



APPENDIX 4-3

**IPC LICENCE P0500-01 ANNUAL
ENVIRONMENTAL REPORTS
(AER)**

2000-2017



Annual Environmental Report

March 2001

Contents

1.0 Introduction

- 1.1 Company Details
- 1.2 Activities
- 1.3 Environmental Policy
- 1.4 Environmental Management of the Company

2.0 Summary Information

- 2.1 Emissions to Water Summary
 - 2.1.1 Silt Pond Emissions
 - 2.1.2 Surface Water Discharge Monitoring Location Programme Review
 - 2.1.3 Yard Run-off
 - 2.1.4 Composite Sampler Proposal
 - 2.1.5 Bunding Programme
- 2.2 Emissions to Air
 - 2.2.1 Dust Monitoring Locations Programme
 - 2.2.2 Boiler Combustion Efficiency
- 2.3 Waste Arisings
 - 2.3.1 Hazardous Waste
 - 2.3.2 Non-Hazardous Waste
- 2.4 Energy and Water Consumption
- 2.5 Environmental Incidents and Complaints
- 2.6 De-silting Report
- 2.7 Silt pond Upgrade Programme
- 2.8 Bog Development and Operational Programme
- 2.9 AER Summary Data Table

3.0 Management of the Activity

3.1 Environmental Management Programme Report

3.2 Environmental Management Programme Proposal

3.3 Environmental Expenditure

3.4 Bog Rehabilitation Report

4.0 Summary

Appendices

Appendix 1 Environmental Management Programme

Appendix 2 Silt pond upgrade programme

Appendix 3 Sample Report Forms

Appendix 4 Waste receipts

Appendix 5 Boiler combustion efficiency tests

1 Introduction

1.1 Company Details

Name: Bord na Mona Energy Ltd

Address: Boora Works,
Leabeg,
Tullamore
Co Offaly

Licence No: 500

Phone No: 0506 45996 **Fax No:** 0506 45179

Grid Ref: E180050 N319540

Contact Name: Paul Riordan
General Manager

1.2 Activities

The Boora Group, which consists of the Boora and Bellair bogs, is located predominately (95%) in Co Offaly, and the remainder in Co Laois.

The Boora group currently employs 165 permanent and 85 seasonal workers producing milled peat for the following customers ;

ESB	165 kTonne/annum
Derrinlough Briquette Factory	315 kTonne/annum
Horticulture use	<u>70 kTonne/annum</u>
Total	550/kTonne/annum

The Bellair bog is situated on the Athlone-Ballycumber road. It has a current target of 35 kTonne/annum for horticulture use.

1.3 Environmental Policy



Environmental Policy Statement

Bord Na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's 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 of 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 high environmental value.

Bord Na Mona Energy Limited seeks to conduct all aspects of its business in an environmentally sensitive manner.

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 environmental and eco-system

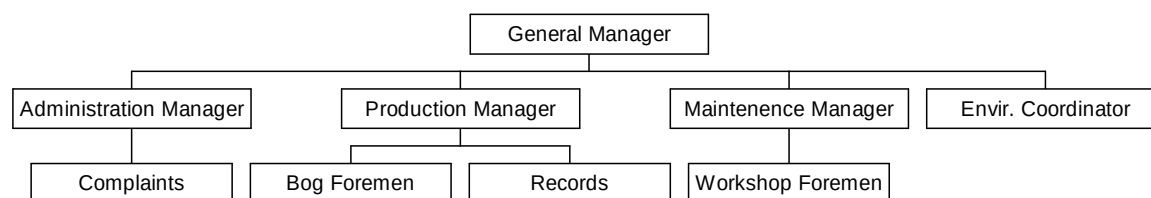
The environmental management system will be monitored, maintained and continually improved. A system of regular environmental audits will be put in place.

Bord Na Mona Energy Limited will continue research and development (R&D) into all aspects of its environmental impact.

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

1.3 Environmental Management of the Company

Environmental Responsibilities;



<i>Name</i>	<i>Title</i>	<i>Responsibilities</i>
Paul Riordan	General Manager	Overall Environmental Responsibility
Seamus Guinan	Production Manager	All Production related issues- silt/dust/noise/waste/codes of practice/sampling peat loading/tea centres
Sean Donoghue	Maintenance Manager	Machine maintenance/ codes of practice/stores/workshops/yards/ stores/waste
John Mc Niff	Manager Horticulture	All issues relating to Bellair and Coolnamona bogs
Tom Feighery	Admin Manager	Monitoring Complaints
Christy Mahon	Environmental Coordinator	Co Ordination of above Records/Reports
Cormac Carroll	Workshop Foreman	Workshop related Environmental Issues
Liam Fox	Workshop Foreman	Workshop related Environmental Issues
Eamon Dooley	Workshop Foreman	Workshop related Environmental Issues
Stephen Ryan	Workshop Foreman	Workshop related Environmental Issues
Patsy Guinan	Bog Foreman	Bog related Environmental Issues
Pat Craven	Bog Foreman	Bog related Environmental Issues
Kevin Healy	Records Keeper	Records

2 Summary Information

2.1 Emissions to Water Summary

2.1.1 Silt Pond Emissions

The results for Sept/Oct/Nov 2000 are as follows;

**Bord na Mona
Group :
IPC Licence No.:
Emissions to water
summary**

Boora Group

500

Silt Pond SW No. Sept/Oct/Nov (Final Quarter 2000)	SW51	POND 64
Parameter	Emissions (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7.2	N/A
Flow (L/sec)	1.75	N/A
Suspended Solids (mg/l)	<5	35 mg/l
Total Solids (mg/l)	159	N/A
Total Phosphorus (mg/l)	<0.05	N/A
Ammonia (mg/l)	1.5	N/A
Colour (Pt Co units)	245	N/A
COD (mg/l)	71	N/A

Silt Pond SW No. Sept/Oct/Nov (Final Quarter 2000)	SW42	POND 16
Parameter	Emissions (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7.8	N/A
Flow (L/sec)	1.8	N/A
Suspended Solids (mg/l)	<5	35mg/l
Total Solids (mg/l)	325	N/A
Total Phosphorus (mg/l)	<0.05	N/A
Ammonia (mg/l)	2.7	N/A
Colour (Pt Co units)	188	N/A
COD (mg/l)	56	N/A

Silt Pond SW No. Sept/Oct/Nov (Final Quarter 2000)	SW 32	POND 62
Parameter	Emissions (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7.8	N/A
Flow (L/sec)	1.39	N/A
Suspended Solids (mg/l)	<5	35mg/l
Total Solids (mg/l)	295	N/A
Total Phosphorus (mg/l)	<0.05	N/A
Ammonia (mg/l)	0.6	N/A
Colour (Pt Co units)	126	N/A
COD (mg/l)	39	N/A

Silt Pond SW No. Sept/Oct/Nov (Final Quarter 2000)	SW 25	Pond 51
Parameter	Emissions (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7.6	N/A
Flow (L/sec)	1	N/A
Suspended Solids (mg/l)	7	35mg/l
Total Solids (mg/l)	298	N/A
Total Phosphorus (mg/l)	<0.05	N/A
Ammonia (mg/l)	0.7	N/A
Colour (Pt Co units)	186	N/A
COD (mg/l)	56	N/A

Silt Pond SW No. Sept/Oct/Nov (Final Quarter 2000)	SW 19	POND 41
Parameter	Emissions (mg/l)	Emission Limit Value (ELV) (mg/l)
pH units	7.7	N/A
Flow (L/sec)	1.81	N/A
Suspended Solids (mg/l)	6	35mg/l
Total Solids (mg/l)	292	N/A
Total Phosphorus (mg/l)	<0.05	N/A
Ammonia (mg/l)	1.2	N/A
Colour (Pt Co units)	138	N/A
COD (mg/l)	48	N/A

Emission Pt	Parameter	Emission Mg/L	Emission Limit Value Mg/l for 75% of grab samples	% Compliance
Sw 51	Suspended Solids	<5	35 mg/l	100%
Sw 42	~	<5	35 mg/l	100%
Sw 32	~	<5	35 mg/l	100%
Sw 25	~	7	35mg/l	100%
Sw 19	~	6	35mg/l	100%

Table: Monitoring May to December 2000

2.1.2 Surface Water Discharge Monitoring Location Programme Review

The above programme is up and running since September 2000. Safe access is being provided at all of these locations and concrete pipes are being installed for accurate flow measurement.

As Pond No.51 Monettia (Sw 25) is the location point for the Composite Sampler and also a Grab Sample, we propose to move the Grab Sampling point to Pond No 34. SW 17.

2.1.3 Yard Run-off

A programme of Oil trap upgrade and installation is underway as required under condition 9.1.8

Traps have been installed at Monettia, Leamonaghan and Derrinlough. Traps will soon be installed in Boora yard. The next quarterly monitoring report will contain full monitoring and sampling results.

2.1.4 Composite Sampler Programme

An ISCO 6700 8 – Bottle composite sampler has been purchased and is being installed and tested. (Ref. Composite Sampler Proposal). A secure box for the sampler has been obtained. Training is being conducted in correct operation and maintenance of the sampler. Samples will be delivered to Newbridge, on a weekly basis for analysis. Results will be reported on in tabular form in the next AER 2001.

Parameter	Monitoring Frequency	Location of analysis
PH	Weekly	Laboratory
Flow (l/s)	Daily	On-site
Suspended Solids (mg/l)	Daily	Laboratory
Total Solids (mg/l)	Daily	Laboratory
Total Phosphorus as p (mg/l)	Weekly	Laboratory
Ammonia as N (mg/l)	Weekly	Laboratory
Colour (Pt co units)	Weekly	Laboratory
COD (mg/l)	Weekly	Laboratory

2.1.5 Bunding Programme

- Boora** Bunding programme is under way for completion April 1st. Reorganisation of existing oil trap and installation of two new oil traps. Work being carried out by external contractor.
- Monettia** Bund will be completed by end Mar. 2001. Anew oil trap and concrete pad is also to be completed by the end of Mar. 2001. An external contractor and internal resources are being employed.
- Lemonaghan.** Bund and a new oil trap was completed at end Jan 2001. Re-piping will be completed by mid March 2001. A new oil trap was installed. External and internal resources were employed.
- Briquette Factory Service area**
Bund to be repaired and sealed and oil interceptor fitted by end March 2001.
- Briquette Factory production Service area**
Bund completed in Jan 2001 with an oil interceptor being fitted. This will be completed by end of March 2001. An external contractor employed.
- Bellair** Bund complete at end Jan 2001.

2.2 Emissions to Air

2.2.1 Dust Monitoring Locations Programme

We are in the process of procuring Bergerhoff gauges for our dust sensitive locations. The bog foremen will be trained in the correct sampling procedures, before the gauges are brought into use. The sampling will cover the 2001 production season.

2.2.2 Boiler Combustion Efficiency

The Boilerhouse at Boora was tested in April 1999 for the licence application . See appendix 5 for results. It will be tested again before the next heating season and will be reported on in the next AER.

2.3 Waste Arisings

2.3.1 Hazardous Waste

BORD NA MÓNA 

BORD NA MÓNA ENERGY LIMITED

Waste Management Record (Hazardous)

Group : Bord na Mona Energy

Works : BooraGroup

WASTE DESCRIPTION	EWCODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Oil	13.02.00	12.144	Atlas Oil	Atlas Oil~	Portlaoise	Ongoing
Filters *	13.06.01	0	Atlas Oil	Atlas Oil	Portlaoise	Dec99
Batteries	16.06.01	6	Returnbatt	Returnbatt	Timahoe, Kildare	26-6-2000
Degreasing Stillbottoms **	12.03.01	None				
Fluorescent tubes	20.01.21		Stored on site			

DETAILS OF ANY REJECTED CONSIGNMENTS						
None to date						

* Being Stored in Skip at workshop for collection **stored on site awaiting contractor

2.3.2 Non-Hazardous Waste



BORD NA MÓNA ENERGY LIMITED

Waste Management Record (Non-Hazardous)

Group : Bord na Mona Energy
 IPC Licence no. : 500
 Works : Boora

WASTE DESCRIPTION	EWC CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Scrap metal	16.01.04	0	Hammond Lane	Hammond Lane	Athlone	
Boiler Ash *	10.01.03	1.8	On Site	P Riordan	On Site	
Polythene	02.01.04	10	Shabra	Shabra	Recycle(Monaghan)	
Workshop waste	12.01.03 15.01.01	20	Alina, Tullamore	Alina	Landfill, Tullamore	Each month
Office/Canteen waste	20.01.00	7.8	Alina Tullamore	Alina	Landfill, Tullamore	Weekly
Peat Silt (Anhydrous)	01.01.02	1,866	BNM	P. Riordan	BNM land	

- Land fill on site

2.4 Energy and Water Consumption

Energy Consumption Table June to Dec 2000

Diesel Derv	135.4 M3	1326 MW/Hr
Diesel Gas Oil	420.0 M3	4113 MW/Hr
Petrol	4.0 M3	36 MW/Hr
Electricity		422 MW/Hr
Peat Briquettes	259 Tonnes	1295 MW/Hr

Water is not used in our production process, therefore usage is minimal.

2.5 Environmental Incidents and Complaints

No complaints were received during the period in question.

A system is in place for recording and dealing with complaints.

A copy of a complaint form is included in appendix 3.

Environmental Complaints	Number of complaints
Complaints received	None
Complaints requiring corrective action	None
Categories of complaint	
Odour	
Noise	
Water	
Air	
Procedural	
Miscellaneous	

2.6 De-Silting Report

There are currently 51 operating silt settlement ponds in Boora and 6 in Bellair.

During the reporting period :

- 36 have been cleaned once
- 13 have been cleaned twice
- 8 ponds have not been cleaned as cleaning has not been required

	Cleaned Once	Cleaned Twice
Noggus	2	
Pollagh	1	2
Oughter	4	
Drinagh	7	
Boora	1	4
Galros	2	
Clongowney	6	
Monettia	5	
Derryclure	3	
Leamonaghan	0	6
Bellair	2	1
Killaun	3	

2.7 Silt Pond Upgrade Programme

During the period of the report, 17,100 m³ of extra pond capacity have been installed on existing ponds.

In addition to this 5 new ponds have been constructed, giving 8,810 m³ of additional capacity.

Stage 1– New Pond Construction

Pond No's 31, 11, 14, 28a, 46 have been completed

Stage 2 – Pond Extention

Pond No's 4, 5, 6, 19, 20, 34, 40, 41 have been extended

2.8 Bog Development and Operational Programme

Areas which will not be in production this year due to large stock levels are :

Boora

Noggus / Falsk

Pollagh / Oughter

Galros

Derryclure

This is expected to be a one year suspension of production.

2.9 AER Summary Data Table

Summary Of Emissions (May-Dec 2000)

Company		Bord na Mona
Address		Leabeg Tullamore
Contact Name		Paul Riordan
Telephone		0506 45974
E-mail		paul.riordan@bmn.ie
GPS Co-ordinates(4N,4E)		E180050 N319540
IPC Register Number		500
IPC Class		1
IPPC Class		
NOSE-P Code		
NACE CODES	Section	C
	Sub-Section	A
	Division	
	Group	
	Class	1.4

Emissions to Waters		Freshwater	or Sewer	or Sea		
Indicate with "X" if emissions are to :						
Parameter	Unit	Licensed emission	1998	1999	2000	2001
Volume	M ³	Not applicable, see section 2.1.1				
Suspended Solids	Kg					
BOD	Kg					
COD	Kg					
Total Dissolved Solids	Kg					
Total Nitrogen	Kg					
Phosphate	Kg					
Toxicity	TU					
Hg	Kg					
Cd	Kg					
Pb	Kg					
Cr	Kg					
As	Kg					
Zn	Kg					
Cu	Kg					
Ni	Kg					
% Compliance	%					
Number of samples						

Emissions to air						
Parameter	Unit	Licensed emission	1998	1999	2000	2001
Particulates	Kg	Not Applicable see section 2.2.1				
Sox	Kg					
Nox	Kg					
Co2	Kg					
TA Luft Class I	Kg					
TA Luft Class II	Kg					
TA Luft Class III	Kg					
Total Organic (as C)	Kg					
Non-Methane VOC	Kg					
Ammonia	Kg					
Total Heavy Metals	Kg					
% Compliance	%					
Number of samples						

Boiler Emissions to air						
Parameter	Unit	Licensed emission	1998	1999	2000	2001
Dust	Kg	Not Applicable see section 2.2.2.				
Sox	Kg					
Nox	Kg					
CO2	Kg					
CO	Kg					

Energy Usage						
Energy Consumption	Unit	Sulphur Content	1998	1999	2000	2001
Heavy Fuel Oil	M ³				None	
Light Fuel Oil	M ³				555	
Natural Gas	M ³				None	
Electricity	MW				422 MWhrs	
Coal	Kg				None	

Environmental Complaints		1998	1999	2000	2001	
Categories of complaint		Complaints received			None	
		Complaints requiring corrective action			None	
			1998	1999	2000	2001
		Odour			None	
		Noise			None	
		Water			None	
		Air			None	
		Procedural			None	
		Miscellaneous			None	

Water			Unit	1998	1999	2000	2001
On-site groundwater use			m ³			N/A	
On-site surface water use			m ³			N/A	
Municipal water use			m ³			N/A	

Accreditation		
EMAS (Yes/No)		No
ISO 14000 (Yes/No)		No
Certification Pending		No

European Waste Catalogue Code	Hazardous (Yes/No)	Description of Waste	Quantity (Tonnes/year)	Method of Disposal Recovery	Location of Disposal/ Recovery	Name of Waste Disposal Recovery Contractor
13.02.00	Yes	Oil	12.144	R 9	Portlaoise	Atlas Oil
13.06.01	Yes	Oil Filters	0	R 4 R 9	Portlaoise	Atlas Oil
16.01.04	No	Scrap Metal	0	R 4	Athlone	Hammond Lane
16.06.01	Yes	Batteries	6	R 4 R 11	Kildare	Return Batt
	Yes	Fluorescent Tubes		R 13		
01.01.02	No	Peat Silt *	1866	D 4	On site	
20.01.00	No	Domestic Waste	27.8	D 1	Tullamore	Alina Waste
02.01.04	No	Polythene	10	R 13		
10.01.03	No	Boiler Ash	1.8	D 1	On site	

**The figure used for silt is Tonnes dry weight.*

Waste	1998	1999	2000	2001
Total quantity of waste produced in calendar year(Tonnes)			1933.74	
total quantity of waste disposed of on-site			1867.8	
total quantity of waste disposed of off-site			37.8	
total quantity of waste recovered on-site			0	
total quantity of waste recovered off-site			28.144	
	1998	1999	2000	2001
Quantity of non-hazardous waste produced in calendar year			1915.6	
quantity of non-hazardous waste disposed of on-site			1,867.8	
quantity of non-hazardous waste disposed of off-site			37.8	
quantity of non-hazardous waste recovered on-site			0	
quantity of non-hazardous waste recovered off-site			10	
	1998	1999	2000	2001
Quantity of hazardous waste produced in calendar year (Tonnes)			18.144	
quantity of hazardous waste disposed of on-site			0	
quantity of hazardous waste disposed of off-site			0	
Quantity of hazardous waste recovered on-site			0	
Quantity of hazardous waste recovered off-site			18.144	

3.0 Management of the Activity

3.1 Environmental Management Programme Report

The EMP Proposal was submitted for approval after the AER reporting period, however draft procedures have been prepared for several activities. Training has been provided on Environmental Awareness for Management and all Production Team Leaders. This is currently being followed up by an IPC Licence Maintenance Training Programme conducted by IBEC. Environmental awareness and licence compliance training will then be conducted in the wider workforce.

3.2 Environmental Management Programme Proposal

The Environmental Management Programme Proposal is included as Appendix 1.

3.3 Environmental Expenditure

Expenditure Related to the Operation of the Cuil na Mona IPC Licence During the Period March 2000 – December 2000	
Description	Cost (£)
Capital Costs	138,584 *
Plant / Labour / Materials	86,000
Overheads (ESB, Phones, Consumables)	1,000
External Environmental Consultancy	1,000
EPA Fees	2,542
Total	229,126

** Included is the cost of a Composite Sampler fitted at Pond 51 SW 25 Monettia.*

3.4 Bog Rehabilitation Report

A great deal of research and groundwork has taken place at Boora in relation to Cutover utilisation. This has been carried out over a 10 year period and has included Forestry, Grasslands, Amenity, Wetlands and Recolonisation options.

A Cutaway Bog Rehabilitation Plan will be submitted under Condition 10.2.1 of the licence.

Bog areas rehabilitated to date are as follows:

Wetlands	1,120 Acres
Angling Lakes (5)	50 Acres
Natural Recolonisation	1,300 Acres
Forestry	2,000 Acres
Agriculture	1,000 Acres

4.0 Summary

As the reporting period only covered date of licence to December 2000 and the quarterly results only cover Sept/Oct/Nov, an accurate assessment of the results cannot be made. However the AER for 2001 will include a full set of quarterly results from the grab sampling and a full years composite sampling results, allowing for a more representative and accurate assessment of Bord Na Mona Energy's impacts on the environment. The attached Environment Management Programme has been implemented throughout the group, operating procedures have been put in place, and training has been provided for personnel involved in compliance with the licence.

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

APPENDIX 2

APPENDIX 3

APPENDIX 4

APPENDIX 5



Annual Environmental Report - Year 2001

February 2002

Contents

1.0 Introduction

- 1.1 Company Details
- 1.2 Activities
- 1.3 Environmental Policy
- 1.4 Environmental Management of the Company

2.0 Summary Information

- 2.1 Emissions to Water Summary
 - 2.1.1 Silt Pond Emissions
 - 2.1.2 Surface Water Discharge Monitoring Location Programme Review
 - 2.1.3 Yard Run-off
 - 2.1.4 Composite Sampler Programme
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 - 2.2.1 Dust Monitoring Locations Programme
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- 2.4 Energy and Water Consumption
- 2.5 Environmental Incidents and Complaints
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- 2.8 Bog Development and Operational Programme

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3.1 Environmental Management Programme Report

3.3 Environmental Expenditure

3.4 Bog Rehabilitation Report

4.0 Summary

Appendices

Appendix 1 Composite Sampler Table of Results

Appendix 2 Composite Sampler Flow Rate

Appendix 3 Boiler Combustion Efficiency Test Result

1 Introduction

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Address: Boora Works,
Leabeg,
Tullamore
Co Offaly

Licence No: 500

Phone No: 0506 45996 **Fax No:** 0506 45179

Grid Ref: E180050 N319540

Contact Name: Paul Riordan
General Manager

1.2 Activities

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ESB	100 kTonne/annum
Derrinlough Briquette Factory	340 kTonne/annum
Horticulture use	100 kTonne/annum
<u>Total</u>	<u>540 kTonne/annum</u>

1.3 Environmental Policy



Environmental Policy Statement

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- Emissions to atmosphere
- Waste disposal
- Use of natural resources
- Noise, vibration, odour, dust and visual effects
- Natural environmental and eco-system

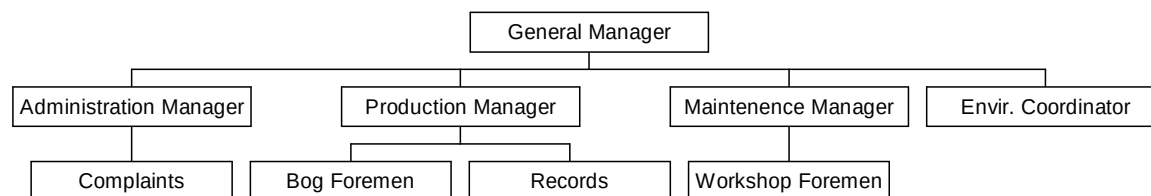
The environmental management system will be monitored, maintained and continually improved. A system of regular environmental audits will be put in place.

Bord Na Mona Energy Limited will continue research and development (R&D) into all aspects of its environmental impact.

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

1.4 Environmental Management of the Company

Environmental Responsibilities;



<i>Name</i>	<i>Title</i>	<i>Responsibilities</i>
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Seamus Guinan	Production Manager	All Production related issues- silt/dust/noise/waste/codes of practice/sampling peat loading/tea centres
Sean Donoghue	Maintenance Manager	Machine maintenance/ codes of practice/stores/workshops/yards/ stores/waste
John Mc Niff	Manager Horticulture	All issues relating to Bellair and Coolnamona bogs
Tom Feighery	Admin Manager	Monitoring Complaints
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Patsy Guinan	Bog Foreman	Bog related Environmental Issues
Pat Craven	Bog Foreman	Bog related Environmental Issues
Kevin Healy	Records Keeper	Records

2 Summary Information

2.1 Emissions to Water Summary

2.1.1 Silt Pond Emissions

Bord na Mona **Boora**
Group :
IPC Licence No.: 500
Emissions to water summary

Silt Pond No: 16		SW No. 42			
Reporting Period (Jan-Dec 2001)					
Quarterly Monitoring					
Parameter	Dec/Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	(mg/l)
pH units	7.9	No sample	8.1	7.7	~
Flow (L/sec)	8.6		0.9	11.8	~
Suspended Solids (mg/l)	5		5	14	35mg/l
Total Solids (mg/l)	296		506	360	~
Total Phosphorus (mg/l)	0.05		0.28	0.05	~
Ammonia (mg/l)	2		0.9	2.1	~
Colour (Pt Co units)	222		79	155	~
COD (mg/l)	51		34	52	~

Silt Pond No:		41	SW No.		19	
Reporting Period (Jan-Dec 2001)						
Quarterly Monitoring						
Parameter	Dec/Jan/Feb/Mar		April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value (mg/l)
	Emission (mg/l)		Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	
pH units	7.9		8	7.7	7.8	~
Flow (L/sec)	137.7		57	18	136.4	~
Suspended Solids (mg/l)	8		14	19	17	35mg/l
Total Solids (mg/l)	256		424	410	350	~
Total Phosphorus (mg/l)	0.05		0.05	0.42	0.05	~
Ammonia (mg/l)	0.8		0.8	0.9	1.4	~
Colour (Pt Co units)	174		76	102	88	~
COD (mg/l)	45		32	57	49	~

Silt Pond No: 34		SW No. 17			
Reporting Period (Jan-Dec 2001)					
Quarterly Monitoring					
Parameter	Dec/Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	(mg/l)
pH units	*	7.9	7.7	7.3	~
Flow (L/sec)		17.6	8.7	9.2	~
Suspended Solids (mg/l)		5	41	7	35mg/l
Total Solids (mg/l)		354	354	278	~
Total Phosphorus (mg/l)		0.06	0.12	0.05	~
Ammonia (mg/l)		1.7	2.7	2.9	~
Colour (Pt Co units)		162	116	193	~
COD (mg/l)		59	60	65	~

* Sample taken from Pond 51 Monettia where Composite sampler is now installed

Silt Pond No: 61		SW No. 32			
Reporting Period (Jan-Dec 2001)					
Quarterly Monitoring					
Parameter	Dec/Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	(mg/l)
pH units	8.1	8	8.1	8	~
Flow (L/sec)	95.7	14.6	26.3	118.1	~
Suspended Solids (mg/l)	10	0.5	5	5	35mg/l
Total Solids (mg/l)	336	410	432	346	~
Total Phosphorus (mg/l)	0.05	0.05	0.08	0.05	~
Ammonia (mg/l)	0.4	0.3	0.2	0.4	~
Colour (Pt Co units)	98	86	61	80	~
COD (mg/l)	27	30	22	36	~

Silt Pond No: 65		SW No. 51			
Reporting Period (Jan-Dec 2001)					
Quarterly Monitoring					
Parameter	Dec/Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	(mg/l)
pH units	7.6	7.4	7.8	6.9	~
Flow (L/sec)	4.95	3.4	0.5	7.8	~
Suspended Solids (mg/l)	5	5	6	6	35mg/l
Total Solids (mg/l)	140	176	264	114	~
Total Phosphorus (mg/l)	0.05	0.05	0.05	0.05	~
Ammonia (mg/l)	1.1	1.2	1.4	1.2	~
Colour (Pt Co units)	254	318	216	238	~
COD (mg/l)	54	68	57	68	~

Non- Compliances (samples)

Composite Sampler SW 25 Pond 51A

Date	Non-compliance	Cause	Corrective Action
17/5/01	Emission Limit Value was exceeded; 98mg/l v 35 mg/l	Work in progress on Pond to consolidate Comp Sampler may have agitated silt.	Suction head of sampler is checked on day of sample.
28/6/01	66mg/l v 35mg/l		
29/6/01	85mg/l v 35mg/l		
10/7/01	78mg/l v 35mg/l		
11/8/01	70mg/l v 35mg/l	Compilation of three days result –Not correct procedure	

2.1.2 Surface Water Discharge Monitoring Location Programme Review

Safe access has been provided at all of these locations and concrete pipes installed for accurate flow measurement.

As Pond No.51 Monettia (Sw 25) is the location point for the Composite Sampler and also a Grab Sample, the Grab Sampling point was moved to Pond No 34. SW 17.

It is proposed to continue the current sampling regime during 2002.

2.1.3 Yard Run-off

Traps have been installed at Boora , Monettia, Leamonaghan, Derrinlough and Bellair. Work outstanding is ;

Workshop	Concrete plinth and oil trap at oil store. Lining for Loco wash.
Monettia	A new percolation area is required for the septic tank.

2.1.4 Composite Sampler Programme

An ISCO 6700 8 – Bottle composite sampler is operating at Pond 51a Monettia. (Ref. Composite Sampler Proposal). The sampler is installed in a secure box . Training has been conducted in correct operation and maintenance of the sampler. Samples are delivered to Newbridge, on a weekly basis for analysis.

Parameter	Monitoring Frequency	Location of analysis
PH	Weekly	Laboratory
Flow (l/s)	Daily	On-site
Suspended Solids (mg/l)	Daily	Laboratory
Total Solids (mg/l)	Daily	Laboratory
Total Phosphorus as p (mg/l)	Weekly	Laboratory
Ammonia as N (mg/l)	Weekly	Laboratory
Colour (Pt co units)	Weekly	Laboratory
COD (mg/l)	Weekly	Laboratory

The composite sampler was operational from May to December. Appendix 1 shows the table of results. Appendix 2 shows the flow rate (Litre/Second) in graph form.

2.1.5 Bunding Programme

This is detailed in 3.1 Environmental Management Programme Report – Project 7.

A Pressure test was carried out on the Petrol Storage Tank and was satisfactory. The certificate of the test result will be on file at Boora.

2.2 Emissions to Air

2.2.1 Dust Monitoring Locations Programme

Three monitoring locations were selected;

Clongawney / Pollagh / Derryclure

As Pollagh and Derryclure were not in production in 2001, a monitoring gauge was not fitted at these locations. The results from Clongawney were;

Emission Point	Parameter	Average Emission (mg/m ² /day)	Emission Limit Value
Clongawney Dm 01	Dust	7.7	(350mg/m ² /Day)

A full programme of dust monitoring will take place during the next production season.

2.2.2 Boiler Combustion Efficiency

A boiler efficiency test was carried out by Boiler Services Ltd .

The efficiency was 77.1 %

Appendix 3 shows the test result.

2.3 Waste Arising

2.3.1 Hazardous Waste



BORD NA MÓNA ENERGY LIMITED

Waste Management Record (Hazardous)

Group : Bord na Mona Energy

Works : BooraGroup

WASTE DESCRIPTION	EWG CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Oil	13.02.04 13.01.04	8.75	Atlas Oil	Atlas Oil~	Portlaoise	Ongoing
Filters	16.01.07	1.00	Atlas Oil	Atlas Oil	Portlaoise	Ongoing
Batteries	16.06.01	7.50	Returnbatt	Returnbatt	Timahoe, Kildare	Ongoing
Degreasing Stillbottoms	12.03.01	2.73	Atlas Oil	Atlas Oil	Portlaoise	20-11-01
Fluorescent tubes	20.01.21		Stored on site	P Riordan	Irish Tubes and Fittings	Yet to commence

DETAILS OF ANY REJECTED CONSIGNMENTS						
None to date						

2.3.2 Non-Hazardous Waste

BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED

Waste Management Record (Non-Hazardous)

Group : Bord na Mona Energy
 IPC Licence no. : 500
 Works : Boora

WASTE DESCRIPTION	EWC CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Scrap metal	16.01.17	48.62	Hammond Lane	Hammond Lane	Athlone	Ongoing
Boiler Ash *	10.01.03	6.2	On Site	P Riordan	On Site	
Polythene	02.01.04	165.8	Shabra	Shabra	Recycle(Monaghan)	Ongoing
Workshop waste	12.01.03 15.01.01	16.8	Alina, Tullamore	Alina	Landfill, Tullamore	Each month
Office/Canteen waste	20.01.01 12.01.13 15.01.02	7.8	Alina Tullamore	Alina	Landfill, Tullamore	Weekly

- Land fill on site

2.4 Energy and Water Consumption

Energy Consumption Table

Diesel Derv	2264 MW~Hr
Diesel Gas Oil	6435 MW~Hr
Petrol	21 MW~Hr
Electricity	746 MW~Hr
Peat Briquettes	1870 MW~Hr

Water is not used in our production process, therefore usage is minimal.

2.5 Environmental Incidents and Complaints

Two complaints were received during the period in question.

A system is in place for recording and dealing with complaints.

Environmental Complaints	Number of complaints
Complaints received	Two
Complaints requiring corrective action	Two
Categories of complaint	
Odour	
Noise	
Water	
Air	Two (Dust)
Procedural	
Miscellaneous	

2.6 De-Silting Report

There are currently 56 operating silt settlement ponds in Boora and 7 in Bellair.

Due to high stock levels, production in 2001 operated on 4,195 Acres (Approx 55 % of Total) and within this acreage, Tonnage produced was also limited to 75 % of normal production targets. This resulted in a reduction of the amount of silt generated.

During the reporting period :

- 13 ponds were cleaned twice
- 38 ponds were cleaned once

Silt Pond Cleaning Summary

Area	No. Of Ponds Cleaned Twice	No. Of Ponds Cleaned Once	Total No. of Ponds in Area
Clongawney	2	4	6
Drinagh	2	5	8
Noggus	0	0	2
Boora	0	1	5
Pollagh/Turraun	0	3	3
Oughter/Killaranny	0	6	6
Lemonaghan	6	3	9
Monnetia	0	5	5
Derryclure	0	3	3
Killaun	0	2	3
Galros	1	1	2
Derinboy	0	2	4
Bellair	2	3	7
Total	13	38	63

Shaded = Areas where production took place in 2001.

2.7 Silt Pond Upgrade Programme

During the reporting period 9,042 m³ of extra pond capacity have been installed on existing ponds.

In addition to this three new ponds have been constructed, giving 3,775 m³ of additional capacity.

Stage 1– New Pond Construction

Pond No's 48, 63, 63a have been completed

Stage 2 – Pond Extensions

Pond No's 22, 49, 50, 36, 37, have been extended

Increased capacity at ponds 36/37 Oughter was got by digging a new pond on the outfall (Pond 38). Because of the difficult terrain, there is a 1055 Cu Metre shortfall of required capacity, therefore all three ponds will be cleaned three times per year if required.

The Pond signposts are in place.

Outstanding ;

Stage 1 - New Ponds;	Cu Metre	Comment
Bellair North 74	2550	No activity on bog
Bellair North 75	2350	No activity on bog
Bellair North 76	250	Land Purchase in progress
Bellair South 68	625	Land Purchase in progress
Total	5775 Cu Metres	
Stage 2 - Pond Extensions;	Cu Metre	Comment
Lemonaghan 42/43/44	778	Planned
Lemonaghan 44a	811	Planned
Lemonaghan 45	1768	Planned
Derryclure 54	738	} excavation Ponds will be cleaned three times per year if required.
Derryclure 55/56	1041	
Killaun 57	2154	Planned
Bellair North 71	838	Land purchase in progress
Bellair North 72	194	Planned
Bellair South 66	1062	Land purchase in progress
Bellair South 69	904	Set out for excavation.
Bellair South 70	100	Surveyed for piping
Total	10,388 Cu metres	

2.8 Bog Development and Operational Programme

Areas which were not be in production during year 2001 due to high stock levels :

Boora	1240 Gross Production Acres
Noggus / Falsk	980 Gross Production Acres
Pollagh / Oughter/Killaranny	2038 Gross Production Acres
Derryclure	340 Gross Production Acres

Areas which will not be in production in 2002 are;

Oughter /Killaranny.
Derryclure will operate on a reduced acreage (approx 200 Acres).

A low level of development work continued in Derrinboy and Killaun;

Derrinboy	Silt pond Excavation and ditching
Killaun	Ditching

3.0 Management of the Activity

The EMP Proposal was submitted for approval in March 2001 and was to the satisfaction of the Agency.

3.1 Environmental Management Programme Report

Project 1.

Condition 5.4 of the Boora licence calls for an emission limit of 350mg/m²/day in accordance with the Batneec guidelines, with regard to dust emissions from milled peat production bogs. Condition 2.2.2 (iv) of the Environmental Management Programme calls for the reduction of fugitive dust emissions during loading and transfer operations on the bog and during unloading operations at the tippler and works yard areas. Also Condition (v) calls for the provision of measures to protect dust sensitive areas.

Project Summary:

1. Training for operatives at the various production cycles will be carried out to cover all locations and the existing dust sensitive locations in the Boora group (Pollagh, Derryclure & Clongawney). This will also incorporate a system of Cleaner Production Methods training, so as to implement the Codes of Practice in relation to dust and increase the awareness of Bord na Mona's production personnel to fugitive dust emissions and waste minimisation.
2. The programme will also include examining production machines, regarding process modifications and improved process control with the objective of increasing production efficiency, while reducing emissions. This will be carried out, with technical assistance from the Research & Development dept.
3. Procedures will be prepared so as to ensure compliance with condition 5.5 of the licence, in relation to dust control.

The results from the monitoring of the dust sensitive locations in accordance with condition 5.3 of the licence, will also be examined and used in improving process control

Project Report

1. Training

Training of management and Teamleaders took place in Feb/Mar 2001.

Training of General Workers – Permanents took place in April 2001.

Training of General Workers – Seasonals took place in June 2001.

14 Gen Workers were absent during training . This will be completed before production.

2. Research and Development

With regard to examining production machines, in relation to process modifications and improved process control, it is proposed to examine three elements of the peat harvester in relation to dust control. Once a production field has been milled, harrowed, ridged it is ready for lifting on the belt of a peat harvester and deposited into a central stockpile for storage or sale. During this process, dust can be generated at various points on the harvester, ie the belt transfer points, the potatoe chain elevator and while discharging onto the stockpile.

It is proposed to asses these dust sensitive points on the machine by investigating methods of covering or dust proofing these locations on the lift of the harvester and on the jib. Trials on the suitability and benefits of this dust suppression system will be assessed in Monettia bog, in the Boora group of bogs. Here its performance and environmental benefits will be assessed along side existing harvesters and a report will be submitted on its feasibility in the Annual Environmental Report 2003.

It is proposed to start the pilot project by March 31st.

3. Procedures

Procedures have been posted in all areas in production and in workshops and transport offices. A special notice board was erected at each Centre for this purpose.

4. Monitoring Results

Production took place in one of the three selected monitoring areas in 2001. The result (Clongawney) was; 7.7 mg/sq mtr/day. All three areas will be monitored monthly in 2002.

Project 2.

Schedule 1 (i) of the Boora licence calls for an emission limit of 35mg/litre in accordance with the Batneec guidelines, with regard to silt emissions from milled peat production bogs. Condition 2.2.2 (i) of the Environmental Management Programme calls for the minimisation of suspended solids movement to surface water systems via peatland surface water drainage channels during development and operation of boglands, to be addressed.

Project Summary:

1. The program will look at improving process control and will involve a programme of cleaner production methods being implemented in the various stages of the production cycle, as waste minimisation measures.
2. A large part of the programme will involve training for management and operatives involved at the various stages of a production cycle i.e. milling, harrowing, ridging, harvesting, loading, ditching etc.
3. Procedures will be prepared, which will highlight the best practice in milled peat production. These procedures will be used to implement the Codes of Practice in peat production and will assist in waste minimisation.
4. Process modification will also be examined with the assistance of the Research & Development Dept, which may improve the efficiency of the production machines, reducing the amount of milled peat lost as silt.

Project Report

1. Cleaner production Methods have been devised and are being implemented.
2. Training
Training of management and Teamleaders took place in Feb/Mar 2001.
Training of General Workers – Permanents took place in April 2001.
Training of General Workers – Seasonals took place in June 2001.
14 Gen Workers were absent during training . This will be completed before production.

1. Operating Procedures

Procedures have been posted in all areas in production and in workshops and transport offices. A special notice board was erected at each Centre for this purpose.

2. Process modifications/Improvements

With regard to process modifications, to reduce peat loss on the bog, inspections will be carried out during the next production season, to see what improvements can be effected to reduce losses and leakages of peat from Millers, Harrows, Ridgers & Harvestors. These machines will be tested at Monnettia in the Boora Group and will involve looking at belt seals, hydraulic harrows, ridger blades, offset millers etc.

These modifications will be examined along side existing machines to quantify any benefits that may be achieved. A report on this project will be submitted as part of the 2002 AER.

Project 3.

Condition 2.2.2 (ii) of the licence calls for the rationalisation of surface water discharge pts from production bog to be addressed.

Project Summary:

All drainage channels will be examined in relation to flow direction and catchment make-up to explore the possibility of reducing the emission points in the Boora Group of bogs.

It will initially be in the form of a desk-based study, examining bog layouts, contours, drainage patterns etc to assess the feasibility of changes to the drainage patterns. This may provide for easier management of the silt pond system, in relation to maintenance of the ponds.

The programme will have three phases run over 12 mths, in which all of the production bogs will be examined on a quarterly roster, as displayed in the Gantt chart below

1. Survey of the bogs in each quarter will involve, checking drainage levels, contours, catchments etc and assessing the advantages and disadvantages of implementing the rationalisation of surface water discharge in each production bog.
2. A decision will be made on the feasibility of changing the drainage network in each production bog, to facilitate a reduction in emission points.
3. If feasible, the work will be implemented by the Bog Foreman.

Project Report:

A Survey of all areas was carried out by the Production Manager, Technical Assistant and Environmental Co – Ordinator.

This work had been carried out at Boora prior to EPA licence application. One development area (Kilaun) is at present a temporary arrangement and will be re-examined prior to production commencing at this site.

Project 4.

Condition 2.2.2 (iii) calls for the Investigation of reed-bed systems for final polish of silt pond discharges to be addressed. Condition 9.1.7.

Project Summary:

This project will be a desk-based study to examine the different types of reed-beds in use and the different types of wastewater's that are suitable for final polishing.

1. An Engineer will be appointed to examine and research existing systems that may be in use, and assess.
their suitability, advantaged/disadvantages etc to the Bord na Mona situation. he/she will liaise with 3rd level Institutions who may be carrying out research into reed-bed systems and their applications for final polishing of wastewater.
2. If the above research shows that demonstrating the effectiveness or not of the system, warrants a pilot area to be selected and a reed-bed constructed, then a test area will be selected
3. If the research shows that the system is not suitable for final polishing of silt pond discharges, the rationale for this will be included in the AER.

Project Report:**The potential for using reedbed systems for the final polishing of silt pond discharges.**

The installation of reedbed treatment systems for the final polishing of silt pond waste is not, in most respects, a feasible option for Bord na Mona. The results collected from composite samplers at two sites (Allen and Blackwater) and also from grab samples at these sites (see report on silt pond efficiency) indicate that BOD, suspended solids, phosphorus and ammonia values are below environmental quality standards given by the EPA. The Lough Ree, Lough Derg study found similar results except that ammonia levels emanating from the worked bog were high. This meant that ammonia levels in the little Cloghan River were elevated downstream of the operational site. If reedbeds could be proven to significantly reduce ammonia from silt pond discharges their installation would be justified, however for the greater part, discharges from worked bogs into catchments satisfy environmental quality standards and literature shows that ammonia removal efficiency is unreliable and unpredictable (Jing *et. al.*, 2001, Steer *et. al.*, 2002, Luederitz *et. al.*, 2001). TMER results (Leuderitz *et. al.*, 2001) would indicate that reedbed treatment systems would not be a desirable option for the final polishing of silt pond waste. Practical problems would also arise in terms of site accessibility and the difficulty of working with peat. A pilot study could be carried out and it would be advisable to do so in conjunction with a third level institution.

Silt removal efficiency trial of Bord na Mona settlement ponds.

The results of efficiency tests from this study indicate that the Barnaran and Creggan ponds were not very efficient but as explained, water entering the ponds in most cases had low suspended solid concentrations. As the amount of silt entering the pond increased, the representative efficiency of the ponds was revealed. Despite this, the requirements of the license were still fulfilled in terms of concentrations of suspended solids in the outflow from the pond.

The results achieved in this test are not typical as previous tests by Hannon and Coffey (1980) and Harkins (1991) have shown silt ponds to be highly efficient at removing peat silt. This is due to the fact that the majority of the silt is retained on the bog in the old sod

trenches in the case of Barnaran, while Creggen bog is pumped drainage with the silt being retained in the pump sump. It is proposed to sample another pond, which is a more representative example of a gravity drained system, in the coming year. Operational practices and improved maintenance of the ponds would also ensure greater silt removal efficiency.

Project 5.

Condition 2.2.2 (xi) calls for the separation of storm water runoff from process and non-process areas to be examined.

Project Summary:

By examining process and non-process water, the volumes of effluent requiring treatment can be reduced. Process water originates from production bog, while non-process water is water from surrounding farmland, which enters the bog drainage system and discharges through the silt pond. The programme will involve three phase's, which will be used to assess all of the bogs, spread over 12 months, and carried out over the four quarters as in the Gantt Chart below

1. The project will initially be in the form of a survey , which will identify the sources of the extraneous water and suggest alternative drainage routes.
2. These areas will then be assessed on the ground for the feasibility of alterations to the existing drainage system and the benefits, if any, of doing so. This will provide for more efficient treatment methods and the reduction of non-process water, which is currently being treated.
3. Any production bog, on which such work would be feasible and beneficial, will be carried out.

Project Report:

An examination of all bog areas has been carried out by the Production Manager/Technical Assistant/Env. Co-ordinator.

Three areas were selected Galros Lemonaghan and Noggus were selected as having potential for possible by- pass of non process water These areas will be examined in detail.

Bellair may also have potential. The plan here is dependent on land acquisition.

Water from non-process areas (agricultural land) has recently been diverted from ponds 51 and 53 (Monettia) .

Project 6.

Condition 2.2.2 (xii) calls for the effective spill/leak management of mobile fuelling units to be addressed. Condition 9.1.7 also calls for the loading and unloading of fuel oils to fixed fuel storage tanks to be carried out in areas protected against spillage.

Project Summary:

1. This programme will initially involve surveying the current situation in a bog for re-fuelling either production machines or fixed fuel storage tanks, so as to protect the environment from spills or leaks should they occur.
2. A large part of the programme will involve developing operating procedures for the loading and un-loading of the fuel oil, to prevent accidental spillage and oil wastage.
3. Operatives will be trained in the safe transfer of fuel from the service wagon/fixed tank to the production machine.
4. The Emergency Response Procedure will be implemented regarding oil spills and will be available at all the works and personnel concerned made aware of its content.

Project Report:

1. The survey of the active areas was carried out by the Production Manager/Environmental Co-Ordinator and area Foremen. The service points in each area were examined and changes proposed where necessary and the progress of required change is being monitored. A notice indicating the correct service point location is posted in each area.

2. Operating Procedures

These have been prepared and posted at Transport Centres/Production areas and Workshops.

3. Training

This is being planned and will take place before production commences.

4. Emergency Response Procedure

This has been prepared and posted at all Production/Transport centres and Workshops. It will also be part of the training carried out.

Project 7.

Condition 9.1.4 calls for all tank and drum storage to be rendered impervious to the materials stored therein.

Project Summary:

All diesel storage locations will be examined under the terms of the licence. Diesel storage and distribution networks will be studied to allow for improvements or adjustments should they be necessary. The program will also cover the rationalisation of the existing diesel/oil storage tanks so as to reduce the bunding requirements and the risk to environment.

1. Analyse oil/diesel storage requirements, with a view to reducing the volumes stored on site, so as to reduce the risk to the environment.
2. Plans for bunding improvements to exist tanks, decommissioning of dis-used tanks and a construction program for new un-bunded tanks will be put in place.
3. Contracts will be placed for the above construction/improvements etc.
4. All bunds will be constructed and certified.

Project Report:

The bunding programme is complete except for repair to bund at Derrinlough (Bog Area Tank) and installation of plinth at Workshop Service area. We are awaiting the contractor to carry out this work.

Summary;

Boora Bunding programme is complete, inspected and the inspection notified to the Agency. We are awaiting external contractor to install a concrete plinth at workshop service area.

Monettia Bunding programme is complete, inspected and the inspection notified to the Agency. A new tank for central heating fuel (a double skinned Kingspan tank) is being installed.
The Derv. Dispenser is being relocated within the bund area (in progress).

Lemonaghan. The Bund and a new oil trap is complete and ready for inspection.

Briquette Factory Service area

The Bund and a new oil trap is complete and ready for inspection.

Briquette Factory production Service area

We are awaiting external contractor to repair bund.

Bellair Bund and a new oil trap is complete and ready for inspection

Oil Barrells Bunds for storage of oil barrels in use are being made inhouse Three units are complete.

Project 8.

Condition 2.2.2 (vii) of the EMP calls for an investigation into the reuse of silt pond waste.

Project Summary:

The difficulty with reusing peat silt is the contamination of the peat by subsoil, because of the location of the silt ponds. This results in high ash content.

1. The project will select 1 to 2 ponds in the Bord na Mona Energy Ltd group, with a view to examining the possibilities of silt containment in intermediate settlement ponds.
2. Examine the methods used for extracting the silt and the physical make-up of the silt once it has been mechanically taken from the silt pond with regard to contamination.
3. Methods for incorporating the silt back into the stockpiles will be examined for feasibility, effectiveness etc.
4. Alternative uses for the silt will also be explored, either for further use within Bord na Mona Energy Ltd, or for public use.

Two suitable ponds will be introduced to the project on a phased basis, to conduct trials. The results from the first pond will determine whether a second test site worth exploring.

Project Report:

Suitable locations for examining the possibility of reusing silt pond waste will be selected prior to the 2002 production season and monitored in the second half of the year.

Project 9.

Condition 2.2.2 (viii) of the EMP calls for the collection, storage, and reuse of polythene covering to be explored.

Project Summary:

1. The project will initially be in the form of desk based study, to examine the methods available for the removal, collection and the storage of the stockpile covering.
2. It will also cover research into the development of a Bord na Mona specific machine/method for the effectiveness and economical removal of the covering
3. Polythene reuse will be examined in relation to reuse in Bord na Mona Energy Ltd, other divisions in Bord na Mona Ltd, or other industry.

The collection and reuse of the material will also be examined in conjunction with the licensed waste contractor, engaged to recycle the used polythene covering. The company is actively pursuing these objectives with Shabra Plastics and is also exploring other outlets for the waste polythene.

Project Report:

Trials were carried out by a private company (Banner Re-cycling) on the baling of used polythene for removal to a recycling depot. The loose polythene is brought to the nearest hard stand on site and is baled into approx 400 kg square bales. It is then in a suitable form for transportation for recycling. The company will soon have a dedicated machine for Bord Na Mona use.

Baling took place at Boora and Coolnamona and this will be extended to all Works.

Bord Na Mona have An agreement with Shabra Plastics Ltd. (Monaghan) to re-cycle this polythene and during year 2001, 185 Tonnes was delivered to them . Shabra use this high grade material to manufacture a raw material in bead form for use in other industries.

We are at present in discussions with two companies regarding re-cycling our used polythene into Bio-Bead for use by Bord Na Mona Environmental Ltd in its products.

Project 10.

Condition 2.2.2 (ix) of the EMP calls for an examination of the use of reusable material for stockpile protection.

Project Summary:

3. This project will be initially in the form of a desk-based study, to examine the various materials on the market, which may suit stockpile protection.
4. It will re-examine previous Bord na Mona research into alternative stockpile protection measures and assess any advances in technology.
It will take into account, the methods of application, life of the product, methods of removal, recyclability, and economics etc and its suitability to Bord na Mona's requirements

This will be reported, on a quarterly basis, to the Head of Civil Engineering & Environmental Control and the results of the research documented.

Project Report:

Currently Bord na Mona use 350 gauge, 89 micron, low density black polythene for stockpile protection for a variety of reasons.

1. Weight per roll of polythene, is suitable for transport on the bog, where low bearing pressures are important.
2. It is also suitable for handling and covering of the stockpile on the bog and when removing during peat sales.
3. The polythene is also suitable for baling for recycling (see project 9).

Bord na Mona have also commissioned a study on biodegradable polymers used in the manufacture of film. The objectives of the study are to compare biodegradable films to polyethylene film for use as peat protective cover. The comparison will be based on product performance, end of life, degradation processes, product shelf life and cost.

The report will detail the current state of the art in commercially available biodegradable polymers. Polymer converters manufacturing biodegradable film will also be detailed. The comparison of biodegradable polymers to polyethylene will also be reported with particular emphasis on the performance requirements of Bord na Mona

The project, which is being carried out by the Polymer Development Centre, in The Athlone Business & Technology Park, has commenced since 11/02/02, and a report is due by 11/03/02

Project 11.

Condition 2.2.2 (x) of the EMP calls for the examination of wind power technology for pumped drainage.

Project Summary:

- 1 It will also involve examining previous research carried out by Bord na Mona and assessing changes in technology.
The project will initially be in the form of desk based study, to examine the technology availability, the pumping requirements of the various licensed activities, wind regimes, and the suitability of bogs for the installation of wind powered pumps.

Project Report:

Previous studies into utilising wind power technology for pumped drainage in Bord na Mona have show it to be unfeasible, for a number of reasons.

1. In order for a wind powered pump to operate when required ie. after periods of rainfall, wind is required. As rainfall is not always accompanied with high winds, a separate electrical pump would be required , therefore installation costs would be higher as both systems would be required on site. The requirement for a reliable and responsive pumping system is very important when operating in a production bog as it provides for the drainage of the catchment in situations where gravity drainage is no longer possible. The drainage is important in order to maintain the production fields for production operations and for the protection of existing stock on the bog.
2. Typical Bord na Mona pumping capacity is approx 2.47 l/sec/hectare. Wind pumping capacity of one wind pump investigated was found to be 20,000 to 40,000 litres depending on water head, which converts to 0.46l/sec, which is less than one fifth of the Bord na Mona requirements.
3. Wind regimes on BNM bogs at low heights are not suitable for wind power due to low wind speeds and obstacles on the bog surface and surrounding land such a forestry plantations which create “wind shade”.
4. Due to the lack of wind data availability for the majority of Ireland, a wind test mast would have to be installed at each site to assess the potential wind regime. This would have to remain on site for 12mths to establish reliable wind speed data. These test masts would also require planning permission.
5. All wind turbines, regardless of hub height require planning permission from the local authority, and may require some environmental monitoring, or even an EIS.

However, regardless of the above, Bord na Mona is advances advances in technology regarding wind energy, and will continue to monitor and examine any possible uses in pumped drainage.

3.3 Environmental Expenditure

Expenditure Related to the Operation of the Boora IPC Licence During the Period Jan 2001 – December 2001	
Description	Cost (Euro)
Capital Costs	64,293
Plant / Labour / Materials	135,367
Overheads (ESB, Phones, Consumables)	2,215
External Environmental Consultancy	11,960
EPA Fees	5,180
Total	219,015

3.4 Bog Rehabilitation Report

A great deal of research and groundwork has taken place at Boora in relation to Cutover utilisation. This has been carried out over a 11 year period and has included Forestry, Grasslands, Amenity, Wetlands and Recolonisation options.

A Cutaway Bog Rehabilitation Plan has been prepared and submitted under Condition 10.2.1 of the licence. A Decommissioning Procedure is in place to apply when production ceases in an area.

Bog areas rehabilitated to date are as follows:

	Acres Todate
Wetlands	1,170
Angling Lakes (5)	50
Natural Recolonisation	1,300
Forestry	2,025
Agriculture	1,200
Total	5,745

4.0 Summary

4.1 Non-Compliance- Samples

The criteria that eight out of ten samples from the Composite Sampler be within the Emission Limit Value was satisfied, however four individual samples exceeded 1.5 times the emission limit value. The major part of these happened within a short timeframe, during work on the silt pond and have not since recurred .

Only one of the quarterly grab samples exceeded the Emission Limit Value and this was under three times the Value.

Dust sampling was within the limit.

4.2 Complaints

Two complaints were received over the year. These complaints , regarding dust, were followed up by the General Manager and the issues dealt with.

4.3 Training/Awareness

Great progress has been made in the area of staff awareness through training and involvement in the operation of the Licence. This training is ongoing and a new programme is being developed for implementation prior to production 2002.

4.4 River Monitoring and Management System

Bord Na Mona are represented on the Operational Management Group of the Lough Ree & Lough Derg Catchment Monitoring & Management System.

4.5 General

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

Composite Sampler Table of Results

APPENDIX 2

Composite Sampler Flow Data

APPENDIX 3

Boiler Efficiency Test Result



Annual Environmental Report M 500 - Year 2002

February 2003

Contents

1.0 Introduction

- 1.1 Company Details
- 1.2 Activities
- 1.3 Environmental Policy
- 1.4 Environmental Management of the Company

2.0 Summary Information

- 2.1 Emissions to Water Summary
 - 2.1.1 Silt Pond Emissions
 - 2.1.2 Surface Water Discharge Monitoring
 - 2.1.3 Composite Sampler Programme
 - 2.1.4 Non Compliance
- 2.2 Emissions to Air
 - 2.2.1 Dust Monitoring Locations Programme
- 2.3 Waste Arisings
 - 2.3.1 Hazardous Waste
 - 2.3.2 Non-Hazardous Waste
- 2.4 Energy Consumption
- 2.5 Water Consumption
- 2.6 Environmental Incidents and Complaints

3.0 Management of the Activity

3.1 Environmental Management Programme Report

3.3 Environmental Expenditure

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

4.2 Bunding Programme

4.3 Boiler Combustion Efficiency

4.4 Resource Consumption Summary

4.5 Desilting Report

4.6 Silt Pond upgrade Programme

4.7 Bog Development and Operational Programme

4.8 Bog Rehabilitation Programme Progress Report

5.0 Summary

5.1 Training/Awareness

5.2 Bunds/Oil traps

5.3 Silt Traps

5.4 Peat Screenings

5.5 River Monitoring and Management System

5.6 General

Appendices

Appendix 1 Composite Sampler Table of Results

Appendix 2 Composite Sampler Flow Rate

Appendix 3 Boiler Combustion Efficiency Test Result

1 Introduction

1.1 Company Details

Name: Bord na Mona Energy Ltd

Address: Boora Works,
Leabeg,
Tullamore
Co Offaly

Licence No: 500

Phone No: 0506 45996 **Fax No:** 0506 45179

Grid Ref: E180050 N319540

Contact Name: **Jim Harkins**
Regional Manager – West Region

1.2 Activities

The Boora Group, which consists of the Boora and Bellair bogs, is located predominately (95%) in Co Offaly, and the remainder in Co Laois.

The Boora Group currently employs 146 permanent and 53 seasonal workers producing milled peat for the following customers ;

ESB	135 kTonne/annum
Derrinlough Briquette Factory	340 kTonne/annum
Horticulture use	45 kTonne/annum
<u>Total</u>	<u>520 kTonne/annum</u>

1.3 Environmental Policy



Environmental Policy Statement

Bord Na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's 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 of 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 high environmental value.

Bord Na Mona Energy Limited seeks to conduct all aspects of its business in an environmentally sensitive manner.

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 environmental and eco-system

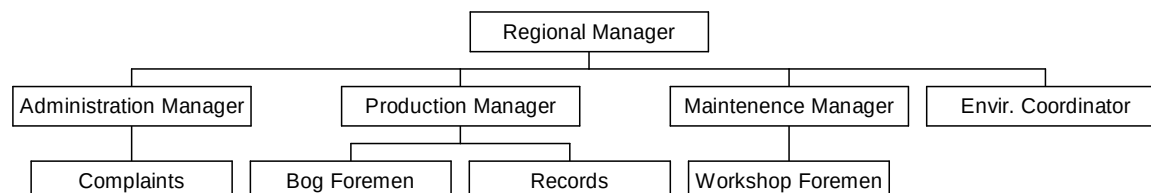
The environmental management system will be monitored, maintained and continually improved. A system of regular environmental audits will be put in place.

Bord Na Mona Energy Limited will continue research and development (R&D) into all aspects of its environmental impact.

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

1.4 *Environmental Management of the Company*

Environmental Responsibilities;



<i>Name</i>	<i>Title</i>	<i>Responsibilities</i>
Jim Harkins	Regional Manager	Overall Environmental Responsibility
Seamus Guinan	Production Manager	All Production related issues- silt/dust/noise/waste/codes of practice/sampling peat loading/tea centres
Con Kelly	Workshop Manager	Machine maintenance/ codes of practice/stores/workshops/yards/ stores/waste
Tom Feighery	Admin Manager	Monitoring Complaints
Christy Mahon	Environmental Coordinator	Co Ordination of above Records/Reports
Cormac Carroll	Workshop Foreman	Workshop related Environmental Issues
Liam Fox	Workshop Foreman	Workshop related Environmental Issues
Eamon Dooley	Workshop Foreman	Workshop related Environmental Issues
Patsy Guinan	Bog Foreman	Bog related Environmental Issues
Pat Craven	Bog Foreman	Bog related Environmental Issues
Kevin Healy	Records Keeper	Records

2 Summary Information

2.1 Emissions to Water Summary

2.1.1 Silt Pond Emissions

Bord na Mona **Boora**
Group :
IPC Licence No.: 500
Emissions to water summary

Silt Pond No: 16		SW No. 42			
Reporting Period (Jan-Dec 2002)					
Quarterly Monitoring					
Parameter	Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	(mg/l)
pH units	8	8.1	8	7.5	~
Flow (L/sec)	84.3	10.2	2.1	17.5	~
Suspended Solids (mg/l)	20	10	5	5	35mg/l
Total Solids (mg/l)	424	444	524	388	~
Total Phosphorus (mg/l)	.05	.05	.05	.08	~
Ammonia (mg/l)	1.5	1	1	0.4	~
Colour (Pt Co units)	122	140	39	216	~
COD (mg/l)	46	44	18	70	~

100 % Compliant (Sus Solids)

Silt Pond No:		41	SW No.		19
Reporting Period (Jan-Dec 2001)					
Quarterly Monitoring					
Parameter	Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value (mg/l)
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	
pH units	8.1	8	8	7.8	~
Flow (L/sec)	190.7	87.11	42.3	200.1	~
Suspended Solids (mg/l)	88	76	5	174	35mg/l
Total Solids (mg/l)	418	406	388	542	~
Total Phosphorus (mg/l)	.07	.08	.05	0.21	~
Ammonia (mg/l)	1	0.9	0.6	0.8	~
Colour (Pt Co units)	28	123	46	114	~
COD (mg/l)	71	82	31	216	~

50 % Compliant (Sus Solids)

Silt Pond No: 34 SW No. 17 Reporting Period (Jan-Dec 2001) Quarterly Monitoring					
Parameter	Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value (mg/l)
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	
pH units	7.5	7.5	7.7	7.6	~
Flow (L/sec)	5.91	52.71	1.5	42.41	~
Suspended Solids (mg/l)	8	15	7	18	35mg/l
Total Solids (mg/l)	288	308	392	192	~
Total Phosphorus (mg/l)	.05	.10	.05	0.08	~
Ammonia (mg/l)	1.9	2.0	4.7	0.9	~
Colour (Pt Co units)	208	302	47	336	~
COD (mg/l)	64	93	39	126	~

100% Compliant (Suspended Solids)

Silt Pond No: 61 SW No. 32 Reporting Period (Jan-Dec 2001) Quarterly Monitoring					
Parameter	Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value (mg/l)
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	
pH units	8	8.1	8.3	7.7	~
Flow (L/sec)	78.39	53.71	2.6	95.3	~
Suspended Solids (mg/l)	8	5	5	6	35mg/l
Total Solids (mg/l)	444	440	365	472	~
Total Phosphorus (mg/l)	.05	.05	.05	0.05	~
Ammonia (mg/l)	.7	.2	0.2	0.4	~
Colour (Pt Co units)	60	83	60	71	~
COD (mg/l)	25	30	20	46	~

100 % Compliant (Suspended Solids)

Silt Pond No:		65	SW No.		51
Reporting Period (Jan-Dec 2001)					
Quarterly Monitoring					
Parameter	Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Value (mg/l)
pH units	7.5	8.1	8.1	7.7	~
Flow (L/sec)	3.21	1.21	0.64	2.1	~
Suspended Solids (mg/l)	5	10	10	15	35mg/l
Total Solids (mg/l)	130	336	312	350	~
Total Phosphorus (mg/l)	.05	.05	.05	0.06	~
Ammonia (mg/l)	1.2	2.0	2.4	1.9	~
Colour (Pt Co units)	224	111	57	88	~
COD (mg/l)	28	42	32	50	~
% Compliant (Sus Solids) =100 %					

2.1.2. Monitoring of workshop/depot surface water run-off

The summary results of yard run-off monitoring showing the average COD for each point monitored are shown in the table below . Sampling is carried out on a monthly basis. The sample is taken from the outlet pipe from the oil trap therefore it is only possible to get a sample after rainfall.

