

Srahmore Peat Deposition Site

W0199-02

Article 12&13 Response

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OCTOBER 2009



ARTICLE 12 COMPLIANCE REQUIREMENTS

Item 1 - Surface Water

Clarify whether the locations for monitoring surface water and surface water run-off during the initial site investigation (October 2003), are the same as those detailed in the waste licence application (Reg. No. W0199-02), and those monitoring points used under the Waste Licence Reg. No. W0199-01 (i.e. identified in the Annual Environmental Reports).

The surface water locations and the analysis presented in Table 9.1 of the original EIS (SW1-SW6 inclusive), are the same as those detailed in the current EIS (Table 9.3 of the EIS, May 2009).

The surface water points proposed in the Waste Licence Application W0199-02 and exactly the same as those required for monitoring under Schedule C2.2 of W0199-01. The references used in Waste Licence Application W0199-02 are the same as those previously used in the Srahmore AERs that were submitted in 2005, 2006, 2007 and 2008. The references are clarified below.

- Location 7 (combined outfall from Area 5 and 6) is the same as SW4 (Grid Ref E083978, N324026);
- Outfall from S5-1 Settlement Pond is the same as SW100 (Grid Ref E084859, N232115); and
- Outfall from S5-2 Settlement Pond is the same as SW101 (Grid Ref E084189, N323106).

Sampling at Location 7 (referred to by Bord na Móna in AERs as SW4) is by means of a composite sampler. This was not installed at the time of the original EIS in 2003. The location of the Location 7 sampling point is in the same area as the sample SW2 referenced in the original (2003) and current (2009) EIS.

Sampling of the outfall from settlement pond S5-1 (referred to by Bord na Móna in AERs as SW100) was not undertaken during the original EIS in 2003.

Sampling of the outfall from settlement pond S5-2 (referred to by Bord na Móna in AERs as SW101) was undertaken during the original EIS in 2003 and corresponds to sampling point SW6 referenced in the original (2003) and current (2009) EIS.

Sampling point SW4 and SW5 referenced in the original (2003) and current (2009) EIS correspond to the Upstream and Downstream sampling points on Munhin River required Schedule C(6) of W0199-01.

Figure 1 and Figure 2, as requested below, are provided to clarify the location of all surface water monitoring points. This clarifies the sampling point locations referenced in the original (2003) and current (2009) EIS, the Waste Licence W0199-01, the Bord na Móna AERs and the current Waste Licence Application W0199-02.

Submit a map/maps clearly identifying the locations of all surface water monitoring points.

Figure 1 and Figure 2 are provided to clarify the location of all surface water monitoring points referenced in the original (2003) and current (2009) EIS, together with surface water monitoring points referenced in the Waste Licence W0199-01, the Bord na Móna AERs and Waste Licence Application W0199-02.

Provide an assessment of the upstream and downstream monitoring data and determine the impact, if any, of the previous operations of the facility (under Waste Licence Reg. No. W0199-01) on surface water. The monitoring data for the periods prior to the commencement of peat deposition, during peat deposition activities and after completion of peat deposition activities should be considered in this assessment. This assessment should take account of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 and should address, inter alia, water quality levels for suspended solids and ammonia.

The full set of monitoring data for the Munhin River, upstream and downstream of the discharge from the Srahmore site is presented in Appendix A.

Schedule C(6) indicates that, in terms of physico-chemical parameters, Ammonia and Suspended Solid concentration should be monitored upstream and downstream of the Srahmore discharge point. In addition to the physico-chemical sampling, a biotic index survey is required annually.

With regard to the Biotic Index Survey, due to watercourse conditions in 2003 it was not possible to safely undertake a biotic index survey. Section 7.3.3 of the EIS (Page7.8) indicates that, based on surveys undertaken in 2005 and 2007 the Q-rating of the Munhin River improved from a Class C 9 (Moderately Polluted) upstream to Class B (Slightly Polluted) downstream. The results indicate that the biological quality of the Munhin River has not been negatively impacted as a result of the peat deposition activities or the discharge of treated water from the site.

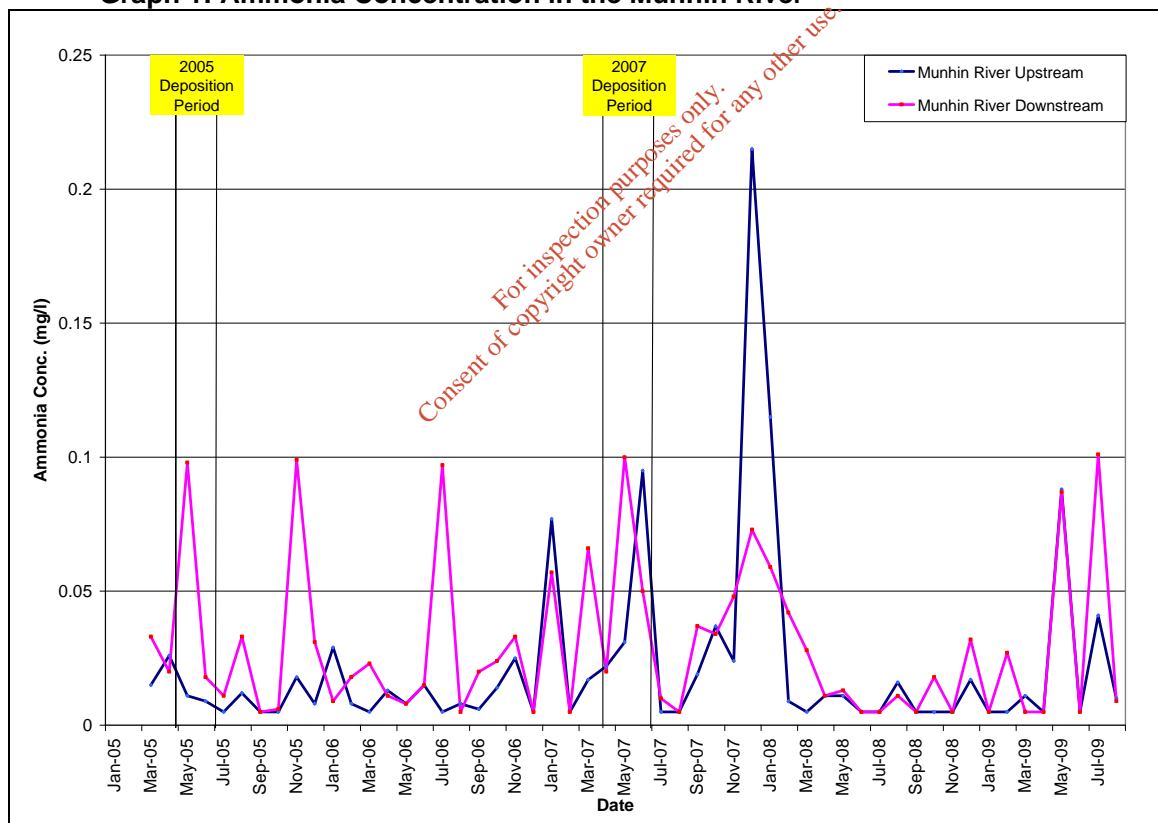
With respect to the physico-chemical sampling requirements, the data is presented in Graph 1 (Ammonia Concentration) and Graph 2 (Suspended Solid Concentration) below.

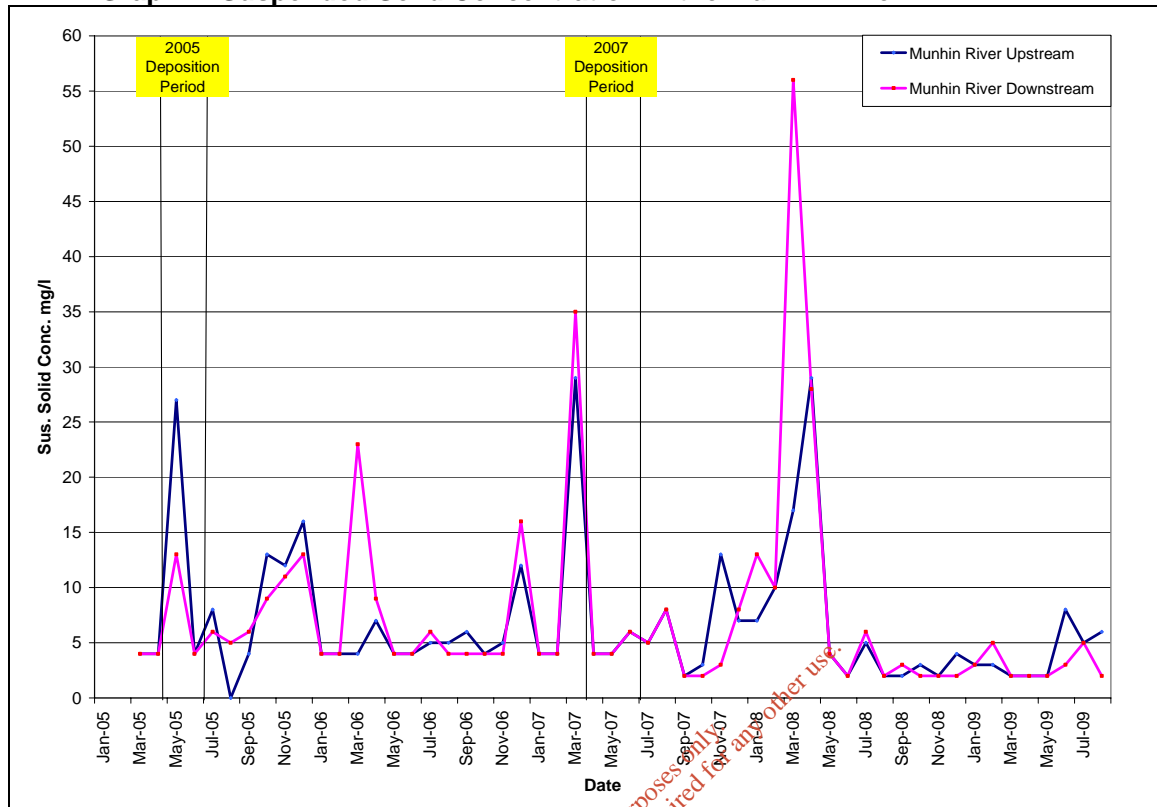
These graphs show the recorded Ammonia Concentration and Suspended Solid Concentration in the Munhin River. For clarity, the active periods of peat deposition have been highlighted on these graphs. The pre deposition, the interval between deposition phases (2005 and 2007) and post deposition are shown.

From analysis of the data there is a general common trend between the concentration of ammonia and suspended solids upstream and downstream of the Srahmore discharge, with isolated divergences. There are peaks in the ammonia concentration downstream of the Srahmore discharge, however there is no discernible trends to suggest a progressive change in surface water quality from pre deposition conditions.

It is noted that there are instances where the ammonia concentration is slightly higher upstream than downstream. There are also some more pronounced instances where the suspended solids concentration is higher upstream than downstream.

Graph 1: Ammonia Concentration in the Munhin River



Graph 2: Suspended Solid Concentration in the Munhin River

While acknowledging peaks in Ammonia and Suspended Solids, it is submitted that the physico-chemical analysis is beneficial in demonstrating that the discharge from the Srahmore site is not resulting in an overall negative impact on the surface water environment.

The graphs are useful in demonstrating the peaks in the Ammonia and Suspended Solid concentration outside the main phases on peat deposition in the Srahmore site. This suggests that this is linked to the overall regional terrain rather than site specific activities within Srahmore.

The EPA has requested that in this assessment account should be taken of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009). These regulations give effect to the measures needed to achieve the environmental objectives of the Water Framework Directive.

These regulations indicate that for High Status River Water Body, the Total Ammonia would have a mean concentration of equal or less than 0.04mg/l or a 95% of equal or less than 0.09mg/l. Graph 1 indicates that the upstream and downstream sampling of the Munhin River would achieve this standard, even allowing for the isolated peaks in Ammonia Concentration. Again, the natural bog land terrain in the Northwest of Ireland should be considered, where Ammonia is a naturally elevated parameter.

Clarify when the monitoring data in Table 9.3 of the EIS was taken. Provide an explanation for why the levels of microbiological parameters are higher for SW1, SW2 and SW3 than in SW4, SW5 and SW6.

The surface water data provided in Table 9.3 of the EIS (May 2009) is analysis of samples (SW1-SW6 inclusive) which were obtained on 29th October 2003. This is stated in Section 9.3.3 of the EIS (1st Paragraph Page9-12).

The location of all surface water monitoring points are shown on Figure 1 and Figure 2.

Sampling points SW1, SW2 and SW3 are located on the Main Drain through the Srahmore site. Sampling point SW4 is located on the Munhin River, upstream of the Srahmore site and also upstream of the confluence of the Srahmore Main Drain with the Munhin River. Sampling point SW5 is location on the Munhin River, downstream of the Srahmore site and also downstream of the confluence of the Srahmore Main Drain with the Munhin River. Sampling point SW6 is located at the outfall from Settlement pond S5-2 (W0199-01 Licence Emission Ref. No. (referred to in Bord na Móna as SW101)).

As noted in the EPA request, the microbial parameters were significantly higher in samples SW1, SW2 and SW3 compared to SW4, SW5 and SW6.

The only explanation offered for the higher microbial parameters in the Main Drain as opposed to the other sampling points is the stagnancy of the water and the low flow. The Srahmore site is not occupied by livestock and never has been. Therefore, there is no plausible source for organic manure or liquids entering the Main Drain that would impact surface water quality. At the time of the survey in October 2003, there was no indication that the main drain was impacted by organic matter, however the channel was noted to be heavily choked with peat and vegetation. Remedial and rehabilitation works required by Condition 10 of the IPPC Licence for the Oweninny Works, were being undertaken at the time of the October 2003 survey, to clean out this Main Drain to improve flow and drainage of the Srahmore site.

Provide an explanation for the peaks in ammonia (circa 0.1mg/l) in the Munhin River recorded downstream of the main discharge point in 2005 and 2006, when upstream levels circa 0.02mg/l were recorded (ref. Figures of ammonia levels in Munhin River in 2005 and 2006 AERS included in EIS Appendix 9). Similarly provide an explanation for the peak in suspended solids identified in March 2006.

For illustration purposes, we would refer to Graph 1 (Ammonia Concentration dataset) and Graph 2 (Suspended Solid Concentration dataset) for upstream and downstream sampling undertaken by Bord na Móna, as required under Schedule C6 of the Waste Licence (W0199-01).

From analysis of the data there is a general correlation between the concentration of ammonia from upstream and downstream samples, with isolated divergences.

The suspended solid concentrations were also assessed in tandem with the ammonia concentrations to determine if there was any commonality to the peaks.

The suspended solid concentration also shows a general correlation in the concentration upstream and downstream of the Srahmore discharge, again with some isolated divergences.

The ammonia concentration downstream of the Srahmore discharge was recorded at (or approaching) 0.1mg/l when the upstream samples generally did not show any elevation in Ammonia concentration. The following dates highlight this divergence; 03rd May 2005, 07th November 2005, 3rd July 2006, 07th July 2007, the 4th May 2009 and 06th July 2009.

It should be noted that the most pronounced peak in Ammonia concentration occurred on 3rd December 2007, when the concentration of the upstream sample was significantly higher than the downstream concentration (0.215mg/l upstream as opposed to 0.073mg/l downstream). There are other more minor instances when the upstream samples record a higher concentration than the downstream samples.

In the case of suspended solid concentration, the occasions where suspended solids are higher upstream than downstream is more pronounced.

The following dates have been identified from the monitoring data for suspended solids:

- 03rd May 2005 (upstream 27mg/l, downstream 13mg/l);
- 06th March 2006 (upstream 4mg/l, downstream 23mg/l);
- 05th March 2007 (upstream 29mg/l, downstream 35mg/l);
- 03rd March 2008 (upstream 17mg/l, downstream 56mg/l); and

The AER (Section 4.4) were assessed to determine if these occurrences of peaks in Ammonia or Suspended solids corresponded to periods of major works in Srahmore relating to Silt Pond Cleaning where discharge occur into the Main Drain. From this analysis the peaks did not appear to be linked to this activity, with the possible exception of the downstream peak in March 2006 (as identified in the query above from EPA. The periods of silt pond cleaning are as follows:

- Early September 2005;
- February 2007;
- July 2007; and
- Late August/early September 2008.

The peaks in Ammonia are most likely due to run-off and/or seepage from the large peat land areas between the R313 and the Owenmore River. These peat lands have been subject to industrial harvesting and the vegetation of the surface is now being actively managed under the Srahmore Restoration Plan and the Oweninny Works Restoration Plan. However, this is still in progress and there remains the potential for ammonia concentration elevation in the surface water environment, due to the dominance of cutover peat in the general area. The land use upstream of Srahmore is dominated by Carrowmore Lake and low intensity agricultural land use around its fringes. Therefore, the likelihood for ammonia concentration elevation in upstream samples is significantly lower.

Therefore, in summary, the peaks in ammonia in downstream samples in the Munhin River is likely due to run-off and/or seepage from the cutover bog during period of high intensity rainfall, coupled with the background occurrence of high Ammonia in peatland terrains. The elevation of suspended solids in upstream and downstream samples is also likely to be due to run-off during period of high intensity rainfall. The EPA identified peak of March 2006 is possible due to maintenance work on the settlement lagoons.

Complete a summary of all non compliances with the surface water emission limit values under Waste Licence Reg. No. W0199-01, identify how these incidents were addressed and what mitigation measures will be undertaken to ensure such non-compliances do not recur.

The full set of monitoring data for surface water analysis for the Srahmore site, undertaken in compliance with W0199-01 is presented in Appendix A.

The Surface Water Emission Limit Value specified under Waste Licence No. W0199-01 is for Suspended Solid Concentration. The Emission Limit Values specified for Suspended Solids in Schedule B(2) is 35mg/l.

Condition 4.1 of W0199-01 indicates that '*Emission limit values for emissions to waters in this licence shall be interpreted in the following way:*

4.1.1 Eight out of ten consecutive results, calculated as daily mean concentration or mass emission values on the basis of flow proportional composite sampling, shall not exceed the emission limit value. No individual result similarly calculated shall not exceed 1.2 times the emission limit value.

4.1.2 No grab sample value shall exceed 1.2 times the emission limit value.

Schedule C2.2 specifies the frequency of sampling from Location 7 (composite sampler) on a daily basis and by means of grab sample on a weekly basis S5-1 and S5-2. Alternative sampling arrangements were agreed between Bord na Móna and the EPA during the period of inactivity at the site in July 2005 up until the commencement of activity in April 2007.

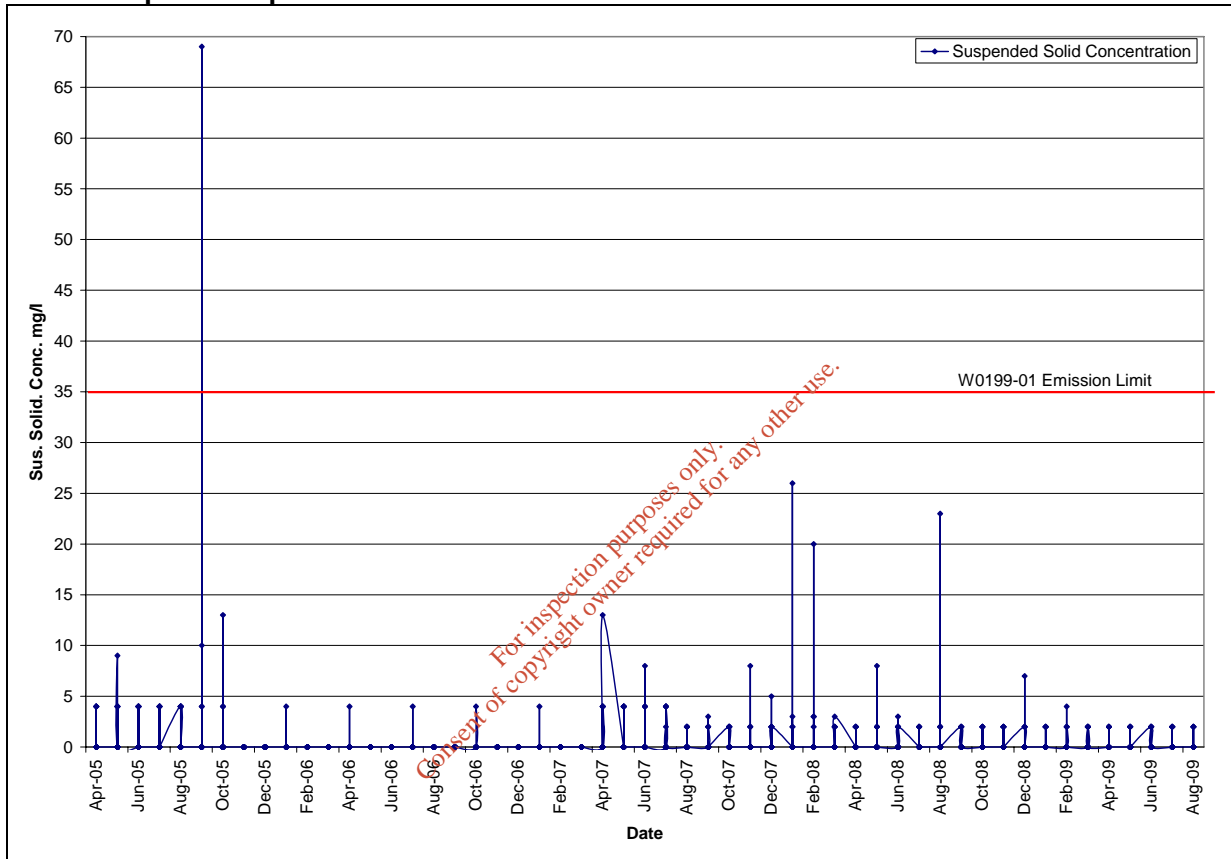
Graph 3 and Graph 4 below show the Suspended Solid Concentration database for W0199-01 Emission Reference Points S5-1 (BnM ref SW100) and S5-2 (BnM ref SW101) respectively, for interval from 1st April 2005 to 31st August 2009

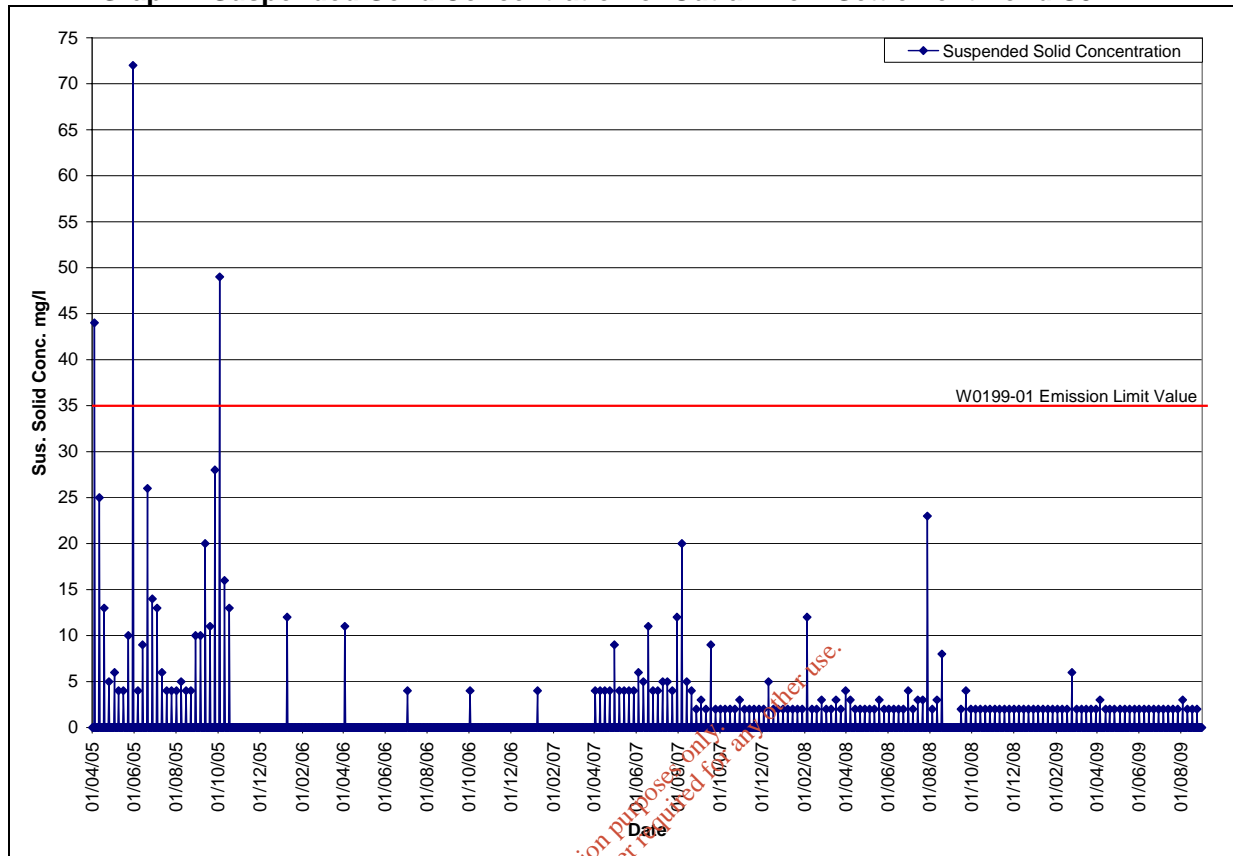
There was a single exceedance of the Emission Limit Value for S5-1, which occurred on the 5th September 2005 (69mg/l). This exceeds the 1.2 times the emission threshold specified in W0199-01. This sample was taken three days after the desilting of S5-1. This activity may have agitated the retained water leading to the elevated results when no activity associated with peat deposition occurred within the site.

There were three exceedances of the Emission Limit Value for S5-2, which occurred on 5th April 2005 (44mg/l), 30th April 2005 (72mg/l) and 3rd October 2005 (49mg/l). These three exceedances were isolated occurrences with the previous and next days result below the emission limit value. However, on the three identified dates the suspended solid concentration exceeded the 1.2 times emission limit threshold.

The first exceedance on the 5th April occurred at the end of the Srahmore construction period (peat acceptance commenced on 18th April 2005). The exceedance on the 30th April occurred during a period of peat deposition within the site. The exceedance on the 30th October occurred during a period of inactivity within the site. No works were being undertaken to the settlement pond during these periods.

Graph 3: Suspended Solid Concentration of Outfall from Settlement Pond S5-1



Graph 4 Suspended Solid Concentration of Outfall from Settlement Pond S5-2

Graph 5 shows the Suspended Solid Concentration database for W0199-01 Emission Reference Points Location 7.

Between 1st April 2005 and 23rd August 2009 the concentration of Suspended Solids has been analysed 1133 times. In general terms, the emission limit value of 35mg/l was exceeded on 45 occasion (days). This indicates that in overall terms the Srahmore site was 96% compliant with the suspended solid emission limit value. When the 1.2 times the emission limit value threshold (i.e. 42mg/l) is used, the Srahmore site was 97.5% compliant with the suspended solid emission value.

The following dates and concentrations are recorded from Location 7:

2005

On the following dates the Suspended Solid concentration exceeded the Emission Limit Value of 35mg/l but was below the 1.2 time Emission Limit threshold, therefore was compliant with Waste Licence.

29th April (39mg/l), 30th April (42mg/l) 10th June (39mg/l), 28th September (37mg/l).

On the following occasion the Suspended Solid concentration exceeded the 1.2 time Emission Limit Threshold or 8 out of 10 consecutive samples exceeded the Emission Limit.

07th April (184mg/l), 08th April (81mg/l), 09th April (46mg/l), 10th April (44mg/l), 14th April (42mg/l), 17th April (65mg/l), 26th April (71mg/l), 27th April (49mg/l), 28th April (71mg/l), 02nd June (62mg/l), 03rd June (92mg/l), 04th June (81mg/l), 09th June (74mg/l), 04th September (44mg/l), 30th September (54mg/l), 18th December (45mg/l).

2006

No exceedance of Emission Limit Value

2007

On the following dates the Suspended Solid concentration exceeded the Emission Limit Value of 35mg/l but was below the 1.2 time Emission Limit threshold, therefore was compliant with Waste Licence.

04th March (39mg/l), 30th April (41mg/l), 01st May (40mg/l), 21st May (39mg/l), 28th October (39mg/l), 17th November (42mg/l), 07th December (39mg/l).

On the following occasion the Suspended Solid concentration exceeded the 1.2 time Emission Limit Threshold or 8 out of 10 consecutive samples exceeded the Emission Limit.

10th May (78mg/l), 17th May (76mg/l), 18th May (37mg/l), 19th May (52mg/l), 25th May (125mg/l), 29th May (63mg/l), 19th June (47mg/l), 21st June (49mg/l), 22nd May (49mg/l), 5th July (71mg/l), 16th September (44mg/l).

