

**BORD NA MÓNA**  
BORD NA MÓNA ENERGY LIMITED

Environmental Protection Agency  
OEE Castlebar

02 APR 2007

Received  
Initial

**Annual Environmental Report 2006  
P0504-01**

**March 2007**



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## **1.0 Introduction**

**1.1 IPPC Licence No** 504

### **1.2 Name & Location of Site**

**Name:** Bord na Mona Energy Limited.

**Address:** Mountdillon Group  
C/o Mountdillon Works  
Lanesboro  
Co. Longford.

**Telephone No:** 043 21117 Fax No 043 21259

**Contact Name** Paul Riordan

**Position** Manager

**National Grid Reference** E204720 N268880

### 1.3 Description of Activities

#### **Peat Milling Operations.**

For milled peat production the bog is laid out in a series of rectangular fields of varying length and 15m wide with drains located between. There are essentially four operations involved in milled peat production:

Milling.

Harrowing.

Ridging.

Harvesting.

#### **Milling.**

Special milling machines work there way along the fields, milling approximately 15mm of peat of the top of the bog in a pass.

#### **Harrowing**

In the course of drying, the milled peat is turned a number of times to avail of the drying conditions. This is achieved with a machine called a harrow. The milled peat is harrowed until its moisture content is down to approximately 40-50%, which can take up to two to three days, weather depending.

#### **Ridging**

The dry peat is then scraped into long ridges running down the centre of each field. This is done with a ridger, a machine consisting of a series of blades in the shape of a v that opens the full width of the field.

#### **Harvesting**

During harvesting every eleventh field is used to stockpile the peat, with this field receiving the milled peat from the five fields either side.

The milled peat is then transported via the existing network of peatland railways or via road to the following location.

Power station

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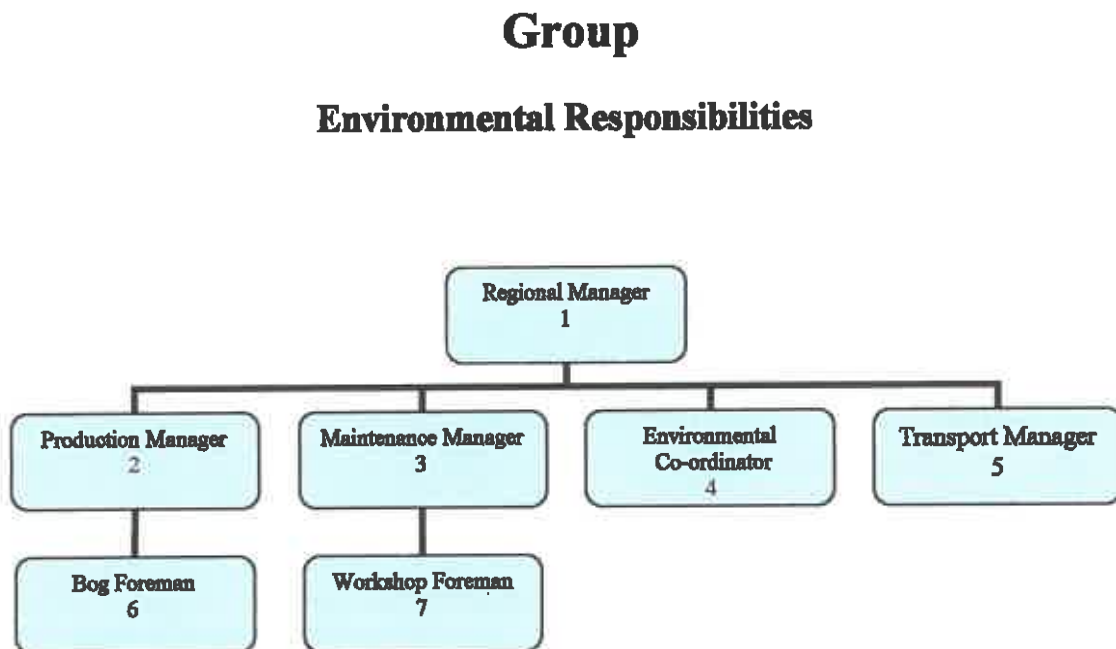
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#### 1.4 Environmental Management of the Company

The organisational structure within the Mount Dillon Group is presented in the flow chart below.



- (1) Overall environmental responsibilities
- (2) All production related issues
- (3) Machine maintenance
- (4) Co-ordinating environmental affairs
- (5) All peat transportation matters
- (6) Environmental issues relating to peatlands.
- (7) Environmental issues relating to Workshops.

## **1.5 Environmental Policy**



**Bord na Mona Energy Limited is a commercial semi-state body with responsibility to develop Irelands peat resources in the national interest.**

**Bord na Mona Energy Limited is committed to gather and make available information on all aspects of its environmental impact and to help improve understanding among the public generally of its role and the importance of Irish peatlands.**

**Bord na Mona Energy Limited recognises the importance of peatland conservation.**

**Bord na Mona Energy Limited will leave behind all areas it owns as either an economically or socially integrated resource of a high environmental value.**

**Bord na Mona Energy Limited seeks to conduct all aspects of its business in an environmentally sensitive value.**

**Bord na Mona Energy Limited will establish an environmental management system specifically addressing the following impacts.**

**Discharges to water.  
Emissions to atmosphere.  
Waste disposal.  
Use of natural resources.  
Noise, vibration, odour, dust and visual effects.  
Natural environment and eco-system.**

**The environmental management system will be monitored, maintained and continually improved.**

**A system of regular environmental audits will be put in place.**

**Bord na Mona Energy Limited will continue research and development into all aspects of its environmental impact.**

**This statement is published and is available at all locations within the division and its contents are brought to the attention of all employees.**



## 2.0 Summary Information

### 2.1 Emissions to Water Summary

#### 2.1.1 Silt Pond Emissions ( Quarterly Grab )

##### Comment

Surface water monitoring was carried out four times during the reporting period. In total analysis was carried out at seven different locations. These locations are as follows, Clonshannagh @ SW8, Granaghan @ SW23, Begnagh @ SW55, Cloneeney @ SW61, Derrycolumb @ SW88, Derryshanoge @ SW94 and Loughbannow @ SW95. The parameters measured during each sampling event were as follows.

Total Phosphorus, Total Solids, Suspended Solids, pH, Ammonia, Colour and COD.

In general results were constant across all parameters at each monitoring location.

May was the wettest month of 2006 with rainfall of 142.5mm being recorded, while June was the driest with 26.2mm recorded.

The quarterly grab sampling programme proved to be 100% compliant for the year as was the 2005 regime.

pH values were between 6.2 and 8.2, with normal emission limit values being of the range 6 and 9.

Suspended solids varied from 5mg/l to 27mg/l and would depend on activities ( piping, ditching ) etc in the catchments at the time of sampling. All are within the licence limit of 35mg/l.

Ammonia levels were constant across all monitoring locations and were well below average in relation to waters emanating from peatlands.

COD readings were consistent across all sampling locations during the reporting period, with slightly elevated results being recorded in the third quarter when flow rates were at their lowest.

Flow rates were far greater during the last quarter sampling event, but this does not seem to have any great adverse effect on any of the parameters.

Total Phosphorus results were all within quality guidelines.

Sampling will continue at the same locations during 2007.

Surface Water Results are contained in Appendix 1

#### 2.1.2 Yard Discharges ( Monthly Grab )

##### Comment

Yard runoff monitoring took place at six different locations during the reporting period. Sampling frequency was monthly and COD was the parameter requiring analysis. As is evident from the graph, on several occasions no sample was available on the day of sampling. This was due to no flow at the emission point and the catchments being so small.

In general results were normal with the exception of Cuil na Gun SWE1 during the October monitoring event. On investigation of that result, no obvious cause could be found. As a precaution results from that location will be closely monitored and should any further high results be found a more intensive investigation will take place.

Sampling will continue at the same locations during 2007.

Yard Emission Results are contained in Appendix 2

## **2.0 Summary Information**

### **2.1 Emissions to Water Summary**

#### **2.1.1 Silt Pond Emissions ( Quarterly Grab )**

##### **Comment**

Surface water monitoring was carried out four times during the reporting period. In total analysis was carried out at seven different locations. These locations are as follows, Clonshannagh @ SW8, Granaghan @ SW23, Begnagh @ SW55, Cloneeney @ SW61, Derrycolumb @ SW88, Derryshanoge @ SW94 and Loughbannow @ SW95. The parameters measured during each sampling event were as follows.