Reporting Period: January – December 2002													
Surface Water Emission pt.	COD (mg/l)												Emission Limit Value
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
SWE-1a Oilstore													N/A
SWE-1b Tractor compound													“
SWE 2 Lemonaghan oil st	19	10	22		14					14		10	“
SWE-3a Bellair service area										28			“
SWE-3b Bellair yard			16			32							“
SWE 4a Briq Fac Service													“
SWE 4b Briq Fac area tank													“
SWE 5 Monettia yard													“
													“
													“

2.1.3. Composite Sampler Programme

The composite sampler operated throughout the year at Pond 51 A Monettia. It performed well except for some instances of power failure and flooding at times of very heavy rainfall.

The sampler was installed at this location in March 2001. We propose to move to a new location during 2003. We will submit a proposal to the agency during 2003.

The table under shows the summary of results for 2002.

2.1.4 Non- Compliance

Emission Limit Value 35 mg/l(Sus Solids) was exceeded as follows;

Date	Non-compliance	Cause	Corrective Action
	Composite Sampler SW25		
10/3/02	94 mg/l	Flooding from heavy rainfall	Check culverts, keep clean
17/5/02	94 mg/l	Flooding from heavy rainfall	Check culverts, keep clean
25/7/02	60mg/l	During cleaning of pond	Cleaning operation improved
10/9/02	56 mg/l		
17/9/02	83 mg/l		
2/11/02	77 170 37 58 94 mg/l	Heavy rainfall, back up of outfall submerged sampler head.	
to 6/11/02			
15/11/02	64 mg/l	Flooding from heavy rainfall	
27/11/02	67 mg/l	Flooding from heavy rainfall	
	Qr. Grab Samples Sw19:		
26/3/02	88 mg/l	High velocity flow	Stand by machine put in place
24/6/02	76 mg/l	Pond reached 90% full	
13/12/02	174 mg/l	High velocity flow	

2.2 *Emissions to Air*

2.2.1 Dust Monitoring Locations Programme

The three monitoring locations are ;

Clongawney / Pollagh / Derryclure

Due to the very poor weather conditions and the resultant late start of production , two samples were got at each location as follows;

Emission Point	Parameter	Average Emission (mg/m ² /day)	Emission Limit Value
Clongawney Xg 14-2 Xk 69-2	Dust	97 78	(350mg/m ² /Day)
Pollagh Xg 14-3 Xk 69-3	Dust	Sample contaminated 94	
Derryclure Xg 14-1 Xk 69-1	Dust	143 30	

100 % Compliant

A full programme of dust monitoring will continue during the next production season.

2.3 Waste Arising

2.3.1 Waste Management Record (Hazardous)

WASTE DESCRIPTION	EWG CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Oil	13.01.01	6.4	Atlas Oil	Atlas Oil~	Portlaoise	Ongoing
Oil intercept Sludge	15.03.03	4.0	Atlas Oil	Atlas Oil~	Portlaoise	21-9-02
Filters	16.01.07	1.00	Atlas Oil	Atlas Oil	Portlaoise	20-9-02
Batteries	16.06.01	1.50	Returnbatt	Returnbatt	Timahoe, Kildare	28-3-02
Degreasing Stillbottoms	12.03.01	4.65	Atlas Oil	Atlas Oil	Portlaoise	20-9-02
Fluorescent tubes	20.01.21	0.045	Irish lamp recycling ltd	Irish lamp recycling ltd	Carbury Co Kildare	27-8-02

DETAILS OF ANY REJECTED CONSIGNMENTS						
None to date						

2.3.2 Waste Management Record (Non-Hazardous)

WASTE DESCRIPTION	EW CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Scrap metal	17.05.07 02.01.10 12.01.01 12.01.02 12.01.03 12.01.04 12.01.13	27.86	Hammond Lane	Hammond Lane	Athlone	Ongoing
Domestic Boiler Ash *	10.01.03	6.0	On Site	Jim Harkins	On Site	
Polythene	02.01.04	128.1	Bellparsontown Ltd	Bellparsontown Ltd	Carbury Co Kildare)	Dec 02
Peat Silt	01.01.02	356	Bord Na Mona	Jim Harkins	Re used on site	Ongoing
Peat Screenings	01.01.02	100	Bord Na Mona	Jim Harkins	Re used on site	Ongoing
Workshop waste	12.01.03	18.1	Alina, Tullamore	Alina	Landfill, Tullamore	Each month
Office/Canteen waste	20.01.08 12.01.13 15.01.02	5.4	Alina Tullamore	Alina	Landfill, Tullamore	Weekly

* Landfill on site

2.4 *Energy Consumption*

Energy Consumption Table

Diesel Derv	2,172 MW~Hr
Diesel Gas Oil	7,114 MW~Hr
Petrol	24 MW~Hr
Electricity	798 MW~Hr
Peat Briquettes	1,884 MW~Hr

2.5 *Water Consumption*

Water is not used in our production process, therefore usage is minimal.

2.6 *Environmental Incidents and Complaints*

One complaint was received and one minor incident reported during the period in question.

A system is in place for recording and dealing with complaints.

Environmental Complaints	Number of complaints
Complaints received	One
Complaints requiring corrective action	One
Categories of complaint	
Odour	
Noise	
Water	
Air	
Procedural	
Miscellaneous	Used Polythene (awaiting baling)

Environmental Incidents	Number of Incidents
No of Incidents (Minor)	One
Incidents requiring corrective action	One
Category – Leak of fuel oil from mobile tanker while being transported.	One

3.0 *Management of the Activity*

3.1 Environmental Management Programme Report

Environmental Management Programme Report	
Project	
Project 1. Reduction of fugitive dust emissions.	Training has been provided for all personnel directly involved in production. Cleaner production process developed and communicated to all concerned. Little progress has been achieved regarding test modification of production machines etc, as proposed in the EMP Proposal, due to the inclement weather conditions experienced during the 02 production season. Any work carried out on the production process, is recorded and in the EMP
Project 2. Minimisation of Suspended Solids	Procedures have been put in place regarding best practice in all elements of production and are posted and brought to the attention of all personnel involved. Little progress has been achieved regarding test modification of production machines etc, as proposed in the EMP Proposal, due to the inclement weather conditions experienced during the 02 production season. Any work carried out on the production process, is recorded and in the EMP
Project 3. Rationalisation of surface water discharges	This project has been completed. Any silt ponds that can be rationalised have been.
Project 4. Investigation of reed-bed systems.	This project has been completed, and a report examining the potential for using reed-bed systems for treatment of silt pond discharges has been completed, and a copy is held on records. The report has come to the conclusion that it would not be suitable for BNM's silt pond treatment systems.
Project 5. Separation of storm water run-off.	This project is completed. Any locations in the group, where it has been feasible to separate non-production run-off have been completed.
Project 6. Effective spill/leak management of mobile fuel	The service points in each area were examined and changes made where necessary. A notice indicating Service Point location is posted in each area as are The Procedures when refueling machines. A Spill Kit spill has been set up at a central location and dry peat is on each service train for minor spills. These procedures continued for any new areas coming into production. This project is now complete.
Project 7. Bunding of tank & drum storage.	This project is completed. All tank and drum storage areas have been bunded and certified.
Project 8. Re-use of silt pond waste	A silt pond has been constructed, on the headland at Giltown Bog in the Kilberry Group of Bogs, where work was carried out to examine the potential for re-using the silt waste from the silt pond as the main product, or as a fuel. This project was due to commence in 2002, but failed to do so, due to the weather conditions during the 02 production season.

Project 9. Collection, storage and re-use of polythene.	Polythene is being collected and stored for recycling. The polythene is either baled on site by an outside contractor or transported loose to their depot for baling off-site. A new mechanical method of removing polythene from stockpiles has been developed and put into operation at some bog locations. This will remove the polythene, wrap it in a bale suitable for recycling. The volumes recycled are recorded in the waste section of the AER.
Project 10. Re-usable stockpile protection.	This project has been completed and a report compiled by the Polymer Development Centre, Athlone Technology Park, on a comparison between biodegradable films and polythene is held on file.
Project 11. Wind power pumping.	This project has been completed, and a report on its findings is on file. Wind power pumping is not suitable for the pumping requirements.

3.2 Environmental Expenditure

Expenditure Related to the Operation of the Boora IPC Licence During the Period Jan 2002 – December 2002	
Description	Cost (Euro)
Capital Costs	42,500
Plant / Labour / Materials	118,132
Overheads (ESB, Phones, Consumables)	2,400
External Environmental Consultancy	12,500
EPA Fees	6,268
Total	181,800

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

It is proposed to continue the current sampling regime during 2003.

4.2 Bunding Programme

All external oil tanks have been bunded. The bunds have been inspected and reported to the agency as follows;

MainWorkshop	External oil tanks Oil store building
Briquette Factory	Transport machine tank Bog area tank
Monettia workshop	External storage tank
Leamonaghan workshop	External storage tank
Bellair workshop	External storage tank

Oil barrell bunds have been fabricated in house and provided where required.

4.3 Boiler Combustion Efficiency

A boiler efficiency test was carried out by Boiler Services Ltd in Dec 02.

The efficiency was 81.2 %

Appendix 3 shows the test result.

4.4 Resource Consumption Summary

The total Milled Peat (@ 55% Moisture content) used was;

Electricity Generation	135 k Tonne
Peat Briquette Manufacture	340 k Tonne
Horticulture use	45 k Tonne
Total	520 k Tonne

4.5 De-Silting Report

There are currently 56 operating silt settlement ponds in Boora and 9 in Bellair with a total capacity of 132 k Cu Metres..

The reasons for not achieving two cleanings per year were;

1. Production in 2002 operated on 6,800 Acres (Approx 80 % of potential) and only 67 % of production target was achieved. This resulted in a reduction of the amount of silt generated. (Two weekly pond inspection records held on site)
2. A longer than expected major overhaul was carried out on the silt cleaning machine (VC 15).

We have now acquired a silt cleaning bucket for a long reach Hitachi to be used as a stand by cleaning machine in the future.

Silt Pond Cleaning Summary 2002

Area	No. Of Ponds Cleaned Twice	No. Of Ponds Cleaned Once	Total No. of Ponds in Area
Clongawney	1	4	5
Drinagh	1	6	7
Noggus		2	2
Boora/Derrybratt		6	6
Pollagh/Turraun		3	3
Oughter/Killaranny		6	6
Lemonaghan		10	10
Monnettia		5	5
Derryclure		3	3
Killaun		3	3
Galros		2	2
Derinboy		4	4
Bellair	3	6	9
Total	5	60	65

Shaded = Areas where production took place in 2002.

The estimated weight of dry matter removed during cleaning was 356 tonne. (2% of total weight).

4.6 *Silt Pond Upgrade Programme*

All of Stage 1 and 2 are now complete in the Boora section. Outstanding in the Bellair area are;

Stage 1 - New Ponds;	Cu Metre	Comment
Bellair North 73	250	No activity on bog
Bellair North 74	2550	No activity on bog
Bellair North 75	2350	No activity on bog
Bellair North 76	250	Planned
Total	5,400 Cu Metres	

Stage 2 - Pond Extensions;	Cu Metre	Comment
Bellair North 71	838	No activity on bog
Bellair North 72	194	Planned
Bellair South 66	572	Planned
Bellair South 68	460	Planned.
Bellair South 70	100	Planned
Total	2,164 Cu metres	

A machine will be put into Bellair in early 2003 to carry out all this work.

Stage 3 - 100 % Design Standard

This stage was scheduled to be complete by end March 2003. We have submitted a request to the agency (Nov 06 2002) for a 12 months extension on this deadline.

4.7 *Bog Development and Operational Programme*

Areas which were not be in production in 2002 due to high stock levels were;

Oughter /Killaranny.	224 Acres
Castletown (part of Lemonaghan area)	280 Acres

Development work continued in Derrinboy and Killaun.

During 2003, development work will continue in Derrinboy and Killaun and also in sections of Bellair which were set aside for some time.

We expect all areas will be in production in 2003, including commencement of production in Derrinboy (350 acres) and Killaun (350 acres).

Budgeted net production acres for 2003 is: 8,510 Acres

4.8 Bog Rehabilitation Progress Report

A great deal of research and groundwork has taken place at Boora in relation to Cutover utilisation. This has been carried out over a 12 year period and has included Forestry, Grasslands, Amenity, Wetlands and Recolonisation options.

A Cutaway Bog Rehabilitation Plan has been prepared and submitted under Condition 10.2.1 of the licence. A Decommissioning Procedure is in place to apply when production ceases in an area.

Rehabilitation work took place under the following headings during 2002:

Category	Location	Acres
Commercial Grassland	East Boora	140
Forestry Trials	East Boora	40
Wetlands (Lough Boora Parklands)	East Boora	40
Sculpture *	East Boora	40
Total acres		260

*An international sculpture symposium was held here over a three week period in Sept 02 and eight large outdoor permanent pieces were exhibited and will remain in place here.

5.0 Summary

5.1 Training/Awareness

Great progress has been made in the area of staff awareness through training and involvement in the operation of the Licence. This training is ongoing and a new programme is being developed including use of a training video. Training records are held on site.

5.2 Bunds/Oil traps

All oil tank bunds are in place, inspected and results notified to the Agency.
All Oil Traps have been fitted.

A spill kit to deal with a major oil spill has been set up in a central location and notices posted at all tea centre /workshops making the workforce aware of its existence and location.

Service trains are provided with a stock of dry peat to deal with minor spills.

5.3 Silt traps

All silt traps are in place in the Boora area. 7500 Cu Metres remains to be dug in Bellair and it is planned to put a machine in place this Spring to carry out this work. Monitoring of all silt ponds is carried out every two weeks.

5.4 Peat Screenings

A Method of capturing and re-using peat screenings which come off the loading process of peat into lorries at Monettia and Bellair was put in place A proposal on this was submitted to the agency and accepted.

5.5 River Monitoring and Management System

Bord Na Mona are represented on the Operational Management Group of the Lough Ree & Lough Derg Catchment Monitoring & Management System.

5.6 General

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.

During year 2002, expenditure on Environmental work was 181,000 Euro.

APPENDIX 1

Composite Sampler Table of Results

APPENDIX 2

Composite Sampler Flow Data

APPENDIX 3

Boiler Efficiency Test Result

BORD NA MÓNA 

BORD NA MÓNA ENERGY LIMITED
Boora Group, C/O Boora Works,
Leabeg, Tullamore,
Co Offaly, Ireland

Annual Environmental Report M 500 - Year 2003

March 2004

Contents

1.0 Introduction

- 1.1 IPC Licence Number
- 1.2 Name and Location of Site
- 1.3 Brief Description of Activities
- 1.4 Environmental Management of the Company
- 1.5 Environmental Policy Statement

2.0 Summary Information

2.1 Emissions to Water Summary

- 2.1.1 Silt Pond Emissions
- 2.1.2 Surface Water Discharge Monitoring
- 2.1.3 Composite Sampler Programme
- 2.1.4 Non Compliances

2.2 Emissions to Air

- 2.2.1 Dust Monitoring Locations Programme
- 2.1.4 Non Compliances

2.3 Waste Arisings

- 2.3.1 Hazardous Waste
- 2.3.2 Non-Hazardous Waste

2.4 Energy and Water Consumption

- 2.4.1 Energy Consumption
- 2.4.2 Water Consumption

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

2.5.2 Complaints

3.0 Management of the Activity

3.1 Environmental Management Programme Report

3.2 Environmental Management Programme Proposal

3.3 Environmental Expenditure

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

4.2 Bunding Programme

4.3 Boiler Combustion Efficiency

4.4 Resource Consumption Summary

4.5 Report on Desilting Programme

4.6 Silt Pond upgrade Programme

4.7 Bog Development and Operational Programme

4.8 Bog Rehabilitation Programme Progress Report

5.0 Summary

Appendices

Appendix 1 Composite Sampler Table of Results/Flow Graphs

Appendix 2 Current Status of Silt Ponds

Appendix 3 Bog Rehabilitation – Orthophoto Tumduff Bog

1. Introduction

1.1 IPC Licence Reg No: M 500

1.2 Name and Location of Site

Name: Bord na Mona Energy Ltd

Address: Boora Works,
Leabeg,
Tullamore
Co Offaly

Phone No: 0506 45996 **Fax No:** 0506 45179

Grid Ref: E180050 N319540

Contact Name: **Jim Harkins**
Regional Manager – West Region

1.3 Activities

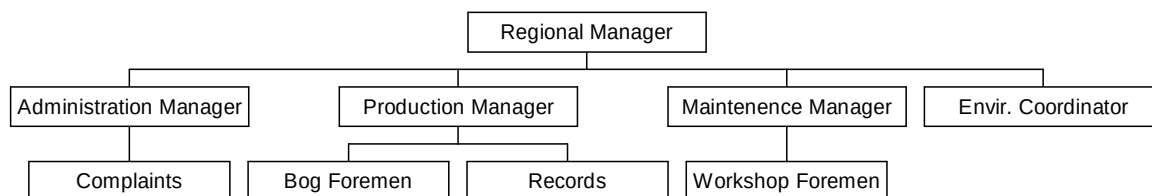
The Boora Group, which consists of the Boora and Bellair bogs, is located predominately (95%) in Co Offaly, and the remainder in Co Laois.

The Boora Group currently employs 140 permanent and 97 seasonal workers producing milled peat for the following customers ;

ESB	135 kTonne/annum
Derrinlough Briquette Factory	280 kTonne/annum
Horticulture use	75 kTonne/annum
<u>Total</u>	<u>490 kTonne/annum</u>

1.4 Environmental Management of the Company

Environmental Responsibilities;



<i>Name</i>	<i>Title</i>	<i>Responsibilities</i>
Jim Harkins	Regional Manager	Overall Environmental Responsibility
Seamus Guinan	Production Manager	All Production related issues- silt/dust/noise/waste/codes of practice/sampling peat loading/tea centres
Con Kelly	Workshop Manager	Machine maintenance/ codes of practice/stores/workshops/yards/ stores/waste
Tom Feighery	Admin Manager	Monitoring Complaints
Christy Mahon	Environmental Coordinator	Co Ordination of above Records/Reports
Cormac Carroll	Workshop Foreman	Workshop related Environmental Issues
Liam Fox	Workshop Foreman	Workshop related Environmental Issues
Eamon Dooley	Workshop Foreman	Workshop related Environmental Issues
Patsy Guinan	Bog Foreman	Bog related Environmental Issues
Pat Craven	Bog Foreman	Bog related Environmental Issues
Kevin Healy	Records Keeper	Records

1.5 Environmental Policy Statement



Environmental Policy Statement

Bord Na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's 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 of 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 high environmental value.

Bord Na Mona Energy Limited seeks to conduct all aspects of its business in an environmentally sensitive manner.

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 environmental 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 (R&D) into all aspects of its environmental impact.

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

2. Summary Information

2.1 Emissions to Water Summary

2.1.1 Silt Pond Emissions

Silt Pond No: 16		SW No. 42			
Reporting Period (Jan-Dec 2003)					
Quarterly Monitoring					
Parameter	Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	(mg/l)
pH units	8.1	7.9	7.6	8.1	35mg/lit
Flow (L/sec)	10.2	.75	2.8	20.1	
Suspended Solids (mg/l)	19	10	5	5	
Total Solids (mg/l)	392	380	214	300	
Total Phosphorus (mg/l)	.05	.05	.05	.05	
Ammonia (mg/l)	1.5	1.8	.93	2.69	
Colour (Pt Co units)	40	140	413	180	
COD (mg/l)	32	66	87	75	

100% Compliant S.Solids

Silt Pond No: 41		SW No. 19		Reporting Period (Jan-Dec 2003) Quarterly Monitoring				
Parameter		Jan/Feb/Mar	April/May/June			July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)			Emission (mg/l)	Emission (mg/l)	(mg/l)
PH units	8.0	7.6	8	7.8	~	35mg/l		
Flow (L/sec)	87.1	99.1	23.55	98.1	~			
Suspended Solids (mg/l)	31	5	6	13	~			
Total Solids (mg/l)	332	232	374	326	~			
Total Phosphorus (mg/l)	.13	.05	.05	.05	~			
Ammonia (mg/l)	3	.63	1.22	0.76	~			
Colour (Pt Co units)	123	110	56	96	~			
COD (mg/l)	77	57	31	50	~			

100% Compliant S.Solids

Silt Pond No: 34 SW No. 17 Reporting Period (Jan-Dec 2003) Quarterly Monitoring					
Parameter	Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value (mg/l)
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	
pH units	7.8	7.2	7.7	7.9	~
Flow (L/sec)	52.7	111.1	2.7	21.2	~
Suspended Solids (mg/l)	21	13	5	5	35mg/l
Total Solids (mg/l)	396	248	386	302	~
Total Phosphorus (mg/l)	.13	.12	.05	.05	~
Ammonia (mg/l)	3.2	1.73	4.44	2.16	~
Colour (Pt Co units)	122	368	42	277	~
COD (mg/l)	70	100	28	89	~

100% Compliant S.Solids

Silt Pond No: 61 SW No. 32 Reporting Period (Jan-Dec 2003) Quarterly Monitoring					
Parameter	Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value (mg/l)
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	
pH units	8.2	7.8	8.2	7.8	~
Flow (L/sec)	54.25	134.2	32	70.6	~
Suspended Solids (mg/l)	5	5	5	5	35mg/l
Total Solids (mg/l)	446	254	428	252	~
Total Phosphorus (mg/l)	.05	.05	.05	.05	~
Ammonia (mg/l)	.2	.18	.06	0.84	~
Colour (Pt Co units)	25	93	57	112	~
COD (mg/l)	23	50	29	42	~

100% Compliant S.Solids

Silt Pond No:		65	SW No.		51
Reporting Period (Jan-Dec 2003)					
Quarterly Monitoring					
Parameter	Jan/Feb/Mar	April/May/June	July/Aug/Sept	Oct/Nov/Dec	Emission Limit Value
	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	Emission (mg/l)	(mg/l)
pH units	8	7.9	8.2	7.8	~
Flow (L/sec)	1	.75	1.75	10.2	~
Suspended Solids (mg/l)	22	5	6	5	35mg/l
Total Solids (mg/l)	340	354	448	240	~
Total Phosphorus (mg/l)	.6	.05	.05	.05	~
Ammonia (mg/l)	2.1	2.21	1.18	0.82	~
Colour (Pt Co units)	57	81	87	172	~
COD (mg/l)	57	32	35	63	~
100% Compliant S.Solids					

2.1.2. Monitoring of workshop/depot surface water run-off

The summary results of yard run-off monitoring showing the average COD for each point monitored are shown in the table below. Sampling is carried out on a monthly basis. The sample is taken from the outlet pipe from the oil trap therefore it is only possible to get a sample after rainfall.

Reporting Period: January – December 2003													
Surface Water Emission pt.	COD (mg/l)												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Emission Limit Value
SWE-1a Fuel Pumps Main W/S				15									N/A
SWE-1b Tractor compound W/Shop													“
SWE 2 Lemonaghan oil store			12	39	11			26			14		“
SWE-3 Bellair Yard				223*									“
SWE-3a Bellair Service Area													“
SWE 4a Briq Fac Service													“
SWE 4B Briq Fac area tank													“
SWE 5A Monettia yard													“
SWE 5B Monettia Service Area													“
SWE 6A Main W/Shop Oil Store				274*	110 *								“
SWE 6B Main W/Shop Machine Wash				10	15								

* These samples were taken from the last chamber of the oil trap and are therefore not representative. Work will be carried out during 2004 on sampling points to ensure that it is possible to take a sample from the outlet pipe from the oil trap.

2.1.3. Composite Sampler Programme

The composite sampler operated at Pond 51 A Monettia. SW 25 from Jan 03 to Jul 03 and at Pond 36 Oughter SW 18 from 25 July 2003. It performed well except for some instances of power failure and the suction head of the sampler becoming dislodged from the pipe.

Appendix 1 shows the summary of results for 2003.

2.1.4 Non- Compliance

Emission Limit Value 53 mg/l(S. Solids on any one day) was exceeded as follows;

Date	Non-compliance	Cause	Corrective Action
04/5/03	Comp Sampler MA51 72 mg/Lit	Heavy Rainfall- back up of water	Cleaning machine sent to ponds
19/6/03	80 mg/Lit	Heavy activity on the bog	
01/7/03	58 mg/Lit	also heavy rainfall	
19/12/03	Comp Sampler OT 36 55 mg/Lit	Activity upstream to free a concrete pipe blockage	Personnel informed
	Qr. Grab Samples 100% Compliant		

2.2 Emissions to Air

2.2.1 Dust Monitoring Locations Programme

The three monitoring locations are ;

Clongawney / Pollagh / Derryclure

Three samples were taken at each location except Derryclure where year round monthly sampling is in place.

Emission Point	Parameter	Average Emission (mg/m ² /day)	Emission Limit Value
Clongawney 16/6/03 15/7/03 11/9/03	Dust	111 109 101	(350mg/m ² /Day)
Pollagh 16/6/03 15/7/03 11/9/03	Dust	190 172 226	
Derryclure 16/6/03 15/7/03 11/9/03 13/10/03 13/11/03 12/12/03	Dust	74 126 202 118 28 255	

2.1.4 Non Compliance

All Samples were 100 % Compliant

A full programme of dust monitoring will continue during the next production season.

2.3 Waste Arising

2.3.1 Waste Management Record (Hazardous)

WASTE DESCRIPTION	EWC CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Oil	13.01.01	2.7	Atlas Oil	Atlas Oil~	Portlaoise	Ongoing
Oil intercept Sludge	15.03.03	0	Atlas Oil	Atlas Oil~	Portlaoise	21-9-02
Filters	16.01.07	1.00	Atlas Oil	Atlas Oil	Portlaoise	20-9-02
Batteries	16.06.01	7.20	Returnbatt	Returnbatt	Timahoe, Kildare	28-3-02
Degreasing Stillbottoms	12.03.01	2.00	Atlas Oil	Atlas Oil	Portlaoise	20-9-02
Fluorescent tubes	20.01.21	0.027	Irish lamp recycling ltd	Irish lamp recycling ltd	Carbury Co Kildare	27-8-02

DETAILS OF ANY REJECTED CONSIGNMENTS						
None to date						

2.3.2 Waste Management Record (Non-Hazardous)

WASTE DESCRIPTION	EWC CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Scrap metal	17.05.07 02.01.10 12.01.01 12.01.02 12.01.03 12.01.04 12.01.13	101.1	Hammond Lane	Hammond Lane	Athlone	Ongoing
Domestic Boiler Ash *	10.01.03	9.9	On Site	Jim Harkins	On Site	
Polythene	02.01.04	75.9	Bellparsontown Ltd	Bellparsontown Ltd	Carbury Co Kildare)	Dec 02
Peat Silt	01.01.02	255	Bord Na Mona	Jim Harkins	Stored on site	Ongoing
Peat Screenings	01.01.02	119	Bord Na Mona	Jim Harkins	Re used on site	Ongoing
Workshop waste	12.01.03	13.2	Alina, Tullamore	Alina	Landfill, Tullamore	Each month
Office/Canteen waste	20.01.08 12.01.13 15.01.02	5.4	Alina Tullamore	Alina	Landfill, Tullamore	Weekly

* Landfill on site

2.4 Energy and Water Consumption

2.4.1 Energy Consumption Table

Diesel Derv	2,363 MW~Hr
Diesel Gas Oil	10,376 MW~Hr
Petrol	33 MW~Hr
Heating Oil	95 MW Hr
Electricity	933 MW~Hr
Peat Briquettes	1,876 MW~Hr

2.4.2 Water Consumption

Water is not used in our production process, therefore usage is minimal.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

Environmental Incidents	Number of Incidents
No of Incidents	None
Incidents requiring corrective action	None
Category –	

2.5.2 Complaints

Two complaints were received during the period in question.

A system is in place for recording and dealing with complaints.

Environmental Complaints	Number of complaints
Complaints received	Two
Complaints requiring corrective action	Two
Categories of complaint	
Odour	
Noise	
Water	One
Air	One
Procedural	
Miscellaneous	

Report on Dust Complaints at Derryclure

A series of remedial actions are being put in place to deal with this (Ref : Notification to Agency 31/10/03);

- All peat produced has now been sold from the area. Great care was taken not to load peat in windy weather.
- Plans are being finalised for relocation of haku stockpiles for production 2004.
- 2,500 trees to create a shelter - belt are at present being planted.
- Continuous dust monitoring is taking place.
- A wind sock is currently being installed
- A bouser/tanker is used for dust suppression on the access road.
- Further training will be provided for all personnel at Derryclure bog

A copy of a report on this complaint is on file at the Works

No complaints were received since 01th Oct 2003.

3.0 Management of the Activity

3.1 Environmental Management Programme Report 2003

Environmental Management Programme Report 2003	
Project	
Project 1. Reduction of fugitive dust emissions.	Training Training was provided for all personnel during 2002, and will be repeated in 2003. A Cleaner Production Video, which is currently in production. This video identifies good practice and codes of practice for peat production in the peat industry. Headland Peat Headland peat is another potential source of dust generation from bog production. The introduction of a pilot production unit, involving a dedicated unit for the production of headland peat, Group of Bogs (IPC 500). This unit, made up of one same field harvest unit, is currently in operation in the Boora group during 2003. Its main function was to generate headland peat units as often as possible, so as to reduce the volumes of loose peat dry matter. This proved successful, and it is proposed to extend this programme in 2004. Hydraulic harrows Plans for the fabrication of hydraulically operated harrows were completed in 2003. The harrows for the 2004 production season.

Project 2. Minimisation of Suspended Solids	Various projects are currently underway to address these issues. As already discussed the Cleaner Production Video examines bad production methods that can lead to waste peat entering the drainage system and subsequently the silt pond network. These can occur during bog maintenance, milling, harrowing, ridging, harvesting and loading. The video highlights these practices and demonstrates improvements that can be achieved through better driving and operation. Other projects such as the hydraulic harrows and the collection of the headland peat are also related to cleaner production which will have a positive impact on waste minimisation and the reduction of waste peat that can potentially find its way into drainage network.
Project 3. Effective spill/leak management of mobile fuelling tanks	One new satellite bog area (Derrinboy) was provided with a stationary Fuel tank, Bund ,Oil trap and a concrete apron for servicing machines. It will no longer be necessary to haul fuel by road in a mobile tank to this area.
Project 4. Re-use of silt pond waste	No work has been carried out on this project to-date. It was proposed to monitor a silt pond constructed on the headland at Giltown, in the Kilberry group of Bogs. Its close proximity to the production fields and stockpiles made it suitable for potentially reusing the waste peat excavated from the silt pond. This project will be examined again in 2004.
Project 5. Collection, storage and re-use of polythene.	Polythene for recycling has been collected from around the production areas, and stockpiled at a hard surface for baling/collection. A new mechanical method of stripping piles and rolling the polythene on a spool was developed and contracts for fabrication of 20 units externally, was agreed. This will produce a more compact and cleaner method of removing and transporting the polythene to a storage area. Polythene baled and loose has sent for recycling to various contractors and records of these are kept on file at the associated works. (see 2.3 Waste Arising). In total, approximately 1500 tonnes have been baled & collected, 700-800 tonnes of this recycled into pellets.

3.2 Environmental Management Programme Proposal for 2004

Environmental Management Programme for 2004	
Project	
Project 1. Reduction of fugitive dust emissions.	Continue with the completion of the Cleaner Production Video for 2004. A two day internal audit will be conducted on site and will include an assessment of dust protection measures in place at Dust Sensitive Locations Project works for 2004 includes: Hydraulic Harrows Eight Hydraulic Harrows have been fabricated in 2004, specifically for Dust Sensitive Locations. These hydraulic harrows will allow the spoons to be lifted when not on the production fields. This will assist in reducing dust generation by the following: 1. Less harrowing of headlands and passways, will reduce the suspension of dust particles 2. The headland peat will not be broken down and dried as much from harrowing, which will reduce the volumes that may become suspended. 3. It will also leave it a better condition for subsequent collection by the proposed headland peat units. It is proposed to have these 8 new hydraulic harrows in operation by the 2004 production season. There is a 5 year policy in BNM to fabricate an additional 40 hydraulic harrows, which will include some for the 2005 production season. The total cost of this proposed work is circa €650,000 over the 5 years and will represent 15% of the total no. of harrows in operation. Headland Peat Collection Following the success of the headland collection trials in Boora in 2003, a machine design for mass manufacture was agreed and tendered outside BNM for manufacture. These units are planed for mid production season in Derrygreenagh, Mountdillon, Boora, Blackwater, Derryfadda & Littleton. In addition to these machines, 26 Tractor and Haku trailer units will be employed to transport the peat from the headland to the Haku piles, at an over all cost of €1.7 million. All of the above modifications/new methods of production will be assessed, throughout the production year, to measure their performance and identify any potential improvements. The EMP will be updated on a regular basis to reflect these assessments.

Project 2. Minimisation of Suspended Solids	Work on this project is also covered by the Cleaner Production Video. Once completed it will be presented as part of the 2004 training programme and will target all production staff in all of the IPC Licence areas. It will cover all areas of production and will identify cleaner production methods aimed at reducing the generation of waste peat. All of the projects for 2004, covered under Project 1, will also have a positive effect on the minimisation of suspended solids, as it will allow for the collection of more loose peat on the headlands that would previously have been unsuitable as fuel peat.
Project 3. Effective spill/leak management of mobile fuelling tanks	A Stationary Fuel tank, Bund ,Oil trap and a concrete apron for servicing machines will be installed at two satellite bogs (Derryclure and Killaun)in 2004. It will no longer be necessary to haul fuel by road in a mobile tank to these areas. Otherwise this project is complete
Project 4. Re-use of silt pond waste	A silt pond has be constructed, on the headland at Giltown Bog in the Kilberry Group of Bogs, where trials will be carried out to examine the potential for re-using the silt waste from the silt pond as the main product, or as a by-product. This project was due to commence in 2002, but failed to do so, due to the weather conditions during the 2002 production season.
Project 5. Collection, storage and re-use of polythene.	Collection of polythene is on-going. This is mainly the back-log of polythene. There are currently 20 of the new polythene strippers being manufactured and are currently being delivered. All of the strippers will be delivered by the end of April, and will be assigned to the different locations within BNM. An additional 3 – 4 will also be fabricated by the late 04, early 05' this will bring to 25 the number in operation. There are currently three potential contractors that could take the waste polythene for recycling. All involve shredding, washing and either baling or pelletising the polythene and BNM are currently assessing each contractor to assess their suitability, environmental compliance etc. Once the back-log has been recycled, and BNM have all of the strippers in place, the day to day recycling of the polythene removed each year will be more efficient.

3.3 Environmental Expenditure

Expenditure Related to the Operation of the Boora IPC Licence During the Period Jan 2003 – December 2003	
Description	Cost (Euro)
Capital Costs	72,400
Plant / Labour / Materials	102,568
Overheads (ESB, Phones, Consumables)	2,900
External Environmental Consultancy	14,950
EPA Fees	8,149
Total	200,967

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

As we have over three years data on the current sampling points (monitored since Oct 2000) it is proposed to change three of the five sampling points during 2004. A proposal giving the rationale for choice of ponds will be submitted during the year.

4.2 Bunding Programme

All external oil tanks have been bunded. During 2003 an Oil tank / Bund / Concrete apron and Oil interceptor was fitted at Derrinboy service area. Production commenced in this bog in 2003.

Location	Description	Test Date
MainWorkshop	External oil tanks Oil store building (Floor)	9/3/04
Briquette Factory	Transport machine tank Bog area tank	9/3/04 9/3/04
Monettia workshop	External storage tank	9/3/04
Leamonaghan workshop	External storage tank	9/3/04
Bellair workshop	External storage tank	9/3/04
Derrinboy Bog	External storage tank	9/3/04

Certification of inspections are kept on site.

4.3 Boiler Combustion Efficiency

Boiler efficiency tests were carried out by Boiler Services Ltd .

Boiler	% Efficiency	Test Date
Monettia Oil	87.5	6/8/03
Main Office Solid Fuel	88.9	18/2/04

4.4 Resource Consumption Summary

The total Milled Peat (@ 55% Moisture content) used was;

Electricity Generation	152 k Tonne
Peat Briquette Manufacture	305 k Tonne
Horticulture use	52 k Tonne
Total	509 k Tonne

Sod Peat (Hopper Turf)	1.1 k Tonne

4.5 De-Silting Report

There are currently 57 silt settlement ponds in Boora and 10 in Bellair with a total capacity of 138 k Cu Metres.

Cleaned in 2003	No of Ponds	% of total
Ponds cleaned twice	32	50%
Ponds cleaned once	32	50%
Ponds not cleaned (inactive)	3	
Total	67	

Year 2003 was not a difficult year silt-wise due to the rainfall pattern during the production season and the low annual rainfall.

Of the ponds where cleaning occurred twice, the average pond was 29 % full of silt and some were only 5 % full of silt, when cleaned.

Silt Pond Cleaning Summary 2003

Area	No. Of Ponds Cleaned Twice	No. Of Ponds Cleaned Once	Total No. of Ponds in Area
Clongawney	4	1	5
Drinagh	5	2	7
Noggus		2	2
Boora/Derrybratt	6		6
Pollagh/Turraun	3		3
Oughter/Killaranny	6		6
Lemonaghan		10	10
Monnettia		5	5
Derryclure		3	3
Killaun		3	3
Galros		2	2
Derinboy	1	3	4
Bellair	7	1	8
Total	32	32	64

The pond cleaned once in Bellair was excavated in Sep 03.

The estimated weight of dry matter removed during cleaning was 255 tonne. (2% of total weight).

The cleaning roster is based on the fortnightly inspection records.

4.6 Silt Pond Upgrade Programme

All of Stage 1 and 2 are now complete in the Boora section. Outstanding in the Bellair area are;

Stage 1 - New Ponds;	Cu Metre	Comment
Bellair North 73	675	No activity on bog
Bellair North 74	1875	No activity on bog
Bellair North 75	1125	In Progress
Bellair North 76	250	Planned 2004
Total	3,925 Cu Metres	

Stage 2 - Pond Extensions;	Cu Metre	Comment
Bellair North 71	838	No activity on bog
Bellair North 72	1729	Planned 2004 /05
Bellair South 66	572	Planned 2004 /05
Bellair South 68	460	Planned 2004
Total	3,599 Cu metres	

Stage 3 - 100 % Design Standard

All Ponds have been fitted with a piped inlet and outlet. We plan to progress the installation of weirs / bypasses on ponds where this is possible in 2004, starting with the five ponds where the quarterly sampling is taking place.

Appendix 3 shows the current status of all silt ponds.

4.7 Bog Development and Operational Programme

Production commenced in 2003 in Derrinboy (500 Acres) Killaun (350 Acres)and Bellair (395 Acres). Development work also continued in these areas.

During 2004, development work will continue in Derrinboy and Killaun and also in sections of Bellair, which were set aside for some time. Production in 2004 will be extended in these areas.

We expect all areas will be in production in 2004.

Budgeted net production acres for 2004 is: 8,948 Acres (640,000 Tonnes)

4.8 Bog Rehabilitation Progress Report

Rehabilitation work took place under the following headings during 2003:

Category	Location	Acres	Status
Commercial Grassland	East Boora/Tumduff	140	Ongoing
Forestry Trials	East Boora	40	Complete
Wetlands (Lough Boora Parklands)	East Boora	40	Complete
Permanent Sculpture Area	East Boora	40	Complete
Total acres		260	

Report on final land use plan for in Tumduff prepared by the Land Development Section for presentation to EPA;

Tumduff Bog extending to 1023 Ha is the first bog unit in the ownership of Bord na Móna which is now totally finished in peat production and where the future use is fully implemented. What is most noteworthy about this is the timeframe that has elapsed since the first area emerged as cutaway in the early seventies until the last area became available in 2000. This can be clearly seen on the enclosed orthophoto (Appendix 3) taken in 2000, where production areas are clearly distinguishable. This pattern of cutaway emergence can be expected for all bog units the timeframe being dictated by original peat deposits which are in turn a consequence of the bog floor contours.

The first area that emerged in Turnduff corresponded to those with shallow peat depth which overlay an uplift of the bog floor. These areas and similar areas that emerged over the following decades were developed to grassland. Today the grassland area extends to 307Ha and is now in multiple private ownership. Part of the internal road infrastructure has been taken over by Offaly County Council. A further 363Ha are afforested by Coillte Teoranta and are on long term lease. 143Ha are leased to NPWS for Grey Partridge conservation. Two angling lakes extending to 8Ha were constructed close to the R357 with suitable access created for coarse fishing. The remaining 207Ha which represent topographical depressions are developed into wet and dry wilderness. A walking route along the track of the old rail line (now lifted) is developed as an elevated walk. This is indicated by yellow line on the orthophoto. Bird hides are located along this route.

5.0 Summary

Further training of Team Leader and Supervisors (26 people) took place in 2003. A new training programme, including use of a training video is being developed and is almost at the completion stage.

Training for Emergency Oil Spill Response commenced on 23rd Mar 2004

Training records are held on site.

All silt traps are in place in the Boora area. An excavator is at present in Bellair to carry out this work as conditions allow.

Monitoring of all silt ponds is carried out every two weeks.

Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management of the River Barrow.

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.

During year 2003, expenditure on Environmental work was 200,967 Euro.

APPENDIX 1

Composite Sampler Table of Results and Flow Graph

29					6	158		6613906				39.68
30					5	150		7773748				38.87

A minus figure usually means the pond was flooded or backflowing

Bord Na Mona Energy Ltd, Boora Group, Leabeg, Tullamore Co Offaly . Composite Sampler Results

	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended
Dec-03		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids
				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day
1					5	428		6608559				33.04
2					5	434		6053396				30.27
3					5	573	33	5476837				27.38
4					5	362		4473539				22.37
5					50	430		1350723				67.54

APPENDIX 2

Current Status of Silt Ponds

Current Status of Silt Ponds - Boora IPC Licence No 500										<u>26/02/2004</u>	
Silt pond ID	Peat Catchment Area (Hectares)	Individual Pond Capacity (M ³)	Total Pond Capacity (M ³)	Capacity Required (M3)	Difference (M3)	% Capacity	Capacity Shortfall Cu Metres	Weir in Place	Piped Inlet/Outlet	By-Pass	Comment
Clongawny											
CG1	140	4,320	4,320	3,500	820	123%		Yes	Yes	No	
CG2	125	2,592	4,352	3,125	1,227	139%			Yes	No	
CG3		1,760							Yes	No	
CG4	30	744	744	750	- 6	99%		Yes	Yes	No	
CG5	150	2,400	2,400	1,875	525	128%			Yes	No	
CG6									Yes	No	
Drinagh West											
DW8		2,025						Yes	Yes	No	
DW9	210	540	6,865	5,250	1,615	131%			Yes	No	
DW10		1,900							Yes	No	
DW11		2,400							Yes	No	
DW12	50	2,640	2,640	1,250	1,390	211%		Yes	Yes	No	
DW13	25	630	630	625	5	101%		Yes	Yes	No	

Drinagh East											
DE14	385	2,640	2,640	2,640	-	100%			Yes	No	
Derrybrat											
DB16	60	3,240	3,240	1,500	1,740	216%			Yes	No	
Noggus											
NS19	200	4,000	15,220	8,875	6,345	171%			Yes	No	
FK20	155	11,220						Yes	Yes	No	
Boora West					-						
BW22	175	5,400	5,400	4,375	1,025	123%			Yes	No	
Derries											
DS28	25	794	794	500	294	159%			Yes	No	
DS28a		560	560	500	60	112%			Yes	No	
DS29	72	1,944	3,775	1,800	1,975	210%			Yes	No	
DS30		1,831							Yes	No	
Turraun											
TN31		3,600	4,470	2,750	1,720	163%			Yes	No	
TN32	135	870							Yes	No	
Pollagh											
PH34	170	4,095	4,095	4,250	- 155	96%			Yes	No	
Oughter											
OT36 *	160	450	2,945	4,000	- 1,055	74%			Yes	No	

OT37 *		1,215							Yes	No	
OT 38 *		1,280							Yes	No	
Lemonaghan		* Limited space for ponds(because of rock) clean three times perYear if required									
LM40	310	5,600	8,293	7,750	543	107%			Yes	No	
LM41		2,693						Yes	Yes	No	
LM41A	15	810	810	375	435	216%			Yes	No	
LM42		1,800	4,622	4,500	122	103%			Yes	No	
LM43	180	1,370							Yes	No	
LM44		1,452							Yes	No	
LM44A	67	1,700	1,700	1,675	25	101%			Yes	No	
LM45	95	608	2,458	2,375	83	103%			Yes	No	
LM 45A		1,850							Yes	No	
LM46	85	2,250	2,250	2,125	125	106%			Yes	No	
Killaranny											
KY48	20	500	500	500	-	100%			Yes	No	
KY49	130	1,980	4,500	3,250	1,250	138%			Yes	No	
KY50		2,520							Yes	No	
Monettia											
MA51A	315	3,060	9,180	7,875	1,305	117%			Yes	No	

MA51B		3,060							Yes	No	
MA51C		3,060							Yes	No	
MA52	160	2,510	5,082	4,000	1,082	127%			Yes	No	
MA53		2,572							Yes	No	
Derryclure											
DC54 *	60	762	762	1,500	- 738	51%			Yes	No	
DC55 *	100	811	1,459	2,500	- 1,041	58%			Yes	No	
DC56 *		648							Yes	No	
Killaun		* Limited space for ponds(because of rock) clean three times perYear if required									
KN57	160	5,046	5,046	4,000	1,046	126%			Yes	No	
KN58	160	1,848	4,092	4,000	92	102%			Yes	Yes	
KN59		2,244							Yes	Yes	
Galros											
GS61	145	2,756	5,756	3,625	2,131	159%			Yes	Yes	
GS62		3,000							Yes	Yes	
Derrinboy											
DB63	120	1,350	3,275	3,000	275	109%		Yes	Yes	No	
DB63A		1,925							Yes	No	
DB64	70	1,620	3,420	1,750	1,670	195%		Yes	Yes	No	
DB65		1,800						Yes	Yes	No	

Totals			128,293	102,365			-				
Bellair South											
BRS66	78	1,510	2,000	1,950	50	103%			Yes	No	
BRS67		490							Yes	No	
BRS68	25	620	620	625	- 5	99%			Yes	No	
BRS69 A	57	521	2,057	1,425	632	144%			Yes	No	
BRS69 B		896							Yes	No	
BRS69 C		640							Yes	No	
BRS70	24	600	600	600	-	100%	-				
Bellair North											
BRN71	70	912	912	1,750	- 838		- 838		Yes	No	No Activity on bog
BRN72	175	531	2,646	4,375	- 1,729	60%	- 1,729		Yes	No	Planned 2004/05
BRN72a		2,115							Yes	No	
BRN73	27	Proposed		675	- 675	0%	- 675				No Activity on bog
BRN74	75	Proposed		1,875	- 1,875	0%	- 1,875				No Activity on bog
BRN75	85		1,000	2,125	- 1,125	47%	- 1,125				In Progress **
BRN76	10	-	-	250	- 250	0%	- 250				Planned 2004
Totals Bellair			9,835	15,650			- 6,492				

	** Excavation of this pond started in Jun 2003 . Excavating Ponds is a slow process in Bellair as the soft conditions requires settlement to take place between digs.									

APPENDIX 3

Orthophoto - Bog Rehabilitation in Tumduff



Annual Environmental Report M 500 - Year 2004

March 2005

Contents

1.0 Introduction

- 1.1 IPC Licence Number
- 1.2 Name and Location of Site
- 1.3 Brief Description of Activities
- 1.4 Environmental Management of the Company
- 1.5 Environmental Policy Statement

2.0 Summary Information

2.1 Emissions to Water Summary

- 2.1.1 Silt Pond Emissions
- 2.1.2 Surface Water Discharge Monitoring
- 2.1.3 Composite Sampler Programme
- 2.1.4 Non Compliances

2.2 Emissions to Air

- 2.2.1 Dust Monitoring Locations Programme
- 2.1.4 Non Compliances

2.3 Waste Arisings

- 2.3.1 Hazardous Waste
- 2.3.2 Non-Hazardous Waste

2.4 Energy and Water Consumption

- 2.4.1 Energy Consumption
- 2.4.2 Water Consumption

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

2.5.2 Complaints

2.5.3 Report on Dust Complaint at Derryclure

3.0 Management of the Activity

3.1 Environmental Management Programme Report

3.2 Environmental Management Programme Proposal

3.3 Environmental Expenditure

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

4.2 Bunding Programme

4.3 Boiler Combustion Efficiency

4.4 Resource Consumption Summary

4.5 Report on Desilting Programme

4.6 Silt Pond upgrade Programme

4.7 Bog Development and Operational Programme

4.8 Bog Rehabilitation Programme Progress Report

5.0 Summary

Appendices

Appendix 1 Graph of Results, Quarterly Grab Samples

Appendix 2 Composite Sampler Table of Results

Appendix 3 Composite Sampler Flow Graph

1. Introduction

1.1 IPC Licence Reg No: M 500

1.2 Name and Location of Site

Name: Bord na Mona Energy Ltd

Address: Boora Works,
Leabeg,
Tullamore
Co Offaly

Phone No: 0506 45996 **Fax No:** 0506 45179

Grid Ref: E180050 N319540

Contact Name: **Jim Harkins**
Regional Manager – West Region

1.3 Activities

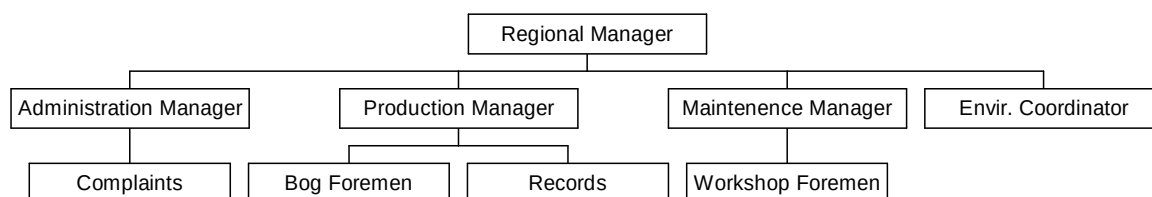
The Boora Group, which consists of the Boora and Bellair bogs, is located predominately (95%) in Co Offaly, and the remainder in Co Laois.

The Boora Group currently employs 132 permanent and 82 seasonal workers producing milled peat for the following customers ;

ESB	150 kTonne/annum
Derrinlough Briquette Factory	250 kTonne/annum
Horticulture use	100 kTonne/annum
<u>Total</u>	<u>500 kTonne/annum</u>

1.4 Environmental Management of the Company

Environmental Responsibilities;



<i>Name</i>	<i>Title</i>	<i>Responsibilities</i>
Jim Harkins	Regional Manager	Overall Environmental Responsibility
Seamus Guinan	Production Manager	All Production related issues- silt/dust/noise/waste/codes of practice/sampling peat loading/tea centres
Con Kelly	Workshop Manager	Machine maintenance/ codes of practice/stores/workshops/yards/ stores/waste
Christy Mahon	Environmental Coordinator	Co Ordination of above Records/Reports
Cormac Carroll	Workshop Foreman	Workshop related Environmental Issues
Liam Fox	Workshop Foreman	Workshop related Environmental Issues
Eamon Dooley	Workshop Foreman	Workshop related Environmental Issues
Patsy Guinan	Bog Foreman	Bog related Environmental Issues
Pat Craven	Bog Foreman	Bog related Environmental Issues
Kevin Healy	Records Keeper	Inspections/Records

1.5 Environmental Policy Statement



Environmental Policy Statement

Bord Na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's 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 of 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 high environmental value.

Bord Na Mona Energy Limited seeks to conduct all aspects of its business in an environmentally sensitive manner.

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 environmental 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 (R&D) into all aspects of its environmental impact.

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

2. Summary Information

2.1 Emissions to Water Summary

2.1.1 Results of the Quarterly Grab Samples are shown in graph format in appendix 1

2.1.2 Monitoring of workshop/depot surface water run-off

The summary results of yard run-off monitoring showing the COD for each point monitored are in the table below. Sampling is carried out on a monthly basis. The sample is taken from the outlet pipe from the oil trap therefore it is only possible to get a sample after rainfall. Work was required on some sampling points so that a reliable sample can be taken and this work is at present being carried out.

Reporting Period: January – December 2004													
Surface Water Emission pt.	COD (mg/l)												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Emission Limit Value
SWE-1a Fuel Pumps Main W/S													N/A
SWE-1b Tractor compound W/Shop											10		“
SWE 2 Lemonaghan oil store	10			10		25		13			10		“
SWE-3 Bellair Yard													“
SWE-3a Bellair Service Area													“
SWE 4a Briq Fac Service													“
SWE 4B Briq Fac area tank													“
SWE 5A Monettia yard													“
SWE 5B Monettia Service Area													“
SWE 6A Main W/Shop Oil Store													“
SWE 6B Main W/Shop Machine Wash													

2.1.3. Composite Sampler Programme

The composite sampler operated at Pond 36 Oughter SW. It performed well except for some instances of power failure.

Appendix 2 shows the summary of results for 2004.

Appendix 3 shows the flow graph of the composite samples

2.1.4 Non- Compliance

Emission Limit Value 53 mg/l (S. Solids on any one day) was exceeded as follows;

Date	Non-compliance	Cause	Corrective Action
16/1/04 17/1/04	Comp Sampler OT 36 83 mg/lit 67 mg/lit	Heavy rainfall following a dry spell.	Relevant personnel informed, Ponds inspected
29/10/04 30/10/04 31/10/04	156 mg/lit 76 mg/lit 71 mg/lit	Heavy and sustained rainfall caused flooding.	Relevant personnel informed, Ponds inspected
23/11/04 28/11/04	56 mg/lit 88 mg/lit	Heavy and sustained rainfall caused flooding.	Relevant personnel informed, Ponds inspected
6/12/04 7/12/04	76mg/lit 73 mg/lit	No Activity on bog -heavy rainfall	Relevant personnel informed, Ponds inspected
	Qr. Grab Samples 100% Compliant		

2.2 Emissions to Air

2.2.1 Dust Monitoring Locations Programme

The three monitoring locations are ;

Clongawney / Pollagh / Derryclure

Four samples were taken during the four months of production in Clongawney and Pollagh. In Derryclure samples were taken during Jan and Feb 04 during outloading operations and also during production. In Sept 04 four sampling points were put in place here and they were sampled once.

Emission Point	Parameter	Emission (mg/m ² /day)	Emission Limit Value
Clongawney	Dust	128 380 74 27	(350mg/m ² /Day)
Pollagh	Dust	666 279 55 16	
Derryclure	Dust	100 50 205 125 49 48 61 17 67 44	

2.1.4 Non Compliance

Two samples were outside of the limits. Ref Report to EPA ; 2004 - 03, 15/7/04 and 2004 - 04, 19/8/04.

A full programme of dust monitoring will continue during the next production season, including four sampling points at Derryclure

2.3 Waste Arising

2.3.1 Waste Management Record (Hazardous)

WASTE DESCRIPTION	EWCODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Oil	13.01.01	2.3	Atlas Oil	Atlas Oil~	Portlaoise	Ongoing
Oil intercept Sludge	15.03.03	Nil	Atlas Oil	Atlas Oil~	Portlaoise	
Filters	16.01.07	Nil	Atlas Oil	Atlas Oil	Portlaoise	
Batteries	16.06.01	3.59	Returnbatt	Returnbatt	Timahoe, Kildare	13/5/04
Degreasing Stillbottoms	12.03.01	2.87	Atlas Oil	Atlas Oil	Portlaoise	12/1/04
Fluorescent tubes	20.01.21	0.025	Irish lamp recycling ltd	Irish lamp recycling ltd	Carbury Co Kildare	5/11/04

DETAILS OF ANY REJECTED CONSIGNMENTS						
None to date						

2.3.2 Waste Management Record (Non-Hazardous)

WASTE DESCRIPTION	EW CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Scrap metal	17.05.07 02.01.10 12.01.01 12.01.02 12.01.03 12.01.04 12.01.13	88.8	Hammond Lane	Hammond Lane	Athlone	Ongoing
Domestic Boiler Ash *	10.01.03	11	On Site	Jim Harkins	On Site	
Polythene	02.01.04	nil				
Peat Silt	01.01.02	360	Bord Na Mona	Jim Harkins	Stored on site	Ongoing
Peat Screenings	01.01.02	100.7	Bord Na Mona	Jim Harkins	Re used on site	Ongoing
Workshop waste	12.01.03	21.27	AES Tullamore	AES	Landfill, Tullamore	Monthly
Office/Canteen waste	20.01.08 12.01.13 15.01.02	5.4	AES Tullamore	AES	Landfill, Tullamore	Weekly

* Landfill on site

2.4. Energy and Water Consumption

2.4.1 Energy Consumption Table

Diesel Derv	2,610 MW~Hr
Diesel Gas Oil	11,159 MW~Hr
Petrol	40 MW~Hr
Heating Oil	550 MW Hr
Electricity	812 MW~Hr
Peat Briquettes	1,100 MW~Hr

2.4.2 Water Consumption

Water is not used in our production process, therefore usage is minimal.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

Environmental Incidents	Number of Incidents
No of Incidents	None
Incidents requiring corrective action	None
Category –	

2.5.2 Complaints

Five complaints were received during 2004.

A system is in place for recording and dealing with complaints.

All complaints are reported to the EPA in the month following the complaint.

Environmental Complaints	Number of complaints
Complaints received	Five
Complaints requiring corrective action	Four
Categories of complaint	
Odour	
Noise	
Water	One
Air	Four (Re Dust at Derryclure)
Procedural	
Miscellaneous	

2.5.3 Report on Dust Complaints at Derryclure

A series of remedial actions are being put in place to deal with this (Ref :Notification to Agency 21/7/2004)

- The only stockpile on the northern end of the bog is at present being sold. All other stockpiles have been relocated to the Southern end of the bog, away from the houses. In 2005 all production will be stockpiled on the Southern end.
- 2,500 trees to create a shelter - belt have been planted and mature trees sown at a point where there was a gap in the natural hedge.
- Dust monitoring has been extended from one to four monitoring points.
- A wind sock has been installed.
- A bouser/tanker is used for dust suppression on the access road.
- Further training will be provided for all personnel at Derryclure bog before production operations commence in 2005.
- The existing headland on the northern end will be moved back 20-40 Metres in order to create a buffer zone between the headland the planted trees. This will be sown with a suitable grass seed. All traffic movement and production will be prohibited in this area. This work will be complete before production 2005.
- An External Audit of this bog has been arranged, which will take place in summer of 2005.
- The harvester in use in Derryclure will be fitted with dust covers to minimise the production of fugitive dust during harvesting. This will be in place for production 2005

3.0 Management of the activity

3.1 Environmental Management Programme Report 2004

Environmental Management Report for 2004	
Project	
Project 1. Reduction of fugitive dust emissions.	Training The Cleaner Production Video was completed in May 2004. The video covers all aspects of the IPC Licence, and in particular, cleaner production methods, good & bad practice, pollution prevention and codes of practice. A quiz on the contents of the video and items relating to the target audience, accompanies the 1 hour training session. During 2004, training with the video occurred at 4 of the IPC licensed sites and targeted management and production personnel. An internal audit of all IPC licensed sites also occurred during May and June of 2004. This included an assessment of the dust prevention measures in-place or planned during 2004. A copy of the audit findings is on file at each works. Based on these audits, various projects were put in-place regarding training for personnel at these dust sensitive locations and new machines for targeting dust problems from headland peat. Project works for 2004 includes: Hydraulic Harrows As was proposed for 2004, 8 newly fabricated hydraulic harrows were purchased and distributed to Dust Sensitive Locations within the 9 IPC licensed sites. ved successful in reducing dust generation at DSL sites. In Boora two hyd harrows were operational in Derryclure and it is planned to have two further harrows in Headland Peat Collection BNM recently took delivery of 4 new mechanical bin harvesters. These were manufactured in Finland, and are currently being modified in Ireland. These types of harvesters are specifically for use in lifting dry peat from headlands at DSL's and will be engaged alone in tackling dust sensitive areas in each licence, for the 2005 production season. In addition two Headland Harvester units will be in operation. These units operated in Boora and Mountdillon in 2004, and will continue to operate in these areas. In total, these 6 units will operate specifically at DSL' in Peco bogs, and will be assessed during the 2005 season, as to their effectiveness at reducing headland peat and reducing incidents of dust generation. The total expenditure on the additional bin harvesters, hydraulic harrows, and the polyrollers (project 5) for the 2004 season is €670,600, which is €400,000 above what was budgeted.

Project 2. Minimisation of Suspended Solids	This project is on-going and is primarily one of training for all production personnel, and is covered in the Cleaner Production Video, as in Project 1 (Training).
Project 3. Effective spill/leak management of mobile fuelling tanks	All of BNM's production bogs now have locations highlighted as being suitable for re-fuelling on the bog, and this is being brought to the attention of all personnel. These locations have been chosen having due regard to location of water courses and drains. In Boora A New bog (Killaun) was provided with a stationary fuel tank, Bund ,oil trap and concrete apron for servicing of machines. This will be provided in Derryclure in 2005. This project is then complete.
Project 4. Re-use of silt pond waste	There are over 850 silt ponds in operation in the 9 IPC Licensed BNM bogs. These are located in low areas on the bog perimeters, due to drainage requirements. All of these ponds are excavated into the mineral layer, and as a result of this, all silt removed from the ponds have high levels of grit, stones etc. All of these make the peat unsuitable for combustion purposes. In addition, over 95% of the silt excavated is water, which would require it to be spread out on the bog to be allowed to dry to the required moisture content. Given the small volumes of silt excavated, it is therefore not feasible to reuse this silt pond waste.
Project 5. Collection, storage and re-use of polythene.	Polythene collection is ongoing in BNM, and volumes collected and recycled are recorded in the Non-hazardous Waste records in the AER. The 25 new polystrippers proposed in last years EMP, were delivered in 04' and are currently being used to strip polythene from stockpiles. This new system now produces a roll of polythene which is cleaner, easier to handle, and consequently more attractive for recycling. All bogs now have a hard standing area, where the rolls of polythene are stored for collection and subsequent recycling. In addition to this, procedures have been put in-place, and are highlighted during training, about best practice for stripping, collection and storage. There are currently three potential contractors that could take the waste polythene for recycling. All involve shredding, washing and either baling or pelletising the polythene and BNM are currently assessing each contractor to assess their suitability, environmental compliance etc. Once the back-log has been recycled, and BNM have all of the strippers in place, the day to day recycling of the polythene removed each year will be more efficient.
Project 6. Condition 2.2.2 (v) <i>Provision of measures to protect dust sensitive areas.</i>	All DSL's have been identified within BNM group. Planting has occurred at Derryclure (See separate report 2.5.3)

3.2 Environmental Management Programme Proposal for 2005

Environmental Management Programme Proposal for 2005	
Project	
Project 1. Reduction of fugitive dust emissions.	Training Continue with the training programme for 2005. 15 Training sessions have already taken place at 6 of the IPC Licensed works, since January 05' This has targeted management and production personnel (teamleaders) and will be extended to include all seasonal staff to be engaged this year. It is targeted to have all production personnel trained by the commencement of production for 2005. Headland Peat The 6 new headland peat harvester units will be deployed for the 2005 production season. These units are a mixture of the bin harvester system (4 units) and the same field harvester (2 units), and will be operated in dust sensitive locations. The bin harvester units, while having been experimented with previously in BNM, are a relatively new technology in BNM's modern day operations, and so will be monitored closely over the coming season to assess their performance. All trials, observations and tests will be monitored and recorded by the EMP system as to their effectiveness and suitability. Hydraulic harrows 14 new hydraulic harrows have been made over 04/05 and will be in operation between now and the end of 2005. In line with BNM's policy to fabricate 40 hydraulic harrows over 5 years, this current no. brings the total to-date to 22 in operation by the end of 05' This is well ahead of what was planned in the 2004 EMP proposal. In addition, 3 new units are budgeted for fabrication by the end of 05. When completed, all DSL's will be equipped with a hydraulic harrow.
Project 2. Minimisation of Suspended Solids	This project is on-going and is primarily one of training for all production personnel, and is covered in the Cleaner Production Video, as in Project 1 (Training). It will also include inspections at a number of production units during the 05 production season, to assess compliance with the good practice and codes of practice developed by BNM and communicated through the training programmes and the video.