2008

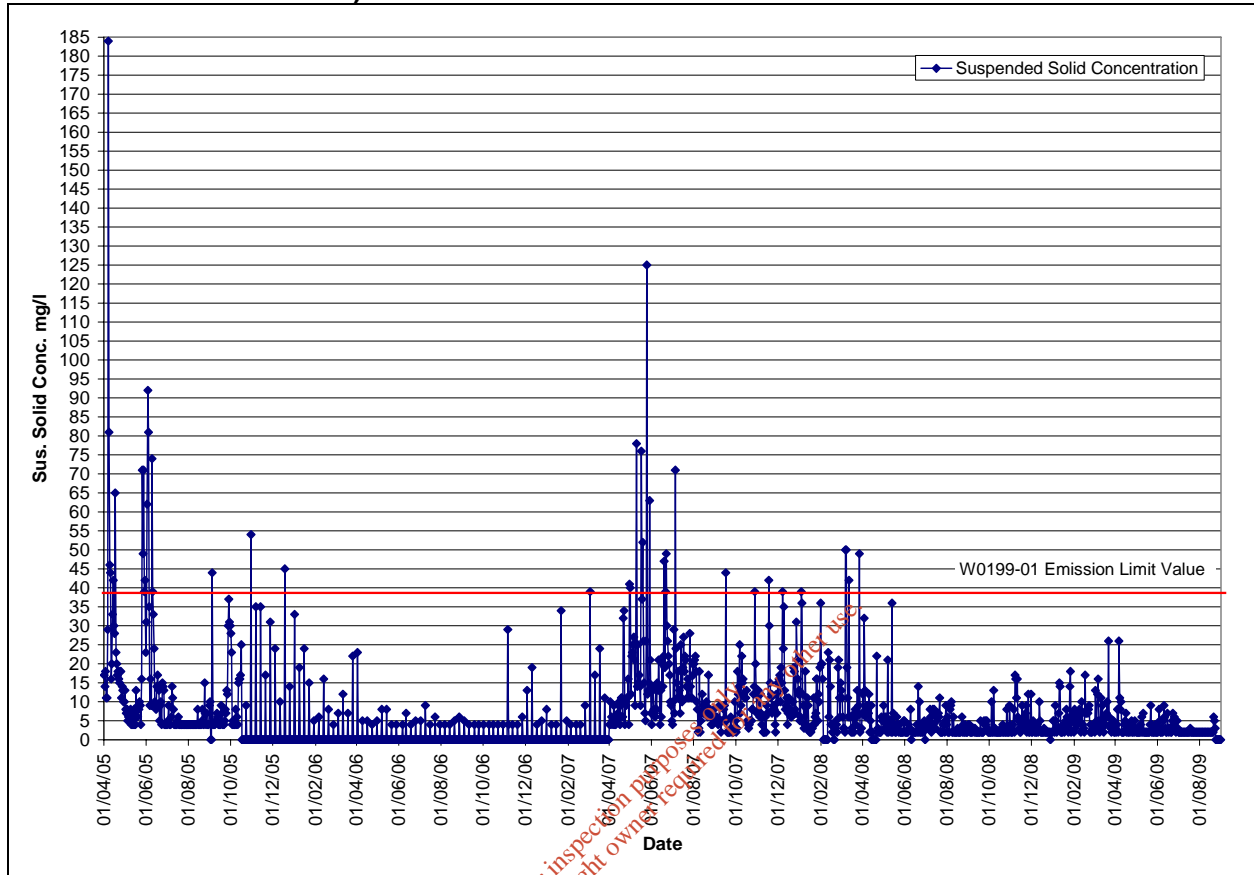
03rd January (39mg/l), 04th January (36mg/l), 31st January (36mg/l), 07th March (50mg/l), 08th March (50mg/l), 12th March (42mg/l), 27th March (49mg/l), 13th May (36mg/l).

2009

No exceedance of Emission Limit Value

The Correspondence relating to these non-compliances and the Corrective / Preventative Action Measures undertaken to identify and remedy these exceedances are attached to Appendix B herein.

Graph 5: Suspended Solid Concentration at Location 7 (combined outfall from Area 5 and Area 6)



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Item 2 - Groundwater

Submit a map/maps clearly identifying the locations of all groundwater monitoring points – those used in the original site investigation (October 2003), those identified in monitoring carried out under the terms of the Waste Licence Reg. No. W0199-01 (referred to in the Annual Environmental Reports) and those used in the W0199-02 waste licence application.

Figure 3 is provided to show the location of all groundwater monitoring points.

References to groundwater monitoring boreholes BH1A and BH1B (screened in subsoil and bedrock respectively), BH2A and BH2B (screened in subsoil and bedrock respectively) and BH3A and BH3B (screened in subsoil and bedrock respectively) are consistent in all documentation, i.e. the original October 2003 submission, the Waste Licence Reg. No. W0199-01, the AERs and the Waste Licence application W0199-02.

The original BH4 was drilled towards the centre of Area 6. This borehole was located on a high field. As part of the Srahmore construction works, the original BH4 was decommissioned as the high field was required to act as an internal haul road.

Bord na Móna subsequently drilled a new paired borehole set BH4A and BH4B (screened in the subsoil and bedrock respectively) to the south of Peat Reception Hardstand. These boreholes were required to specifically accord to Condition 8.10.1 of the Waste Licence W0199-01.

The existing network of groundwater monitoring boreholes is in accordance with Condition 8.10.1, whereby:

- BH3A & BH3B act as an upgradient monitoring borehole;
- BH4A & BH4B act as a downgradient monitoring borehole from the peat reception area; and
- BH1A, BH1B, BH2A and BH2B act as downgradient monitoring boreholes from Area 6.

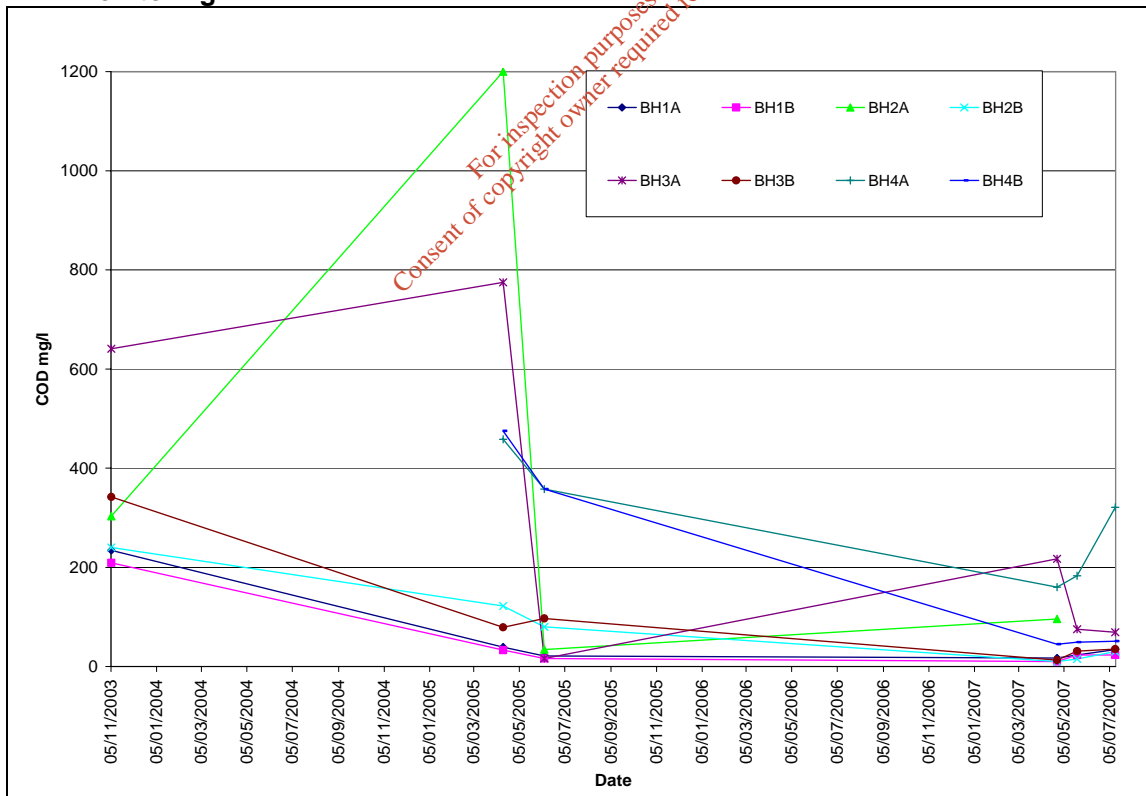
In hindsight, it is acknowledged, that the numbering of the new boreholes BH4A and BH4B to the south of the Peat Reception Hardstand may have resulted in confusion. However, as all previous AERs have been compiled using this alpha-numerical numbering system, it is proposed to maintain this in all future reporting.

Provide an assessment of the impacts, if any, of the operations of the facility on groundwater during its operation in accordance with Waste Licence Reg. No. W0199-01. The monitoring data for the periods prior to the commencement of the peat deposition activities, during peat deposition and after completion of the peat deposition activities should be considered. This assessment shall consider the Agency’s Publication *Towards Setting Guideline Values for the Protection of Groundwater in Ireland, Interim Report*, and shall compare groundwater quality levels on a year on year basis as well as with baseline data.

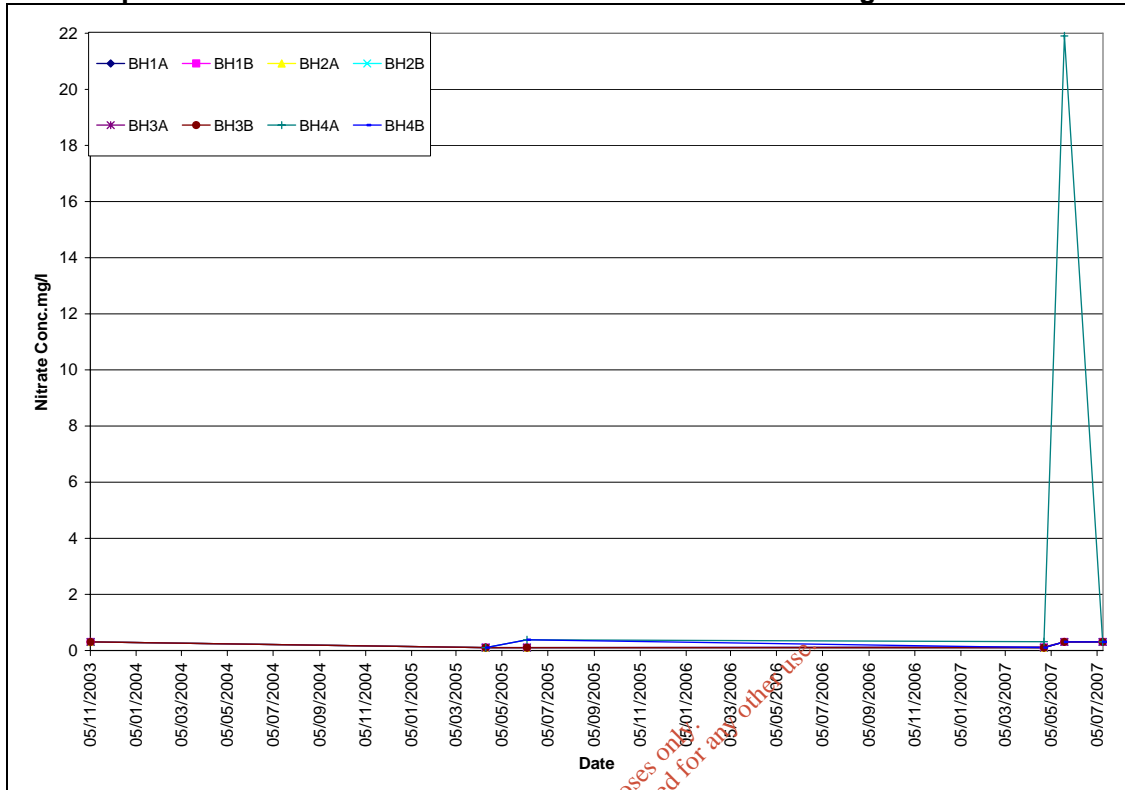
Schedule C(6) of W0199-01 indicates that groundwater monitoring should be undertaken on a Biannual basis from all groundwater monitoring boreholes. The parameters required for analysis were COD (Chemical Oxygen Demand), Nitrate, Total Ammonia, Conductivity and Diesel Range Organics.

Graphs 6-10 inclusive show the groundwater analysis dataset for the prescribed groundwater parameters in Schedule C(6).

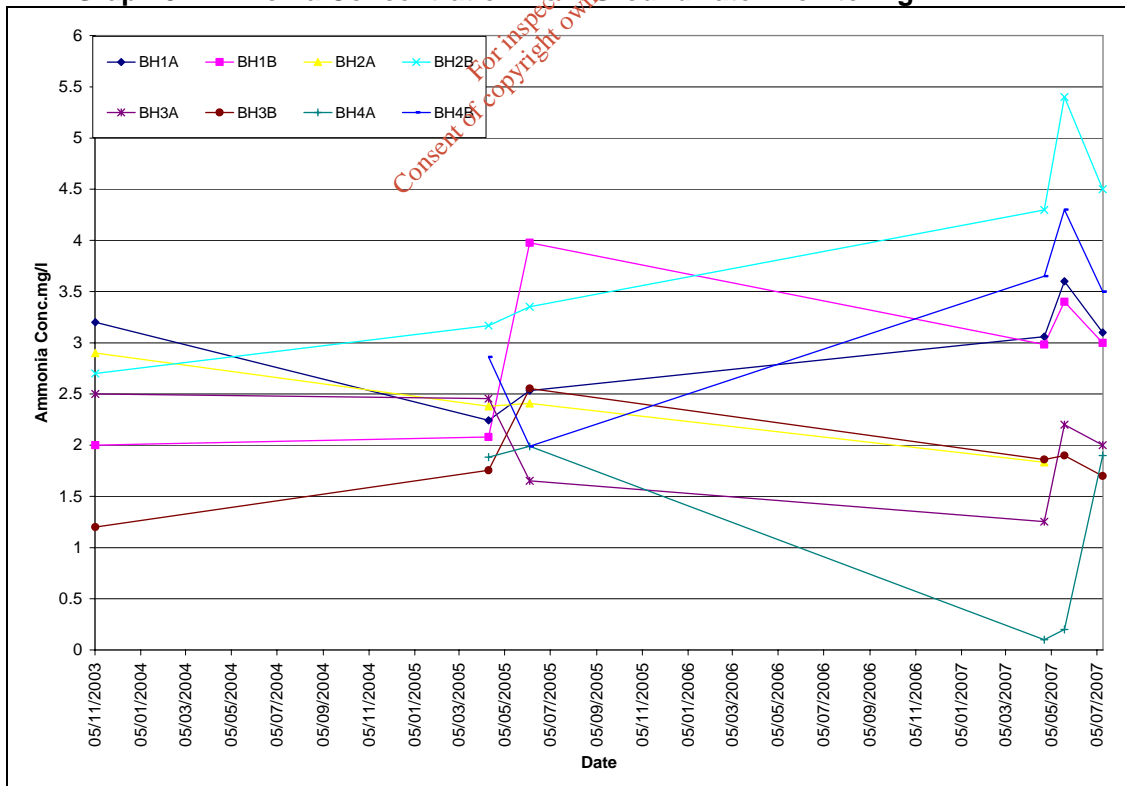
Graph 6: Chemical Oxygen Demand Concentration from Groundwater Monitoring



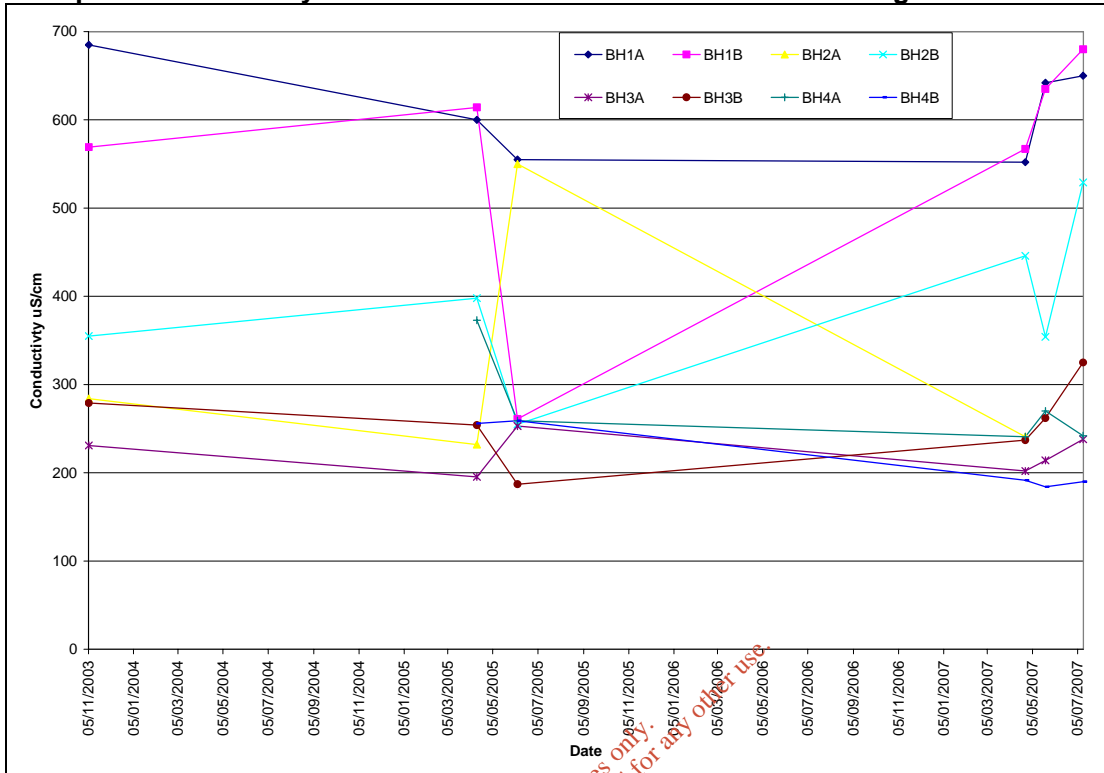
Graph 7: Nitrate Concentration from Groundwater Monitoring



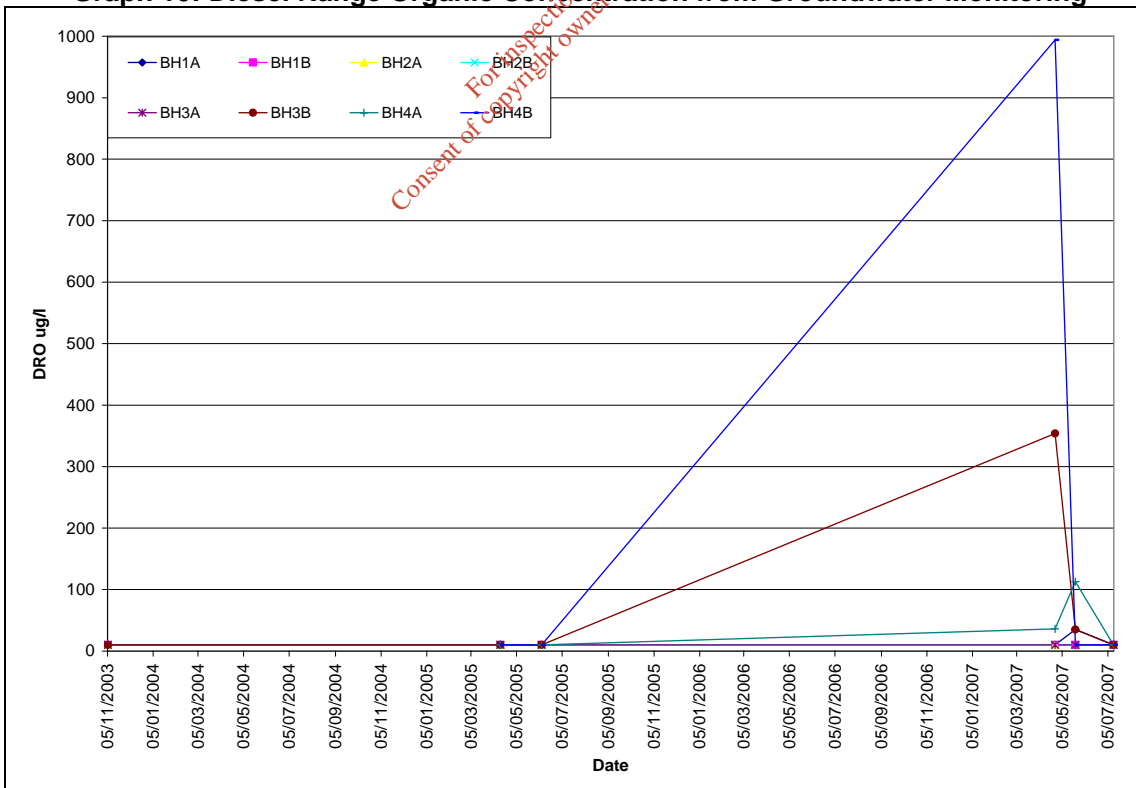
Graph 8: Ammonia Concentration from Groundwater Monitoring



Graph 9: Conductivity Concentration from Groundwater Monitoring



Graph 10: Diesel Range Organic Concentration from Groundwater Monitoring



The concentration of COD (Graph 6) and Conductivity (Graph 9) in the groundwater is erratic. High concentrations of COD is common in groundwater derived in bog terrain. This is due to the fact that peat is biological inert but chemically active. The variation of conductivity of the in the groundwater samples is again likely due to the presence of peat particles. A heavy sediment load occurs in groundwater samples from Srahmore as these are not permanently pumped. The purging the boreholes would agitate the water column and disturb sediment. The EPA Interim Report – Towards Setting Guideline Values for the Protection of Groundwater in Ireland does not recommend an Interim Guideline Value for COD but recommends an Interim Guideline Value of 1500uS/cm for Conductivity. All groundwater analysis of groundwater has recorded Conductivity values below 700uS/cm.

The Nitrate concentration in the groundwater is very low and generally recorded less than 0.4mg/l. This is consistent with the low Nitrate in the surface water environment. The low nitrate in the groundwater and surface water environment is a common feature to area of extensive bog terrain, which are reducing environments. The only exception is a recorded concentration of Nitrate of 21.9mg/l for Borehole BH4A on the 22nd May 2007. The high concentration of nitrate on this occasion is likely a laboratory error, as such a concentration would be inconsistent with the terrain and other groundwater analysis. The EPA Interim Report – Towards Setting Guideline Values for the Protection of Groundwater in Ireland recommends an Interim Guideline Value of 25mg/l. All groundwater samples have been below this value and are likely to stay below this level into the future.

The Ammonia concentration in the groundwater is again somewhat erratic, with Boreholes BH1A, BH2B and BH4B showing a general upward trend, whereas BH1B, BH2A, BH3A, BH3B and BH4A showing a general downward trend. The concentration of Ammonia is generally within the concentration range of 1mg/l to 4.5mg/l. The EPA Interim Report – Towards Setting Guideline Values for the Protection of Groundwater in Ireland recommends an Interim Guideline Value of 0.15mg/l for Ammonia. It is submitted that the natural geochemistry of the groundwater is such that this guideline value will never be reached. The elevated concentration of ammonia in the groundwater is a factor of the geological regime, whereby any nitrogen in the groundwater is reduced to Ammonia.

The Diesel Range Organic concentration was consistently below detection limits until April 2007. On the 25th April 2007 borehole BH3B, BH4A and BH4B recorded DRO concentrations of 354ug/l, 36ug/l and 994ug/l respectively. A repeat round of sampling was undertaken on 22nd May 2007, with a DRO concentration of 35ug/l recorded in BH1A, 35ug/l recorded in BH3B, 113ug/l recorded in BH4A and <10ug/l recorded in BH4B. A repeat groundwater sampling survey was undertaken on 12th July 2007 and found the concentration of DRO of all boreholes to be below the detection limit of the laboratory (i.e. <10ug/l). From review of the data and the

sampling methodology it is suggested that the recording of DRO is most likely a factor of exhaust fumes from the sampling pump rather than contamination of the groundwater. Exhaust fumes will contain PAHs which would show up in the gross DRO analysis. It has been recommended to Bord na Móna that this pump would not be used in the future for obtaining groundwater for DRO analysis.

Item 3 – Submit a site boundary map (boundary identified in colour on one A3 drawing).

Drawing 4903-2604 (Appendix C), attached to the Waste Licence Application Attachments for W0199-02, is resubmitted with a thicker red line to show the Srahmore Activity Boundary. The outer blue line delineates the wider ownership of Bord na Móna in this area. The Srahmore Peat Deposition Site is a subset landbank of a much larger land ownership by Bord na Móna in the Banger and Bellacorrick region.

Item 4 – Submit a response to Section D.1(j) of the Waste Licence application form in line with the *Waste Licensing Application Guidance Notes 2005*.

The EPA *Waste Licensing Application Guidance Notes 2005* indicate that Section D.1(j) shall include details of traffic control, including location and detail of signs, barriers, parking, number of vehicles catered for, etc.

As detailed in Section 16.3 of the Srahmore EIS, a designated traffic manager will be appointed for the overall management of haul vehicles between the source of the excess peat (i.e. the Corrib Gas on-shore pipeline route) and the proposed end destination (i.e. Srahmore). The organisation of haul vehicles will minimise conflicts and impacts on the public road network.

Upon arrival of haul vehicles at the Srahmore site, all haulage vehicles will adhere to the Srahmore Traffic Management Plan, as detailed in Appendix 16.1 of the EIS. This is the same traffic management plan that operated under previous activities in 2005 and 2007. The site has been designed to minimise traffic movement conflicts and to minimise any interaction between public road haul vehicles and internal Srahmore vehicles.

The traffic management plan is summarised as follows:

- Importation of peat will be accepted to the Srahmore site during normal operating hours of 0700 to 1900hrs Monday to Friday and 0700 to 1600hrs on Saturdays.
- Vehicles will access the site through the sole entrance point and travel on the dedicated access road to the Peat Reception Hardstand, as a restricted speed limit of 15km/hr.

- All vehicles will be weighed in on arrival, with documentation retained on site for administrative purposes and copies supplied to drivers for documentation management at the source end of the project.
- Each vehicle will be directed, by means of mobile vehicle barriers to the permitted deposition area of the hardstand (i.e. the permitted deposition area will alternate to different sides of the peat reception hammerhead hardstand.
- Drivers will not dismount from vehicles in the peat reception area.
- Once the peat has been unloaded, all haulage vehicles will exit the site and will be directed to travel through a wheelwash to minimise soiling of public roads.
- At the same time as peat is being unloaded from haulage trucks on one side of the peat reception area, internal loaders will be active on the other side. These loaders will fill the Haku trailers and will be transported out into the Srahmore peat deposition bays. The trailers and haku trailers will travel out to the deposition area on a dedicated internal road and travel back on a different internal road. This one way system will minimise internal traffic conflicts.
- Within the administration area of the Peat Reception Hardstand there is defined parking spaces for 9 No. cars and 10 No. Heavy Good Vehicles. There is also a traffic overflow area to accommodate any additional vehicles. This overflow area is rarely used.

Section 2 of the EIS details the proposed activities of the development and includes pictures and figures of how activities were managed during operations in 2005 and 2007. Section 2.7 of the EIS outlines the operational plant requirements for the Srahmore operation. The overnight accommodation of Haulage Vehicles will not generally be permitted within the Srahmore site, however dedicated parking is provided for emergency situations whereby instructions have been issued by the Traffic Manager or the Garda Siochana to immediately cease travel on the public road network.

Item 5 – Submit details of the waste inspection and acceptance procedure in line with the Agency’s *Waste Licensing Application Guidance Notes 2005*.

The EPA *Waste Licensing Application Guidance Notes 2005* indicate that procedures for checking waste loads as they arrive on site must be included. A clear description of the manner by which waste are to be checked should be given, including documenting time of deliveries and management of such documentation.

It is proposed that Bord na Móna will have a representative present at the site of the on-shore pipeline route when peat is being excavated. This person will be responsible for inspecting and ensuring that only peat loads which are appropriate and designated for Srahmore are actually accepted at Srahmore.

There will be another Bord na Móna representative present at the Srahmore Peat Reception area to inspect each peat load as it unloads. This will ensure that only peat is permitted in this area.

A waste inspection area is located immediately after the weighbridge on the Peat Reception Hardstand. Further, there is a waste quarantine area also located on the Peat Reception Hardstand.

The checking at the excavation area and at Srahmore Peat Reception area is considered a robust procedure to ensure that only peat material is imported and deposited at the Srahmore site.

As detailed in Item 4 above, as each vehicle enters the site it will be weighed in at a weighbridge. This weighbridge will record the weight and time of delivery. This documentation will be documented and maintained for any future investigation. This procedure was operated during previous activities in 2005 and 2007 and worked effectively in documentation management.

Item 6 – Confirm whether or not the licence applicant has been convicted of an offence under any environmental legislation, e.g. the Waste Management Acts, 1996-2008, the Environmental Protection Agency Acts, 1992-2007, the Local Government (Water Pollution) Acts 1977-1990, etc.

As detailed in Attachment L (Statutory Requirements) of the Waste Licence Application (Page 47 of Attachments to Waste Licence), it is confirmed that Bord na Móna has not been convicted of an offence under any environmental legislation. A letter from Bord na Móna confirming this is included in Appendix D.