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Suspended solids varied from 5mg/l to 27mg/l and would depend on activities ( piping, ditching ) etc in the catchments at the time of sampling. All are within the licence limit of 35mg/l.

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Flow rates were far greater during the last quarter sampling event, but this does not seem to have any great adverse effect on any of the parameters.

Total Phosphorus results were all within quality guidelines.

Sampling will continue at the same locations during 2007.

Surface Water Results are contained in Appendix 1

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In general results were normal with the exception of Cuil na Gun SWE1 during the October monitoring event. On investigation of that result, no obvious cause could be found. As a precaution results from that location will be closely monitored and should any further high results be found a more intensive investigation will take place.

Sampling will continue at the same locations during 2007.

Yard Emission Results are contained in Appendix 2

### 2.1.3 Composite Sampler Report

#### Comment

The composite sampler has been operating at SW76 during the reporting period.

The parameters measured were Total Phosphorus, Total Solids, Suspended Solids, pH, Ammonia, Colour and COD, with Suspended solids being the only parameter with an emission limit value ( 35mg/l ). In general result were satisfactory with no non-compliances being recorded for the period.

May was the wettest month of 2006 with rainfall of 142.5mm being recorded, while June was the driest with 26.2mm recorded.

Due to the ongoing compliance at the site a proposal to relocate the composite sampler during 2007 will be submitted to the agency, as a suitable site has been identified at Derraghan bog SW96. This site because of its nature has the potential to give more accurate flow data when it becomes operational.

Composite Sampler Results are contained in Appendix 3.

### 2.1.4 Emissions to Water Non-compliance's

**IPPC Licence: P0504-01**

**Works: Mount Dillon**

Type	Non-Compliances	Location / SW Nr
Composite	0	
Quarterly Grab	0	
Monthly Yard	NA	
<b>Totals</b>	<b>0</b>	

**Note: Emission Limit Value = 35mg/litre**

## 2.2 Emissions to Air

### 2.2.1 Dust Monitoring

#### Comment

Dust monitoring was carried out on three occasions between June and September. Each monitoring event lasted between 28 and 32 days and the Bergerhoff method of analysis was used.

The monitoring locations were as follows, Edera and Cloonshanagh. Slightly elevated results were detected during the July - August monitoring event at Cloonshanagh. This can be expected as production would have been at its most intense at this time. It should also be noted that all results were below the emission value of 350 mg/m<sup>2</sup>/day set out in the licence and no complaints were received in relation to dust. Hydraulic harrows and headland harvesters were deployed at both locations during the production season

Sampling will continue at the same locations during 2007.

Dust Monitoring Results are contained in Appendix 4.

## 2.2.2 Emissions to Air Non-compliance's

**IPPC Licence: P0504-01**

**Works: Mount Dillon**

Location / DM Nr	Non-Compliances
Edera / DM01	0
Cloonshanagh / DM02	0
<b>Total</b>	<b>0</b>

## 2.2 Waste Arisings

### 2.3.1 Non Hazardous Waste

#### Non Hazardous Waste Data

**IPPC Licence: IPPC P 0504**

**Works: Mount Dillon  
2006**

Type	Tonnes	EWC Code	Contractor	Licence Nr
Skips	16.6	20 03 01	Mulleadys Ltd	S/E 152/2002
Wheelie Bins	0.00	20 03 01	AES	053/OY/39/02
Polyethylene	250.80	02 01 04	Leinster Environmentals	WP 2004/30 050/OY/162/0 4
Scrap Steel	346.50	17 04 07	Hammond Lane	WP/TN/24
Timber Pallets	0.00	15 01 02	Klawa Ltd	IPPC P 0499
Silt Pond Cleanings	1267.73	01 01 02	Bord na Mona	IPPC P 0499
Peat Screenings	1491.86	01 01 02	Bord na Mona	
<b>Totals</b>	<b>3373.29</b>			

**Note:** Polyethylene and Steel are recycled.

## 2.3.2 Hazardous Waste

## Hazardous Waste Data

Licence: P0504-01

Works: Mount Dillon

Type	Tonnes	EWG Code	Contractor	Licence Nr	Destination
Waste Oil	8.65	13 02 05	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	2.31	16 01 07	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Oily Rags	0.00	15 02 02	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Waste Grease	0.00	13 08 99	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Lead Acid Batt	3.92	16 06 01	Retumbatt		
Ni Cad Batt	0.13	16 06 02	Retumbatt		
Primary Batt	0.08	16 06 03	Retumbatt		
Fluorescent Tubes	0.00	20 02 21	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Parts Wash	0.00	11 01 13	Safety Kleen, Tallaght, Dublin	99-1	Dublin
Asbestos	0.00	17 06 05			
<b>Total</b>	<b>15.10</b>				

## 2.4 Energy and Water Consumption

### 2.4.1 Energy

#### Energy Consumption

<b>Licence: P0504-01</b>				
<b>Works: Mt Dillon</b>				
<b>Units</b>	<b>Diesel ( Litres )</b>	<b>Petrol (Litres)</b>	<b>Electricity (Units)</b>	<b>Peat Briquettes (Tonnes)</b>
<b>Totals</b>	<b>1448856</b>	<b>2718</b>	<b>1542</b>	<b>25</b>
<b>MW Hours</b>	<b>14187.8</b>	<b>24.5706</b>	<b>1.542</b>	<b>125</b>
<b>Total MW Hours</b>	<b>14338.9</b>			

## 2.5 Environmental Incidents and Complaints

### 2.5.1 Incidents

Environmental Incidents	
Licence: P0504-01	
Works: Mt Dillon	
	Number
Incidents	1
Requiring corrective action	Yes
Category	
Water	
Air	Yes
Procedural	
Miscellaneous	
Total	1

Refer to Environmental Notification Form and Environmental Corrective/Preventive Action Form Ref. No. CA-504-005 sent to E.P.A. on 12 June 2006

### 2.5.2 Complaints

Environmental Complaints	
Licence:P0504-01	
Works: Mt Dillon	
	Number
Complaints	2
Requiring corrective action	
Category	
Water	
Air	
Procedural	
Miscellaneous	
Total	2

**3.0 Management of the Activity****3.1 Environmental Management Programme Report 2006****3.1 Achievement of Objectives & Targets**

Project	Description & Status
<p><b>Project 1:</b></p> <p>Reduction of fugitive dust emissions.</p>	<p><b>Training.</b> Achieved. Training in Mountdillon was provided for all seasonals in 2006, this was in the form of a Cleaner Production Video.</p> <p><b>Hydraulic Harrows.</b> Ongoing. Hydraulic harrows worked well in Mountdillon D.S.L.'s in 2006. One extra harrow was introduced for the 2006 production season in Lough Bannow Bog. There are two working in Edera Bog, one in Derryadd Bog and one in Cloontuskert, they have proved successful in helping to reduce dust generation on Headlands.</p> <p><b>Headland Peat Collection.</b> Ongoing. Mountdillon Works has one extra Headland harvester unit operating for the 2006 production season, this brings the number of units to three, two mechanical bin type harvesters and one haku type, there was a total of 7,828 tonnes of headland peat collected in 2006.</p>
<p><b>Project 2:</b></p> <p>Minimisation of suspended solids</p>	<p><b>On Site Inspections.</b> Project didn't materialise. Will commence at start of production 2007.</p>
<p><b>Project 3:</b></p> <p>Effective spill leak management of mobile fuelling units.</p>	<p><b>On Site Inspections.</b> Project didn't materialise. Will commence at start of production 2007. Mountdillon overhauled two service trains during 2006</p>
<p><b>Project 4:</b></p> <p>Reuse of silt pond waste.</p>	<p><b>Trials.</b> Trials in the past proved unsuccessful. For peat silt to be reused, it must be available on the production bog for transfer into the piles. 99 % of all silt ponds are located on the outfall. Another factor is contamination, as these ponds are excavated into the mineral soil to achieve gravity drainage, and as such the silt excavated from the pond is contaminated with mineral soil. Should suitable bog come into production in the future, this project will be considered.</p>



<b>Project 5:</b>  Collection storage and reuse of polyethylene.	<b>Identify Recyclers.</b> Ongoing Polythene for recycling has been collected from around the production areas, and stockpiled at a hard surface area for baling/collection. A new mechanical method of stripping piles and rolling the polythene on a spool was developed. There was 250 tonnes of polythene recycled in Mountdillon during 2006 with Leinster environmentals Ltd. Dundalk
<b>Project 6:</b>  Provision of measures to protect Dust Sensitive Areas.	<b>Planting.</b> Ongoing ALL D.S.L.'s have been identified within Mountdillon. A programme of tree planting was undertaken in 2005 and 2006 a total of 3700 trees were planted in 2005 and 500 trees planted in 2006.