Project 3. Effective spill/leak management of mobile fuelling tanks	As reported in the 2004 EMP report, all areas have designated areas for re-fuelling. This project is therefore completed. Compliance with the original requirements of this project will however be checked through the inspections as highlighted in project 2 above. Specific training has also been provided for oil spill management and clean-up, as part of the management of oil spill kits and procedures etc. and will continue to be facilitated during 2005.
Project 4. Re-use of silt pond waste	This project is also not feasible, as highlighted in the 2004 report, but will be reviewed where necessary, if a use (other than fuel use) emerges.
Project 5. Collection, storage and re-use of polythene.	Banner recycling are currently taking BNM's rolled and loose polythene, for recycling to their permitted yards in Co.Clare. Two additional interested parties are also being investigated, one locally in Co Kildare and a potential recycler in Belgium who may be in a position to reuse the polythene to process pellets to be used in the manufacture of new polythene to be used by BNM. An additional order for 22 polyrollers have been placed, to be delivered by the end of March, so that all bog units will have a roller for stripping piles. This will put an end to loose polythene gathering around the bog.
Project 6. Condition 2.2.2 (v) <i>Provision of measures to protect dust sensitive areas.</i>	This project is on-going. All dust sensitive locations will have bergerhoff dust gauges installed for the 2005 season. We will be creating a new buffer zone and planting it with a suitable grass in Derryclure (See separate report 2.5.3)

3.3 Environmental Expenditure

Expenditure Related to the Operation of the Boora IPC Licence During the Period Jan 2004 – Dec 2004	
Description	Cost (Euro)
Capital Costs	192,000
Plant / Labour / Materials	147,557
Overheads (ESB, Phones, Consumables)	3,132
External Environmental Consultancy	18,500
EPA Fees	8,773
Total	369,962

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

A proposal to change the location of the ponds for the Quarterly Grab samples was submitted on 23 Aug 2004, giving the rationale for the change. The new locations will apply from Jan 2005.

4.2 Bunding Programme

All external oil tanks have been bunded. During 2004 an Oil tank / Bund / Concrete apron and Oil interceptor was fitted at Killaun service area. Production commenced in this bog in 2003. Also the solid fuel boiler of the heating system at the main office/workshop was replaced by an oil boiler. There is a bund around the new oil tank.

Location	Description	Test Date
Main Workshop	External oil tanks Oil store building (Floor)	9/3/04
Briquette Factory	Transport machine tank Bog area tank	9/3/04 9/3/04
Monettia workshop	External storage tank	9/3/04
Leamonaghan workshop	External storage tank	9/3/04
Bellair workshop	External storage tank	9/3/04
Derrinboy Bog	External storage tank	9/3/04
Killaun Bog	External storage tank	2/3/05
Main Office Heating	External storage tank	2/3/05

Certification of inspections are kept on site.

4.3 Boiler Combustion Efficiency

Boiler efficiency tests were carried out by Boiler Services Ltd .

Boiler	% Efficiency	Test Date
Monettia - Oil	86.3	10/3/05
Main Office/W Shop - Oil	86.7	19/10/04

4.4 Resource Consumption Summary

The total Milled Peat (@ 55% Moisture content) used was;

Electricity Generation	34 k Tonne
Peat Briquette Manufacture	228 k Tonne
Horticulture use	65 k Tonne

Total **327 k Tonne**

Sod Peat (Hopper Turf) 0.3 k Tonne

4.5 De-Silting Report

There are currently 58 silt settlement ponds in Boora and 11 in Bellair with a total capacity of 138 k Cu Metres.

Cleaned in 2004	No of Ponds	% of total
Ponds cleaned twice	17	26%
Ponds cleaned once	48	74%
Ponds not cleaned (inactive)	2	
New Excavated	2	
Total	69	

Year 2004 was not a difficult year silt-wise due to the rainfall pattern during the production season and the low annual rainfall.

Silt Pond Cleaning Summary 2004

Area	No. Of Ponds Cleaned Twice	No. Of Ponds Cleaned Once	Total No. of Ponds in Area
Clongawney		5	5
Drinagh		7	7
Noggus		2	2
Boora/Derrybratt		6	6
Pollagh/Turraun		3	3
Oughter/Killaranny		6	6
Lemonaghan	9	2	11
Monnettia		5	6
Derryclure		3	3
Killaun		3	3
Galros		2	2
Derinboy		4	4
Bellair	8		11
Total	17	48	69

Two ponds were excavated during the year and did not require cleaning and two existing ponds also did not require cleaning.

The cleaning roster is based on the fortnightly inspection of ponds.

The estimated weight of dry matter removed during cleaning was 360 tonne. (2% of total weight).

4.6 Silt Pond Upgrade Programme

All of Stage 1 and 2 are now complete in the Boora section. In Bellair excavation of Pond 75 was abandoned because ground conditions were found to be unsuitable. Pond 74 was excavated with a capacity of 4380 Cu mtrs. This is more than sufficient to take the water of the proposed ponds 74 and 75 combined. Extensions to Ponds 66 and 68 were completed (1032 cu metres)

There is no activity as yet on the catchment area of ponds 71, 73 and 74. However at present land is being purchased to complete all ponds. This may require some reconfiguration of the catchments and we will submit a revised area plan when the land purchase is complete.

Outstanding at present;

Stage 1 - New Ponds;	Cu Metre	Comment
Bellair North 73	675	Land being purchased at present
Bellair North 76	250	Planned
Total	925 Cu Metres	

Stage 2 - Pond Extensions;	Cu Metre	Comment
Bellair North 71	838	} Land being purchased at present for ponds.
Bellair North 72	1729	
Total	2,567 Cu metres	

Stage 3 - 100 % Design Standard

All Ponds have been fitted with a piped inlet and outlet. Five mechanical weirs have been fabricated and we plan to fit these where quarterly grab samples are taken, and monitor their effectiveness during 2005.

4.7 Bog Development and Operational Programme

During 2004, development work continued in Derrinboy and Killaun and also in North Bellair, which was set aside for some time. Derrinboy development is now complete. Production in 2005 will be extended in these areas.

Budgeted net production acres for 2005 is: 8,500 Acres (620,000 Tonnes)

In the mature bog areas, net acres being worked is reducing. The table under compares year 2000 with 2005;

Area	Acres 2000	Acres 2005
Boora/Drina	1394	1055
Clongawney/Galros	1302	978
Noggus	800	712
Pollagh/Oughter	1073	820
Monettia	1070	950
Total	5639	4515 (20% Reduction)

4.8 Bog Rehabilitation Progress Report

East Boora Developments 2004

By year end 2004 the area of East Boora bog stretching from the Cycle Path Road to the west boundary of the former Lough Boora lake site is finished with all activities relating to peat harvesting. The only peat production related activities are a narrow gauge railway for peat transport at the west extremity and a rail link to Boora Works at the north extremity. All the remaining rail links are now completely lifted and the beds of these former railways are now levelled and developed as walkways for the amenities developed in the area.

This area of East Boora is now utilised for the following purposes,

Commercial Afforestation	Leased to Coillte Teoranta Ltd
Trial Afforestation areas	Bog for research areas
Commercial Grassland	Sold to local farmers
Wetlands/natural wilderness	
Amenity areas	

The amenities developed in this area consist of;

Loch an Dochas

This is a one hectare lake developed for angling with special facilities for anglers with disabilities. This lake was developed in conjunction with the following groups and organisations;

Lough Boora Parklands Group
Kilcormac Development Association
Shannon Regional Fisheries Board
Central Fisheries Board

This project was officially launched by The President of Ireland Mrs Mary Robinson.

Boora lake

This is a lake for angling that lies alongside the Cycle Path Road and has 7 fish stands. It is provided with three car parks and has a safe area where people can feed ducks.

Sculpture Park

This is an area which is under the control of The Lough Boora Sculpture Group. An international sculpture Symposium was held here in 2002 when seven permanent sculpture pieces were constructed. A new piece was added in 2004. This project was awarded a prestigious Business/Arts award in 2003. This project is developed in conjunction with;

Lough Boora Parklands Group
Lough Boora Sculpture Group
Offaly County Council
Offaly Leader 2
Arts Council of Ireland

Walkways.

There are walkways developed in this area for public use, most of which are on former railway lines. These include;

“The Offaly Way.”

This “Waymarked” walkway is a link walkway between “The Slieve Bloom Way” and “The Grand Canal Way” along the Cycle Path road. There is also a spur walk to Lough Boora Mesolithic site which now is the oldest archaeological site in Ireland circa 6800-7000B.C. At present a circuitous roadway/walkway is under construction to this very important site and this is being jointly funded by:

Bord na Mona
Offaly County Council
Offaly Leader 2
Coillte

“Access for All Walkway”

This is a walkway with a tarred surface that is suitable for wheelchair access. This was jointly funded by Bord na Mona and Offaly County Council in conjunction with the “Offaly Way” Project

“Sculpture Walkway”

This is a gravelled walkway which is laid out so as to provide access to each of the sculpture pieces That was jointly funded by Bord na Mona and Offaly County Council. It is linked to the “Access for All walkway” and the “Offaly Way”.

Roadways.

Two new and permanent roadways are constructed in this area so as to service the farm and forestry areas. A further permanent roadway is under construction so as to service forestry area in conjunction with the Lough Boora Mesolithic area

General

The development of the East Boora area is being finalised this year and we will report on final acreages and Kms of walkways in each category when complete.

5.0 Summary

A new training programme, including use of a training video is at currently taking place. This will be extended to all employees before start of production 2005.

Training records are held on site.

Maintenance of silt traps inspection covers took place (building of concrete surrounds to protect the inspection covers) Further work is planned on pipe outlets. Monitoring of all silt ponds is carried out every two weeks.

Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management of the River Barrow.

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.

During year 2004, expenditure on Environmental work was € 369,962.

APPENDIX 1

Silt pond Emissions -Graph of results from Quarterly Grab Samples

APPENDIX 2

Composite Sampler Table of Results

APPENDIX 3

Composite Sampler - Flow Graph

BORD NA MÓNA 

BORD NA MÓNA ENERGY LIMITED

Boora Group, C/O Boora Works,

Leabeg, Tullamore,

Co Offaly, Ireland

ENVIRONMENTAL PROTECTION
AGENCY

29 MAR 2006

Annual Environmental Report M 500 - Year 2005

March 2006

Contents

1.0 Introduction

- 1.1 IPC Licence Number
- 1.2 Name and Location of Site
- 1.3 Brief Description of Activities
- 1.4 Environmental Management of the Company
- 1.5 Environmental Policy Statement

2.0 Summary Information

2.1 Emissions to Water Summary

- 2.1.1 Silt Pond Emissions
- 2.1.2 Surface Water Discharge Monitoring
- 2.1.3 Composite Sampler Programme
- 2.1.4 Non Compliances

2.2 Emissions to Air

- 2.2.1 Dust Monitoring Locations Programme
- 2.1.4 Non Compliances

2.3 Waste Arisings

- 2.3.1 Hazardous Waste
- 2.3.2 Non-Hazardous Waste

2.4 Energy and Water Consumption

- 2.4.1 Energy Consumption
- 2.4.2 Water Consumption

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

2.5.2 Complaints

2.5.3 Report on Dust Complaint at Derryclure

3.0 Management of the Activity

3.1 Environmental Management Programme Report

3.2 Environmental Management Programme Proposal

3.3 Environmental Expenditure

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

4.2 Bunding Programme

4.3 Boiler Combustion Efficiency

4.4 Resource Consumption Summary

4.5 Report on Desilting Programme

4.6 Silt Pond upgrade Programme

4.7 Bog Development and Operational Programme

4.8 Bog Rehabilitation Programme Progress Report

5.0 Summary

Appendices

Appendix 1 Graph of Results, Quarterly Grab Samples

Appendix 2 Composite Sampler Table of Results

Appendix 3 Composite Sampler Flow Graph

1. Introduction

1.1 IPC Licence Reg No: M 500

1.2 Name and Location of Site

Name: Bord na Mona Energy Ltd

Address: Boora Works,
Leabeg,
Tullamore
Co Offaly

Phone No: 0506 45996 **Fax No:** 0506 45179

Grid Ref: E180050 N319540

Contact Name: Jim Harkins
Regional Manager – West Region

1.3 Activities

The Boora Group, which consists of the Boora and Bellair bogs, is located predominately (95%) in Co Offaly, and the remainder in Co Laois.

The Boora Group currently employs 127 permanent and 44 seasonal workers producing milled peat for the following customers ;

ESB	220 kTonne/annum
Derrinlough Briquette Factory	255 kTonne/annum
Horticulture use	60 kTonne/annum
Total	535 kTonne/annum

1.4 Environmental Management of the Company



Environmental Responsibilities;

<i>Name</i>	<i>Title</i>	<i>Responsibilities</i>
Jim Harkins	Regional Manager	Overall Environmental Responsibility
Seamus Guinan	Production Manager	All Production related issues- silt/dust/noise/waste/codes of practice/sampling peat loading/tea centres
Con Kelly	Workshop Manager	Machine maintenance/ codes of practice/stores/workshops/yards/ stores/waste
Christy Mahon	Environmental Coordinator	Co Ordination of above Records/Reports
Cormac Carroll	Workshop Foreman	Workshop related Environmental Issues
Liam Fox	Workshop Foreman	Workshop related Environmental Issues
Eamon Dooley	Workshop Foreman	Workshop related Environmental Issues
Patsy Guinan	Bog Foreman	Bog related Environmental Issues
Pat Craven	Bog Foreman	Bog related Environmental Issues
Kevin Healy	Records Keeper	Inspections/Records

1.5 Environmental Policy Statement



Environmental Policy Statement

Bord Na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's 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 of 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 high environmental value.

Bord Na Mona Energy Limited seeks to conduct all aspects of its business in an environmentally sensitive manner.

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 environmental 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 (R&D) into all aspects of its environmental impact.

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

2.1.3. Composite Sampler Programme

The composite sampler operated at Pond 36 Oughter SW. It performed well except for some instances of power failure. A solar panel has been installed to help keep the battery charged.

Appendix 2 shows the summary of results for 2005.

Appendix 3 shows the flow graph of the composite samples

2.1.4 Non- Compliance

Emission Limit Value for Composite Sampler are as follows; 8 of any 10 samples must not exceed 35 mg/l Sus Solids. No sample can exceed 52.5 mg/l Sus Solids. Non compliance was as follows;

Date	Non-compliance	Cause	Corrective Action
14/6/05	Comp Sampler OT 36 59 mg/lit	No obvious cause	Relevant personnel informed, Ponds inspected
23/6/05	129 mg/lit	Possible dirty suction tube/suction head	Relevant personnel informed, Ponds inspected.
24/6/05	94		Replaced suction tube of sampler, cleaned suction head
25/6/05	48		
26/6/05	40		
27/6/05	34		
28/6/05	66		
13/8/05	302mg/lit	Pond cleaning was in progress	Block outlet in future
28/11/05	66 mg/lit	No obvious reason	Relevant personnel informed, Ponds inspected
	Comp Sampler 97% Compliant		
	Qr. Grab Samples 100% Compliant		

Corrective Action Reports were submitted to EPA for all non-compliances.

2.2 Emissions to Air

2.2.1 Dust Monitoring Locations Programme

The three monitoring locations are ; **Clongawney, Pollagh, Derryclure (Four monitoring points)**

Four samples were taken during the four months of production. On the last sampling period (Aug/Sept) the sample bottles were stolen from the monitoring sites in Pollagh and Clongawney.

Emission Point	Parameter	Emission (mg/m ³ /day)	Emission Limit Value
Clongawney	Dust	83 40 42	(350mg/m ³ /Day)
Pollagh	Dust	56 52 26	
Derryclure A	Dust	56 115 42 44	
Derryclure B	Dust	61 29 89 67	
Derryclure C	Dust	39 29 16 56	
Derryclyre C	Dust	39 23 21 72	

2.1.4 Non Compliance

All sample results were within limits.

Clongawney No complaints received in 2005. Dust monitoring will continue during 2006 season.
 Pollagh No complaints received in 2005. Dust monitoring will continue during 2006 season
 Derryclure No complaints received in 2005. Dust monitoring will continue during 2006 season
 (See separate report on Derryclure 2.5.3)

2.3 Waste Arising

2.3.1 Waste Management Record (Hazardous)

WASTE DESCRIPTION	EWC CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Oil	13.01.01	14.4	Atlas Oil	Atlas Oil~	Portlaoise	Ongoing
Oil intercept Sludge	15.03.03	5.5	Atlas Oil	Atlas Oil~	Portlaoise	9/8/05
Filters	16.01.07	Nil	Atlas Oil	Atlas Oil	Portlaoise	
Batteries	16.06.01	1.66	Returnbatt	Returnbatt	Timahoe, Kildare	2/9/05
Degreasing Stillbottoms	12.03.01	2.34	Atlas Oil	Atlas Oil	Portlaoise	11/3/05
Fluorescent tubes	20.01.21	Nil	Irish lamp recycling ltd	Irish lamp recycling ltd	Carbury Co Kildare	
Asbestos	17.06.05	0.216	Stephen Cullen Transport	Onyx Environmental Services Western Ind Estate Dublin 12	AGR mbh Entsorgungshirschaft Buro RZR Hertfen Im Erchenruch 11 D 45699 Hertfen	8/9/05

DETAILS OF ANY REJECTED CONSIGNMENTS

None to date

2.3.2 Waste Management Record (Non-Hazardous)

WASTE DESCRIPTION	EWC CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
Scrap metal	17.05.07 02.01.10 12.01.01 12.01.02 12.01.03 12.01.04 12.01.13	61.92	Hammond Lane	Hammond Lane	Athlone	Ongoing
Polythene	02.01.04	205.2	BSM (Import/Export) 29 Waterside Waterford City	Asia Global Trade Ltd Suite 3 57 Lancaster Gate London W2 3na	Tak Shing (Sing Kee) Co 12A Ka Yip St Chai Wan Hong Kong	June to Dec 2005
Polythene	02.01.04	862	Banner Recycling	Banner Recycling	Clonina, Cree, Killrush Co Clare	Through 2005
Peat Silt	01.01.02	395	Bord Na Mona	Jim Harkins	Stored on site	Ongoing
Peat Screenings	01.01.02	69.4	Bord Na Mona	Jim Harkins	Re used on site	Ongoing
Workshop waste	12.01.03	21.09	AES Tullamore	AES	Landfill, Tullamore	Monthly
Office/Canteen waste	20.01.08 12.01.13 15.01.02	6.75	AES Tullamore	AES	Landfill, Tullamore	Weekly
Baled Cardboard Baled plastic (Wrapping)	15.01.01 15.01.02	0.49 0.05	AES Tullamore AES Tullamore	AES AES	AES Recycling, Tullamore AES Recycling, Tullamore,	Ongoing Ongoing

2.4 Energy and Water Consumption

2.4.1 Energy Consumption Table

Diesel Derv	3,360 MW~Hr
Diesel Gas Oil	9,989 MW~Hr
Petrol	18 MW~Hr
Heating Oil	1050 MW Hr
Electricity	736 MW~Hr
Peat Briquettes	126 MW~Hr

2.4.2 Water Consumption

Water is not used in our production process, therefore usage is minimal.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

Environmental Incidents	Number of Incidents
No of Incidents	None
Incidents requiring corrective action	None
Category –	

2.5.2 Complaints

No complaints were received during 2005

A system is in place for recording and dealing with complaints.

All complaints are reported to the EPA in the month following the complaint.

Environmental Complaints	Number of complaints
Complaints received	None
Complaints requiring corrective action	None
Categories of complaint	
Odour	
Noise	
Water	
Air	
Procedural	
Miscellaneous	

2.5.3 Update on Dust Complaints at Derryclure during year 2005

All remedial actions put in place to deal with this have now been completed. (Ref :Notification to Agency 21/7/2004)

In October 2005 the existing headland on the northern end was extended by 20-40 Metres in order to create a buffer zone between the production area and the planted trees. This area was sown with a suitable grass seed and a drain was ditched along the perimeter. All traffic movement is prohibited in this area. No complaints were received regarding Derryclure during 2005.

An External Audit of this bog was carried out in the summer of 2005 by Craig Mallinson, Bord Na Mona Environmental Services Ltd. The conclusion of the report was;

“It is concluded from the site visit and audit of the Derryclure bog operations that the implementation of the corrective actions has significantly reduced the potential for fugitive dust emissions from the site – this is confirmed the 2005 dust disposition results from Derryclure bog, all of which are below the ambient dust deposition limit value of 350mg/m²/day.”

The full report is held on file at Boora.

3.0 Management of the activity

3.1 Environmental Management Programme Report 2005

Environmental Management Report for 2005	
Project	
Project 1. Reduction of fugitive dust emissions.	Training Training continued in 2005 including the use of a Cleaner Production video. 76% of permanent workforce received this training and 38% of the seasonals. Cleaner Production Procedures are posted in all tea centres. This will continue with all new seasonals trained at the start of the production season. Hydraulic Harrows Two Hydraulic harrows are deployed in a dust sensitive area (Derryclure) These reduce the amount of dust created as the harrow spoons are raised during travel on headlands. Headland Peat Collection A mobile crew using a Haku system was in operation in Drinagh and Noggus. They harvested 2 km headland peat in Drinagh and 1.2 km in Noggus, (1,700 Tonnes of peat) This proved successful in reducing any dust from this source and will be expanded as haku production takes place in other areas.
Project 2. Minimisation of Suspended Solids	Training continued in 2005 (with particular emphasis on minimisation of suspended solids) including the use of a Cleaner Production video. Cleaner Production Procedures are posted in all tea centres.
Project 3. Effective spill/leak management of mobile fuelling tanks	Designated refuelling locations have been identified and posted in the tea centres in all production areas. Equipment to deal with a major oil spillage is located at a central point (main workshop). This equipment includes a map of areas roads and rivers, bunds, stakes and wire, straw bales and dry peat. The location of the major oil spill kit is also posted at all tea centres. Training has taken place on the use of the spill kit.
Project 4. Re-use of silt pond waste	This Project will be kept active should any opportunities for re-using silt pond waste arise.

Project 5. Collection, storage and re-use of polythene.	A new poly-stripping machine was developed for removing polythene from the stockpiles and rolling it into bales suitable for transportation to a hard stand for collection. A procedure was developed for this operation and communicated to all production personnel. Five of these rollers were in operation in 2005. A total of 1,067.2 Tonnes of polythene was recycled during 2005.
Project 6. Condition 2.2.2 (v) Provision of measures to protect dust sensitive areas.	In Derryclare the existing headland on the northern end was extended by 20-40 Metres in order to create a buffer zone between the production area and the planted trees. This area was sown with a suitable grass seed and a drain was ditched along the perimeter. All traffic movement is prohibited in this area. During windy weather conditions production operations are stopped, especially in dust sensitive areas. This occurred twice in Derryclare and once in Pollagh. No complaints were received regarding dust in 2005.

3.2 Environmental Management Programme Proposal for 2006

Environmental Management Programme Proposal for 2006	
Project	
Project 1. Reduction of fugitive dust emissions.	Training We will continue to include an update when carrying out training on Health/Safety etc. prior to production 2006 we will update all notices in Tea Centres and Transport centres. New seasonal staff will receive induction training at start of the production season. Headland Peat We plan to continue using the haku production unit to carry out this work in 2006 and to make use of breaks in weather to use this unit in peco production areas. In addition headlands in peco areas are cleaned by dozing peat down the production fields to be ridged and harvested. Hydraulic harrows Five additional units will be in operation in 2006. - Two in Clongawney, two in Noggus and one in Pollagh. Clongawney and Pollagh are Dust Sensitive Areas and Noggus is close to a public road..
Project 2. Minimisation of Suspended Solids	Inspections during 2005 primarily targeted tea-centres, oil stores, workshops etc. It is proposed to carry out inspections at a number of production locations during 2006, looking at cleaner production, dust sensitive areas, pond maintenance etc. The results of these inspections will be reported to the General Manager and any corrective actions will be maintained on file.
Project 3. Effective spill/leak management of mobile fuelling tanks	These areas will also be inspected as part of the proposed inspections under Project 6 above. Compliance with Conditions 9.1.1 to 9.1.14 will be checked and any improvements and corrective actions will be documented and maintained on file.
Project 4. Re-use of silt pond waste	This Project will be kept active should any opportunities for re-using silt pond waste arise.

Project 5. Collection, storage and re-use of polythene.	An invitation to tender for the recycling of BNM's polythene was sent to a number of interested companies in 2005. Six companies expressed in interest, and are currently being assessed as to environmental compliance with permitting regulations, collection methods, waste records transfer etc. It is proposed to select one or two of these companies to contract the recycling of the BNM Polythene in 2006. The Polyrollers developed in BNM will be removing and wrapping the 2006 polythene in the coming months. This year will have a renewed emphasis on the reduction of peat and water contamination in the rolls.
Project 6. Condition 2.2.2 (v) Provision of measures to protect dust sensitive areas.	There are no plans for additional work in 2006. However this will be continually reviewed.

3.3 Environmental Expenditure

Expenditure Related to the Operation of the Boora IPC Licence During the Period Jan 2005 – Dec 2005	
Description	Cost (Euro)
Capital Costs	154,000
Plant / Labour / Materials	128,302
Overheads (ESB, Phones, Consumables)	4,200
External Environmental Consultancy	20,500
EPA Fees	9,201
Total	316,203

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

The current locations commenced operation in Jan 2005. We do not propose any change at present. Sampling is successful and will continue in 2006.

4.2 Bunding Programme

All external oil tanks have been bunded. During 2006 an Oil tank / Bund / Concrete apron and Oil interceptor will be fitted at Deryclure service area.

Location	Description	Test Date
Main Workshop	External oil tanks Oil store building (Floor)	9/3/04
Briquette Factory	Transport machine tank Bog area tank	9/3/04 9/3/04
Monettia workshop	External storage tank	9/3/04
Leamonaghan workshop	External storage tank	9/3/04
Bellair workshop	External storage tank	9/3/04
Derrinboy Bog	External storage tank	9/3/04
Kilaun Bog	External storage tank	2/3/05
Main Office Heating	External storage tank	2/3/05

Certification of inspections are kept on site.

4.3 Boiler Combustion Efficiency

Boiler efficiency tests were carried out by Boiler Services Ltd .

Boiler	% Efficiency	Test Date
Monettia - Oil	91.3	12/10/05
Main Office/W Shop - Oil	93.2	12/10/05

4.4 Resource Consumption Summary

The total Milled Peat (@ 55% Moisture content) used was;

Electricity Generation	195 k Tonne
Peat Briquette Manufacture	288 k Tonne
Horticulture use	37 k Tonne

Total 520 k Tonne

Sod Peat (Hopper Turf) 0.2 k Tonne

4.5 De-Silting Report

There are currently 58 silt settlement ponds in Boora and 12 in Bellair with a total capacity of 144 k Cu Metres.

Cleaned in 2005	No of Ponds	% of total
Ponds cleaned twice	19	27%
Ponds cleaned once	48	69%
Ponds- no cleaning required	2	
New Excavated	1	
Total	70	

Year 2005 was not a difficult year silt-wise due to the rainfall pattern during the production season and the low annual rainfall.

Silt Pond Cleaning Summary 2005

Area	No. Of Ponds Cleaned Twice	No. Of Ponds Cleaned Once	Total No. of Ponds in Area
Clongawney		5	5
Drinagh	1	3	7
Noggus		2	2
Boora/Derrybratt		6	6
Pollagh/Turraun		3	3
Oughter/Killaranny		6	6
Lemonaghan	1	10	11
Monnetia	6	0	6
Derryclure	3	0	3
Killaun		3	3
Galros		2	2
Derinboy		4	4
Bellair	8	4	13
Total	19	48	70

One pond was excavated during the year and did not require cleaning and two existing ponds also did not require cleaning.

The cleaning roster is based on the fortnightly inspection of ponds.

The estimated weight of dry matter removed during cleaning was 395 tonne. (2% of total weight).

4.6 Silt Pond Upgrade Programme

All of Stage 1 and 2 are now complete in the Boora section. In Bellair excavation of Pond 71 was completed and a second pond (71A) added. These two ponds have a capacity of 2,100 Cu metres. Pond 72 and 72a are also complete.

There is no activity as yet on the catchment area of pond 73. However at present land is being purchased to complete this pond. We plan to complete this in 2006.

Outstanding at present;

Stage 1 - New Ponds;	Cu Metre	Comment
Bellair North 73	675	Planned 2006
Bellair North 76	250	Planned 2006
Total	925 Cu Metres	

Stage 2 - Pond Extensions;	Cu Metre	Comment

All complete

Stage 3 - 100 % Design Standard

All Ponds have been fitted with a piped inlet and outlet. Five mechanical weirs are being fabricated and we plan to fit these in 2006, and monitor their effectiveness.

4.7 Bog Development and Operational Programme

During 2005, development work continued in Killaun and also in North Bellair, which was set aside for some time. Due to high stock of peat production will be reduced in 2006. No production will take place in Pollagh/Oughter /Killaranny/Killaun.

Budgeted net production acres for 2006 is: 6,854 Acres (490,000 Tonnes)

4.8 Bog Rehabilitation Progress Report East Boora 2005

Biomass trials

In 2005 approx 15 hectares of reclaimed cutaway were planted with crops for biomass growing experiments. The main trial set down was for fast growing willow species (Salix) on approx 12 hectares of cutaway and also 1 hectare was planted with Reed Canary grass (Phalarus). Also some trials were conducted for direct seeding of Birch (Betula) and Alder (Alnus)

Walking Routes

Work on developing extensive and looped walking systems in conjunction with Offaly Leader Plus and Offaly County Council are nearly finalised. The circuitous route to the Mesolithic site is now complete and map-boards and information boards are at an advanced stage of preparation and will be installed around the walking routes in early 2006. The Longest outer perimeter in the network is now over 20 kilometers long with a walking time of over 4 hours. This will take a walker on a round journey from Finnermore Lakes to The Lough Boora Mesolithic Site and back.

Sculpture Park

Two new pieces of sculpture were commissioned in the Sculpture Park in 2005, one by a Dutch artist and one by a Danish artist. Also one of the old Tipplers from Ferbane Power Station is being recycled in the Sculpture Park as a shelter.

Wetlands

A new area of wetlands in an area of natural recolonisation is establishing due to the removal and blocking of drainage exits from this low-lying area. This will enhance the biodiversity of this area.

Partridge Project.

An area of approx 40 hectares of which 50% had been reclaimed for commercial grassland use will now be transferred to The Parks and Wildlife Service as a continuation of the area in Tumduff for the preservation of the Grey Partridge (*Perdix perdix*).

General

The final-final map of the complete range of land uses for the East is not fully settled yet, but probably will be in 2007. This will then complement and adjoin to the Tumduff area of Boora.

5.0 Summary

Compliance Levels for 2005 were good. Employees are continually reminded through training, of the importance of good house-keeping and improved procedures and practices to minimise effects on the environment. Continuous improvement is our aim and constant vigilance is required from all staff in order to bring about this.

During year 2005, expenditure on Environmental work was € 316,203.

Plans for 2006:

Training will continue with particular emphasis on Dust Sensitive Areas and ensuring that all new seasonal staff are trained.

Outstanding work on Silt Ponds will be finished in Ballair. Five mechanical weirs will be put in place on various Ponds. This will complete the Silt Pond Upgrade Programme.

Five new Hydraulic Harrows will be added to production in 2006, mainly in dust sensitive areas.

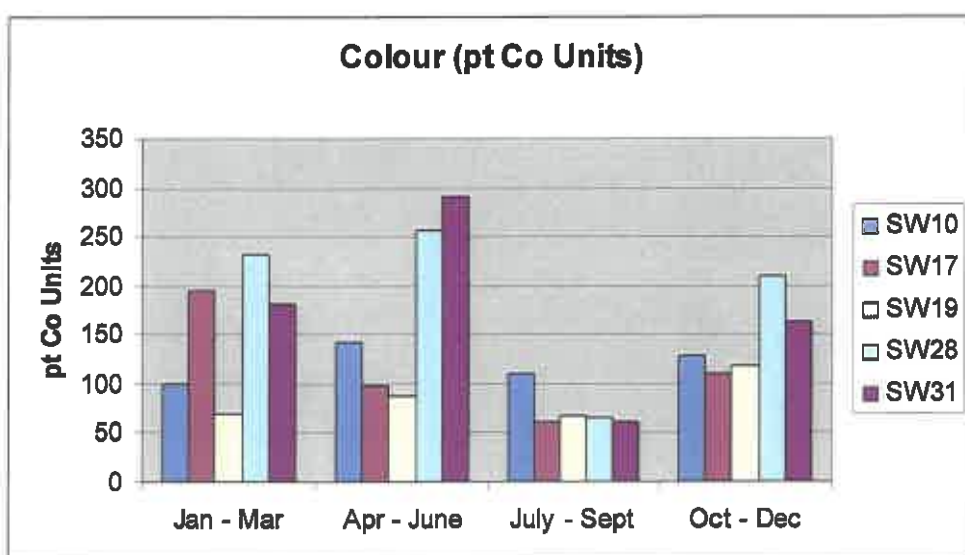
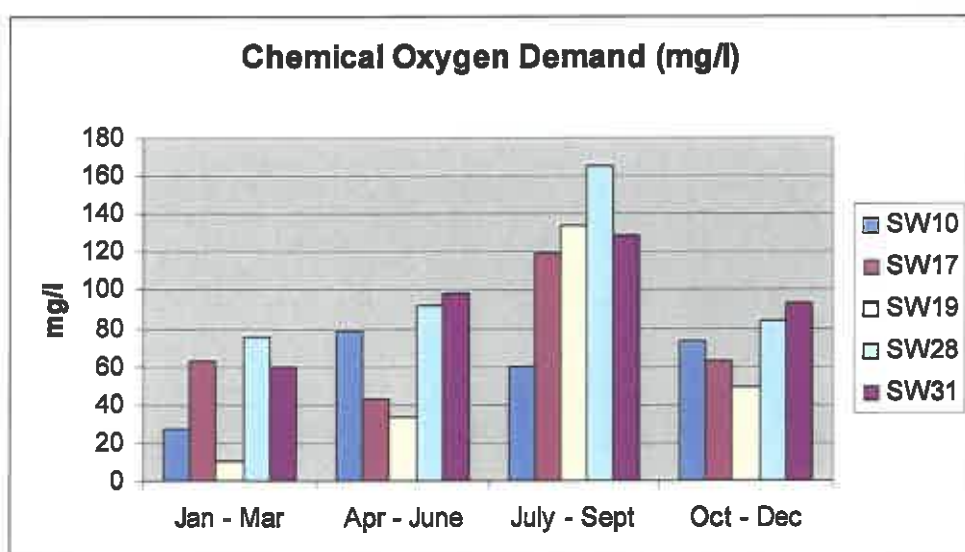
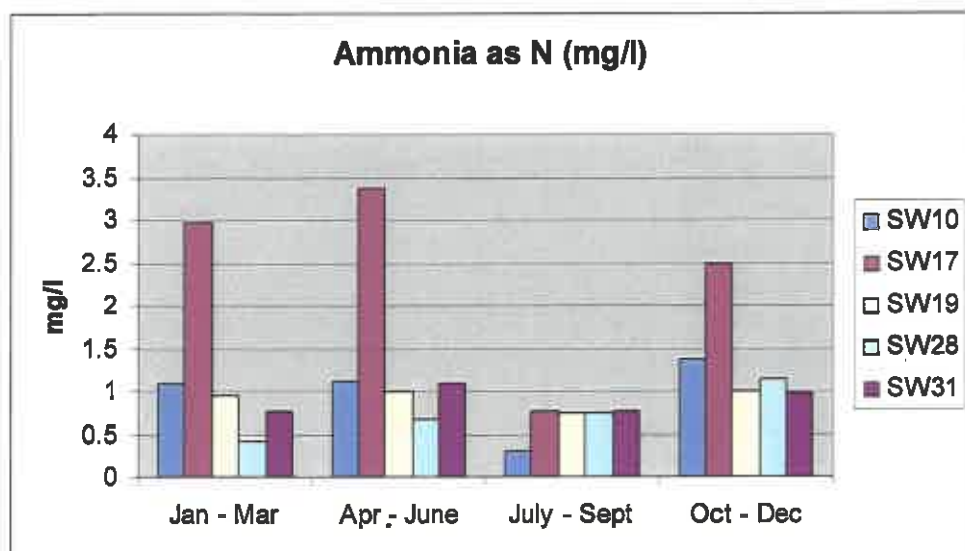
~~We recycle all waste products where possible such as Oil/Filters/Batteries/Fluorescent Tubes/Metal/Polythene and recently Baled Cardboard. We will seek to expand the level of recycling where possible.~~

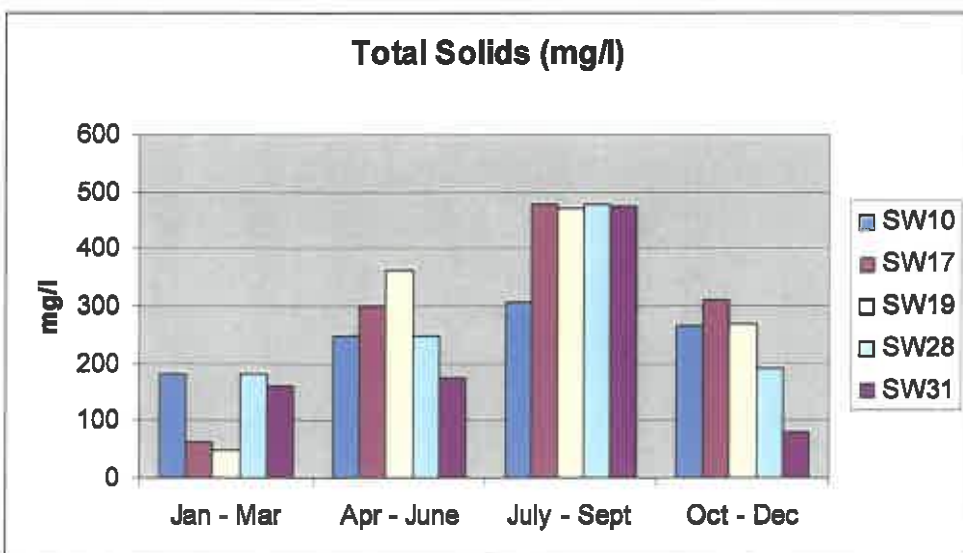
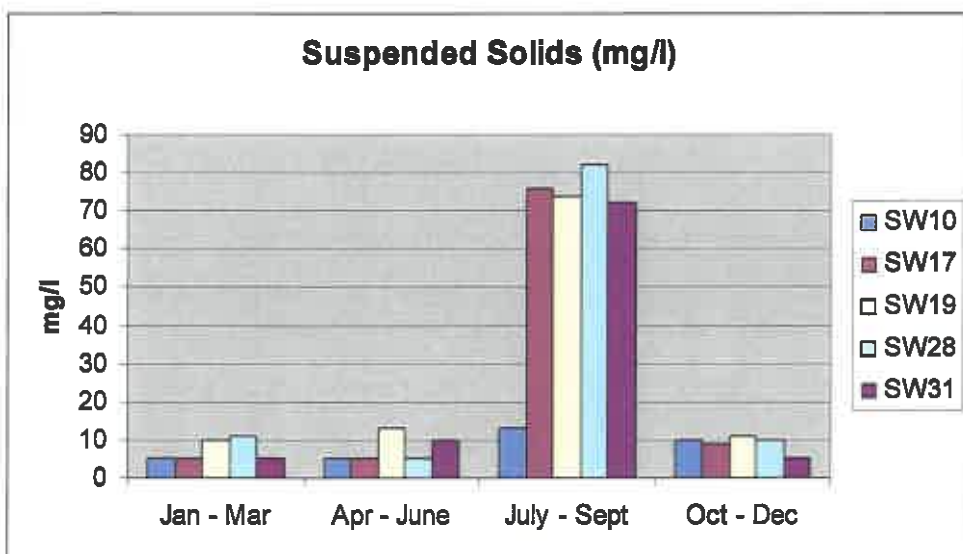
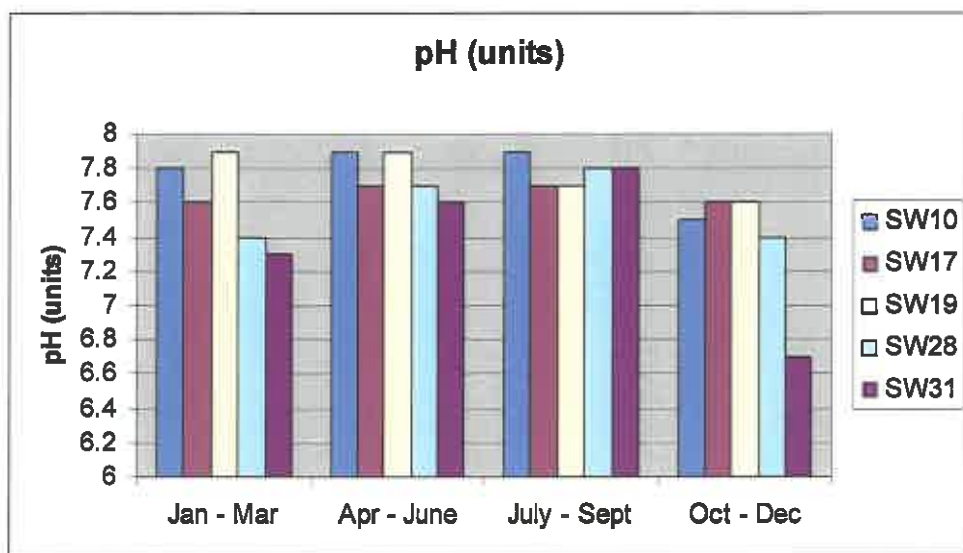
Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management of the River Barrow.

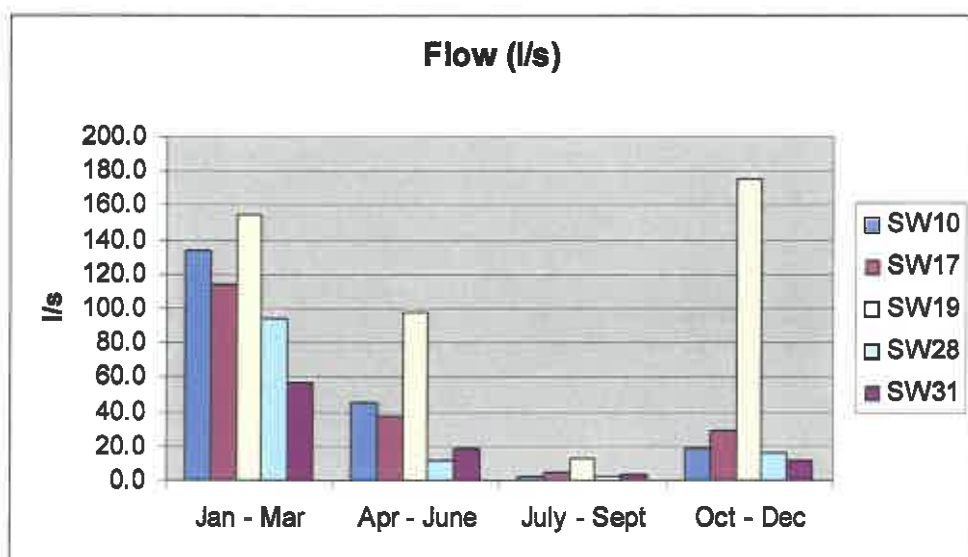
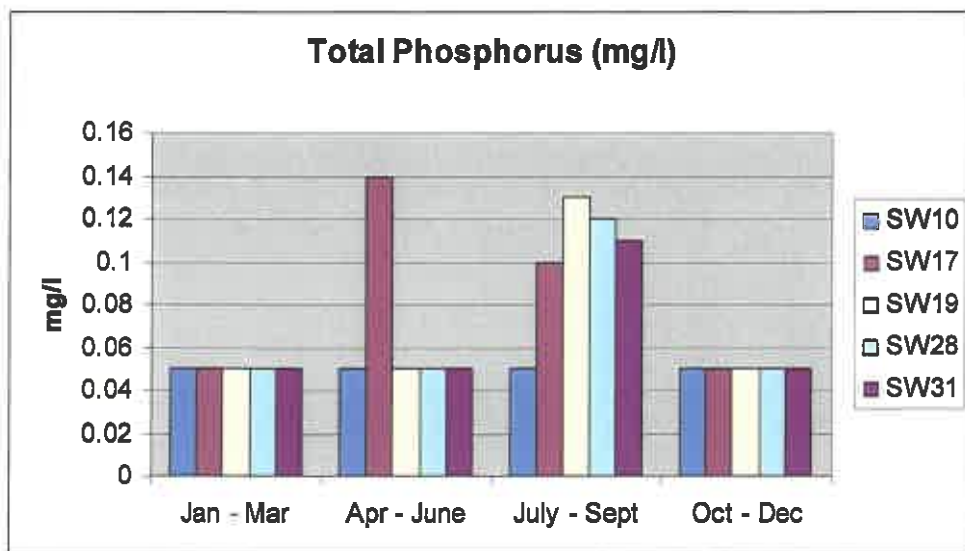
Bord Na Mona Energy Ltd would like to take this opportunity to advise the Environmental Protection Agency of its continued commitment to improving its environmental performance by adopting cleaner production methods and improving its environmental protection measures.

APPENDIX 1

Silt pond Emissions -Graph of results from Quarterly Grab Samples







APPENDIX 2

Composite Sampler Table of Results

Composite Sampler Results 2005

All flow data up to November 2005 was lost due to a technical fault in the storage of the data.

All flow data up to November 2005 was lost due to a technical fault in the storage of the data.

Composite Sampler Results 2005

Mar	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus 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	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
1					5	100		*					
2	8.2	29	0.6	0.05	5	70	62	*					
3					10	472		*					
4					7	438		*					
5					5	486		*					
6					5	508		*					
7					5	398		*					
8					5	468		*					
9	8.2	24	0.46	0.05	5	448	47	*					
10					15	442		*					
11					6	448		*					
12					32	474		*					
13					25	446		*					
14					15	468		*					
15					10	432		*					
16					5	444		*					
17	8	19	18	0.05	13	442	59	*					
18					7	198		*					
19					5	476		*					
20					16	466		*					
21					6	397		*					
22					5	0.7		*					
23	8.2	30	0.2	0.05	5	464	71	*					
24					5	426		*					
25					5	420		*					
26					8	423		*					
27					5	398		*					
28					6	440		*					
29					5	414		*					
30	8	47	0.35	0.05	12	382	69	*					
31					5	182		*					

* All flow data up to November 2005 was lost due to a technical fault in the storage of the data.

Composite Sampler Results 2005

Apr	pH	COD mg/l	Ammonia as N mg/l		Total Phosphorus 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	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
1						5	114		*					
2						7	440		*					
3						8	449		*					
4						5	389		*					
5						5	185		*					
6	7.9	30	0.44	0.05	11	180	71		*					
7					5	450			*					
8					7	440			*					
9					5	452			*					
10					5	438			*					
11					5	460			*					
12					5	454			*					
13	8.3	17	0.18	0.05	5	438	37		*					
14					24	444			*					
15					8	414			*					
16					14	360			*					
17					10	270			*					
18					6	388			*					
19					9	282			*					
20	8.4	36	0.11	0.05	5	338	56		*					
21					5	448			*					
22					5	450			*					
23					6	430			*					
24					5	458			*					
25					5	472			*					
26					13	470			*					
27	8.2	10	0.31	0.05	13	412	64		*					
28					5	412			*					
29					8	427			*					
30					5	408			*					

All flow data up to November 2005 was lost due to a technical fault in the storage of the data.

Composite Sampler Results 2005

May	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus 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	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
1					5	402		*					
2					19	410		*					
3					5	476		*					
4	8.2	24	0.3	0.05	6	462	61	*					
5					21	418		*					
6					14	370		*					
7					8	434		*					
8					5	390		*					
9					9	462		*					
10					5	412		*					
11	8.2	15	0.27	0.05	5	442	45	*					
12	Power Fail							*					
13	Power Fail							*					
14	Power Fail							*					
15	Power Fail							*					
16	Power Fail							*					
17					18	442		*					
18					32	434		*					
19	7.9	42	0.68	0.05	31	460	45	*					
20					7	370		*					
21					7	444		*					
22					5	446		*					
23					5	414		*					
24					8	360		*					
25	8.2	34	0.33	0.05	5	414	77	*					
26					5	416		*					
27					5	422		*					
28					5	420		*					
29					5	404		*					
30					5	450		*					
31					5	422		*					

All flow data up to November 2005 was lost due to a technical fault in the storage of the data.

Composite Sampler Results 2005

June	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus 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	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
1	8.3	41	0.18	0.05	5	420	52	*					
2					10	406		*					
3					5	480		*					
4					5	468		*					
5					6	462		*					
6					5	484		*					
7					5	442		*					
8	8.3	18	0.04	0.05	8	416	46	*					
9					17	452		*					
10					7	426		*					
11					8	406		*					
12					30	430		*					
13					27	417		*					
14					59	430		*					
15	8.2	44	0.07	0.05	14	420	33	*					
16					5	398		*					
17					5	398		*					
18					52	414		*					
19					31	372		*					
20	Technical Fault							*					
21	Technical Fault							*					
22	Technical Fault							*					
23	8	31	0.24	0.05	10	472	28	*					
24					129	504		*					
25					94	464		*					
26					48	436		*					
27					40	418		*					
28					34	488		*					
29					66	468		*					
30	8.1	73	2.77	0.05	21	392	159	*					
					26	456							

All flow data up to November 2005 was lost due to a technical fault in the stoarge of the data.

Composite Sampler Results 2005

July	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus 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	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
1					23	400		*					
2					5	372		*					
3					5	402		*					
4					5	368		*					
5					15	430		*					
6	7.8	33	0.83	0.05	5	492	45	*					
7					51	390		*					
8					22	350		*					
9					31	372		*					
10	Power Fail							*					
11	Power Fail							*					
12	Power Fail							*					
13	Power Fail							*					
14	8.2	21	0.34	0.05	7	491	40	*					
15	Tech Fault							*					
16	Tech Fault							*					
17	Tech Fault							*					
18					6	428		*					
19					5	41		*					
20	7.9	23	0.04	0.05	5	448	35	*					
21					5	456		*					
22					5	462		*					
23					5	465		*					
24					5	478		*					
25					5	482		*					
26					5	474		*					
27	8.1	10	0.21	0.05	5	448	42	*					
28					6	454		*					
29					5	472		*					
30					5	450		*					
31					5	480		*					

* All flow data up to November 2005 was lost due to a technical fault in the storage of the data.

Composite Sampler Results 2005

Aug	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus 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	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
1					5	470		*					
2					5	474		*					
3	8	10	0.15	0.05	5	470	38	*					
4					5	422		*					
5					5	406		*					
6					5	436		*					
7					11	422		*					
8	Power Failure							*					
9	Power Failure							*					
10	7.6	37	0.32	0.05	5	496	31	*					
11					5	423		*					
12					5	426		*					
13					302	638		*					
14	Sample head disturbed							*					
15	Sample head disturbed							*					
16	7.6	28	0.62	0.05	5	494	40	*					
17	Sample head disturbed							*					
18	Sample head disturbed							*					
19	Sample head disturbed							*					
20	Sample head disturbed							*					
21	Sample head disturbed							*					
22	Sample head disturbed							*					
23	Sample head disturbed							*					
24	7.7	16	0.7	0.05	6	476	58	*					
25					18	456		*					
26					5	488		*					
27					5	500		*					
28					5	452		*					
29					6	504		*					
30					5	488		*					
31	8.2	30	0.39	0.05	5	512	41	*					

* All flow data up to November 2005 was lost due to a technical fault in the stoarge of the data.

Composite Sampler Results 2005

	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus 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	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
Sep													
1					5	474		*					
2					5	434		*					
3					9	448		*					
4					5	484		*					
5					5	486		*					
6					5	468		*					
7	8	10	0.32	0.05	5	486	34	*					
8					5	483		*					
9					5	406		*					
10					5	402		*					
11					5	438		*					
12					5	438		*					
13					5	438		*					
14	8.1	33	0.22	0.05	5	450	36	*					
15					5	332		*					
16					5	372		*					
17					5	436		*					
18					5	240		*					
19					5	432		*					
20					5	428		*					
21	8	20	0.23	0.05	5	460	36	*					
22					5	440		*					
23					12	460		*					
24					6	466		*					
25					5	440		*					
26					5	466		*					
27					5	450		*					
28	8.2	27	0.47	0.05	5	474	37	*					
29					13	440		*					
30					5	410		*					

All flow data up to November 2005 was lost due to a technical fault in the storage of the data.

Composite Sampler Results 2005

Oct	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus 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	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
1					6	436		*					
2					5	444		*					
3					5	454		*					
4					7	444		*					
5	8.1	38	0.39	0.05	12	478	31	*					
6					16	450		*					
7					23	418		*					
8					6	422		*					
9					10	394		*					
10					10	372		*					
11					5	358		*					
12	8.2	33	1.38	0.05	8	424	84	*					
13					10	424		*					
14					8	422		*					
15					26	466		*					
16					8	452		*					
17					5	440		*					
18					9	454		*					
19	8.1	15	0.85	0.05	6	424	48	*					
20					5	378		*					
21					5	360		*					
22					5	398		*					
23					5	402		*					
24					5	268		*					
25					5	38		*					
26	7.9	75	2.19	0.05	5	418	166	*					
27					5	346		*					
28	Batt Down							*					
29	Batt Down							*					
30	Batt Down							*					
31	Batt Down							*					

All flow data up to November 2005 was lost due to a technical fault in the storage of the data

Bord Na Mona Energy Ltd, Boora Group, Leabeg, Tullamore Co Offaly .

Nov	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus 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	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
1	75	54	2.15	0.05	5	228	117	*					
2					10	410		*					
3					43	330		*					
4					18	373		*					
5					5	324		*					
6					10	378		*					
7					10	408		*					
8	7.9	63	1.84	0.05	6	448	152	*					
9					9	392		*					
10					5	390		*					
11					15	424		*					
12					8	351		*					
13					5	404		*					
14					5	442		*					
15	8	17	1.16	0.05	12	428	107	*					
16					7	428		*					
17					5	414		*					
18					14	404		*					
19					5	434		*					
20					7	398		*					
21					5	434		*					
22	7.5	42	1.12	0.05	6	423	61	6874243	288.72	7.70	0.34	41.25	2907.80
23					26	444		6997023				181.92	3106.68
24					5	426		7034273				35.17	2996.60
25					5	430		7473950				37.37	3213.80
26					11	376		7336622				80.70	2758.57
27					10	436		7053288				70.53	3075.23
28	8	45	0.64	0.05	66	462	50	6979035	314.06	4.47	0.35	460.62	3224.31
29					8	426		7426752				59.41	3163.80
30					7	394		8244698				57.71	3248.41

* All flow data up to November 2005 was lost due to a technical fault in the storage of the data.

Composite Sampler Results 2005

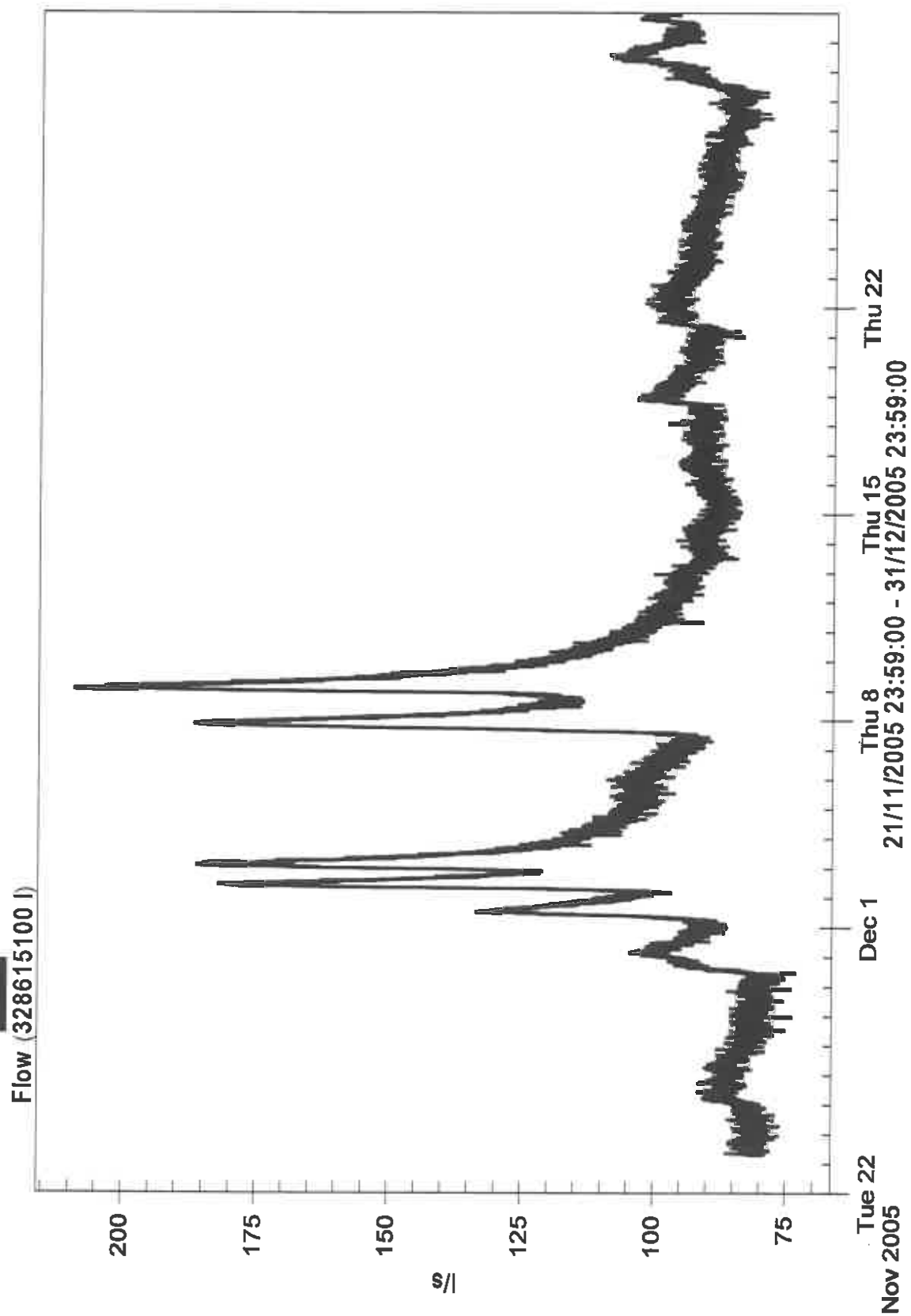
Dec	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus mg/l	Suspended Solids mg/l	Total Solids mg/l	Colour Pt Co units	Flow Daily Total (litres)	COD Kg/Day	Ammonia as Kg/Day	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
1					7	480		9320802				65.25	4473.98
2					13	373		11561210				150.30	4312.33
3					5	344		12244180				61.22	4212.00
4					5	386		9450844				47.25	3648.03
5	7.7	38	1.41	0.05	8	434	87	8894483	337.99	12.54	0.44	71.16	3860.21
6					8	431		8596182				68.77	3704.95
7					8	435		10276770				82.21	4470.39
8					7	330		11347110				79.43	3744.55
9					6	336		13376090				80.26	4494.37
10					5	320		9625630				48.13	3080.20
11					7	426		8619432				60.34	3671.88
12					36	494		8263165				297.47	4082.00
13	8.1	47	1.07	0.05	13	434	71	7891864	370.92	8.44	0.39	102.59	3425.07
14					10	450		7792705				77.93	3506.72
15					6	452		7621540				45.73	3444.94
16					5	454		7870656				39.35	3573.28
17					7	353		7881297				55.17	2782.10
18					5	488		8019094				40.10	3913.32
19					5	442		8295242				41.48	3666.50
20	8.2	33	0.63	0.14	13	386	55	7915454	261.21	4.99	1.11	102.90	3055.37
21					5	448		8089801				40.45	3624.23
22					5	436		8332832				41.66	3633.11
23					5	450		8026479				40.13	3611.92
24					5	500		7932723				39.66	3966.36
25					5	468		7775633				38.88	3639.00
26					5	490		7609321				38.05	3728.57
27					5	485		7542829				37.71	3658.27
28	8.1	24	1.41	0.05	5	480	46	7309757	175.43	10.31	0.37	36.55	3508.68
29					5	485		7638614				38.19	3704.73
30					6	492		8661285				51.97	4261.35
31					5	470		8343976				41.72	3921.67

All flow data up to November 2005 was lost due to a technical fault in the stoarge of the data.

APPENDIX 3

Composite Sampler - Flow Graph

Oughter Composite Flow Rates 2005





Annual Environmental Report 2006 P0500-01

March 2007

Contents

1.0 Introduction

- 1.1 IPC Licence Register No
- 1.2 Name & Location of Site
- 1.3 Brief Description of Activities
- 1.4 Environmental Management of the Company
- 1.5 Environmental Policy Statement

2.0 Summary Information

- 2.1 Emissions to Water Summary
 - 2.1.1 Silt Pond Emissions
 - 2.1.2 Yard Discharges
 - 2.1.3 Composite Sampler Report
 - 2.1.4 Emissions to Water Non-compliance's

2.2 Emissions to Air Summary

- 2.2.1 Dust Monitoring
- 2.2.2 Emissions to Air Non-compliance's

2.3 Waste Arising

- 2.3.1 Non-Hazardous Waste
- 2.3.2 Hazardous Waste

2.4 Energy and Water Consumption

- 2.4.1 Energy Consumption

2.5 Environmental Incidents and Complaints

- 2.5.1 Incidents
- 2.5.2 Complaints

3.0 Management of the Activity

3.1 Environmental Management Programme Report

3.2 Environmental Management Programme Proposal

3.3 Environmental Expenditure

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

4.2 Bunding Programme

4.3 Boiler Combustion Efficiency

4.4 Resource Consumption Summary

4.5 Report on de-silting Programme

4.6 Bog Development and Operational Programme

4.7 Bog Rehabilitation Report

4.8 Archaeological Report

5.0 Summary

Appendix 1: Emissions to Water Monitoring Results. (Bogs)

Appendix 2: Emissions to Water Monitoring Results. (Yards)

Appendix 3: Emissions to Water Monitoring Results. (Composite)

Appendix 4: Emissions to Air Monitoring Results.

Appendix 5: Boiler Efficiency Results

Appendix 6: De-silting Programme Review

1.0 Introduction

1.1 IPPC Licence No

1.2 Name & Location of Site

Name: **Bord na Mona Energy Limited.- Boora Works**

Address: **Leabeg, Tullamore Co Offaly**

Telephone No: **05793 45900**

Contact Name **Jim Harkins**

Position **Regional Manager**

National Grid Reference **E180050 N319540**

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 their way along the fields, milling approximately 15mm of peat from 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 one of the following locations.