ARTICLE 13 COMPLIANCE REQUIREMENTS

Item 1 - Surface Water

Clarify whether the locations for monitoring surface water and surface water run-off during the initial site investigation (October 2003), are the same as those detailed in the waste licence application (Reg. No. W0199-02), and those monitoring points used under the Waste Licence Reg. No. W0199-01 (i.e. identified in the Annual Environmental Reports).

The surface water locations and the analysis presented in Table 9.1 of the original EIS (SW1-SW6 inclusive), are the same as those detailed in the current EIS (Table 9.3 of the EIS, May 2009).

The surface water points proposed in the Waste Licence Application W0199-02 and exactly the same as those required for monitoring under Schedule C2.2 of W0199-01. The references used in Waste Licence W0199-02 are the same as those previously used in the Srahmore AERs that were submitted in 2005, 2006, 2007 and 2008. The references are clarified below:

- Location 7 (combined outfall from Area 5 and 6) is the same as SW4 (Grid Ref E083978, N324026);
- Outfall from S5-1 Settlement Pond is the same as SW100 (Grid Ref E084859, N232115); and
- Outfall from S5-2 Settlement Pond is the same as SW101 (Grid Ref E084189, N323106).

Sampling at Location 7 (referred to by Bord na Móna in AERs as SW4) is by means of a composite sampler. This was not installed at the time of the original EIS in 2003. The location of the Location 7 sampling point is in the same area as the sample SW2 referenced in the original (2003) and current (2009) EIS.

Sampling of the outfall from settlement pond S5-1 (referred to by Bord na Móna in AERs as SW100) was not undertaken during the original EIS in 2003.

Sampling of the outfall from settlement pond S5-2 (referred to by Bord na Móna in AERs as SW101) was undertaken during the original EIS in 2003 and corresponds to sampling point SW6 referenced in the original (2003) and current (2009) EIS.

Sampling point SW4 and SW5 referenced in the original (2003) and current (2009) EIS correspond to the Upstream and Downstream sampling points on Munhin River required Schedule C(6) of W0199-01.

Figure 1 and Figure 2, as requested below, are provided to clarify the location of all surface water monitoring points. This clarifies the sampling point locations referenced in the original (2003) and current (2009) EIS, the Waste Licence W0199-01, the Bord na Móna AERs and the current Waste Licence Application W0199-02.

Submit a map/maps clearly identifying the locations of all surface water monitoring points.

Figure 1 and Figure 2 are provided to clarify the location of all surface water monitoring points referenced in the original (2003) and current (2009) EIS, together with surface water monitoring points referenced in the Waste Licence W0199-01, the Bord na Móna AERs and Waste Licence Application W0199-02.

Provide an assessment of the upstream and downstream monitoring data and determine the impact, if any, of the previous operations of the facility (under Waste Licence Reg. Mo. W0199-01) on surface water. The monitoring data for the periods prior to the commencement of peat deposition, during peat deposition activities and after completion of peat deposition activities should be considered in this assessment. This assessment should take account of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 and should address, inter alia, water quality levels for suspended solids and ammonia.

The full set of monitoring data for the Munhin River, upstream and downstream of the discharge from the Srahmore site is presented in Appendix A.

Schedule C(6) indicates that in terms of physico-chemical parameters, Ammonia and Suspended Solid concentration should be monitored upstream and downstream of the Srahmore discharge point. In addition to the physico-chemical sampling, a biotic index survey is required annually.

With regard to the Biotic Index Survey, due to watercourse conditions in 2003 it was not possible to safely undertake a biotic index survey. Section 7.3.3 of the EIS (Page 7.8) indicates that, based on surveys undertaken in 2005 and 2007 the Q-rating of the Munhin River improved from a Class C 9 (Moderately Polluted) upstream to Class B (Slightly Polluted) downstream. The results indicate that the biological quality of the Munhin River has not been negatively impacted as a result of the peat deposition activities or the discharge of treated water from the site.

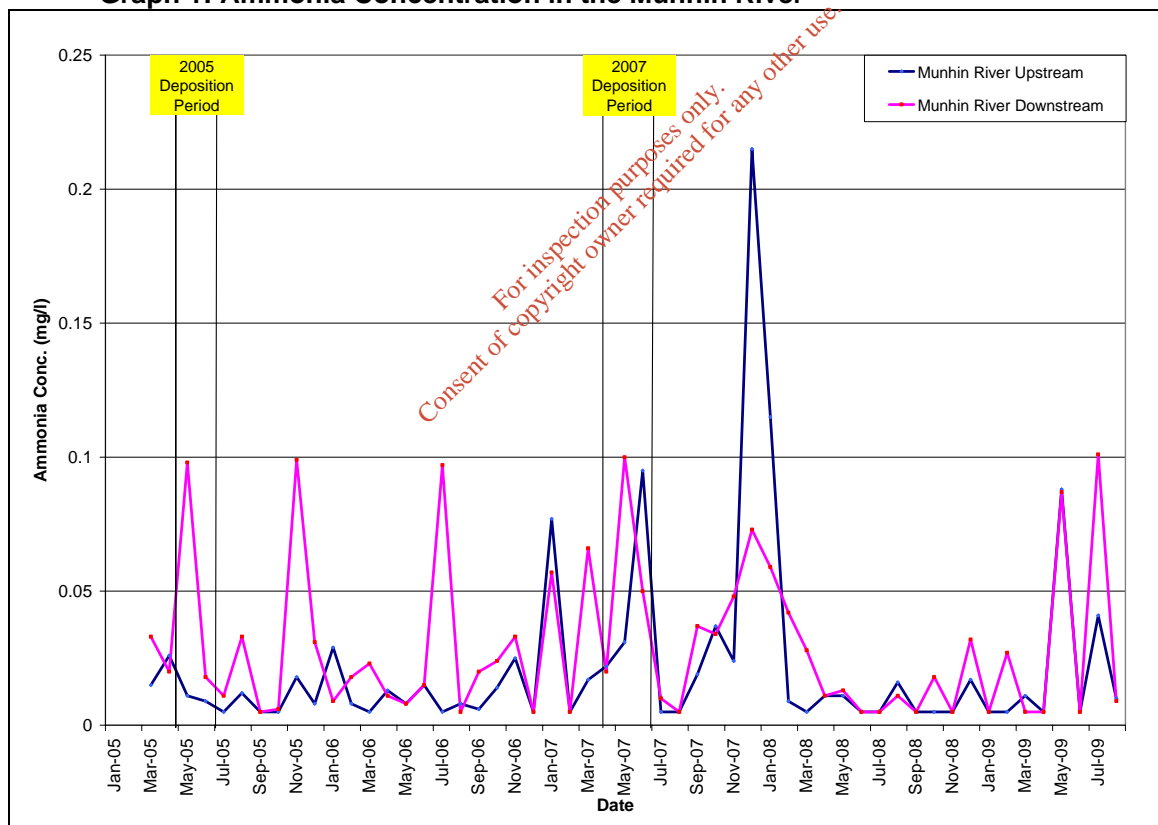
With respect to the physico-chemical sampling requirements, the data is presented in Graph 1 (Ammonia Concentration) and Graph 2 (Suspended Solid Concentration) below.

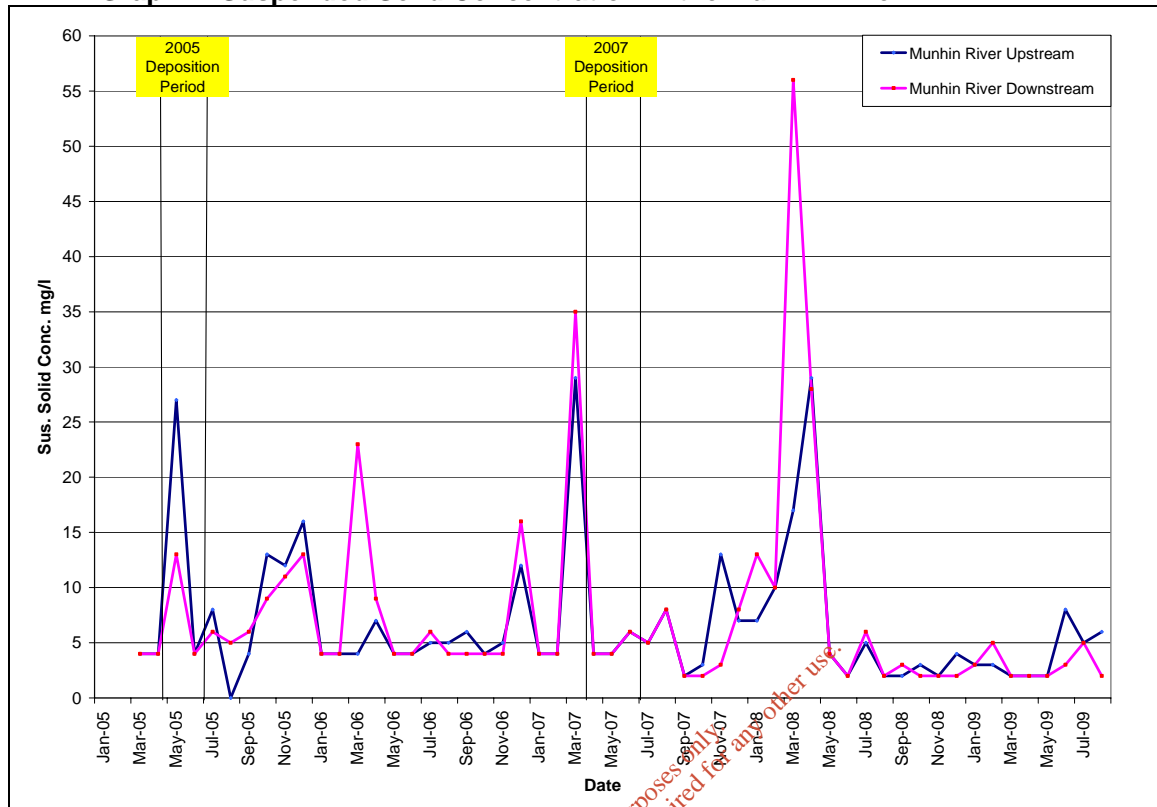
These graphs show the recorded Ammonia Concentration and Suspended Solid Concentration in the Munhin River. For clarity, the active periods of peat deposition have been highlighted on these graphs. The pre deposition, the interval between deposition phases (2005 and 2007) and post deposition are shown.

From analysis of the data there is a general common trend between the concentration of ammonia and suspended solids upstream and downstream of the Srahmore discharge, with isolated divergences. There are peaks in the ammonia concentration downstream of the Srahmore discharge, however there is no discernible trends to suggest any progressive change in surface water quality from pre-deposition conditions.

It is noted that there are instances where the ammonia concentration is slightly higher upstream than downstream. There are also some more pronounced instances where the suspended solids concentration is higher upstream than downstream.

Graph 1: Ammonia Concentration in the Munhin River



Graph 2: Suspended Solid Concentration in the Munhin River

While acknowledging peaks in Ammonia and Suspended Solids, it is submitted that the physico-chemical analysis is beneficial in demonstrating that the discharge from the Srahmore site is not resulting in an overall negative impact on the surface water environment.

The graphs are useful in demonstrating the peaks in the Ammonia and Suspended Solid concentration outside the main phases on peat deposition in the Srahmore site. This suggests that this is linked to the overall regional terrain rather than site specific activities within Srahmore.

The EPA has requested that in this assessment account should be taken of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009). These regulations give effect to the measures needed to achieve the environmental objectives of the Water Framework Directive.

These regulations indicate that for High Status River Water Body, the Total Ammonia would have a mean concentration of equal or less than 0.04mg/l or a 95% of equal or less than 0.09mg/l. Graph 1 indicates that the upstream and downstream sampling of the Munhin River would achieve this standard, even allowing for the isolated peaks in Ammonia Concentration. Again, the natural bog land terrain in the Northwest of Ireland should be considered, where Ammonia is a naturally elevated parameter.

Clarify when the monitoring data in Table 9.3 of the EIS was taken.

The surface water data provided in Table 9.3 of the EIS (May 2009) is analysis of samples (SW1-SW6 inclusive) which were obtained on 29th October 2003. This is stated in Section 9.3.3 of the EIS (1st Paragraph Page9-12).

The location of all surface water monitoring points are shown on Figure 1 and Figure 2.

Item 2 - Groundwater

Submit a map/maps clearly identifying the locations of all groundwater monitoring points – those used in the original site investigation (October 2003), those identified in monitoring carried out under the terms of the Waste Licence Reg. No. W0199-01 (referred to in the Annual Environmental Reports) and those used in the W0199-02 waste licence application.

Figure 3 is provided to show the location of all groundwater monitoring points.

References to groundwater monitoring boreholes BH1A and BH1B (screened in subsoil and bedrock respectively), BH2A and BH2B (screened in subsoil and bedrock respectively) and BH3A and BH3B (screened in subsoil and bedrock respectively) are consistent in all documentation, i.e. the original October 2003 submission, the Waste Licence Reg. No. W0199-01, the AERs and the Waste Licence application W0199-02.

The original BH4 was drilled towards the centre of Area 6. This borehole was located on a high field. As part of the Srahmore construction works, the original BH4 was decommissioned as the high field was required to act as an internal haul road.

Bord na Móna subsequently drilled a new paired borehole set BH4A and BH4B (screened in the subsoil and bedrock respectively) to the south of Peat Reception Hardstand. These boreholes were required to specifically accord to Condition 8.10.1 of the Waste Licence W0199-01.

The existing network of groundwater monitoring boreholes is in accordance with Condition 8.10.1, whereby:

- BH3A & BH3B act as an upgradient monitoring borehole;
- BH4A & BH4B act as a downgradient monitoring borehole from the peat reception area; and

- BH1A, BH1B, BH2A and BH2B act as downgradient monitoring boreholes from Area 6.

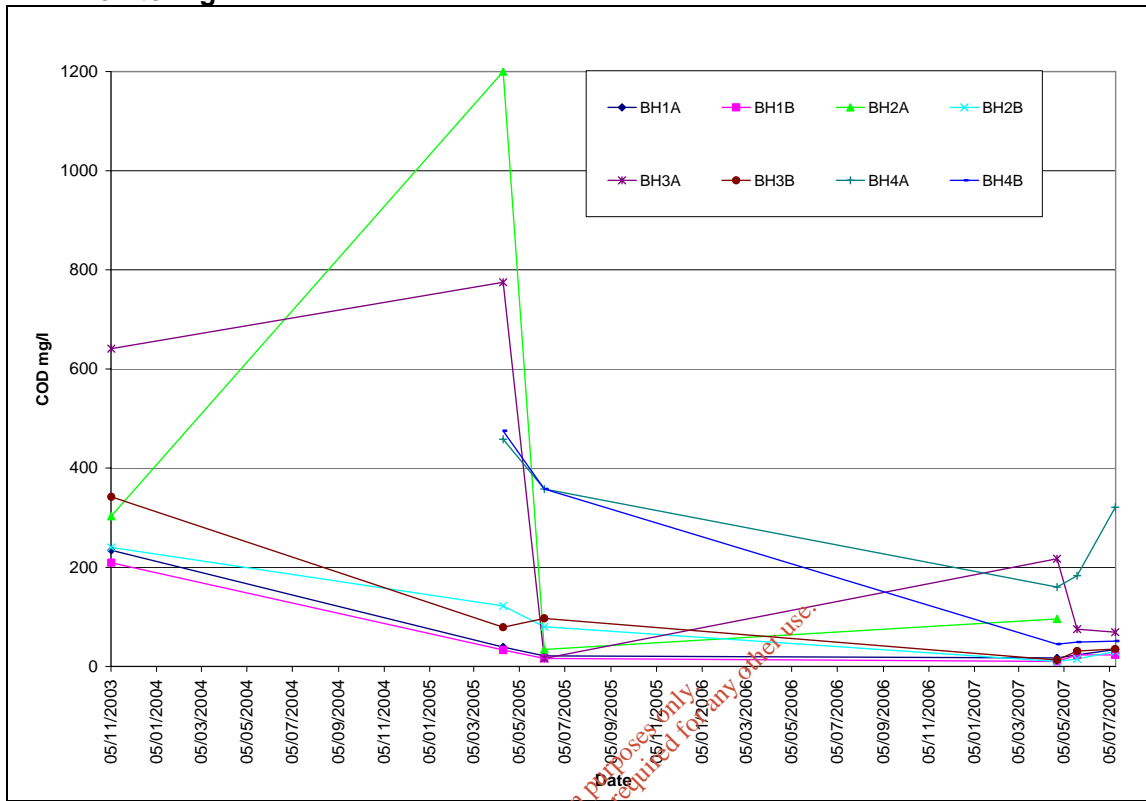
In hindsight, it is acknowledged, that the numbering of the new boreholes BH4A and BH4B to the south of the Peat Reception Hardstand may have resulted in confusion. However, as all previous AERs have been compiled using this alpha-numerical numbering system, it is proposed to maintain this in all future reporting.

Provide an assessment of the impacts, if any, of the operations of the facility on groundwater during its operation in accordance with Waste Licence Reg. No. W0199-01. The monitoring data for the periods prior to the commencement of the peat deposition activities, during peat deposition and after completion of the peat deposition activities should be considered. This assessment shall consider the Agency's Publication *Towards Setting Guideline Values for the Protection of Groundwater in Ireland, Interim Report*, and shall compare groundwater quality levels on a year on year basis as well as with baseline data.

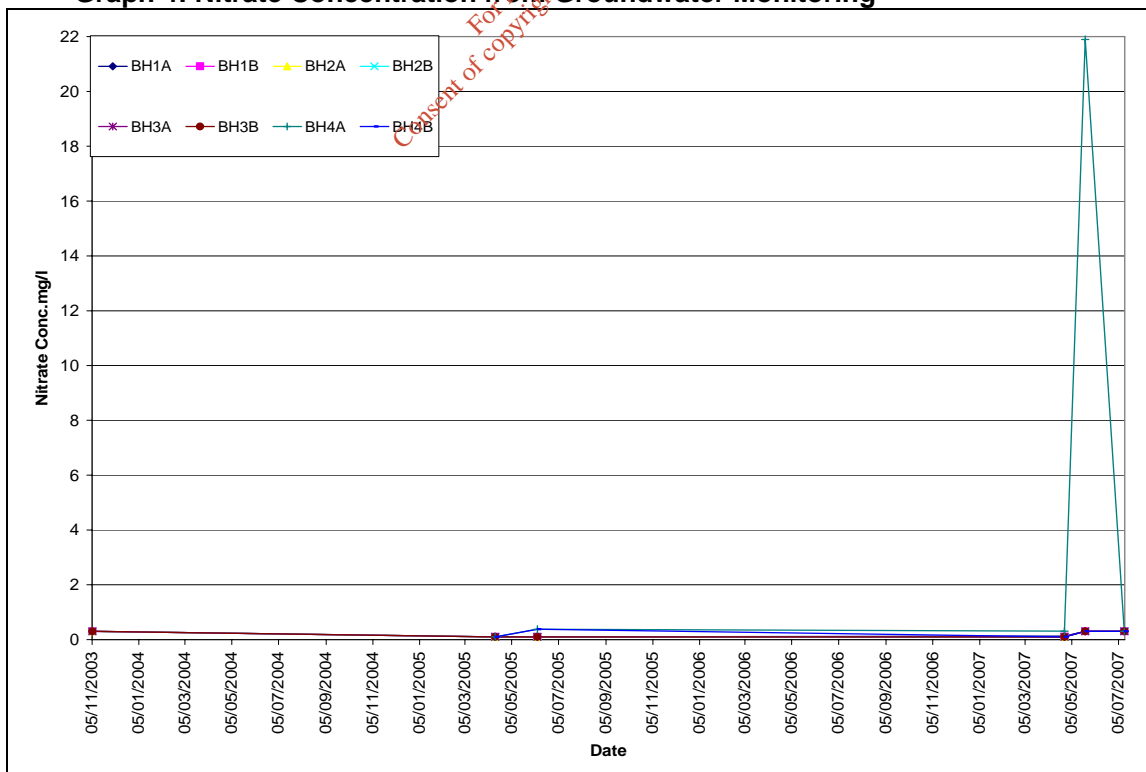
Schedule C(6) of W0199-01 indicates that groundwater monitoring should be undertaken on a Biannual basis from all groundwater monitoring boreholes. The parameters required for analysis were COD (Chemical Oxygen Demand), Nitrate, Total Ammonia, Conductivity and Diesel Range Organics.

Graphs 3-7 inclusive show the groundwater analysis dataset for the prescribed groundwater parameters in Schedule C(6).

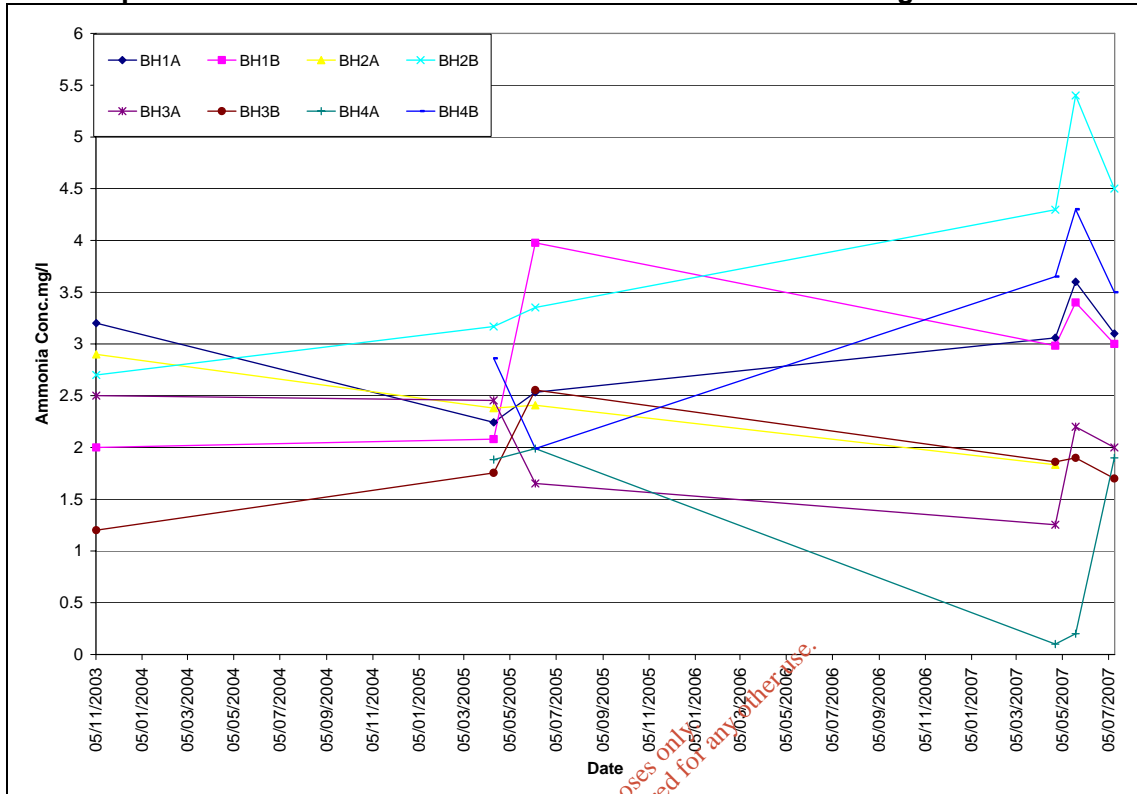
Graph 3: Chemical Oxygen Demand Concentration from Groundwater Monitoring



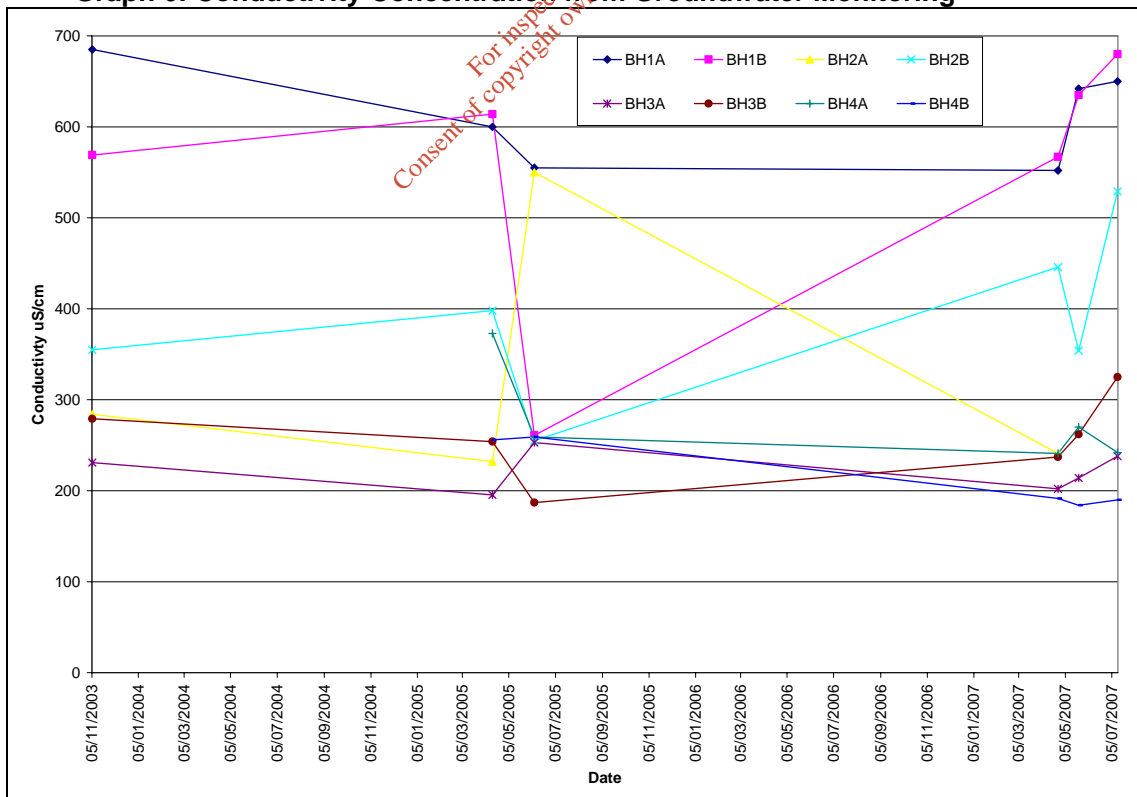
Graph 4: Nitrate Concentration from Groundwater Monitoring

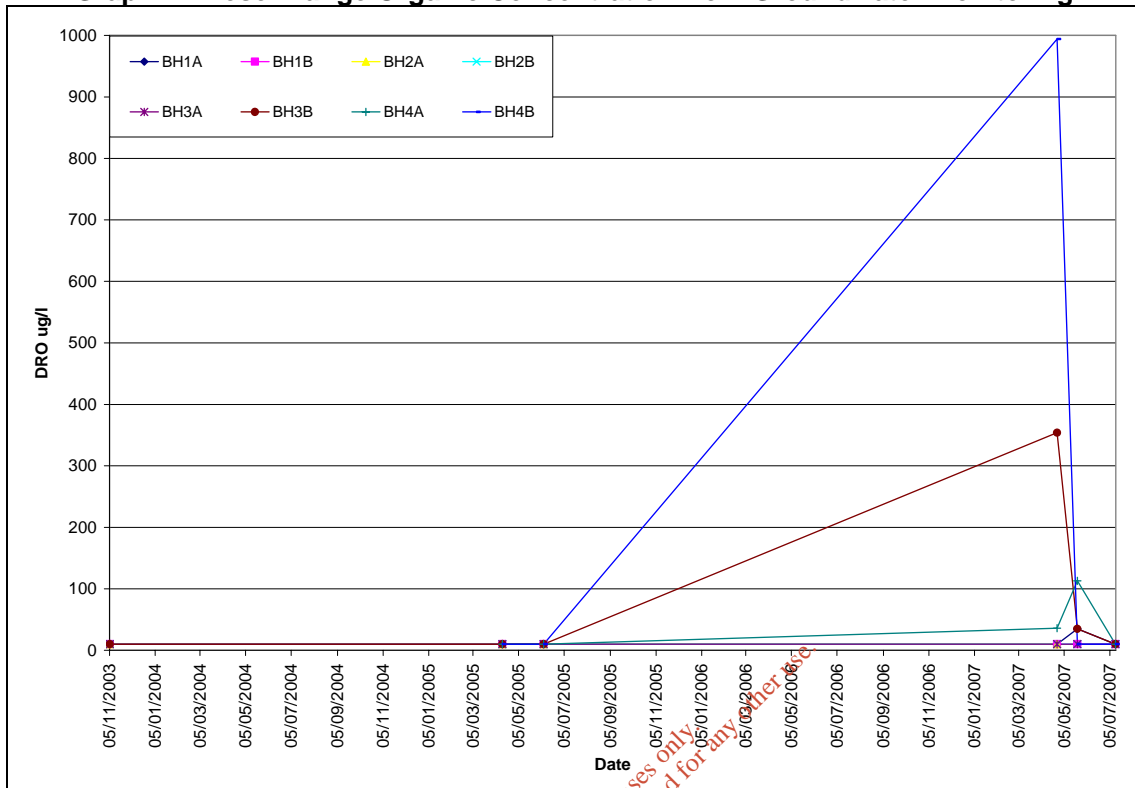


Graph 5: Ammonia Concentration from Groundwater Monitoring



Graph 6: Conductivity Concentration from Groundwater Monitoring



Graph 7: Diesel Range Organic Concentration from Groundwater Monitoring

The concentration of COD (Graph 3) and Conductivity (Graph 6) in the groundwater is erratic. High concentrations of COD is common in groundwater derived in bog terrain. This is due to the fact that peat is biological inert but chemically active. The variation of conductivity of the in the groundwater samples is again likely due to the presence of peat particles. A heavy sediment load occurs in groundwater samples from Srahmore as these are not permanently pumped. The purging the boreholes would agitate the water column and disturb sediment. The EPA Interim Report – Towards Setting Guideline Values for the Protection of Groundwater in Ireland does not recommend an Interim Guideline Value for COD but recommends an Interim Guideline Value of 1500uS/cm for Conductivity. All groundwater analysis of groundwater has recorded Conductivity values below 700uS/cm.