### 3.2 Environmental Management Programme Proposal for 2007

#### 3.2 Environmental Management Programme Proposal 2007

Project	Description & Status
<p><b>Project 1:</b></p> <p>Reduction of fugitive dust emissions.</p>	<p><b>Training.</b> Continue to train all new employees in environmental matters. Copy environmental video to disk and distribute more widely.</p> <p><b>Hydraulic Harrows.</b> Continue to supply hydraulic harrows. Prioritising dust sensitive locations.</p> <p><b>Headland Peat Collection.</b> Continue with the collection of headland peat, particularly at dust sensitive locations. Supply more headland peat collection machinery as required and research efficient ways of collecting such peat for use as a saleable product.</p>
<p><b>Project 2:</b></p> <p>Minimisation of suspended solids</p>	<p><b>On Site Inspections.</b> A full programme of internal audits will be carried out as soon as production commences. Particular emphasis will be put on cleaner production procedures, milling, harrowing, ridging, harvesting and loading.</p>
<p><b>Project 3:</b></p> <p>Effective spill leak management of mobile fuelling units.</p>	<p><b>On Site Inspections.</b> As part of the above project, service trains will also be prioritised with a fitter accompanying the auditor during inspections to highlight any risks or potential risks that may occur.</p>
<p><b>Project 4:</b></p> <p>Fire Prevention.</p>	<p><b>Fire Patrols.</b> There will be extra emphasis on fire patrols this coming production season. Research on improved fire fighting techniques will also be investigated. The newly adopted Fire and Environmental Plan will be communicated to all personnel.</p>
<p><b>Project 5:</b></p> <p>Collection storage and reuse of polyethylene.</p>	<p><b>Identify Recyclers.</b> Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing. To date in 2007 Mountdillon has recycled 60 tonnes with Leinster Environmentals Ltd</p>
<p><b>Project 6:</b></p> <p>Provision of measures to protect Dust Sensitive Areas.</p>	<p><b>Planting.</b> Ongoing Planting is ongoing as required, with areas in the periphery of production bogs that are being developed for housing being prioritised. We will continue to monitor the bergerhoff dust gauge's for 2007</p>

### 3.3 Environmental Expenditure

#### Environmental Expenditure

Licence:P0504-01

Works: Mt Dillon

Description	Cost €
Capital Costs	4389
Silt Control, (wages + mats)	150660
Analytical & Consultancy Costs, (lab costs)	7973.62
EPA Fees,	9180.45
Bog Rehabilitation,	0
<b>Total</b>	<b>€172203.07</b>

### 4.0 Licence Specific Reports

#### 4.1 Surface Water Discharge Monitoring Location Programme Review

The surface water discharge monitoring location programme has been submitted and accepted by the agency in July 2000. Three sampling locations have been changed in 2004 and the Agency notified. Monitoring will be carried out at these locations in the forthcoming year.

#### 4.2 Bunding Programme

All bunds have been tested ,the bund at the Power Station and the bund at Cuil na Gun workshop have been passed, the bunds at Mountdillon workshop and Mountdillon yard have failed, a programme of work has been put in place to remedy same and this will be carried by sept 2007

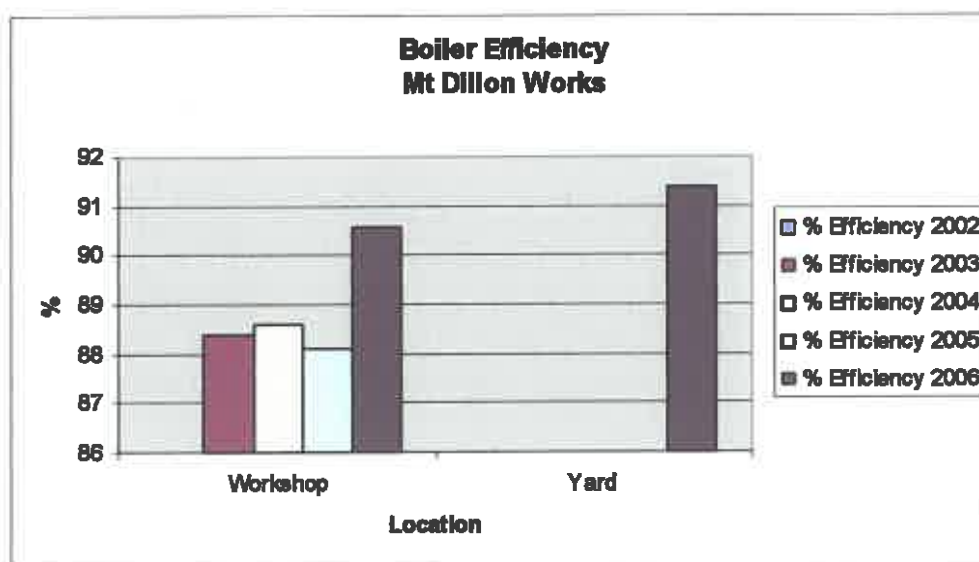
### 4.3 Boiler Combustion Efficiency

#### Boiler Emissions

**Licence: P0504-01**

**Works: Mt Dillon**

Boiler Location	% Efficiency 2002	% Efficiency 2003	% Efficiency 2004	% Efficiency 2005	% Efficiency 2006
Workshop		88.4	88.6	88.1	90.6
Yard					91.4



Boiler at the main Workshop and Mountdillon Yard have been tested by Boiler Services Allenstown Broadway Co. Wexford on 19/10/06.

The actual test results are contained in Appendix 5.

## 4.4 Resource consumption summary

Resource Consumption			
Licence: P0504-01			
Works: Mount Dillon			
Product	Tonnes Produced	Tonnes Sold	Customer
Milled Peat	680337	740717	ESB
<b>Totals</b>	<b>680337</b>	<b>740717</b>	<b>ESB</b>

Proposed Production 2007	
Licence: P0504-01	
Works: Mount Dillon	
Product	Proposed Target
Milled Peat	690000
<b>Totals</b>	<b>690000</b>

Production tonnage has reduced from 2005 to 2006 by 185,643 tonnes

#### **4.5 De-Silting Report**

The De-silting programme worked well during 2006 with all ponds receiving at least two cleanings  
Silt Pond Cleaning Programme attached in Appendix 6.

#### **4.6 Bog Development and Operational Programme**

There are two bogs under development in the Mountdillon group of bogs namely Milkernagh and Cuil na gCun both bogs are covered by adequately sized silt ponds which are cleaned at least twice a year

#### **4.7 Bog Rehabilitation Report**

There has been no Bog Rehabilitation carried out in Mountdillon Bogs during 2006

#### **4.8 Archaeological Report**

There has been no archaeological surveys carried out in Mountdillon in 2006.