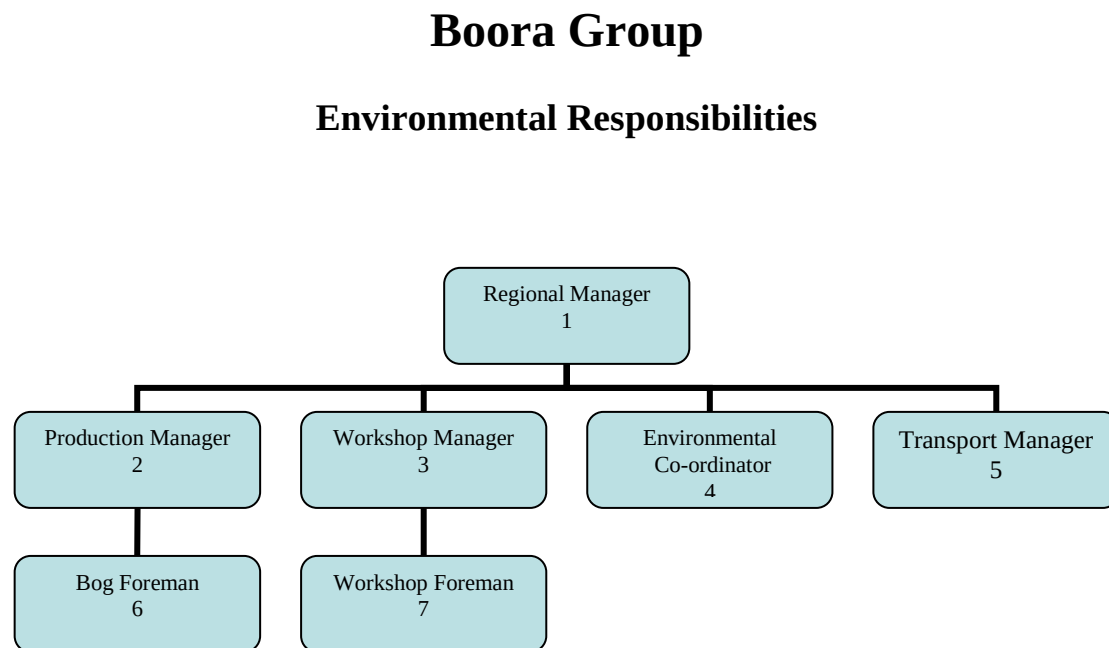
Power station

Horticultural Factory.

Briquette Factory.

1.4 Environmental Management of the Company

The organisational structure within the Boora 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 buisness 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 five different locations. These locations are as follows, Noggus @ SW10, Pollagh @ SW17, Lemonaghan @ SW 19, Derryclure @ SW 28 and Killaun @ SW 31. 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.

pH values were between 7 and 8.4, with normal emission limit values being of the range 6 and 9.

Suspended solids varied from 5mg/l to 23mg/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.

Slightly elevated **Ammonia** levels were detected at Derryclure SW28 in the first, third and fourth quarters and although slightly elevated would not be unusual of waters emanating from peatlands.

COD readings at Killaun SW31 are elevated and if compared with flow values on the same dates, a direct link can be established. In fact in quarters 2 and 3 respective readings of 6.3 and 8 litres per second would indicate almost stagnant water. Sampling will continue at the same locations during 2007. **Total**

Phosphorus levels were all within guidelines. Any proposals to move sampling locations will be sent to the Agency for approval.

Surface water results are contained in Appendix 1

2.1.2 Yard Discharges (Monthly Grab)

Comment

Yard runoff monitoring took place at nine 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 as the catchments are so small.

In general results were normal with the exception of SWE 9 during the September monitoring event. On investigation of that result, it was found that in trying to retrieve a sample, the sample pot was contaminated with debris from the outlet pipe. As a further precaution the oil interceptor at the location was cleaned. As is evident from the graph no samples were available during October and November but a subsequent COD result for December showed an acceptable COD level of 10 mg/l. All the oil interceptors are inspected on a weekly basis. A new oil interceptor was fitted on the runoff from the concrete yard at Monettia workshop.

(SWE 5B) This has been added to the list for inspection and sampling, while sampling will continue at the same locations during 2007. Weekly inspections are carried out at each location on a weekly.

Yard discharge results are contained in Appendix 2

2.1.3 Composite Sampler Report (Weekly - Continuous)

Comment

The composite sampler has been operating at SW 18 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 results were satisfactory with 10 non-compliances being recorded for the period. These were reported to the agency at the time and subsequently closed out. This particular site is influenced by spring water in the vicinity, which greatly increases the dilution factor at the discharge point.

A proposal to relocate the composite sampler during 2007 may be submitted to the agency should a suitable site be identified.

Composite Sample Results are contained in Appendix 3

2.1.4 Emissions to Water Non-compliance's

Type	Non-Compliances	Location / SW Nr
Composite	10	Oughter / SW18
Quarterly Grab	0	
Monthly Yard	NA	
Totals	10	

Note: Emission Limit Value = 35mg/litre

Corrective Action Reports were submitted to EPA for all non-compliances.

2.2 Emissions to Air

2.2.1 Dust Monitoring

Comment

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

The monitoring locations were as follows, Clongawney DM01, Pollagh DM02, and Derryclure DM01 – DM04. Slightly elevated results were detected during the June – July monitoring event. This can be expected as June was the driest month of 2006 and production would have been most intense. It should also be noted that all results were below the emission value of 350 mg/m²/day set out in the licence. It should be noted that there have been no complaints at Clongawney and Pollagh for a number of years and since Tree planting and Grassing occurred at Derryclure, there have been no complaints from residents in the locality. All Haku piles of stock peat has also been moved from the sensitive location in Derryclure. Sampling will continue at the same locations during 2007.

Dust Sample Results are contained in Appendix 4

2.2.2 Emissions to Air Non-compliance's

Location / DM Nr	Non-Compliances
DM01	0
DM02	0
DM03	0
DM04	0
DM05	0
DM06	0
Total	0

2.3 Waste Arising

2.3.1 Non-Hazardous Waste

Non Hazardous Waste Data

Licence: P0500-01

Works: Boora

Type	Tonnes	EWC Code	Contractor	Licence Nr
Skips	21.48	20 03 01	AES	053/OY/39/02
Wheelie Bins	5.40	20 03 01	AES	053/OY/39/02
Polythene	0.00	02 01 04	Leinster Environmentals	WP 2004/30
Scrap Steel	77.21	17 04 07	Hammond Lane	050/OY/162/04
Timber Pallets	0.00	15 01 02	Kiawa Ltd	WP/TN/24
Silt Pond Cleanings	404.94	01 01 02	Bord na Mona	IPPC P 0500
Peat Screenings	52.00	01 01 02	Bord na Mona	IPPC P 0500
Baled Cardboard	0.32	15 01 01	AES	053/OY/39/02
Totals	561.35			

2.3.2 Hazardous Waste

Hazardous Waste Data

Licence: P0500-01

Works: Boora

Type	Tonnes	EWC Code	Contractor	Licence Nr	Destination
Waste Oil	26.28	13 02 05	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	1.00	16 01 07	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oily Rags	0.00	15 02 02	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Waste Grease	0.00	13 08 99	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Lead Acid Batt	1.66	16 06 01	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Fluorescent Tubes	0.00	20 02 21	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Parts Wash	2.2	11 01 13	Safety Kleen, Tallaght, Dublin	99-1	Dublin
Asbestos	0.00	17 06 05			
Total	31.14				

2.4 Energy and Water Consumption

2.4.1 Energy

Energy Consumption

Licence: P0500-01				
Works: Boora				
Units	Diesel (Litres)	Petrol (Litres)	Electricity (Units)	Peat Briquettes (Tonnes)
Totals	1,053,929	4,001		14.90
MW Hours	10,320	36.17	740.00	74.50
Total MW Hours	11,171			

Energy consumption is down 26% on 2005. This is because production operations were reduced due to high stock levels and also one of our sales outlets (West Offaly Power) was off load for six months. Water is not used in our production process, therefore usage is minimal.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

We had no incidents during 2006.

2.5.2 Complaints

Environmental Complaints	2006

Licence: P0500-01

Works: Boora

	Number
Complaints	2
Requiring corrective action	1
Category	
Water	2
Air	
Procedural	
Miscellaneous	
Total	2

3.0 Management of the Activity

3.1 Environmental Management Programme Report 2006

Achievement of Objectives & Targets

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. No new seasonal employees were taken on in 2006 and no training took place Hydraulic Harrows. Three new hydraulic harrows were put into operation in 2006 in dust sensitive areas making a total of six. These reduce significantly the amount of dust generated. Headland Peat Collection. Approx 2,000 tonnes of headland peat was collected in areas 13/14 as part of the Haku production system. We plan to extend this to Area 16 in 2007.
Project 2: Minimisation of suspended solids	On Site Inspections. Project didn't materialise. Will commence at start of production 2007.
Project 3: Effective spill leak management of mobile fuelling units.	On Site Inspections. Project didn't materialise. Will commence at start of production 2007. Service trains were inspected in 2006 as per Condition 9.1.12 of our IPC Licence.
Project 4: Reuse of silt pond waste.	Trials. 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.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Polythene is being rolled into bales as it is removed from stockpiles and brought to hard stands for collection and recycling. None was removed offsite in 2006.
Project 6: Provision of measures to protect Dust Sensitive Areas.	Planting. A buffer area in Derryclure (Dust Sensitive Area) was seeded with grass and fertilised in Oct 06.

3.2 Environmental Management Programme Proposal for 2007

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Copy environmental video to disk and distribute more widely. It is planned to carryout refresher training on all production workers in 2007. Hydraulic Harrows. Continue to supply hydraulic harrows. Prioritising dust sensitive locations. We plan to add two hydraulic harrows in 2007 making a total of nine. Headland Peat Collection. 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. Extend collection to area 16 in 2007.
Project 2: Minimisation of suspended solids	On Site Inspections. 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.
Project 3: Effective spill leak management of mobile fuelling units.	On Site Inspections. 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.
Project 4: Fire Prevention.	Fire Patrols. 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.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing. Approx 156 bales of polythene has been removed offsite for recycling to-date by Leinster Environmental Ltd And Appex Ltd
Project 6: Provision of measures to protect Dust Sensitive Areas.	Planting. Ongoing Planting is ongoing as required, with areas in the periphery of production bogs that are being developed for housing being prioritised. We plan to continue the dust monitoring in the three dust sensitive areas (Deryclure/Pollagh/Clongawney).

3.3 Environmental Expenditure

Environmental Expenditure

Licence:	P0500-01

Works:	Boora

Description	Cost €
Capital Costs, poly strippers etc	38,375
Silt Control, pond maintenance, rivers etc	149,228
Analytical & Consultancy Costs, lab costs	11,904
EPA Fees, annual contribution	7,584
Bog Rehabilitation,	64,000
Waste Recycling	43,144
Administration	67,600
Total	€381,835

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

We may submit a proposal to the Agency later in 2007 on location changes.

4.2 Bunding Programme

Bund integrity tests were carried out on all bunds in Dec 06 /Jan 07 by Mr B Hoey Civil Engineer. Two of the eight bunds failed the tests. Remedial will be carried out on the failed bunds and they will be retested by July 07. Results of tests with photographic evidence are held on file at Boora.

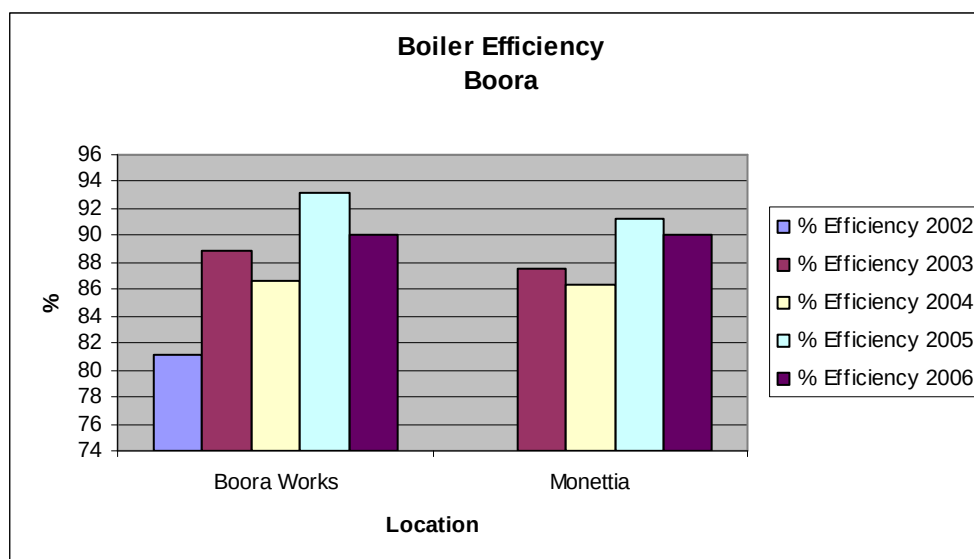
4.3 Boiler Combustion Efficiency

Boiler Emissions

Licence: P0500-01

Works: Boora

Boiler Location	% Efficiency 2002	% Efficiency 2003	% Efficiency 2004	% Efficiency 2005	% Efficiency 2006
Boora Works	81.2	88.9	86.7	93.2	90
Monettia	na	87.5	86.3	91.3	90.1



There are two Oil fired boilers in operation, one at Main Works and one at Monettia Workshop which was commissioned in 2003. These were tested in Nov 06.

Actual Efficiency Results are attached in Appendix 5.

4.4 Resource consumption summary

Resource Consumption		
Licence: P0500-01		
Works: Boora		
Product	Tonnes Produced	Tonnes Sold
Milled Peat	401,899	476,891
Moss	66,880	34,713
Turf	580	580
Other	-	-
Totals	469,359	512,184

Proposed Production 2007	
Licence: P0500-01	
Works: Boora	
Product	Proposed Target
Milled Peat	390,000
Moss	0
Turf	500
Other	0
Totals	390,500

4.5 De-Silting Report

The cleaning roster is based on the fortnightly inspection of ponds. Some ponds were cleaned once during 2006 as from inspection they did not require a second cleaning. The production catchments at some ponds are also declining because of the bogs being cut away.

There was no production in the following areas, comprising of approx. 2,200 Acres in 2006, which resulted in reduced levels of silt;

- Derries
- Pollagh
- Oughter
- Killaranny
- Killaun
- Galross
- Bellair South

The estimated weight of dry matter removed during cleaning was 405 tonne.

Silt Pond Cleaning Programme is contained in Appendix 6

4.6 Bog Development and Operational Programme

During 2006, development work continued in Killaun and also in North Bellair, which was set aside for some time. It is expected that development work will be completed in these two areas in 2007.

Due to high stocks of peat, production will be reduced to 390,000 tonnes (4,964 acres) in 2007.

No production will take place in Oughter /Killaranny/Killaun/Monettia/Bellair North/Bellair South. - Total acres 3,100

4.7 Bog Rehabilitation Report

Biomass Trials

In 2006 the biomass trial area for Reed Canary Grass was extended to four hectares. One hectare of Miscanthus was also planted for trial purposes.

Walking Routes

All of the interpretation work for the walking routes is now finalised with map-boards, information posters and directional markers erected.

Sculpture Park

Two new sculpture pieces, one by an American artist and one by an Irish artist were completed in September 06. Both pieces are based on interpretation of the former cooling towers at Ferbane power Station.

Partridge Project

The formal handover of 460 acres of cutaway at Tumduff and East Boora from Bord Na Mona to the National Parks and Wildlife Service was completed.

The final land use map can now be finalised for East Boora as far as the Lough Boora site.

4.8 Archaeological Report

No work was carried out during 2006.

5.0 Summary

Compliance Levels for 2006 were good. Employees are continually reminded through training, of the importance of good house-keeping and improved procedures and practices to minimise effects on the environment. Continuous improvement is our aim and constant vigilance is required from all staff in order to bring this about.

During year 2006, expenditure on Environmental work was € 381,835

Plans for 2007;

Training will continue with particular emphasis on Dust Sensitive Areas and ensuring that all new seasonal staff are trained.

Two new Hydraulic Harrows will be added to production in 2007, mainly in dust sensitive areas.

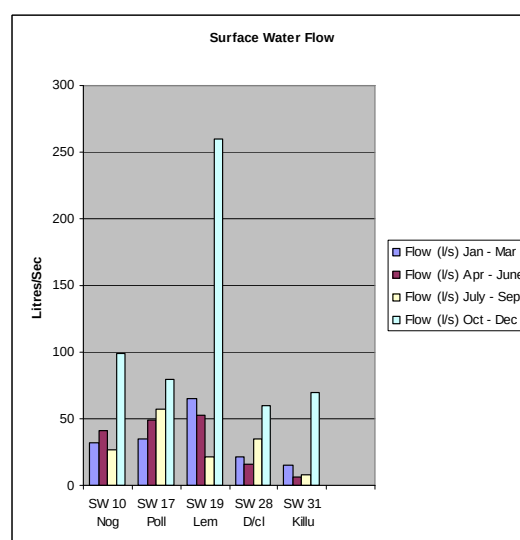
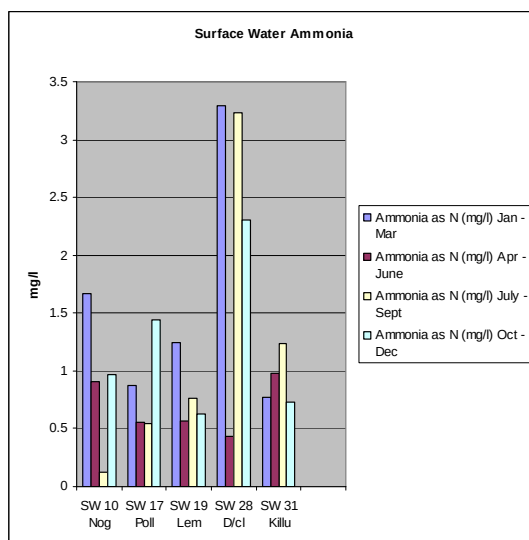
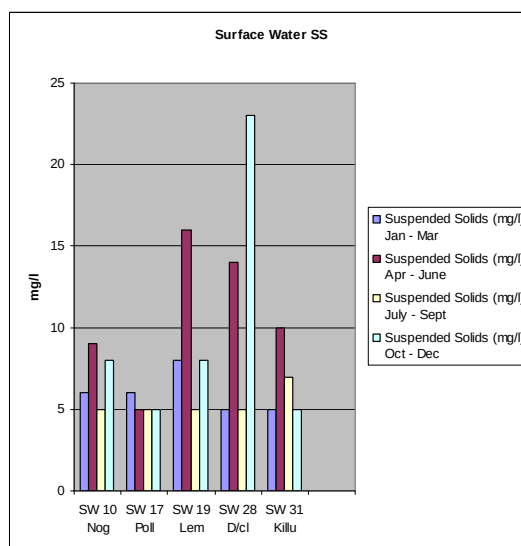
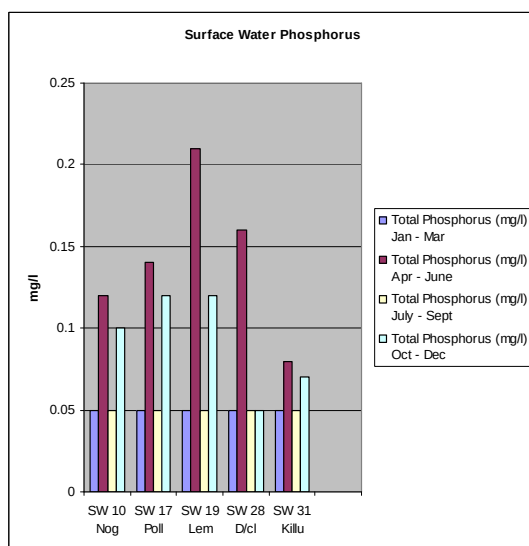
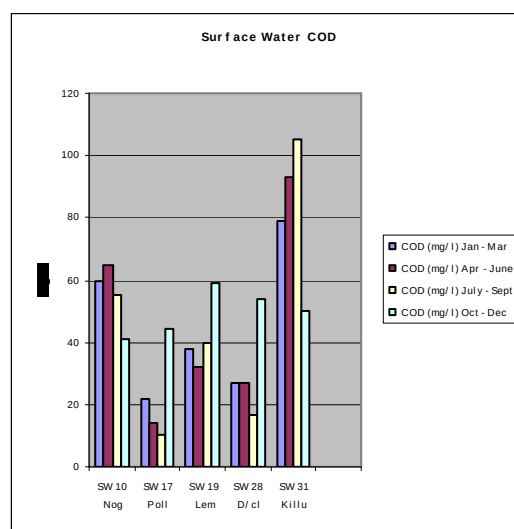
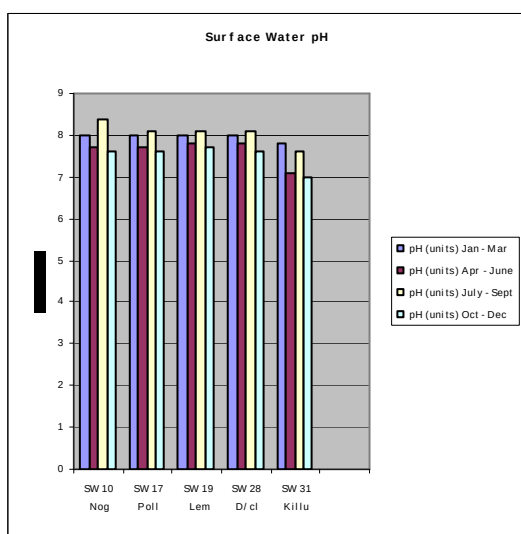
We recycle all waste products where possible such as Oil, Filters, Batteries, Fluorescent Tubes, Metal, Polythene and recently Baled Cardboard. We will seek to expand the level of recycling where possible. Towards this end a recycling area will be set out at the main workshop yard with space and signage for the various materials.

Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management of the River Barrow.

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

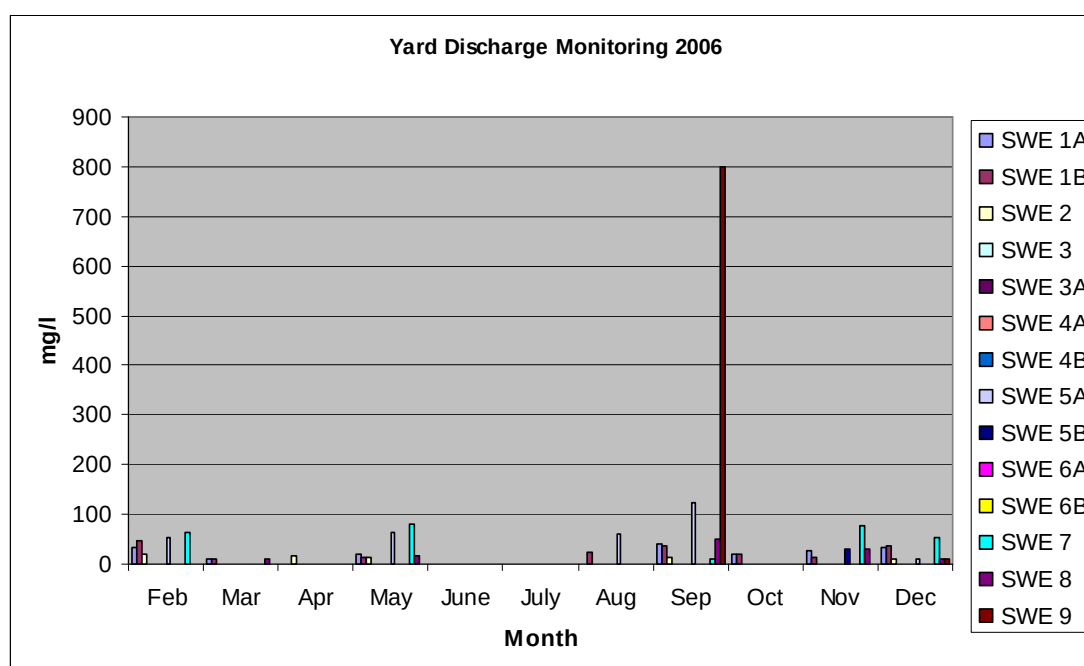
Yard Discharge Results

Licence: P0500-01

Works: Boora

Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9
Jan	22	24	NF				NF	NF				76		
Feb	33	46	21				NF	54				63		
Mar	10	10	NF				NF	NF				NF	10	
Apr	NF	NF	16				NF	NF				NF	NF	
May	20	15	14				NF	65				80	18	
June	NF	NF	NF				NF	NF				NF	NF	
July	NF	NF	NF				NF	NF				NF	NF	
Aug	NF	25	NF				NF	59				NF	NF	
Sep	41	36	13				NF	123				10	49	798
Oct	19	20	NF				NF	NF				NF	NF	NF
Nov	26	13	NF				NF	NF	29			78	29	NF
Dec	35	36	10				NF	10	NF			54	10	10

Note: NF denotes no flow at emission point on day of sampling
 SWE 5B Start Nov, SWE 8 Start March, SWE 9 Start Sep



APPENDIX 3

Surface Water Discharge Monitoring Results Composite

APPENDIX 4

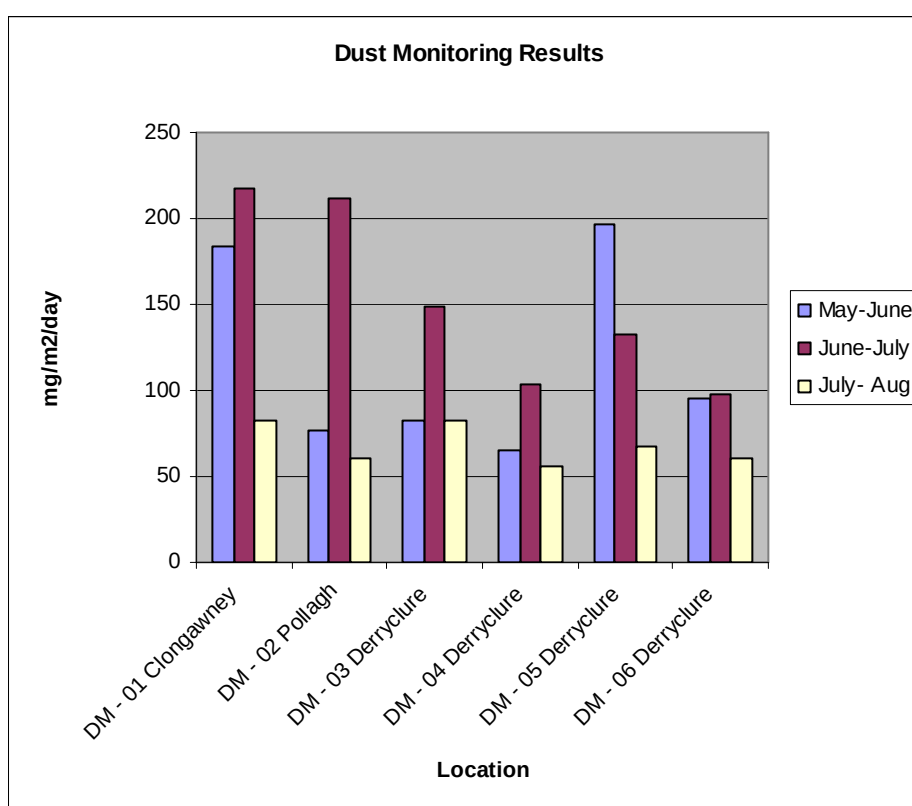
Dust Monitoring Results.

Dust Monitoring Results

Licence: P0500-01

Works: Boora

Sample Period	DM - 01 Clongawney	DM - 02 Pollagh	DM - 03 Derryclure	DM - 04 Derryclure	DM - 05 Derryclure	DM - 06 Derryclure
May-June	184	77	83	65	196	95
June-July	218	212	149	103	132	98
July- Aug	83	61	83	56	67	61



APPENDIX 5

Boiler Efficiency Results

APPENDIX 6

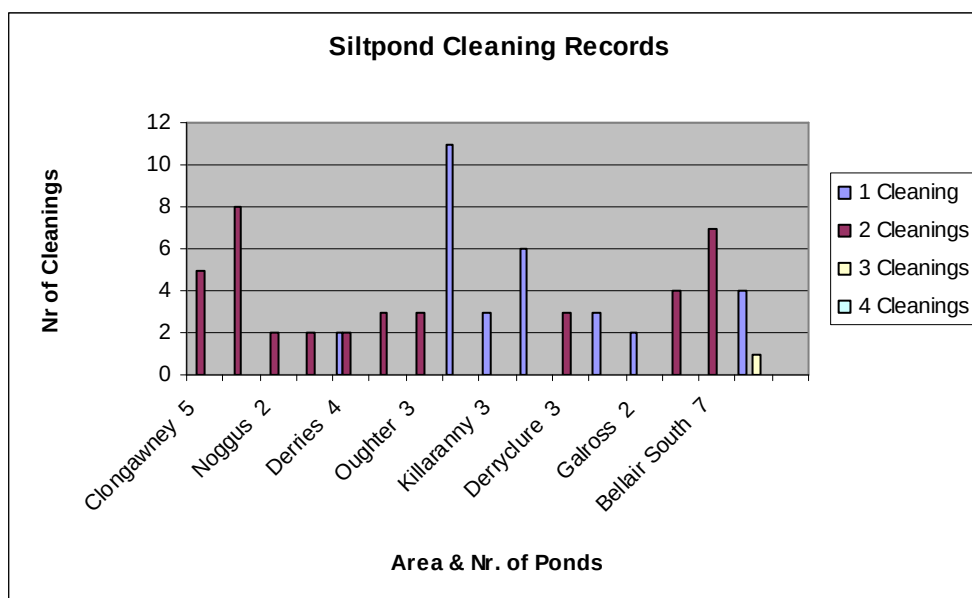
De-silting Programme Review.

Siltpond Cleaning Programme

IPPC Licence: P0500-01

Works: Boora

Bog Area & No. of Ponds	1 Cleaning	2 Cleanings	3 Cleanings	4 Cleanings
Clongawney 5		5		
Drinagh 8		8		
Noggus 2		2		
West Boora 1		2		
Derries 4	2	2		
Torraun/Pollagh 3		3		
Oughter 3		3		
Leamonaghan 11	11			
Killaranny 3	3			
Monettia 6	6			
Derryclure 3		3		
Killaun 3	3			
Galross 2	2			
Derrinboy 4		4		
Bellair South 7		7		
Bellair North 5	4		1	





Annual Environmental Report 2007 P0500-01

March 2008

Contents

1.0 Introduction

- 1.1 IPC Licence Register No
- 1.2 Name & Location of Site
- 1.3 Brief Description of Activities
- 1.4 Environmental Management of the Company
- 1.5 Environmental Policy Statement

2.0 Summary Information

- 2.1 Emissions to Water Summary
 - 2.1.1 Silt Pond Emissions
 - 2.1.2 Yard Discharges
 - 2.1.3 Composite Sampler Report
 - 2.1.4 Emissions to Water Non-compliance's

2.2 Emissions to Air Summary

- 2.2.1 Dust Monitoring
- 2.2.2 Emissions to Air Non-compliance's

2.3 Waste Arising

- 2.3.1 Non-Hazardous Waste
- 2.3.2 Hazardous Waste

2.4 Energy and Water Consumption

- 2.4.1 Energy Consumption

2.5 Environmental Incidents and Complaints

- 2.5.1 Incidents
- 2.5.2 Complaints

3.0 Management of the Activity

3.1 Environmental Management Programme Report

3.2 Environmental Management Programme Proposal

3.3 Environmental Expenditure

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

4.2 Bunding Programme

4.3 Boiler Combustion Efficiency

4.4 Resource Consumption Summary

4.5 Report on de-silting Programme

4.6 Bog Development and Operational Programme

4.7 Bog Rehabilitation Report

4.8 Archaeological Report

5.0 Summary

Appendix 1: Emissions to Water Monitoring Results. (Bogs)

Appendix 2: Emissions to Water Monitoring Results. (Yards)

Appendix 3: Emissions to Water Monitoring Results. (Composite)

Appendix 4: Emissions to Air Monitoring Results.

Appendix 5: De-silting Programme Review

Appendix 6: AER & PRTR Data

1.0 Introduction

1.1 IPPC Licence No

1.2 Name & Location of Site

Name: **Bord na Mona Energy Limited.- Boora Works**

Address: **Leabeg, Tullamore Co Offaly**

Telephone No: **05793 45900**

Contact Name **John Mc Niff**

Position **Resource Manager Blackwater /Boora**

National Grid Reference **E180050 N319540**

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 their 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 one of the following locations.

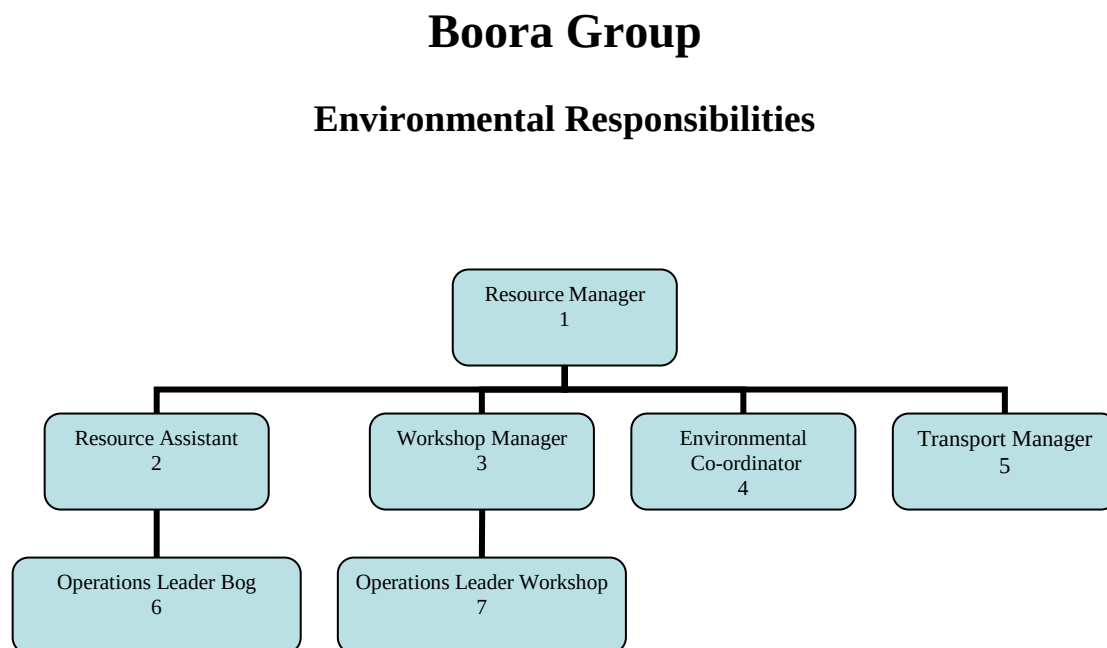
Power station

Horticultural Factory.

Briquette Factory.

1.4 Environmental Management of the Company

The organisational structure within the Boora 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 Ireland's 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 five different locations. These locations were as follows, Noggus @ SW10, Pollagh @ SW17, Lemonaghan @ SW 19, Derryclure @ SW 28 and Killaun @ SW 31.

From July the sample points were:

Noggus @ SW10, Bellair @ SW34 Clongawney @ SW6 Derryclure @ SW 28 and Killaun @ SW 31.

A submission regarding these changes was made to the agency.

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.

pH values were between 6.4 and 8.3, with normal emission limit values being of the range 6 and 9. In general pH values remained constant throughout the monitoring regime.

Suspended solids varied from 5mg/l to 43mg/l and would depend on activities (piping, ditching) etc in the catchments at the time of sampling. The licence limit of 35mg/l was exceeded on one occasion, at two separate locations but did not constitute a non compliance as results were below 105 mg/l. The remaining results were very satisfactory. Slightly elevated results in the 3rd quarter can be attributed to July and August being the two wettest months of 2007.

Ammonia levels ranged from 0.21 mg/l to 5.34 mg/l. The I/PV for A3 waters is of the range 4mg/l. It is however not unusual for surface waters emanating from production peatlands to be slightly elevated.

COD readings were slightly elevated during the reporting period, with results for the 3rd quarter being consistently elevated. The I/PV for A3 waters is of the range 40mg/l. All locations will be watched closely and any continuing elevated COD trends will be investigated. Sampling will continue at the same locations during 2007.

Flow monitoring results showed increased flow at SW10, SW19 and SW28 during the 1st quarter monitoring event, this increased flow seemed to have a slight impact on suspended solids results for that period, but, as stated above did not create a non compliance.

Total Phosphorus results were elevated at SW28 3rd quarter 2007. All other results were consistently low during monitoring events, including those in the 1st, 2nd and 4th quarters at SW28.

Surface Water Results are attached in Appendix 1.

2.1.2 Yard Discharges (Monthly Grab)

Comment

Yard runoff monitoring took place at fourteen 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 as the catchments are so small.

In general results were normal with the exception of

- (a) SWE 9 during the May monitoring period. Following this all oil interceptors were cleaned
- (b) SWE 6A and 6B during November. Following these results Bio Tubes (absorbent pillows) were fitted to these interceptors. All oil interceptors will be cleaned in 2008.

Yard discharge results are contained in Appendix 2

2.1.3 Composite Sampler Report (Weekly - Continuous)

Comment

The composite sampler operated at SW 18 from Jan to 5/6/07 and was then relocated to SW 7 (Drinagh). A submission for relocation was reported to the agency.

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 results were very satisfactory with 3 non-compliances being recorded for the period. These were reported to the agency at the time and subsequently closed out.

Composite Sample Results are contained in Appendix 3

2.1.4 Emissions to Water Non-compliance's

Type	Non-Compliances	Location / SW Nr
Composite	1 2	Oughter SW 18 Drinagh SW 7
Quarterly Grab	0	
Monthly Yard	NA	
Totals	3	

Note: Emission Limit Value = 35mg/litre

Corrective Action Reports were submitted to EPA for all non-compliances.

2.2 Emissions to Air

2.2.1 Dust Monitoring

Comment

Dust monitoring was carried out on four occasions between May and August. Each monitoring event lasted between 28 and 32 days and the Bergerhoff method of analysis was used.

The monitoring locations were as follows, Clongawney DM01, Pollagh DM02, and Derryclure DM03.

The May sample at Derryclure was sabotaged at the site- (Bottle and stand thrown down).

Slightly elevated results were detected at Derryclure during the June – July monitoring event. However all results were below the emission value of 350 mg/m²/day set out in the licence.

Sampling will continue at the same locations during 2008.

Dust Sample Results are contained in Appendix 4

2.2.2 Emissions to Air Non-compliance's

Location / DM Nr	Non-Compliances
DM01	0
DM02	0
DM03	0
DM04	0
Total	0

2.3 Waste Arising

2.3.1 Non-Hazardous Waste

Non Hazardous Waste Data

Licence: P0500-01

Works: Boora

Type	Tonnes	EWC Code	Contractor	Licence Nr
Skips (Municipal)	14.3	20 03 01	AES	053/OY/39/02
Wheelie Bins	5.40	20 03 01	AES	053/OY/39/02
Polythene	187.98	02 01 04	Leinster Environmentals	WP 2004/30
Polythene	29.28	02 01 04	Apec	205/2005
Scrap Steel	202.98	17 04 07	Hammond Lane	050/OY/162/04
Timber Pallets	5.76	15 01 02	C J Sheeran Ltd	189/oy/132/04
Silt Pond Cleanings	438.10	01 01 02	Bord na Mona	IPPC P0 500
Peat Screenings	91.5	01 01 02	Bord na Mona	IPPC P0 500
Baled Cardboard	0.30	03 03 08	AES	053/OY/39/02
Paper	27.69	03 03 08	Security in Shredding	219(2)/oy/490/06
Totals	1,003.29			

There was a backlog of paper shredding carried out this year

2.3.2 Hazardous Waste

Hazardous Waste Data

Licence:P0500-01

Works: Boora

Type	Tonnes	EWC Code	Contractor	Licence Nr	Destination
Waste Oil	15.00	13 02 05	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	1.00	16 01 07	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oily Rags	0.00	15 02 02	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Waste Grease	1.40	13 08 99	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Lead Acid Batt	2.63	16 06 01	Returnbatt Ltd	WO 105-01	Kildare
Fluorescent Tubes	0.00	20 02 21	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Parts Wash	0.18	11 01 13	Safety Kleen, Tallaght, Dublin	99-1	Tallaght
Electronic waste	1.44	16 02 13	KMK Metals	113-1	Tullamore
Fire ext powder	0.0725	01 04 07	Apex Fire	192-1	Rathcoole
Total	21.72				

2.4 Energy and Water Consumption

2.4.1 Energy

Energy Consumption

Licence: P0500-01				
Works: Boora				
Units	Diesel (Litres)	Petrol (Litres)	Electricity (Units)	Peat Briquettes (Tonnes)
Totals	924061	5707	730759	16.21
MW Hours	9048.8	51.59103	730.759	81.05
Total MW Hours	9912.2			

Energy consumption is down 11.2% on 2006. This is because production operations were reduced due to high stock levels and also only 86% of peat production target was achieved.

Water is not used in our production process, therefore usage is minimal.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

We had no incidents during 2007.

2.5.2 Complaints

Environmental Complaints	2007

Licence: P0500-01
Works: Boora

	Number
Complaints	0
Requiring corrective action	0
Category	
Water	0
Air	
Procedural	
Miscellaneous	
Total	0

3.0 Management of the Activity

3.1 Achievement of Objectives & Targets 2007

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Copy environmental video to disk and distribute more widely. All new employees will be trained during the year. Status The training video was successfully transferred onto DVD and distributed to all Licence holders. The DVD was also edited to include new improved poly stripping and rolling techniques. In total 37 personnel received training in 2007. Hydraulic Harrows. Continue to supply hydraulic harrows. Prioritising dust sensitive locations. There is one Hydraulic Harrow in operation at the moment we will continue to monitor the situation regarding introducing any more. Status No hydraulic harrows were introduced in 2007. Headland Peat Collection. 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. Status As the production season was greatly hampered by inclement weather, July 114.9mm and August 119.6mm of rainfall, headland peat dust was not an issue. However in areas where HAKU production methods are used, headland peat was collected as part of the production process.
Project 2: Minimisation of suspended solids	On Site Inspections. 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. Status A comprehensive internal audit took place, which proved very successful. Follow up audits were subsequently carried out to ensure that initial findings were addressed and closed out.
Project 3: Effective spill leak management of mobile fuelling units.	On Site Inspections. 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.

	Status In conjunction with the above, the fitter at each location audited was present to inspect the service train. Any repairs that were required were identified and rectified.
Project 4: Fire Prevention.	Fire Patrols. 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. Status The fire prevention plan was communicated to all personnel
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing. Status During the year a total of 217 tonnes of polythene has been sent for recycling to Apec Plastics Co. Kildare and Leinster Environmentals, Dundalk.
Project 6: Provision of measures to protect Dust Sensitive Areas.	Planting. Planting is ongoing as required, with areas in the periphery of production bogs that are being developed for housing being prioritised. Status No planting took place in 2007.

3.2 Environmental Management Programme Proposal 2008

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Hydraulic Harrows. There are two new Hydraulic Harrows programmed for delivery for 2008 to be used in Dust Sensitive Locations. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations. A new mobile Haku Harvester is programmed for delivery for 2008/09 which will include dust sensitive headlands in its operations.
Project 2: Waste Management	On Site Inspections. A full programme of internal audits will be carried out as soon as production commences. This will be an annual exercise with the 2008 audit placing more emphasis on waste management.
Project 3: Minimisation of Suspended Solids.	Training. Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.
Project 4: Effective spill leak management of mobile fuelling units.	Research and Development. The identification and ultimately the introduction of mobile fuelling units which will enhance the spill / leak management of fuel oils. Increased bund provisions are planned for 2008, as well as two new fuel service wheeled wagons which contain banded tanks. In addition to this, one new rail operated Fuel Service Wagon will be introduced in Boora.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.
Project 6: Provision of measures to protect Dust Sensitive Areas.	Planting. Ongoing Planting is ongoing as required, with areas in the periphery of production bogs that are being developed for housing being prioritised.

3.3 Environmental Expenditure

Environmental Expenditure

Licence: P0500-01

Works: Boora

Description	Cost €
Capital Costs, poly strippers etc	22,000
Silt Control, pond maintenance, rivers etc	114,960
Analytical & Consultancy Costs, lab costs	11,971
EPA Fees, annual contribution	7,245
Bog Rehabilitation,	72,000
Waste Recycling	35,200
Administration	69,200
Total	332,576

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

Sampling locations will be as those in 2007.

4.2 Bunding Programme

Bund integrity tests were carried out on all bunds in Dec 06 /Jan 07 by Mr B Hoey Civil Engineer. Two of the eight bunds failed the tests. Remedial work was carried out on the failed bunds and one was retested and passed (Briquette Factory Area tank)

Remedial work was carried out on the other failed bund (Monettia) which did not prove successful and a contractor is now appointed to re-floor the bund. This will require lifting out the fuel tank. When complete, it will be retested. Results of tests with photographic evidence will be held on file at Boora.

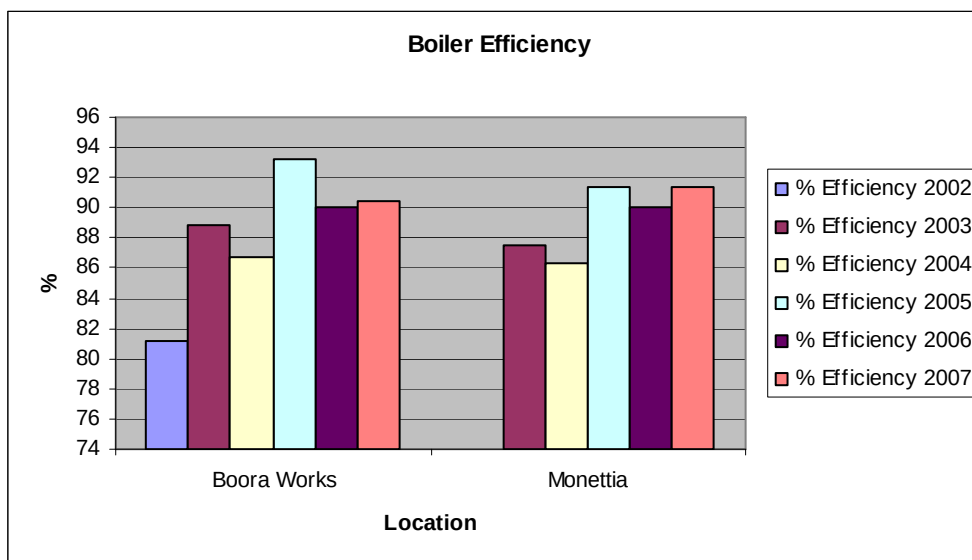
4.3 Boiler Combustion Efficiency

Boiler Emissions

Licence: P0500-01

Works: Boora

Boiler Location	% Efficiency 2002	% Efficiency 2003	% Efficiency 2004	% Efficiency 2005	% Efficiency 2006	% Efficiency 2007
Boora Works	81.2	88.9	86.7	93.2	90	90.4
Monettia	na	87.5	86.3	91.3	90.1	91.3



There are two Oil fired boilers in operation, one at the Main Works and one at Monettia Workshop. Monettia boiler was installed in 2003.

Boiler efficiency tests were carried out in Dec 07 and the test reports are on file in Boora.

4.4 Resource consumption summary

Resource Consumption		
Licence: P0500-01		
Works: Boora		
Product	Tonnes Produced	Tonnes Sold
Milled Peat-(Energy)	330,547	444,809
Moss Peat-(Hort)	27,000	64,941
Sod Turf-(Energy)	300	300
Other	-	-
Totals	357,847	510,050

Proposed Production 2008	
Licence: P0500-01	
Works: Boora	
Product	Proposed Target
Milled Peat-(Energy)	371,574
Moss Peat-(Hort)	101,500
Sod Turf-(Energy)	300
Other	0
Totals	473,374

4.5 De-Silting Report

The cleaning roster is based on the fortnightly inspection of ponds. Some ponds were cleaned only once during 2007, as inspections dictated, they did not require a second cleaning.

The production catchments at some ponds are also declining, due to the bogs being cut away.

There was no production in the following areas, comprising of approx. 3,800 Acres in 2007, which resulted in reduced levels of silt;

Oughter

Killaranny

Killaun

Bellair South

Bellair North

Monettia

The estimated weight of dry matter removed during cleaning was 438 tonne.

Silt Pond Cleaning Programme is contained in Appendix 5

4.6 Bog Development and Operational Programme

During 2007, development work continued in Killaun and also in North Bellair, which was set aside for some time. Development work is now almost complete in these two areas.

Due to high stocks of peat, production will be reduced to 473,000 tonnes (5,939 acres) in 2008.

No production will take place in the following areas;

Oughter /Killaranny/Killaun//Bellair North/Bellair South. - Total acres 2,700

4.7 Bog Rehabilitation Report

Sculpture Park

A new outdoor sculpture piece titled "The Pavilion" was erected in 2007. The walking paths around the Walking Park were all upgraded to suit "Access for All" purposes.

Partridge Project

The National parks and Wildlife project was extended onto the new areas of cutaway bogland acquired in 2006 with new areas planted for arable cover crops..

Loch an Dochas

This is a small lake with angling facilities for people with disabilities. The lake was drained ,deepened and extended to cover 1 Ha of water. The pathways, fishing stands, car park and seating were all upgraded in 2007.

Native woodland scheme

A remnant of old bogwood at Clongawney bog “Maddens Wood”, has been approved for rehabilitation under “The Native Woodland Scheme”. Work will proceed on this in 2008

4.8 Archaeological Report

Lough Boora Mesolithic Site

Two interpretation boards relating to the archaeological history of the site were erected there in 2007 and public walkway access to this site is now opened up.

Other than this no work was carried out during 2007.

5.0 Summary

Compliance Levels for 2007 were good. Employees are continually reminded through training, of the importance of good house-keeping and improved procedures and practices to minimise effects on the environment. Continuous improvement is our aim and constant vigilance is required from all staff in order to bring this about.

During year 2007, expenditure on Environmental work was € 332,576
Plans for 2008;

Training will continue with particular emphasis on Dust Sensitive Areas and ensuring that all new seasonal staff are trained.

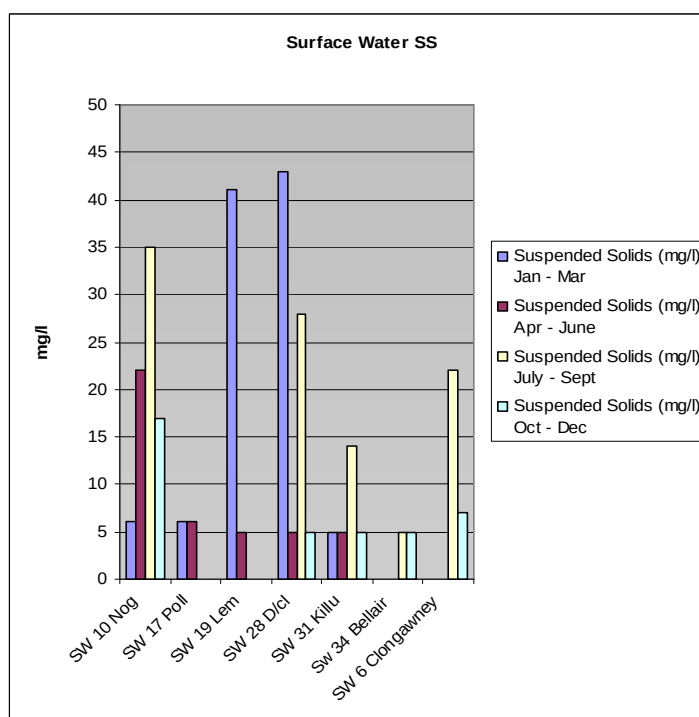
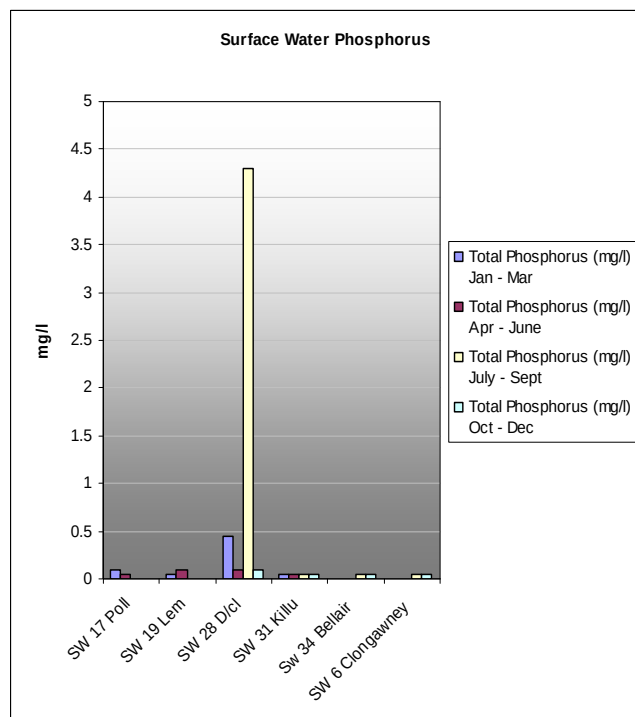
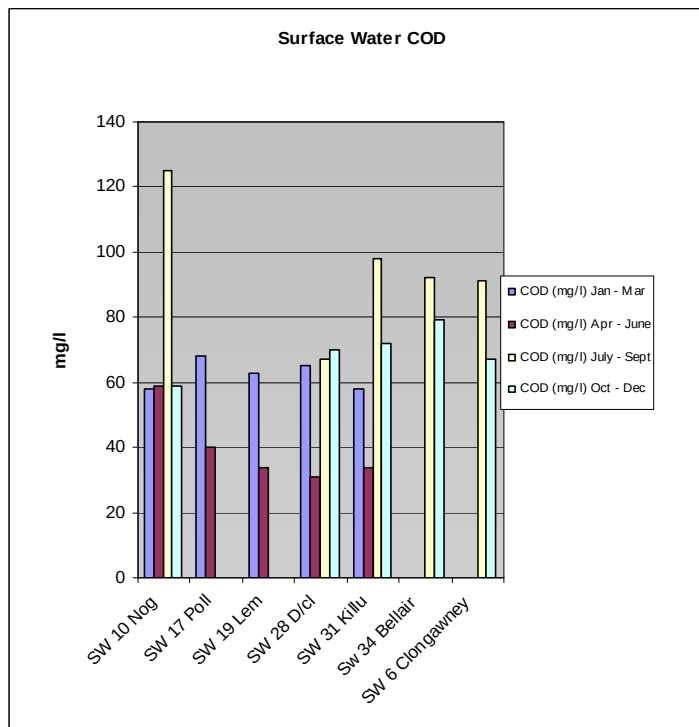
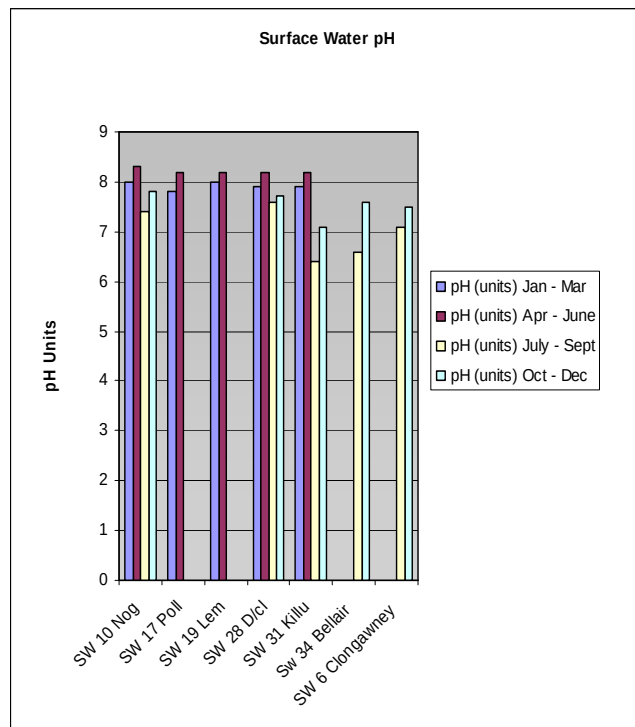
We recycle all waste products where possible such as Oil, Filters, Batteries, Fluorescent Tubes, Metal, Polythene, Wood, Plastic swamp shoes and Baled Cardboard/Plastic. We will seek to expand the level of recycling where possible. Towards this end a recycling area is set out at the main workshop yard with space allocated for the various materials.

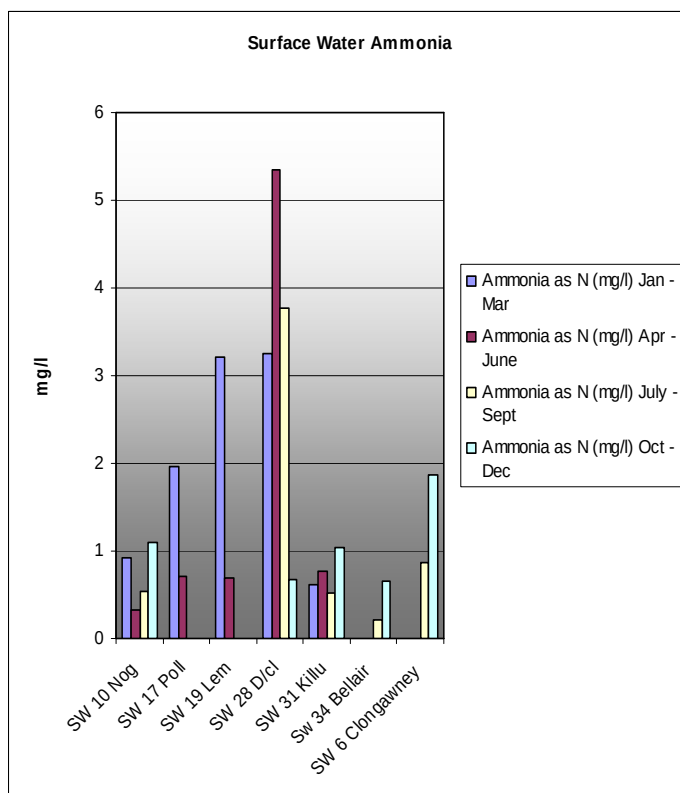
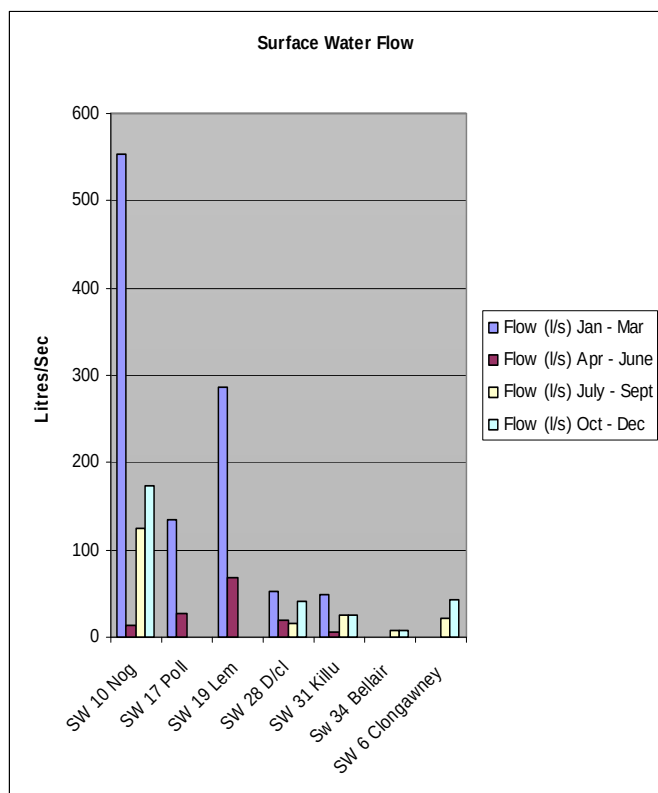
Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management of the River Barrow.

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

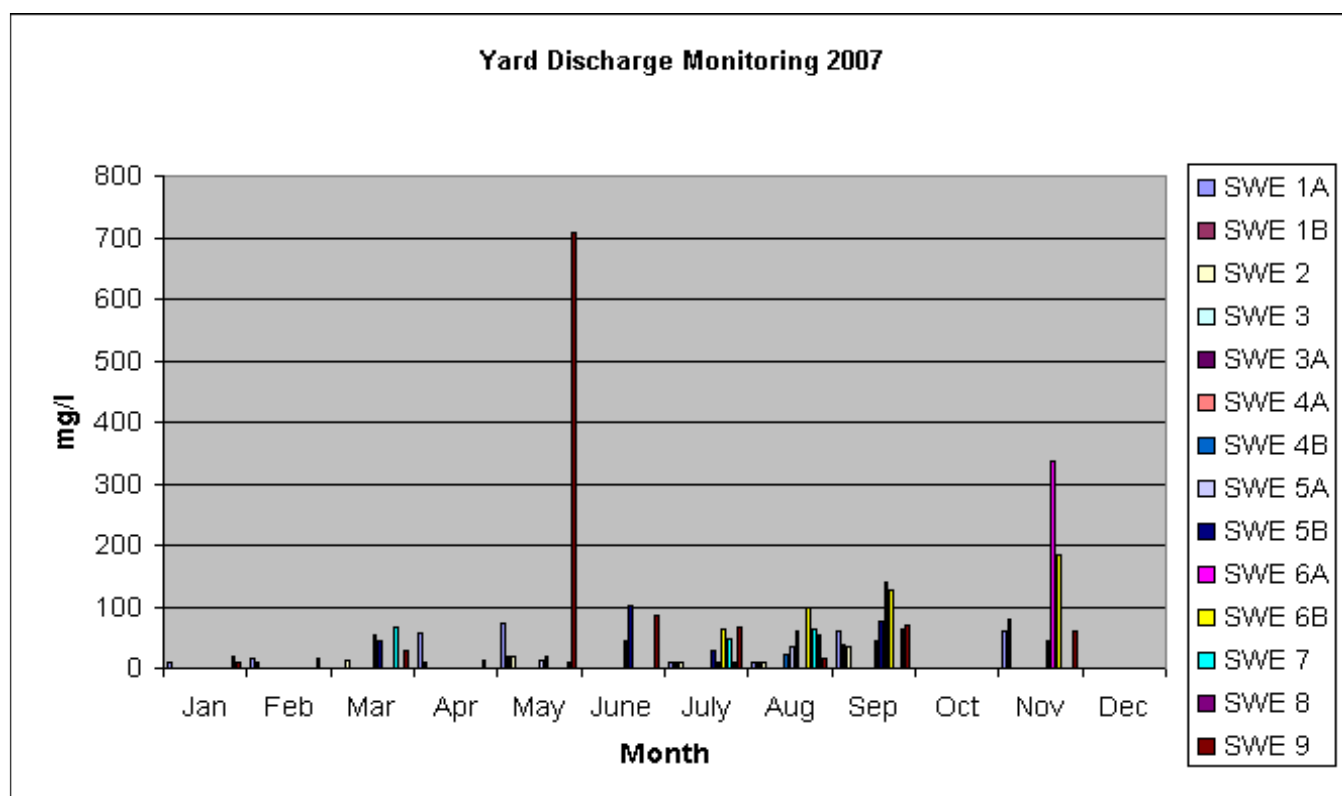
Surface Water Discharge Monitoring Results - Yards

Yard Discharge Results 2007

Licence: P0500-01														
Works: Boora														
Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9
Jan	10	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	18	10
Feb	17	11	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	17	N F
Mar	N F	N F	14	N F	N F	N F	N F	55	44	N F	N F	68	N F	30
Apr	56	10	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	12	N F
May	72	19	18	N F	N F	N F	N F	12	18	N F	N F	N F	10	708
June	Nf	N F	N F	N F	N F	N F	N F	45	103	N F	N F	N F	N F	86
July	10	10	10	N F	N F	N F	N F	N F	30	10	65	49	10	66
Aug	10	10	10	N F	N F	N F	23	34	59	N F	100	65	55	15
Sep	59	37	36	N F	N F	N F	N F	43	75	140	128	N F	63	70
Oct	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F
Nov	60	80	N F	N F	N F	N F	N F	N F	45	336	185	N F	N F	59
Dec	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F	N F

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

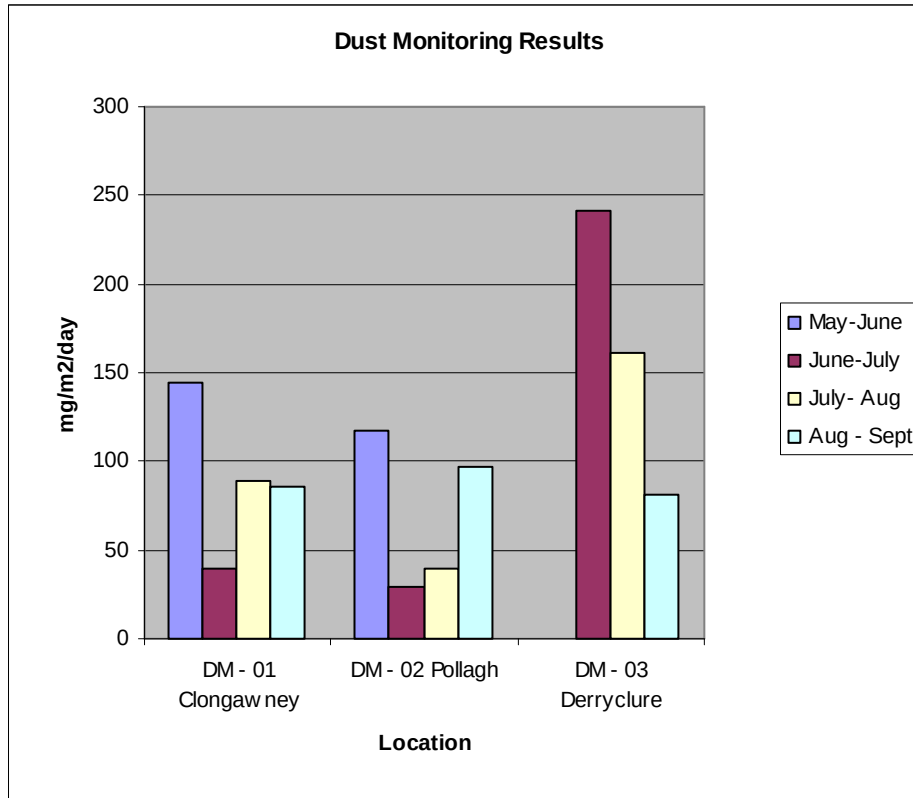
Interceptors cleaned 31st May 07



APPENDIX 3
Surface Water Discharge
Monitoring Results
Composite

APPENDIX 4

Dust Monitoring Results.