The Nitrate concentration in the groundwater is very low and generally recorded less than 0.4mg/l. This is consistent with the low Nitrate in the surface water environment. The low nitrate in the groundwater and surface water environment is a common feature to area of extensive bog terrain, which are reducing environments. The only exception is a recorded concentration of Nitrate of 21.9mg/l for Borehole BH4A on the 22nd May 2007. The high concentration of nitrate on this occasion is likely a laboratory error, as such a concentration would be inconsistent with the terrain and other groundwater analysis. The EPA Interim Report – Towards Setting Guideline Values for the Protection of Groundwater in Ireland recommends an Interim

Guideline Value of 25mg/l. All groundwater samples have been below this value and are likely to stay below this level into the future.

The Ammonia concentration in the groundwater is again somewhat erratic, with Boreholes BH1A, BH2B and BH4B showing a general upward trend, whereas BH1B, BH2A, BH3A, BH3B and BH4A showing a general downward trend. The concentration of Ammonia is generally within the concentration range of 1mg/l to 4.5mg/l. The EPA Interim Report – Towards Setting Guideline Values for the Protection of Groundwater in Ireland recommends an Interim Guideline Value of 0.15mg/l for Ammonia. It is submitted that the natural geochemistry of the groundwater is such that this guideline value will never be reached. The elevated concentration of ammonia in the groundwater is a factor of the geological regime, whereby any nitrogen in the groundwater is reduced to Ammonia.

The Diesel Range Organic concentration was consistently below detection limits until April 2007. On the 25th April 2007 borehole BH3B, BH4A and BH4B recorded DRO concentrations of 354ug/l, 36ug/l and 994ug/l respectively. A repeat round of sampling was undertaken on 22nd May 2007, with a DRO concentration of 35ug/l recorded in BH1A, 35ug/l recorded in BH3B, 113ug/l recorded in BH4A and <10ug/l recorded in BH4B. A repeat groundwater sampling survey was undertaken on 12th July 2007 and found the concentration of DRO of all boreholes to be below the detection limit of the laboratory (i.e. <10ug/l). From review of the data and the sampling methodology it is suggested that the recording of DRO is most likely a factor of exhaust fumes from the sampling pump rather than contamination of the groundwater. Exhaust fumes will contain PAHs which would show up in the gross DRO analysis. It has been recommended to Bord na Móna that this pump would not be used in the future for obtaining groundwater for DRO analysis.



GENERAL LEGEND

LANDS UNDER CONTROL OF DEVELOPER

SITE ACTIVITY BOUNDARY

- NOTES**
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
 2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
 3. ENGINEER TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 4. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD
 5. OS DISCOVERY SHEET NO: F - 0832

Rev	Date	Description	By	Chkd.
A	29-09-09	ISSUED EPA Art 12&13 REQUEST	MC	DG

Applicant: Shell E&P Ireland Limited
Corrib House, 52 Leeson Street Lower,
Dublin 2, Republic of Ireland.

Operator: **BORD NA MÓNA**

Project: CORRIB ONSHORE PIPELINE DEVELOPMENT

Aspect: SRAHMORE PEAT DEPOSITION SITE

Title: REGIONAL SURFACE WATER MONITORING LOCATION PLAN

Scale @ A1: 1:10,000 @ A3

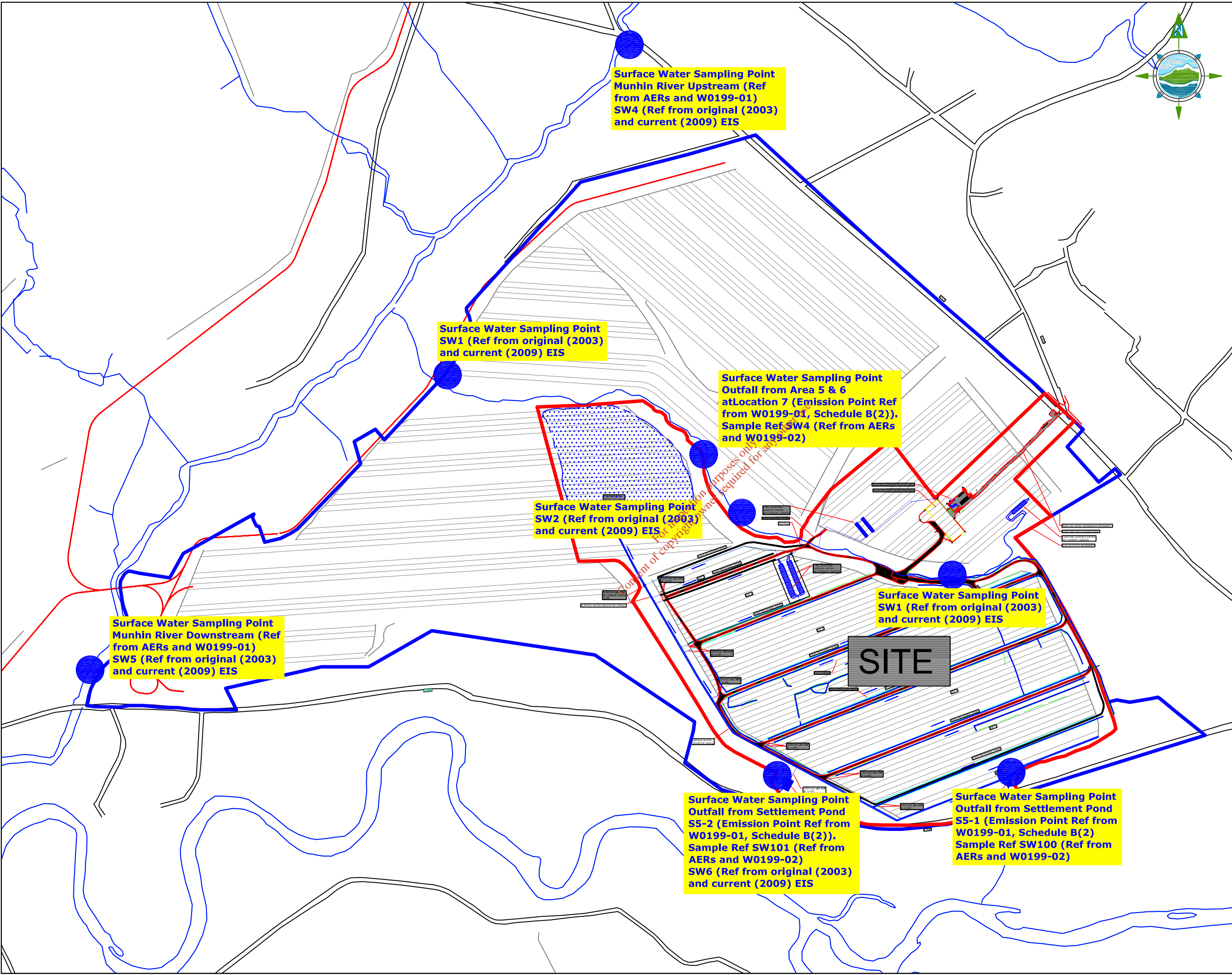
Prepared by: M Conroy
Checked: D. Grehan
Date: Sept 2009

Project Director: S. Finlay

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Drawing No: **FIGURE 1** A



LEGEND

- SITE OWNERSHIP BOUNDARY
- SITE ACTIVITY BOUNDARY
- HAUL ROAD
- HIGH FIELD
- FIELD DRAIN
- HIGH FIELD TOE DRAIN
- SURFACE WATER FLOW DIRECTION

- NOTES**
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
 2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
 3. ENGINEER TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 4. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Rev	Date	Description	By	Chkd.
A	29-09-09	ISSUED EPA Art 12&13 REQUEST	MC	MN

Applicant:

Operator:

Project: CORRIB ONSHORE PIPELINE DEVELOPMENT

Aspect: SRAHMORE PEAT DEPOSITION SITE

Title: SITE DRAINAGE LAYOUT PLAN

Scale @ A1: 1:10,000 @ A3

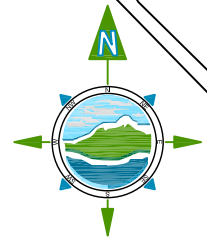
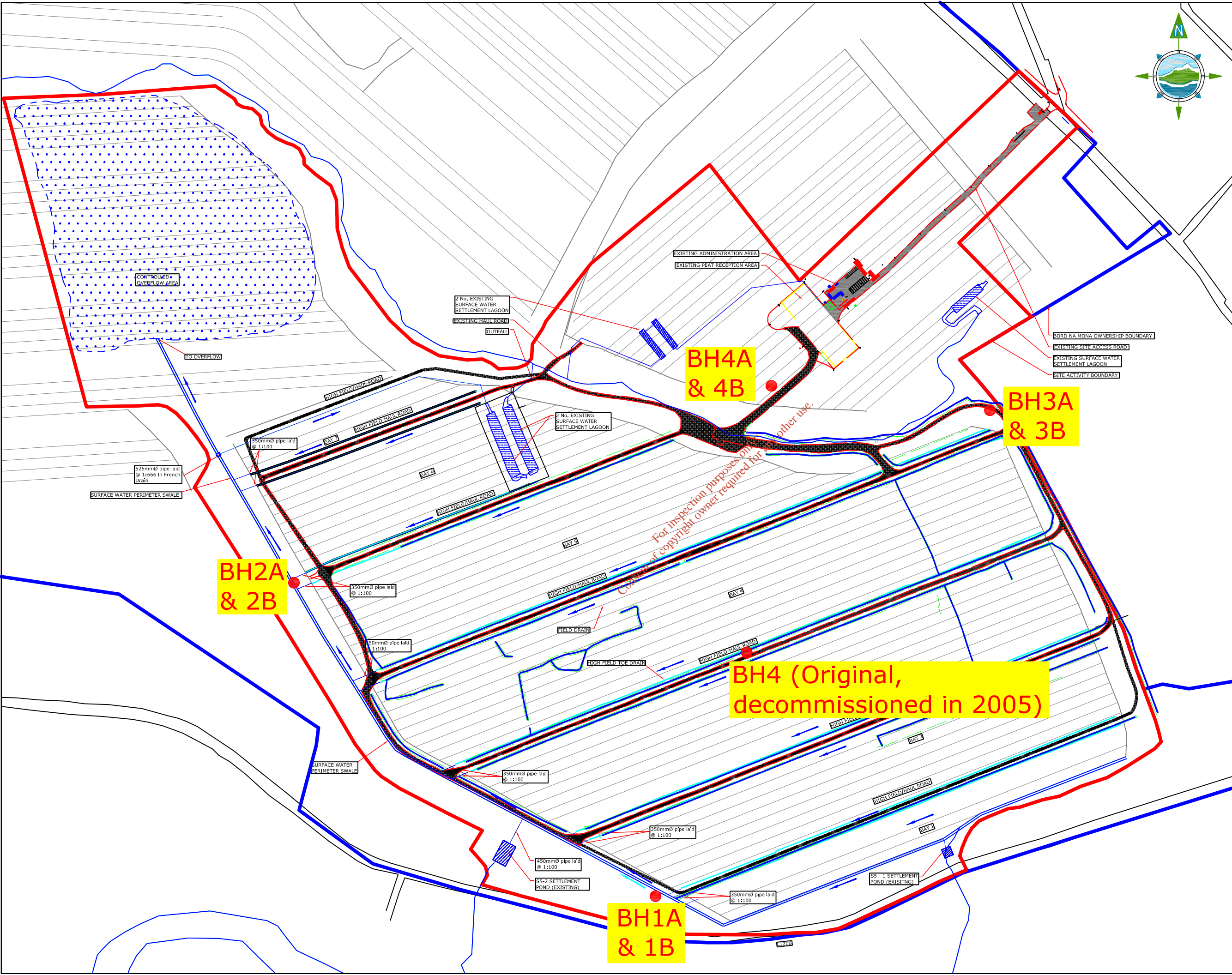
Prepared by: M. Nolan Checked: M. Conroy Date: Feb 2009

Project Director: S. Finlay

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Drawing No. **FIGURE 2** Revision: **A**



- LEGEND**
- SITE OWNERSHIP BOUNDARY
 - SITE ACTIVITY BOUNDARY
 - HAUL ROAD
 - HIGH FIELD
 - FIELD DRAIN
 - HIGH FIELD TOE DRAIN
 - SURFACE WATER FLOW DIRECTION

- NOTES**
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 4. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Rev	Date	Description	By	Chkd.
A	29-09-09	EPA Art 12&13 REQUEST	MC	DG

Applicant:

Operator:

Project: CORRIB ONSHORE PIPELINE DEVELOPMENT

Aspect: SRAHMORE PEAT DEPOSITION SITE

Title: GROUNDWATER MONITORING LOCATION PLAN

Scale @ A1: 1:5,000 @ A3

Prepared by: M. Conroy Checked: M. Conroy Date: Sept 2009

Project Director: S. Finlay

Patrick J. Tobin & Co. Ltd.

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Drawing No.: **FIGURE 3** Revision: **A**

APPENDIX A

Srahmore Surface Water & Groundwater Monitoring Data (2005-2009)

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Srahmore Waste Licence W199-1				
	Munhin River			
	Upstream		Downstream	
	SS	Ammonia	SS	Ammonia
Date	(mg/l)	(mg/l)	(mg/l)	(mg/l)
07 March 2005	<4	0.015	<4	0.033
04 April 2005	4	0.026	<4	0.02
03 May 2005	27	0.011	13	0.098
06 June 2005	<4	0.009	<4	0.018
04 July 2005	8	<0.005	6	0.011
01 August 2005	<4	0.012	5	0.033
05 September 2005	4	<.005	6	<.005
03 October 2005	13	<.005	9	0.006
07 November 2005	12	0.018	11	0.099
05 December 2005	16	0.008	13	0.031
09 January 2006	4	0.029	<4	0.009
06 February 2006	<4	0.008	<4	0.018
06 March 2006	<4	0.005	23	0.023
03 April 2006	7	0.013	9	0.011
08 May 2006	<4	0.008	4	0.008
05 June 2006	<4	0.015	<4	0.015
03 July 2006	5	<.005	6	0.097
06 August 2006	5	0.008	<4	<.005
04 September 2006	6	0.006	<4	0.02
02 October 2006	<4	0.014	<4	0.024
06 November 2006	5	0.025	<4	0.033
04 December 2006	12	<0.005	16	<.005
07 January 2007	<4	0.077	<4	0.057
05 February 2007	<4	<0.005	<4	<0.005
05 March 2007	29	0.01	35	0.066
09 April 2007	<4	0.022	<4	0.02
07 May 2007	<4	0.031	<4	0.1
04 June 2007	6	0.095	6	0.05
02 July 2007	5	0.005	5	0.01
06 August 2007	8	<0.005	8	<0.005
03 September 2007	2	0.019	2	0.037
08 October 2007	3	0.037	<2	0.034
05 November 2007	13	0.024	3	0.048
03 December 2007	7	0.215	8	0.073
07 January 2008	7	0.115	13	0.059
04 February 2008	10	0.009	10	0.042
03 March 2008	17	<0.005	56	0.028
07 April 2008	29	0.011	28	0.011
05 May 2008	<2	0.011	<2	0.013
02 June 2008	<2	<0.005	<2	<0.005
07 July 2008	5	<0.005	6	<0.005
04 August 2008	2	0.016	<2	0.011
08 September 2008	2	<0.005	3	<0.005
06 October 2008	3	<0.005	<2	0.018
03 November 2008	<2	<0.005	2	<0.005
08 December 2008	4	0.017	<2	0.032
05 January 2009	3	<0.005	3	<0.005
02 February 2009	3	<0.005	5	0.027
02 March 2009	<2	0.011	2	<0.005
06 April 2009	<2	<0.005	2	<0.005
04 May 2009	2	0.088	2	0.087
08 June 2009	8	<0.005	3	<0.005
06 July 2009	5	0.041	5	0.101
03 August 2009	6	0.01	<2	0.009

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
01 April 2005	1796046		348		17							
02 April 2005	733597		360		14							
03 April 2005	550613	7.5	378	39	18	181	0.718	0.718	0.038	0.058		
04 April 2005	683042		387		11							
05 April 2005	1369327		361		11							
06 April 2005	7733507		299		29							
07 April 2005	8298909		202		184							
08 April 2005	2013001		224		81							
09 April 2005	1211046		240		46							
10 April 2005	922529	7.3	259	74	44	107	0.543					
11 April 2005	810799		286		16							
12 April 2005	1380660		291		20							
13 April 2005	8280152		259		33							
14 April 2005	7801484		224		42							
15 April 2005	1922850		225		30							
16 April 2005	1162025		235		28							
17 April 2005	5311352	7	242	68	65	142	0.611					
18 April 2005	1558482		237		23							
19 April 2005	872787		262		20							
20 April 2005	630815		281		17							
21 April 2005	567172		313		18							
22 April 2005	655535		334		16							
23 April 2005	646133		340		15							
24 April 2005	595091	7.28	349	47	18	168	0.596					
25 April 2005	460216		357		18							
26 April 2005	687877		372		11							
27 April 2005	1084323		322		14							
28 April 2005	6082646		263		13							
29 April 2005	1168783		280		10							
30 April 2005	759767		317		10							
01 May 2005	773469	7.5	338	23	13	205	0.568	0.454	0.015	0.063		
02 May 2005	3299317		295		8							
03 May 2005	4026625		239		8							
04 May 2005	1268728		269		8							
05 May 2005	1119623		300		5							
06 May 2005	1433121		303		6							
07 May 2005	1472092		294		7							
08 May 2005	1374480	7.5	313	33	5	275	0.079					
09 May 2005	2069279		275		8							
10 May 2005	3679895		302		4							
11 May 2005	1605809		301		6							
12 May 2005	1628067		306		4							
13 May 2005	1725912		330		4							
14 May 2005	1892315		360		8							
15 May 2005	1842739	7.2	379	45	4	198	0.427					
16 May 2005	1923734		384		<4							
17 May 2005	2008558		424		13							
18 May 2005	2331617		435		6							
19 May 2005	1967145		415		6							
20 May 2005	2191372		376		9							
21 May 2005	2250370		397		8							
22 May 2005	2591153	7.6	377	32	10	186	0.516					
23 May 2005	2992960		357		9							
24 May 2005	2092336		384		<4							
25 May 2005	23151200		286		16							
26 May 2005	8507733		187		71							
27 May 2005	3965113		236		49							
28 May 2005	11914150		205		71							
29 May 2005	3749650	6.6	222	117	39		0.597					
30 May 2005	3104217		256		42							
31 May 2005	3225590		268		23							
01 June 2005	20972340		180		31							
02 June 2005	30383950		141		62							
03 June 2005	10117870		155		92							
04 June 2005	6090265		190		81							
05 June 2005	3139602	6.8	225	102	35	156	0.209	0.414	0.03	0.04		
06 June 2005	1439474		251		9							
07 June 2005	946022		277		16							
08 June 2005	886635		303		9							
09 June 2005	2323661		230		74							
10 June 2005	911771		277		39							
11 June 2005	1070076		293		33							
12 June 2005	1163709	7.3	348	64	24	175	0.575			0.06	10	

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
13 June 2005	1247147		385		10							
14 June 2005	776088		415		9							
15 June 2005	925555		400		8							
16 June 2005	2124038		342		14							
17 June 2005	2203136		307		17							
18 June 2005	1639117		358		14							
19 June 2005	931377	7.6	340	39	13	181	0.376					
20 June 2005	699646		357		5							
21 June 2005	868880		349		9							
22 June 2005	2174546		400		10							
23 June 2005	4345543		278		<4							
24 June 2005	1243007		263		15							
25 June 2005	927690		312		14							
26 June 2005	916854	7.3	331	51	13	186	0.272					
27 June 2005	375238		343		<4							
28 June 2005					<4							
29 June 2005					4							
30 June 2005					4							
01 July 2005	2475990		344		4							
02 July 2005	1861890		360		5							
03 July 2005	2067810	7.8	384	37	9	203	0.329	0.009	0.55	0.068		
04 July 2005	2394990		400		<4							
05 July 2005	1869270		430		<4							
06 July 2005	2041740		369		<4							
07 July 2005	2192760		368		6							
08 July 2005	2351820		373		14							
09 July 2005	4259790		302		11							
10 July 2005	3159990	7.4	323	40	8	179	0.176			0.056		
11 July 2005	2949000		345		4							
12 July 2005	2221710		365		<4							
13 July 2005	2103630		378		4							
14 July 2005	1806120		383		4							
15 July 2005	2612340		398		4							
16 July 2005	2327040		425		5							
17 July 2005	2235540	7.4	429	30	6	176	0.308			0.061	6	22
18 July 2005	2896500		423		<4							
19 July 2005	2198760		424		<4							
20 July 2005	2126340		438		<4							
21 July 2005	2338260		443		<4							
22 July 2005	2215410		442		<4							
23 July 2005	2592000		444		<4							
24 July 2005	2941140	7.8	448	22	<4	243	0.148			0.046		
25 July 2005	2762250		460		<4							
26 July 2005	2390220		466		<4							
27 July 2005	2471910		474		<4							
28 July 2005	2522310		470		<4							
29 July 2005	2511630		456		<4							
30 July 2005	2366400		457		<4							
31 July 2005	2387460	7.7	465	30	4	209	0.145	0.19	0.333	0.035		
01 August 2005	2560350		466		4							
02 August 2005	2733150		473		<4							
03 August 2005	2683200		472		<4							
04 August 2005	2719890		465		<4							
05 August 2005	2801220		457		<4							
06 August 2005	3030990		450		<4							
07 August 2005	3182250	8	460	18	4	253	0.021					
08 August 2005	3222690		462		<4							
09 August 2005	2833350		476		<4							
10 August 2005	3007860		462		<4							
11 August 2005	2971530		469		<4							
12 August 2005	2963550		471		<4							
13 August 2005	3114780		473		<4							
14 August 2005	3125280	7.6	449	17	8	199	0.087					
15 August 2005	3038250		473		<4							
16 August 2005	3043830		477		<4							
17 August 2005	3005040		475		<4							
18 August 2005	6748920		389		<4							
19 August 2005	5251860		419		<4							
20 August 2005	4472550		369		5							
21 August 2005	3874890	7	374	46	8	209	0.362					
22 August 2005	6449340		335		4							
23 August 2005	4944660		341		<4							
24 August 2005	12195000		331		15							

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
25 August 2005	7150140		259		7							
26 August 2005	6416910		257		4							
27 August 2005	5151180		261		7							
28 August 2005	4249770	7.2	288	28	<4	232	0.425					
29 August 2005	6029250		287		<4							
30 August 2005	6281070		280		<4							
31 August 2005	4582950		294		9							
01 September 2005	4339230		332		10							
02 September 2005	3929370		340		MF							
03 September 2005	148860		348		MF							
04 September 2005	0	6.7	373	56	44	267	0.727					
05 September 2005	0		393		<4							
06 September 2005	0		368		<4							
07 September 2005	0		389		4							
08 September 2005	13011930		399		4							
09 September 2005	15932250		394		5							
10 September 2005	4948350		400		5							
11 September 2005	1388940	7.2	393	49	7	262	0.594					
12 September 2005	1323870		404		6							
13 September 2005	1467990		394		<4							
14 September 2005	2674710		338		<4							
15 September 2005	2605380		328		<4							
16 September 2005	4353540		313		4							
17 September 2005	2090940		325		9							
18 September 2005	1572690	7.4	357	<10	7	243	0.409					
19 September 2005	1587630		380		<4							
20 September 2005	7928940		291		<4							
21 September 2005	3201930		280		<4							
22 September 2005	4687290		308		5							
23 September 2005	8732460		294		8							
24 September 2005	6029010		247		7							
25 September 2005	14165160	6	243	71	13	211	0.542	0.569	0.005	0.061	<1	<1
26 September 2005	6310710		237		2							
27 September 2005	19362180		151		30							
28 September 2005	9809010		181		37							
29 September 2005	16555770		188		31							
30 September 2005	8505360		202		30							
01 October 2005	5721984		226		28							
02 October 2005	3686178	6.7	240	65	23	180	0.433	0.563	<.005	0.062	17	<1
03 October 2005	3070710		253		<4							
04 October 2005	3027282		277		5							
05 October 2005	2216646		287		<4							
06 October 2005	1892034		308		<4							
07 October 2005	3711306		331		<4							
08 October 2005	7429938		255		8							
09 October 2005	6473436	6.8	237	37.5	<4	211	0.401					
10 October 2005	33223330		157		6							
11 October 2005	11184320		164		<4							
12 October 2005	10515940		179		15							
13 October 2005	6428292		188		16							
14 October 2005	5459946		219		16							
15 October 2005	4087308		245		17							
16 October 2005	3945174	6.6	243	55	25	164	0.437					
17 October 2005	3149052		251									
18 October 2005	2742318		272									
19 October 2005	2523060		287									
20 October 2005	3161298		276									
21 October 2005	5801394		249									
22 October 2005	3743394		232									
23 October 2005	3119526		245		9							
24 October 2005	10218610		200									
25 October 2005	6336750		204									
26 October 2005	9647400		200									
27 October 2005	9359640		187									
28 October 2005	7474992		180									
29 October 2005	7484580		192									
30 October 2005	8294400		192		54							
31 October 2005	10169540		180									
01 November 2005	7479390		176									
02 November 2005	10903400		174									
03 November 2005	8040096		172									
04 November 2005	15459900		158									
05 November 2005	11988440		159									

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
06 November 2005	10818410	6.3	163	59	35	135	0.044	<.01	<.005	0.025		
07 November 2005	19303420		155									
08 November 2005	9883296		175									
09 November 2005	11752970		192									
10 November 2005	13288900		178									
11 November 2005	13581350		183									
12 November 2005	11373920		200									
13 November 2005	6693684		211		35							
14 November 2005	5350476		221									
15 November 2005	7087248		224									
16 November 2005	4557252		230									
17 November 2005	3611784		236									
18 November 2005	3130836		251									
19 November 2005	2888274		265									
20 November 2005	2719506		275		17							
21 November 2005	2598246		279									
22 November 2005	2503764		285									
23 November 2005	2216022		295									
24 November 2005	1933698		299									
25 November 2005	5162508		311									
26 November 2005	6356922		306									
27 November 2005	5558958		297		31							
28 November 2005	7154754		286									
29 November 2005	15851020		234									
30 November 2005	8797410		226									
01 December 2005	10594250		211									
02 December 2005	21264630		180									
03 December 2005	14793500		145									
04 December 2005	11704150	5.7	150	51	24	796	0.299	0.48	<.005	0.041	2	11
05 December 2005	6541578		169									
06 December 2005	11453560		155									
07 December 2005	11269490		160									
08 December 2005	9182064		147									
09 December 2005	10466100		152									
10 December 2005	8213106		156									
11 December 2005	5059488		181		10							
12 December 2005	5399064		186									
13 December 2005	3541980		208									
14 December 2005	3083796		229									
15 December 2005	2670792		245									
16 December 2005	3897258		270									
17 December 2005	2839950		254									
18 December 2005	5938176		271		45							
19 December 2005	5074086		187									
20 December 2005	4590888		201									
21 December 2005	7287840		183									
22 December 2005	4266600		192									
23 December 2005	5900754		188									
24 December 2005	4854138		193									
25 December 2005	2939766		214		14							
26 December 2005	2930814		243									
27 December 2005	2112138		257									
28 December 2005	2169720		277									
29 December 2005	4219902		266									
30 December 2005	17332000		150									
31 December 2005	16211910		137									
01 January 2006	11707290		152		33							
02 January 2006	8229876		168									
03 January 2006	7324626		168									
04 January 2006	4645332		186									
05 January 2006	7633974		194									
06 January 2006	13735700		135									
07 January 2006	5869458		151									
08 January 2006	3076710		180		19							
09 January 2006	5610972		191									
10 January 2006	10397060		157									
11 January 2006	12102380		134									
12 January 2006	7875768		153									
13 January 2006	14390690		129									
14 January 2006	8078862		134									
15 January 2006	6857838		155		24							
16 January 2006	11113640		137									
17 January 2006	9323718		130									