#### **5.0 Summary**

With regard to environmental compliance at the Mountdillon Group of Bogs, there were no exceedences in the quarterly grab sampling of the ponds in the Surface Water Discharge Monitoring Location Programme. There was no non compliance in relation to the Composite Sampler during the period of Jan to the end of December. Mountdillon received two complaints in relation to dust monitoring

We intend to build on the success of 2006 and increase our efforts to minimise the impact of our operations on the locality. We have greatly improved our fire prevention and fire fighting capabilities in line with experience gained from the bog fires in June of 2006

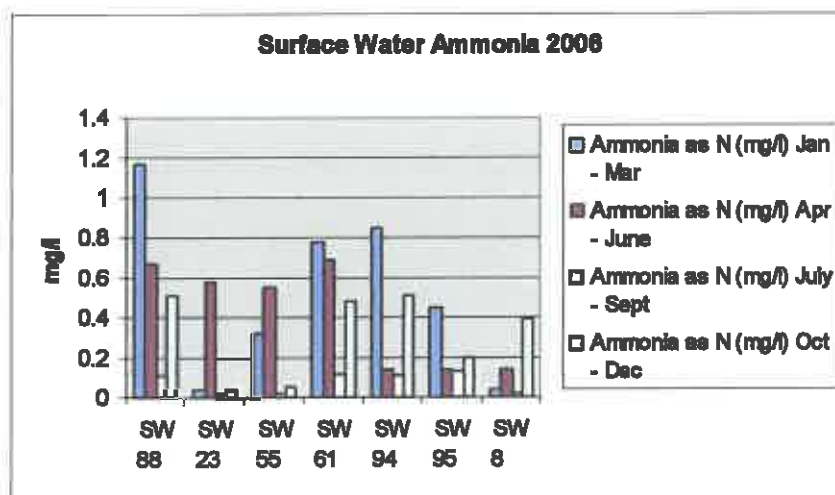
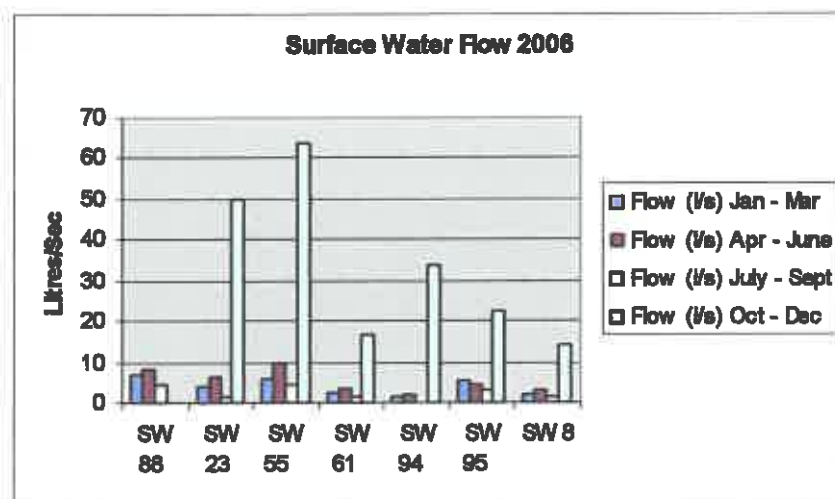
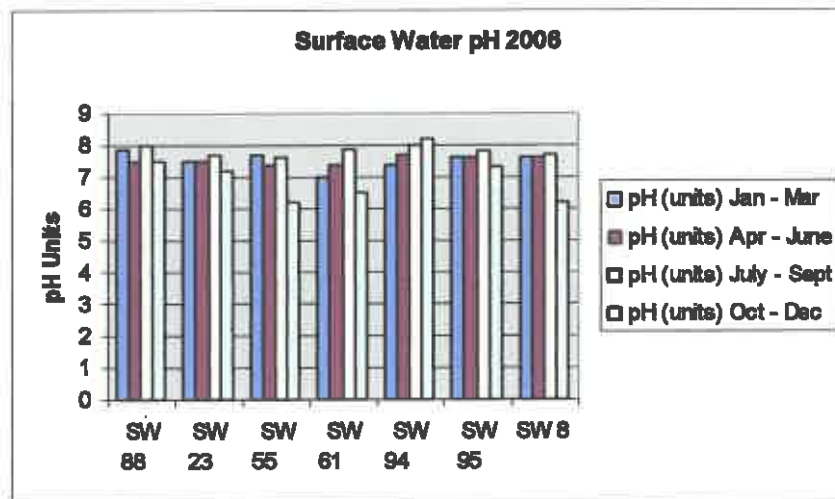
Staff training will again be an important and ongoing part of our Environmental Management System

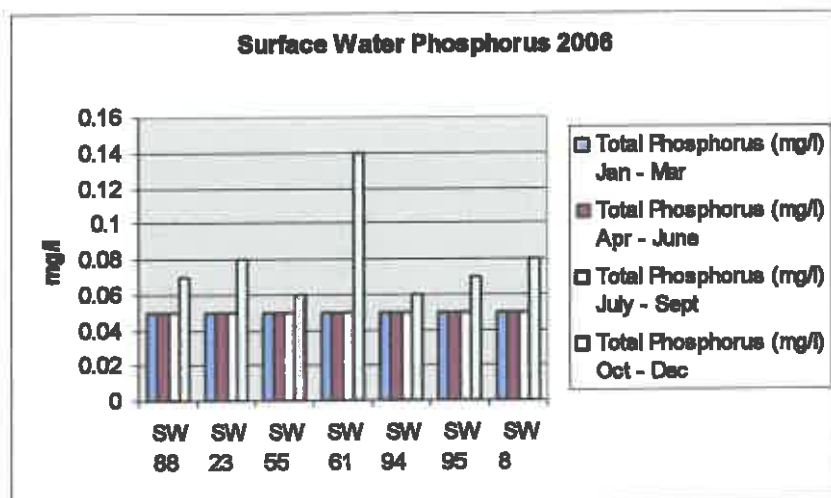
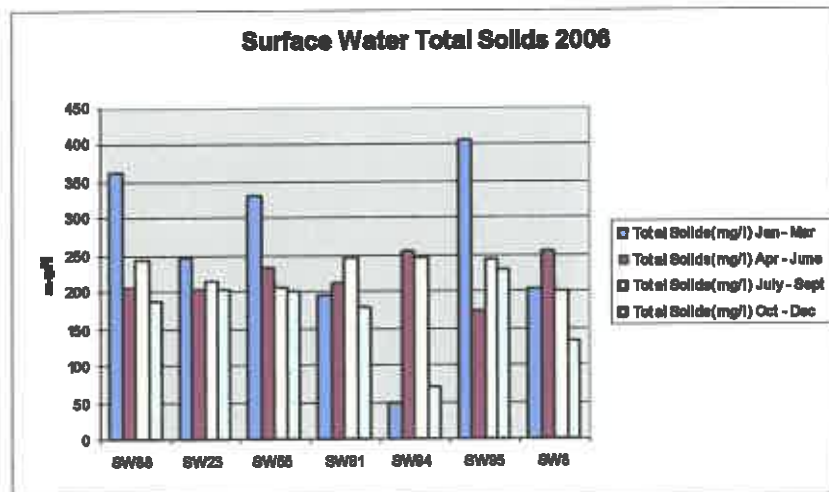
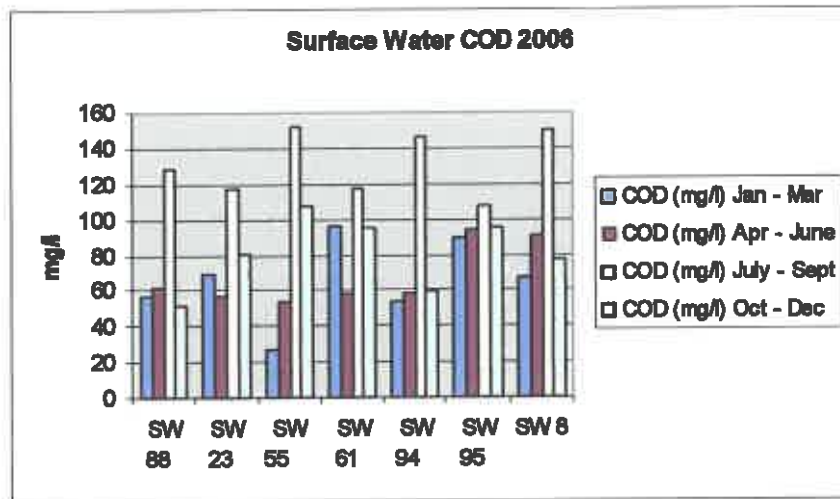
Bord na Mona Energy Ltd would like to take this opportunity to advise the Environmental Protection Agency of its continued commitment to improving its environmental performance by adopting cleaner production methods and improving its environmental protection measures