The dust gauge at Derryclure was vandalised in May-June

APPENDIX 5

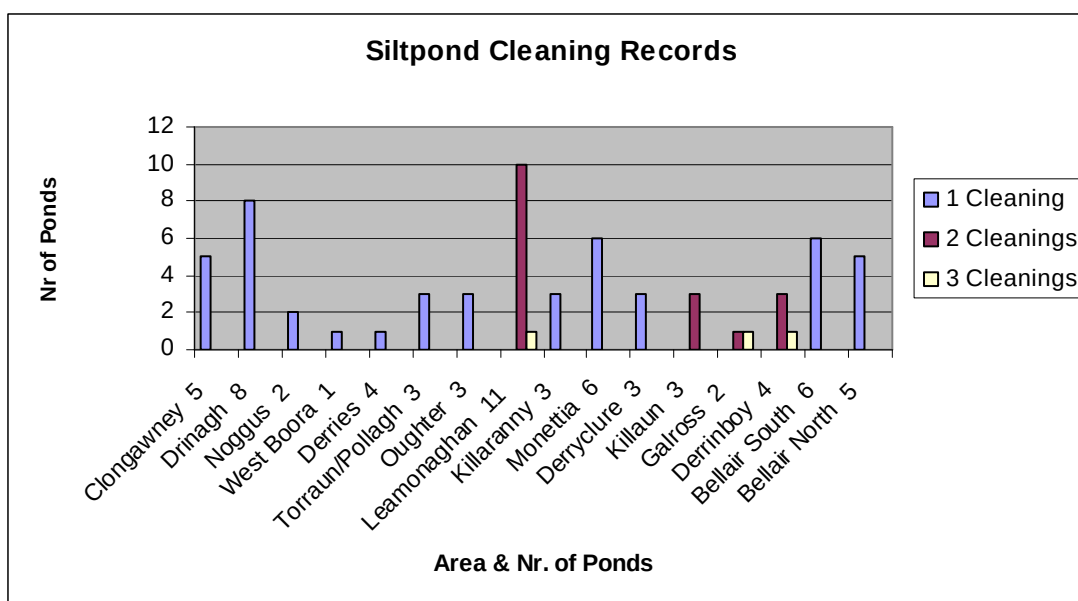
De-silting Programme Review.

Siltpond Cleaning Programme

IPPC Licence: P0500-01

Works: Boora

Bog Area & No. of Ponds	1 Cleaning	2 Cleanings	3 Cleanings
Clongawney 5	5		
Drinagh 8	8		
Noggus 2	2		
West Boora 1	1		
Derries 4	1		
Terraun/Pollagh 3	3		
Oughter 3	3		
Leamonaghan 11		10	1
Killaranny 3	3		
Monettia 6	6		
Derryclure 3	3		
Killaun 3		3	
Galross 2		1	1
Derrinboy 4		3	1
Bellair South 6	6		
Bellair North 5	5		





Annual Environmental Report 2008 P0500-01

March 2009

Bord na Móna today operates 5 main subsidiary companies in more than 20 locations throughout Ireland, the UK and USA. The principal businesses are in the Energy, Resource Recovery, Horticulture, Home Heating and Wastewater Treatment and Air Pollution Abatement markets. The company also engages in an extensive rehabilitation program to develop its peat lands in an environmentally sustainable manner. The company turnover for 2007/8 was €370m.



Bord na Móna has long recognised the need to diversify its activities in order to secure a sustainable future. In this context we identified the energy and resource recovery sectors as appropriate areas of growth and development, given our assets, strengths and skills. Significant challenges face Ireland in meeting the country's needs to provide secure sustainable energy and manage waste while minimising the impact on the environment.

Bord na Móna is in a strong position to contribute to dealing with these challenges. We have a unique mixture of assets, experience and innovation which will enable us to cross-link our activities in energy, water and resource recovery to provide products and services which will meet Ireland's needs. We also have the capacity to become an exemplar for others to follow in these fields.

With this background we have scoped out a new vision for the future sustainable development of Bord na Móna.

Following on from our vision, we have developed a new mission for Bord na Móna which the Company is committed to achieving.

In 1934 the Turf Development Board was formed to 'develop and improve the turf industry.' The experience of fuel shortages during the war re-enforced the Irish State's commitment to developing the country's bogs. In 1944 the TDB was asked to devise and submit a comprehensive programme, the outcome was the transformation in 1946 of the TDB into Bord na Móna. The Board was given a mandate to increase the use of peat as a fuel and in energy production. Markets for the use of moss peat in horticulture were also developed.

In 1990 Bord na Móna implemented a divisionalised and decentralised structure, designed to delegate responsibility downwards ensuring a sharper focus on each profit centre and a greater spirit of enterprise.

Group Vision



The vision statement defines the Company's purpose, in terms of its values.

Values are guiding beliefs about how things should be done.

The vision statement communicates both the purpose and values of Bord na Móna.

For employees, it gives direction about how they are expected to behave and inspires them to give their best. Shared with customers, it shapes the customers' understanding of why they should work with Bord na Móna.

Bord na Móna will seek solutions that optimise the creative energy and potential of the organisation, driven by long term goals and the organisation's vision and mission.

In this context our devolved business units will align their vision and strategic planning with the global direction provided.

Consistent with our vision, innovation will once again return to the core of everything we do. We will capitalise on opportunities to cross fertilise our unique range of skills and technologies that add value and are socially and environmentally sustainable.

Greater focus will be placed on managing and developing our land assets in a responsible and sustainable manner. Our award winning initiatives at Lough Boora (Co. Offaly) and Oweninny (Co Mayo), provide shining examples of what can be achieved

Group Mission

We conduct our affairs with openness, honesty and integrity.

We are Ireland's leading environmentally responsible integrated utility service provider encompassing electricity, heating solutions, resource recovery, water, horticulture and related services.

We capitalise on international opportunities where we have a competitive advantage.

We achieve continuing growth through superior customer service, outstanding quality and innovation delivered through the excellence and commitment of our people.

We engage in sustainable profitable business in the communities we serve, which is rewarding and challenging for employees and other stakeholders.

Contents

1.0 Introduction

- 1.1 IPPC Licence Register No
- 1.2 Name & Location of Site
- 1.3 Brief Description of Activities
- 1.4 Environmental Management of the Company
- 1.5 Environmental Policy Statement

2.0 Summary Information

- 2.1 Emissions to Water Summary
 - 2.1.1 Silt Pond Emissions
 - 2.1.2 Yard Discharges
 - 2.1.3 Composite Sampler Report
 - 2.1.4 Emissions to Water Non-compliance's

2.2 Emissions to Air Summary

- 2.2.1 Dust Monitoring
- 2.2.2 Emissions to Air Non-compliance's

2.3 Waste Arising

- 2.3.1 Non-Hazardous Waste
- 2.3.2 Hazardous Waste

2.4 Energy and Water Consumption

- 2.4.1 Energy Consumption

2.5 Environmental Incidents and Complaints

- 2.5.1 Incidents
- 2.5.2 Complaints

3.0 Management of the Activity

- 3.1 Environmental Management Programme Report
- 3.2 Environmental Management Programme Proposal
- 3.3 Environmental Expenditure

4.0 Licence Specific Reports

- 4.1 Surface Water Discharge Monitoring Location Programme Review
- 4.2 Bunding Programme
- 4.3 Boiler Combustion Efficiency
- 4.4 Resource Consumption Summary
- 4.5 Report on de-silting Programme
- 4.6 Bog Development and Operational Programme
- 4.7 Bog Rehabilitation Report
- 4.8 Archaeological Report

5.0 Summary

- Appendix 1:** Emissions to Water Monitoring Results. (Bogs)
- Appendix 2:** Emissions to Water Monitoring Results. (Yards)
- Appendix 3:** Emissions to Water Monitoring Results. (Composite)
- Appendix 4:** Emissions to Air Monitoring Results.
- Appendix 5:** De-silting Programme Review
- Appendix 6:** AER & PRTR Data

1.0 Introduction

1.1 IPPC Licence No

1.2 Name & Location of Site

Name:	Bord na Mona Energy Limited.- Boora Works
Address:	Leabeg, Tullamore Co Offaly
Telephone No:	05793 45900
Contact Name	John Mc Niff
Position	Resource Manager, Blackwater /Boora
National Grid Reference	E180050 N319540

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 one of the following locations.

Power station

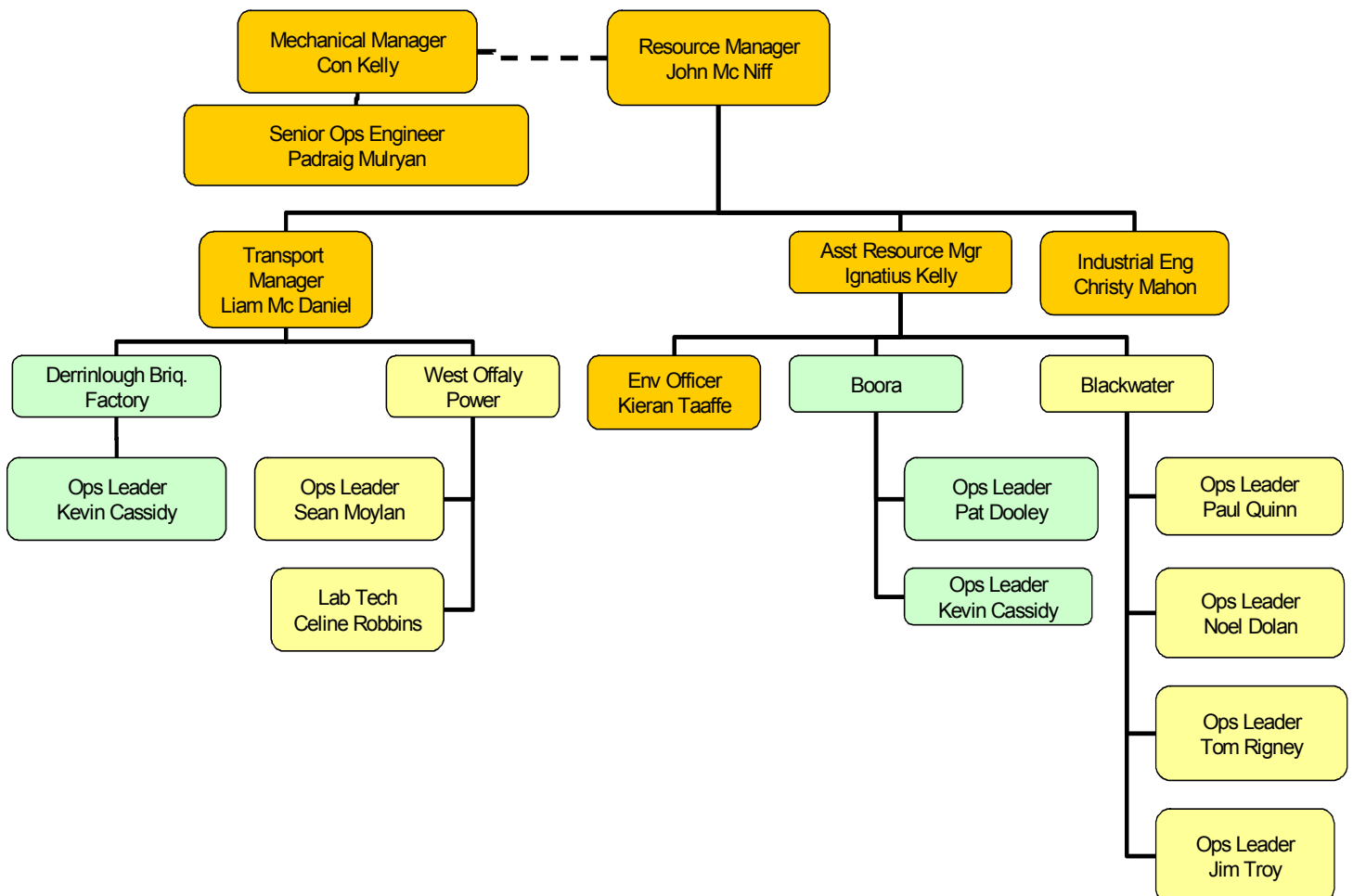
Horticultural Factory.

Briquette Factory.

1.4 Environmental Management of the Company

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

Boora Group Environmental Responsibilities



1.5 Environmental Policy



Bord na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's 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 five different locations. These locations were as follows, Noggus @ SW10, Bellair @ SW34, Clongawney @ SW 6, Derryclure @ SW 28 and Killaun @ SW 31.

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 driest month with 14.6mm of rainfall recorded, with August being the wettest with 210.7mm recorded.

pH values were between 6.5 and 8.5, with normal emission limit values being of the range 6 and 9. In general pH values remained constant throughout the monitoring regime.

Suspended solids varied from 5mg/l to 42mg/l and would depend on activities (piping, ditching) etc in the catchments at the time of sampling. The licence limit of 35mg/l was exceeded on one occasion, at Clongawney SW6, but did not constitute a non compliance as that result was below 105 mg/l. The remaining results were very satisfactory, especially in the third quarter, when rainfall was unprecedented for that time of year.

Ammonia levels ranged from 0.06 mg/l to 4.31 mg/l. The I/PV for A3 waters is of the range 4mg/l. It is however not unusual for surface waters emanating from production peatlands to be slightly elevated. Overall the range is less than that in 2007.

COD readings were slightly elevated during the reporting period, with results at SW31 and SW34 being consistently close to or above trigger levels. The I/PV for A3 waters is of the range 40mg/l. These results were flagged to the local Environmental Co-ordinator for investigation. Monitoring results of the first quarter 2008 will be watched closely for continuing elevated COD trends and further investigations may follow, depending on results.

Flow monitoring showed flood conditions in the 3rd quarter monitoring event, at SW6 and SW10.

The 4th quarter had the most measured elevated flow, while August was the wettest month with 210.7mm of rainfall recorded and May the driest with 14.6mm recorded. Flow rates appear to have had no adverse effect on suspended solids results.

Total Phosphorus results were consistently low across all monitoring locations in 2008. Sampling will continue at the same locations during 2009.

Surface Water Results are attached in Appendix 1.

2.1.2 Yard Discharges (Monthly Grab)

Comment

Yard runoff monitoring took place at fourteen 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 as the catchments are so small. It has been decided that every effort should be made to retrieve a sample every month going forward.

In general results were normal, with the exception of SWE 1A during the July monitoring period, with subsequent results following interceptor cleaning, returning to expected values and SWE 6A and SWE 7 during January and July, where again cleaning of the interceptor again proved successful.

Monitoring will take place at the same locations in 2009.

Yard discharge results are contained in Appendix 2

2.1.3 Composite Sampler Report (Weekly - Continuous)

Comment

The composite sampler operated at SW 7 Drinagh Bog 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 results were very satisfactory with one non-compliance being recorded for the period.

It is proposed to leave the sampler at this location for the foreseeable future.

Composite Sample Results are contained in Appendix 3

2.1.4 Emissions to Water Non-compliance's

Emissions to Water Non-Compliances 2008

Licence: P0500-01
Works: Boora

Type	Non-Compliances	Location / SW Nr
Composite	1	SW 7
Quarterly Grab	0	
Monthly Yard	0	
Totals	1	

Note: There was one non-compliance in relation to emissions to water and the Agency was informed.

2.2 Emissions to Air

2.2.1 Dust Monitoring

Comment

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

The monitoring locations were as follows: Clongawney DM01, Pollagh DM02, and Derryclure DM03.

With the exception of Clongawney, during the June – July monitoring event, all results were below the emission value of 350 mg/m²/day set out in the licence. The elevated result at Clongawney was reported to the agency.

Sampling will continue at the same locations during 2009.

Dust Sample Results are contained in Appendix 4

2.2.2 Emissions to Air Non-compliance's

Dust Non-Compliances 2008	
Licence:P0500-01	
Works: Boora	
Location / DM Nr	Non-Compliances
Clongawney/DM 01	1
Total	1

Note: There was one non-compliance in relation to dust, and the Agency was informed.

2.3 Waste Arising

2.3.1 Non-Hazardous Waste

Non Hazardous Waste Data 2008

Licence: P0500-01

Works: Boora

Type	Tonnes	EW Code	Contractor	Licence Nr
Skips	24.75	20 03 01	AES	053/OY/39/02
Wheelie Bins	2.36	20 03 01	AES	053/OY/39/02
Polyethylene	216.34	02 01 04	Leinster Environmentals	WP 2004/30
Scrap Steel	51.53	17 04 07	Hammond Lane	050/OY/162/04
Timber Pallets	5.66	15 01 02	Kiawa Ltd	WP/TN/24
Silt Pond Cleanings	487.10	01 01 02	Bord na Mona	IPPC P 0499
Peat Screenings	286.86	01 01 02	Bord na Mona	IPPC P 0499
Paper	6.05	20 01 01	Security in Shredding	WCP/KE/232C/07C
Cardboard	0.37	20 01 01	AES	053/OY/39/02
Totals	1074.59			

2.3.2 Hazardous Waste

Hazardous Waste Data 2008

Licence:P0500-01

Works:Boora

Type	Tonnes	EW Code	Contractor	Licence Nr	Destination
Waste Oil	47.50	13 02 05	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	0.58	16 01 07	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Lead Acid Batt	3.00	16 06 01	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Parts Wash	1.20	11 01 13	Safety Kleen, Tallaght, Dublin	99-1	Dublin
Contaminated Soil	230.70	19 13 01	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Electrical Waste	0.37	16 02 14	WEEE Recycle Tullamore	WO113-02	Tullamore

Total 283.35

Note: Waste oil figure, included the removal of oil trap liquids, which greatly increased the figure.

2.4 Energy and Water Consumption

2.4.1 Energy

Energy Consumption 2008

Licence: P0500-01				
Works: Boora				
Units	Diesel (Litres)	Petrol (Litres)	Electricity (Units)	Peat Briquettes (Tonnes)
Totals	1,191,660	4,383	325,488.19	13.14
MW Hours	11,669	39.62	325.49	65.70
Total MW Hours	12,100			

Note: The electricity consumption figure was extracted from ESB on line information systems. Some of the consumption figures relate to estimated readings which do not reflect on the exact amount of consumption. Going forward/ Bord na Mona are liaising with the supplier, to try and eliminate all estimated readings. This will give a more precise figure in relation to consumption in the future.

Water is not used in our production process, with usage confined to domestic applications.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

Environmental Incidents 2008

Licence: P0500-01	
Works: Boora	
	Number
Incidents	1
Requiring corrective action	1
Category	
Water	
Air	1
Procedural	
Miscellaneous	
Total	1

There was one incident during 2008, and it related to a Bog fire at Monettia Bog. The Agency was informed.

2.5.2 Complaints

Environmental Complaints 2008

Licence: P0500-01

Works: Boora

	Number
Complaints	1
Requiring corrective action	
Category	
Water	
Air	1
Procedural	
Miscellaneous	
Total	1

There was one complaint in relation to dust at Derryclure Bog.

3.0 Management of the Activity

3.1 Achievement of Objectives & Targets 2008

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Status 36 Employees received environmental training during the reporting period. Hydraulic Harrows. There are two new Hydraulic Harrows programmed for delivery for 2008 to be used in Dust Sensitive Locations. Status Boora did not take delivery of any hydraulic harrows in 2008. 7 hydraulic harrows were in operation across the licence area in 2008. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations. A new mobile Haku Harvester is programmed for delivery for 2008/09 which will include dust sensitive headlands in its operations. Status Headland peat was collected as part of the general peat harvesting process and deposited into the existing stockpiles. Boora also took delivery of a Bulldozer, for the purpose of fire abatement.
Project 2: Waste Management	On Site Inspections. A full programme of internal audits will be carried out as soon as production commences. This will be an annual exercise with the 2008 audit placing more emphasis on waste management. Status Due to unforeseen circumstances, this project did not materialise.
Project 3: Minimisation of Suspended Solids.	Training. Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.

	Status 36 Employees received environmental training during the reporting period.
Project 4: Effective spill leak management of mobile fuelling units.	Research and Development. The identification and ultimately the introduction of mobile fuelling units which will enhance the spill / leak management of fuel oils. Increased bund provisions are planned for 2008, as well as three new fuel service wheeled wagons which contain bunded tanks. In addition to this, one new rail operated Fuel Service Wagon will be introduced in Boora. Status Boora took delivery of one rail operated Fuel Service Wagon. The delivery of Wheeled Fuel Service Wagons was deferred due to design issues. In addition to this, a filler slab and associated oil interceptor drainage works was completed at Monettia.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing. Status There was 216.34 tonnes of polyethylene removed for recycling in 2008.
Project 6: Provision of measures to protect Dust Sensitive Areas.	Planting. Ongoing Planting is ongoing as required, with areas in the periphery of production bogs that are being developed for housing being prioritised. Status No planting took place in the licence area in 2008.

3.2 Environmental Management Programme Proposal for 2009

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Hydraulic Harrows. Hydraulic harrows will continue to be deployed across the licence area in 2009. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations.
Project 2: Waste Management	Waste Streamlining. Following the purchase by Bord na Mona of AES Ltd, Communication with that company's management will be ongoing to see how best Bord na Mona's waste management can be improved. Key account managers dedicated to Bord na Mona have been requested and are due to be in place in 2009.
Project 3: Minimisation of Suspended Solids.	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.
Project 4: Effective spill leak management of mobile fuelling units.	Research and Development. Continue to introduce rail operated fuel service wagons on a phased basis, with Boora works budgeted to receive one wagon during the 2010/2011 financial year. Increased bund provisions where required, will be provided, in 2009.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.
Project 6:	Survey. Carry out a comprehensive survey of all PCB suspect

PCB Directive	appliances. Following this, liaise with EPA in deciding plan of action once, a definitive amount of PCB suspect holdings are agreed.

3.3 Environmental Expenditure

Environmental Expenditure 2008

Licence:P0500-01

Works: Boora

Description	Cost €
Capital Costs	70,018.00
Silt Control	92,616.06
Analytical & Consultancy Costs	10,238.00
EPA Fees	7,995.00
Bog Rehabilitation	73,800.00
Waste Management	22,005.53
Total	276,672.59

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

Sampling went well in 2008, with results at both the Quarterly Grab and Composite locations being very favourable. It is proposed to sample the same locations during 2009.

4.2 Bunding Programme

Bund integrity testing took place at Boora, Bellair, Lemanaghan, Derrinlough, Derrinboy and Derryclure. In all cases the bunds passed. Re-testing is due again in 2010.

The bund at Monettia was upgraded to include a filler slab and associated drainage to an existing oil interceptor.

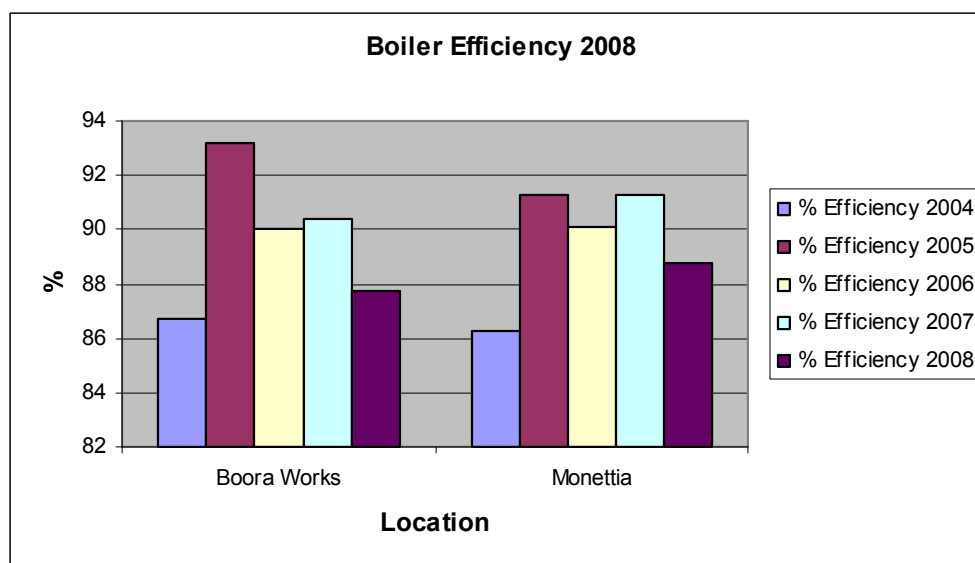
4.3 Boiler Combustion Efficiency

Boiler Emissions 2008

Licence: P0500-01

Works: Boora

Boiler Location	% Efficiency 2004	% Efficiency 2005	% Efficiency 2006	% Efficiency 2007	% Efficiency 2008
Boora Works	86.7	93.2	90	90.4	87.75
Monettia	86.3	91.3	90.1	91.3	88.75



Note: All boilers are also serviced at the time of efficiency testing.

4.4 Resource consumption summary

Resource Consumption 2008			
Licence: P0500-01			
Works: Boora			
Product	Tonnes Produced	Tonnes Sold	Customer
Milled Peat	283,775	465,063	ESB and Briquette Fac
Moss	81,797	96,006	BNM Horticulture
Turf	250	250	Domestic Customers
Other	-	-	
Totals	365,822	561,319	

Proposed Production 2009	
Licence: P0500-01	
Works: Boora	
Product	Proposed Target
Milled Peat	434,256
Moss	120,971
Turf	250
Other	
Totals	555,477

4.5 De-Silting Report

All ponds were cleaned at least once during the reporting period. Cleanings were dictated by the inspections programme.

Silt Pond Cleaning Programme is contained in Appendix 5

4.6 Bog Development and Operational Programme

Some small scale development took place at Killaun Bog. These works extended to final ditching, screw levelling and piping. The area concerned, covered approximately 90 hectares and is serviced by an existing adequately designed silt settlement pond. This work was to accommodate production in the 2009 season.

4.7 Bog Rehabilitation Report

Bog Rehabilitation Report for Boora 2008

Sculpture Park.

A new sculpture piece titled “Ruaile Buaile” was installed in the Sculpture in the Parklands area in June 2008, it was created by Patrick Doherty, an American sculptor using freshly cut willow-approximately 20 tonnes- which was woven into an existing Alder plantation. Patrick worked in conjunction with up to thirty local arts and craft people to install the large piece which consists of a series of passageways and large chamber like areas of approximately thirty metres length with two entrances.

A new picnic area with ten picnic tables was developed and about twenty timber seats were placed along the walkways.

Information boards relating to all the sculpture pieces were installed in the open pavilion structure.

Native Woodland Scheme.

The area at Clongawney Bog at Maddens Wood was planted with one hectare of native Oak trees and was enclosed by a protective fence to prevent Hares and Deer damage to the plants.

Approval was received for a new Native Woodland Scheme at the long established naturally revegetated area at Turraun. This involved planting three thousand Native Oak-approximately one hectare - inside a similar protective fence and also the planting of 10,000 native Scots Pine on relatively new open areas of Cutaway Bogland. Also all alien species such as Lodgepole Pine were cut down in the naturally revegetated area.

Turraun.

The access road to the Turraun area was upgraded to a tarred road in 2008 and this has greatly improved access to the area and its amenities.

Cycle Paths.

A new network of cycle paths of approximately 10 kilometres length were laid down through the Parklands area in 2008. This consists of a tarmac path one metre wide that overlies 804 fill in a circuit route and this path also links to the existing tarred farm roads. This network is now fifteen kilometres long and provides safe off road routes for cyclists and families.

Wetlands.

Drainage was blocked in a new area at East Boora and this has resulted in approximately twenty hectares of partially flooded wetlands for wildlife purposes.

Partridge Project.

The National parks and Wildlife project continues to expand in the Boora area and the numbers of recorded Partridge continue to expand to approximately 250 birds.

4.8 Archaeological Report

No survey or excavations took place in 2008

5.0 Summary

Compliance Levels for 2008 were good even though the summer rainfall was approx. 140% of normal.

Employees are continually reminded through training, of the importance of good house-keeping and improved procedures and practices to minimise effects on the environment. Continuous improvement is our aim and constant vigilance is required from all staff in order to bring this about.

Silt pond cleaning and waste removal played an important role during the year with over 1300 tonnes of waste sent for recycling.

A number of improvements happened in the Lough Boora Parklands area with the upgrading of the walking/cycling route.

During year 2008 the de-commissioning of the transport centre at the power station site commenced. This entailed the removal of rail lines, buildings tanks etc.

The collection of waste was streamlined during the year with the integration of AES into Bord na Mona.

Training will continue with particular emphasis on Dust Sensitive Areas and ensuring that all new seasonal staff are trained.

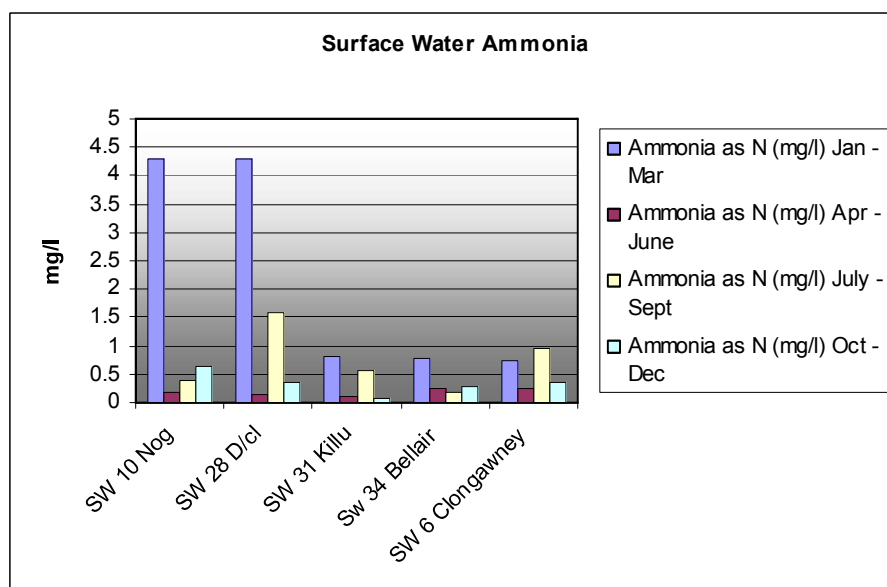
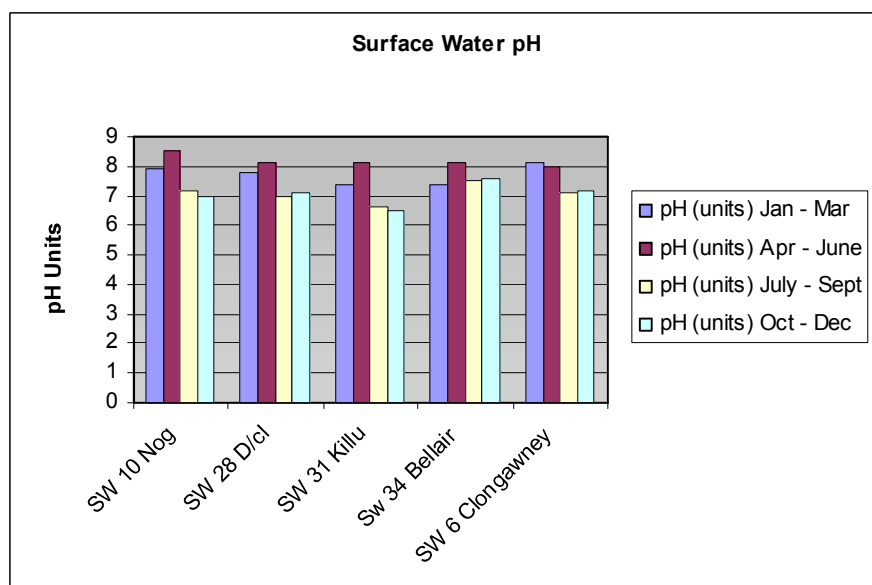
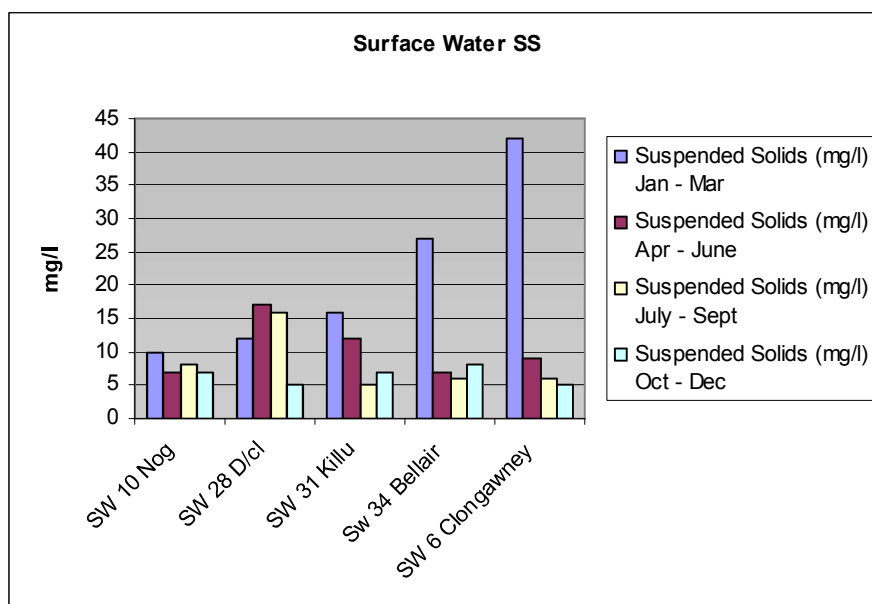
Bord na Mona Energy Ltd would like to take this opportunity to assure the Environmental Protection Agency of its continued commitment to improving its environmental performance by adopting cleaner production methods and improving its environmental protection measures.

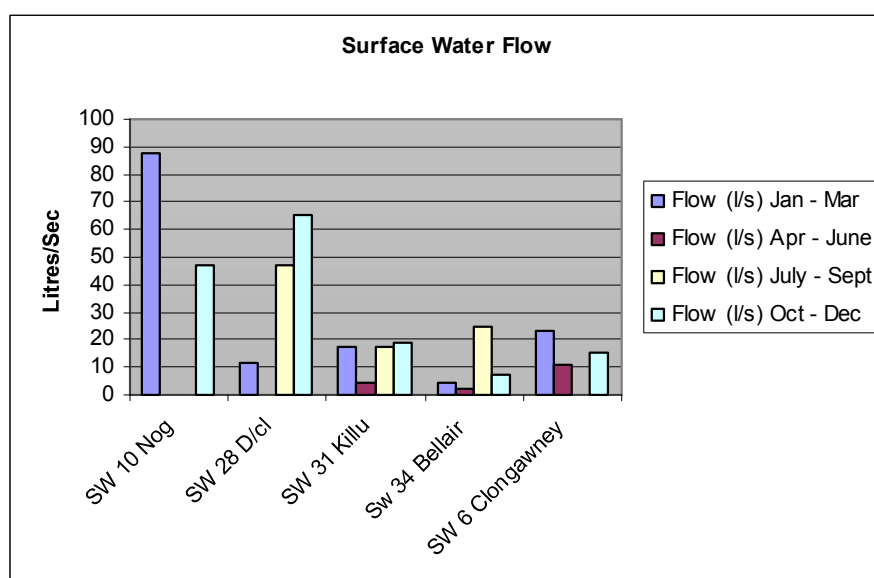
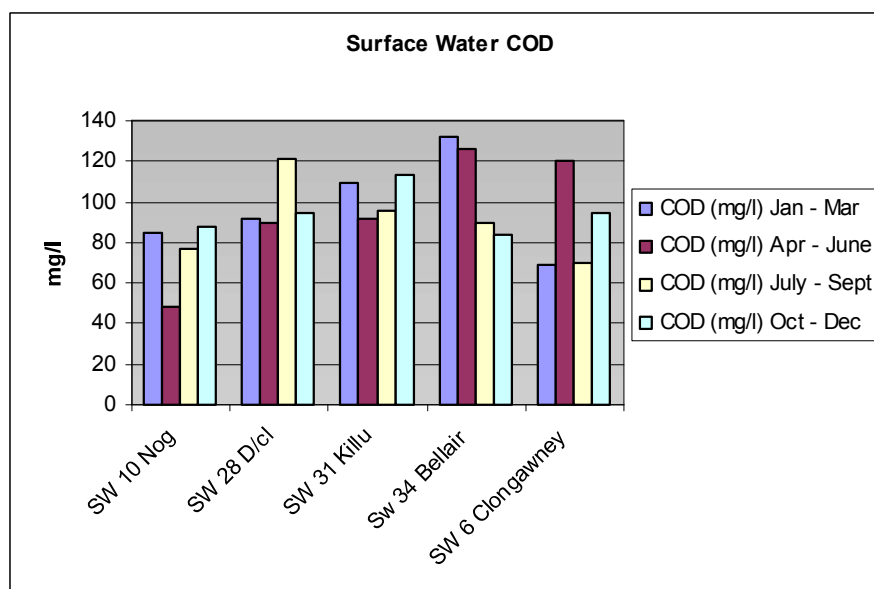
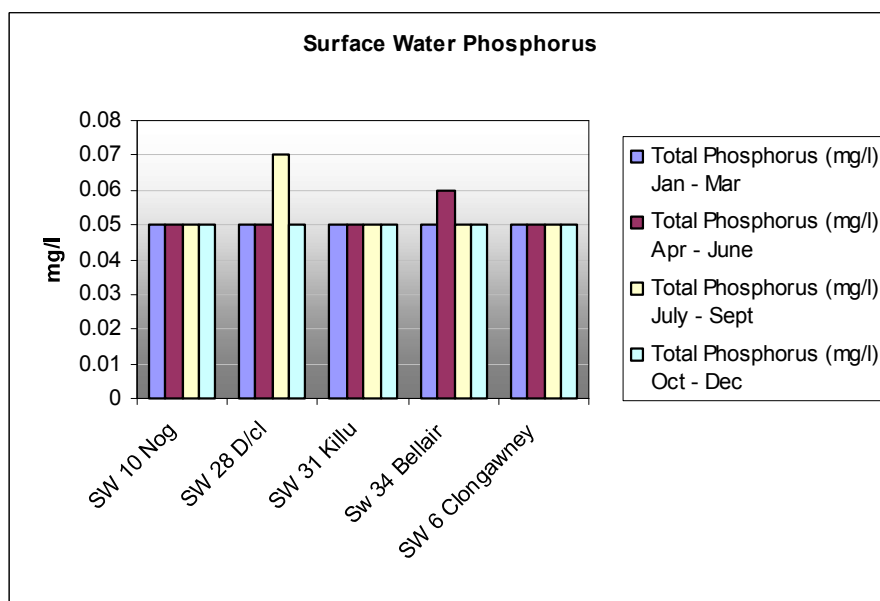
This will be communicated to all staff through the ongoing training programme.

Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management on the River Barrow

APPENDIX 1

Surface Water Discharge Monitoring Results - Bogs





APPENDIX 2

Surface Water Discharge Monitoring Results - Yards

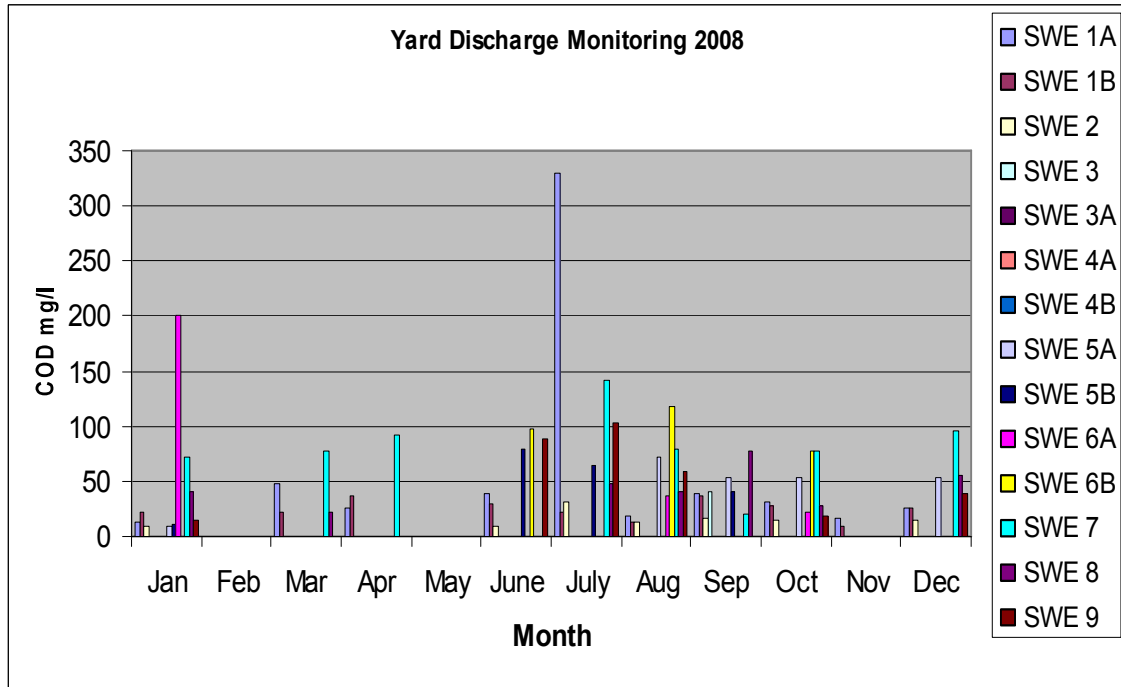
Yard Discharge Results 2008

Licence: P0500-01

Works: Boora

Month	SW E 1A	SWE 1B	SW E 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9
Jan	13	23	10	nf	nf	nf	nf	10	11	201	nf	72	40	14
Feb	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf
Mar	47	23	nf	nf	nf	nf	nf	nf	nf	nf	nf	78	22	nf
Apr	25	37	nf	nf	nf	nf	nf	nf	nf	nf	nf	92	nf	nf
May	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf
June	39	30	10	nf	nf	nf	nf	nf	79	nf	98	nf	nf	88
July	330	22	31	nf	nf	nf	nf	nf	65	nf	nf	141	48	103
Aug	19	13	12	nf	nf	nf	nf	72	nf	37	117	80	40	59
Sep	39	37	16	41	nf	nf	nf	53	41	nf	nf	20	78	nf
Oct	32	28	15	nf	nf	nf	nf	53	nf	23	77	77	27	18
Nov	17	10	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf	nf
Dec	26	26	14	nf	nf	nf	nf	54	nf	nf	nf	95	55	38

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



APPENDIX 3

Surface Water Discharge Monitoring Results Composite

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters Total Phosphorus 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 Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
April													
SW7													
1					5	308		44103750				220.52	13583.96
2	8.2	51	0.92	0.05	5	298	100	31868640	1625.30	29.32	1.59	159.34	9496.85
3					5	254		26993950				134.97	6856.46
4					5	290		26358050				131.79	7643.83
5					7	304		27037150				189.26	8219.29
6					10	312		27574560				275.75	8603.26
7					8	322		27645410				221.16	8901.82
8					5	328		28101600				140.51	9217.32
9	8.3	32	1.19	0.05	5	322	105	28330560	906.58	33.71	1.42	141.65	9122.44
10					5	326		28668380				143.34	9345.89
11					5	326		29185060				145.93	9514.33
12					6	310		29773440				178.64	9229.77
13					5	316		29211840				146.06	9230.94
14					8	308		29194560				233.56	8991.92
15					5	334		28353890				141.77	9470.20
16	8.4	50	0.97	0.05	5	323	87	28478300	1423.92	27.62	1.42	142.39	9198.49
17					5	344		28523230				142.62	9811.99
18					5	342		28848960				144.24	9866.34
19					7	338		29022620				203.16	9809.65
20					5	352		29058050				145.29	10228.43
21					5	356		29107300				145.54	10362.20
22					5	340		29222210				146.11	9935.55
23	8.4	54	1.33	0.05	5	354	65	29353540	1585.09	39.04	1.47	146.77	10391.15
24					5	342		29444260				147.22	10069.94
25					5	346		29421790				147.11	10179.94
26					5	328		29382910				146.91	9637.59
27					5	320		29015710				145.08	9285.03
28					5	320		28769470				143.85	9206.23
29					5	320		29423520				147.12	9415.53
30	8.3	49	0.67	0.05	5	290	95	30125950	1476.17	20.18	1.51	150.63	8736.53

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters Total Phosphorus 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 Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
May													
SW7													
1					5	310		29094340				145.47	9019.25
2					5	314		28849820				144.25	9058.84
3					5	324		28943140				144.72	9377.58
4					5	344		28670980				143.35	9862.82
5					5	322		28600130				143.00	9209.24
6					6	336		28184540				169.11	9470.01
7	8.5	23	0.63	0.05	8	337	86	28168130	647.87	17.75	1.41	225.35	9492.66
8					9	380		28362530				255.26	10777.76
9					21	382		28266620				593.60	10797.85
10					11	378		28365120				312.02	10722.02
11					13	370		28295140				367.84	10469.20
12					19	388		28366850				538.97	11006.34
13					30	374		28336610				850.10	10597.89
14	8.6	49	0.13	0.05	23	562	74	28136160	1378.67	3.66	1.41	647.13	15812.52
15					5	386		28067040				140.34	10833.88
16					6	398		28283900				169.70	11256.99
17					5	400		28325380				141.63	11330.15
18					5	386		28311550				141.56	10928.26
19					5	396		28273540				141.37	11196.32
20					5	398		28577660				142.89	11373.91
21	8.5	45	0.63	0.05	8	378	56	28610500	1287.47	18.02	1.43	228.88	10814.77
22					8	388		28783300				230.27	11167.92
23					6	368		29222210				175.33	10753.77
24					5	366		29016580				145.08	10620.07
25					7	368		28504230				199.53	10489.56
26					5	380		28296860				141.48	10752.81
27					6	390		28353890				170.12	11058.02
28	8.4	44	35	0.05	7	380	54	28657150	1260.91	1003.00	1.43	200.60	10889.72
29					5	376		29036450				145.18	10917.71
30					8	410		28854140				230.83	11830.20
31					5	376		28596670				142.98	10752.35

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters Total Phosphorus 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 Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
SW7													
1					5	378		28538780				142.69	10787.66
2					5	356		28877470				144.39	10280.38
3					5	350		27756000				138.78	9714.60
4	8.3	53	1.16	0.05	21	378	98	27960770	1481.92	32.43	1.40	587.18	10569.17
5					5	332		28289950				141.45	9392.26
6					5	350		28351300				141.76	9922.96
7					5	342		28529280				142.65	9757.01
8					5	336		28337470				141.69	9521.39
9					5	354		28195780				140.98	9981.31
10					5	352		28182820				140.91	9920.35
11	8.2	63	0.61	0.07	5	362	68	28302910	1783.08	17.26	1.98	141.51	10245.65
12					5	392		28276990				141.38	11084.58
13					5	398		28545700				142.73	11361.19
14					5	392		28196640				140.98	11053.08
15					5	376		28378950				141.89	10670.49
16					5	384		28564710				142.82	10968.85
17					5	392		28431650				142.16	11145.21
18	8.4	38	0.6	0.05	5	388	63	28580260	1086.05	17.15	1.43	142.90	11089.14
19					5	372		29409130				147.05	10940.20
20					5	344						0.00	0.00
21					5	334						0.00	0.00
22					9	286						0.00	0.00
23					7	316						0.00	0.00
24					7	322						0.00	0.00
25	8	80	1.5	0.06	8	304	177					0.00	0.00
26					5	304						0.00	0.00
27					5	251						0.00	0.00
28					5	288						0.00	0.00
29					8	296						0.00	0.00
30					5	298						0.00	0.00

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters Total Phosphorus 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 Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
July													
SW7													
1					5	298		2295734				11.48	684.13
2	8.1	52	0.9	0.05	9	298	132	2815430	146.40	2.53	0.14	25.34	839.00
3					5	278		3196886				15.98	888.73
4					6	288		8955360				53.73	2579.14
5					5	272		609466				3.05	165.77
6					5	224		12085630				60.43	2707.18
7					37	228		4031510				149.17	919.18
8					5	196		2625005				13.13	514.50
9	7.8	98	1.41	0.08	5	196	278	2277590	223.20	3.21	0.18	11.39	446.41
10					9	222		2565216				23.09	569.48
11					8	234		3841862				30.73	899.00
12					8	254		1961021				15.69	498.10
13					5	337		990576				4.95	333.82
14					5	262		1299283				6.50	340.41
15					9	266		556260				5.01	147.97
16	8.2	74	0.72	0.05	5	342	146	446921	33.07	0.32	0.02	2.23	152.85
17					8	348		883613				7.07	307.50
18					5	356		2221344				11.11	790.80
19					5	346		3029789				15.15	1048.31
20					5	260		3046378				15.23	792.06
21					5	344		2534285				12.67	871.79
22					5	348		2604010				13.02	906.20
23	8.1	46	0.63	0.1	5	368	97	2842387	130.75	1.79	0.28	14.21	1046.00
24					6	396		2847226				17.08	1127.50
25					7	404		2744237				19.21	1108.67
26					5	388		2843942				14.22	1103.45
27					5	350		2721773				13.61	952.62
28					24	384		2483222				59.60	953.56
29					6	390		2535149				15.21	988.71
30	8	73	0.49	0.05	5	314	155	6522336	476.13	3.20	0.33	32.61	2048.01
31					5	302		194141				0.97	58.63

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters Total Phosphorus 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 Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
August													
SW7													
1					5	328		1847232				9.24	605.89
2					7	272		10316160				72.21	2806.00
3					5	290		1000685				5.00	290.20
4					5	314		0				0.00	0.00
5					5	308		1080259				5.40	332.72
6	7.9	78	0.58	0.05	8	284	218	6803309	530.66	3.95	0.34	54.43	1932.14
7					31	234		6681571				207.13	1563.49
8					7	212		3003091				21.02	636.66
9					7	226		1925078				13.48	435.07
10					7	226		3943814				27.61	891.30
11					7	232		2943129				20.60	682.81
12					12	226		2955225				35.46	667.88
13	7.9	103	0.47	0.13	5	198	376	3740429	385.26	1.76	0.49	18.70	740.60
14					5	158		2182810				10.91	344.88
15					5	206		2605478				13.03	536.73
16					5	218		2797373				13.99	609.83
17					5	210		4907779				24.54	1030.63
18					5	230		3072643				15.36	706.71
19					5	202		3203453				16.02	647.10
20	7.7	85	0.19	0.05	5	224	376	2212531	188.07	0.42	0.11	11.06	495.61
21					5	296		2715898				13.58	803.91
22					5	296		2816122				14.08	833.57
23					5	277		2458080				12.29	680.89
24					5	286		2675117				13.38	765.08
25					5	222		3162326				15.81	702.04
26					5	182		2425853				12.13	441.51
27	7.7	85	0.31	0.05	5	230	398	3226695	274.27	1.00	0.16	16.13	742.14
28					16	228		2116368				33.86	482.53
29					5	278		2096582				10.48	582.85
30					5	320		1183853				5.92	378.83
31					5	322		1655165				8.28	532.96

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters Total Phosphorus 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 Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
Sept													
SW7													
1					5	352		1965946				9.83	692.01
2					5	332		3091997				15.46	1026.54
3	7.9	61	0.27	0.05	5	315	157	2499379	152.46	0.67	0.12	12.50	787.30
4					5	232		8107257				40.54	1880.88
5					5	210		7633181				38.17	1602.97
6					31	134		8421840				261.08	1128.53
7					24	190		3565728				85.58	677.49
8					24	230		1755648				42.14	403.80
9					6	262		2227392				13.36	583.58
10	8.2	86	0.18	0.07	18	230	214	4263322	366.65	0.77	0.30	76.74	980.56
11					5	312		3449002				17.25	1076.09
12					5	248		2165357				10.83	537.01
13					5	300		2002579				10.01	600.77
14					40	264		2008714				80.35	530.30
15					5	218		6176304				30.88	1346.43
16					7	224		3447101				24.13	772.15
17	8.2	115	0.23	0.07	18	280	295	1454458	167.26	0.33	0.10	26.18	407.25
18					5	367		1327363				6.64	487.14
19					5	328		1768349				8.84	580.02
20					5	337		2802643				14.01	944.49
21					5	224		645417				3.23	144.57
22					10	248		872726				8.73	216.44
23					5	218		1743898				8.72	380.17
24	8.1	71	0.02	0.05	7	92	259	754761	53.59	0.02	0.04	5.28	69.44
25					5	356		2406154				12.03	856.59
26					11	354		2737411				30.11	969.04
27					5	368		2974147				14.87	1094.49
28					5	368		3088195				15.44	1136.46
29					5	312		3307910				16.54	1032.07
30					5	388		3333501				16.67	1293.40

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters Total Phosphorus 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 Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
Oct													
SW7													
1	8.1	50	0.32	0.05	5	358	125	4145386	207.27	1.33	0.21	20.73	1484.05
2					7	334		4033930				28.24	1347.33
3					10	278		5844614				58.45	1624.80
4					5	252		7215351				36.08	1818.27
5					14	232		3604781				50.47	836.31
6					6	190		24161760				144.97	4590.73
7					15	216		1156982				17.35	249.91
8	8.3	53	0.02	0.05	9	352	117	4403376	233.38	0.09	0.22	39.63	1549.99
9					5	174		879984				4.40	153.12
10					7	72		1315008				9.21	94.68
11					28	248		7447334				208.53	1846.94
12					5	230		1899504				9.50	436.89
13					5	74		1403482				7.02	103.86
14					8	222		1610842				12.89	357.61
15	7.8	70	0.1	0.05	5	233	232	8540208	597.81	0.85	0.43	42.70	1989.87
16					5	270		1180397				5.90	318.71
17					5	244		689887				3.45	168.33
18					5	242		681549				3.41	164.93
19					9	238		824861				7.42	196.32
20					5	216		677022				3.39	146.24
21					6	234		4418323				26.51	1033.89
22	8.1	66	0.02	0.05	5	212	242	4169664	275.20	0.08	0.21	20.85	883.97
23					5	246		4508698				22.54	1109.14
24					5	182		11490340				57.45	2091.24
25					5	254		3025987				15.13	768.60
26					5	220		5081789				25.41	1117.99
27					5	216		4280256				21.40	924.54
28					7	202		0				0.00	0.00
29	8.4	74	0.02	0.05	5	268	200	0				0.00	0.00
30					5	194		2391466				11.96	463.94
31					5	276		6943795				34.72	1916.49

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters Total Phosphorus 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 Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
Nov													
SW7													
1					34	320		0				0.00	0.00
2					21	302		0				0.00	0.00
3					16	238		0				0.00	0.00
4					7	289		0				0.00	0.00
5	8.4	104	0.02	0.11	5	290	189	186996	19.45	0.00	0.02	0.93	54.23
6					5	196		408084				2.04	79.98
7					11	151		1003190				11.04	151.48
8					10	253		12838180				128.38	3248.06
9					12	254		16270850				195.25	4132.80
10					5	200		17121020				85.61	3424.20
11					10	208		4210272				42.10	875.74
12	8.2	43	0.22	0.05	5	312	196	3120509	134.18	0.69	0.16	15.60	973.60
13					7	216		0				0.00	0.00
14					5	208		5776358				28.88	1201.48
15					5	224		2467843				12.34	552.80
16					10	220		3139344				31.39	690.66
17					10	234		6847114				68.47	1602.22
18					5	180		2558131				12.79	460.46
19	8.1	63	0.02	0.05	5	172	228	2233354	140.70	0.04	0.11	11.17	384.14
20					17	170		857036				14.57	145.70
21					9	225		1318378				11.87	296.64
22					5	416		1578874				7.89	656.81
23					5	263		1994458				9.97	524.54
24					21	262		8274269				173.76	2167.86
25					5	232		11552540				57.76	2680.19
26	7.9	67	0.46	0.05	5	226	228	324372	21.73	0.15	0.02	1.62	73.31
27					5	252		410011				2.05	103.32
28					30	214		3103661				93.11	664.18
29					42	204		1686701				70.84	344.09
30					44	202		0				0.00	0.00

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters Total Phosphorus 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 Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day
SW7													
1					5	256		0				0.00	0.00
2					34	295		0				0.00	0.00
3	7.9	69	1.15	0.05	5	264	142	115448	7.97	0.13	0.01	0.58	30.48
4					5	168		421969				2.11	70.89
5					6	204		28290820				169.74	5771.33
6					5	200		24691390				123.46	4938.28
7					5	190		7048253				35.24	1339.17
8					5	202		233816				1.17	47.23
9					6	222		6568733				39.41	1458.26
10	8.1	64	0.49	0.05	10	194	125	3326141	212.87	1.63	0.17	33.26	645.27
11					8	192		49559				0.40	9.52
12					5	186		1933286				9.67	359.59
13					5	148		11829030				59.15	1750.70
14					5	380		17496860				87.48	6648.81
15					5	148		0				0.00	0.00
16					5	286		0				0.00	0.00
17	8.1	60	0.56	0.05	5	216	199	658428	39.51	0.37	0.03	3.29	142.22
18					5	220		275124				1.38	60.53
19					5	224		1882742				9.41	421.73
20					5	220		1088986				5.44	239.58
21					5	176		3478637				17.39	612.24
22	8.1	64	0.03	0.05	5	210	191	3919018	250.82	0.12	0.20	19.60	822.99
23					5	320		2844547				14.22	910.26
24					9	324		675821				6.08	218.97
25					6	322		87903				0.53	28.30
26					5	306		261032				1.31	79.88
27					5	328		487745				2.44	159.98
28					5	312		444692				2.22	138.74
29	7.7	67	0.85	0.05	5	301	147	678750	45.48	0.58	0.03	3.39	204.30
30					5	330		579485				2.90	191.23
31					5	314		1889465				9.45	593.29

APPENDIX 4

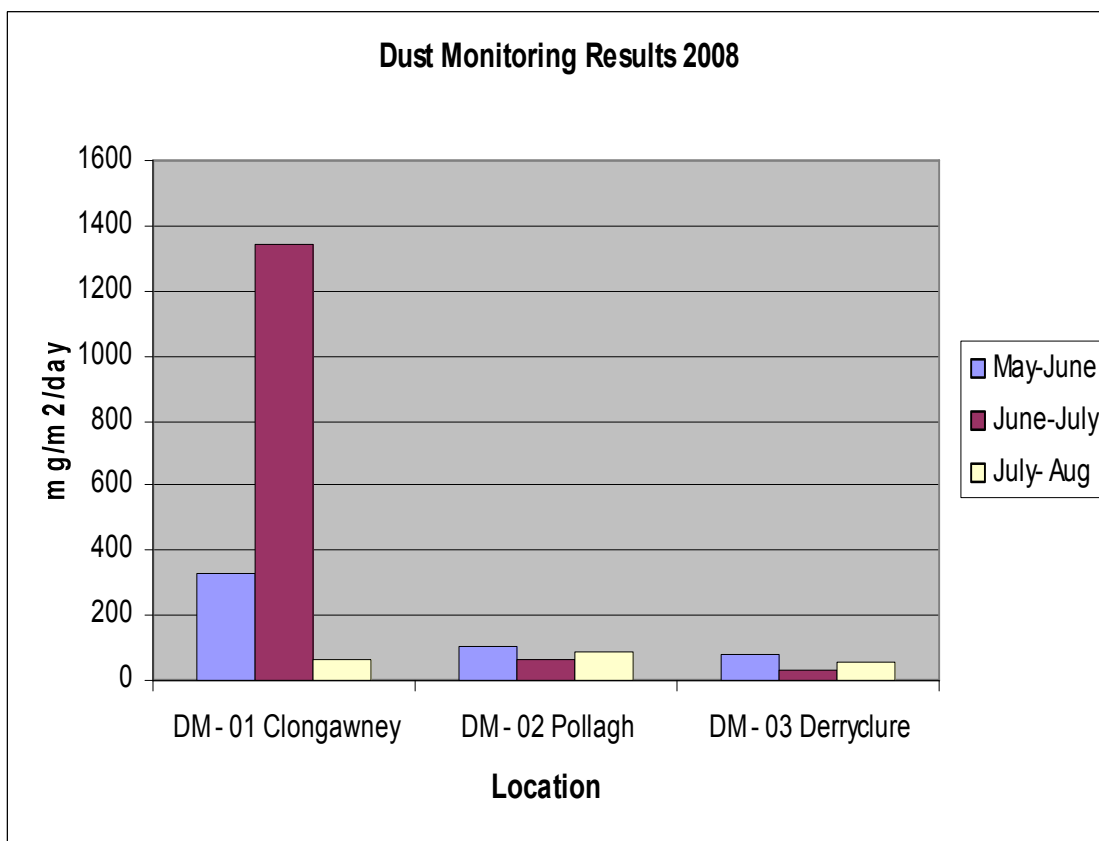
Dust Monitoring Results.

Dust Monitoring Results 2008

Licence: P0500-01

Works: Boora

Sample Period	DM - 01 Clongawney	DM - 02 Pollagh	DM - 03 Derryclure
May-June	333	105	78
June-July	1344	67	33
July- Aug	63	92	57



APPENDIX 5

De-silting Programme Review.