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
18 January 2006	5564856		156									
19 January 2006	5834898		174									
20 January 2006	11667070		162									
21 January 2006	4770894		179									
22 January 2006	3981912		185		15							
23 January 2006	3152148		211									
24 January 2006	2616084		231									
25 January 2006	2464260		249									
26 January 2006	2332596		263									
27 January 2006	2031360		275									
28 January 2006	2250810		276									
29 January 2006	1837716		284		5							
30 January 2006	1929774		302									
31 January 2006	1711578		311									
01 February 2006	1957932		313									
02 February 2006	1868226		319									
03 February 2006	1837314		328									
04 February 2006	1765728		328									
05 February 2006	1727304		332	<10	6	222	0.279	0.945	0.022	0.062		
06 February 2006	1770996		340									
07 February 2006	2092464		348									
08 February 2006	2445606		353									
09 February 2006	2488944		344									
10 February 2006	2020824		337									
11 February 2006	2206266		344									
12 February 2006	15889760		175		16							
13 February 2006	13590200		128									
14 February 2006	13027120		125									
15 February 2006	13911680		117									
16 February 2006	12102680		137									
17 February 2006	7622676		150									
18 February 2006	5600688		159									
19 February 2006	3545196		177									
20 February 2006	3264906		213									
21 February 2006	2605944		231									
22 February 2006	2361648		244									
23 February 2006	2170722		258									
24 February 2006	2232438		270									
25 February 2006	2027610		282									
26 February 2006	1931196		290		<4							
27 February 2006	2068788		302									
28 February 2006	2748180		307									
01 March 2006	3835164		287									
02 March 2006	5058318		255									
03 March 2006	3982776		230									
04 March 2006	5495376		219									
05 March 2006	6114924		192	23	7	104	0.336	0.208	0.016	0.027	<1	<1
06 March 2006	4304874		191									
07 March 2006	7084950		191									
08 March 2006	13566560		153									
09 March 2006	8932212		155									
10 March 2006	7800372		165									
11 March 2006	6968982		180									
12 March 2006	7965672		166		12							
13 March 2006	9651960		167									
14 March 2006	6258402		166									
15 March 2006	3777642		191									
16 March 2006	3134838		214									
17 March 2006	2574456		234									
18 March 2006	2360742		257									
19 March 2006	2304546		273		7							
20 March 2006	2283978		285									
21 March 2006	2156628		296									
22 March 2006	2136132		307									
23 March 2006	2178870		313									
24 March 2006	2268108		321									
25 March 2006	2305656		319									
26 March 2006	4527246		292		22							
27 March 2006	9256944		188									
28 March 2006	4334886		203									
29 March 2006	2942238		228									
30 March 2006	7686810		183									
31 March 2006	4757586		192									

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SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
01 April 2006	3928080		214									
02 April 2006	14885680	6.8	137	30	23	124	0.166	0.197	0.009	0.04		
03 April 2006	4852230		154									
04 April 2006	2873070		202									
05 April 2006	2873946		218									
06 April 2006	3117450		223									
07 April 2006	3452838		235									
08 April 2006	3869508		221									
09 April 2006	5244882		210		5							
10 April 2006	3337194		238									
11 April 2006	10006030		188									
12 April 2006	4396572		195									
13 April 2006	3620112		221									
14 April 2006	3294216		241									
15 April 2006	3240048		251									
16 April 2006	3253824		250		5							
17 April 2006	4682232		255									
18 April 2006	8771796		193									
19 April 2006	5116746		192									
20 April 2006	5191734		195									
21 April 2006	3830604		225									
22 April 2006	4165356		236									
23 April 2006	4373358		228		4							
24 April 2006	3854088		246									
25 April 2006	4250022		259									
26 April 2006	3657180		269									
27 April 2006	3385026		278									
28 April 2006	3488064		285									
29 April 2006	4018992		296									
30 April 2006	6440814		284		5							
01 May 2006	6539466		235									
02 May 2006	12280360		198									
03 May 2006	8667546		169									
04 May 2006	5444538		199									
05 May 2006	4520022		230									
06 May 2006	5870766		227									
07 May 2006	5735916	6.8	213	10	8	199	<.005	0.375	0.108	0.033		
08 May 2006	5422326		245									
09 May 2006	6012810		214									
10 May 2006	5030964		242									
11 May 2006	4783620		263									
12 May 2006	4790190		293									
13 May 2006	4685604		323									
14 May 2006	5468010		311		8							
15 May 2006	6188904		253									
16 May 2006	11545610		221									
17 May 2006	10477840		164									
18 May 2006	13856480		142									
19 May 2006	8837688		159									
20 May 2006	14995320		130									
21 May 2006	6876324		167		<4							
22 May 2006	8135034		169									
23 May 2006	6409998		196									
24 May 2006	5422752		213									
25 May 2006	5043150		241									
26 May 2006	6760974		205									
27 May 2006	5573190		228									
28 May 2006	5077392		266		<4							
29 May 2006	5161842		305									
30 May 2006	4961754		316									
31 May 2006	4935354		328									
01 June 2006	4908216		326									
02 June 2006	4825494		332									
03 June 2006	4760274		341									
04 June 2006	4991262		345									
05 June 2006	5058204		349									
06 June 2006	5043486	7.9	354	16	<4	230	0.096	0.402	0.022	0.052	<1	<1
07 June 2006	5066184		358									
08 June 2006	5281476		363									
09 June 2006	5073282		360									
10 June 2006	4919724		403									
11 June 2006	4803468		425		7							
12 June 2006	5085330		444									

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
13 June 2006	4860150		432									
14 June 2006	5147814		425									
15 June 2006	5236212		425									
16 June 2006	5405184		425									
17 June 2006	5242584		424									
18 June 2006	5850174		387		4							
19 June 2006	5349306		352									
20 June 2006	5628864		378									
21 June 2006	5201262		379									
22 June 2006	4882104		398									
23 June 2006	5048484		417									
24 June 2006	5282790		417									
25 June 2006	5217708		421		5							
26 June 2006	5201058		426									
27 June 2006	5214042		434									
28 June 2006	5278194		444									
29 June 2006	5474490		430									
30 June 2006	5304678		416									
01 July 2006	5394618		430									
02 July 2006	5276766	7.8	435	10	5	264	<.005	0.455	0.034	0.041		
03 July 2006	5319534		436									
04 July 2006	5431068		443									
05 July 2006	5458236		465									
06 July 2006	5969964		445									
07 July 2006	5684928		441									
08 July 2006	6188142		427									
09 July 2006	6983940		327		9							
10 July 2006	6027378		415									
11 July 2006	5978880		482									
12 July 2006	5978880		482									
13 July 2006	5978880		482									
14 July 2006	5978880		482									
15 July 2006	5978880		482									
16 July 2006	5978880		482									
17 July 2006	5688132		486									
18 July 2006	5589288		504									
19 July 2006	5766720		494									
20 July 2006	5675088		495									
21 July 2006	5651838		486									
22 July 2006	5972394		498									
23 July 2006	5828244		509		6							
24 July 2006	5825988		549									
25 July 2006	5915244		547									
26 July 2006	6133014		553									
27 July 2006	6333030		518									
28 July 2006	6481230		543									
29 July 2006	6347574		654									
30 July 2006	6435168		770		<4							
31 July 2006	8805804		710									
01 August 2006	6650370		709									
02 August 2006	6090336		731									
03 August 2006	5975550		743									
04 August 2006	6008556		780									
05 August 2006	6072564		701									
06 August 2006	6975558	6.9	674	17	<4	172	0.151	0.589	0.023	0.038		
07 August 2006	6276138		663									
08 August 2006	7185354		629									
09 August 2006	7164810		597									
10 August 2006	6289086		651									
11 August 2006	6154596		613									
12 August 2006	6042696		618									
13 August 2006	6018354		603		<4							
14 August 2006	6016014		587									
15 August 2006	6258594		597									
16 August 2006	6620430		584									
17 August 2006	6465594		554									
18 August 2006	6062190		530									
19 August 2006	6155730		509									
20 August 2006	6184278		514		5							
21 August 2006	6192432		528									
22 August 2006	6248586		524									
23 August 2006	6327270		513									
24 August 2006	6248544		498									

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SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
25 August 2006	6382974		520									
26 August 2006	6319128		501									
27 August 2006	6218220		495		6							
28 August 2006	6236292		503									
29 August 2006	6309972		494									
30 August 2006	7342458		490									
31 August 2006	8317212		457									
01 September 2006	7427970		450									
02 September 2006	9247296		438									
03 September 2006	8469186	7.2	411	51	5	199	0.114	0.434	0.023	0.044	1	1
04 September 2006	7465110		402									
05 September 2006	19874850		314									
06 September 2006	17182710		213									
07 September 2006	9133998		244									
08 September 2006	7443210		285									
09 September 2006	7094574		325									
10 September 2006	6587376		352		4							
11 September 2006	6408330		372									
12 September 2006	6783282		375									
13 September 2006	6588510		363									
14 September 2006	6221052		373									
15 September 2006	6039390		392									
16 September 2006	6357600		403									
17 September 2006	6539214		392									
18 September 2006	10402750		309		4							
19 September 2006	10890950		261									
20 September 2006	20276820		200									
21 September 2006	15998690		200									
22 September 2006	22380340		163									
23 September 2006	11736980		204									
24 September 2006	14641580		186		4							
25 September 2006	10659070		192									
26 September 2006	11434000		203									
27 September 2006	15203840		200									
28 September 2006	12558470		183									
29 September 2006	16139560		167									
30 September 2006	11793800		190									
01 October 2006	10364480	7	196	49	<4	166	0.291	0.5	0.109	0.045		
02 October 2006	10094380		226									
03 October 2006	9198150		222									
04 October 2006	8318568		237									
05 October 2006	20904590		163									
06 October 2006	20336510		144									
07 October 2006	13112050		165									
08 October 2006	10797990		190									
09 October 2006	10501270		184		4							
10 October 2006	9583938		213									
11 October 2006	11043070		201									
12 October 2006	12689690		183									
13 October 2006	5095716		208									
14 October 2006	*		*									
15 October 2006	*		*		<4							
16 October 2006	*		*									
17 October 2006	*		*									
18 October 2006	*		*									
19 October 2006	*		*									
20 October 2006	*		*									
21 October 2006	*		*									
22 October 2006	*		*		<4							
23 October 2006	*		*									
24 October 2006	*		*									
25 October 2006	*		*									
26 October 2006	*		*									
27 October 2006	*		*									
28 October 2006	*		*									
29 October 2006	*		*		<4							
30 October 2006	*		*									
31 October 2006	*		*									
01 November 2006	*		*									
02 November 2006	*		*									
03 November 2006	*		*									
04 November 2006	*		*									
05 November 2006	*	6.7	*	27	29	171	0.244	0.605	0.027	0.053		

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SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
06 November 2006	*		*		<4							
07 November 2006	*		*									
08 November 2006	*		*									
09 November 2006	*		*									
10 November 2006	*		*									
11 November 2006	*		*									
12 November 2006	*		*		4							
13 November 2006	*		*									
14 November 2006	*		*									
15 November 2006	*		*									
16 November 2006	*		*									
17 November 2006	*		*									
18 November 2006	*		*									
19 November 2006	*		*		<4							
20 November 2006	*		*									
21 November 2006	*		*									
22 November 2006	*		*									
23 November 2006	*		*									
24 November 2006	*		*									
25 November 2006	*		*									
26 November 2006	*		*		6							
27 November 2006	*		*									
28 November 2006	*		*									
29 November 2006	*		*									
30 November 2006	*		*									
01 December 2006	*		*									
02 December 2006	*		*									
03 December 2006	*	6.5	*	43	13	81	0.108	0.259	0.005	0.05	15	<1
04 December 2006	*		*									
05 December 2006	*		*									
06 December 2006	*		*									
07 December 2006	*		*									
08 December 2006	*		*									
09 December 2006	*		*									
10 December 2006	*		*		19							
11 December 2006	*		*									
12 December 2006	*		*									
13 December 2006	*		*									
14 December 2006	*		*									
15 December 2006	*		*									
16 December 2006	*		*									
17 December 2006	*		*		<4							
18 December 2006	*		*									
19 December 2006	*		*									
20 December 2006	*		*									
21 December 2006	*		*									
22 December 2006	*		*									
23 December 2006	*		*									
24 December 2006	*		*		5							
25 December 2006	*		*									
26 December 2006	*		*									
27 December 2006	*		*									
28 December 2006	*		*									
29 December 2006	*		*									
30 December 2006	*		*									
31 December 2006	*		*		8							
01 January 2007	5745600		226									
02 January 2007	5745600		226									
03 January 2007	5745600		226									
04 January 2007	5745600		226									
05 January 2007	5745600		226									
06 January 2007	5745600		226									
07 January 2007	5745600	7	226	62	<4	198	0.013	0.298	0.005	0.036		
08 January 2007	5745600		226									
09 January 2007	5745600		226									
10 January 2007	5745600		226									
11 January 2007	5745600		226									
12 January 2007	5745600		226									
13 January 2007	5745600		226									
14 January 2007	5745600		226		4							
15 January 2007	6250206		226									
16 January 2007	4261170		226									
17 January 2007	6164178		226									

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SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
18 January 2007	13956610		226									
19 January 2007	5089140		226									
20 January 2007	9205428		226									
21 January 2007	7481172		226		34							
22 January 2007	5417334		226									
23 January 2007	3279300		231									
24 January 2007	5456844		233									
25 January 2007	2229702		235									
26 January 2007	2226576		243									
27 January 2007	1614738		249									
28 January 2007	1533972		259									
29 January 2007	2008050		259		5							
30 January 2007	1443348		271									
31 January 2007	690510		302									
01 February 2007	188346		287									
02 February 2007	23844		296									
03 February 2007	69456		301									
04 February 2007	79200	7	309	12	<4	159	<0.005	0.924	0.006	0.039		
05 February 2007	42756		298									
06 February 2007	10248		287									
07 February 2007	0		314									
08 February 2007	8366370		234									
09 February 2007	5114694		176									
10 February 2007	1936662		196									
11 February 2007	3865662		193									
12 February 2007	2844480		206		<4							
13 February 2007	3290754		228									
14 February 2007	2602272		233									
15 February 2007	5295876		246									
16 February 2007	6802704		209									
17 February 2007	1979916		215									
18 February 2007	977376		231		<4							
19 February 2007	3417774		264									
20 February 2007	1716648		284									
21 February 2007	1777566		286									
22 February 2007	2898084		310									
23 February 2007	3170778		324									
24 February 2007	3088704		336									
25 February 2007	3522762		274		9							
26 February 2007	2348634		248									
27 February 2007	9879738		214									
28 February 2007	6223362		194									
01 March 2007	4019778		209									
02 March 2007	2993112		218									
03 March 2007	2232288		240									
04 March 2007	6508500	6.8	228	62	39	143	0.367	0.301	<0.005	0.034		
05 March 2007	14732170		207									
06 March 2007	10898740		205									
07 March 2007	10352900		201									
08 March 2007	5995908		195									
09 March 2007	6913824		196									
10 March 2007	3335694		206									
11 March 2007	7132728		201		17						<1	<1
12 March 2007	5289108		200									
13 March 2007	3558042		205									
14 March 2007	2296380		215									
15 March 2007	9903768		191									
16 March 2007	3352200		189									
17 March 2007	4989048		198									
18 March 2007	8881416		222		24							
19 March 2007	7851876		278									
20 March 2007	5789670		289									
21 March 2007	3383280		283									
22 March 2007	3410604		280									
23 March 2007	1643634		278									
24 March 2007	1116450		280									
25 March 2007	1100214		286		11							
26 March 2007	1292052		291									
27 March 2007	896274		297									
28 March 2007	675036		291									
29 March 2007	1066506		301									
30 March 2007	618300		308									
31 March 2007	184554		311									

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
01 April 2007	61980		312		4							
02 April 2007	307200	7	313	42	10	170	0.409	0.662	0.011	0.075	22	<1
03 April 2007	323010		316		4							
04 April 2007	305190		323		6							
05 April 2007	946860		374		5							
06 April 2007	1082940		378		4							
07 April 2007	953040		366		9							
08 April 2007	947100	7.6	373	38	4	221	0.163	0.902	0.013	0.078		
09 April 2007	966240		374		4							
10 April 2007	1096620		381		4							
11 April 2007	836160		424		6							
12 April 2007	799620		410		5							
13 April 2007	749340		414		7							
14 April 2007	799920		430		9							
15 April 2007	661380	6.8	416	29	10	267	0.227					
16 April 2007	476040		397		<4							
17 April 2007	374520		459		9							
18 April 2007	445980		458		11							
19 April 2007	357420		453		11							
20 April 2007	276360		463		6							
21 April 2007	626760		449		32							
22 April 2007	5491620	7.5	368	60	34	208	0.527					
23 April 2007	5548320		350		4							
24 April 2007	5847060		280		10							
25 April 2007	14589060		254		9							
26 April 2007	7530240		185		11							
27 April 2007	2453940		214		11							
28 April 2007	1988880		247		16							
29 April 2007	2055840	4.1	270	43	4	89	0.821					
30 April 2007	1856340		291		41							
01 May 2007	1665360		317		40							
02 May 2007	1529040		333		12							
03 May 2007	1578480		350		22							
04 May 2007	1535760		357		23							
05 May 2007	1450260		362		25							
06 May 2007	1849560	7.7	342	94	27	207	<.005	0.772	0.074	0.139		
07 May 2007	1830480		334		21							
08 May 2007	1855380		339		9							
09 May 2007	1690020		351		25							
10 May 2007	2274540		334		78							
11 May 2007	1943820		321		14							
12 May 2007	2052000		332		25							
13 May 2007	1965120	7.7	333	69	15	180	0.084					
14 May 2007	1714920		354		17							
15 May 2007	1364220		383		14							
16 May 2007	1214220		369		9							
17 May 2007	7546500		253		76							
18 May 2007	5098860		284		37							
19 May 2007	4588620		257		52							
20 May 2007	3573120	6.9	261	58	26	139	0.072					
21 May 2007	2480100		283		15							
22 May 2007	2063040		313		7							
23 May 2007	1863960		335		5							
24 May 2007	2249940		338		26							
25 May 2007	3461280		275		125							
26 May 2007	2692560		279		12							
27 May 2007	2411040	6.8	296	60	13		0.118					
28 May 2007	1687140		323		15							
29 May 2007	1751160		362		63							
30 May 2007	1720380		381		21							
31 May 2007	1803960		395		7							
01 June 2007	1610700		385		4							
02 June 2007	2416260		375		14							
03 June 2007	4188720	7.3	266	49	13	188	0.005	0.839	0.005	<0.01		
04 June 2007	1841820		320		8							
05 June 2007	1874580		356		7							
06 June 2007	1751940		398		6							
07 June 2007	1782540		401		14							
08 June 2007	840420		408		8							
09 June 2007	869280		410		15							
10 June 2007	1076940	7.8	377	80	13	260	0.066					
11 June 2007	781980		397		21							
12 June 2007	1312140		381		13							

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
13 June 2007	1027320		394		<4							
14 June 2007	3479460		349		13							
15 June 2007	1584240		369		6							
16 June 2007	1285500		381		20							
17 June 2007	1218300	7.3	363	44	14	242	0.148					
18 June 2007	1218420		378		22							
19 June 2007	1461900		402		47							
20 June 2007	4983960		336		19							
21 June 2007	6163920		253		39							
22 June 2007	3082500		256		49							
23 June 2007	1917540		285		30							
24 June 2007	3500820	6.7	279	28	26	250	0.138					
25 June 2007	2310360		281		22							
26 June 2007	1523520		341		20							
27 June 2007	1109160		367		17							
28 June 2007	807840		377		10							
29 June 2007					9							
30 June 2007					5							
01 July 2007	1109292	7.8	366	25	4		0.111	0.683	0.021	0.049	<1	<1
02 July 2007	1002960		358		10							
03 July 2007	663210		371		29							
04 July 2007	2476812		338		7							
05 July 2007	710940		317		71							
06 July 2007	1023174		332		24							
07 July 2007	2623806		311		15							
08 July 2007	1194852	7.2	320	20	11	240	0.109					
09 July 2007	1030272		324		18							
10 July 2007	7901100		266		11							
11 July 2007	5028678		237		13							
12 July 2007	4015968		242		7							
13 July 2007	4914774		206		25							
14 July 2007	4056870		217		11							
15 July 2007	3329178	7.2	229	53	10	184	0.07					
16 July 2007	2470374		262		19							
17 July 2007	9239706		243		27							
18 July 2007	4834116		214		18							
19 July 2007	4404144		204		22							
20 July 2007	3458700		277		21							
21 July 2007	2949486		288		14							
22 July 2007	2508576	7.1	299	31	11	161	0.298					
23 July 2007	2383416		312		16							
24 July 2007	2341464		319		11							
25 July 2007	2236032		334		11							
26 July 2007	3618090		326		28							
27 July 2007	13689880		205		14							
28 July 2007	4392816		190		11							
29 July 2007	2890644	7	225	156	11	181	0.016					
30 July 2007	2490582		245		20							
31 July 2007	2347608		267		17							
01 August 2007	2309304		275		20							
02 August 2007	2935170		287		21							
03 August 2007	2914944		292		22							
04 August 2007	3054300		297		18							
05 August 2007	6363492	7.2	265	73	10	176	0.083	0.452	0.008	0.175		
06 August 2007	3991332		251		8							
07 August 2007	3799290		242		<2							
08 August 2007	3135012		256		3							
09 August 2007	2578680		280		18							
10 August 2007	2576154		274		2							
11 August 2007	2627514		295		5							
12 August 2007	7234158	6.8	216	48	7	132	0.061					
13 August 2007	6528816		204		12							
14 August 2007	4323180		229		9							
15 August 2007	3318990		280		7							
16 August 2007	3313572		320		7							
17 August 2007	3167958		313		8							
18 August 2007	3375042		298		9							
19 August 2007	5391528	7.2	251	59	10	192	0.127					
20 August 2007	3673440		283		7							
21 August 2007	7048518		218		6							
22 August 2007	3589872		260		17							
23 August 2007	3845886		262		7							
24 August 2007	2864724		268		8							

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
25 August 2007	2644458		276		6							
26 August 2007	2523150	7.4	281	34	4	182	0.106					
27 August 2007	1933494		295		4							
28 August 2007	1833756		304		4							
29 August 2007	1876308		314		6							
30 August 2007	1236540		325		8							
31 August 2007	1002966		334		5							
01 September 2007	1283064		343		6							
02 September 2007	1518330	7.4	347	29	5	179	0.015	0.37	0.016	0.069		
03 September 2007	1477194		354		6							
04 September 2007	765114		363		5							
05 September 2007	905232		365		4							
06 September 2007	787788		355		5							
07 September 2007	657870		354		9							
08 September 2007	533592		356		5							
09 September 2007	395022	7.6	373	45	2	256	0.182					
10 September 2007	396816		411		5							
11 September 2007	341004		422		5							
12 September 2007	303828		421		5							
13 September 2007	193992		418		8							
14 September 2007	532476		424		9							
15 September 2007	368958		427		5							
16 September 2007	287094		439		44							
17 September 2007	12459370		262		5							
18 September 2007	2501724		232		2							
19 September 2007	1310286		274		<2							
20 September 2007	3376392		230		<2							
21 September 2007	1624146		258		2							
22 September 2007	2251296		246		<2							
23 September 2007	1255044	7.1	268	28	6	200	0.125					
24 September 2007	3281898		281		3							
25 September 2007	6259716		209		<2							
26 September 2007	1891566		240		2							
27 September 2007	918552		275		2							
28 September 2007	700800		307		3							
29 September 2007	747276		333		10							
30 September 2007	792972	7.1	339	18	5	197	0.148					
01 October 2007	755148		335		2							
02 October 2007	491982		323		3							
03 October 2007	595560		337		18							
04 October 2007	6641142		262		12							
05 October 2007	2900802		234		14							
06 October 2007	1511688		263		25							
07 October 2007	1106346	7.3	295	50	7	200	0.109	0.714	0.01	0.073	23	<1
08 October 2007	1344234		303		9							
09 October 2007	3285132		302		22							
10 October 2007	5520234		211		15							
11 October 2007	2404536		212		16							
12 October 2007	2160114		239		12							
13 October 2007	1909962		261		11							
14 October 2007	1880436	7.2	277	40	11	198	0.192					
15 October 2007	2852418		288		11							
16 October 2007	4222008		276		13							
17 October 2007	3029502		273		5							
18 October 2007	1497978		271		4							
19 October 2007	1049976		274		3							
20 October 2007	1170300		285		4							
21 October 2007	1094766	7.5	302	32	5	199	0.154					
22 October 2007	1431966		337		5							
23 October 2007	2188728		323		5							
24 October 2007	1298754		317		8							
25 October 2007	974160		325		8							
26 October 2007	1298148		342		12							
27 October 2007	4478262		310		14							
28 October 2007	7383984	6.6	252	91	39	150						
29 October 2007	19835780		145		20							
30 October 2007	8918862		163		12							
31 October 2007	4265460		184		7							
01 November 2007	2837502		205		7							
02 November 2007	2194470		241		13							
03 November 2007	1766682		259		7							
04 November 2007	1739754	7.3	272	50	6	182	0.134	0.611	0.006	0.051		
05 November 2007	2015874		277		12							

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
06 November 2007	2777646		270		7							
07 November 2007	1849386		282		4							
08 November 2007	2209692		291		6							
09 November 2007	3448230		298		<2							
10 November 2007	2043900		303		<2							
11 November 2007	2147352	7.3	310	50	2	191	0.184					
12 November 2007	2062584		321		6							
13 November 2007	2006586		323		2							
14 November 2007	2124564		319		9							
15 November 2007	2065050		323		7							
16 November 2007	2141346		324		7							
17 November 2007	2225892		320		42							
18 November 2007	11034350	6.4	255	52	30	183	0.149					
19 November 2007	32127760		127		15							
20 November 2007	16915240		121		11							
21 November 2007	5456940		165		12							
22 November 2007	4590552		180		7							
23 November 2007	7298556		182		8							
24 November 2007	3744996		195		9							
25 November 2007	6201240	6.6	198	51	8	196	0.043					
26 November 2007	3461958		203		4							
27 November 2007	3702390		199		<2							
28 November 2007	4021206		213		12							
29 November 2007	10704760		186		7							
30 November 2007	7336506		170		15							
01 December 2007	13114780		163		10							
02 December 2007	8901408	6.6	161	63	16	200	0.101	0.43	<0.005	0.038		
03 December 2007	10192130		175		17							
04 December 2007	10451970		165		10							
05 December 2007	8605686		178		19							
06 December 2007	9080310		178		15							
07 December 2007	12945520		180		39							
08 December 2007	17381410		143		24							
09 December 2007	21485200	6.4	134	40	35	210	<0.005					
10 December 2007	13962650		153		13							
11 December 2007	5396154		182		8							
12 December 2007	3257418		205		9							
13 December 2007	3025242		228		11							
14 December 2007	2942850		239		4							
15 December 2007	2697606		250		7							
16 December 2007	2412126	7	266	19	11	199	0.344					
17 December 2007	2147532		282		7							
18 December 2007	1936650		296		8							
19 December 2007	1866234		307		6							
20 December 2007	1989024		314		6							
21 December 2007	2047368		319		10							
22 December 2007	1685472		330		10							
23 December 2007	2222340	6.8	312	30	19	186	0.122					
24 December 2007	2471130		315		18							
25 December 2007	10054690		206		8							
26 December 2007	9923460		182		7							
27 December 2007	7405410		173		31							
28 December 2007	10175040		168		21							
29 December 2007	14047200		155		16							
30 December 2007	9859872	6.9	165	55	12	156	0.064					
31 December 2007	4609032		194		13							
01 January 2008	7560342				5							
02 January 2008	4058892				6							
03 January 2008	2799870				39							
04 January 2008	3270150				36							
05 January 2008	7230006				12							
06 January 2008	6442272	6.7		34	9	161	0.185	0.467	0.02	0.046	<1	<1
07 January 2008	11223680				3							
08 January 2008	10948230				4							
09 January 2008	9608352				18							
10 January 2008	8146032				4							
11 January 2008	6040866				3							
12 January 2008	6964440				11							
13 January 2008	9927936	6.6		24	9	154	0.124					
14 January 2008	11311580				3							
15 January 2008	7438692				<2							
16 January 2008	6293142				2							
17 January 2008	10803370				2							

