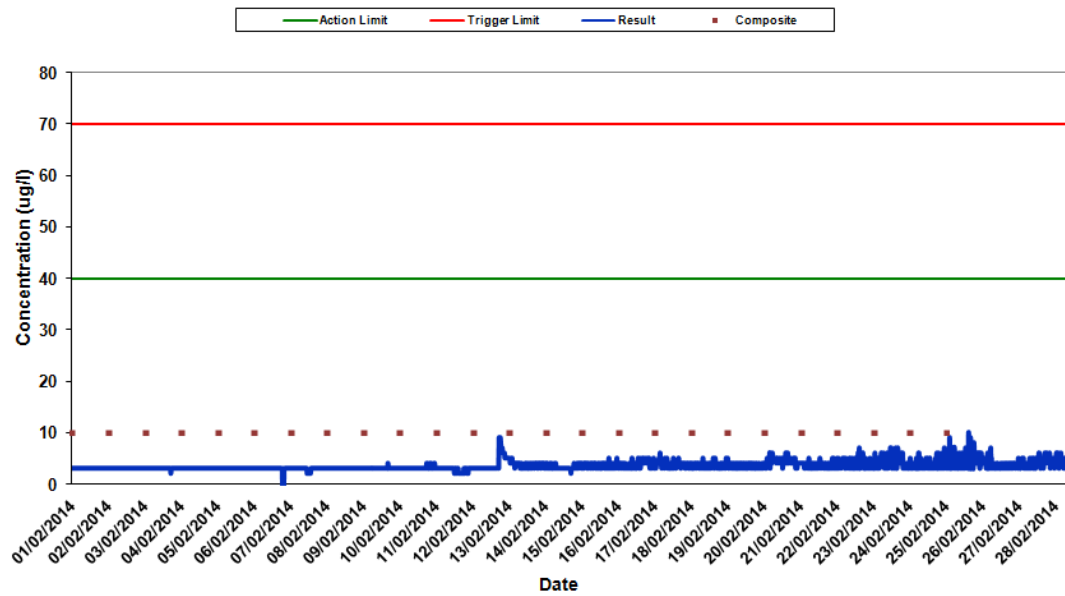
Total Suspended Solids Results at SP1 February 2014



Turbidity Results at SP1
February 2014



Orthophosphate Results at SP1
February 2014



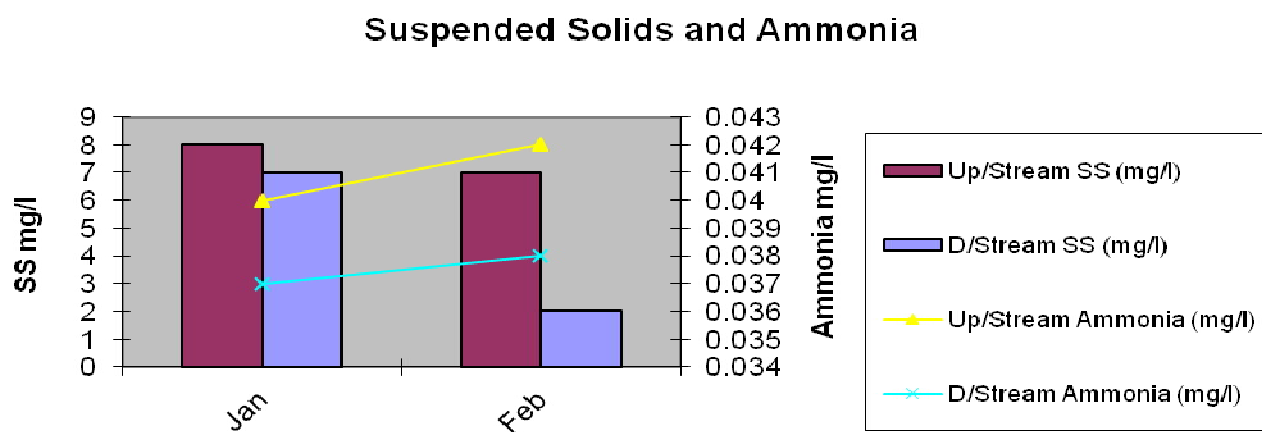
Srahmore Peat Repository
WL 0199-02
Environmental Management System Up-Date No. 66 (05/03/14)

Environmental Monitoring:

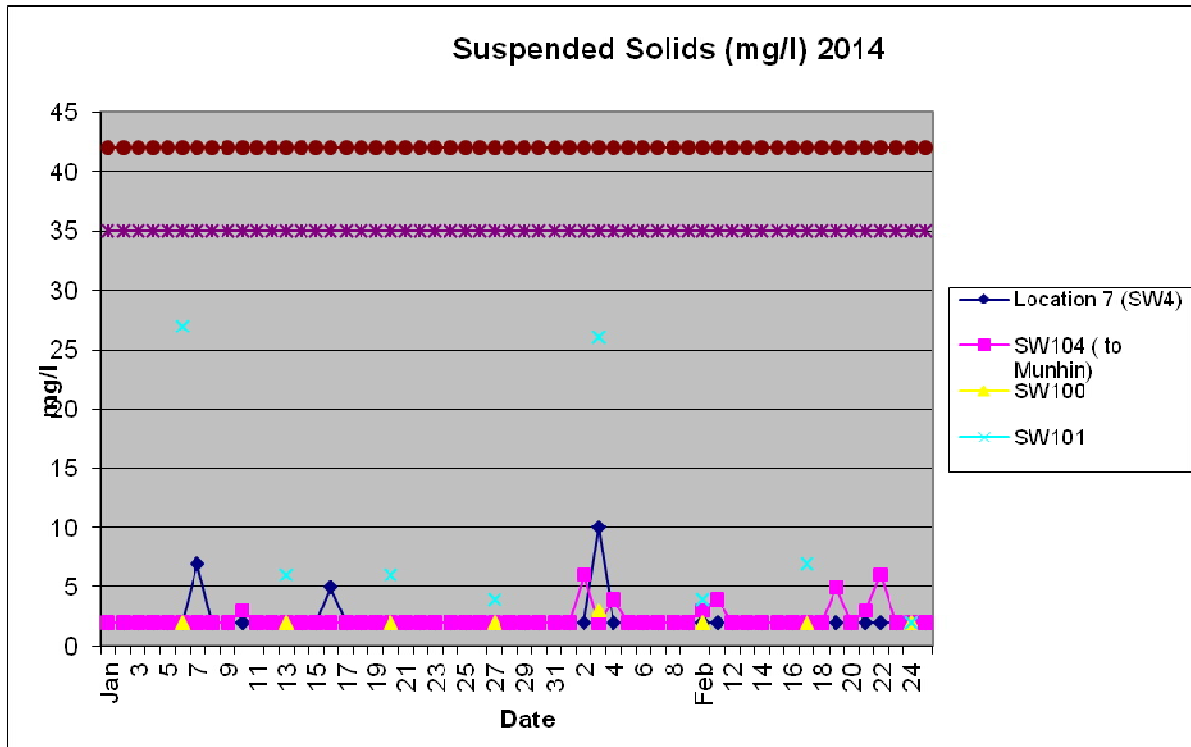
- There were no non-compliances since the last meeting in January 2014
- There were no complaints since the last meeting in January 2014.
- There were no incidents since the last meeting in January 2014.

Monitoring Results:

Munhin River (2014)



SW4/104/100&101 to 25/02/2014



The average Suspended Solids for 2014 to date was 2.28 mg/l at SW 4 and 2.32 mg/l at the discharge from the site to the Munhin at SW104, and 2.12 and 10.25 mg/l at SW100 and 101.

Srahmore Site Update:

Personnel:

On Site

		Tractor & General Oper.	0	Environmental	0
BnM (Engineering)	0	Fitters	0	Archaeological	0
Site Admin & Mgt.	1	Electricians	0		
		Site Supervisors	2		
		Excavator & Shovel	0		
TOTAL EMPLOYED					3

Contractors

Security	0	Catering	0		
TOTAL EMPLOYED					0

Off Site

Head Offices Staff	3			BnM (Support)	0
Environmental Officer	1				
TOTAL EMPLOYED					4

OVERALL TOTAL EMPLOYED	7
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Srahmore Site Operations:

Peat deposition is now completed. The site has been demobilised and is currently being monitored as per the licence requirements for stabilisation.

An Annual Environmental Report for 2013 is currently being prepared for submission to the EPA by the 31st March.

As of the 25th February 2014 the Srahmore site is compliant with Waste Licence W0199-02.