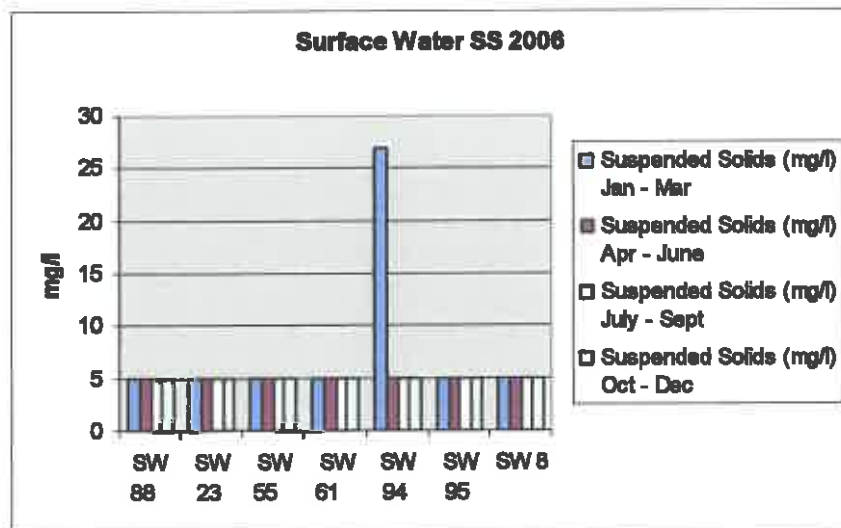
# **APPENDIX 1**

## **Surface Water Discharge Monitoring Results Bogs**









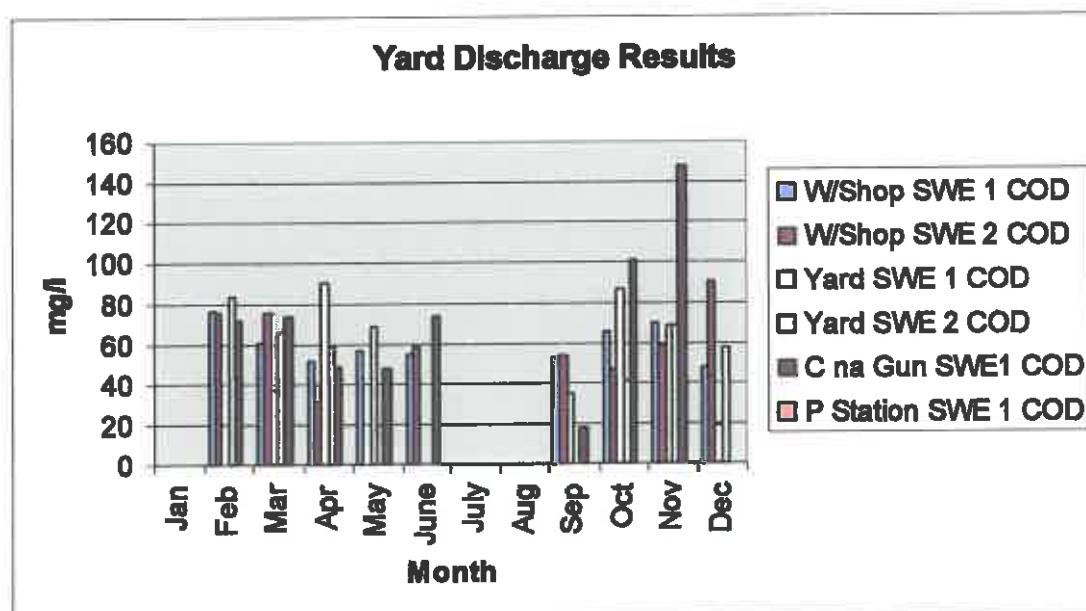
## **APPENDIX 2**

### **Surface Water Discharge Monitoring Results Yards**

**Yard Discharge Results****Licence: P0504-01****Works: Mt Dillon**

Month	W/Shop SWE 1 COD	W/Shop SWE 2 COD	Yard SWE 1 COD	Yard SWE 2 COD	C na Gun SWE1 COD	P Station SWE 1 COD
Jan						
Feb	77	76		83	72	
Mar	61	76	37	66	74	
Apr	52	32	90	59	49	
May	57		69		48	
June	55	59			74	
July						
Aug						
Sep	53	54	35		18	
Oct	66	47	86	41	101	
Nov	70	59	69	69	148	
Dec	48	90	19	58		

**Note:** NF denotes no flow at emission point on day of sampling



## **APPENDIX 3**

### **Surface Water Discharge Monitoring Results Composite**

# Bord Na Mona Energy Ltd, Mountdillon Co Wick, Lanesboro, Co Longford

## Composite Sampler Results

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters		Total Solids mg/l	Colour Pt Co units	Flow Daily Total (litres)	COD Kg/Day	Ammonia as Kg/Day	Daily Totals	
				Total Phosphorus mg/l	Suspended Solids mg/l						Total Phosphorus Kg/Day	Suspended Solids Kg/Day
January 2006												
SW 76												
1	-	-	-	-	5	300	-	1634863				8.17
2	-	-	-	-	12	306	-	1138070				13.66
3	-	-	-	-	5	332	-	950906				4.75
4	8.2	20	0.02	0.05	5	318	121	768474	15.37	0.02	0.04	3.84
5	-	-	-	-	9	264	-	617078				5.55
6	-	-	-	-	5	230	-	705112				3.53
7					5	333		680200	0.00	0.00	0.00	3.40
8	-	-	-	-	12		-	286424				3.44
9	-	-	-	-	17	336	-	1037609				17.64
10	-	-	-	-	24		-	1534896				36.84
11	8.1	62	0.02	0.05	15	318	104	1534896	95.16	0.03	0.08	23.02
12	-	-	-	-	5	352	-	1534896				7.67
13	-	-	-	-	5	384	-	1534896				7.67
14					15	310		1534896	0.00	0.00	0.00	23.02
15					5	378		1534896				7.67
16	-	-	-	-	5	374	-	1553187				7.77
17	-	-	-	-	5	264	-	1516587				7.58
18	7.8	56	0.02	0.05	5	168	147	1495033	83.72	0.03	0.07	7.48
19	-	-	-	-	10	374	-	1371217				13.71
20	-	-	-	-	5	280	-	1604681				8.02
21					5	334		1327297	0.00	0.00	0.00	6.64
22					5	376		1236508				6.18
23	-	-	-	-	5	326	-	1172858				5.86
24	-	-	-	-	5	324	-	1162685				5.81
25	7.6	59	0.02	0.05	5	264	122	1248755	73.68	0.02	0.06	6.24
26	-	-	-	-			-	1073656				
27	-	-	-	-			-	1083514				
28	-	-	-	-			-	870367				
29								946879				
30	-	-	-	-			-	764379				
31	-	-	-	-			-	1054228				

**Bord Na Mona Energy Ltd, Mountdri Group, Lanesboro, Co Longford**  
**Composite Sampler Results**

Month February 2006 SW 76	pH	COD mg/l	Ammonia N K: mg/l	Parameters			Colour Pt Co units	Flow Daily Total (litres)	COD Kg/Day	Ammonia Kg/Day	Daily Totals		Total Solids Kg/Day
				Total Phosphorus mg/l	Suspended Solids mg/l	Total Solids mg/l					Total Phosphorus Kg/Day	Suspended Solids Kg/Day	
1	-	-	-	-	-	-	-	1001821				0.00	0.00
2	-	-	-	-	5	198	-	991027				4.96	196.22
3					8	308		990727	0.00	0.00	0.00	7.93	305.14
4					6	292		984667	0.00	0.00	0.00	5.91	287.52
5					5	266		984319				4.92	261.83
6	-	-	-	-	5	220	-	979612				4.90	215.51
7	-	-	-	-	5	264	-	983700				4.92	259.70
8	8.2	41	1.26	0.05	5	216	76	961268	39.41	1.21	0.05	4.81	207.63
9	-	-	-	-	5	320	-	936392				4.68	299.65
10					15	50		932854				13.99	46.64
11					5	160		944617	0.00	0.00	0.00	4.72	151.14
12					5	162		1217630	0.00	0.00	0.00	6.09	197.26
13	-	-	-	-	9	202	-	1171449				10.54	236.63
14					8	284	-	1364893				10.92	387.63
15	8.5	58	0.02	0.07	20	126	62	1721733	99.86	0.03	0.12	34.43	216.94
16	-	-	-	-	14	362	-	1704253				23.86	616.94
17	-	-	-	-	6	336	-	1523855				9.14	512.02
18	-	-	-	-	11	310	-	1245129				13.70	385.99
19	-	-	-	-	9	340	-	973820				8.76	331.10
20	-	-	-	-	18	280	-	806584				14.52	225.84
21					9	294		810887				7.30	238.40
22	8.2	49	0.02	0.05	21	238	101	730662	35.80	0.01	0.04	15.34	173.90
23	-	-	-	-			-	679581				0.00	0.00
24	-	-	-	-			-	840708				0.00	0.00
25								651635	0.00	0.00	0.00	0.00	0.00
26	-	-	-	-			-	787910				0.00	0.00
27	-	-	-	-			-	715474				0.00	0.00
28	-	-	-	-			-	387053				0.00	0.00
29	-	-	-	-			-					0.00	0.00
30	-	-	-	-	-	-	-						
31	-	-	-	-	-	-	-						