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
18 January 2008	11987720				3							
19 January 2008	5956020				3							
20 January 2008	8215854	6.5		21	4	169	0.096					
21 January 2008	22183190				11							
22 January 2008	14074100				4							
23 January 2008	18344330				6							
24 January 2008	9992196				7							
25 January 2008	4947732				16							
26 January 2008	3535446				16							
27 January 2008	3104016	7.1		34	5	154	0.105					
28 January 2008	6588768				12							
29 January 2008	8860386				10							
30 January 2008	5195946				19							
31 January 2008	13492880				36							
01 February 2008	9132018				20							
02 February 2008	10698310				20							
03 February 2008	29148800	6.1		28	16	128	0.12	0.277	0.019	0.05		
04 February 2008	14953180											
05 February 2008	6487392											
06 February 2008	3922560											
07 February 2008	3922560											
08 February 2008	3922560											
09 February 2008	3922560											
10 February 2008	3922560											
11 February 2008	3676560				23							
12 February 2008	2813280				6							
13 February 2008	2382558				21							
14 February 2008	2067330				14							
15 February 2008	1939254				4							
16 February 2008	1876680				4							
17 February 2008	1943478				2							
18 February 2008	1971576	7.2		35	<2	131	0.244					
19 February 2008	2067150											
20 February 2008	2511072											
21 February 2008	3668802				3							
22 February 2008	4500192				5							
23 February 2008	6001878				4							
24 February 2008	12483690	6.6		37	2	249	<0.005					
25 February 2008	11923640				19							
26 February 2008	7494168				21							
27 February 2008	6023760				11							
28 February 2008	5285430				6							
29 February 2008	15039400				15							
01 March 2008	9051276				13							
02 March 2008	7759926	6.9		26	11	143	0.156	0.131	0.014	0.024		
03 March 2008	10848250				6							
04 March 2008	5097894				3							
05 March 2008	3944328				3							
06 March 2008	6215274				2							
07 March 2008	11937710				50							
08 March 2008	12573100				50							
09 March 2008	9360774	6.7		40	19	151	0.078					
10 March 2008	9205518				11							
11 March 2008					6							
12 March 2008					42							
13 March 2008					6							
14 March 2008					6							
15 March 2008					2							
16 March 2008		7.1		65	3	148	0.027					
17 March 2008					<2							
18 March 2008					6							
19 March 2008					2							
20 March 2008					7							
21 March 2008					8							
22 March 2008					4							
23 March 2008		7.5		12	6	151	<0.005					
24 March 2008					13							
25 March 2008					7							
26 March 2008					9							
27 March 2008					49							
28 March 2008					<2							
29 March 2008					3							
30 March 2008		7.2		31	3	170	0.05					

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SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
31 March 2008					7							
01 April 2008	1557274		276		12							
02 April 2008	1611187		272		7							
03 April 2008	1188173		285		32							
04 April 2008	949190		295		13							
05 April 2008	1288051		301		6							
06 April 2008	1336694	7.5	310	<10	8	164	0.136	0.545	0.005	0.059	<1	<1
07 April 2008	1816906		311		9							
08 April 2008	5416675		253		9							
09 April 2008	3604867		251		7							
10 April 2008	2056579		280		12							
11 April 2008	1832803		292		2							
12 April 2008	1587946		304		5							
13 April 2008	3596054	6.9	266	19	9	170	0.223					
14 April 2008	1309392		275									
15 April 2008	799416		298		<2							
16 April 2008	923357		309									
17 April 2008	1212451		319									
18 April 2008	1100995		340									
19 April 2008	1015373		352									
20 April 2008	906595		362									
21 April 2008	874714		370		22							
22 April 2008	889661		374		2							
23 April 2008	1023667		376		3							
24 April 2008	847498		367		2							
25 April 2008	572080		359		<2							
26 April 2008	262915		365		<2							
27 April 2008	598830	7.3	313	17	2	152	0.053					
28 April 2008	768424		330		6							
29 April 2008	1468973		265		5							
30 April 2008	417666		306		5							
01 May 2008	370060		325		9							
02 May 2008	239242		346		3							
03 May 2008	121470		364		6							
04 May 2008	198763	7.6	381	10	5	166	0.075	0.378	0.018	0.065		
05 May 2008	130075		371		6							
06 May 2008	148245		389		<2							
07 May 2008	193821		393		21							
08 May 2008	223093		406		<2							
09 May 2008	230956		419		4							
10 May 2008	205528		414		3							
11 May 2008	213149	7.4	419	31	5	176	0.013					
12 May 2008	235475		422		<2							
13 May 2008	297734		416		36							
14 May 2008	211576		413		<2							
15 May 2008	172325		433		7							
16 May 2008	173267		430		6							
17 May 2008	182641		430		4							
18 May 2008	177837	7.7	431	25	<2	175	0.036					
19 May 2008	161404		426		2							
20 May 2008	179487		430		6							
21 May 2008	162734		445		3							
22 May 2008	209900		444		4							
23 May 2008	176679		424		<2							
24 May 2008	134058		420		4							
25 May 2008	80127	7.7	430	26	<2	180	0.031					
26 May 2008	132926		446		<2							
27 May 2008	144193		452		<2							
28 May 2008	144884		460		2							
29 May 2008	182425		468		<2							
30 May 2008	82624		463		5							
31 May 2008	40012		454		5							
01 June 2008	24227	7.6	448	24	<2	176	0.052	0.599	0.01	0.044		
02 June 2008	179055		437		<2							
03 June 2008	183488		403		<2							
04 June 2008	63996		443		<2							
05 June 2008	185872		416		<2							
06 June 2008	34007		409		4							
07 June 2008	1140		417		3							
08 June 2008	69	7.1	432	20	3	181	0.159					
09 June 2008	0		452		8							
10 June 2008	1607		453									
11 June 2008	11379		457		<2							

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
12 June 2008	95558		459		<2							
13 June 2008	45991		445		<2							
14 June 2008	100587		443		<2							
15 June 2008	117055	7.2	449	<10	<2	176	0.044					
16 June 2008	105667		454		<2							
17 June 2008	113651		465		<2							
18 June 2008	381145		439		4							
19 June 2008	201182		396		2							
20 June 2008	8986		426		14							
21 June 2008	0		436		2							
22 June 2008	36660	7.6	445	24	10	181	0.044					
23 June 2008	6389539		274		<2							
24 June 2008	273421		302		<2							
25 June 2008	124235		343		4							
26 June 2008	306651		328		<2							
27 June 2008	417519		315		<2							
28 June 2008	1233792		288		3							
29 June 2008	414340	7.1	305	23	5	235	0.039					
30 June 2008	128053		340									
01 July 2008	1391190		357		3							
02 July 2008	10175440		241		4							
03 July 2008	4403574		257		3							
04 July 2008	1752366		300		5							
05 July 2008	1072308		311		4							
06 July 2008	954282	7	337	42	3	202	0.036	0.615	>0.005	0.083	<1	<1
07 July 2008	800964		352		8							
08 July 2008	646590		367		6							
09 July 2008	469620		391		<2							
10 July 2008	627096		409		4							
11 July 2008	824784		370		8							
12 July 2008	276180		384		7							
13 July 2008	494430	7.5	408	25	8	289	0.055					
14 July 2008	608136		417		3							
15 July 2008	400620		416									
16 July 2008	460260		419		6							
17 July 2008	564552		419		5							
18 July 2008	688908		423		7							
19 July 2008	551580		409		7							
20 July 2008	224688	6.9	409	18	6	414	0.116					
21 July 2008	141900		428		11							
22 July 2008	333222		430		<2							
23 July 2008	1469070		355		<2							
24 July 2008	789894		374		<2							
25 July 2008	816990		416		<2							
26 July 2008	865950		428		4							
27 July 2008	608694	7.9	439	23	4	255	0.016					
28 July 2008	506106		440		2							
29 July 2008	418470		433		5							
30 July 2008	481962		435		9							
31 July 2008	194310		424		4							
01 August 2008	407538		424		6							
02 August 2008	725646		416		<2							
03 August 2008	966606	7	368	48	<2	281	<0.005	0.46	<0.005	0.041		
04 August 2008	1213164		355		<2							
05 August 2008	753510		381		8							
06 August 2008	799638		414		9							
07 August 2008	724626		432		10							
08 August 2008	609276		430		<2							
09 August 2008	577716		442		<2							
10 August 2008	1548660	7.3	382	56	6	202	<0.005					
11 August 2008	3766308		296		<2							
12 August 2008	4151772		281		<2							
13 August 2008	5735976		261		<2							
14 August 2008	10304110		258		<2							
15 August 2008	13252160		211		<2							
16 August 2008	5154306		232		3							
17 August 2008	14203570	6.3	188	54	2	157	0.099					
18 August 2008	4405260		223		<2							
19 August 2008	3221628		249		2							
20 August 2008	2684748		256		<2							
21 August 2008	1896522		273		3							
22 August 2008	1112418		294		6							
23 August 2008	1109892		326		2							

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
24 August 2008	2203674	6.9	316	53	4	179	0.038					
25 August 2008	4043244		233		<2							
26 August 2008	3479454		251		<2							
27 August 2008	2710938		281		4							
28 August 2008	3999438		245		2							
29 August 2008	3737340		247		<2							
30 August 2008	2599794		271		<2							
31 August 2008	2745534	7.3	294	14	4	212	0.039					
01 September 2008	4315074		231		3							
02 September 2008	6867288		235		4							
03 September 2008	7559814		209		2							
04 September 2008	8544948		203		2							
05 September 2008	5486550		220		2							
06 September 2008	3333024		246		<2							
07 September 2008	2678652	6.9	254	72	3	198	0.033	0.499	<0.005	0.058		
08 September 2008	1699164		282		3							
09 September 2008	1597326		304		<2							
10 September 2008	5928450		259		3							
11 September 2008	8698608		195		2							
12 September 2008	8274222		183		2							
13 September 2008	4080516		204		<2							
14 September 2008	2957538	6.5	225	24	<2	351	<0.005					
15 September 2008	4630950		217		<2							
16 September 2008	4854018		204		<2							
17 September 2008	2464134		246		<2							
18 September 2008	1846560		272		5							
19 September 2008	1784808		286		2							
20 September 2008	2690274		257		<2							
21 September 2008	2437518	6.9	272	41	<2	242	0.017					
22 September 2008	1827822		302		2							
23 September 2008	1564752		323		5							
24 September 2008	1634100		335		4							
25 September 2008	1552854		350		5							
26 September 2008	1492200		361		5							
27 September 2008	1397760		368		5							
28 September 2008	850098	6.8	371	85	3	256	0.062					
29 September 2008	520686		373		<2							
30 September 2008	1546638		373		<2							
01 October 2008	12186720		208		<2							
02 October 2008	13463710		179		<2							
03 October 2008	21141220		154		<2							
04 October 2008	21141220		154		10							
05 October 2008	21141220	6.5	154	52	<2	139	0.027	0.32	<0.005	0.075	<1	<1
06 October 2008	21141220		154		2							
07 October 2008	21141220		154		13							
08 October 2008	21141220		154		2							
09 October 2008	21141220		154		3							
10 October 2008	21141220		154		<2							
11 October 2008	21141220		154		2							
12 October 2008	21141220	6.3	154	<10	2	121	0.045					
13 October 2008	21141220		154		2							
14 October 2008	21141220		154		2							
15 October 2008	21141220		154		2							
16 October 2008	21141220		154		2							
17 October 2008	21141220		154		2							
18 October 2008	21141220		154		3							
19 October 2008	21141220	6.6	154	36	<2	183	0.069					
20 October 2008	21141220		154		4							
21 October 2008	21141220		154		2							
22 October 2008	21141220		154		2							
23 October 2008	21141220		154		3							
24 October 2008	21141220		154		<2							
25 October 2008	21141220		154		<2							
26 October 2008	21141220	6.5	154	30	8	145	0.036					
27 October 2008	21141220		154		<2							
28 October 2008	21141220		154		<2							
29 October 2008	21141220		154		<2							
30 October 2008	17489090		156		9							
31 October 2008	4663008		174		4							
01 November 2008	2887056		189		<2							
02 November 2008	2108246	6.2	195	38	<2	161	0.069	0.33	0.022	0.044		
03 November 2008	1620259		208		<2							
04 November 2008	2525386	7.2	201	31	4	186	0.062					

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
05 November 2008	2381357		196		8							
06 November 2008	1239408		223		2							
07 November 2008	1235779		252		17							
08 November 2008	10440580		175		16							
09 November 2008	12428640	7.2	155	59	11	176	0.064					
10 November 2008	5438448		162		16							
11 November 2008	5752339		175		6							
12 November 2008	8351856		175		5							
13 November 2008	2422742		192		3							
14 November 2008	5814720		176		<2							
15 November 2008	2971037		192		2							
16 November 2008	2889130	6.7	205	20	4	183	0.101					
17 November 2008	5034009		184		9							
18 November 2008	5690477		185		5							
19 November 2008	5338829		186		3							
20 November 2008	3001363		210		6							
21 November 2008	2731277		221		4							
22 November 2008	2820528		217		7							
23 November 2008	4763405	6.9	201	49	9	159	0.037					
24 November 2008	6368285		178		2							
25 November 2008	2307744		210		4							
26 November 2008	1490573		235		12							
27 November 2008	1944518		228		<2							
28 November 2008	7886246		199		2							
29 November 2008	5964106		198		4							
30 November 2008	4525719	7	204	36	12	131	0.141					
01 December 2008	7954502		194		2							
02 December 2008	8991648		184		<2							
03 December 2008	5660151		183		5							
04 December 2008	6706714		192		4							
05 December 2008	16790980		147		<2							
06 December 2008	9235296		147		3							
07 December 2008	2063405	6.9	168	27	22	137	0.064	0.283	<0.005	0.059		
08 December 2008	1701389		170		2							
09 December 2008	2230416		176		4							
10 December 2008	3003437		193		2							
11 December 2008	2655850		194		3							
12 December 2008	3367699		194		10							
13 December 2008	9351072		167		5							
14 December 2008	7625319	7	154	41	2	135	0.071					
15 December 2008	3980016		171		<2							
16 December 2008	3040848		188		<2							
17 December 2008	7702819		159		<2							
18 December 2008	4178390		172		<2							
19 December 2008	2929219		192		3							
20 December 2008	4192474		191		<2							
21 December 2008	6364742	6.6	181	29	<2	122	0.094					
22 December 2008	4243795		194		<2							
23 December 2008	2354400		220		<2							
24 December 2008	1889309		240		<2							
25 December 2008	1705536		251		<2							
26 December 2008	1504656		257		<2							
27 December 2008	1378685		261		<2							
28 December 2008	886291	6.6	273	<10		192	0.054					
29 December 2008	633459		298		<2							
30 December 2008	816748		308		<2							
31 December 2008	955352		314		<2							
01 January 2009	2299206		323		5							
02 January 2009	2057034		328		5							
03 January 2009	1254828		335		2							
04 January 2009	802674	7.1	340	36	9	222	0.047	0.838	0.008	0.01	<1	<1
05 January 2009	1163208		340		5							
06 January 2009	1053822		347		<2							
07 January 2009	666540		351		3							
08 January 2009	763170		360		3							
09 January 2009	1117392		348		7							
10 January 2009	1461846		363		15							
11 January 2009	5395632	6.5	295	26	14	150	0.022					
12 January 2009	14510650		187		<2							
13 January 2009	4959804		198		<2							
14 January 2009	7075914		216		2							
15 January 2009	9080640		222		4							
16 January 2009	9080640		222		3							

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
17 January 2009	9080640		222		<2							
18 January 2009	9080640	6.4	222	40	4	218	0.156					
19 January 2009	9080640		222		5							
20 January 2009	8107758		230		8							
21 January 2009	9319752		230		6							
22 January 2009	6984324		225		4							
23 January 2009	8985744		201		2							
24 January 2009	4340328		213		4							
25 January 2009	3385332	6.5	221	17	14	168	0.05					
26 January 2009	4067556		219		18							
27 January 2009	3498336		216		<2							
28 January 2009	1172040		227		5							
29 January 2009	335742		242		6							
30 January 2009	2233338		237		7							
31 January 2009	1849146		232		<2							
01 February 2009	1962162	6.5	233	42	8	246	0.26	0.531	0.043	0.21		
02 February 2009	625746		241		3							
03 February 2009	258306		269		5							
04 February 2009	651108		265		4							
05 February 2009	83874		264		4							
06 February 2009	179412		267		6							
07 February 2009	271998		271		5							
08 February 2009	846444	6.8	261	35	8	222	0.255					
09 February 2009	2530494		252		7							
10 February 2009	2405730		241		<2							
11 February 2009	3866508		226		10							
12 February 2009	1901694		209		7							
13 February 2009	1089918		226		4							
14 February 2009	434106		241		3							
15 February 2009	208104	6.8	258	48	<2	177	0.287					
16 February 2009	212652		269		17							
17 February 2009	63222		289		7							
18 February 2009	570		303		8							
19 February 2009	128190		314		8							
20 February 2009	217500		308		7							
21 February 2009	45120		314		8							
22 February 2009	118626	6.7	324	22	9	169	0.421					
23 February 2009	367770		322		2							
24 February 2009	249624		319		4							
25 February 2009	0		324		2							
26 February 2009	0		327		2							
27 February 2009	0		340		3							
28 February 2009	86430		305		4							
01 March 2009	1672818	7.2	289	45	3	178	0.073	0.592	<0.005	0.079		
02 March 2009	2402148		246		2							
03 March 2009	1142256		268		13							
04 March 2009	4647972		237		4							
05 March 2009	4073760		220		5							
06 March 2009	1697742		225		12							
07 March 2009	858360		234		16							
08 March 2009	2920572	6.7	223	38	5	142	0.081					
09 March 2009	4759032		196		2							
10 March 2009	3472110		210		3							
11 March 2009	3210588		202		11							
12 March 2009	2613840		213		3							
13 March 2009	1912878		217		9							
14 March 2009	1060452		246		5							
15 March 2009	615882	6.7	252	17	2	165	0.179					
16 March 2009	540		271		4							
17 March 2009	2070168		241		4							
18 March 2009	993990		246		6							
19 March 2009	552078		281		7							
20 March 2009	105684		295		10							
21 March 2009	0		321		6							
22 March 2009	0	6.9	324	19	26	286	0.255					
23 March 2009	0		330		6							
24 March 2009	2160		333		4							
25 March 2009	39960		344		3							
26 March 2009	1824		330		2							
27 March 2009	416208		314		4							
28 March 2009	90948		327		4							
29 March 2009	0	6.8	332	21	5	223	0.236					
30 March 2009	0		344		2							

SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
31 March 2009	0		340		2							
01 April 2009					3							
02 April 2009					2							
03 April 2009					4							
04 April 2009					8							
05 April 2009		7.4		<10	2	216	0.263	0.578	0.008	0.034	<1	<1
06 April 2009					26							
07 April 2009					11							
08 April 2009					8							
09 April 2009					10							
10 April 2009					2							
11 April 2009					2							
12 April 2009		6.9		36	2	153	0.005					
13 April 2009					2							
14 April 2009					4							
15 April 2009					5							
16 April 2009					7							
17 April 2009					2							
18 April 2009					4							
19 April 2009		7	314	26	2	192	0.373					
20 April 2009					2							
21 April 2009					3							
22 April 2009					2							
23 April 2009					4							
24 April 2009					5							
25 April 2009					2							
26 April 2009		6.8		10	2	148	0.061					
27 April 2009					3							
28 April 2009					2							
29 April 2009					5							
30 April 2009					3							
01 May 2009					2							
02 May 2009					2							
03 May 2009		6.4		26	2	175	0.134	0.307	0.012	0.034		
04 May 2009					2							
05 May 2009					2							
06 May 2009					2							
07 May 2009					4							
08 May 2009					2							
09 May 2009					6							
10 May 2009		6.3		24	2	180	0.005					
11 May 2009					7							
12 May 2009					2							
13 May 2009					2							
14 May 2009					2							
15 May 2009					2							
16 May 2009					2							
17 May 2009		5.7		37	2	151	0.069					
18 May 2009					2							
19 May 2009					2							
20 May 2009					2							
21 May 2009					4							
22 May 2009					9							
23 May 2009					2							
24 May 2009		7.3		18	4	172	0.03					
25 May 2009					2							
26 May 2009					2							
27 May 2009					2							
28 May 2009					4							
29 May 2009					2							
30 May 2009					2							
31 May 2009		7.3		18	2	230	<0.005					
01 June 2009					2							
02 June 2009					3							
03 June 2009					8							
04 June 2009					5							
05 June 2009					2							
06 June 2009					2							
07 June 2009		7.6		27	3	248	<0.005	0.385	<0.005	0.046		
08 June 2009					2							
09 June 2009					5							
10 June 2009					9							
11 June 2009					6							

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SW 4 (Sampling Surface Water Quality of Discharge from Area 5 & 6 (Composite Sampling, Location 7))												
	Flow	pH	Conductivity	COD	SS	TDS	Ammonia	Nitrates	Nitrites	TP	BOD	OFG
	(l/s)	(pH units)	(20c uS/cm)	(mg/l)	(mg/l)	(mg/l)	NH3-N	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
			Average				(mg/l)					
12 June 2009					3							
13 June 2009					<2							
14 June 2009		7.2		12	<2	303	0.012					
15 June 2009					7							
16 June 2009					3							
17 June 2009					2							
18 June 2009					3							
19 June 2009					3							
20 June 2009					2							
21 June 2009		7.1		30	2	270	0.069					
22 June 2009					5							
23 June 2009					7							
24 June 2009					4							
25 June 2009					6							
26 June 2009					3							
27 June 2009					<2							
28 June 2009		7.3		12	3	307	0.021					
29 June 2009					5							
30 June 2009					3							
01 July 2009					<2							
02 July 2009					2							
03 July 2009					<2							
04 July 2009					2							
05 July 2009		7.2		33	2	220	<0.005	0.502	0.008	0.074	<1	<1
06 July 2009					2							
07 July 2009					2							
08 July 2009					<2							
09 July 2009					<2							
10 July 2009					<2							
11 July 2009					<2							
12 July 2009		7.2		20	<2	237	0.011					
13 July 2009					2							
14 July 2009					<2							
15 July 2009					<2							
16 July 2009					<2							
17 July 2009					<2							
18 July 2009					3							
19 July 2009		7.4		16	<2	280	0.009					
20 July 2009					<2							
21 July 2009					<2							
22 July 2009					<2							
23 July 2009					2							
24 July 2009					<2							
25 July 2009					2							
26 July 2009		7.1		41	2	237	0.921					
27 July 2009					<2							
28 July 2009					2							
29 July 2009					<2							
30 July 2009					<2							
31 July 2009					2							
01 August 2009					2							
02 August 2009		7.1		64	2	165	<0.005					
03 August 2009					<2							
04 August 2009					2							
05 August 2009					<2							
06 August 2009					<2							
07 August 2009					<2							
08 August 2009					<2							
09 August 2009		7.4		34	<2	270	<0.005					
10 August 2009					<2							
11 August 2009					<2							
12 August 2009					<2							
13 August 2009					<2							
14 August 2009					<2							
15 August 2009					<2							
16 August 2009		7.1		27	<2	229	0.012	0.35	<0.005	0.12		
17 August 2009					<2							
18 August 2009					2							
19 August 2009					<2							
20 August 2009					<2							
21 August 2009					6							
22 August 2009					5							
23 August 2009		7.9		62	3	182	<0.005					

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SW100 (Sampling Surface Water Quality of Outfall from S5-1)					
	pH	SS	COD	Total	Conductivity
	(pH units)	(mg/l)	(mg/l)	Ammonia	(20c uS/cm)
				(mg/l)	
04 April 2005	6.1	<4	43	0.042	124
11 April 2005	6.8	<4	26	<.005	130.2
18 April 2005	5.3	<4	40	0.009	122
25 April 2005	5.7	<4	40	0.027	126.3
03 May 2005	5	<4	41	0.104	113.6
09 May 2005	6	<4	38	0.008	109.5
16 May 2005	5.2	<4	37	0.007	126.7
23 May 2005	6	<4	51	<.005	118.9
30 May 2005	5.8	9	35	0.017	95.8
06 June 2005	5.6	<4	43	0.005	82.8
13 June 2005	5.9	<4	80	0.005	97
20 June 2005	6.1	<4	60	0.013	92
27 June 2005	5.4	<4	67	<.005	87.5
04 July 2005	5	<4	99	<.005	92.6
11 July 2005	5	<4	60	0.007	89.9
18 July 2005	5.3	<4	64	<.005	92
25 July 2005	5.9	<4	89	0.007	97
01 August 2005	6.2	<4	83	0.497	102
08 August 2005	4.8	<4	94	0.005	103
15 August 2005	5.6	<4	80	0.005	113
22 August 2005	5.6	<4	56	<.005	127.9
29 August 2005	5	<4	31	0.005	119
05 September 2005	5.5	69	178	0.012	119
12 September 2005	4.9	10	82	0.018	116
19 September 2005	4.7	<4	33	<.005	115
26 September 2005	4.6	<4	54	<.005	104
03 October 2005	4.7	<4	50	0.008	99
10 October 2005	5.2	13	25	0.016	102
17 October 2005	4.8	<4	38	0.009	99
09 January 2006	5	<4	14	0.01	97
03 April 2006	6.1	<4	16	0.013	82.4
03 July 2006	5.9	<4	14	0.169	113
02 October 2006	7	<4	52	0.021	160.9
08 January 2007	5.4	<4	17	0.67	95.6
02 April 2007	5.4	<4	37	0.015	146
09 April 2007	5.6	<4	38	0.025	137.4
16 April 2007	4.5	<4	24	0.031	197.1
23 April 2007	6.3	<4	33	0.117	169.6
30 April 2007	4.3	13	41	0.068	141.5
07 May 2007	4.9	<4	51	0.039	141.1
14 May 2007	4.5	<4	59	0.017	144.1
21 May 2007	4.7	<4	23	0.051	139.6
28 May 2007	4.8	<4	58	0.013	133.8
04 June 2007	4.7	8	52	0.056	129
11 June 2007	4.7	4	50	0.012	146.1
18 June 2007	4.9	<4	47	0.014	132.4
25 June 2007	5.2	<4	<10	<0.005	113
02 July 2007	4.8	<4	24	0.011	105.8
09 July 2007	4.8	<4	27	0.029	89.1
16 July 2007	4.8	<4	76	<0.005	68.9
23 July 2007	4.7	<4	41	0.044	65.4
30 July 2007	6	<2	67	0.014	85.2
05 August 2007	5.2	<2	78	<0.005	73.4
12 August 2007	5.1	<2	66	0.112	74.6
19 August 2007	5	<2	81	0.024	63.6
26 August 2007	5	<2	65	0.016	84.5
02 September 2007	4.9	<2	57	<0.005	92.8
09 September 2007	5.5	<2	76	0.006	94.6

16 September 2007	5.5	2	28	0.035	83.7
23 September 2007	4.8	3	45	0.009	83
01 October 2007	5.1	<2	48	<0.005	88.8
08 October 2007	5.3	<2	51	<0.005	86.5
15 October 2007	8.2	<2	56	0.076	88.9
22 October 2007	5.1	<2	51	0.04	85.2
29 October 2007	5.2	2	61	0.015	82.9
05 November 2007	5.4	<2	53	0.019	79.8
12 November 2007	5.4	<2	63	0.01	91.7
19 November 2007	5.4	8	27	0.022	81
26 November 2007	4.9	<2	40	0.012	76.1
03 December 2007	4.9	2	34	0.062	89
10 December 2007	5	<2	23	<0.005	100
17 December 2007	4.9	5	17	0.043	101
24 December 2007	4.3	<2	42	0.243	93.9
31 December 2007	4.6	<2	32	<0.005	98.5
07 January 2008	4.6	<2	11	0.079	106.4
14 January 2008	4.4	<2	<10	0.007	176.4
21 January 2008	4.4	26	37	0.166	82.2
28 January 2008	4.8	3	20	0.018	111.9
04 February 2008	5.4	3	11	0.048	134.6
11 February 2008	4.4	3	24	0.066	136.1
18 February 2008	5	<2	28	<0.005	126.4
25 February 2008	4.9	20	<10	<0.005	115.1
03 March 2008	5	<2	<10	0.019	122.6
10 March 2008	5	<2	11	<0.005	125
17 March 2008	4.6	<2	<10	0.011	213
24 March 2008	4.4	<2	<10	0.006	205
31 March 2008	4.5	3	20	<0.005	181.8
07 April 2008	5.5	<2	<10	<0.005	158.3
14 April 2008	4.6	<2	<10	0.015	163.7
21 April 2008	6.2	<2	11	1.088	154.3
28 April 2008	5.9	<2	15	0.006	148.9
05 May 2008	6	8	11	0.007	150.5
12 May 2008	6.2	<2	39	<0.005	155.3
19 May 2008	7.2	2	45	0.006	157.8
26 May 2008	6.4	<2	44	<0.005	162.2
02 June 2008	6.6	<2	45	<0.005	182.2
09 June 2008	6.2	<2	14	0.031	172.8
16 June 2008	6.5	3	<10	0.014	164.6
23 June 2008	4.8	<2	47		166.2
30 June 2008	5	<2	28	<0.005	173.3
07 July 2008	4.3	<2	46	0.01	160.8
14 July 2008	5.6	2	42	<0.005	156.2
21 July 2008	5.6	<2	22	0.023	158
28 July 2008	6.2	<2	41	0.008	164.7
04 August 2008	5.3	<2	51	<0.005	155.8
11 August 2008	4.1	<2	72	<0.005	134.4
18 August 2008	5.2	<2	57	0.02	97.6
25 August 2008	5.3	23	124	<0.005	106.1
01 September 2008	7.4	<2	12	<0.005	99.8
08 September 2008					
15 September 2008	5.5	<2	18	<0.005	90.6
22 September 2008	6.1	<2	58	0.013	97.7
29 September 2008	4.7	<2	104	<0.005	102.4
06 October 2008	5	<2	38	<0.005	88
13 October 2008	5.2	<2	<10	<0.005	73.7
20 October 2008	5.8	<2	41	0.011	80.4
27 October 2008	4.8	<2	<10	<0.005	102
03 November 2008	5.3	<2	29	<0.005	104
10 November 2008	7	<2	<10	<0.005	57.1
17 November 2008	7.9	<2	10	<0.005	104.7