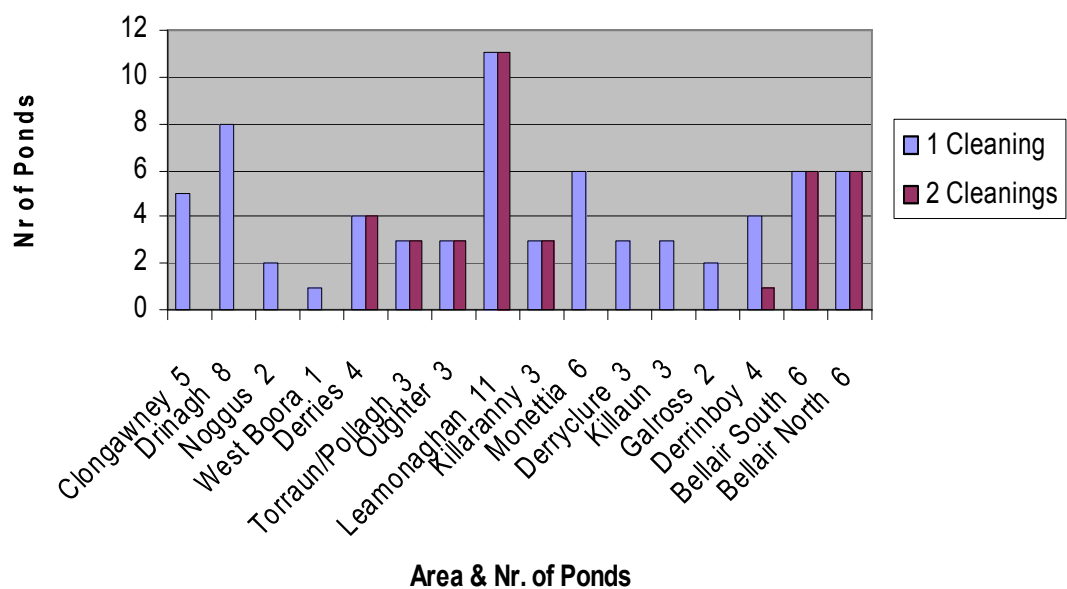
Siltpond Cleaning Programme 2008

IPPC Licence: P0500-01

Works: Boora

Bog Area & No. of Ponds	1 Cleaning	2 Cleanings
Clongawney 5	5	
Drinagh 8	8	
Noggus 2	2	
West Boora 1	1	
Derries 4	4	4
Torraun/Pollagh 3	3	3
Oughter 3	3	3
Leamonaghan 11	11	11
Killaranny 3	3	3
Monettia 6	6	0
Derryclure 3	3	
Killaun 3	3	
Galross 2	2	
Derrinboy 4	4	1
Bellair South 6	6	6
Bellair North 6	6	6

Siltpond Cleaning Records 2008



APPENDIX 6

AER PRTR Data.



Annual Environmental Report 2009
P0500-01

March 2010

Bord na Móna today operates 5 main subsidiary companies in more than 20 locations throughout Ireland, the UK and USA. The principal businesses are in the Energy, Resource Recovery, Horticulture, Home Heating and Wastewater Treatment and Air Pollution Abatement markets. The company also engages in an extensive rehabilitation program to develop its peat lands in an environmentally sustainable manner.



Bord na Móna has long recognised the need to diversify its activities in order to secure a sustainable future. In this context we identified the energy and resource recovery sectors as appropriate areas of growth and development, given our assets, strengths and skills. Significant challenges face Ireland in meeting the country's needs to provide secure sustainable energy and manage waste while minimising the impact on the environment.

Bord na Móna is in a strong position to contribute to dealing with these challenges. We have a unique mixture of assets, experience and innovation which will enable us to cross-link our activities in energy, water and resource recovery to provide products and services which will meet Ireland's needs. We also have the capacity to become an exemplar for others to follow in these fields.

With this background we have scoped out a new vision for the future sustainable development of Bord na Móna.

Following on from our vision, we have developed a new mission for Bord na Móna which the Company is committed to achieving.

In 1934 the Turf Development Board was formed to 'develop and improve the turf industry.' The experience of fuel shortages during the war re-enforced the Irish State's commitment to developing the country's bogs. In 1944 the TDB was asked to devise and submit a comprehensive programme, the outcome was the transformation in 1946 of the TDB into Bord na Móna. The Board was given a mandate to increase the use of peat as a fuel and in energy production. Markets for the use of moss peat in horticulture were also developed.

In 1990 Bord na Móna implemented a divisionalised and decentralised structure, designed to delegate responsibility downwards ensuring a sharper focus on each profit centre and a greater spirit of enterprise.

Group Vision



The vision statement defines the Company's purpose, in terms of its values.

Values are guiding beliefs about how things should be done.

The vision statement communicates both the purpose and values of Bord na Móna.

For employees, it gives direction about how they are expected to behave and inspires them to give their best. Shared with customers, it shapes the customers' understanding of why they should work with Bord na Móna.

Bord na Móna will seek solutions that optimise the creative energy and potential of the organisation, driven by long term goals and the organisation's vision and mission.

In this context our devolved business units will align their vision and strategic planning with the global direction provided.

Consistent with our vision, innovation will once again return to the core of everything we do. We will capitalise on opportunities to cross fertilise our unique range of skills and technologies that add value and are socially and environmentally sustainable.

Greater focus will be placed on managing and developing our land assets in a responsible and sustainable manner. Our award winning initiatives at Lough Boora (Co. Offaly) and Oweninny (Co Mayo), provide shining examples of what can be achieved

Group Mission

We conduct our affairs with openness, honesty and integrity.

We are Ireland's leading environmentally responsible integrated utility service provider encompassing electricity, heating solutions, resource recovery, water, horticulture and related services.

We capitalise on international opportunities where we have a competitive advantage.

We achieve continuing growth through superior customer service, outstanding quality and innovation delivered through the excellence and commitment of our people.

We engage in sustainable profitable business in the communities we serve, which is rewarding and challenging for employees and other stakeholders.

Contents

1.0 Introduction

- 1.1 IPPC Licence Register No
- 1.2 Name & Location of Site
- 1.3 Brief Description of Activities
- 1.4 Environmental Management of the Company
- 1.5 Environmental Policy Statement

2.0 Summary Information

- 2.1 Emissions to Water Summary
 - 2.1.1 Silt Pond Emissions
 - 2.1.2 Yard Discharges
 - 2.1.3 Composite Sampler Report
 - 2.1.4 Emissions to Water Non-compliance's

2.2 Emissions to Air Summary

- 2.2.1 Dust Monitoring
- 2.2.2 Emissions to Air Non-compliance's

2.3 Waste Arising

- 2.3.1 Non-Hazardous Waste
- 2.3.2 Hazardous Waste

2.4 Energy and Water Consumption

- 2.4.1 Energy Consumption

2.5 Environmental Incidents and Complaints

- 2.5.1 Incidents
- 2.5.2 Complaints

3.0 Management of the Activity

3.1 Environmental Management Programme Report

3.2 Environmental Management Programme Proposal

3.3 Environmental Expenditure

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

4.2 Bunding Programme

4.3 Boiler Combustion Efficiency

4.4 Resource Consumption Summary

4.5 Report on de-silting Programme

4.6 Bog Development and Operational Programme

4.7 Bog Rehabilitation Report

4.8 Archaeological Report

5.0 Summary

Appendix 1: Emissions to Water Monitoring Results. (Bogs)

Appendix 2: Emissions to Water Monitoring Results. (Yards)

Appendix 3: Emissions to Water Monitoring Results. (Composite)

Appendix 4: Emissions to Air Monitoring Results.

Appendix 5: De-silting Programme Review

Appendix 6: AER & PRTR Data

1.0 Introduction

1.1 IPPC Licence No: P0500-01

1.2 Name & Location of Site

Name:	Bord na Mona Energy Limited.- Boora Works
Address:	Leabeg, Tullamore Co Offaly
Telephone No:	05793 45900
Contact Name	John Mc Niff
Position	Resource Manager, Blackwater /Boora
National Grid Reference	E180050 N319540

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 their way along the fields, milling approximately 15mm of peat from 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 one of the following locations.

Power station

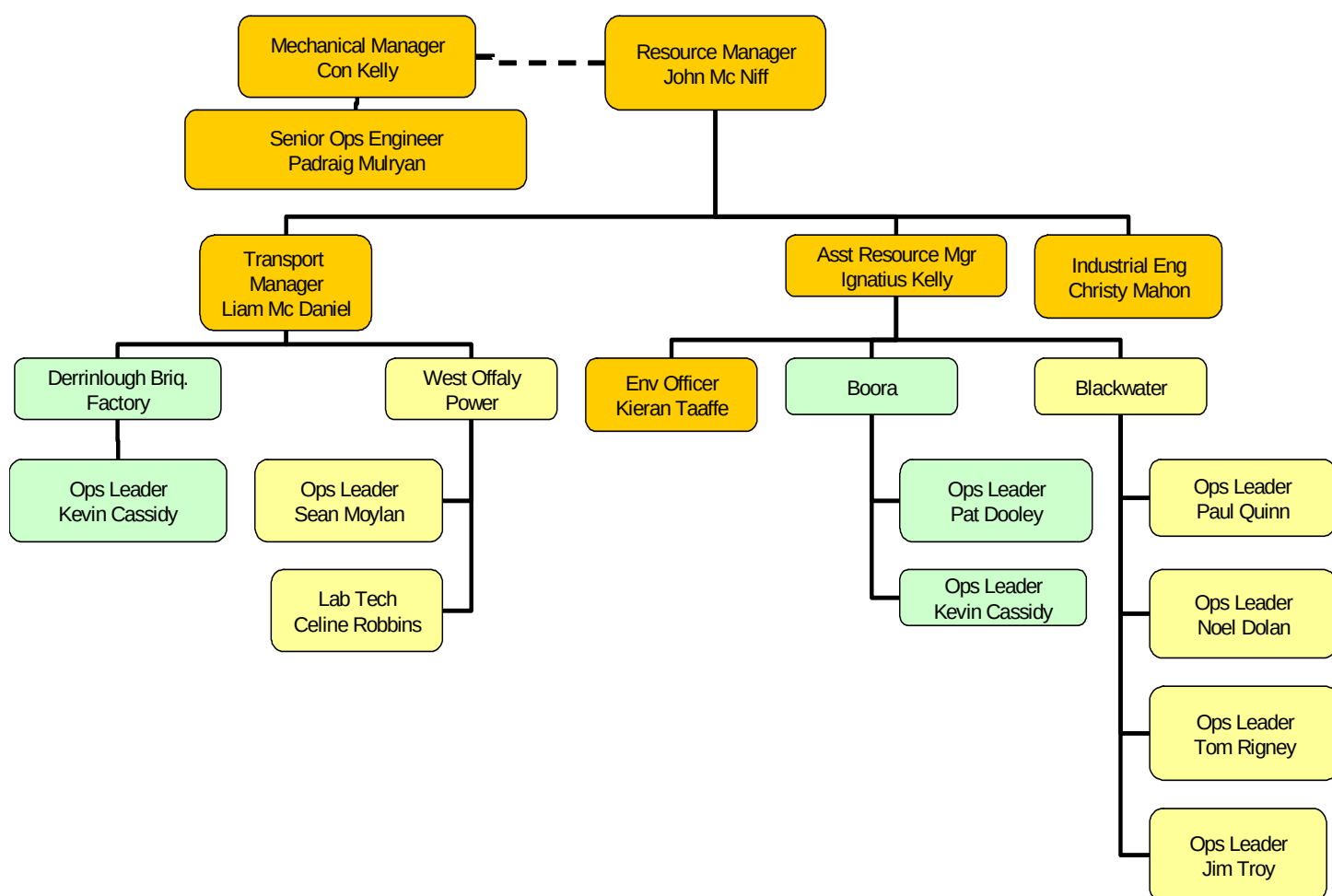
Horticultural Factory.

Briquette Factory.

1.4 Environmental Management of the Company

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

Boora Group Environmental Responsibilities



1.5 Environmental Policy



Bord na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's 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 Quarterly during the reporting period. In total analysis was carried out at five different locations. These locations were as follows, Noggus @ SW10, Bellair @ SW34, Clongawney @ SW 6, Derryclure @ SW 28 and Killaun @ SW 31.

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.

February was the driest month with 22.9mm of rainfall recorded, with November being the wettest with 175.7mm recorded.

pH values were between 6.0 and 8.1, with normal emission limit values being of the range 6 and 9. This demonstrated a slight narrowing of the bands compared with 2008. In general pH values remained constant throughout the monitoring regime.

Suspended solids varied from 5 mg/l to 129 mg/l and would depend on activities (piping, ditching) etc in the catchments at the time of sampling. The licence limit of 35mg/l was exceeded on one occasion, at Killaun SW31, and the Agency was informed. Other than the fourth quarter, when rainfall was unprecedented, suspended solid results are quite satisfactory.

Ammonia levels ranged from 0.04 mg/l to 11 mg/l. The I/PV for A3 waters is of the range 4mg/l. It is however not unusual for surface waters emanating from production peatlands to be slightly elevated. The result from SW28 Derryclure Bog are very elevated in quarters one and two, however these elevated results appear to have greatly reduced in the final two quarters of 2009.

COD readings ranged between 39 mg/l and 249 mg/l. The latter reading being well above Bord na Mona set trigger levels. Similarly to the ammonia, first quarter results 2010 will be closely scrutinised with any continuing elevated results investigated. The I/PV for A3 waters is of the range 40mg/l.

Flow monitoring showed increased flow in the final quarter 2010 and this can be expected as the rainfall at that time was unprecedented. At two locations, Noggus and Killaun, flow measurement was not possible due to flood conditions.

Total Phosphorus results were consistently low across all monitoring locations in 2009.

Sampling will continue at the same locations during 2010.

Surface Water Results are attached in Appendix 1.

2.1.2 Yard Discharges (Monthly Grab)

Comment

Yard runoff monitoring took place at fourteen 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 due to small catchments. It was decided in 2008, that every effort should be made to retrieve a sample every month going forward.

The graph in appendix 2 represents the last four years data and also indicates reductions in COD in the last two months of 2009. Bord na Mona set trigger levels of 100 mg/l in relation to COD and discharges exceeding this are always investigated. Corrective action work following elevated results has included the cleaning of interceptors.

Monitoring will take place at the same locations in 2010.

Yard discharge results are contained in Appendix 2

2.1.3 Composite Sampler Report (Weekly - Continuous)

Comment

The composite sampler operated at SW 7 Drinagh Bog 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 results were very satisfactory with one non-compliance being recorded for the period, and reported to the Agency

It is proposed to leave the sampler at this location for the foreseeable future.

Composite Sample Results are contained in Appendix 3

2.1.4 Emissions to Water Non-compliance's

Emissions to Water Non-Compliances 2009	
Licence: P0500-01	
Works: BOORA	

Type	Non-Compliances	Location / SW Nr
Composite	1	SW 7
Quarterly Grab	1	SW 31
Monthly Yard	0	
Totals	2	

Note: There were two non-compliances in relation to emissions to water and the Agency was informed.

2.2 Emissions to Air

2.2.1 Dust Monitoring

Comment

Dust monitoring was carried out on five occasions between April and September 2009. Each monitoring event lasted between 28 and 32 days and the Bergerhoff method of analysis was used.

The monitoring locations were as follows: Clongawney @ DM01, Pollagh @ DM02, and Derryclure @ DM03.

There was one non-compliance recorded at Pollagh Bog during the reporting period and the Agency was informed. At no time was there a complaint of a dust nuisance.

Sampling will continue at the same locations during 2010.

Dust Sample Results are contained in Appendix 4

2.2.2 Emissions to Air Non-compliance's

Dust Non-Compliances 2009	
Licence:P0500-01	
Works: Boora	
Location / DM Nr	Non-Compliances
Pollagh/DM 02	1
Total	1

Note: There was one non-compliance in relation to dust, and the Agency was informed.

2.3 Waste Arising

2.3.1 Non-Hazardous Waste

Non Hazardous Waste Data 2009				
Licence: P0500-01				
Works: Boora.				
Type	Tonnes	EW C Code	Contractor	Licence Nr
Skips	23.64	20 03 01	AES	053/OY/39/02
Wheelie Bins	9.43	20 03 01	AES	053/OY/39/02
Polyethylene	200.18	02 01 04	Eco Plastics	WFP-CE-08-0005-01
Scrap Steel	59.00	17 04 07	AES	050/OY/39/02
Timber Pallets	24.69	15 01 03	AES	053/OY/39/02
Silt Pond Cleanings	640.78	01 01 02	Bord na Mona	IPPC P 0500
Peat Screenings	120.00	01 01 02	Bord na Mona	IPPC P 0500
Totals	1077.72			

Note: Polyethylene and scrap steel are recycled through AES Ltd.

2.3.2 Hazardous Waste

Hazardous Waste Data 2009					
Licence:P0500-01					
Works: Boora					
Type	Tonnes	EW Code	Contractor	Licence Nr	Destination
Waste Oil	6.50	13 02 05	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	1.22	16 01 07	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oily Rags	0.41	15 02 02	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Waste Grease	1.29	13 08 99	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Total	9.43				

2.4 Energy and Water Consumption

2.4.1 Energy

Energy Consumption 2009				
Licence: P0500-01				
Works: Boora				
Units	Diesel (Litres)	Petrol (Litres)	Electricity (Units)	Peat Briquettes (Tonnes)
Totals	1196209	4212	776408	11
MW Hours	11714	38	776	55
Total MW Hours	12583			

Note: The electricity consumption figure was extracted from ESB on line information systems. Some of the consumption figures relate to estimated readings which do not reflect on the exact amount of consumption. Going forward/ Bord na Mona are liaising with the supplier, to try and eliminate all estimated readings. This will give a more precise figure in relation to consumption in the future.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

Environmental Incidents 2009	
Licence: P0500-01	
Works: Boora	
	Number
Incidents	3
Requiring corrective action	3
Category	
Water	1
Air	2
Procedural	
Miscellaneous	
Total	3

There were three incident during 2009, these related to an oil spill at Oughter and Bog fires at Lemanaghan and Belair. The Agency was informed of the oil spill and the Lemanaghan fire. It was decided the Belair fire was to small to warrant EPA notification.

2.5.2 Complaints

Environmental Complaints 2009	
Licence:P0500-01	
Works: Boora	
	Number
Complaints	1
Requiring corrective action	0
Category	
Water	
Air	1
Procedural	
Miscellaneous	
Total	1

There was one complaint in relation to dust at Pollagh Bog. This was investigated and found to be inaccurate and the Agency was not informed. This complaint did not occur at the time of the Pollagh dust non-compliance.

3.0 Management of the Activity

3.1 Achievement of Objectives & Targets 2009

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Status 94 employees received environmental training during the reporting period. Hydraulic Harrows. Hydraulic harrows will continue to be deployed across the licence area in 2009. Status Hydraulic harrows were deployed at seven locations during 2009. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations. Status Due to the above average rainfall experienced during the 2009 production season and the effect this had on production, no headland peat was collected during the period.
Project 2: Waste Management	Waste Streamlining. Following the purchase by Bord na Mona of AES Ltd, communication with that company's management will be ongoing to see how best Bord na Mona's waste management can be improved. Key account managers dedicated to Bord na Mona have been requested and are due to be in place in 2009. Status A pilot programme has been put in place at Bord na Mona Boora works. Should this prove successful it will be extended to all Bord na Mona works. The service promises to include the issuing of quarterly reports on waste quantities and types.

Project 3: Minimisation of Suspended Solids.	Training. Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Status 94 employees received environmental training during the reporting period.
Project 4: Effective spill leak management of mobile fuelling units.	Research and Development. Continue to introduce rail operated fuel service wagons on a phased basis, with Boora works budgeted to receive one wagon during the 2010/2011 financial year. Increased bund provisions where required, will be provided, in 2009. Status Boora received one double skinned fuel service wagon in 2009. There was also repair works to the Monettia bund. The installation of a double skinned tank at the site is now being planned.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing. Status There was 200 tonnes of polyethylene removed for recycling in 2009.
Project 6: PCB Directive	Survey. Carry out a comprehensive survey of all PCB suspect appliances. Following this, liaise with EPA in deciding plan of action once, a definitive amount of PCB suspect holdings are agreed. Status The identification and subsequent sampling of PCB suspect equipment is almost complete at Boora works. Final findings are due to be communicated to the Agency in 2010.

3.2 Environmental Management Programme Proposal for 2010

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Hydraulic Harrows. Hydraulic harrows will continue to be deployed across the licence area in 2010. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations.
Project 2: Waste Management	Waste Streamlining. Following the purchase by Bord na Mona of AES Ltd, Communication with that company's management will be ongoing to see how best Bord na Mona's waste management can be improved.
Project 3: Minimisation of Suspended Solids.	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.
Project 4: Effective spill leak management of mobile fuelling units.	Research and Development. A double skinned fuel tank is to be installed at Monettia in 2010. This is to replace the existing bund which has failed integrity tests. A double skinned service train is also to be deployed in 2010.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.
Project 6: Septic Tank Survey	Survey. Install improved septic tank facilities where required.
Project 7: Energy Management	Internal Meter Reading. As part of an energy management process a programme of internal meter readings will commence in 2010. The purpose of this exercise is to establish accurate energy consumption as here to fore a high percentage of electricity bills have been estimated by the supplier.

3.3 Environmental Expenditure

Environmental Expenditure 2009	
Licence:P0500-01	
Works: Boora	
Description	Cost €
Capital Costs	86,375.00
Silt Control	73,419.81
Analytical & Consultancy Costs	18,157.73
EPA Fees	6,994.00
Bog Rehabilitation	53,200.00
Waste Management	17,537.20
Total	255,683.74

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

Sampling went well in 2009, with results at both the Quarterly Grab and Composite locations being very favourable. It is proposed to sample the same locations during 2010.

4.2 Bunding Programme

Bund integrity testing took place at Derrinlough Briquette Factory and Killaun Tea Centre during 2009. The table below is an over view of the integrity test results at Boora Works.

The bund at Monettia failed its integrity test and is to be replaced with a double skinned tank.

Bund Locations & Numbers Boora Works					
IPPC Licence: P0500-01					
Location	Bund Number	Last Tested	Status Pass/Fail	Repair Date	Next Test Due
Briquette Factory (Bog Area Tank)	500-15-01	Sep-09	Pass	N/A	Sep-11
Briquette Factory (Transport Tank)	500-15-02	Nov-08	Pass	N/A	Nov-10
Derrinboy Bund	500-15-03	Nov-08	Pass	N/A	Nov-10
Killaun Bund	500-15-04	Sep-09	Pass	N/A	Sep-11
Bellair Bund	500-15-05	Nov-08	Pass	N/A	Nov-10
Leamanaghan Bund	500-15-06	Nov-08	Pass	N/A	Nov-10
Derryclure Bund	500-15-07	Nov-08	Pass	N/A	Nov-10
Boora Main Bund	500-15-08	Nov-08	Pass	N/A	Nov-10
Monettia Bund	500-15-09	2009	Fail		ASAP

4.3 Boiler Combustion Efficiency

Due to error boiler efficiency testing was not carried out during the reporting period. The boiler at Boora and Monettia will be tested in early 2010 and results retained on file.

4.4 Resource consumption summary

Resource Consumption 2009			
Licence: P0500-01			
Works: Boora			
Product	Tonnes Produced	Tonnes Sold	Customer
Milled Peat	380098.00	514024.00	ESB and Briquette Fac
Moss	70815.00	93970.00	BNM Horticulture
Turf	250.00	250.00	Domestic Customers
Totals	451163	608244	

Proposed Production 2010	
Licence: P0500-01	
Works: Boora	
Product	Proposed Target
Milled Peat	471000
Moss	130000
Turf	250
Totals	601250

4.5 De-Silting Report

All ponds were cleaned twice during the reporting period. Cleanings were dictated by the inspections programme.

Silt Pond Cleaning Programme is contained in Appendix 5

4.6 Bog Development and Operational Programme

During 2009, continuing drainage development was completed at Killaun bog where it is proposed to bring dormant areas back into production.

4.7 Bog Rehabilitation Report

Bog Rehabilitation Report for Boora 2009

2008: Following consultation with the National Parks and Wildlife Service, an exercise was carried out, to identify potential areas within the Licence area that may be suitable for management with a biodiversity focus. Following from the initial desktop survey and mapping exercise, key areas of potential biodiversity areas within the Boora Bogs were identified. These include Oughter, Turraun, Derries, Derrybrat, Drinagh, Clongawney, and Boora.

2009: In September 2009, a large-scale baseline ecological survey of all of the Borna Mona bogs commenced. The survey will target those areas identified during the mapping project in 2008 and will form the basis for development of *Rehabilitation Plans* for all bog areas, while also identifying areas considered as being rich biodiversity. To date, Oughter, Turraun, Derries, Derrybrat, Drinagh and Clongawney Bogs have been surveyed and there are selected sites ear-marked for survey in 2010. Possible rehabilitation measures will be outlined and developed as areas are removed from the peat production process.

Further consultation with the NPWS was carried out in 2009, including a meeting with Padraic Comerford and Val Swann, Eastern Region Management Staff. The outline long-term rehabilitation plans for the Boora bogs were discussed and it was agreed to notify the NPWS when potential Biodiversity Areas are identified and more site specific rehabilitation plans drawn up.

Sculpture in the parklands.

Two new sculpture pieces were installed in September 2009 in the Parklands area. One is called "Passage" by Irish artist Alan Counihan which is constructed mainly from old railway materials. The other is by English artist Julian Wilde and is called "System 30" or "The Skimming Stone" which again is constructed from waste metal from the workshop and is located in the Canal in the Parklands area.

Partridge Project.

The latest official count for partridge bird numbers is 467 birds this Autumn 2009. This is an excellent increase in numbers from approximately 26 birds in 2004.

4.8 Archaeological Report

Archaeological survey work was carried out in Bellair Nth & Sth, Clongawney, East Boora, Galros, Oughter & Drinagh West. This was part of a reassessment survey, as agreed with the Heritage Department in the Department of Environment, Heritage and Local Government.

5.0 Summary

Compliance Levels for 2009 were good. Employees are informed through training of the importance of good house-keeping, improved procedures and practices to minimise effects on the environment. Continuous improvement is our aim and constant vigilance is required from all staff in order to bring this about.

Training will continue with particular emphasis on Dust Sensitive Areas and ensuring that all new seasonal staff are trained.

We recycle all waste products where possible such as Oil, Filters, Batteries, Fluorescent Tubes, Metal, Polythene, Wood, Plastic swamp shoes and Baled Cardboard/Plastic. We will seek to expand the level of recycling where possible. Towards this end a recycling area is set out at the main workshop yard with space allocated for the various materials.

There is ongoing replacement and improvement of signage as commented on in our recent E.P.A. audit.

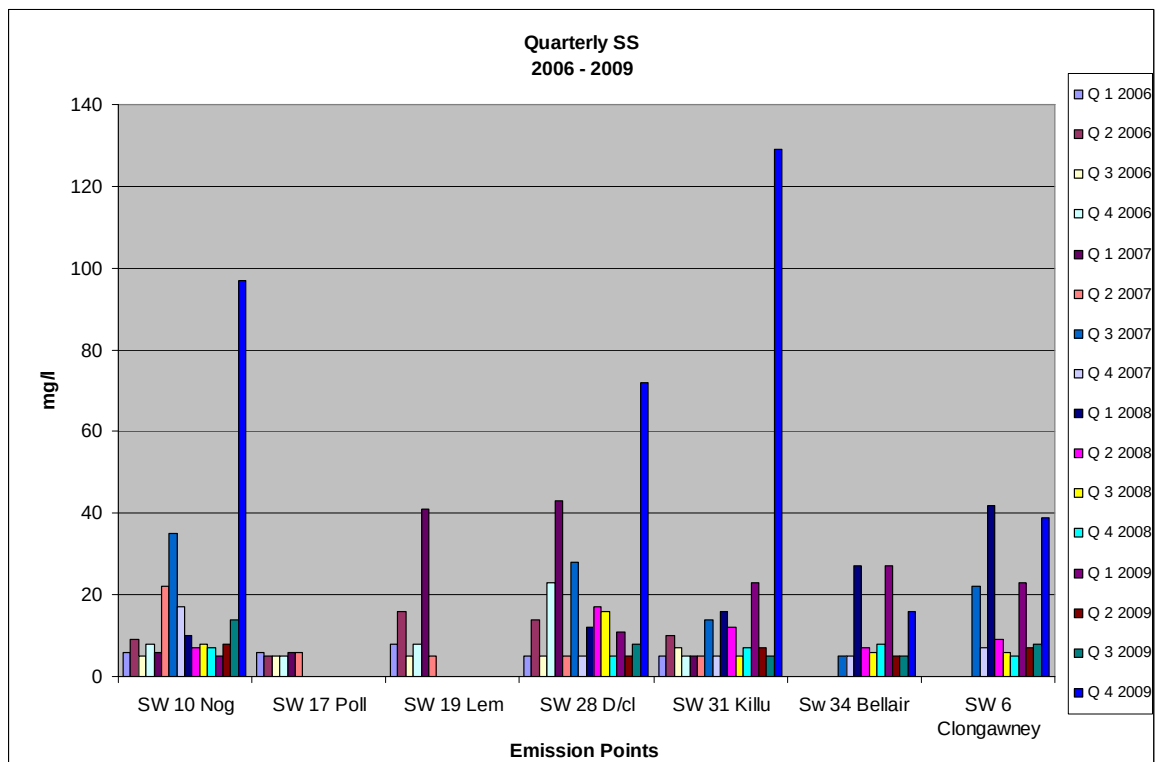
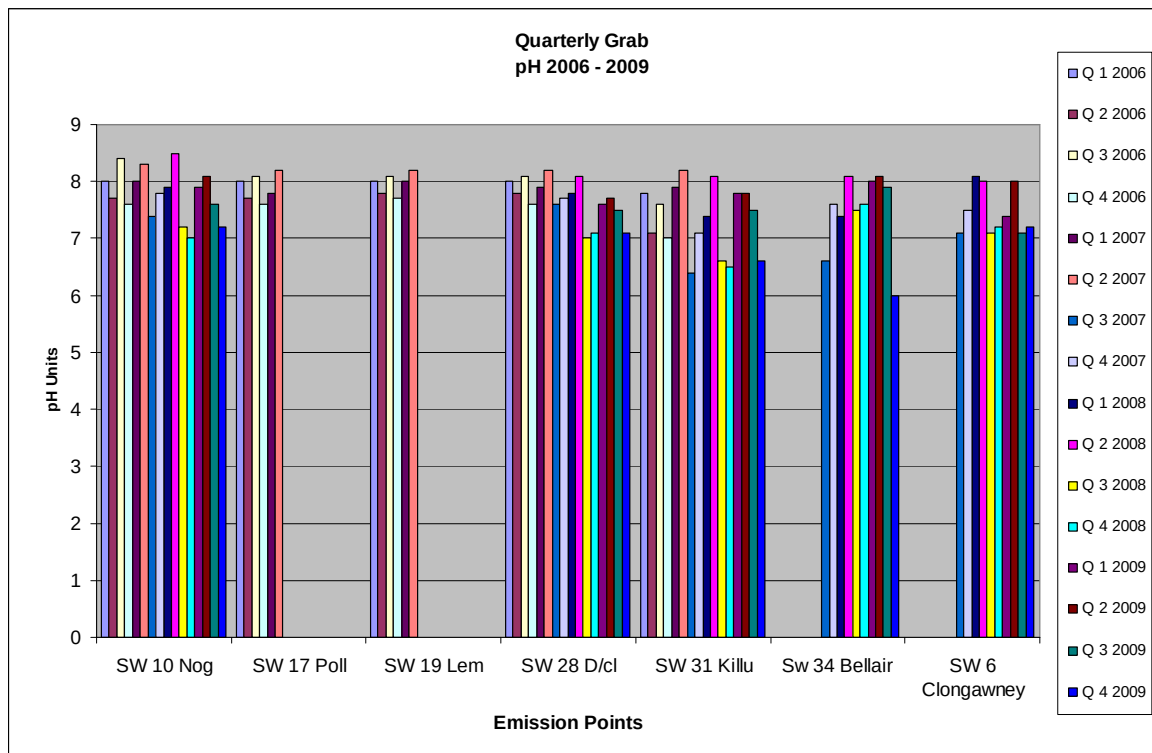
Bord na Mona Energy Ltd would like to take this opportunity to assure the Environmental Protection Agency of its continued commitment to improving its environmental performance by adopting cleaner production methods and improving its environmental protection measures.

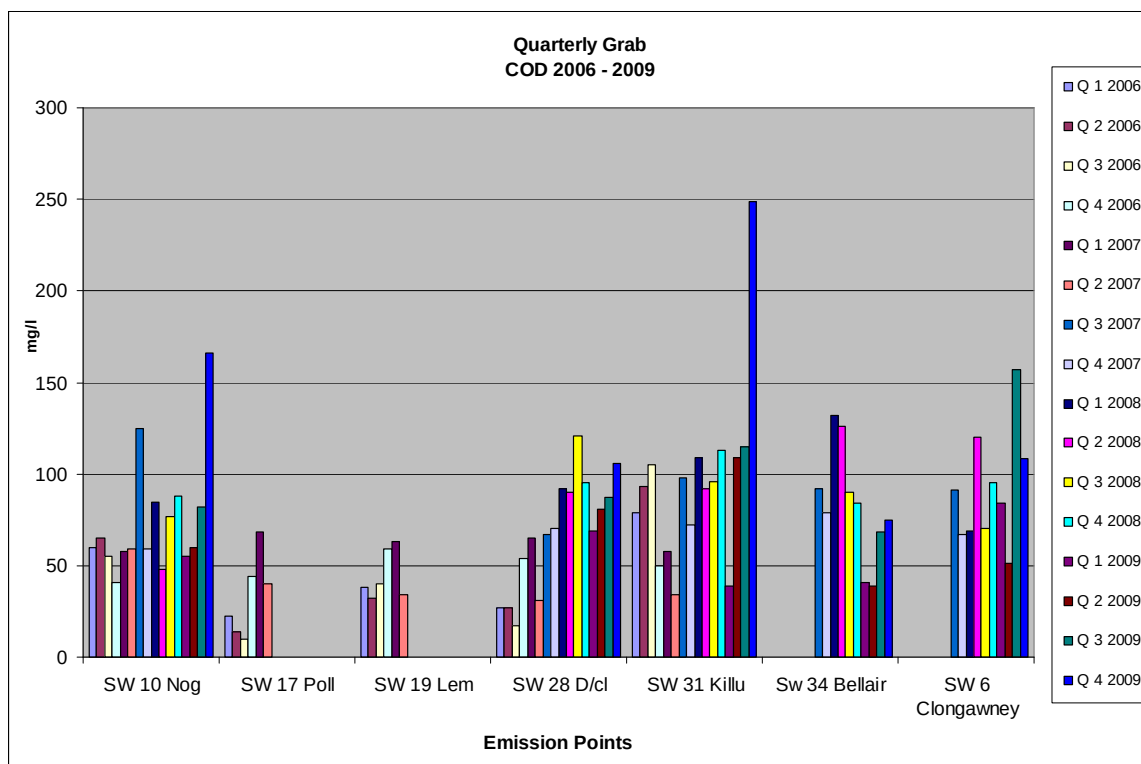
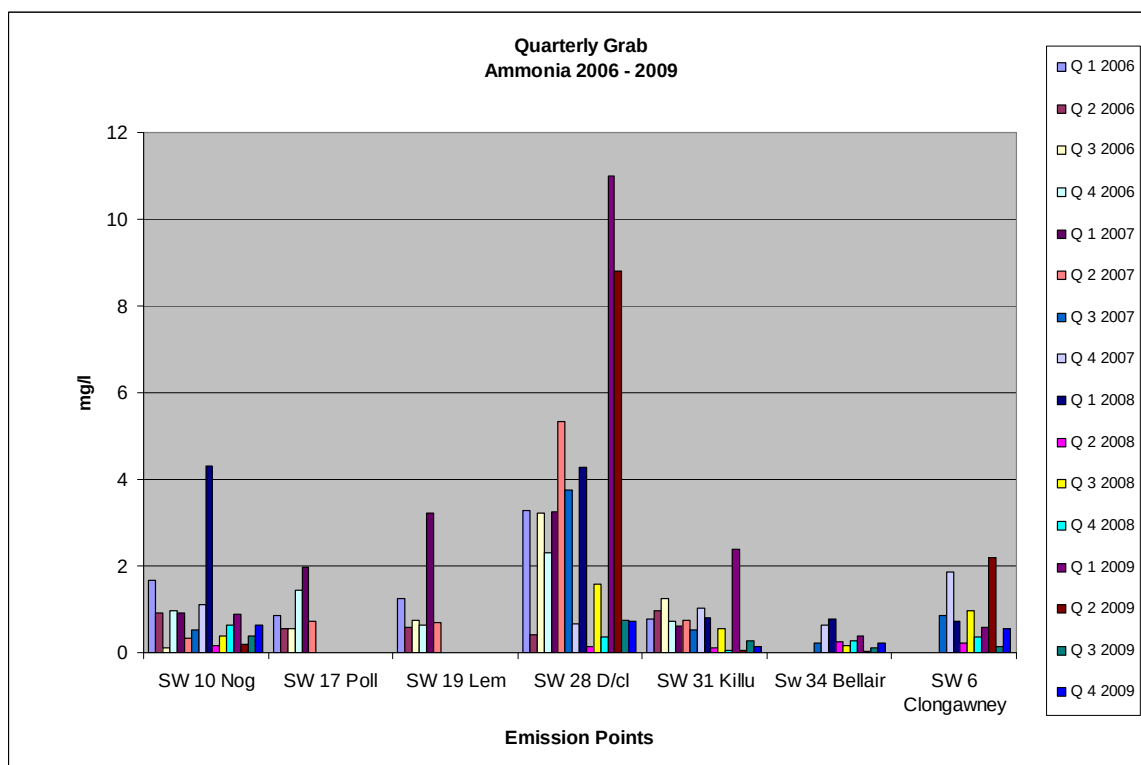
This will be communicated to all staff through the ongoing training programme.

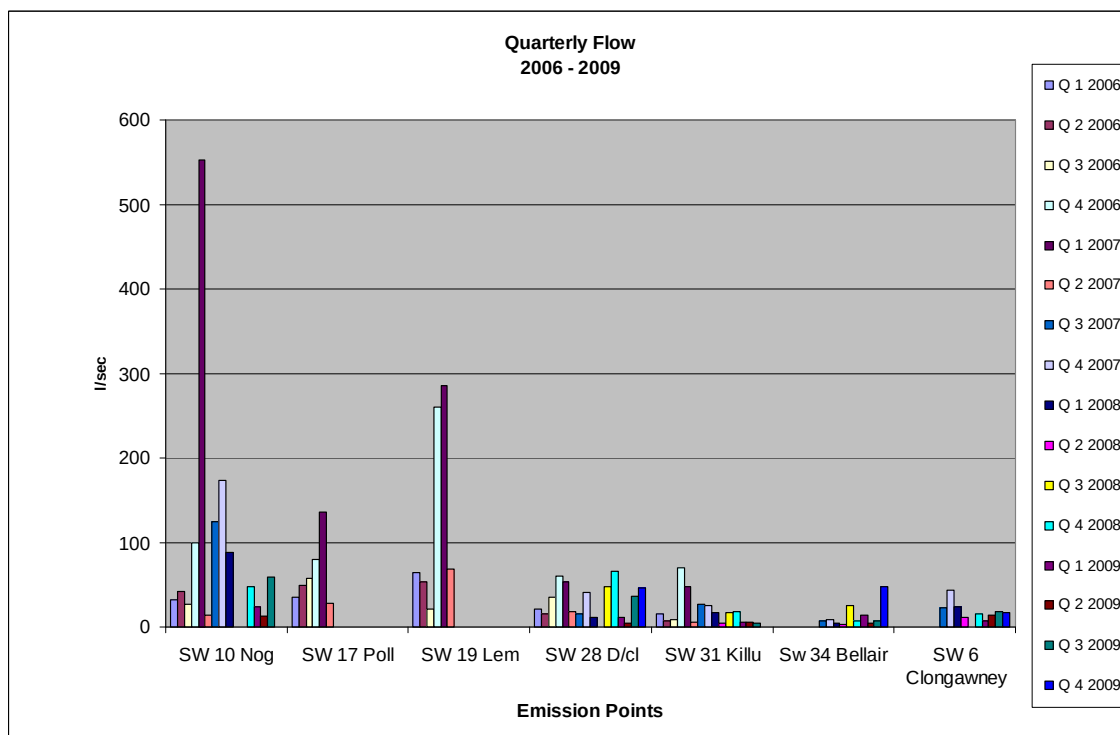
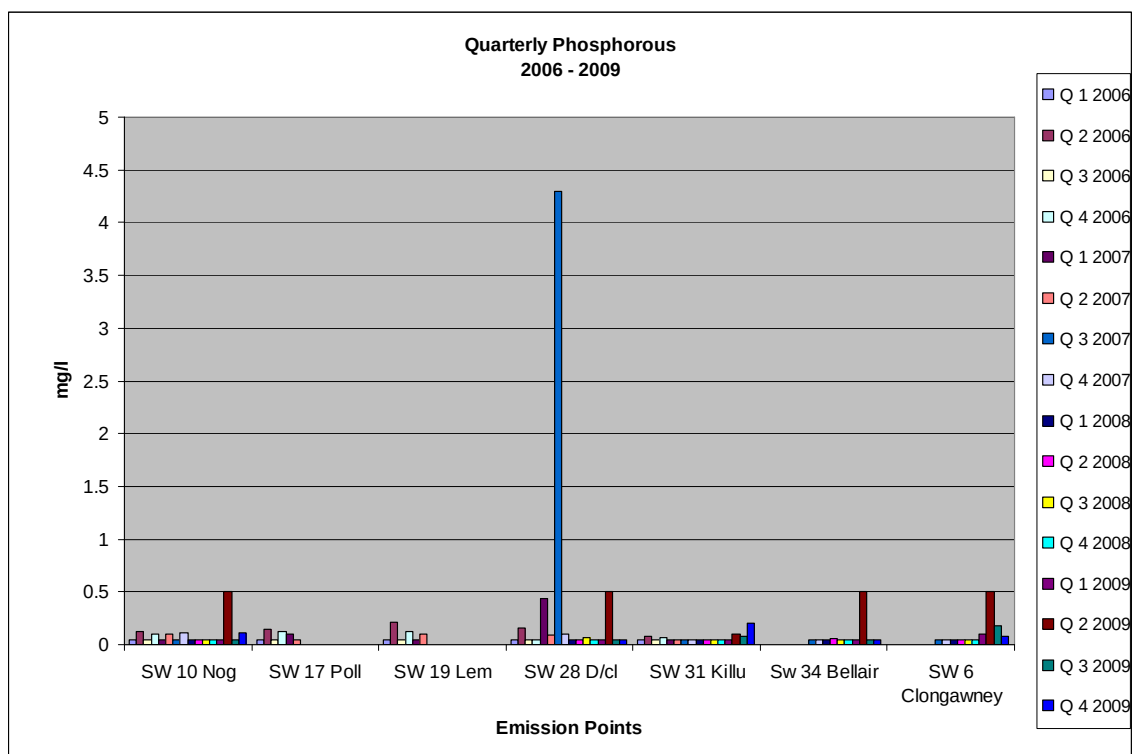
Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management on the River Barrow

APPENDIX 1

Surface Water Discharge Monitoring Results - Bogs



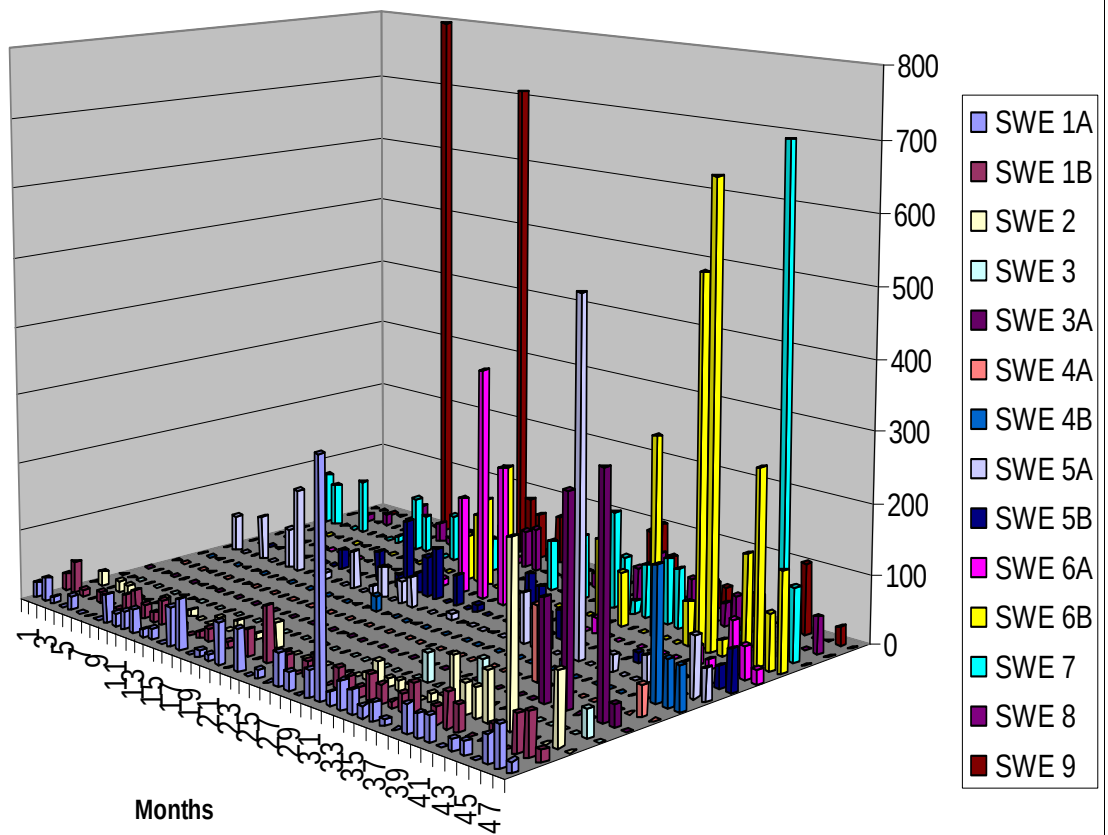




APPENDIX 2

Surface Water Discharge Monitoring Results - Yards

Monthly COD Yard Monitoring (mg/l) 2006-2009



APPENDIX 3

Surface Water Discharge Monitoring Results Composite

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
Jan		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	332		1822781				9.11	605.16
2					5	346		1927411				9.64	666.88
3					6	332		2230675				13.38	740.58
4					20	342		2245968				44.92	768.12
5					6	332		2245968				13.48	745.66
6	7.4	46	1.44	0.05	5	330	100	2357510	108.45	3.39	0.12	11.79	777.98
7					5	272		2090794				10.45	568.70
8					13	230		1772496				23.04	407.67
9					5	332		2301437				11.51	764.08
10					5	322		2788301				13.94	897.83
11					5	276		4128106				20.64	1139.36
12					5	174		6657379				33.29	1158.38
13	7.9	61	0.61	0.05	5	180	186	17705950	1080.06	10.80	0.89	88.53	3187.07
14					5	148		13889660				69.45	2055.67
15					5	140		10719650				53.60	1500.75
16					5	186		10582270				52.91	1968.30
17					11	236		2780093				30.58	656.10
18					5	206		3555792				17.78	732.49
19					5	132		24871970				124.36	3283.10
20	7.8	50	0.35	0.05	7	126	209	19081440	954.07	6.68	0.95	133.57	2404.26
21					5	197		4565376				22.83	899.38
22					5	216		1193962				5.97	257.90
23					5	174		7370784				36.85	1282.52
24					5	174		969926				4.85	168.77
25					5	186		0				0.00	0.00
26					5	196		907114				4.54	177.79
27	7.6	50	0.53	0.05	5	174	185	73457	3.67	0.04	0.00	0.37	12.78
28					24	201		1015286				24.37	204.07
29					57	226		852768				48.61	192.73
30					8	234		0				0.00	0.00
31					6	72		15152830				90.92	1091.00

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
Feb		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	160		12874460				64.37	2059.91
2					5	146		635723				3.18	92.82
3	7.8	73	0.38	0.05	5	156	243	0				0.00	0.00
4					6	152		0				0.00	0.00
5					5	154		0				0.00	0.00
6					5	152		0				0.00	0.00
7					9	140		0				0.00	0.00
8					0			0				0.00	0.00
9					0			0				0.00	0.00
10	7.6	48	1.2	0.05	5	174	171	208907	10.03	0.25	0.01	1.04	36.35
11					5	288		0				0.00	0.00
12					5	288		0				0.00	0.00
13					5	280		0				0.00	0.00
14					5	272		0				0.00	0.00
15					5	286		61491				0.31	17.59
16	7.8	49	1.14	0.05	5	308	121	575882	28.22	0.66	0.03	2.88	177.37
17					20	332		1144195				22.88	379.87
18					5	320		1837469				9.19	587.99
19					5	310		2328394				11.64	721.80
20					5	306		2773699				13.87	848.75
21					5	314		2884637				14.42	905.78
22					5	282		3086985				15.43	870.53
23	8.3	42	1.41	0.06	5	311	100	3337373	140.17	4.71	0.20	16.69	1037.92
24					5	280		3577306				17.89	1001.65
25					5	266		3965155				19.83	1054.73
26					5	262		3706819				18.53	971.19
27					5	288		3436906				17.18	989.83
28					5	228		3648499				18.24	831.86

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
March		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	243		3702154				18.51	899.62
2	8.2	19	0.81	0.05	5	244	107	4545331	86.36	3.68	0.23	22.73	1109.06
3					0	0		3692995				0.00	0.00
4					0	0		4330109				0.00	0.00
5					0	0		5412441				0.00	0.00
6					0	0		5312390				0.00	0.00
7					0	0		4567191				0.00	0.00
8					0	0		5366909				0.00	0.00
9	7.7	65	0.46	0.12	10	164	175	16268260	1057.44	7.48	1.95	162.68	2667.99
10					5	188		15980540				79.90	3004.34
11					5	172		16644960				83.22	2862.93
12					5	186		4448477				22.24	827.42
13					5	224		2935526				14.68	657.56
14					5	256		1367453				6.84	350.07
15					5	262		2005949				10.03	525.56
16					5	256		1658362				8.29	424.54
17					5	250		2019427				10.10	504.86
18					5	270		2432851				12.16	656.87
19	8.3	38	0.86	0.05	5	296	125	2382134	90.52	2.05	0.12	11.91	705.11
20					5	304		2033856				10.17	618.29
21					5	348		2438813				12.19	848.71
22					5	324		2926281				14.63	948.12
23					5	330		3262550				16.31	1076.64
24					5	374		3453235				17.27	1291.51
25					5	352		3553200				17.77	1250.73
26	8	37	0.82	0.05	15	364	77	3662064	135.50	3.00	0.18	54.93	1332.99
27					5	373		3716755				18.58	1386.35
28					5	372		3500237				17.50	1302.09
29					5	386		3709757				18.55	1431.97
30					5	366		3446928				17.23	1261.58
31					7	368		3875285				27.13	1426.10

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
April		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					30	400		0				0.00	0.00
2	8.4	34	1.29	0.15	71	450	58	0				0.00	0.00
3					5	384		0				0.00	0.00
4					6	380		0				0.00	0.00
5					7	370		0				0.00	0.00
6					7	354		0				0.00	0.00
7					31	366		0				0.00	0.00
8	8.6	38	0.79	0.05	14	328	136	166484	6.33	0.13	0.01	2.33	54.61
9					5	206		0				0.00	0.00
10					5	178		7792157				38.96	1387.00
11					5	258		11475650				57.38	2960.72
12					5	260		2675722				13.38	695.69
13					5	216		85441				0.43	18.46
14					5	184		377698				1.89	69.50
15					5	280		377698				1.89	105.76
16	8.4	21	0.28	0.05	5	308	92	0				0.00	0.00
17					7	364		0				0.00	0.00
18					5	304		0				0.00	0.00
19					5	320		0				0.00	0.00
20					5	312		0				0.00	0.00
21					5	350		0				0.00	0.00
22					5	366		0				0.00	0.00
23	8.4	44	0.67	0.05	5	168	80	0				0.00	0.00
24					5	256		0				0.00	0.00
25					7	192		15159740				106.12	2910.67
26					5	226		6564240				32.82	1483.52
27					5	186		6564240				32.82	1220.95
28					11	198		13317700				146.49	2636.90
29	7.7	87	0.23	0.05	7	50	247	13317700	1158.64	3.06	0.67	93.22	665.89
30					5	238		9429696				47.15	2244.27

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
May		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	216		11475650				57.38	2478.74
2					5	224		11475650				57.38	2570.55
3					5	222		4108320				20.54	912.05
4					5	206		4108320				20.54	846.31
5					5	224		4108320				20.54	920.26
6					5	280		0				0.00	0.00
7	7.9	48	0.48	0.05	5	318	139	0				0.00	0.00
8					5	322		0				0.00	0.00
9					5	276		3699043				18.50	1020.94
10					5	294		0				0.00	0.00
11					6	312		0				0.00	0.00
12					5	362		0				0.00	0.00
13					5	372		0				0.00	0.00
14	8.1	49	0.72	0.05	5	355	88	0				0.00	0.00
15					5	248		0				0.00	0.00
16					10	232		0				0.00	0.00
17					5	272		654428				3.27	178.00
18					5	296		996710				4.98	295.03
19					5	342		6973603				34.87	2384.97
20					0	0		6973603				0.00	0.00
21	7.8	68	0.78	0.05	13	240	223	5336323	362.87	4.16	0.27	69.37	1280.72
22					0	0		5336323				0.00	0.00
23					0	0		5336323				0.00	0.00
24					0	0		5336323				0.00	0.00
25					0	0		654428				0.00	0.00
26					0	0		654428				0.00	0.00
27					0	0		0				0.00	0.00
28	8	45	0.86	0.05	5	300	119	0				0.00	0.00
29					0	0		0				0.00	0.00
30					0	0		0				0.00	0.00
31					0	0		0				0.00	0.00

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
June		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					0	0		0	0.00	0.00	0.00	0.00	0.00
2					0	0		0				0.00	0.00
3	7.9	36	0.66	0.05	5	338	72	0				0.00	0.00
4					0	0		0				0.00	0.00
5					0	0		0				0.00	0.00
6					0	0		0				0.00	0.00
7					0	0		0				0.00	0.00
8					0	0		0				0.00	0.00
9					0	0		0				0.00	0.00
10	8	37	0.9	0.06	5	368	70	0				0.00	0.00
11					0	0		0				0.00	0.00
12					0	0		0				0.00	0.00
13					0	0		0				0.00	0.00
14					0	0		0				0.00	0.00
15					0	0		0				0.00	0.00
16					0	0		1428883				0.00	0.00
17					0	0		166484				0.00	0.00
18	7.3	65	1.25	0.05	5	194	212	0				0.00	0.00
19					0	0		0				0.00	0.00
20					0	0		0				0.00	0.00
21					0	0		0				0.00	0.00
22					0	0		0				0.00	0.00
23					5	248		0				0.00	0.00
24	8	76	0.99	0.05	7	286	157	0				0.00	0.00
25					5	314		0				0.00	0.00
26					5	290		0				0.00	0.00
27					5	356		0				0.00	0.00
28					5	349		0				0.00	0.00
29					5	354		0				0.00	0.00
30					5	388		0				0.00	0.00

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
July		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	8.3	53	0.41	0.05	5	398	79	19580470	1037.76	8.03	0.98	97.90	7793.03
2					5	342		19896470				99.48	6804.59
3					5	328		20148390				100.74	6608.67
4					5	397		19556880				97.78	7764.08
5					5	304		19466940				97.33	5917.95
6					5	312		19617640				98.09	6120.70
7					5	310		21431840				107.16	6643.87
8	7.8	80	0.53	0.05	7	250	212	20158520	1612.68	10.68	1.01	141.11	5039.63
9					5	226		19220050				96.10	4343.73
10					5	262		19403370				97.02	5083.68
11					5	254		19679860				98.40	4998.68
12					5	288		20558970				102.79	5920.98
13					5	260		20982770				104.91	5455.52
14					5	232		19836730				99.18	4602.12
15	7.6	72	0.52	0.05	5	262	187	20419680	1470.22	10.62	1.02	102.10	5349.96
16					5	264		20051840				100.26	5293.69
17					5	268		19637970				98.19	5262.98
18					5	276		19538640				97.69	5392.66
19					5	284		19693900				98.47	5593.07
20					5	238		22556300				112.78	5368.40
21					5	236		19582280				97.91	4621.42
22	7.7	69	0.31	0.05	5	242	211	19607800	1352.94	6.08	0.98	98.04	4745.09
23					5	252		19887540				99.44	5011.66
24					5	232		20388040				101.94	4730.03
25					9	218		21142460				190.28	4609.06
26					6	238		19491840				116.95	4639.06
27					7	222		20220420				141.54	4488.93
28					9	234		19662750				176.96	4601.08
29	7.9	69	0.37	0.05	6	266	179	19469450	1343.39	7.20	0.97	116.82	5178.87
30					5	284		20254450				101.27	5752.26
31					5	296		19504900				97.52	5773.45

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
August		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	298		20413570				102.07	6083.24
2					5	290		21326510				106.63	6184.69
3					5	333		19535520				97.68	6505.33
4					5	322		19996540				99.98	6438.89
5	8.1	63	0.16	0.05	5	326	142	20060510	1263.81	3.21	1.00	100.30	6539.73
6					5	322		19619760				98.10	6317.56
7					5	328		19747930				98.74	6477.32
8					5	340		19980920				99.90	6793.51
9					5	346		19960690				99.80	6906.40
10					5	343		19901100				99.51	6826.08
11					5	356		20034870				100.17	7132.41
12	8.2	41	0.26	0.05	5	362	83	19852830	813.97	5.16	0.99	99.26	7186.72
13					5	336		20267100				101.34	6809.75
14					5	344		19695950				98.48	6775.41
15					5	292		19840570				99.20	5793.45
16					5	266		20970620				104.85	5578.18
17					5	300		19402710				97.01	5820.81
18					5	312		19635690				98.18	6126.34
19	7.9	25	0.32	0.05	5	307	122	19947850	498.70	6.38	1.00	99.74	6123.99
20					9	203		20269430				182.42	4114.69
21					5	208		25381490				126.91	5279.35
22					5	202		17775330				88.88	3590.62
23					6	190		17468050				104.81	3318.93
24					6	230		24867650				149.21	5719.56
25					5	180		18546820				92.73	3338.43
26					7	228		16597670				116.18	3784.27
27	8.1	78	0.17	0.05	5	260	150	19274050	1503.38	3.28	0.96	96.37	5011.25
28					5	310		18341880				91.71	5685.98
29					5	256		21151080				105.76	5414.68
30					5	268		20277150				101.39	5434.28
31					5	256		19879730				99.40	5089.21

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
Sept		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	250		26057410				130.29	6514.35
2	7.8	74	0.12	0.05	5	230	236	18071060	1337.26	2.17	0.90	90.36	4156.34
3					27	278		21355600				576.60	5936.86
4					14	276		20226370				283.17	5582.48
5					8	260		18330640				146.65	4765.97
6					32	318		18214860				582.88	5792.33
7					10	282		19016930				190.17	5362.77
8					17	272		19735130				335.50	5367.96
9	7.7	66	0.68	0.05	17	290	199	20528290	1354.87	13.96	1.03	348.98	5953.20
10					5	298		20065260				100.33	5979.45
11					7	318		19763570				138.34	6284.82
12					5	338		19954000				99.77	6744.45
13					5	330		20109180				100.55	6636.03
14					5	342		20182380				100.91	6902.37
15					5	359		20244240				101.22	7267.68
16	8	47	0.74	0.05	5	360	108	20400570	958.83	15.10	1.02	102.00	7344.21
17					5	378		20440020				102.20	7726.33
18					5	378		20447760				102.24	7729.25
19					5	390		20475480				102.38	7985.44
20					5	384		20608600				103.04	7913.70
21					5	374		20538440				102.69	7681.38
22					5	384		20500530				102.50	7872.20
23					5	384		20560510				102.80	7895.24
24	8.2	40	0.61	0.05	5	376	72	20503310	820.13	12.51	1.03	102.52	7709.24
25					10	370		20434860				204.35	7560.90
26					5	374		20441070				102.21	7644.96
27					5	402		20440320				102.20	8217.01
28					5	392		20426520				102.13	8007.20
29					5	388		20410020				102.05	7919.09
30	8.1	45	0.51	0.05	5	410	69	20402440	918.11	10.41	1.02	102.01	8365.00

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
Oct		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					6	380		20425020				122.55	7761.51
2					5	366		20394120				101.97	7464.25
3					5	382		20497800				102.49	7830.16
4					5	370		20824810				104.12	7705.18
5					5	390		20741430				103.71	8089.16
6					5	359		20632920				103.16	7407.22
7	8.1	44	0.46	0.05	27	336	79	22256600	979.29	10.24	1.11	600.93	7478.22
8					5	322		21273580				106.37	6850.09
9					13	305		20289750				263.77	6188.37
10					5	268		21875220				109.38	5862.56
11					9	286		21781260				196.03	6229.44
12					5	280		21285490				106.43	5959.94
13					5	278		20240720				101.20	5626.92
14	7.9	63	0.24	0.05	5	270	165	20232030	1274.62	4.86	1.01	101.16	5462.65
15					5	266		20401050				102.01	5426.68
16					5	300		20449410				102.25	6134.82
17					5	93		20567340				102.84	1912.76
18					5	352		20612980				103.06	7255.77
19					5	362		20762340				103.81	7515.97
20					5	368		21187420				105.94	7796.97
21	8.1	41	0.5	0.05	5	364	93	21697090	889.58	10.85	1.08	108.49	7897.74
22					5	244		22043070				110.22	5378.51
23					5	238		21931520				109.66	5219.70
24					5	236		21184630				105.92	4999.57
25					5	264		21660310				108.30	5718.32
26					5	238		22027040				110.14	5242.44
27					5	237		20984280				104.92	4973.27
28	7.8	72	0.32	0.05	10	212	185	21104110	1519.50	6.75	1.06	211.04	4474.07
29					5	240		20845730				104.23	5002.98
30					5	206		20212530				101.06	4163.78
31					6	182		22302580				133.82	4059.07

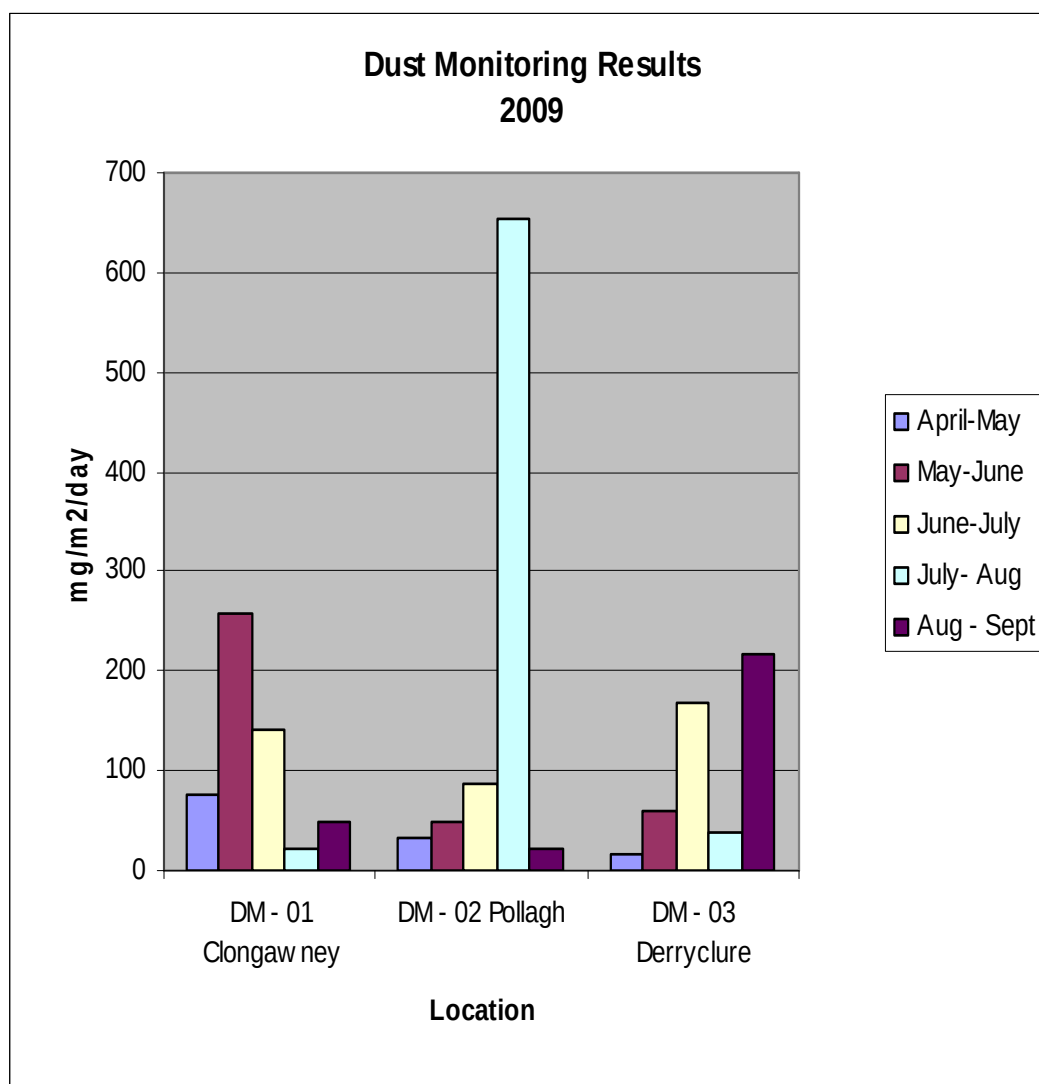
Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
Nov		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					13	199		22041540				286.54	4386.27
2					11	160		29782280				327.61	4765.16
3					15	50		18732550				280.99	936.63
4	7.8	78	0.23	0.05	12	188	228	22197300	1731.39	5.11	1.11	266.37	4173.09
5					15	215		19900160				298.50	4278.53
6					5	208		19082580				95.41	3969.18
7					5	230		19532510				97.66	4492.48
8					5	244		26757240				133.79	6528.77
9					6	208		19681550				118.09	4093.76
10					5	216		20801970				104.01	4493.23
11	7.7	79	0.52	0.05	25	224	241	23729020	1874.59	12.34	1.19	593.23	5315.30
12					19	134		17886380				339.84	2396.77
13					20	156		21048530				420.97	3283.57
14					9	164		20200320				181.80	3312.85
15					18	134		20200320				363.61	2706.84
16					9	166		20200320				181.80	3353.25
17					33	160		19823590				654.18	3171.77
18	7.4	106	0.36	0.05	17	180	277	18857360	1998.88	6.79	0.94	320.58	3394.32
19					5	50		26462670				132.31	1323.13
20					5	92		22759310				113.80	2093.86
21					5	140		19657050				98.29	2751.99
22					5	126		20675230				103.38	2605.08
23					8	94		20135500				161.08	1892.74
24					13	50		20669290				268.70	1033.46
25	7.7	104	0.39	0.07	16	62	280	24146830	2511.27	9.42	1.69	386.35	1497.10
26					6	68		19440560				116.64	1321.96
27					19	142		20953180				398.11	2975.35
28					20	122		18257310				365.15	2227.39
29					19	130		18920160				359.48	2459.62
30					24	140		19671860				472.12	2754.06

Month	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
Dec		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					20	200		38379560				767.59	7675.91
2	7.4	119	0.6	0.08	31	208	250	25091140	2985.85	15.05	2.01	777.83	5218.96
3					5	140		27767770				138.84	3887.49
4					11	50		26988700				296.88	1349.44
5					10	152		24476660				244.77	3720.45
6					5	134		15462140				77.31	2071.93
7					5	106		18621940				93.11	1973.93
8					7	167		16094350				112.66	2687.76
9	7.8	76	0.8	0.05	11	224	227	24667950	1874.76	19.73	1.23	271.35	5525.62
10					5	104		53035				0.27	5.52
11					5	106		6334597				31.67	671.47
12					9	102		1963582				17.67	200.29
13					9	130		18533790				166.80	2409.39
14					11	104		-1758757				-19.35	-182.91
15	7.7	91	0.81	0.05	16	192	197	2106778	191.72	1.71	0.11	33.71	404.50
16					7	136		2070933				14.50	281.65
17					9	134		3113532				28.02	417.21
18					7	242		5475610				38.33	1325.10
19					5	274		-1531071				-7.66	-419.51
20					6	337		-1053389				-6.32	-354.99
21					5	294		-1053389				-5.27	-309.70
22	7.5	49	1.44	0.05	5	244	117	12716930	623.13	18.31	0.64	63.58	3102.93
23					0	0		13957400				0.00	0.00
24					0	0		13957400				0.00	0.00
25					0	0		13957400				0.00	0.00
26					0	0		13957400				0.00	0.00
27					0	0		12910600				0.00	0.00
28	7.3	53	1.54	0.05	5	226	122	-527609	-27.96	-0.81	-0.03	-2.64	-119.24
29					0	0		-1580083				0.00	0.00
30					0	0		3871204				0.00	0.00
31					0	0		11060580				0.00	0.00

APPENDIX 4

Dust Monitoring Results.