**Bord Na Mona Energy Ltd, Mountdi Group, Lanesboro, Co Longford**  
**Composite Sampler Results**

Month March 2006	Parameters				Total Solids mg/l	Suspended Solids mg/l	Colour Pt Co units	Flow Daily total (litres)	COD Kg/Day	Ammonia as N Kg/Day	Daily Totals		
	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus mg/l							Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
SW 76													
1	-	-	-	-			-	64397					
2	-	-	-	-			-	622469					
3								454486	0.00	0.00	0.00	0.00	0.00
4	-	-	-	-			-	459995					
5								452225					
6	-	-	-	-			-	651278					
7	-	-	-	-			-	1152630					
8								1100412	0.00	0.00	0.00	0.00	0.00
9	7.9	47	1.08	0.05	323	5	118	1091059	51.28	1.18	0.05	5.46	352.41
10								890189	0.00	0.00	0.00	0.00	0.00
11	-	-	-	-			-	677445					
12	-	-	-	-			-	677445					
13								677445					
14	-	-	-	-			-	677445					
15	-	-	-	-			-	677445					
16	7.8	50	0.03	0.05	462	5	126	325206	16.26	0.01	0.02	1.63	150.25
17	-	-	-	-			-	47611					
18	-	-	-	-			-	37343					
19	-	-	-	-			-	22098					
20	-	-	-	-			-	812490				0.00	0.00
21	-	-	-	-			-	2120140				0.00	0.00
22	-	-	-	-			-	397047				0.00	0.00
23						5		547321	0.00	0.00	0.00	2.74	171.31
24						5		536362	0.00	0.00	0.00	2.68	196.31
25						5		528642	0.00	0.00	0.00	2.64	174.45
26						5		1197745	0.00	0.00	0.00	5.99	294.65
27						5		1955361	0.00	0.00	0.00	9.78	473.20
28						6		953440	0.00	0.00	0.00	5.72	295.57
29	8.2	66	0.73	0.05	302	23	112	583757	38.53	0.43	0.03	13.43	176.29
30						6		2004171	0.00	0.00	0.00	12.03	577.20
31						18		2811002	0.00	0.00	0.00	50.60	747.73

**Bord Na Mona Energy Ltd, Mountdiloup, Lanesboro, Co Longford**  
**Composite Sampler Results**

Composite Sample Results												
Month	Parameters			Parameters			Flow Daily Total (litres)	COD Kg/Day	Ammonia a Kg/Day	Daily Totals		Total Solids Kg/Day
	pH	COD mg/l	Ammonia a N mg/l	Total Phosphorus mg/l	Suspended Solids mg/l	Total Solids mg/l				Phosphorus Kg/Day	Suspended Solids Kg/Day	
April 2006 SW 76												
1	-	-	-	-	8	326	2190744				17.53	714.18
2	-	-	-	-	11	392	2022501				22.25	792.82
3	-	-	-	-	5	350	1618696				8.09	566.54
4	-	-	-	-	5	392	947324				4.74	371.35
5	8.8	51	0.38	0.05	11	416	667255	34.03	0.25	0.03	7.34	277.58
6	-	-	-	-	-	-	720202				0.00	0.00
7					5	434	748035	0.00	0.00	0.00	3.74	324.65
8					5	434	716597	0.00	0.00	0.00	3.58	311.00
9							596314	0.00	0.00	0.00	0.00	0.00
10							225296	0.00	0.00	0.00	0.00	0.00
11							730019	0.00	0.00	0.00	0.00	0.00
12	8.1	85	2.36	0.06	7	314	2055348	174.70	4.85	0.12	14.39	645.38
13					5	366	1612289	0.00	0.00	0.00	8.06	590.10
14					5	418	38845	0.00	0.00	0.00	0.19	16.24
15					9	350	606072	0.00	0.00	0.00	5.45	212.13
16							36100	0.00	0.00	0.00	0.00	0.00
17							22781	0.00	0.00	0.00	0.00	0.00
18							893029	0.00	0.00	0.00	0.00	0.00
19	8	46	0.63	0.05	5	372	59344	2.73	0.04	0.00	0.30	22.08
20					45	423	510184	0.00	0.00	0.00	22.96	215.81
21	-	-	-	-	-	-	46483				0.00	0.00
22	-	-	-	-	19	386	0				0.00	0.00
23	-	-	-	-	-	-	565784					
24	-	-	-	-	5	348	18434				0.09	6.42
25	-	-	-	-	-	-	18365					
26	8.6	59	0.76	0.05	5	346	534777	31.55	0.41	0.03	2.67	185.03
27	-	-	-	-	-	-	700					
28	-	-	-	-	-	-	*					
29	-	-	-	-	11	366	*					
30	-	-	-	-	5	358	*					
31	-	-	-	-	-	-	*					

\* Internal battery problem

**Bord Na Mona Energy Ltd, Mountdillon Group, Lanesboro, Co Longford**  
**Composite Sampler Results**

Month	pH	COD mg/l	Ammonia N mg/l	Parameters			Colour Pt Co units	Flow Daily Total (litres)	COD Kg/Day	Ammonia Kg/Day	Daily Totals		
				Total mg/l	Phosphorus mg/l	Suspended Solids mg/l					Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
May 2006 SW 76													
1	-	-	-	-	-	9	-	*					
2	-	-	-	-	-	5	-	*					
3	7.9	46	0.4	0.05	5	252	107	*					
4	-	-	-	-	-	-	-	*					
5	-	-	-	-	-	-	-	*					
6								*					
7								*					
8								*					
9								*					
10	8.1	22	0.36	0.05	5	386	114	*					
11								*					
12								*					
13								*					
14								*					
15								*					
16								*					
17								*					
18								*					
19								*					
20								*					
21								*					
22						5	262	*					
23						5	232	*					
24	8	73	0.42	0.05	5	256	172	*					
25						10	350	*					
26						9	338	*					
27						5	324	*					
28						5	330	*					
29						5	366	*					
30						5	394	*					
31	8.1	47	0.71	0.33	5	422	155	*					

\* Internal battery problem

**Bord Na Mona Energy Ltd, Mountdiloup, Lanesboro, Co Longford**  
**Composite Sampler Results**

Month	pH	COD mg/l	Parameters			Colour Pt Co units	Flow Daily Total (litres)	COD Kg/Day	Ammonia Kg/Day	Daily Totals		
			Ammonia N mg/l	Total Phosphorus mg/l	Suspended Solids mg/l	Total Solids mg/l				Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
June 2006												
SW 76												
1							*					
2							*					
3					5	350	*					
4							*					
5					5	408	*					
6							*					
7	8.2	70	0.04	0.05	5	444	*					
8						95	*					
9							*					
10							*					
11							*					
12							*					
13							*					
14							*					
15							*					
16							*					
17					5	401	*					
18					5	386	*					
19					5	330	*					
20							*					
21							*					
22							*					
23							*					
24							*					
25							*					
26							*					
27							*					
28							*					
29	7.9	95	0.28	0.07	5	832	*					
30						144	*					
31							*					
								-0.00	0.00	0.00	0.00	0.00

\* Internal battery problem

**Bord Na Mona Energy Ltd, Mountdilip Group, Lanesboro, Co Longford**  
**Composite Sampler Results**

Composite sampler results												
Month	pH	COD mg/l	Ammonia n N mg/l	Parameters			Colour Pt Co units	Flow Daily total (litres)	Daily Totals			Total Solids Kg/Day
				Total Phosphorus mg/l	Suspended Solids mg/l	Total Solids mg/l			COD Kg/Day	Ammonia n Kg/Day	Total Phosphorus Kg/Day	
July 2006												
SW 76												
1								*				
2								*				
3								*				
4								*				
5								*				
6	8.4	112	0.02	0.05	5	786	129	*				
7								*				
8								*				
9								*				
10								*				
11								*				
12	8.2	119	0.05	0.05	5		116	*				
13								*				
14								*				
15								*				
16								*				
17								*				
18								*				
19								*				
20								*				
21								*				
22								*				
23								*				
24								*				
25								*				
26								*				
27								*				
28								*				
29								*				
30								*				
31								*				