24 November 2008	7.3	<2	23	0.016	109
01 December 2008	5.8	<2	<10	0.026	123.9
08 December 2008	5	<2	18	0.03	108.7
15 December 2008	6.1	<2	15	0.012	91.6
22 December 2008	4.3	7	17	0.132	103.7
29 December 2008	5.9	<2	25	<0.005	101.7
05 January 2009	5.3	<2	25	<0.005	108
12 January 2009	5.4	<2	<10	<0.005	98.5
19 January 2009	4	<2	38	0.022	129.9
26 January 2009	4.2	<2	<10	0.006	145.9
02 February 2009	4.1	<2	28	0.02	139
09 February 2009	4.3	<2	38	0.031	132.1
16 February 2009	4.5	<2	43	<0.005	129
23 February 2009	5.2	4	23	0.333	128.1
02 March 2009	4.5	<2	41	0.015	119.1
09 March 2009	4.4	<2	15	0.014	113.1
16 March 2009	4.8	2	10	0.022	118.5
23 March 2009	5.6	2	11	0.015	125.4
30 March 2009	5.2	2	17	0.005	138.4
05 April 2009	5.8	2	18	0.005	138.4
13 April 2009	4.8	2	15	0.005	132.8
19 April 2009	5.7	2	16	0.121	125.2
26 April 2009	4.5	2	16	0.005	123.4
04 May 2009	5.2	2	25	0.062	98.8
11 May 2009	6.6	2	13	0.005	102.5
18 May 2009	4.6	2	31	0.005	167.4
25 May 2009	4.9	<2	25	0.021	95.6
01 June 2009	6.2	<2	29	<0.005	114.1
08 June 2009	5.9	<2	35	0.012	120.9
15 June 2009	6.2	<2	34	0.013	122.1
22 June 2009	6.4	<2	56	0.006	121.9
29 June 2009	6.6	2	32	<0.005	127
06 July 2009	5.7	<2	37	0.078	111.6
13 July 2009	6.2	<2	31	0.006	111.7
20 July 2009	6.3	<2	25	<0.005	117.3
27 July 2009	6.1	<2	53	0.036	180
03 August 2009	4.7	<2	64	<0.005	164.9
10 August 2009	5.4	<2	53	<0.005	104.8
17 August 2009	4.9	<2	43	0.006	97.5
24 August 2009	6.9	<2	43	<0.005	83.5

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SW101 (Sampling Surface Water Quality of Outfall from S5-2)					
	pH	SS	COD	Total	Conductivity
	(pH units)	(mg/l)	(mg/l)	Ammonia	(20c uS/cm)
				(mg/l)	
04 April 2005	5.3	44	141	0.265	129.5
11 April 2005	5.2	25	85	0.127	130.4
18 April 2005	4.6	13	57	0.067	128.6
25 April 2005	5	5	55	0.034	130.1
03 May 2005	4.6	6	56	0.048	122.8
09 May 2005	4.7	<4	53	0.018	115.7
16 May 2005	4.3	<4	43	0.013	128.7
23 May 2005	5	10	59	0.009	119.1
30 May 2005	5	72	138	0.049	107.4
06 June 2005	6	<4	81	0.39	123.6
13 June 2005	6	9	121	0.803	164
20 June 2005	4.9	26	72	0.07	93
27 June 2005	5.3	14	75	<.005	95
04 July 2005	4.4	13	101	<.005	96.5
11 July 2005	4.8	6	65	<.005	93.6
18 July 2005	4.4	<4	63	0.008	96.9
25 July 2005	5.1	<4	59	0.013	89
01 August 2005	5.2	<4	72	0.012	90
08 August 2005	4.5	5	51	0.773	92
15 August 2005	5.1	<4	44	0.028	105
22 August 2005	4.8	<4	64	0.059	103.5
29 August 2005	4.9	10	45	0.829	190
05 September 2005	4.9	10	45	0.829	190
12 September 2005	5.5	20	86	0.753	179
19 September 2005	4.2	11	48	0.78	178
26 September 2005	4.4	28	85	0.185	152
03 October 2005	3.8	49	85	0.306	139
10 October 2005	5.9	16	22	0.365	123
17 October 2005	4.5	13	45	0.138	103
09 January 2006	4.1	12	25	0.048	107
03 April 2006	5.2	7	20	0.049	87
03 July 2006	5.1	<4	38	0.008	96
02 October 2006	4.7	<4	46	0.088	110.6
08 January 2007	5.4	<4	17	0.67	95.6
02 April 2007	4.5	<4	31	0.154	197
09 April 2007	4.8	<4	46	0.059	205
16 April 2007	4.5	<4	25	0.028	199.8
23 April 2007	5.1	<4	45	0.072	198.2
30 April 2007	4.5	9	44	0.055	139.5
07 May 2007	4.5	<4	60	0.026	139
14 May 2007	4.6	<4	62	0.034	144.5
21 May 2007	5	<4	12	0.013	144.1
28 May 2007	4.7	<4	43	0.012	141.6
04 June 2007	4.5	6	59	0.01	141
11 June 2007	4.7	5	92	0.019	155.9
18 June 2007	4.6	11	73	0.188	153.5
25 June 2007	4.9	<4	23	<0.005	139
02 July 2007	5.4	<4	43	0.089	122.8
09 July 2007	4.5	5	54	<0.005	113.4
16 July 2007	4.4	5	40	0.041	90.1
23 July 2007	4.5	<4	30	0.021	90.8
30 July 2007	6	12	116	0.227	119.9
06 August 2007	4.4	20	90	0.019	93.9
13 August 2007	4.4	5	59	0.072	108.2
20 August 2007	4.3	4	82	0.016	97.6
27 August 2007	4.5	2	54	0.033	108
03 September 2007	4.2	3	59	0.008	112.5
10 September 2007	4.4	<2	59	0.322	233

17 September 2007	4.4	9	32	0.419	107.7
24 September 2007	4.4	<2	43	0.117	114.7
01 October 2007	4.4	<2	45	0.107	95.6
08 October 2007	4.3	<2	55	0.062	107.8
15 October 2007	4.5	<2	54	0.169	110.3
22 October 2007	4.5	<2	43	0.103	106.7
29 October 2007	4.4	3	68	0.216	109.6
05 November 2007	4.5	<2	52	0.217	102.5
12 November 2007	4.6	<2	60	0.203	115.5
19 November 2007	4.3	2	37	0.229	93.8
26 November 2007	4.5	2	29	0.158	91.3
03 December 2007	4.3	<2	51	0.226	108.6
10 December 2007	4.2	5	45	0.234	124.2
17 December 2007	4.4	<2	26	0.311	122
24 December 2007	4.8	<2	25	0.047	80.4
31 December 2007	4.4	<2	36	0.126	102
07 January 2008	4.5	<2	16	0.178	109.2
14 January 2008	4.3	<2	21	0.065	169.4
21 January 2008	5.4	<2	14	0.025	110.5
28 January 2008	4.4	<2	36	0.135	122.5
04 February 2008	4.8	12	20	0.21	112.3
11 February 2008	4.3	2	29	0.107	146.6
18 February 2008	4.4	2	32	0.12	178
25 February 2008	4.3	3	27	0.061	141.2
03 March 2008	4.4	<2	25	0.156	125.4
10 March 2008	4.4	<2	25	0.067	127.3
17 March 2008	4.1	3	21	0.186	219
24 March 2008	4.2	<2	<10	0.118	225
31 March 2008	4.4	4	43	0.078	165.2
07 April 2008	4.3	3	<10	0.061	167.5
14 April 2008	4.4	<2	<10	0.045	170
21 April 2008	4.4	<2	13	0.094	165
28 April 2008	4.5	<2	24	0.017	164.2
05 May 2008	4.5	<2	20	0.029	164.2
12 May 2008	4.5	<2	23	<0.005	175.1
19 May 2008	4.5	3	37	0.023	178.7
26 May 2008	4.3	<2	38	<0.005	183
02 June 2008	4.4	<2	33	<0.005	208
09 June 2008	4.2	<2	22	0.047	204
16 June 2008	4.2	<2	<10	0.01	208
23 June 2008	4.3	<2	50	0.136	190.8
30 June 2008	4.6	4	40	0.045	191
07 July 2008	3.9	<2	68	0.205	195.9
14 July 2008	3.6	3	68	0.126	195.8
21 July 2008	3.4	3	52	0.089	196
28 July 2008	3.8	23	70	0.031	192.3
04 August 2008	3.2	<2	64	<0.005	187.6
11 August 2008	3.6	3	67	<0.005	180.6
18 August 2008	4.1	8	73	0.332	154.9
15 September 2008	4.7	2	35	0.067	114.2
22 September 2008	4.4	4	63	0.046	118.5
29 September 2008	4.3	<2	110	<0.005	118.7
06 October 2008	4.2	<2	60	0.179	124
13 October 2008	4.2	<2	34	0.117	98
20 October 2008	4.4	<2	60	0.129	99.3
27 October 2008	4.1	2	10	0.187	138.6
03 November 2008	5	<2	36	0.125	125.5
10 November 2008	5.4	<2	45	0.137	67.8
17 November 2008	6.7	<2	28	0.047	124.1
24 November 2008	6.6	<2	25	0.049	138.6
01 December 2008	5.2	<2	12	0.057	146.3
08 December 2008	6.3	<2	24	0.147	123.5

15 December 2008	4.5	2	38	0.204	110
22 December 2008	4.1	<2	29	0.025	133.8
29 December 2008	4.5	<2	49	<0.005	130.9
05 January 2009	4.5	<2	49	<0.005	130.9
12 January 2009	4.1	<2	18	0.313	119
19 January 2009	3.8	<2	39	0.333	196.9
26 January 2009	3.9	<2	<10	0.304	160.1
02 February 2009	4	<2	49	0.21	151.3
09 February 2009	4.2	<2	22	0.165	148.6
16 February 2009	4.4	<2	47	0.095	136
23 February 2009	6	6	45	0.123	132.3
02 March 2009	4.3	<2	45	0.074	129.7
09 March 2009	4.4	<2	43	0.235	131.6
16 March 2009	4.2	2	33	0.178	134
23 March 2009	4.3	2	30	0.135	131.8
30 March 2009	4.1	2	28	0.077	148.1
05 April 2009	4.2	3	31	0.042	147.4
13 April 2009	4.1	2	53	0.115	163.2
19 April 2009	4.3	2	39	0.136	145.4
26 April 2009	4.3	2	44	0.045	149.5
04 May 2009	5	2	55	0.153	121.8
11 May 2009	5.2	2	44	0.019	152.5
18 May 2009	4.6	2	55	0.035	140
25 May 2009	4.6	<2	49	0.096	132.2
01 June 2009	4.3	2	62	0.04	134.5
08 June 2009	4.7	2	64	0.046	139.1
15 June 2009	4.5	<2	47	0.018	140.1
22 June 2009	4.5	<2	74	0.032	140.1
29 June 2009	4.5	2	60	<0.005	141.3
06 July 2009	4.4	<2	58	0.121	134.4
13 July 2009	4.2	<2	78	0.109	164.4
20 July 2009	4.5	<2	65	0.088	162.3
27 July 2009	4.5	<2	76	0.091	160.2
03 August 2009	4.4	3	84	0.048	155.1
10 August 2009	5.5	<2	86	0.04	153.6
17 August 2009	4.2	<2	89	0.12	211
24 August 2009	5.5	<2	82	0.056	183.6

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Borehole	BH 1A					
Parameter	05/11/2003	13/04/2005	07/06/2005	25/04/2007	22/05/2007	12/07/2007
COD	234	39	21	17	23	34
Nitrate	<0.3	<0.1	<0.1	0.124	<0.3	<0.3
Total Ammonia	3.2	2.242	2.533	3.06	3.6	3.1
Conductivity	685	600	555	552	642	650
Diesel Range	<10	<10	<10	<10	35	<10

Borehole	BH 1B					
Parameter	13/04/2005	07/06/2005	25/04/2007	22/05/2007	12/07/2007	
COD	209	33	16	<10	23	23
Nitrate	<0.3	<0.1	<0.1	0.104	<0.3	<0.3
Total Ammonia	2	2.08	3.977	2.983	3.4	3
Conductivity	569	614	261	567	635	680
Diesel Range	<10	<10	<10	<10	<10	<10

Borehole	BH 2A					
Parameter	13/04/2005	07/06/2005	25/04/2007	22/05/2007	12/07/2007	
COD	303	1200	34	96	Dry	Dry
Nitrate	<0.3	<0.1	<0.1	<.1	Dry	Dry
Total Ammonia	2.9	2.38	2.408	1.833	Dry	Dry
Conductivity	284	232	550	241	Dry	Dry
Diesel Range	<10	<10	<10	<10	Dry	Dry

Borehole	BH 2B					
Parameter	13/04/2005	07/06/2005	25/04/2007	22/05/2007	12/07/2007	
COD	240	122	80	<10	15	30
Nitrate	<0.3	<0.1	<0.1	<.1	<0.3	<0.3
Total Ammonia	2.7	3.168	3.352	4.297	5.4	4.5
Conductivity	355	398	255	446	354	529
Diesel Range	<10	<10	<10	<10	<10	<10

Borehole	BH 3A					
Parameter	13/04/2005	07/06/2005	25/04/2007	22/05/2007	12/07/2007	
COD	641	775	16	217	75	69
Nitrate	<0.3	<0.1	<0.1	<.1	<0.3	<0.3
Total Ammonia	2.5	2.455	1.652	1.252	2.2	2
Conductivity	231	195.4	253	202	214	238
Diesel Range	<10	<10	<10	<10	<10	<10

Borehole	BH 3B					
Parameter	13/04/2005	07/06/2005	25/04/2007	22/05/2007	12/07/2007	
COD	342	79	97	13	31	35
Nitrate	<0.3	<0.1	<0.1	<.1	<0.3	<0.3
Total Ammonia	1.2	1.754	2.554	1.861	1.9	1.7
Conductivity	279	254	187	237	262	325
Diesel Range	<10	<10	<10	354	35	<10

Borehole	BH 4A					
Parameter	13/04/2005	07/06/2005	25/04/2007	22/05/2007	22/05/2007	12/07/2007
COD	458	358	160	183	162	321
Nitrate	<0.1	0.379	0.306	<0.3	21.9	<0.3
Total Ammonia	1.883	1.988	<0.1	0.2	<0.2	1.9
Conductivity	373	259	241	270	271	242
Diesel Range	<10	<10	36	<10	113	<10

Borehole	BH 4B					
Parameter	13/04/2005	07/06/2005	25/04/2007	22/05/2007	22/05/2007	12/07/2007
COD	475	358	45	49	40	51
Nitrate	<0.1	0.379	<0.1	<0.3	<0.3	<0.3
Total Ammonia	2.861	1.988	3.65	4.3	4.2	3.5
Conductivity	256	259	191.5	187	184	190
Diesel Range	<10	<10	944	<10	<10	<10

APPENDIX B

Reporting and Corrective/Preventative Actions issued to EPA (2005-2008)

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BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED

Leabeg, Tullamore, Co Offaly, Ireland

Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/001	Date	06/05/05	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedance in the Emission Limit Value (ELV) associated with the composite sampler located at SW4 (Location 7). Suspended solids result of 65 mg/l for 17/04/05. The result for the 7 days before and after the 17 th show all results to be within the ELV as specified by Condition 4 of Waste Licence W199-1 (See attached).					
Bodies Informed, Date and Details:	Mayo County Council & North Western Regional Fisheries Board				
Identified as a Result of:	Suspended solids results from the 24 hr flow proportional composite sampler operating at this location.				
Identified by:	Enda McDonagh, Bord na Mona Energy Ltd			Date of Identification:	29 /04/05
Action Plan:	<p>There are three silt ponds discharging up-stream of the composite sampler. Following investigation of these three outlets, and examination of the inspection records, the outlet from SP 2a/b was blocked and a pump installed. This enabled the discharge to be pumped onto an adjacent bay, which having being blocked, allowed for the discharge water to be retained on site for a much longer period which will allow for longer retention time on site. All of these operations are being carried out within the sites licensed boundary. This operation is currently being carried out on daily basis and results for the succeeding 7 days show them to in compliance. In addition, the laboratory results for suspended solids, which were taking up to 10 working days to be processed, are now being fast tracked to allow a more immediate response should suspended solids above the ELV be identified.</p> <p>Conditions at this location will be monitored closely over the next few weeks as to its effectiveness at reducing the suspended solids.</p>				
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd				
Target Date for Completion:	04/05/05	Actual Date of Completion:	04/05/05	/	/
Closed by (Signature and Title):				Date:	/ /

Srahmore Waste Licence W199-1				SW 4				BORD NA MÓNA 					
Month: April 2005 - Second Quarter								Monthly			Quarterly		
Date	Flow (l/s) Average	pH (pH units)	Conductivity (20c uS/cm) Average	COD (mg/l)	SS (mg/l)	TDS (mg/l)	Ammonia (mg/l)	Nitrates (mg/l)	Nitrites (mg/l)	TP (mg/l)	BOD (mg/l)	OFG (mg/l)	Non-Compliance 8<35 & 2<42
11↓					16								ok
12					20								ok
13					33								ok
14					42								ok
15					30								ok
16					28								ok
17		7		68	65	142	0.611						N/C
18					23								ok
19					20								ok
20↑					17								ok
21↓					18								ok
22					16								ok
23					15								ok
24		7.28		47	18	168	0.596						ok

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BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED

Leabeg, Tullamore, Co Offaly, Ireland

Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/003	Date	02/06/05	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
<p>Exceedance in the Emission Limit Value (ELV) associated with the composite sampler located at SW4 (Location 7). Suspended solids results of 71, 49 & 71 mg/l for the 26/27/28 May. Limits call for 8/10 samples to be < 35 mg/l and 2/10 to be <42 mg/l. Rainfall for this period was very high (see attached) with 33.5 mm between the 25 and 27 of May.</p> <p>Exceedance in the Emission Limit Value (ELV) associated with S5-2 (SW101). Suspended solids results of 72 mg/l for the grab sample of 30/05/05. Limits call for no individual result shall exceed 1.2 times the ELV (42mg/l)</p> <p>Again rainfall for the 5 days previous to this event was 34.8 mm.</p>					
Bodies Informed, Date and Details:	Mayo County Council & North Western Regional Fisheries Board				
Identified as a Result of:	Suspended solids results from the 24 hr flow proportional composite sampler operating at this location.				
Identified by:	Enda McDonagh, Bord na Mona Energy Ltd	Date of Identification:	01/06/05		
Action Plan:	<p>To counteract this high flow, the swale gate has been closed, allowing the swale to back up, providing additional storage and retention time, as was proposed in the EIS. All sluice gates have been raised to the maximum height allowed. In addition it is proposed to pump the excess water from the swale into the controlled overflow area (Area 7) as proposed in the EIS.</p> <p>The controlled overflow area is 16 hectares and all drains in this area have been blocked. This will allow the water to permeate over the bog surface and fill these blocked drains, providing a substantial area of water retention. This will greatly assist in settling out any suspended solids in the water. This area eventually drains to silt ponds S5-6 & S5-7, which are part of the IPC licence ponds, before discharging directly to the Munhin River.</p> <p>The quarterly grab samples for IPC 505 are due next Tuesday, and additional samples will be taken at S5-6 & S5-7, should pumping into Area 7 occur.</p> <p>A sample is also due at S5-2, SW101 (non-compliance pond), which will identify any further problems at this emission point.</p>				
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd				
Target Date for Completion:	08/06/05	Actual Date of Completion:			
Closed by (Signature and Title):				Date:	03/06/05

Srahmore Waste Licence W199-1		SW 4		BORD NA MÓNA 									
Month: May 2005 - Second Quarter								Monthly			Quarterly		
Date	Flow (l/s) Average	pH (pH units)	Conductivity (20c uS/cm) Average	COD (mg/l)	SS (mg/l)	TDS (mg/l)	Ammonia (mg/l)	Nitrates (mg/l)	Nitrites (mg/l)	TP (mg/l)	BOD (mg/l)	OFG (mg/l)	Non-Compliance 8<35 & 2<42
1↓		7.5		23	13	205	0.568	0.454	0.015	0.063			ok
2					8								ok
3					7								ok
4					8								ok
5					5								ok
6					6								ok
7					7								ok
8		7.5		33	5	275	0.079						ok
9					8								ok
10↑					4								ok
11↓					6								ok
12					4								ok
13					4								ok
14					8								ok
15		7.2		45	4	198	0.427						ok
16					<4								ok
17					13								ok
18					6								ok
19					6								ok
20↑					9								ok
21↓					8								ok
22		7.6		32	10	186	0.516						ok
23					9								ok
24					<4								ok
25					16								ok
26					71								N/C
27					49								N/C
28					71								N/C
29		6.6		117	39		0.597						ok
30↑													

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BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED

Leabeg, Tullamore, Co Offaly, Ireland

Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/005	Date	16/06/05	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedance in the Emission Limit Value (ELV) associated with the composite sampler located at SW4 (Location 7). Suspended solids results of 62, 92 & 81 mg/l for the 2/3/4 June and 74 for the 9 th . (see attached). Limits call for 8/10 samples to be < 35 mg/l and 2/10 to be <42 mg/l. Rainfall for this period was very high (see attached) with 27.5 mm falling on the 1/2 June.					
Bodies Informed, Date and Details:	Mayo County Council & North Western Regional Fisheries Board				
Identified as a Result of:	Suspended solids results from the 24 hr flow proportional composite sampler operating at this location.				
Identified by:	Enda McDonagh, Bord na Mona Energy Ltd	Date of Identification:	16/06/05		
Action Plan:	<p>The source of these non-compliance's have been investigated and identified as being caused in part by the rainwater during high rainfall events, discharging through the drain leading to SP 2a & b and the swale leading to SP 3a & b. These drains are cut into the subsoil and are producing a colloidal material which is proving difficult to settle. To counteract this, it is proposed to line these drains with a 1.0 mm LLDPE liner, which will allow the rainwater to discharge to the silt ponds, free from any colloidal material, as it will be prevented from re-suspending the sediment in the drain bed. It is proposed to start this work this weekend, on the drain from the reception area to SP 2a & b. If it proves successful, which will be visually evident immediately, the liner will be extended to cover the swale drain from the peat deposition area to SP 3a & b. The results for the week after these non-compliances (5 – 11/06/05) other than the 9th are back down to normal compliance levels. The high result for the 9th was due directly to a gate being installed at the flooded bay adjacent to SP 2a & b, as was proposed in SR-CA 001 and water being released. This water is now being released on a more controlled manner, from the surface of the bay. In the interim, the swale gate remains closed with any excess rainwater during these high rainfall events being pumped into the controlled overflow area.</p>				
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd				
Target Date for Completion:	27/06/05	Actual Date of Completion:			
Closed by (Signature and Title):		Date:	16/06/05		



Month: June 2005 - Second Quarter

Date	Flow (l/s) Average	pH (pH units)	Conductivity (20c uS/cm) Average	COD (mg/l)	SS (mg/l)	TDS (mg/l)	Ammonia NH3-N (mg/l)	Monthly			Quarterly		Non-Compliance 8<35 & 2<42
								Nitrates (mg/l)	Nitrites (mg/l)	TP (mg/l)	BOD (mg/l)	OFG (mg/l)	
1↓					31								ok
2					62								N/C
3					92								N/C
4					81								N/C
5		6.8		102	35	156	0.209	0.414	0.03	0.04			ok
6					9								ok
7					16								ok
8					9								ok
9					74								N/C
10↑					39								ok
11↓					33								ok
12													
13													
14													
15													
16													
17													
18													
19													
20↑													
21↓													
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Weather Report

Srahmore - Attawalla Station

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	November	Dec
1st		0.1	6	12.9					6.63	9.3
2nd		1.5	8.1	14.8					3.6	18.6
3rd		0	0.1						12	10
4th		7.2	0						7.5	2.6
5th		10	2.7	3.5					7	7.2
6th		9.8	2.5	0					9.8	2
7th		3.5	2.4	0.1					7.6	8.3
8th		1.1	1.7	0.4					3.4	5.8
9th		0.4	0.1	0					13.6	
10th		0	0	0					8.3	
11th		4	0	0					7	
12th		6.4	0	0					1.8	
13th		8.6	0	0.1					0.6	
14th		4	0	0.5					2.9	
15th		0.2	0.2	9.1					0.1	
16th	1.5	8.4	0.1						0.1	
17th	0.8	0.1	0						0	
18th	0	0.2	0.8						0	
19th	0	0	7.3						0	
20th	0.7	0	2.5						0	
21st	6.6	0	6.2						0	
22nd	3.6	1.5	5.8						0	
23rd	0	0	0.1						0.8	
24th	0.9	0.2	11.1						5.1	
25th	0	3.2	20.3						3.5	
26th	0	11	1						2	
27th	0	1.2	12.2						6	
28th	1.1	0	0.8						12.2	
29th	0.3	0.7	0.5						5	
30th	0		0.2						6.6	
31st	6.5		19.4							
Total	22	83.3	112.1	41.4	0	0	0	0		
Average	1.375	2.872414	3.616129	3.184615	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Stdev	2.221261	3.671891	5.517252	5.393645	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Max	6.6	11	20.3	14.8	0	0	0	0		

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Liam O'Suilleabhain
Office of Environmental Enforcement
Inspector
Environmental Protection Agency
John Moore Rd.
Castlebar
Co Mayo

October 24th 2005

Ref: W199-1/Srah025
Your Ref: 199-1/gc021os

Re. Comment on Monitoring Returns

Dear Mr. O'Suilleabhain

The monitoring results received on the 18th October last, for samples taken at the Srahmore site, by the EPA, on the 26th September at Location 7, S5-1 & S5-2, have been cross checked with the results of our weekly sampling taken at these locations on the same day.

These results are attached, for the weeks prior to & after the 26th. In relation to the only ELV attached to the site emissions (suspended solids), our monitoring results for that period are within the limits set out in Schedule B Emission Limits for Location 7 (SW4) & S5-1 (SW100). However on the 3rd October, S5-2(SW101) recorded an SS of 49 mg/l, which is 7 mg/l above the ELV, i.e. no grab sample to exceed 1.2 times the ELV. The results for the following weeks at this location are all within the ELV i.e. 16 & 13 mg/l.

Yours sincerely

Enda McDonagh
Bord na Mona Energy Ltd.

BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED

Leabeg, Tullamore, Co Offaly, Ireland

Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/007	Date	07/11/05	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedance in the Emission Limit Value (ELV) associated with the composite sampler located at SW4 (Location 7), & SW 101. Suspended solids results of 210 & 228 mg/l for the 26 th September based on EPA sampling. The Waste Licence calls for 8/10 samples to be < 35 mg/l and 2/10 to be <42 mg/l and no individual grab sample to exceed 42 mg/l. Rainfall for this period was very high (see attached) with 40mm over three days.					
Bodies Informed, Date and Details:	Mayo County Council & North Western Regional Fisheries Board				
Identified as a Result of:	Suspended solids results from EPA monitoring at SW4(location 7) & SW101				
Identified by:	Enda McDonagh, Bord na Mona Energy Ltd	Date of Identification:	18/10/2005		
Action Plan:	<ol style="list-style-type: none"> No similar excavation work will take place during high rainfall events. This work on the internal drainage system is now completed and other than normal peat deposition and grading during peat haulage, no other excavation or drainage work is planned. During high rainfall events, the swale gate will be closed and any water backing up in the swale drain will be pumped out into the controlled discharge area (area 7). A pump is permanently located at the swale gate for this purpose. In future, all EPA staff visiting the site for sampling will be accompanied around the different sampling points. If this is not possible, a key for the composite sampler will be left with security. A split sample will be taken where possible. The sampling procedure will be reviewed, so as to provide for good, representative sampling. 				
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd				
Target Date for Completion:	Completed as from the 04.11.05	Actual Date of Completion:			
Closed by (Signature and Title):		Date:	07/11/05		

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Leabeg, Tullamore, Co Offaly, Ireland

Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/007-2	Date	23/11/05	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedance in the Emission Limit Value (ELV) associated with the composite sampler located at SW4 (Location 7), & SW 101. Suspended solids results of 210 & 228 mg/l for the 26 th September based on EPA sampling. The Waste Licence calls for 8/10 samples to be < 35 mg/l and 2/10 to be <42 mg/l and no individual grab sample to exceed 42 mg/l. Rainfall for this period was very high (see attached) with 40mm over three days.					
Bodies Informed, Date and Details:	Mayo County Council & North Western Regional Fisheries Board				
Identified as a Result of:	Suspended solids results from EPA monitoring at SW4(location 7) & SW101				
Identified by:	Enda McDonagh, Bord na Mona Energy Ltd	Date of Identification:	18/10/2005		
Action Plan:	<ol style="list-style-type: none"> No similar excavation work will take place during high rainfall events. This work on the internal drainage system is now completed and other than normal peat deposition and grading during peat haulage, no other excavation or drainage work is planned. In accordance with the action required by the EPA, a new pump has been purchased for dealing with run-off during periods of heavy rainfall. This pump will be stationed at the swale gate at all times, and will be used for pumping the water backed-up in the swale during these events out into Area 7. The trigger for this action will be the interpretation of daily weather forecasts received from Met Eireann at the site. Predicted high rainfall will require the closing of the swale gate, and the pumping into Area 7. A record of when these events occur will be maintained on-site. The silt control procedure has been up-dated to include this requirement. (See Attached). In future, all EPA staff visiting the site for sampling will be accompanied around the different sampling points. If this is not possible, a key for the composite sampler will be left with security. A split sample will be taken where possible. The sampling procedure will be reviewed, so as to provide for good, representative sampling. 				
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd				
Target Date for Completion:	Completed as from the 23-11-05	Actual Date of Completion:			
Closed by (Signature and Title):				Date:	23/11/05

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Leabeg, Tullamore, Co Offaly, Ireland

Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/009	Date	21/11/05	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd	
Nature of non-compliance?	Actual / Potential	Description of non-compliance				
Exceedance of ELV at SW4. 54 mg/l where allowable ELV is 1.2 x 35mg/l (42mg/l) on 2/10 consecutive samples.						
Bodies Informed, Date and Details: Mayo County Council & North Western Regional Fisheries Board.						
Identified as a Result of: Composite sampler results from Complete Laboratory Services. The rainfall for that day and the one previous show a total of 15.7mm. The results from SW104 (300-400 metres down/stream of SW4), showed only 14 mg/l SS. This is located before discharge to the Munhin River.						
Identified by:	Enda McDonagh			Date of Identification:	07/11/05	
Action Plan:	As was proposed under SR-CA/007-2, a new pump has been stationed at the swale gate, so as to pump into the controlled overflow during high rainfall periods.					
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd					
Target Date for Completion:	Completed as from	Actual Date of Completion:				
	21/11/05					
Closed by (Signature and Title):					Date:	21/11/05

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Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/010	Date	11/01/06	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedance of ELV at SW4. 45 mg/l where allowable ELV is 1.2 x 35mg/l (42mg/l) on 2/10 consecutive samples.					
Bodies Informed, Date and Details:	Mayo County Council & North Western Regional Fisheries Board.				
Identified as a Result of:	Composite sampler results from Complete Laboratory Services.				
The results from SW104 (300-400 metres down/stream of SW4), showed only 13 mg/l SS. This is located before discharge to the Munhin River.					
Identified by:	Enda McDonagh	Date of Identification:	09/01/06		
Action Plan:	As was proposed under SR-CA/007-2, a new pump will be stationed at the swale gate, so as to pump into the controlled overflow during high rainfall periods. This new pump is now in-place and is being used to prevent excess water discharging to SW4, during heavy rainfall events. The controlled overflow area is now being utilised more efficiently. The effectiveness of this operation is being assessed using the results obtained weekly at SW4. As the exceedance was only 3 mg/l above the limit, subsequent results for the following weeks will be have to be consulted to establish the effectiveness of this operation.				
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd				
Target Date for Completion:	Completed as and from 21/12/05	Actual Date of Completion:			
Closed by (Signature and Title):				Date:	11/01/06

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Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/011	Date	10/05/2007	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedance of ELV at SW4. 78 mg/l where allowable ELV is 1.2 x 35mg/l (42mg/l) on 2/10 consecutive samples.					
Bodies Informed, Date and Details:	Mayo County Council & North Western Regional Fisheries Board.				
Identified as a Result of:	Composite sampler results from Complete Laboratory Services.				
Identified by:	Enda McDonagh	Date of Identification:	18/05/07		
Action Plan:	<p>The results for before and after the non-compliance show results are compliant (see attached graph). SW 104 which is located 500-600m downstream of SW4 shows the discharge as 13 mg/l for the same day, and is consistently lower than SW4 since peat deposition commenced. This is due to additional treatment at SW104 before the discharge to the Munhin River. Therefore even though SW4 for that day was non-compliant, it had no effect on the discharge to the Munhin. However a number of improvements have been put in-place at Srahmore to increase retention and subsequent treatment on site.</p> <ol style="list-style-type: none"> 1. The gates on all silt ponds have been raised to provide additional storage on-site. 2. An automatic discharge has been installed at the swale gate to allow rainfall during flood events to discharge into the controlled overflow area 7. 3. The samplers have been calibrated to improve collection efficiency and representative sampling. 				
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd				
Target Date for Completion:	Completed as and from 21/05/07	Actual Date of Completion:	21/05/07		
Closed by (Signature and Title):				Date:	21/05/07

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Leabeg, Tullamore, Co Offaly, Ireland

Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/012	Date	17, 18 & 19/05/2007	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedance of ELV at SW4. 76, 37 & 52 mg/l where allowable ELV is 1.2 x 35mg/l (42mg/l) on 2/10 consecutive samples.					
Bodies Informed, Date and Details:	Mayo County Council & North Western Regional Fisheries Board.				
Identified as a Result of:	Composite sampler results from Complete Laboratory Services.				
Identified by:	Enda McDonagh	Date of Identification:	18/05/07		
Action Plan:	<p>These exceedences occurred the week after the one reported on the 21/05/07 (SR-CA/012). Results of Suspended solids from internal silt ponds SP2A & 2B during this period had a result of 65 mg/l. SW 104 which is located 500-600m downstream of SW4 shows the discharge as 20, 19 and 21 mg/l for the same dates and is consistently lower than SW4 since peat deposition commenced. This is due to addition treatment at SW104 before the discharge to the Munhin River. Therefore, even though SW4 for those 2 days was non-compliant it had no effect on the discharge to the Munhin. (see attached graph)</p> <p>The samples taken for SW4 and 104 on the 28th May for the week after the high results will be available by Friday the 1st June and will indicate if the high result was due to rainfall over the period. Excess rainfall during the high events is being pumped into the controlled overflow area as per the Waste Licence.</p> <p>As Sw104 is below the Emission Limit Value, this pond, while outside the Waste Licence area but inside the Integrated Pollution Prevention Control Licence area, is adequately treating the non-compliant emission from SW4.</p>				
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd				
Target Date for Completion:	Friday 1 st June	Actual Date of Completion:			
Closed by (Signature and Title):		Date:	28/05/2007		

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Leabeg, Tullamore, Co Offaly, Ireland

Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/013	Date	25 & 29 th May 2007	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedance of ELV at SW4 on the 25 th and 29 th May of 125 and 63 mg/l where allowable ELV is 1.2 x 35mg/l (42mg/l) on 2/10 consecutive samples.					
Bodies Informed, Date and Details:	Mayo County Council & North Western Regional Fisheries Board.				
Identified as a Result of:	Composite sampler results from Complete Laboratory Services.				
Identified by:	Enda McDonagh	Date of Identification:	18/05/07		
Action Plan:	<p>These exceedances occurred 6 and 10 days after the one reported on the 21/05/07 (SR-CA/012). Results of Suspended solids from internal silt ponds SP2A & 2B during this period had a result of 65 and 55 mg/l. SW 104 which is located 500-600m downstream of SW4 shows the discharge as 35 & 22 mg/l for the same dates and is consistently lower than SW4 since peat deposition commenced. This is due to additional treatment at SW104 before the discharge to the Munhin River. Therefore, even though SW4 for those 2 days was non-compliant it had no effect on the discharge to the Munhin. (see attached graph)</p> <p>However, these results at SW4 were caused by peat from the haulage wagons which was deposited on the haul road and washed into the drain. This peat has to be continually scraped and washed from these tarmac roads for Health and Safety concerns regarding skidding of machines. This peat is ridged up with a scrapper and during the rainfall on the 23/24 of May and some of it was washed into the drain. Also the SS from SP2A & 2B was high during that week and would have contributed to the problem.</p> <p>The corrective action plan was initiated on the 25th of may after this problem was visually identified. The loose peat in this area was removed from the road and in future excess peat scrapped from the road over the drain will be stockpiled away from the drain and deposited in the peat deposition bays. Silt pond SP 2A and 2B will also be cleaned as this may be adding to the non-compliance.</p> <p>In order to reduce the reaction time to high SS, Complete Laboratory Services will now collect samples twice a week, on Monday and Wednesday. These samples will be analysed on Tuesday and Thursday with SS results prioritised. In addition a spilt sample will be sent to the</p>				

laboratory in operation at the Shell Bellanaboy site, daily, where SS will be analysed using a new optical SS meter which will give indicative early results which will allow exceedances in the Emission Limit Value to be detected early and corrective action applied.

Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd
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Target Date for Completion:	Saturday 9 th June	Actual Date of Completion:	
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Closed by (Signature and Title):		Date:	08/06/07
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FACSIMILE TRANSMITTAL SHEET

TO: Liam O Suilleabháin	FROM: Enda McDonagh
COMPANY: EPA, Castlebar	DATE: 27/06/2007
FAX NUMBER: 094 9048499	TOTAL NO. OF PAGES INCLUDING COVER: 2
PHONE NUMBER: RE:	SENDER'S REFERENCE NUMBER: SRAH050 YOUR REFERENCE NUMBER:

Srahmore peat repository

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

Re Srahmore Waste Licence W0199-01

Dear Mr O'Suilleabháin

Bord na Mona Energy wish to notify the Agency that sampling carried out at Location 7 (SW4) on the 19th June have returned results of 47 mg/l suspended solids. The limit on 2/10 samples is 1.2 times 35mg/l which is 42 mg/l. The sample was therefore 5 mg/l above the ELV.

These samples were collected on the 20th June and results would have been available on Friday the 22nd. As I was on A/L for Friday and had a meeting Monday, I only received the results today and apologise for the late notification.

Sample results for the three weeks to the 19th were all compliant following the corrective actions associated with the previous 5 non-compliances in May, notified to the Agency.

The results attached cover all of June 2007 to the 19th and include daily sampling carried out by the laboratory in Bellanboy. Results for the same day from Bellanboy lab were 12 mg/l. Results from CLS for the 5 days after the 19th will be available tomorrow and will be included in the corrective action report to follow.

Regards

Enda McDonagh
Bord na Mona Energy Ltd
Tel. 057 93 45911
Fax. 057 93 45160
Mob. 086 2370816

[CLICK HERE AND TYPE RETURN ADDRESS]

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
Liam O Suilleabháin	Enda McDonagh
COMPANY:	DATE:
EPA, Castlebar	29/06/2007
FAX NUMBER:	TOTAL NO. OF PAGES INCLUDING COVER:
094 9048499	2
PHONE NUMBER:	SENDER'S REFERENCE NUMBER: SRAH052
RE:	YOUR REFERENCE NUMBER:
Srahmore peat repository	

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

Re Srahmore Waste Licence W0199-01

Dear Mr O'Súilleabháin

Bord na Mona Energy wish to notify the Agency that sampling carried out at Location 7 (SW4) on the 22nd June have returned results of 49 mg/l suspended solids. The limit on 2/10 samples is 1.2 times 35mg/l which is 42 mg/l. The sample was therefore 7 mg/l above the ELV.

These samples were collected on the 25th June and results would have been available on Thursday the 28th.

The results attached cover all of June 2007 to the 24th and include daily sampling carried out by the laboratory in Bellanboy. Results for the same day from Bellanboy lab were 20 mg/l. Results for SW104 which is down stream of Location 7 (SW4) on the same day were 13 mg/l. Corrective action for this and SRAH050 to follow.

Regards

Enda McDonagh
Bord na Mona Energy Ltd
Tel. 057 93 45911
Fax. 057 93 45160
Mob. 086 2370816

BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED

Leabeg, Tullamore, Co Offaly, Ireland

Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/015	Date	19/06/07 & 22//06/07	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedence of ELV on the 19 th and 22 nd of June 2007 of 47 and 49 mg/l. The ELV is 8 out of 10 < 35mg/l and 2out of 10 < 42 mg/l.					
Bodies Informed, Date and Details: EPA on the 29 th June 2007 (ref. Srah050 – fax and Srah052 - fax). Mayo County Council and NWRFB.					
Identified as a Result of:	Laboratory analysis				
Identified by:	Joe Ryan	Date of Identification:	29/06/2007		
Action Plan:	As peat deposition has been completed as of Friday June 29 th , it is expected that the potential for further non-compliances is significantly reduced. The site manager has been notified of these non-compliances. As there is a clear discrepancy in lab results which attributed to the delay in notification a calibration of the photometric metre used in Ballinboy will be carried out on Monday July 2 nd .				
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd				
Target Date for Completion:	03/07/2007	Actual Date of Completion:			
Closed by (Signature and Title):	Joe Ryan	Environmental Officer	Date:	29/06/2007	

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FACSIMILE TRANSMITTAL SHEET

TO: Liam O Suilleabháin	FROM: Enda McDonagh
COMPANY: EPA, Castlebar	DATE: 06/07/2007
FAX NUMBER: 094 9048499	TOTAL NO. OF PAGES INCLUDING COVER: 1
PHONE NUMBER: RE: Srahmore peat repository	SENDER'S REFERENCE NUMBER: SRAH053 YOUR REFERENCE NUMBER:

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

Re Srahmore Waste Licence W0199-01

Dear Mr O'Suilleabháin

Bord na Mona Energy wish to notify the Agency that sampling carried out at Location 7 (SW4) on the 4th July have returned results of 82 mg/l suspended solids. The limit on 2/10 samples is 1.2 times 35mg/l which is 42 mg/l. The sample was therefore 40 mg/l above the ELV. These sample results are from analysis carried out at the Bellanboy laboratory. Results for SW104 which is down stream of Location 7 (SW4) on the same day were 12 mg/l.

These samples were collected on the 4th July and results would have been available today Friday the 6th.

Results for the same day from Complete Laboratory Solutions will be available to us by Tuesday 10th July and will be included along with investigation findings in the corrective action report which is to follow.

Regards

Enda McDonagh
Bord na Mona Energy Ltd
Tel. 057 93 45911
Fax. 057 93 45160
Mob. 086 2370816

[CLICK HERE AND TYPE RETURN ADDRESS]

FACSIMILE TRANSMITTAL SHEET

TO: Liam O Suilleabháin	FROM: Enda McDonagh
COMPANY: EPA, Castlebar	DATE: 06/07/2007
FAX NUMBER: 094 9048499	TOTAL NO. OF PAGES INCLUDING COVER: 1
PHONE NUMBER: RE: Srahmore peat repository	SENDER'S REFERENCE NUMBER: SRAH054 YOUR REFERENCE NUMBER:

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

Re Srahmore Waste Licence W0199-01

Dear Mr O'Suilleabháin

Bord na Mona Energy wish to notify the Agency that sampling carried out at Location 7 (SW4) on the 6th July have returned results of 167 mg/l suspended solids. The limit on 2/10 samples is 1.2 times 35mg/l which is 42 mg/l. The sample was therefore 125 mg/l above the ELV. These sample results are from analysis carried out at the Bellanboy laboratory. Results for SW104 which is down stream of Location 7 (SW4) on the same day were 13 mg/l.

These samples were collected on the 6th July and results have only just been made available to this office.

Results for the same day from Complete Laboratory Solutions will be available to us by Tuesday 10th July and will be included along with investigation findings in the corrective action report which is to follow and will cover the non-compliance notified to you earlier today ref SRAH 053.

Regards

Enda McDonagh
Bord na Mona Energy Ltd
Tel. 057 93 45911
Fax. 057 93 45160
Mob. 086 2370816

BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED

Leabeg, Tullamore, Co Offaly, Ireland

Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/016	Date	04/07/2007 & 06/07/2007	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedence of ELV on the 4 th of July 2007 of 82 mg/l and 6 th of July of 167 mg/l at Location 7 (SW4) The ELV is 8 out of 10 < 35mg/l and 2out of 10 < 42 mg/l. Additional analysis at Complete Laboratory Solutions found the suspended solids for the same days to be 7 & 24 mg/l respectively.					
Bodies Informed, Date and Details:	EPA on the 6 th July 2007 (ref. Srah053 – fax & Srah054 – fax). Mayo County Council and NWRFB.				
Identified as a Result of:	Laboratory analysis at Bellanboy & Complete Laboratory Solutions.				
Identified by:	Joe Ryan	Date of Identification:	06/07/2007 & 10/072007		
Action Plan:	<p>There is a clear difference in both sets of results, as the same parameters at the same location were within the ELV when analysed at the accredited laboratory. It would however be good practice to follow up with the following investigation.</p> <p>As peat deposition has ceased as of June 29th 2007, the main activity on site is the grading of deposited peat to achieve the final contours. This work involves the small scale movement of peat within the site using tractors and trailers and would not appear to be in any way disruptive. As monitoring has shown suspended solids results have in general been within the emission limit values even during times of greater activity on site when peat deposition was at its peak. Therefore Bord na Mona feel that the recent elevated suspended solids results can be primarily attributed to the inclement weather currently being experienced. Daily silt pond inspections have shown a marked change in the colour of the water being emitted from SW3 which is up stream of location 7 (SW4). As a follow up, this silt pond will be cleaned once the water levels return to normal. SW 104 which is located 500-600m downstream of SW4 shows the discharge as 5 & 18 mg/l for the same dates and is consistently lower than SW4 since peat deposition commenced. This is due to additional treatment at SW104 before the discharge to the Munhin River. Therefore, even though SW4 for those 2 days may have been non-compliant it had no effect on the discharge to the Munhin.</p>				
Responsibility:	Enda McDonagh, Bord na Mona Energy Ltd				
Target Date for Completion:	11/07/2007	Actual Date of Completion:			
Closed by (Signature and Title):	Joe Ryan	Environmental Officer	Date:		

FACSIMILE TRANSMITTAL SHEET

TO: Liam O Suilleabháin	FROM: Enda McDonagh
COMPANY: EPA, Castlebar	DATE: 13/07/2007
FAX NUMBER: 094 9048499	TOTAL NO. OF PAGES INCLUDING COVER: 1
PHONE NUMBER: RE: Srahmore peat repository	SENDER'S REFERENCE NUMBER: SRAH055 YOUR REFERENCE NUMBER:

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

Re Srahmore Waste Licence W0199-01

Dear Mr O'Suilleabháin

Bord na Mona Energy wish to notify the Agency that sampling carried out at Location 7 (SW4) on the 13th July have returned results of 100 mg/l suspended solids. The limit on 2/10 samples is 1.2 times 35mg/l which is 42 mg/l. The sample was therefore 58 mg/l above the ELV. These sample results are from analysis carried out at the Bellanboy laboratory. Results for SW104 which is down stream of Location 7 (SW4) on the same day were 55 mg/l.

These samples were collected on the 13th July and results have only just been made available to this office.

Results for the same day from Complete Laboratory Solutions will be available to us by Thursday 19th July and will be included along with investigation findings in the corrective action report which is to follow.

Regards

Enda McDonagh
Bord na Mona Energy Ltd
Tel. 057 93 45911
Fax. 057 93 45160
Mob. 086 2370816

BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED

Leabeg, Tullamore, Co Offaly, Ireland

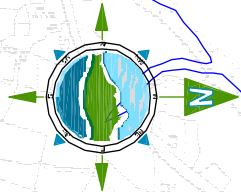
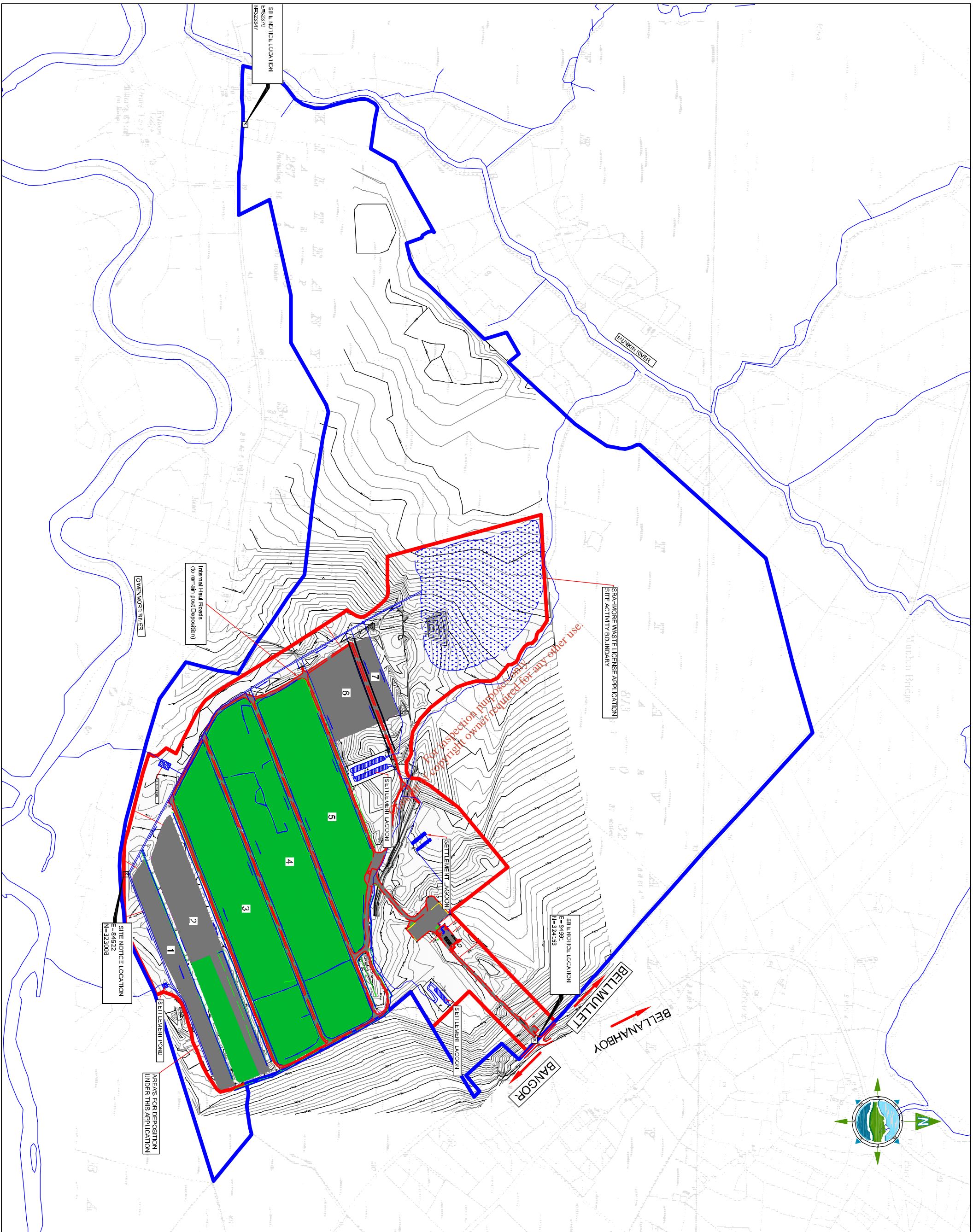
Environmental Corrective/Preventative Action Report Form (EPF 2.1)

Reference Number	SR-CA/017	Date	27 th March 2008	Initiator:	Enda McDonagh, Bord na Mona Energy Ltd
Nature of non-compliance?	Actual / Potential	Description of non-compliance			
Exceedence of ELV on the 27 th of March 2008 of 49 mg/l at Location 7 (SW4). The ELV is 8 out of 10 < 35mg/l and 2out of 10 < 42 mg/l, so the exceedance was 7mg/l above the ELV. Additional analysis at SW104, on the same day, which is downstream of SW4 before discharging to the Munhin, was 2mg/l.					
Bodies Informed, Date and Details:	EPA on the 4 th April 2008.				
Identified as a Result of:	Laboratory analysis at Bellanboy & Complete Laboratory Solutions and observations during sampling				
Identified by:	Richard Cosgrove & Enda McDonagh			Date of Identification:	27/03/2008 & 03/04/2008
Action Plan:	Following heavy rainfall earlier in March, the sluice gate at the swale box was closed so as to divert all run-off from the site to the controlled overflow area (Area 7). The water observed discharging from the bays was clean, but with this volume discharging through the silt ponds, it could result in re-suspension of any settled solids. Prior to the non-compliance the average results for the two weeks was 5.5 mg/l and the 3 days following the 27 th were <2, 3 and 3 mg/l. Given that the exceedance was only 7mg/l over the ELV, it was only for one daily sample, and the same daily result at SW104 further down the internal drain was 2 mg/l, there is no risk to the Munhin River, and the only further corrective action would be to maintain the overflow arrangement which is required to cater for storm conditions.				
Responsibility:	Enda McDonagh/Richard Cosgrove, Bord na Mona Energy Ltd				
Target Date for Completion:	04/04/08	Actual Date of Completion:			
Closed by (Signature and Title):				Date:	04/04/08

APPENDIX C

Drawing 403-2604

For inspection purposes only.
Consent of copyright owner required for any other use.



GENERAL LEGEND

LANDS UNDER CONTROL OF DEVELOPER	SITE ACTIVITY BOUNDARY	EXISTING MAJOR CONDUIT	DRAINAGE & FLOW DIRECTION
CURRENT APPLICATION AREA	EXISTING MAJOR CONDUIT	PROPOSED TEMPORARY BUILDING/SI STRUCTURE	FENCING
PUBLIC ROAD	40.00m	PROPOSED TEMPORARY BUILDING/SI STRUCTURE	WALL
EXISTING TEMPORARY BUILDING/SI STRUCTURE	40.00m	PROPOSED TEMPORARY BUILDING/SI STRUCTURE	SPOT LEVEL
TOP OF BANK		FENCING	LAGOONS
BOTTOM OF BANK		WALL	INTERNAL ACCESS ROAD
LAGOONS		SPOT LEVEL	AREAS FOR DEPOSITION
INTERNAL ACCESS ROAD		AREAS FOR DEPOSITION	EXISTING TREE
AREAS FILLED WITH PEAT 2009/2009		EXISTING TREE	LAKE STANDS
SITE NOTICE LOCATION		LAKE STANDS	

- NOTES**
1. SECURED UNDER ONE OWNER TO BE TAKEN FROM THIS DRAWING
 2. ALL DIMENSIONS TO BE CHECKED BY THE CONTRACTOR ON SITE
 3. LAYOUT TO BE IMPROVED BY THE CONTRACTOR OR ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 4. ALL LEVELS SHOW RELATIVE TO ORDNANCE SURVEY DATUM (MVA) W/LEAD
 5. OS 6 SHEET NO: 24/00/2 & 25

Scale: 1:10,000

0 100m 200m 300m

No	Date	Description	By	CHK
1	21/07/09	AS'G'D. E.I.2 REVISION	WJ	WJ
2	28/04/09	30% AS'G'D. 10% REVIEW	WJ	WJ

ASSOCIATE: Shell E&P Ireland Limited
OPERATOR: Bord na Móna
 Dublin 2, Republic of Ireland

PROJECT: CORIB ONSHORE PIPELINE DEVELOPMENT
ASPECT: SRAIMORE PEAT DEPOSITION SITE

TITLE: SITE LOCATION MAP

Scale: 1:10,000
Project No: 11.10.000
Project No: V. Bonyon
Client: M. Nolan
Date: April 2009
Project Director: S. Finlay

TOBIN
 Tobiin Consulting Engineers
 Block 7-4, Berea Station, Concess Park,
 Dublin 3, Ireland.
 Tel: +353 (0)1 4530366
 Fax: +353 (0)1 4530366
 Email: info@tobiin.ie
 www.tobiin.ie

4903-2604
A

APPENDIX 4

Bord Na M6na Letter

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Ref.: W0199-02
FAO: Mr John McEntagart

Administration
Licensing Unit
Office of Climate, Licensing & Resource Use
Environmental Protection Agency
Headquarters
PO Box 3000
Johnstown Castle Estate
County Wexford

6 October 2009

**Re: Article 12(1)(j) and Article 14(2)(b)(ii) of the Waste Management (Licensing) Regulations 2004
Section 40(4)(d) of the Waste Management Acts, 1996 to 2008**

Dear Sir,

In response to item no. 6 of the "Article 12 Compliance Requirements" in your notice dated 14 September 2009, we confirm that the licence applicant, Bord na Móna Energy Limited, has never been convicted of an offence under any environmental legislation (including the examples provided, namely, the Waste Management Acts, 1996 to 2008, the Environmental Protection Agency Acts, 1992 to 2007 and the Local Government (Water Pollution) Acts, 1977 to 2007).

For the avoidance of doubt, we confirm that neither the licence applicant, Bord na Móna Energy Limited, nor any connected company has been convicted of an offence prescribed for the purposes of section 40(7) of the Waste Management Acts, 1996 to 2008.

Trusting this is to the satisfaction of the Agency.

Yours faithfully,


ANNA-MARIE MOONEY
Head of Legal Services
Bord na Móna plc