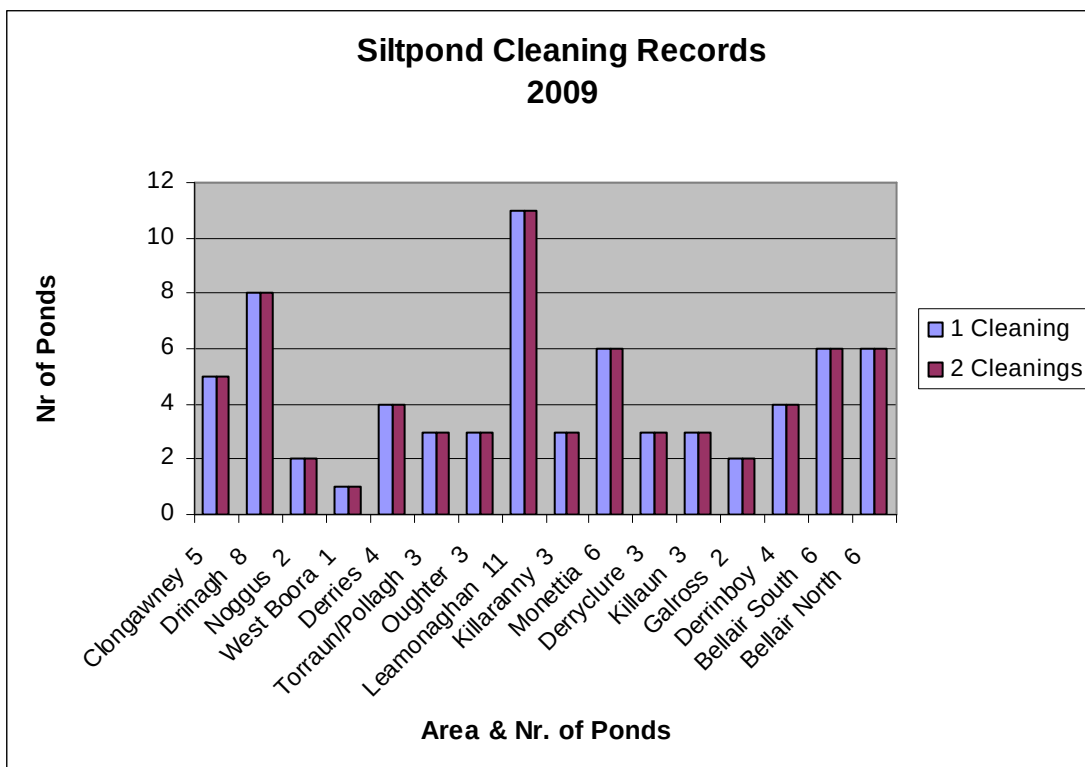
Dust Monitoring Results 2009			
Licence: P0500-01			
Works: Boora			
Sample Period	DM - 01 Clongawney	DM - 02 Pollagh	DM - 03 Derryclure
April-May	75	32	16
May-June	258	48	61
June-July	142	86	167
July- Aug	22	653	37
Aug - Sept	50	23	217



APPENDIX 5

De-silting Programme Review.

Siltpond Cleaning Programme 2009			
IPPC Licence: P0500-01			
Works: Boora			
Bog Area & No. of Ponds	1 Cleaning	2 Cleanings	3 Cleanings
Clongawney 5	5	5	
Drinagh 8	8	8	
Noggus 2	2	2	
West Boora 1	1	1	
Derries 4	4	4	
Torraun/Pollagh 3	3	3	
Oughter 3	3	3	
Leamonaghan 11	11	11	
Killaranny 3	3	3	
Monettia 6	6	6	
Derryclure 3	3	3	
Killaun 3	3	3	
Galross 2	2	2	
Derrinboy 4	4	4	
Bellair South 6	6	6	
Bellair North 6	6	6	



APPENDIX 6

AER PRTR Data.



Annual Environmental Report 2010
P0500-01

March 2011

Bord na Móna today operates 5 main subsidiary companies in more than 20 locations throughout Ireland, the UK and USA. The principal businesses are in the Energy, Resource Recovery, Horticulture, Home Heating and Wastewater Treatment and Air Pollution Abatement markets. The company also engages in an extensive rehabilitation program to develop its peat lands in an environmentally sustainable manner.



Bord na Móna has long recognised the need to diversify its activities in order to secure a sustainable future. In this context we identified the energy and resource recovery sectors as appropriate areas of growth and development, given our assets, strengths and skills. Significant challenges face Ireland in meeting the country's needs to provide secure sustainable energy and manage waste while minimising the impact on the environment.

Bord na Móna is in a strong position to contribute to dealing with these challenges. We have a unique mixture of assets, experience and innovation which will enable us to cross-link our activities in energy, water and resource recovery to provide products and services which will meet Ireland's needs. We also have the capacity to become an exemplar for others to follow in these fields.

With this background we have scoped out a new vision for the future sustainable development of Bord na Móna.

Following on from our vision, we have developed a new mission for Bord na Móna which the Company is committed to achieving.

In 1934 the Turf Development Board was formed to 'develop and improve the turf industry.' The experience of fuel shortages during the war re-enforced the Irish State's commitment to developing the country's bogs. In 1944 the TDB was asked to devise and submit a comprehensive programme, the outcome was the transformation in 1946 of the TDB into Bord na Móna. The Board was given a mandate to increase the use of peat as a fuel and in energy production. Markets for the use of moss peat in horticulture were also developed.

In 1990 Bord na Móna implemented a divisionalised and decentralised structure, designed to delegate responsibility downwards ensuring a sharper focus on each profit centre and a greater spirit of enterprise.

Group Vision



The vision statement defines the Company's purpose, in terms of its values.

Values are guiding beliefs about how things should be done.

The vision statement communicates both the purpose and values of Bord na Móna.

For employees, it gives direction about how they are expected to behave and inspires them to give their best. Shared with customers, it shapes the customers' understanding of why they should work with Bord na Móna.

Bord na Móna will seek solutions that optimise the creative energy and potential of the organisation, driven by long term goals and the organisation's vision and mission.

In this context our devolved business units will align their vision and strategic planning with the global direction provided.

Consistent with our vision, innovation will once again return to the core of everything we do. We will capitalise on opportunities to cross fertilise our unique range of skills and technologies that add value and are socially and environmentally sustainable.

Greater focus will be placed on managing and developing our land assets in a responsible and sustainable manner. Our award winning initiatives at Lough Boora (Co. Offaly) and Oweninny (Co Mayo), provide shining examples of what can be achieved

Group Mission

We conduct our affairs with openness, honesty and integrity.

We are Ireland's leading environmentally responsible integrated utility service provider encompassing electricity, heating solutions, resource recovery, water, horticulture and related services.

We capitalise on international opportunities where we have a competitive advantage.

We achieve continuing growth through superior customer service, outstanding quality and innovation delivered through the excellence and commitment of our people.

We engage in sustainable profitable business in the communities we serve, which is rewarding and challenging for employees and other stakeholders.

Contents

1.0 Introduction

- 1.1 IPPC Licence Register No
- 1.2 Name & Location of Site
- 1.3 Brief Description of Activities
- 1.4 Environmental Management of the Company
- 1.5 Environmental Policy Statement

2.0 Summary Information

- 2.1 Emissions to Water Summary
 - 2.1.1 Silt Pond Emissions
 - 2.1.2 Yard Discharges
 - 2.1.3 Composite Sampler Report
 - 2.1.4 Emissions to Water Non-compliance's

2.2 Emissions to Air Summary

- 2.2.1 Dust Monitoring
- 2.2.2 Emissions to Air Non-compliance's

2.3 Waste Arising

- 2.3.1 Non-Hazardous Waste
- 2.3.2 Hazardous Waste

2.4 Energy and Water Consumption

- 2.4.1 Energy Consumption

2.5 Environmental Incidents and Complaints

- 2.5.1 Incidents
- 2.5.2 Complaints

3.0 Management of the Activity

- 3.1 Environmental Management Programme Report
- 3.2 Environmental Management Programme Proposal
- 3.3 Environmental Expenditure

4.0 Licence Specific Reports

- 4.1 Surface Water Discharge Monitoring Location Programme Review
- 4.2 Bunding Programme
- 4.3 Boiler Combustion Efficiency
- 4.4 Resource Consumption Summary
- 4.5 Report on de-silting Programme
- 4.6 Bog Development and Operational Programme
- 4.7 Bog Rehabilitation Report
- 4.8 Archaeological Report

5.0 Summary

- Appendix 1:** Emissions to Water Monitoring Results. (Bogs)
- Appendix 2:** Emissions to Water Monitoring Results. (Yards)
- Appendix 3:** Emissions to Water Monitoring Results. (Composite)
- Appendix 4:** Emissions to Air Monitoring Results.
- Appendix 5:** De-silting Programme Review

1.0 Introduction

1.1 IPPC Licence No P0500-01

1.2 Name & Location of Site

Name:	Bord na Mona Energy Limited.- Boora Works
Address:	Leabeg, Tullamore Co Offaly
Telephone No:	05793 45900
Contact Name	John Mc Niff
Position	Resource Manager, Blackwater /Boora
National Grid Reference	E180050 N319540

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 their way along the fields, milling approximately 15mm of peat from 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 one of the following locations.

Power station

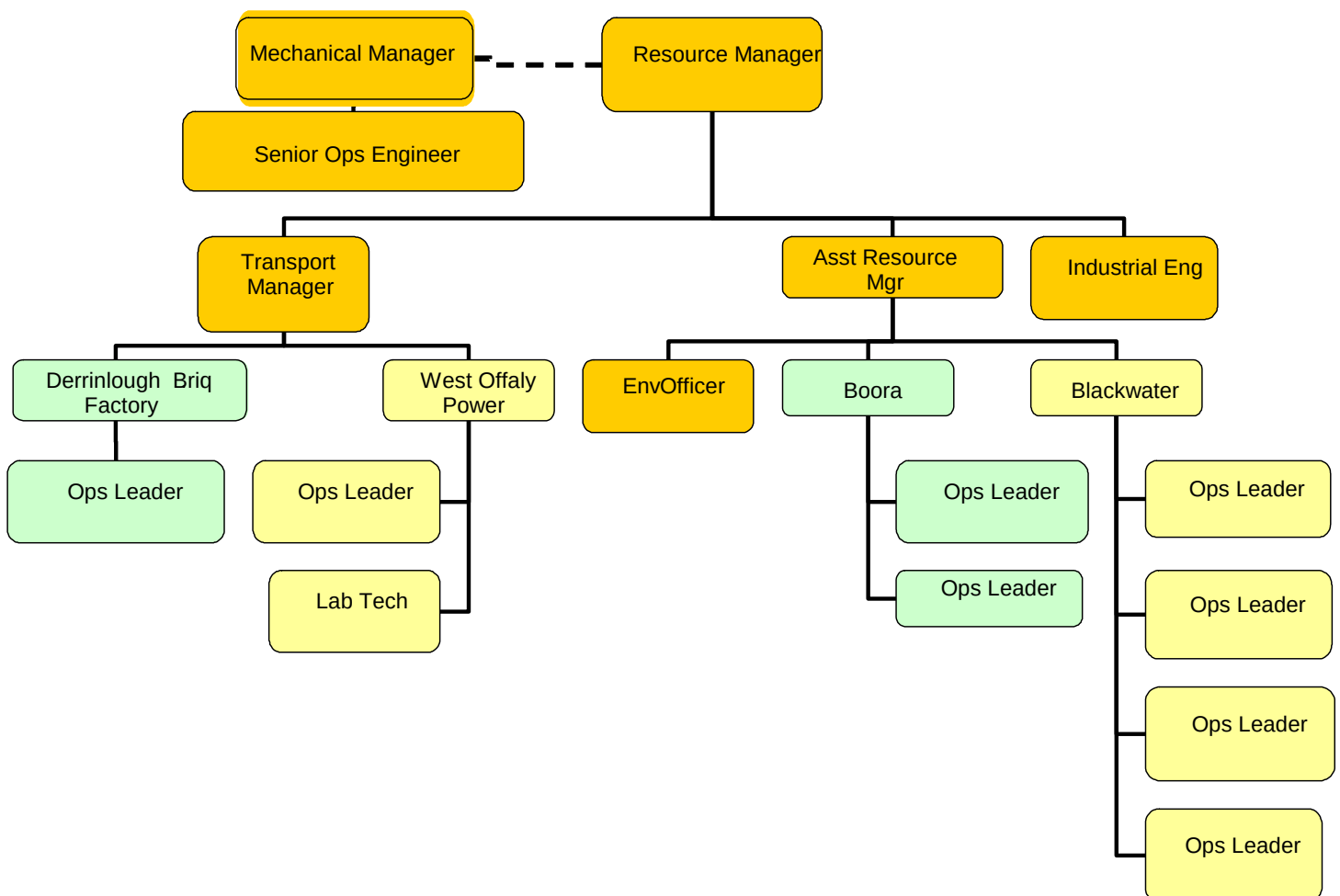
Horticultural Factory.

Briquette Factory.

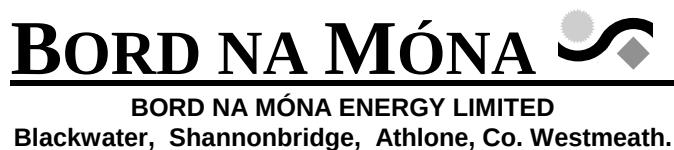
1.4 Environmental Management of the Company

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

Boora Group Environmental Responsibilities



1.5 Environmental Policy



Bord na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's 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 operates 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 Quarterly during the reporting period. In total analysis was carried out at five different locations. These locations were as follows, Noggus @ SW10, Bellair @ SW34, Clongawney @ SW 6, Derryclure @ SW 28 and Killaun @ SW 31. 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. April was the driest month with 37.3mm of rainfall recorded, with September being the wettest with 169.3mm recorded.

pH values were between 5.5 and 8.2 pH units. With an average value of 7.15 pH units. Acceptable emissions limit values being of the range 6 and 9. In general pH values remained constant throughout the monitoring regime, with the exception of Clongawney where there was a slight downward deviation in the last quarter monitoring event.

Suspended solids varied from 5 mg/l to 87 mg/l, with a mean value of 17.35 mg/l. Results would depend on activities (piping, ditching) etc in the catchments at the time of sampling as well as climatic conditions. There was one non-compliance at Noggus SW10, and the Agency was informed. In general suspended solid results were quite satisfactory for the period.

Ammonia levels ranged from 0.07 mg/l to 14 mg/l. The I/PV for A3 waters is of the range 4mg/l. It is however not unusual for surface waters emanating from production peatlands to be slightly elevated. The result from SW31 Killaun Bog was very elevated in quarter two; however this elevated result appears greatly reduced in the final two quarters of 2010. All other results were of no cause for concern.

COD readings ranged between 44 mg/l and 124 mg/l. The latter reading being above Bord na Mona set trigger levels. Investigations showed no obvious reason for the elevated results at Noggus SW10 and Bellair SW34, with subsequent results at each location being markedly reduced. The I/PV for A3 waters is of the range 40mg/l.

Flow monitoring showed increased flow in the third quarter 2010. For that reason safe access to record flow was not possible at Noggus SW10. This increased flow may have contributed to elevated COD levels at the two locations mentioned above.

Total Phosphorus results were consistently low across all monitoring locations in 2010.

Sampling will continue at the same locations during 2011.

At the request of the Agency, analysis results are now demonstrated in both tabular and graphical format.

Surface Water Results are attached in Appendix 1.

2.1.2 Yard Discharges (Monthly Grab)

Comment

Yard runoff monitoring took place at fourteen 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 because of no flow at the emission point due to small catchments and exceptionally dry and frosty weather. Monitoring will take place at the same locations in 2011.

Yard discharge results are contained in Appendix 2

2.1.3 Composite Sampler Report (Weekly - Continuous)

Comment

The composite sampler operated at SW 7 Drinagh Bog 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 results were very satisfactory with no non-compliance being recorded for the period. The sampling regime was interrupted during the extremely cold weather experienced during November and December.

It is proposed to leave the sampler at this location for the foreseeable future.

Composite Sample Results are contained in Appendix 3

2.1.4 Emissions to Water Non-compliance's

Emissions to Water Non-Compliances 2010		
Licence: P0500-01		
Works: Boora		
Type	Non-Compliances	Location / SW Nr
Composite	0	
Quarterly Grab	1	Noggus SW 10
Monthly Yard	0	
Totals	1	

Note: There was one non-compliance in relation to emissions to water and the Agency was informed.

2.2 Emissions to Air

2.2.1 Dust Monitoring

Comment

Dust monitoring was carried out on five occasions between April and September 2010. Each monitoring event lasted between 28 and 32 days and the Bergerhoff method of analysis was used.

The monitoring locations were as follows: Clongawney @ DM01, Pollagh @ DM02, and Derryclure @ DM03. Monitoring was carried out to coincide with production at each area. The sample pot was vandalised at Pollagh which accounts for the missing results at that location. There was one non-compliance recorded at Pollagh Bog during the reporting period and the Agency was informed. Sampling will continue at the same locations during 2011.

Dust Sample Results are contained in Appendix 4

2.2.2 Emissions to Air Non-compliance's

Dust Non-Compliances 2010	
Licence: P0500-01	
Works: Boora	
Location / DM Nr	Non-Compliances
Pollagh/DM 02	1
Total	1

Note: There was one non-compliance in relation to dust, this occurred at Pollagh bog and the Agency was informed. No complaints of a dust nature were received at the time of the non-compliance.

2.3 Waste Arising

2.3.1 Non-Hazardous Waste

Non Hazardous Waste Data 2010				
Licence: P0500-01				
Works: Boora.				
Type	Tonnes	EWC Code	Contractor	Licence Nr
Skips	29.62	20 03 01	AES	053/OY/39/02
Wheelie Bins	18.16	20 03 01	AES	053/OY/39/02
Polyethylene	241.76	02 01 04	Leinster Environmentals	205/2005
Polyethylene	22.66	02 01 04	Eco Plastics	WFP-CE-08-0005-01
Scrap Steel	52.87	17 04 07	AES	050/OY/39/02
Timber Pallets	5.94	15 01 03	AES	053/OY/39/02
Silt Pond Cleanings	676.65	01 01 02	Bord na Mona	IPPC P0500-01
Waste Paper	0.31	20 01 01	Security in Shredding	WCP-KK-08-0502-01
Contaminated Soil	716.76	17 05 04	Drehid Landfill	W0201-03
Peat Screenings	110.00	01 01 02	Bord na Mona	IPPC P0500-01
Totals	1874.76			

Note: Polyethylene and scrap steel are recycled through AES Ltd. Skips and Wheelie Bins are brought to a mixed recycling centre with the residue going to landfill.

2.3.2 Hazardous Waste

Hazardous Waste Data 2010					
Licence: P0500-01					
Works: Boora					
Type	Tonnes	EWC Code	Contractor	Licence Nr	Destination
Waste Oil	14.62	13 02 05	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	1.28	16 01 07	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oily Rags	0.60	15 02 02	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Waste Paint	0.23	08 01 11	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Lead Acid Batt	2.91	16 06 01	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Total	19.63				

2.4 Energy and Water Consumption

2.4.1 Energy

Energy Consumption 2010				
Licence: P0500-01				
Works: Boora				
Units	Diesel (Litres)	Petrol (Litres)	Electricity (Units)	Peat Briquettes (Tonnes)
Totals	1529654.00	4173.00	869018	10.57
MW Hours	14978.99	37.72	869.02	52.85
Total MW Hours	15938.58			

Note: The electricity consumption figure was extracted from ESB on line information systems. Some of the consumption figures relate to estimated readings which do not reflect on the exact amount of consumption. Bord na Mona are currently implementing the Energy Standard 16001 at Mountdillon, should this prove successful it will be extended to Boora.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

Environmental Incidents 2010	
Licence: P0500-01	
Works: Boora	
Incidents	1
Requiring corrective action	1
Category	
Water	0
Air	1
Total	1

There was one incident during 2010, this related to a bog fire at Clongawney and the Agency was informed.

2.5.2 Complaints

Environmental Complaints 2010		
Licence:P0500-01		
Works: Boora		
Complaints	2	
Requiring corrective action		
Category		
Air	2	
	Total	2

There were two complaints in relation to dust, one at Derryclure bog the other at Leamore Boora. The Derryclure location being dust sensitive however monitoring results were fully compliant at the time of the complaint.

3.0 Management of the Activity

3.1 Achievement of Objectives & Targets 2010

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Status 46 employees received environmental training during the reporting period. Hydraulic Harrows. Hydraulic harrows will continue to be deployed across the licence area in 2010. Status Ten Hydraulic Harrows were in operation in the Boora licence area in 2010. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations. Status Headland peat was collected as part of the general peat harvesting process and deposited into the existing stockpile.
Project 2: Waste Management	Waste Streamlining. Following the purchase by Bord na Mona of AES Ltd, Communication with that company's management will be ongoing to see how best Bord na Mona's waste management can be improved. Status Ongoing. AES are acting as Bord na Mona's waste management providers, issuing quarterly reports in relation to all waste streams.
Project 3: Minimisation of Suspended Solids.	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Status 46 employees received environmental training during the reporting period.

Project 4: Effective spill leak management of mobile fuelling units.	Research and Development. A double skinned fuel tank is to be installed at Monettia in 2010. This is to replace the existing bund which has failed integrity tests. A double skinned service train is also to be deployed in 2010. Status Boora took delivery of one double skinned rail operated Fuel Service Wagon in 2010. A double skinned tank was also installed at Monettia and is currently waiting commissioning.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing. Status There was 264 tonnes of polyethylene removed for recycling in 2010 by two contractors.
Project 6: Septic Tank Survey	Survey. Install improved septic tank facilities where required. Status Following the completion of a septic tank survey, remedial work is planned where necessary.
Project 7: Energy Management	Internal Meter Reading. As part of an energy management process a programme of internal meter readings will commence in 2010. The purpose of this exercise is to establish accurate energy consumption as here to fore a high percentage of electricity bills have been estimated by the supplier. Status Internal meter readings are ongoing which is giving a more accurate reflection of consumption.

3.2 Environmental Management Programme Proposal for 2011

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. The training programme will be revised in 2011. Hydraulic Harrows. Hydraulic harrows will continue to be deployed across the licence area in 2011. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations.
Project 2: Waste Management	Waste Streamlining. Waste streamlining is a project we are particularly interested in pursuing and hope to reduce wastes in the future and be more efficient in dealing with all aspects of waste management.
Project 3: Minimisation of Suspended Solids.	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. The training programme will be revised in 2011.
Project 4: Effective spill leak management of mobile fuelling units.	Bund Provisions Increased bund provisions where required, will be provided, in 2011.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.
Project 6: Septic Tank Survey	Survey. Following the septic tank survey it is proposed to carry out remedial work where necessary.
Project 7: Energy Management	Energy Management Continue with energy management by means of a review of energy aspects, identifying areas of significant energy use that can be targeted for energy reduction projects.

3.3 Environmental Expenditure

Environmental Expenditure 2010	
Licence:P0500-01	
Works: Boora	
Description	Cost €
Capital Costs	€85,236
Silt Control	€68,827
Analytical & Consultancy Costs	€8,423
EPA Fees	€7,150
Bog Rehabilitation	€4,000
Waste Management	€46,127
Total	€219,763

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

Sampling went well in 2010, with results at both the Quarterly Grab and Composite locations being very favourable, with only one non-compliance being recorded. It is proposed to sample the same locations during 2011.

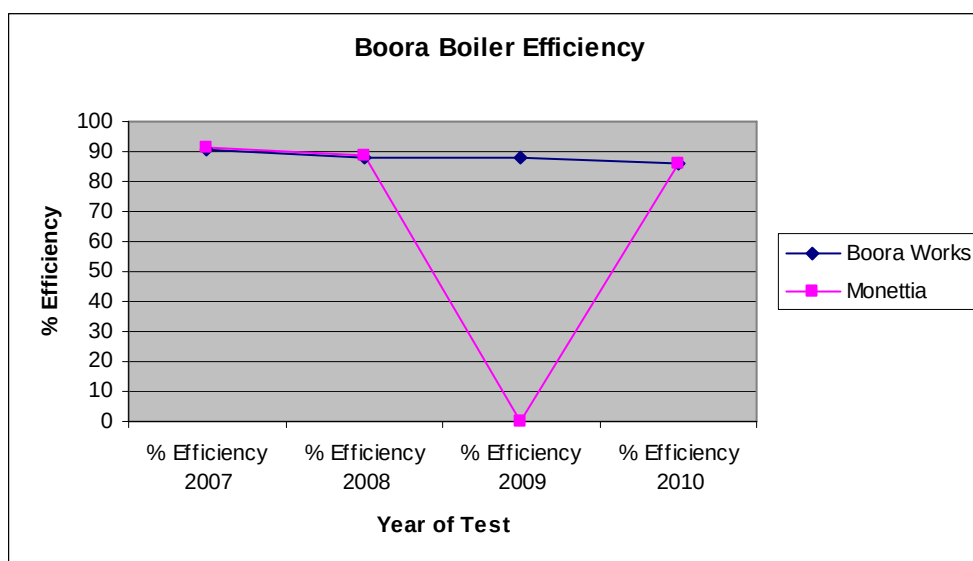
4.2 Bunding Programme

Bund Locations & Numbers Boora Works					
IPPC Licence: P0500-01					
Location	Bund Number	Last Tested	Status Pass/Fail	Repair Date	Next Test Due
Briquette Factory (Bog Area Tank)	500-15-01	Sep-09	Pass	N/A	Sep-11
Briquette Factory (Transport Tank)	500-15-02	Nov-10	Pass	N/A	Nov-12
Derrinboy Bund	500-15-03	Nov-10	Pass	N/A	Nov-12
Killaun Bund	500-15-04	Sep-09	Pass	N/A	Sep-11
Bellair Bund	500-15-05	Nov-10	Pass	N/A	Nov-12
Leamanaghan Bund	500-15-06	Nov-10	Pass	N/A	Nov-12
Derryclure Bund	500-15-07	Nov-10	Pass	N/A	Nov-12
Boora Main Bund	500-15-08	Nov-10	Pass	N/A	Nov-12
Monettia Bund	500-15-09	Double Skinned Tank Installed			

Bund integrity testing took place as per the above table during the reporting period. The bund at Monettia has been replaced with a double skinned tank as repair works were unsuccessful at that location.

4.3 Boiler Combustion Efficiency

Boiler Efficiency 2010				
Licence: P0500-01				
Works: Boora				
Boiler Location	% Efficiency 2007	% Efficiency 2008	% Efficiency 2009	% Efficiency 2010
Boora Works	90.4	87.75	87.75	86.25
Monettia	91.3	88.75	0	86.2



Note: Due to an error no boiler efficiency test took place at Monettia in 2009.

4.4 Resource consumption summary

Resource Consumption 2010			
Licence: P0500-01			
Works: Boora			
Product	Tonnes Produced	Tonnes Sold	Customer
Milled Peat	616639	560052	ESB and Briquette Fac
Moss	140000	73709	BNM Horticulture
Mini Sod	8000	0	
Turf	250	250	Domestic Customers
Totals	764889	634011.00	

Proposed Production 2011	
Licence: P0500-01	
Works: Boora	
Product	Proposed Target
Milled Peat	510000
Moss	120000
Mini Sod	5000
Turf	250
Totals	635250

4.5 De-Silting Report

All ponds were cleaned twice during the reporting period. Cleanings were dictated by the inspections programme.

Silt Pond Cleaning Programme is contained in Appendix 5

4.6 Bog Development and Operational Programme

Work is continuing on bringing sections of bog back into production that have been out of production for a number of years.

4.7 Bog Rehabilitation Report

During 2010, sites surveyed in the Boora Group include Bellair, Leamonaghan, Noggus, Pollagh, Killaranny, and Hort Bogs Derryclure, Monettia and Derrinboy. Habitat maps and reports have been outlined for all sites and draft rehabilitation plans will be developed in 2011 for all bog areas surveyed to date. A joint project with BirdWatch Ireland on Drinagh Bog was also initiated to enhance an area of cutaway bog for breeding waders. Consultation with local community groups, NPWS and Offaly Heritage Forum is ongoing.

4.8 Archaeological Report

There were no archaeological excavations in Boora during 2010.

5.0 Summary

Compliance Levels for 2010 were considered good with the composite sampler compliant. One quarterly sample and one dust sample were non compliant. There was one incident which related to a fire at Clongawney which was notified to the Agency. There were no complaints on foot of this incident.

Employees are informed through training of the importance of good house-keeping, improved procedures and practices to minimise effects on the environment. Continuous improvement is our aim and constant vigilance is required from all staff in order to bring this about.

The silt pond cleaning programme went very well with all ponds cleaned at least twice or more often where inspections dictated.

Training will continue with particular emphasis on Dust Sensitive Areas and ensuring that all new seasonal staff are trained.

We recycle all waste products where possible such as Oil, Filters, Batteries, Fluorescent Tubes, Metal, Polythene, Wood, Plastic swamp shoes and Baled Cardboard/Plastic. We will seek to expand the level of recycling where possible. Towards this end a new improved recycling area is set out at the main workshop yard with space allocated for the various materials.

There is ongoing replacement and improvement of environmental signage.

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

This will be communicated to all staff through the ongoing training programme.

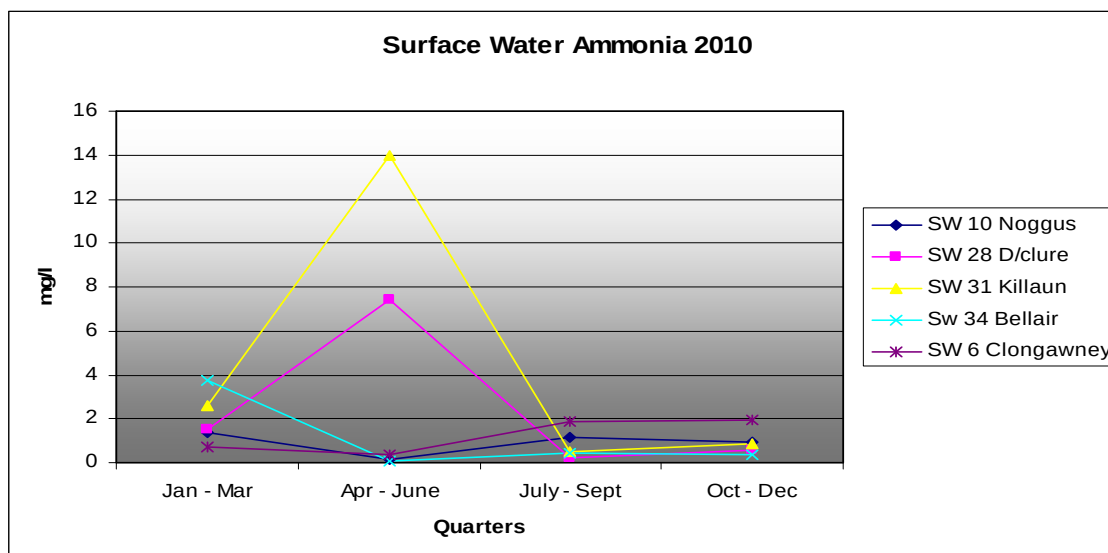
Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management on the River Barrow

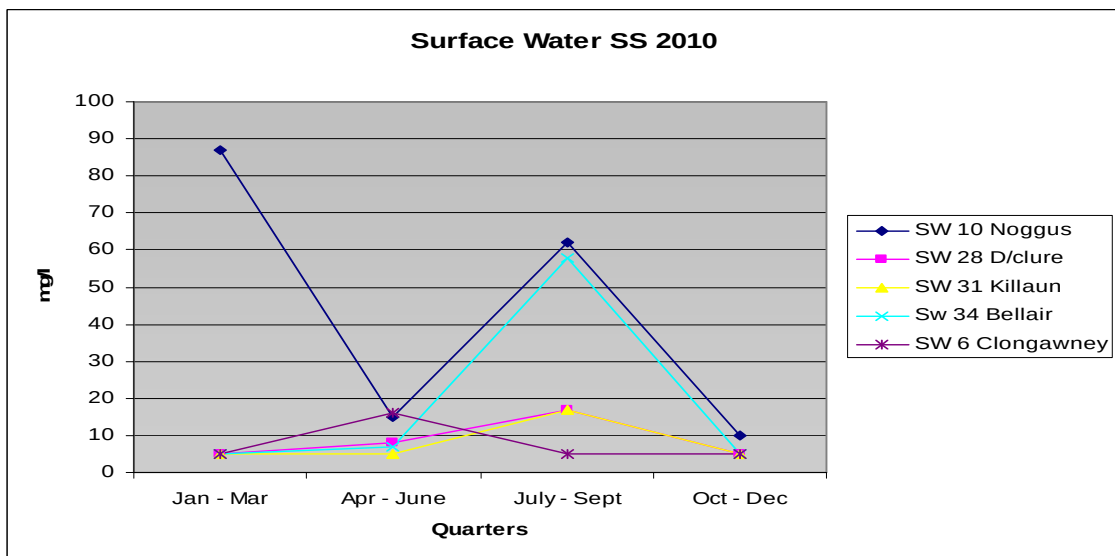
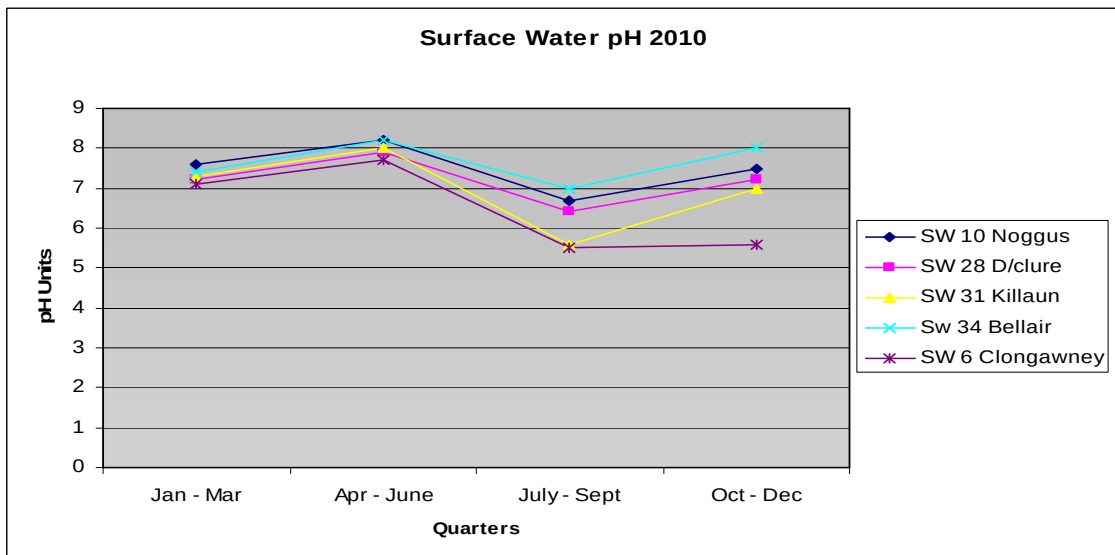
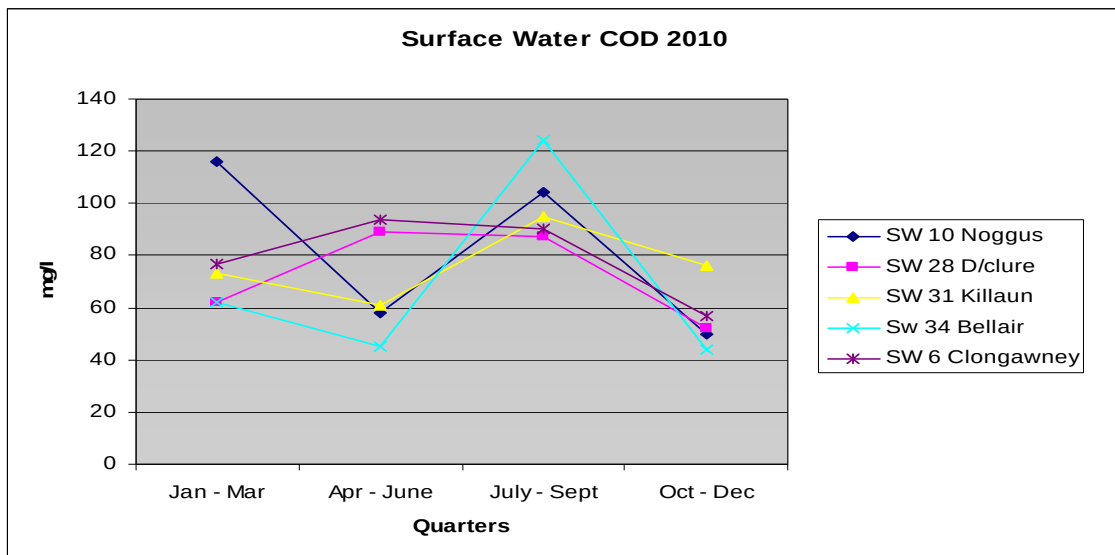
APPENDIX 1

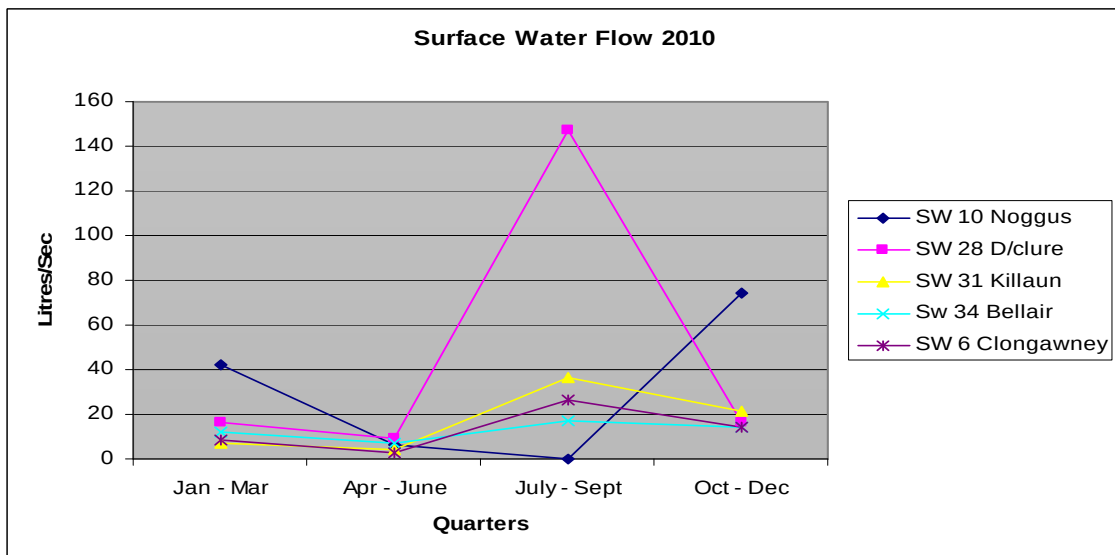
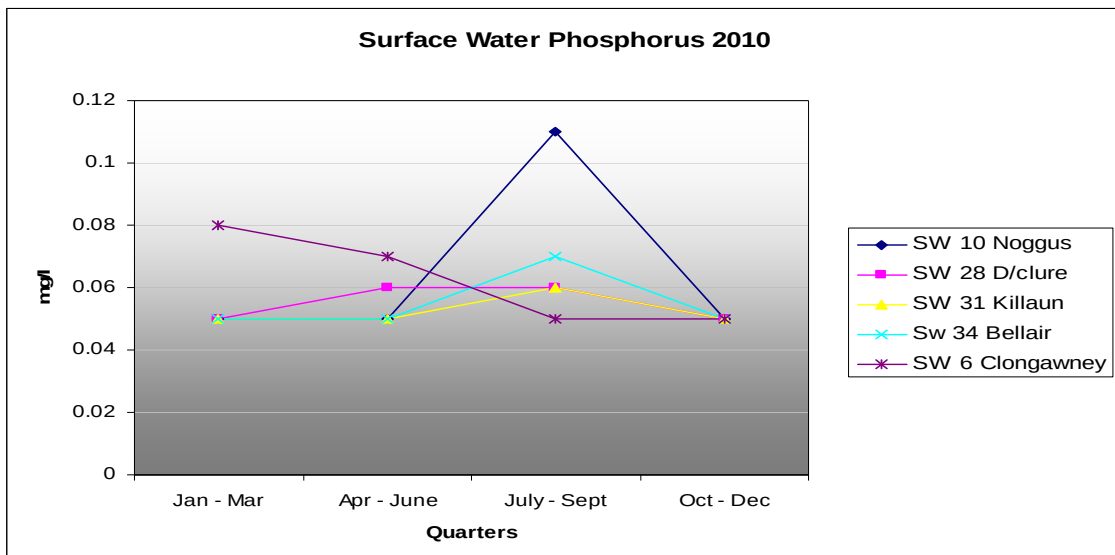
Surface Water Discharge Monitoring Results - Bogs

BNM Group:	Boora		Quarterly Grabs	
IPPC Licence No.	PO500-01	2010		
Ammonia as N (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	1.36	0.16	1.14	0.95
SW 28 D/clure	1.5	7.4	0.23	0.58
SW 31 Killaun	2.6	14	0.52	0.89
Sw 34 Bellair	3.73	0.07	0.4	0.34
SW 6 Clongawney	0.72	0.38	1.85	1.92
COD (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	116	58	104	50
SW 28 D/clure	62	89	87	52
SW 31 Killaun	73	61	95	76
Sw 34 Bellair	62	45	124	44
SW 6 Clongawney	77	94	90	57
Colour (pt Co Units)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	120	103	168	122
SW 28 D/clure	187	189	255	246
SW 31 Killaun	215	83	191	204
Sw 34 Bellair	210	102	340	128
SW 6 Clongawney	223	223	260	170
pH (units)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	7.6	8.2	6.7	7.5
SW 28 D/clure	7.2	7.9	6.4	7.2
SW 31 Killaun	7.3	8	5.6	7
Sw 34 Bellair	7.4	8.2	7	8
SW 6 Clongawney	7.1	7.7	5.5	5.6
Suspended Solids (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	87	15	62	10
SW 28 D/clure	5	8	17	5
SW 31 Killaun	5	5	17	5
Sw 34 Bellair	5	7	58	5
SW 6 Clongawney	5	16	5	5

Total Solids (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	336	364	50	94
SW 28 D/clure	338	544	110	122
SW 31 Killaun	180	664	116	110
Sw 34 Bellair	172	426	200	180
SW 6 Clongawney	182	346	120	88
Total Phosphorus (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	0.05	0.05	0.11	0.05
SW 28 D/clure	0.05	0.06	0.06	0.05
SW 31 Killaun	0.05	0.05	0.06	0.05
Sw 34 Bellair	0.05	0.05	0.07	0.05
SW 6 Clongawney	0.08	0.07	0.05	0.05
Flow (l/s)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	42.2	6.3	0	74.2
SW 28 D/clure	16.6	9.3	147.3	16.4
SW 31 Killaun	7.3	4.1	36.3	21.3
Sw 34 Bellair	11.8	6.8	17.3	14.3
SW 6 Clongawney	8.3	2.7	26.1	14.3







Note: No flow recording at Noggus SW 10 during third quarter monitoring event due to flood conditions.

APPENDIX 2

Surface Water Discharge Monitoring Results - Yards

Yard Discharge Results 2010

Licence: P0500-01

Works: Boora

Month	SW E 1A	SWE 1B	SW E 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9
Jan					196	71		55			113	75		
Feb														
Mar			37											
Apr														
May														
June														
July			18											
Aug														
Sep			22											
Oct			35							32	187			
Nov								64	218			100		53
Dec														

Note: 0 denotes no flow at emission point on day of sampling

APPENDIX 3

Surface Water Discharge Monitoring Results Composite

Month				Parameters							Daily Totals		
Jan	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					0			27732670				0.00	0.00
2					0			5021827				0.00	0.00
3					0			0				0.00	0.00
4	7.3	77	1.2	0.05	7	152	189	0				0.00	0.00
5					0			0				0.00	0.00
6					0			55832				0.00	0.00
7					0			0				0.00	0.00
8					0			0				0.00	0.00
9					0			89735				0.00	0.00
10					0			881107				0.00	0.00
11					0			1910822				0.00	0.00
12	7.5	45	1.1	0.05	11	150	106	2899584	130.48	3.19	0.14	31.90	434.94
13					5	167		5385485				26.93	899.38
14					5	180		9594720				47.97	1727.05
15					5	140		7082381				35.41	991.53
16					5	156		10261730				51.31	1600.83
17					5	124		12513310				62.57	1551.65
18					5	152		5779037				28.90	878.41
19					5	116		2954621				14.77	342.74
20	7.7	54	0.73	0.05	8	168	138	2511130	135.60	1.83	0.13	20.09	421.87
21					5	206		3335213				16.68	687.05
22					5	200		2184106				10.92	436.82
23					5	246		4613415				23.07	1134.90
24					5	237		1521331				7.61	360.56
25					5	244		2240006				11.20	546.56
26					5	252		2431814				12.16	612.82
27	7.8	57	1.16	0.05	5	272	161	2430173	138.52	2.82	0.12	12.15	661.01
28					5	252		3534365				17.67	890.66
29					5	276		3914698				19.57	1080.46
30					5	274		4341773				21.71	1189.65
31					5	275		3767472				18.84	1036.05

0: Insufficient amount of sample due to low flow or technical fault.

Month				Parameters							Daily Totals		
Feb	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	268		3428179				17.14	918.75
2					5	288		3763238				18.82	1083.81
3	7.8	67	0.7	0.05	5	288	212	5382806	360.65	3.77	0.27	26.91	1550.25
4					5	230		8754912				43.77	2013.63
5					5	220		6537801				32.69	1438.32
6					5	190		8538739				42.69	1622.36
7					5	254		2119651				10.60	538.39
8					5	246		884045				4.42	217.48
9					5	268		1667520				8.34	446.90
10	7.5	55	1.26	0.05	22	286	152	2313965	127.27	2.92	0.12	50.91	661.79
11					5	291		2511562				12.56	730.86
12					5	306		3022531				15.11	924.89
13					5	308		3584650				17.92	1104.07
14					5	308		4180032				20.90	1287.45
15					5	300		4074624				20.37	1222.39
16					5	298		4494874				22.47	1339.47
17	7.9	48	1.22	0.05	5	306	119	4285354	205.70	5.23	0.21	21.43	1311.32
18					5	292		4200163				21.00	1226.45
19					5	288		4020105				20.10	1157.79
20					5	290		4158950				20.79	1206.10
21					5	290		4076525				20.38	1182.19
22					5	380		4370198				21.85	1660.68
23					5	248		4135536				20.68	1025.61
24	7.7	49	0.62	0.06	5	260	145	4144694	203.09	2.57	0.25	20.72	1077.62
25					5	180		7873891				39.37	1417.30
26					5	221		6603380				33.02	1459.35
27					5	414		5066323				25.33	2097.46
28					5	234		4122922				20.61	964.76

0: Insufficient amount of sample due to low flow or technical fault.

Month				Parameters							Daily Totals		
March	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	266		3734035				18.67	993.25
2					5	276		3623184				18.12	1000.00
3	8	60	1.27	0.05	5	252	108	3709930	222.60	4.71	0.19	18.55	934.90
4					6	274		4497120				26.98	1232.21
5					5	316		4927565				24.64	1557.11
6					5	312		3898886				19.49	1216.45
7					5	344		4009738				20.05	1379.35
8					5	402		3974746				19.87	1597.85
9					5	346		3759005				18.80	1300.62
10	8	30	1.49	0.06	7	338	86	3893875	116.82	5.80	0.23	27.26	1316.13
11					5	314		4045162				20.23	1270.18
12					5	308		4355856				21.78	1341.60
13					5	249		4204224				21.02	1046.85
14					5	282		4056134				20.28	1143.83
15					5	308		3967747				19.84	1222.07
16					5	334		3901911				19.51	1303.24
17	8.3	27	1.28	0.08	5	330	67	3851280	103.98	4.93	0.31	19.26	1270.92
18					5	358		3966192				19.83	1419.90
19					5	332		4148064				20.74	1377.16
20					5	312		4098038				20.49	1278.59
21					5	248		6146150				30.73	1524.25
22					5	294		3152304				15.76	926.78
23					5	282		4462042				22.31	1258.30
24	8	56	0.64	0.05	6	276	118	3547497	198.66	2.27	0.18	21.28	979.11
25					5	240		4558896				22.79	1094.14
26					5	228		4254682				21.27	970.07
27					9	238		5112288				46.01	1216.72
28					5	222		2768515				13.84	614.61
29					5	262		2692829				13.46	705.52
30					5	254		8319888				41.60	2113.25
31	7.5	71	0.32	0.05	33	260	257	21298350	1512.18	6.82	1.06	702.85	5537.57

0: Insufficient amount of sample due to low flow or technical fault.

Month				Parameters							Daily Totals		
April	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	50		9067680				45.34	453.38
2					5	152		1680480				8.40	255.43
3					5	214		4181155				20.91	894.77
4					5	168		2474150				12.37	415.66
5					5	192		845752				4.23	162.38
6					15	214		2538605				38.08	543.26
7	7.5	75	0.39	0.05	10	50	317	11027230	827.04	4.30	0.55	110.27	551.36
8					5	194		1859760				9.30	360.79
9					5	198		1760573				8.80	348.59
10					7	188		1679530				11.76	315.75
11					5	222		1969142				9.85	437.15
12					5	256		1276819				6.38	326.87
13					6	316		2718230				16.31	858.96
14	8	56	0.99	0.05	5	432	142	3078778	172.41	3.05	0.15	15.39	1330.03
15					5	324		3198614				15.99	1036.35
16					5	316		3476563				17.38	1098.59
17					5	320		3448397				17.24	1103.49
18					5	324		3451248				17.26	1118.20
19					5	332		3344285				16.72	1110.30
20					5	332		3454358				17.27	1146.85
21	8.2	39	3.46	0.05	5	326	92	3362774	131.15	11.64	0.17	16.81	1096.26
22					5	300		3418157				17.09	1025.45
23					5	338		3479846				17.40	1176.19
24					5	350		3386966				16.93	1185.44
25					5	345		3356294				16.78	1157.92
26					5	320		3813437				19.07	1220.30
27					5	344		3066595				15.33	1054.91
28	8.3	41	0.61	0.05	5	316	74	3020803	123.85	1.84	0.15	15.10	954.57
29					5	332		3555101				17.78	1180.29
30					5	374		3090614				15.45	1155.89

0: Insufficient amount of sample due to low flow or technical fault.

Month				Parameters							Daily Totals		
May	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	334		3600202				18.00	1202.47
2					5	346		3486931				17.43	1206.48
3					5	296		3006461				15.03	889.91
4					5	324		3081888				15.41	998.53
5	8.4	50	0.85	0.05	5	338	87	3178224	158.91	2.70	0.16	15.89	1074.24
6					5	358		3550781				17.75	1271.18
7					5	354		3559939				17.80	1260.22
8					5	350		3264538				16.32	1142.59
9					5	338		3173645				15.87	1072.69
10					5	354		3183581				15.92	1126.99
11					5	356		3275078				16.38	1165.93
12	8.4	41	0.92	0.05	5	350	140	3395347	139.21	3.12	0.17	16.98	1188.37
13					5	394		3209760				16.05	1264.65
14					34	410		2570314				87.39	1053.83
15					18	374		2948746				53.08	1102.83
16					6	372		3970426				23.82	1477.00
17					8	372		3273696				26.19	1217.81
18					7	358		2907360				20.35	1040.83
19	8.2	43	1.34	0.05	6	336	59	3269894	140.61	4.38	0.16	19.62	1098.68
20					0	0		3387226				0.00	0.00
21					5	358		2716761				13.58	972.60
22					6	350		2566166				15.40	898.16
23					6	352		2164752				12.99	761.99
24					8	354		2243462				17.95	794.19
25					5	360		2032646				10.16	731.75
26	8.2	46	0.25	0.18	9	350	74	1805328	83.05	0.45	0.32	16.25	631.86
27					5	358		1931818				9.66	691.59
28					5	344		1877818				9.39	645.97
29					5	378		3145478				15.73	1188.99
30					5	368		3615753				18.08	1330.60
31					5	332		2925245				14.63	971.18

0: Insufficient amount of sample due to low flow or technical fault.

Month				Parameters							Daily Totals		
June	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	340		2195597				10.98	746.50
2	8.4	42	0.35	0.05	13	362	63	4206902	176.69	1.47	0.21	54.69	1522.90
3					5	294		2178490				10.89	640.48
4					5	302		2279750				11.40	688.48
5					5	314		2023488				10.12	635.38
6					5	306		2210544				11.05	676.43
7					5	292		3231792				16.16	943.68
8					5	336		2509661				12.55	843.25
9	8.2	37	0.5	0.05	5	330	95	3129062	115.78	1.56	0.16	15.65	1032.59
10					5	322		2852150				14.26	918.39
11					5	325		2836166				14.18	921.75
12					5	326		2599085				13.00	847.30
13					5	324		2572906				12.86	833.62
14					5	326		2493590				12.47	812.91
15					5	340		2870813				14.35	976.08
16	8.2	35	0.32	0.05	5	354	85	2509834	87.84	0.80	0.13	12.55	888.48
17					8	348		1525133				12.20	530.75
18					6	356		1450742				8.70	516.46
19					7	358		1729642				12.11	619.21
20					5	364		1379376				6.90	502.09
21					5	356		587114				2.94	209.01
22					6	364		558775				3.35	203.39
23	8.3	48	0.19	0.05	6	354	63	659431	31.65	0.13	0.03	3.96	233.44
24					0	0		1298851				0.00	0.00
25					0	0		354361				0.00	0.00
26					0	0		72948				0.00	0.00
27					0	0		73596				0.00	0.00
28					23	380		0				0.00	0.00
29					10	346		78935				0.79	27.31
30	8.3	43	0.61	0.05	8	382	49	708808	30.48	0.43	0.04	5.67	270.76

0: Insufficient amount of sample due to low flow or technical fault.

Month				Parameters							Daily Totals		
July	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					10	350		209546				2.10	73.34
2					27	368		1697501				45.83	624.68
3					0	0		495072				0.00	0.00
4					0	0		155088				0.00	0.00
5					0	0		657				0.00	0.00
6					0	0		457600				0.00	0.00
7	8.2	39	0.63	0.05	17	364	55	0				0.00	0.00
8					0	0		0				0.00	0.00
9					8	166		0				0.00	0.00
10					5	350		738660				3.69	258.53
11					5	252		5884359				29.42	1482.86
12					5	236		2091830				10.46	493.67
13					5	246		1458605				7.29	358.82
14	7.7	91	1.5	0.06	5	246	256	2112048	192.20	3.17	0.13	10.56	519.56
15					5	252		2841350				14.21	716.02
16					5	256		3660336				18.30	937.05
17					5	212		5775494				28.88	1224.40
18					5	226		2498688				12.49	564.70
19					5	218		2397600				11.99	522.68
20					11	258		2280010				25.08	588.24
21	7.7	66	0.67	0.05	11	278	242	1343347	88.66	0.90	0.07	14.78	373.45
22					5	338		5443373				27.22	1839.86
23					5	332		2237069				11.19	742.71
24					5	310		238153				1.19	73.83
25					5	300		2175379				10.88	652.61
26					5	282		2475187				12.38	698.00
27					5	269		2606688				13.03	701.20
28	8	89	0.15	0.05	6	272	281	2284762	203.34	0.34	0.11	13.71	621.46
29					5	342		2492554				12.46	852.45
30					5	340		2773872				13.87	943.12
31					7	336		2680474				18.76	900.64

0: Insufficient amount of sample due to low flow or technical fault.

Month				Parameters							Daily Totals		
August	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					8	336		2230330				17.84	749.39
2					5	356		1772064				8.86	630.85
3					5	354		1678493				8.39	594.19
4	8	47	0.49	0.17	7	352	105	2093904	98.41	1.03	0.36	14.66	737.05
5					5	406		3309466				16.55	1343.64
6					5	388		1163635				5.82	451.49
7					19	408		1279843				24.32	522.18
8					5	388		1529366				7.65	593.39
9					5	410		921629				4.61	377.87
10					5	404		1009498				5.05	407.84
11	8.3	43	0.07	0.05	27	406	79	911693	39.20	0.06	0.05	24.62	370.15
12					5	348		926899				4.63	322.56
13					5	358		1077062				5.39	385.59
14					5	360		1010707				5.05	363.85
15					5	364		725846				3.63	264.21
16					5	360		336537				1.68	121.15
17					5	367		450533				2.25	165.35
18	8.3	36	0.17	0.05	18	354	83	1475885	53.13	0.25	0.07	26.57	522.46
19					5	362		899942				4.50	325.78
20					5	368		2141078				10.71	787.92
21					5	367		1313107				6.57	481.91
22					17	354		480306				8.17	170.03
23					5	348		421796				2.11	146.79
24					5	346		978826				4.89	338.67
25	8.1	90	0.34	0.05	5	346	77	1630109	146.71	0.55	0.08	8.15	564.02
26					0	0		780192				0.00	0.00
27					0	0		272445				0.00	0.00
28					0	0		78564				0.00	0.00
29					29	394		9608				0.28	3.79
30					9	364		0				0.00	0.00
31					0	0		0				0.00	0.00

0: Insufficient amount of sample due to low flow or technical fault.

Month				Parameters							Daily Totals		
Sept	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	8	44	0.6	0.05	8	367	60	0				0.00	0.00
2					13	340		0				0.00	0.00
3					32	318		0				0.00	0.00
4					8	272		0				0.00	0.00
5					5	340		0				0.00	0.00
6					5	364		0				0.00	0.00
7					6	224		7249565				43.50	1623.90
8	7.1	74	0.56	0.06	12	176	250	3160166	233.85	1.77	0.19	37.92	556.19
9					5	177		2938637				14.69	520.14
10					5	202		3039466				15.20	613.97
11					5	198		3649277				18.25	722.56
12					5	198		2450304				12.25	485.16
13					10	210		2828649				28.29	594.02
14					5	216		3018211				15.09	651.93
15	7.3	94	1.28	0.05	6	254	317	3636231	341.81	4.65	0.18	21.82	923.60
16					5	268		2166221				10.83	580.55
17					13	326		1775693				23.08	578.88
18					15	278		3092947				46.39	859.84
19					6	272		3565987				21.40	969.95
20					5	280		3889123				19.45	1088.95
21					5	292		2931984				14.66	856.14
22	8	75	0.3	0.05	5	300	199	2978035	223.35	0.89	0.15	14.89	893.41
23					5	276		3436301				17.18	948.42
24					5	276		3065386				15.33	846.05
25					5	298		2964816				14.82	883.52
26					5	318		3135715				15.68	997.16
27					5	292		3198355				15.99	933.92
28					5	290		3182976				15.91	923.06
29	8.1	52	0.45	0.05	5	334	133	3492979	181.63	1.57	0.17	17.46	1166.65
30					5	314		3688272				18.44	1158.12

0: Insufficient amount of sample due to low flow or technical fault.

Month				Parameters							Daily Totals		
Oct	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	308		3196541				15.98	984.53
2					5	320		3438288				17.19	1100.25
3					5	316		3310070				16.55	1045.98
4					5	308		3658608				18.29	1126.85
5					5	276		3234816				16.17	892.81
6	8.2	53	0.3	0.05	14	312	119	3533587	187.28	1.06	0.18	49.47	1102.48
7					5	324		3363811				16.82	1089.87
8					5	318		3448570				17.24	1096.65
9					5	322		2540246				12.70	817.96
10					5	328		2306275				11.53	756.46
11					5	324		2326406				11.63	753.76
12					5	322		2412202				12.06	776.73
13	8.1	54	0.29	0.05	5	350	98	2200090	118.80	0.64	0.11	11.00	770.03
14					5	122		2005430				10.03	244.66
15					5	376		1870214				9.35	703.20
16					5	380		2036448				10.18	773.85
17					5	381		2271197				11.36	865.33
18					5	374		2088461				10.44	781.08
19					5	384		2002666				10.01	769.02
20	8.1	49	0.48	0.05	5	372	81	1590624	77.94	0.76	0.08	7.95	591.71
21					5	378		1582502				7.91	598.19
22					5	346		1879546				9.40	650.32
23					5	360		2983306				14.92	1073.99
24					5	268		6203002				31.02	1662.40
25					5	274		3549053				17.75	972.44
26					6	260		2885069				17.31	750.12
27	7.9	52	0.33	0.05	19	256	147	5024160	261.26	1.66	0.25	95.46	1286.18
28					5	206		4898880				24.49	1009.17
29					5	248		3680640				18.40	912.80
30					6	196		6617981				39.71	1297.12
31					5	225		2997302				14.99	674.39

0: Insufficient amount of sample due to low flow or technical fault.