\* Internal battery problem

**Bord Na Mona Energy Ltd, Mountdillon Group, Lanesboro, Co Longford**  
**Composite Sampler Results**

Month	pH	COD mg/l	Ammonia N mg/l	Parameters Total Phosphorus mg/l	Total Solids mg/l	Colour Pt Co units	Flow Daily Total (litres)	COD Kg/Day	Ammonia Kg/Day	Daily Totals Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
August 2006							*					
SW 76												
1							*					
2							*					
3							*					
4							*					
5							*					
6							*					
7							*					
8							*					
9							*					
10							*					
11							*					
12							*					
13							*					
14							*					
15							*					
16							*					
17					7	366	*					
18							*					
19							*					
20					5	354	*					
21					5	358	*					
22	8.1	28	0.74	0.05	10	344	64					
23							*					
24					5	352						
25					5	380						
26					5	50						
27							*					
28					6	390						
29	8.2	32	1.17	0.05	5	364	61					
30							*					
31					5	352	*					

\* Internal battery problem

**Bord Na Mona Energy Ltd, Mountdillon Group, Lanesboro, Co Longford**  
**Composite Sampler Results**

Month September 2006 SW 76	pH	COD mg/l	Ammonia at N mg/l	Parameters		Colour Pt Co units	Flow Daily Total (litres)	COD		Ammonia at Kg/Day	Daily Totals		Total Solids Kg/Day
				Total Phosphorus mg/l	Suspended Solids mg/l	Total Solids mg/l		Kg/Day	Kg/Day		Total Phosphorus Kg/Day	Suspended Solids Kg/Day	
1					5	342	*						
2							*						
3							*						
4					5	330	*						
5					5	320	*						
6	7.4	10	0.55	0.05	5	322	*						
7							*						
8							*						
9							*						
10							*						
11							*						
12							*						
13							*						
14					5	344	*						
15					5	364	*						
16					5	346	*						
17					5	358	*						
18					5	364	*						
19					6	348	*						
20	7.8	10	0.6	0.05	5	432	*		63				
21					5	322	*						
22					5	266	*						
23					5	252	*						
24					5	244	*						
25					10	260	*						
26					5	294	*						
27	7.5	47	0.02	0.05	21	334	*		121				
28					5	302	*						
29					5	320	*						
30					5	322	*						
31								0.00	0.00	0.00	0.00	0.00	0.00

\* Internal battery problem



**Bord Na Mona Energy Ltd, Mountdillon C Lanesboro, Co Longford**

**Composite Sampler Results**

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters		Suspended Solids mg/l	Total Solids mg/l	Colour Pt Co units	Flow Daily Total (litres)	COD Kg/Day	Ammonia as Kg/Day	Daily Totals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
				Phosphorus mg/l	Total Phosphorus Kg/Day							Suspended Solids Kg/Day	Total Solids Kg/Day																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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\* Internal battery problem



**Bord Na Mona Energy Ltd, Mountdillon C , Lanesboro, Co Longford**

**Composite Sampler Results**

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters		Total Solids mg/l	Suspended Solids mg/l	Total Solids mg/l	Colour Pt Co units	Flow Daily Total (litres)	COD Kg/Day	Ammonia as Kg/Day	Daily Totals		Total Solids Kg/Day
November 2006				Total Phosphorus mg/l									Total Phosphorus Kg/Day		Total Solids Kg/Day
SW 76															
1	7.7	66	0.31	0.05		5		358	210	*					
2										*					
3										*					
4										*					
5										*					
6										*					
7										*					
8	7.7	53	0.35	0.29		5		394	96	*					
9						5		406		*					
10						5		420		*					
11						5		357		*					
12						5		370		*					
13						5		394		*					
14						5		374		*					
15	8.2	56	0.07	0.11		5		380	101	*					
16										*					
17										*					
18										*					
19										*					
20										*					
21										*					
22	5.8	112	0.03	0.07		5		144	364	*					
23						5		302		*					
24						5		314		*					
25						5		296		*					
26						5		262		*					
27						5		272		*					
28						5		384		*					
29	8.1	73	0.03	0.07		5		302	132	*					
30											0.00	0.00	0.00	0.00	0.00
*											0.00	0.00	0.00	0.00	0.00

\* Internal battery problem

**Bord Na Mona Energy Ltd, Mountdillon Gr : Lanesboro, Co Longford**

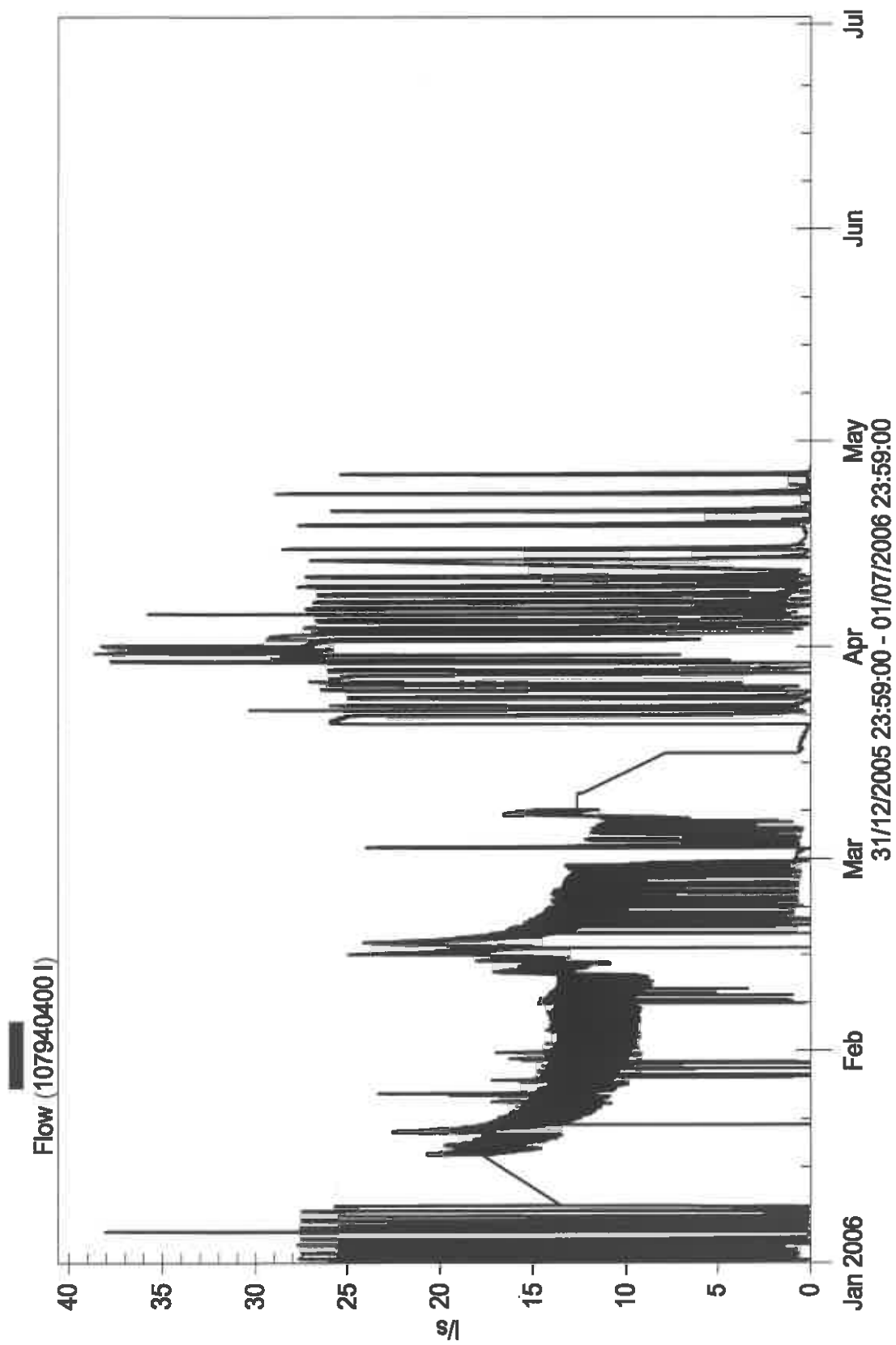
**Composite Sampler Results**

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters		Total Solids mg/l	Suspended Solids mg/l	Colour Pt Co units	Flow Daily Total (litres)	COD Kg/Day	Ammonia as Kg/Day	Daily Totals		Suspended Solids Kg/Day	Total Solids Kg/Day
				Total Phosphorus mg/l								Total Phosphorus Kg/Day			
December 2006									*						
SW 76															
1						230	23		*						
2						252	38		*						
3						378	11		*						
4									*						
5						338	27		*						
6	7.9	80	0.02	0.05		288	25	187	*						
7						216	5		*						
8						176	5		*						
9						274	5		*						
10						258	22		*						
11						136	17		*						
12						228	8		*						
13	6.9	108	0.22	0.12		236	21	147	*						
14						304	46		*						
15						254	12		*						
16						306	19		*						
17						241	13		*						
18						292	31		*						
19						324	18		*						
20	8	60	0.08	0.06		296	5	155	*						
21						300	5		*						
22						278	10		*						
23						332	5		*						
24						342	17		*						
25						424	24		*						
26	7.9	74	0.02	0.06		176	13	109	*						
27									*						
28									*						
29									*						
30									*						
31									*						

\* Internal battery problem

# Mountdillon Composite Sampler

January - June 2006



## **APPENDIX 4**

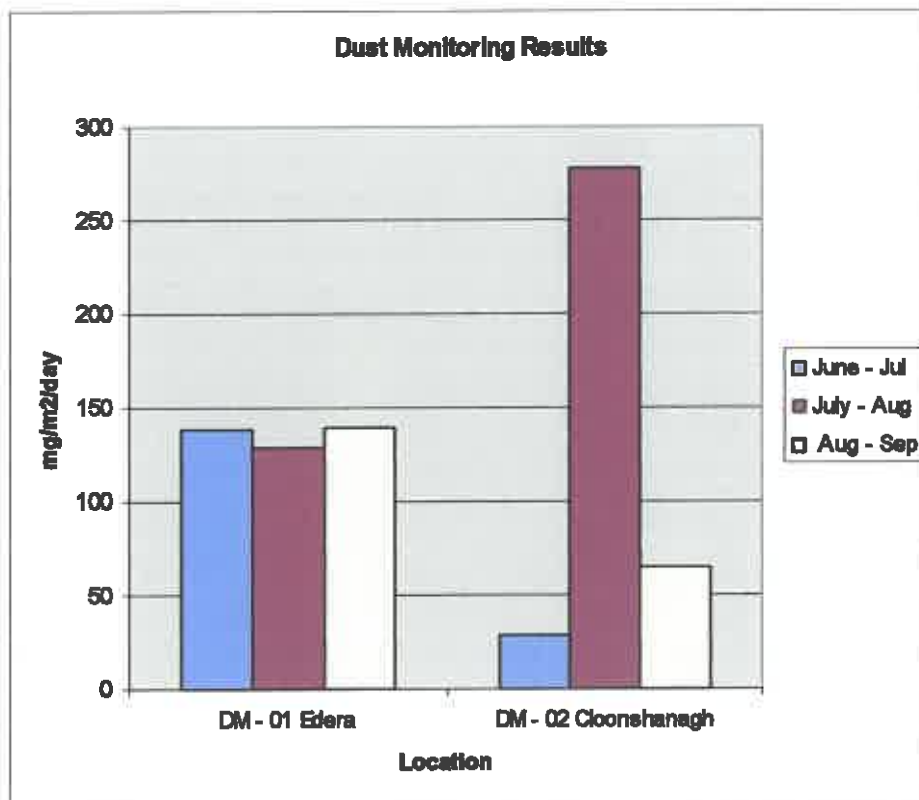
### **Dust Monitoring Results.**

### Dust Monitoring Results

**Licence:P0504-01**

**Works: Mt Dillon  
2006**

Sample Period	DM - 01 Edera	DM - 02 Cloonshanagh
June - Jul	138	29
July - Aug	129	278
Aug - Sep	139	65



## **APPENDIX 5**

### **Boiler Efficiency Results**



# Boiler Services

SERVICE/COMMISSION

REPORT No. 4304



Allenstown, Broadway, Co. Wexford.

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CUSTOMER: <b>C.M. DELANEY</b> SITE ADDRESS <b>RE: BORD NA MONA</b> <b>MOUNT DILLON (1)</b> <b>MOUNT DILLON (2)</b> <b>KANUSBOROUGH</b> <b>(O LONGFORD)</b>	ENGINEER SIGNATURE <i>On 2 hours</i>	DATE <i>19/10/2008</i>
	CUSTOMER TEL-CONTACT	O No/JOB No
	WORKING TIME	MILEAGE
	MATERIALS USED <b>4 OIL NOZZLES</b>	

## SITE TELEPHONE No & CONTACT

BOILER No	No1	No2	No3	COMMENTS		
BOILER TYPE & MAKE	CHAPPEL NXR4	CHAPPEL NXR4		CLEANED & CHECKED Boiler. CLEANED & CHECKED BURNERS. CLEANED OIL FILTERS REPLACED OIL NOZZLES CALIBRATED BURNERS FOR GAS OIL		
OUTPUT	620KW	740KW				
SEAL No	992201510	052200414				
BURNER	BelloRLEO	BelloRL100				
SERIAL No	0216000016	0225500005				
GAS TRAIN SIZE REF	N117	N117				
FUEL	GAS OIL	GAS OIL				
BOILER No	No1	No2	No3			
BURNER STATUS	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE
CO2	11.2	11.5	10.9	11.5		
CO	0	0	0	0		
O2	6.0	6.1	5.8	6.1		
VOX	—	—	—	—		
FLUE TEMP GROSS	180	185	170	180		
AIR TEMP	12	12	12	12		
FLUE TEMP NETT	168	173	158	168		
EFFICIENCY	88.1	90.6	89.6	91.4		
FLUE DRAUGHT	MB	2	1	2	1	
BOILER TEMP	-C	75	75	75	75	
GAS INLET PRESS (STATIC)	—	—	—	—		
GAS INLET PRESS (RUNNING)	—	—	—	—		
IONIZATION CURRENT UA	—	—	—	—		
GAS HEAD PRESS	—	—	—	—		
GAS RATE Pr3/M3h	—	—	—	—		
NOZZLE SIZE & TYPE	6.0	6.0	8.0	8.0		
SMOKE No	17	0	0	0		
OIL PUMP PRESS	BAR	12	12	12	12	
COMBUSTION CHAMBER PRESS	—	0.5	0	0.5		
FAN STATIC PRESS	—	—	—	—		
AIR SETTING	1.8	4.2	2	5		
HEAD SETTING	2	2	2.5	2.5		

NO2 Boiler!  
MOUNT DILLON YARD  
SHUNT PUMP NOT  
WORKING. NO POWER  
TO PUMP

AIR REQUIREMENTS BS6644

TOTAL KW INPUT

AIR REQUIREMENTS HIGH CM<sup>2</sup>

LEVEL LOW CM<sup>2</sup>

AIR AVAILABLE HIGH CM<sup>2</sup>

LEVEL LOW CM<sup>2</sup>

CUSTOMER SIGNATURE

SIGN.

PRINT:

# **APPENDIX 6**

## **De-silting Programme Review.**



### Siltpond Cleaning Programme

IPPC Licence: P0504-01

Works: Mt Dillon

Bog Area & Nr Ponds	1 Cleanin g	2 Cleanin g s	3 Cleanin g s	4 Cleanin g s
Lough Bannow (6)		5		1
Derryadd (10)		9	1	
Derryaroge (13)		13		
Knappoge/Begnagh (18)		11	7	
Derrycolumb (10)		10		
Derryshanoge (9)		9		
Cloontuskert (15)		14	1	
Cloonshannagh (16)		16		
Mountdillon (16)		16		
Edera (6)		6		
Cuil na gCun (5)		3	1	1

### Siltpond Cleaning Records