Month				Parameters							Daily Totals		
Nov	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	224		2593123				12.97	580.86
2					5	210		3186864				15.93	669.24
3	7.5	77	0.21	0.05	5	238	223	8025177	617.94	1.69	0.40	40.13	1909.99
4					5	160		2879280				14.40	460.68
5					12	172		4223664				50.68	726.47
6					0	0		2987193				0.00	0.00
7					0	0		3526330				0.00	0.00
8					0	0		4366915				0.00	0.00
9					0	0		4926442				0.00	0.00
10	7.3	109	0.52	0.05	13	189	276	3633898	396.09	1.89	0.18	47.24	686.81
11					5	102		4159469				20.80	424.27
12					5	164		5165424				25.83	847.13
13					5	200		3446237				17.23	689.25
14					5	204		3904243				19.52	796.47
15					5	210		2522016				12.61	529.62
16					8	270		2916864				23.33	787.55
17	7.8	94	0.58	0.07	29	208	193	843169	79.26	0.49	0.06	24.45	175.38
18					8	226		1816128				14.53	410.44
19					8	266		0				0.00	0.00
20					5	244		0				0.00	0.00
21					5	226		0				0.00	0.00
22					5	234		0				0.00	0.00
23					5	268		0				0.00	0.00
24	7.5	66	0.85	0.05	6	278	169	0				0.00	0.00
25					0	0		0				0.00	0.00
26					0	0		0				0.00	0.00
27					0	0		0				0.00	0.00
28					0	0		0				0.00	0.00
29					0	0		0				0.00	0.00
30					0	0		0				0.00	0.00

0: Insufficient amount of sample due to low flow or technical fault.

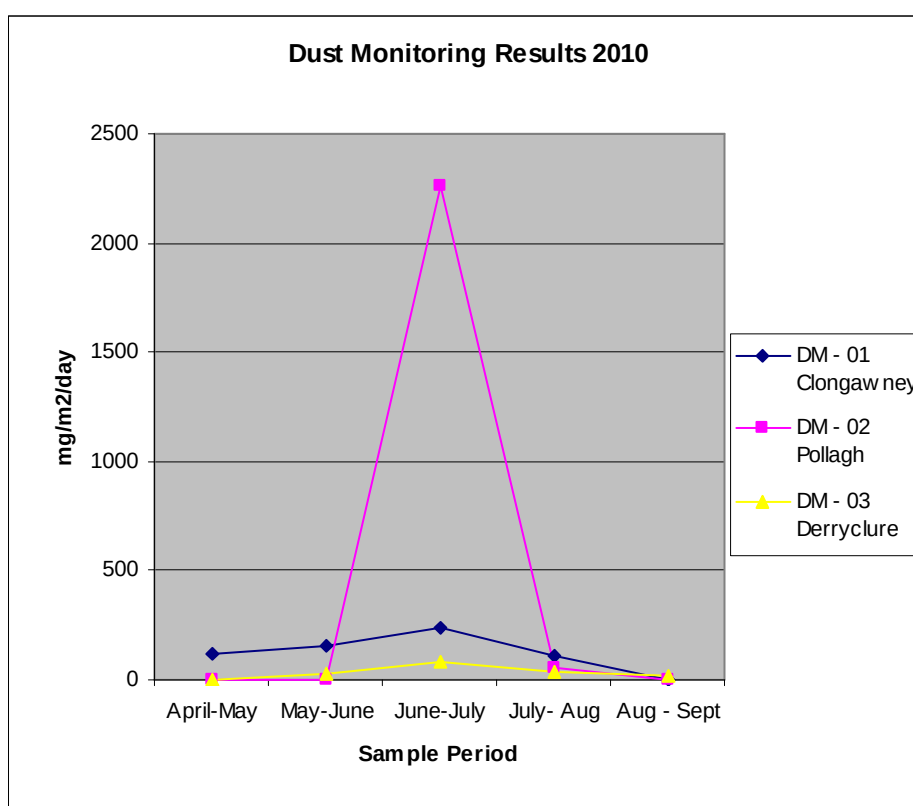
Month				Parameters							Daily Totals		
Dec	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2010		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	7.6	58	1.4	0.05	5	282	140	0				0.00	0.00
2					0	0		0				0.00	0.00
3					0	0		0				0.00	0.00
4					0	0		0				0.00	0.00
5					0	0		0				0.00	0.00
6					0	0		0				0.00	0.00
7					0	0		0				0.00	0.00
8	7.4	48	1.3	0.05	5	306	109	0				0.00	0.00
9					0	0		0				0.00	0.00
10					0	0		0				0.00	0.00
11					0	0		74606				0.00	0.00
12					0	0		1524096				0.00	0.00
13					0	0		0				0.00	0.00
14					0	0		0				0.00	0.00
15	7.3	42	0.83	0.05	5	272	121	0				0.00	0.00
16					0	0		0				0.00	0.00
17					0	0		339198				0.00	0.00
18					0	0		0				0.00	0.00
19					0	0		0				0.00	0.00
20					0	0		0				0.00	0.00
21					0	0		0				0.00	0.00
22	7.3	42	1.83	0.05	5	314	106	0				0.00	0.00
23					0	0		0				0.00	0.00
24					0	0		0				0.00	0.00
25					0	0		0				0.00	0.00
26					0	0		0				0.00	0.00
27					0	0		0				0.00	0.00
28	7.4	50	0.8	0.05	5	302	189	11545630	577.28	9.24	0.58	57.73	3486.78
29					0	0		261075				0.00	0.00
30					0	0		0				0.00	0.00
31					0	0		0				0.00	0.00

0: Insufficient amount of sample due to low flow or technical fault.

APPENDIX 4

Dust Monitoring Results.

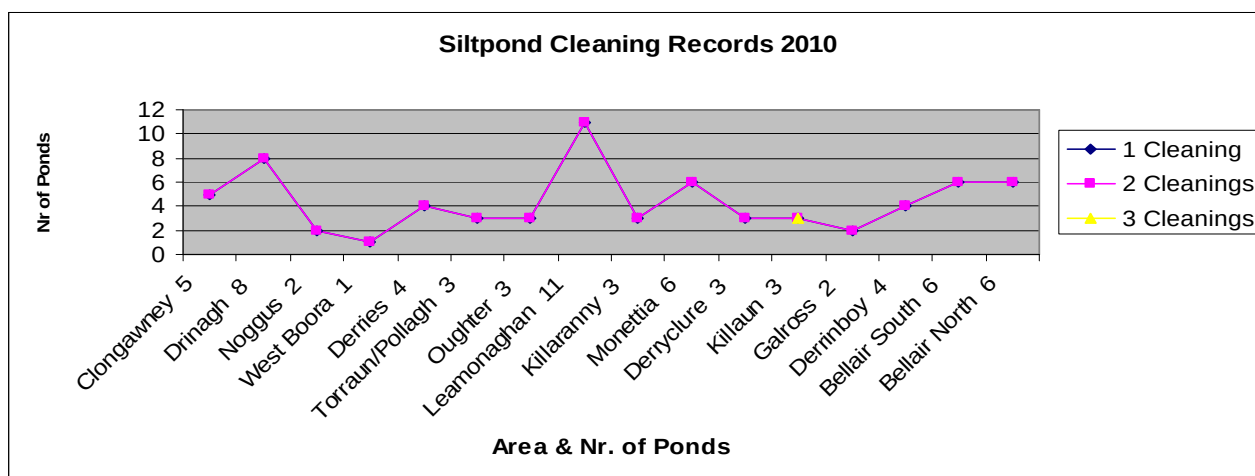
Dust Monitoring Results 2010			
Licence: P0500-01			
Works: Boora			
Sample Period	DM - 01 Clongawney	DM - 02 Pollagh	DM - 03 Derryclure
April-May	120	0	0
May-June	156	0	27
June-July	237	2264	81
July- Aug	113	54	39
Aug - Sept	0	0	22



APPENDIX 5

De-silting Programme Review.

Siltpond Cleaning Programme 2010			
IPPC Licence: P0500-01			
Works: Boora			
Bog Area & No. of Ponds	1 Cleaning	2 Cleanings	3 Cleanings
Clongawney 5	5	5	
Drinagh 8	8	8	
Noggus 2	2	2	
West Boora 1	1	1	
Derries 4	4	4	
Torraun/Pollagh 3	3	3	
Oughter 3	3	3	
Leamonaghan 11	11	11	
Killaranny 3	3	3	
Monettia 6	6	6	
Derryclure 3	3	3	
Killaun 3	3	3	3
Galross 2	2	2	
Derrinboy 4	4	4	
Bellair South 6	6	6	
Bellair North 6	6	6	





Annual Environmental Report 2011

P0500-01

March 2012

Bord na Móna today operates 5 main subsidiary companies in more than 20 locations throughout Ireland, the UK and USA. The principal businesses are in the Energy, Resource Recovery, Horticulture, Home Heating and Wastewater Treatment and Air Pollution Abatement markets. The company also engages in an extensive rehabilitation program to develop its peat lands in an environmentally sustainable manner.



Bord na Móna has long recognised the need to diversify its activities in order to secure a sustainable future. In this context we identified the energy and resource recovery sectors as appropriate areas of growth and development, given our assets, strengths and skills. Significant challenges face Ireland in meeting the country's needs to provide secure sustainable energy and manage waste while minimising the impact on the environment.

Bord na Móna is in a strong position to contribute to dealing with these challenges. We have a unique mixture of assets, experience and innovation which will enable us to cross-link our activities in energy, water and resource recovery to provide products and services which will meet Ireland's needs. We also have the capacity to become an exemplar for others to follow in these fields.

With this background we have scoped out a new vision for the future sustainable development of Bord na Móna.

Following on from our vision, we have developed a new mission for Bord na Móna which the Company is committed to achieving.

In 1934 the Turf Development Board was formed to 'develop and improve the turf industry.' The experience of fuel shortages during the war re-enforced the Irish State's commitment to developing the country's bogs. In 1944 the TDB was asked to devise and submit a comprehensive programme, the outcome was the transformation in 1946 of the TDB into Bord na Móna. The Board was given a mandate to increase the use of peat as a fuel and in energy production. Markets for the use of moss peat in horticulture were also developed.

In 1990 Bord na Móna implemented a divisionalised and decentralised structure, designed to delegate responsibility downwards ensuring a sharper focus on each profit centre and a greater spirit of enterprise.

Group Vision



The vision statement defines the Company's purpose, in terms of its values.

Values are guiding beliefs about how things should be done.

The vision statement communicates both the purpose and values of Bord na Móna.

For employees, it gives direction about how they are expected to behave and inspires them to give their best. Shared with customers, it shapes the customers' understanding of why they should work with Bord na Móna.

Bord na Móna will seek solutions that optimise the creative energy and potential of the organisation, driven by long term goals and the organisation's vision and mission.

In this context our devolved business units will align their vision and strategic planning with the global direction provided.

Consistent with our vision, innovation will once again return to the core of everything we do. We will capitalise on opportunities to cross fertilise our unique range of skills and technologies that add value and are socially and environmentally sustainable.

Greater focus will be placed on managing and developing our land assets in a responsible and sustainable manner. Our award winning initiatives at Lough Boora (Co. Offaly) and Oweninny (Co Mayo), provide shining examples of what can be achieved

Group Mission

We conduct our affairs with openness, honesty and integrity.

We are Ireland's leading environmentally responsible integrated utility service provider encompassing electricity, heating solutions, resource recovery, water, horticulture and related services.

We capitalise on international opportunities where we have a competitive advantage.

We achieve continuing growth through superior customer service, outstanding quality and innovation delivered through the excellence and commitment of our people.

We engage in sustainable profitable business in the communities we serve, which is rewarding and challenging for employees and other stakeholders.

Contents

1.0 Introduction

- 1.1 IPPC Licence Register No
- 1.2 Name & Location of Site
- 1.3 Brief Description of Activities
- 1.4 Environmental Management of the Company
- 1.5 Environmental Policy Statement

2.0 Summary Information

- 2.1 Emissions to Water Summary
 - 2.1.1 Silt Pond Emissions
 - 2.1.2 Yard Discharges
 - 2.1.3 Composite Sampler Report
 - 2.1.4 Emissions to Water Non-compliance's

2.2 Emissions to Air Summary

- 2.2.1 Dust Monitoring
- 2.2.2 Emissions to Air Non-compliance's

2.3 Waste Arising

- 2.3.1 Non-Hazardous Waste
- 2.3.2 Hazardous Waste

2.4 Energy and Water Consumption

- 2.4.1 Energy Consumption

2.5 Environmental Incidents and Complaints

- 2.5.1 Incidents
- 2.5.2 Complaints

3.0 Management of the Activity

- 3.1 Environmental Management Programme Report
- 3.2 Environmental Management Programme Proposal
- 3.3 Environmental Expenditure

4.0 Licence Specific Reports

- 4.1 Surface Water Discharge Monitoring Location Programme Review
- 4.2 Bunding Programme
- 4.3 Boiler Combustion Efficiency
- 4.4 Resource Consumption Summary
- 4.5 Report on de-silting Programme
- 4.6 Bog Development and Operational Programme
- 4.7 Bog Rehabilitation Report
- 4.8 Archaeological Report

5.0 Summary

- Appendix 1:** Emissions to Water Monitoring Results. (Bogs)
- Appendix 2:** Emissions to Water Monitoring Results. (Yards)
- Appendix 3:** Emissions to Water Monitoring Results. (Composite)
- Appendix 4:** Emissions to Air Monitoring Results.
- Appendix 5:** De-silting Programme Review

1.0 Introduction

1.1 IPPC Licence No P0500-01

1.2 Name & Location of Site

Name: Bord na Mona Energy Limited.- Boora Works

Address: Leabeg, Tullamore Co Offaly

Telephone No: 05793 45900

Contact Name John Mc Niff

Position Resource Manager, Blackwater /Boora

National Grid Reference E180050 N319540

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 one of the following locations.

Power station

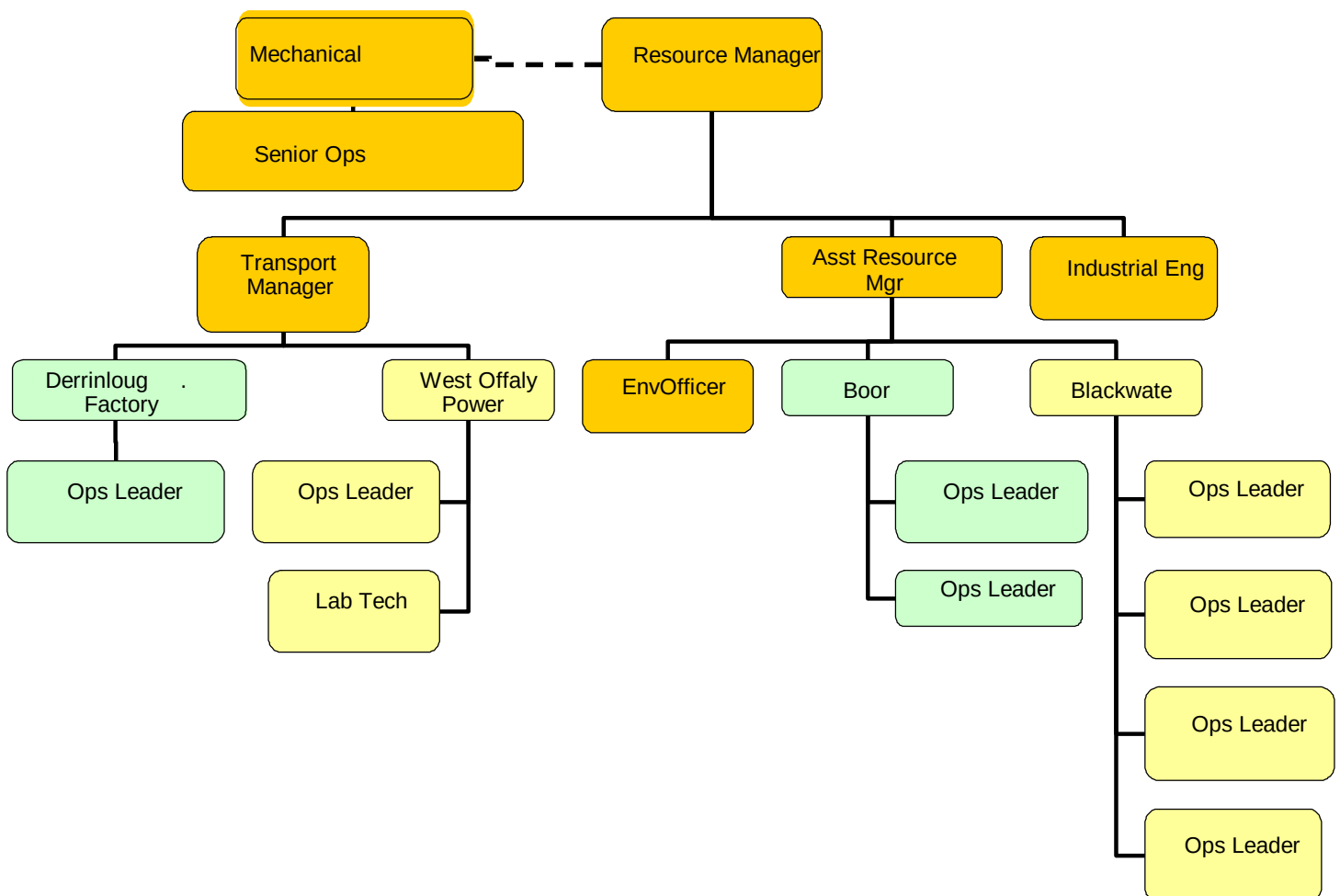
Horticultural Factory.

Briquette Factory.

1.4 Environmental Management of the Company

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

Boora Group Environmental Responsibilities



1.5 Environmental Policy



Bord na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's 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 operates 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 Quarterly during the reporting period. In total analysis was carried out at five different locations. These locations were as follows: Noggus @ SW10, Bellair @ SW34, Clongawney @ SW 6, Derryclure @ SW 28 and Killaun @ SW 31. 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. March was the driest month with 29.4mm of rainfall recorded, with October being the wettest with 123.5mm recorded.

pH values were between 7.1 and 8.2 pH units, with an average value of 7.75 pH units. Acceptable emissions limit values being of the range 6 and 9. In general pH values remained constant throughout the monitoring regime.

Suspended solids varied from 5 mg/l to 60 mg/l, with a mean value of 11.9 mg/l. Results would depend on activities (piping, ditching) etc in the catchments at the time of sampling as well as climatic conditions. There was one non-compliance at Noggus SW10 where a result of 60mg/l was returned and the Agency was informed. In general suspended solid results were quite satisfactory for the period.

Ammonia levels ranged from 0.04mg/l to 3.38mg/l. The mean value being 1.07mg/l. The I/PV for A3 water's is of the range 4mg/l. It is however not unusual for surface waters emanating from production peatlands to be slightly elevated. In general results were quite satisfactory.

COD readings ranged between 10mg/l and 109mg/l, the latter reading being above Bord na Mona set trigger levels. This occurred at Killaun SW31 in the 4th quarter and investigations showed no obvious reason for the elevated result. The I/PV for A3 waters is of the range 40mg/l. The 1st quarter 2012 results will be watched with interest to see if the trend continues. All other results were satisfactory.

Flow monitoring showed increased flow in the 2nd quarter 2011 at Noggus SW10. In fact due to water backing up from the receiving water no flow measurement was attainable and was the probable cause of the emission limit exceedence at the site.

Total Phosphorus results were consistently low across all monitoring locations in 2011. Results were of the range 0.05mg/l to 0.14mg/l with a mean value of 0.064mg/l

Sampling will continue at the same locations during 2012.

At the request of the Agency, analysis results are now demonstrated in both tabular and graphical format.

Surface Water Results are attached in Appendix 1.

2.1.2 Yard Discharges (Monthly Grab)

Comment

Yard runoff monitoring can potentially take place at fourteen 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.

Visits are made to the oil interceptor sampling points once a month. The primary aim is to secure a water sample for analysis and to observe the workings of the oil interceptor insuring that things are in order. It can be difficult even in showery conditions to secure a sample as the run off areas are quiet small.

Since 2010 the practice of adding water at the concrete apron in order to generate a flow was discontinued as it did not appear to be the proper procedure. Also leaving a bottle under a dripping pipe and collecting it the next day meant the integrity of the sample could not vouch for.

Following on from this it has been difficult trying to get samples every month at some locations. Visits to these locations to obtain samples have been recorded on an Excel spreadsheet and a comment as to the outcome. This was made available to the Agency Auditors at our most recent audit.

Monitoring will take place at the same locations in 2012.

Yard discharge results are contained in Appendix 2

2.1.3 Composite Sampler Report (Weekly - Continuous)

Comment

The composite sampler operated at SW 7 Drinagh Bog 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 results were very satisfactory with one non-compliance being recorded for the period which the Agency was informed about. The sampler was also calibrated by an outside contractor during the reporting period.

It is proposed to leave the sampler at this location for the foreseeable future.

Composite Sample Results are contained in Appendix 3

2.1.4 Emissions to Water Non-compliance's

Emissions to Water Non-Compliances 2011		
Licence: P0500-01		
Works: Boora		
Type	Non-Compliances	Location / SW Nr
Composite	1	SW07
Quarterly Grab	1	SW10
Monthly Yard		
Totals	2	

Note: There were two non-compliance's in relation to emissions to water, which were recorded at the composite sampler (SW7) and during quarterly grab sampling at Noggus (SW10), with the Agency informed on both occasion's.

2.2 Emissions to Air

2.2.1 Dust Monitoring

Comment

Dust monitoring was carried out on four occasions between April and September 2011. Each monitoring event lasted between 28 and 32 days and the Bergerhoff method of analysis was used.

The monitoring locations were as follows: Clongawney @ DM01, Pollagh @ DM02, and Derryclure @ DM03. Monitoring was carried out to coincide with production at each area. The sample pot was vandalised at Pollagh during the first monitoring event which accounts for the missing result at that location, however that location was additionally sampled in September to account for the shortfall. There was no dust non-compliance recorded for the period.

Sampling will continue at the same locations during 2012.

Dust Sample Results are contained in Appendix 4

2.2.2 Emissions to Air Non-compliance's

Dust Non-Compliances 2011	
Licence: P0500-01	
Works: Boora	
Location / DM Nr	Non-Compliances
Clongawney DM-01	0
Pollagh DM-02	0
Derryclure DM-03	0
Total	0

Note: Dust monitoring was 100% compliant during the reporting period.

2.3 Waste Arising

2.3.1 Non-Hazardous Waste

Non Hazardous Waste Data 2011				
Licence: P0500-01				
Works: Boora.				
Type	Tonnes	EW Code	Contractor	Licence Nr
Skips	22.32	20 03 01	AES	WP-OY-08-601-01
Wheelie Bins	19.29	20 03 01	AES	WP-OY-08-601-01
Polyethylene	218.78	02 01 04	Leinster Environmentals	WP 2008/06
Scrap Steel	79.06	17 04 07	AES	WP-OY-08-601-01
Timber Pallets	8.76	15 01 03	AES	WP-OY-08-601-01
Silt Pond Cleanings	549.00	01 01 02	Bord na Mona	IPPC P0500-01
Soil	0.12	17 05 04	Drehid Landfill	W0201-03
Peat Screenings	1169.00	01 01 02	Bord na Mona	IPPC P0500-01
Totals	2066.33			

Note: Polyethylene and scrap steel are recycled through AES Ltd. Skips and Wheelie Bins are brought to a mixed recycling centre with the residue going to landfill.

2.3.2 Hazardous Waste

Hazardous Waste Data 2011					
Licence: P0500-01					
Works: Boora					
Type	Tonnes	EW Code	Contractor	Licence Nr	Destination
Waste Oil	3.40	13 02 05	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	1.17	16 01 07	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oily Rags	0.86	15 02 02	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Lead Acid Batt	1.98	16 06 01	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Total	7.40				

2.4 Energy and Water Consumption

2.4.1 Energy

Energy Consumption 2011				
Licence: P0500-01				
Works: Boora				
Units	Diesel (Litres)	Petrol (Litres)	Electricity (Units)	Peat Briquettes (Tonnes)
Totals	1443716.00	3669.50		8.94
MW Hours	14669.60	34.30		46.04
Total MW Hours	14749.94			

Note: Due to issues with Electric Ireland's web site which is outside Bord Na Mona's control, accurate electrical consumption figures were not available. We are informed that this will be resolved in the coming weeks. This is important as the figures are also required in relation to the implementation of the energy standard ISO50001 at Mountdillon Works.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

Environmental Incidents 2011	
Licence: P0500-01	
Works: Boora	
Incidents	6
Requiring corrective action	6
Category	
Water	1
Air	5
Procedural	
Miscellaneous	
Total	6

There were six incidents during 2011, five of which related to bog fires at Lemanaghan and Bellair bogs. The sixth related to a small oil spill at the fuel pump at Boora Works. In all cases the Agency was informed.

2.5.2 Complaints

Environmental Complaints 2011	
Licence:P0500-01	
Works: Boora	
Complaints	7
Requiring corrective action	6
Category	
Water	
Air	6
Procedural	
Miscellaneous	1
Total	7

Five of the above complaints are included in the incident table above, the remaining two relate to a dust complaint at Pollagh and a potential flooding issue at Dernagun. All were reported to the Agency.

3.0 Management of the Activity

3.1 Achievement of Objectives & Targets 2011

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. The training will be reviewed in 2011. Status 45 Employees received environmental training during the reporting period. Hydraulic Harrows. Hydraulic harrows will be deployed at dust sensitive locations during the 2011 production season Additional harrows are also budgeted for in the five year plan. Status All existing Hydraulic Harrows were in operation during the 2011 production season. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations. Status Headland peat was collected as part of the general peat harvesting process and deposited into the existing stockpile
Project 2: Waste Management	Waste Streamlining. Waste streamlining is a project we are particularly interested in pursuing and hope to reduce wastes in future and be more efficient in dealing with all aspects of waste management. Status We are continuing to work with A.E.S. Ltd. to bring about improvements and efficiencies where they are at present not up to the optimum standard.
Project 3: Minimisation of Suspended Solids.	Training. Continue to train all employees in environmental matters .Training will be by means of the screening of an environmental DVD, followed by a power point presentation .The training programme is to be reviewed in 2011. Status 45 Employees received environmental training during the reporting period. This review took place.

Project 4: Effective spill leak management of mobile fuelling units.	Bund Provision Increased bund provisions where required will be provided in 2011. Status We took delivery of a new double skinned service tanker in 2011.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing. Status There were 218.78 tonnes of polythene removed for recycling in 2011. One of our contractors ceased trading with the result that we were confined to one contractor.
Project 6: Septic Tank Survey	Septic Tank Survey Carry out remedial work on septic tanks identified as requiring attention. Status This ongoing operation gave priority to the areas where the need was greatest.
Project 7: Energy Management	Energy Management.. Continue with energy management by means of a review of energy aspects, identifying areas of significant energy use that can be targeted for energy reduction projects. Status All electrical and fuel costs being monitored and tracked with a view to reduction and improvement in efficiency.

3.2 Environmental Management Programme Proposal for 2012

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Training will be by means of a new four module training programme delivered by dedicated Bord na Mona Training Specialists. This new training programme includes Environmental Compliance - IPPC, Biodiversity, Archaeology and Energy Management. Hydraulic Harrows. Hydraulic harrows will continue to be deployed across the licence area in 2012. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations.
Project 2: Waste Management	Waste Streamlining. Continue to use AES as a waste management provider. Using their expertise in identifying potential recyclers of waste streams generated.
Project 3: Minimisation of Suspended Solids.	Training. Continue to train all employees in environmental matters. Training will be by means of a new four module training programme delivered by dedicated Bord na Mona Training Specialists. This new training programme includes Environmental Compliance - IPPC, Biodiversity, Archaeology and Energy Management.
Project 4: Silt Pond Upgrade	Silt Control Silt Ponds will be upgraded where necessary.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.
Project 6: Septic Tank Survey	Survey. Following the septic tank survey it is proposed to carry out remedial work where necessary.
Project 7: Energy Management	Energy Management As part of an energy management process, a review of energy aspects will continue to take place identifying the significant energy users of the licensee.

3.3 Environmental Expenditure

Environmental Expenditure 2011	
Licence:P0500-01	
Works: Boora	
Description	Cost €
Capital Costs	€42,585
Silt Control	€134,205
Analytical & Consultancy Costs	€10,509
EPA Fees	€14,484
Bog Rehabilitation	€7,000
Waste Management	€28,469
Total	€237,252

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

Sampling went well in 2011, with results at both the Quarterly Grab and Composite locations being very favourable and with one non-compliance being recorded from each regime. It is proposed to sample the same locations during 2012.

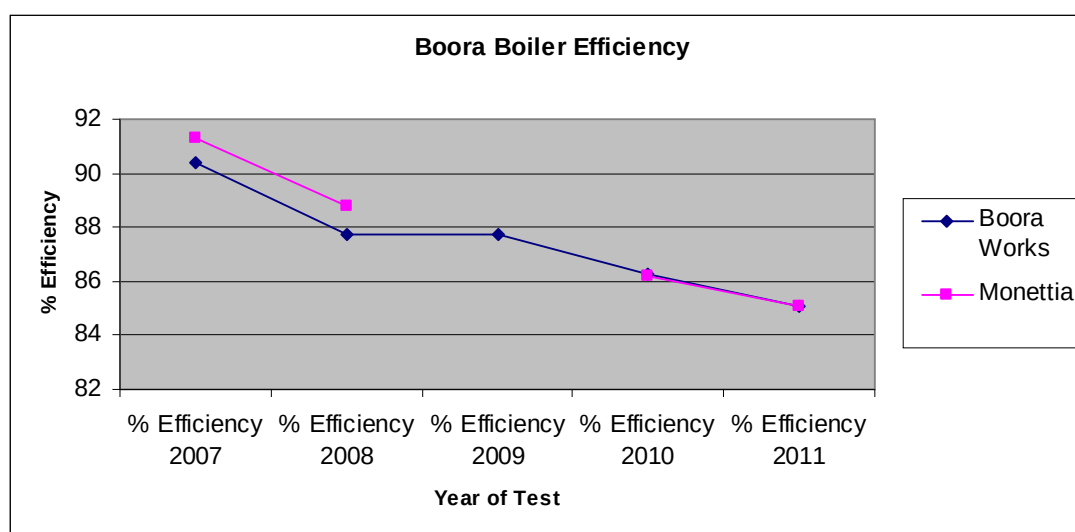
4.2 Bunding Programme

Bund Locations & Numbers Boora Works					
IPPC Licence: P0500-01					
Location	Bund Number	Last Tested	Status Pass/Fail	Repair Date	Next Test Due
Briquette Factory (Bog Area Tank)	500-15-01	Aug-11	Pass	N/A	Aug-13
Briquette Factory (Transport Tank)	500-15-02	Nov-10	Pass	N/A	Nov-12
Derrinboy Bund	500-15-03	Nov-10	Pass	N/A	Nov-12
Killaun Bund	500-15-04	Sep-09	Pass	N/A	Sep-11
Bellair Bund	500-15-05	Nov-10	Pass	N/A	Nov-12
Leamanaghan Bund	500-15-06	Nov-10	Pass	N/A	Nov-12
Derryclure Bund	500-15-07	Nov-10	Pass	N/A	Nov-12
Boora Main Bund	500-15-08	Nov-10	Pass	N/A	Nov-12
Monettia Bund	500-15-09	Double Skinned Tank in situ in Bund			

The bund at the briquette factory was the only bund that required testing during 2011. The bund at Killaun is not in use but will be tested in the coming months regardless. The Monettia bund is now only used to accommodate a double skinned tank and therefore does not require testing anymore.

4.3 Boiler Combustion Efficiency

Boiler Efficiency 2011					
Licence: P0500-01					
Works: Boora					
Boiler Location	% Efficiency 2007	% Efficiency 2008	% Efficiency 2009	% Efficiency 2010	% Efficiency 2011
Boora Works	90.4	87.75	87.75	86.25	85.1
Monettia	91.3	88.75	0	86.2	85.1



Note: Due to an error no boiler efficiency test took place at Monettia in 2009.

4.4 Resource consumption summary

Resource Consumption 2011			
Licence: P0500-01			
Works: Boora			
Product	Tonnes Produced	Tonnes Sold	Customer
Milled Peat	540000	318503	ESB and Briquette Fac
Moss	110000	73949	BNM Horticulture
Mini Sod	0	0	
Turf	250	250	Domestic Customers
Totals	650250	392702.00	

Proposed Production 2012	
Licence: P0500-01	
Works: Boora	
Product	Proposed Target
Milled Peat	530000
Moss	120000
Mini Sod	0
Turf	250
Totals	650250

4.5 De-Silting Report

All ponds were cleaned twice during the reporting period. Cleanings were dictated by the inspections programme.

Silt Pond Cleaning Programme is contained in Appendix 5

4.6 Bog Development and Operational Programme

Work is continuing on bringing sections of bog back into production that have been out of production for a number of years.

4.7 Bog Rehabilitation Report

- The greater area is still in peat production with some isolated cutaway bog areas in Boora, Turraun, Derries, Drinagh and Oughter.
- Small scale rehabilitation measures have been developed on these sites but the greater bog units remain in peat production.
- The ecology survey of the Boora Bogs is complete and habitat maps, ecology reports and draft rehabilitation plans for each of the sites have been developed.
- The *Lough Boora Parklands* is a significant development in terms of informing further rehabilitation and after-use plans.
- Partnership projects on parts of the Boora Group have been developed with BirdWatch Ireland (Drinagh Bog) and the Grey Partridge Trust (Lough Boora, Lough Cloghan) and local communities (www.loughbooraparklands.ie)
- Consultation with Heritage groups, NPWS is ongoing.

The above is an overview of the ongoing rehabilitation plan associated with this licence. There is a fully prepared plan retained at the licence site office, which includes Land Use maps for each licensed area updated in January 2012 and the habitat maps, future maps and ecology reports for each site.

4.8 Archaeological Report

There were no archaeological excavations in Boora during 2011.

5.0 Summary

This reporting period covers the calendar year 2011.

Overall performance would be considered to be good with the dust samples fully compliant and one composite sample and one quarterly sample exceeding the ELV. We had a particularly difficult year with the spread of gorse fires on to our bogs, with 7 complaints in total during the year, 6 of which required corrective actions. The majority of the complaints were as a result of the bog fires.

Environmental protection procedures in all situations are regularly re-affirmed to staff through the training programme and the Environmental Co-ordinator.

The silt pond cleaning programme went very well with all ponds cleaned at least twice with others cleaned more as required. We carried out a survey of all silt ponds as to their size, suitability and upgrades will be made where it is deemed necessary.

We continued in our efforts to recycle or reuse as many products as we possibly can and strive to reduce fuel and lubricant usage by the full utilisation of the available products.

Weather conditions made operations difficult during the year. The dry windy weather in late spring/early summer, together with the high rainfall during the later summer presented challenges to our operations.

A new four module training programme delivered by dedicated Bord na Mona Training Specialists has also been developed during 2011/2012 and will be rolled out in the coming weeks. This new training programme includes Environmental Compliance - IPPC, Biodiversity, Archaeology and Energy Management.

There is also ongoing replacement and improvement of signage,

The issues raised in the 2011 audit have either been rectified or are underway.

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

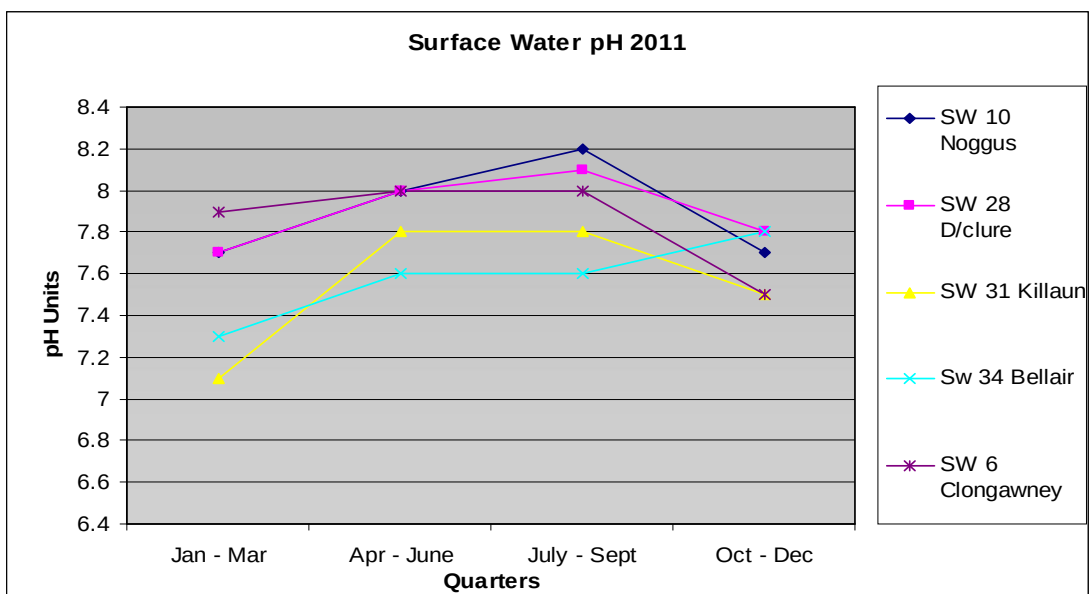
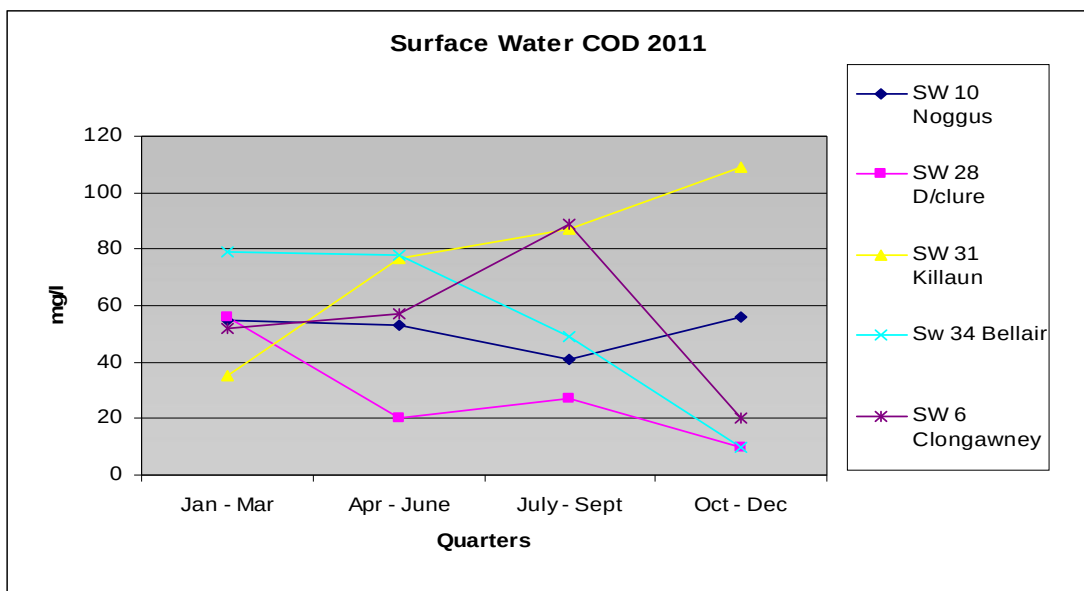
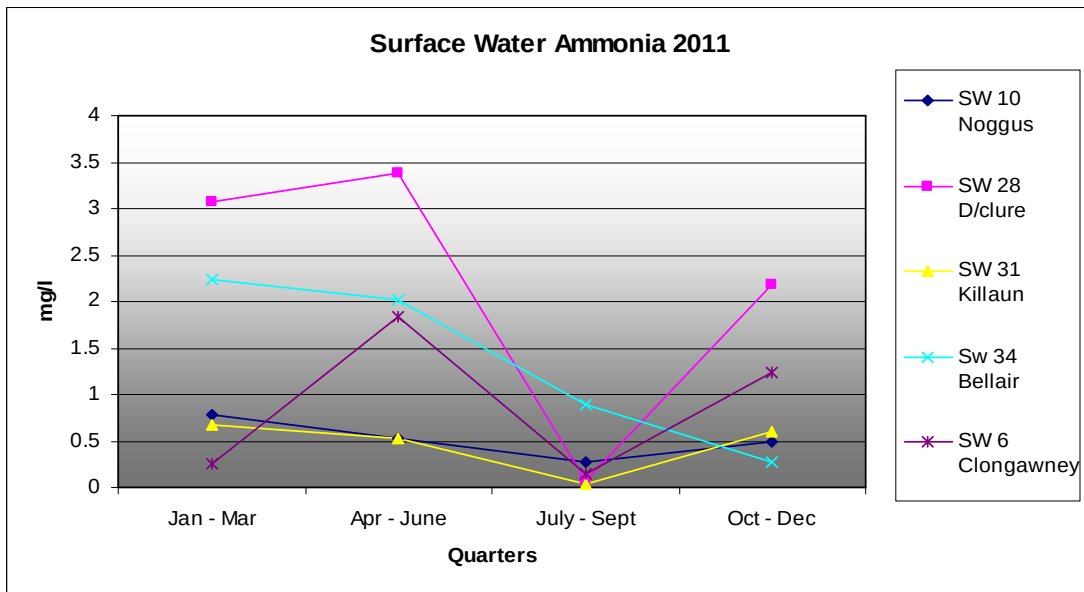
This will be communicated to all staff through the ongoing training programme.

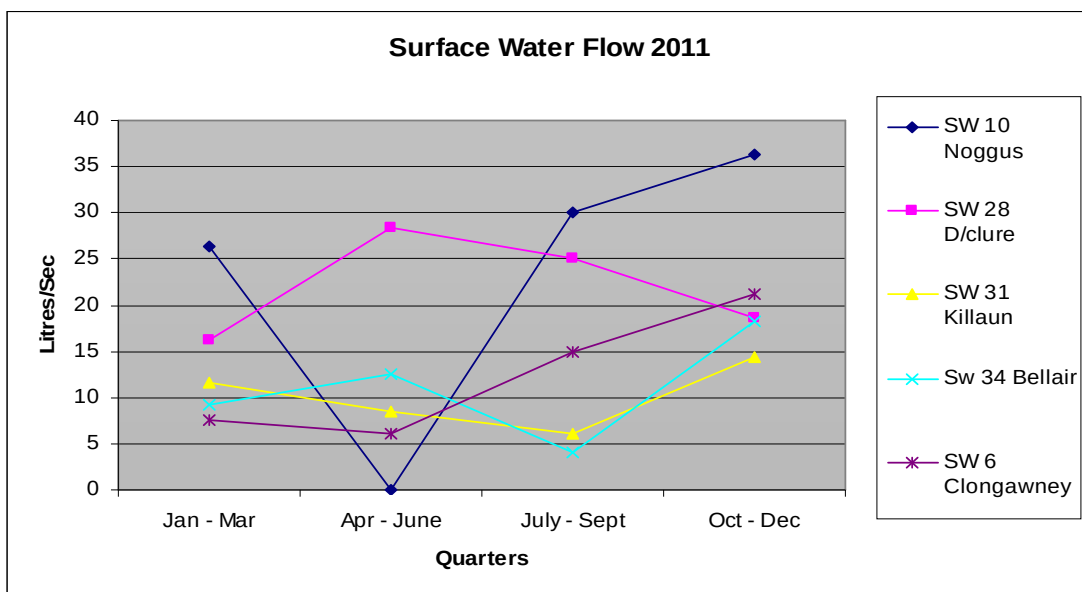
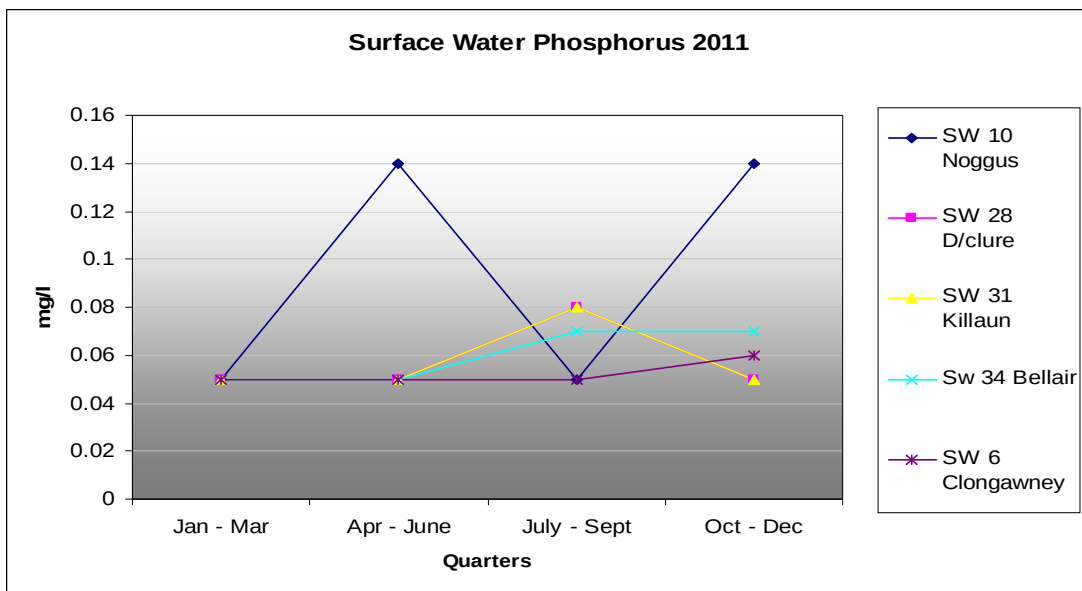
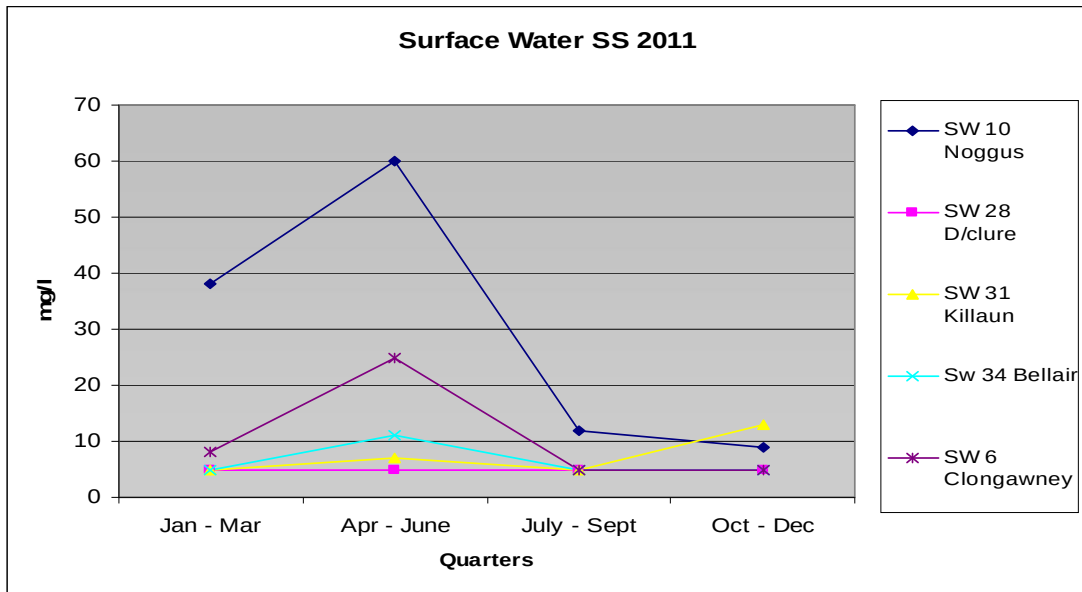
Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management on the River Barrow

APPENDIX 1

Surface Water Discharge Monitoring Results - Bogs

BNM Group:	Boora		Quarterly Grabs	
IPPC Licence No.	PO500-01	2011		
Ammonia as N (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	0.78	0.52	0.27	0.5
SW 28 D/clure	3.08	3.38	0.08	2.18
SW 31 Killaun	0.67	0.52	0.04	0.6
Sw 34 Bellair	2.23	2.02	0.89	0.27
SW 6 Clongawney	0.26	1.84	0.14	1.24
COD (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	55	53	41	56
SW 28 D/clure	56	20	27	10
SW 31 Killaun	35	77	87	109
Sw 34 Bellair	79	78	49	10
SW 6 Clongawney	52	57	89	20
pH (units)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	7.7	8	8.2	7.7
SW 28 D/clure	7.7	8	8.1	7.8
SW 31 Killaun	7.1	7.8	7.8	7.5
Sw 34 Bellair	7.3	7.6	7.6	7.8
SW 6 Clongawney	7.9	8	8	7.5
Suspended Solids (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	38	60	12	9
SW 28 D/clure	5	5	5	5
SW 31 Killaun	5	7	5	13
Sw 34 Bellair	5	11	5	5
SW 6 Clongawney	8	25	5	5
Total Phosphorus (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	0.05	0.14	0.05	0.14
SW 28 D/clure	0.05	0.05	0.08	0.05
SW 31 Killaun	0.05	0.05	0.08	0.05
Sw 34 Bellair	0.05	0.05	0.07	0.07
SW 6 Clongawney	0.05	0.05	0.05	0.06
Flow (l/s)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	26	0	30	36
SW 28 D/clure	16	28	25	19
SW 31 Killaun	12	8	6	14
Sw 34 Bellair	9	13	4	18
SW 6 Clongawney	8	6	15	21





Note: No flow recording at Noggus SW 10 during second quarter monitoring event due to flood conditions.

APPENDIX 2

Surface Water Discharge Monitoring Results - Yards

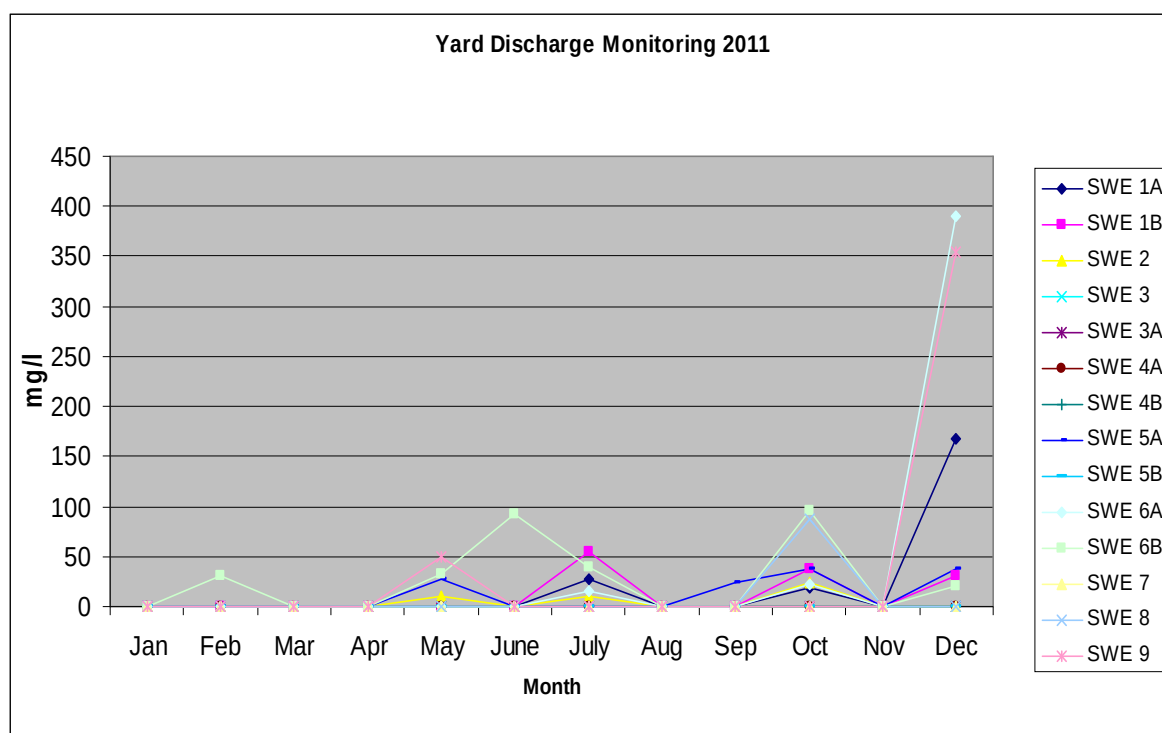
Yard Discharge Results 2011

Licence: P0500-01

Works: Boora

Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	30	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	10	0	0	0	0	27	0	0	33	0	0	49
June	0	0	0	0	0	0	0	0	0	0	93	0	0	0
July	28	54	10	0	0	0	0	0	0	15	39	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	24	0	0	0	0	0	0
Oct	19	37	24	0	0	0	0	38	0	23	95	0	87	0
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	168	31	0	0	0	0	0	37	0	390	21	0	0	355

Note: 0 denotes no flow at emission point on day of sampling



APPENDIX 3

Surface Water Discharge Monitoring Results Composite

Month				Parameters							Daily Totals		
Jan	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	228		12674690				63.37	2889.83
2					5	226		11715230				58.58	2647.64
3					5	234		10598110				52.99	2479.96
4	7.6	54	0.93	0.05	7	246	138	11904640	642.85	11.07	0.60	83.33	2928.54
5					6	210		13138050				78.83	2758.99
6					5	194		14522410				72.61	2817.35
7					7	190		12833850				89.84	2438.43
8					8	181		12820110				102.56	2320.44
9					5	206		14073410				70.37	2899.12
10					6	182		14509790				87.06	2640.78
11					5	216		17272560				86.36	3730.87
12	7.5	78	0.68	0.05	6	220	254	16800720	1310.46	11.42	0.84	100.80	3696.16
13					6	188		18049380				108.30	3393.28
14					6	194		13060870				78.37	2533.81
15					5	196		13048950				65.24	2557.59
16					11	206		14564990				160.21	3000.39
17					5	206		12571420				62.86	2589.71
18					33	276		11214940				370.09	3095.32
19	7.4	64	0.71	0.05	9	276	183	9340176	597.77	6.63	0.47	84.06	2577.89
20					5	228		10897090				54.49	2484.54
21					0	0		9446070				0.00	0.00
22					0	0		6566400				0.00	0.00
23					0	0		6566400				0.00	0.00
24					0	0		6566400				0.00	0.00
25					0	0		6566400				0.00	0.00
26	7.4	65	0.79	0.05	5	234	161	6566400	426.82	5.19	0.33	32.83	1536.54
27					0	0		6566400				0.00	0.00
28					0	0		7785708				0.00	0.00
29					0	0		8968320				0.00	0.00
30					6	252		8968320				53.81	2260.02
31					6	258		8968320				53.81	2313.83

Month				Parameters							Daily Totals		
Feb	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	7.8	59	1.09	0.05	6	250	120	8968320	529.13	9.78	0.45	53.81	2242.08
2					5	0		8968320				44.84	0.00
3					5	210		11399300				57.00	2393.85
4					5	216		13982440				69.91	3020.21
5					5	140		16618940				83.09	2326.65
6					5	154		16480980				82.40	2538.07
7					5	168		13968780				69.84	2346.76
8	7.5	91	0.62	0.05	5	114	282	13067000	1189.10	8.10	0.65	65.34	1489.64
9					7	226		12634830				88.44	2855.47
10					9	221		13163290				118.47	2909.09
11					8	222		12988310				103.91	2883.40
12					5	224		13130970				65.65	2941.34
13					10	220		13038950				130.39	2868.57
14					11	218		14131100				155.44	3080.58
15	7.5	87	0.52	0.05	9	226	217	13144070	1143.53	6.83	0.66	118.30	2970.56
16					6	182		12613340				75.68	2295.63
17					7	196		11994510				83.96	2350.92
18					7	182		12340800				86.39	2246.03
19					6	208		13160630				78.96	2737.41
20					6	198		13308470				79.85	2635.08
21					10	204		13286530				132.87	2710.45
22	7.7	61	0.43	0.05	6	190	167	13265450	809.19	5.70	0.66	79.59	2520.44
23					5	370		13093030				65.47	4844.42
24					6	266		13255610				79.53	3525.99
25					5	246		12507850				62.54	3076.93
26					5	266		12029210				60.15	3199.77
27					5	250		12729010				63.65	3182.25
28					5	260		13368440				66.84	3475.79

Month				Parameters							Daily Totals		
March	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	7.6	57	0.93	0.05	5	273	125	12332920	702.98	11.47	0.62	61.66	3366.89
2					8	88		12902070				103.22	1135.38
3					8	52		12751020				102.01	663.05
4					7	50		13073320				91.51	653.67
5					5	90		13288890				66.44	1196.00
6					18	84		13202000				237.64	1108.97
7					5	98		12906600				64.53	1264.85
8	6.6	68	1.02	0.05	5	78	217	12773090	868.57	13.03	0.64	63.87	996.30
9					5	338		12892360				64.46	4357.62
10					7	280		12771830				89.40	3576.11
11					5	320		13091920				65.46	4189.41
12					5	231		14846900				74.23	3429.63
13					5	220		16778950				83.89	3691.37
14					5	258		11788250				58.94	3041.37
15	7.9	51	0.55	0.05	5	242	164	12300490	627.32	6.77	0.62	61.50	2976.72
16					5	260		12180090				60.90	3166.82
17					5	280		12455560				62.28	3487.56
18					5	288		13106820				65.53	3774.76
19					6	300		12658740				75.95	3797.62
20					7	298		12868210				90.08	3834.73
21					5	280		13628030				68.14	3815.85
22	8	48	0.62	0.05	22	300	117	12407360	595.55	7.69	0.62	272.96	3722.21
23					5	282		12182240				60.91	3435.39
24					5	294		11953710				59.77	3514.39
25					5	318		12144700				60.72	3862.01
26					5	326		12143270				60.72	3958.71
27					5	308		12083670				60.42	3721.77
28					5	308		12403440				62.02	3820.26
29	7.9	57	1.08	0.05	5	317	77	12721370	725.12	13.74	0.64	63.61	4032.67
30					5	355		12444230				62.22	4417.70
31					5	328		13770200				68.85	4516.63

Month				Parameters							Daily Totals		
April	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					6	324		364867				2.19	118.22
2					6	320		591840				3.55	189.39
3					7	236		1663110				11.64	392.49
4					0			700963				0.00	0.00
5	7.8	47	0.39	0.05	21	292	113	834538	39.22	0.33	0.04	17.53	243.69
6					0	0		1638320				0.00	0.00
7					0	0		413424				0.00	0.00
8					0	0		177725				0.00	0.00
9					0	0		177725				0.00	0.00
10					0	0		177725				0.00	0.00
11					62	340		177725				11.02	60.43
12	8	39	1.22	0.05	9	238	86	177725	6.93	0.22	0.01	1.60	42.30
13					0	0		177725				0.00	0.00
14					0	0		177725				0.00	0.00
15					0	0		177725				0.00	0.00
16					0	0		177725				0.00	0.00
17					0	0		177725				0.00	0.00
18					0	0		177725				0.00	0.00
19	7.8	40	1.38	0.05	13	318	64	177725	7.11	0.25	0.01	2.31	56.52
20					5	342		177725				0.89	60.78
21					5	306		184032				0.92	56.31
22					5	335		33955.2				0.17	11.37
23					5	320		180317				0.90	57.70
24					5	346		0				0.00	0.00
25					5	344		0				0.00	0.00
26	8.2	37	0.85	0.05	8	348	71	0				0.00	0.00
27					5	368		0				0.00	0.00
28					5	366		0				0.00	0.00
29					5	378		0				0.00	0.00
30					5	360		0				0.00	0.00

Month				Parameters							Daily Totals		
May	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	376		0				0.00	0.00
2					5	384		0				0.00	0.00
3	8.2	29	0.65	0.06	7	382	55	0				0.00	0.00
4					20	358		0				0.00	0.00
5					8	368		0				0.00	0.00
6					6	368		1181950				7.09	434.96
7					5	366		487728				2.44	178.51
8					5	344		667958				3.34	229.78
9					14	378		368755				5.16	139.39
10	8.1	35	0.54	0.05	18	308	77	1031010	36.09	0.56	0.05	18.56	317.55
11					5	262		913507				4.57	239.34
12					5	266		84844.8				0.42	22.57
13					5	286		448502				2.24	128.27
14					5	298		537062				2.69	160.04
15					5	298		345254				1.73	102.89
16					15	320		381542				5.72	122.09
17	8	56	0.51	0.05	7	310	83	334627	18.74	0.17	0.02	2.34	103.73
18					5	345		181008				0.91	62.45
19					5	356		390355				1.95	138.97
20					5	356		0				0.00	0.00
21					5	342		0				0.00	0.00
22					5	352		0				0.00	0.00
23					5	354		1456010				7.28	515.43
24	8.1	20	0.48	0.05	9	338	76	814925	16.30	0.39	0.04	7.33	275.44
25					6	340		70243.2				0.42	23.88
26					19	342		0				0.00	0.00
27					12	332		1080430				12.97	358.70
28					5	314		94953.6				0.47	29.82
29					5	321		468029				2.34	150.24
30					5	318		0				0.00	0.00
31	8	36	0.66	0.05	6	328	78	0				0.00	0.00

Month				Parameters							Daily Totals		
June	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	342		0				0.00	0.00
2					5	346		0				0.00	0.00
3					5	331		0				0.00	0.00
4					5	340		0				0.00	0.00
5					5	350		0				0.00	0.00
6					5	348		0				0.00	0.00
7	8.2	31	0.78	0.05	5	338	70	0				0.00	0.00
8					5	220		4618430				23.09	1016.05
9					5	230		752458				3.76	173.07
10					5	228		0				0.00	0.00
11					5	275		0				0.00	0.00
12					5	304		236736				1.18	71.97
13					5	314		959731				4.80	301.36
14	8	60	0.87	0.05	5	338	114	552787	33.17	0.48	0.03	2.76	186.84
15					5	296		114739				0.57	33.96
16					5	290		205718				1.03	59.66
17					5	348		0				0.00	0.00
18					5	348		1109120				5.55	385.97
19					5	300		297216				1.49	89.16
20					5	296		180317				0.90	53.37
21	8	44	0.37	0.06	7	314	100	147658	6.50	0.05	0.01	1.03	46.36
22					5	262		1204500				6.02	315.58
23					5	266		364781				1.82	97.03
24					5	274		0				0.00	0.00
25					5	234		2329860				11.65	545.19
26					5	266		930787				4.65	247.59
27					5	270		0				0.00	0.00
28	7.9	50	0.48	0.05	5	282	171	0				0.00	0.00
29					5	322		0				0.00	0.00
30					5	336		0				0.00	0.00

Month				Parameters							Daily Totals		
July	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	356		11290400				56.45	4019.38
2					5	360		11155000				55.78	4015.80
3					5	362		10795100				53.98	3907.83
4					5	364		10423300				52.12	3794.08
5	8.1	33	0.29	0.07	7	372	84	10906100	359.90	3.16	0.76	76.34	4057.07
6					5	360		12064000				60.32	4343.04
7					5	292		15151300				75.76	4424.18
8					8	256		12521800				100.17	3205.58
9					5	226		10309000				51.55	2329.83
10					5	254		10138600				50.69	2575.20
11					5	266		11248600				56.24	2992.13
12	8	122	0.53	0.05	5	286	204	11150600	1360.37	5.91	0.56	55.75	3189.07
13					5	360		11000000				55.00	3960.00
14					5	350		10855900				54.28	3799.57
15					5	376		10907800				54.54	4101.33
16					5	346		11553300				57.77	3997.44
17					5	362		11656900				58.28	4219.80
18					5	316		11746200				58.73	3711.80
19	8.2	13	0.04	0.05	5	320	131	11812800	153.57	0.47	0.59	59.06	3780.10
20					5	375		11376200				56.88	4266.08
21					5	360		11122500				55.61	4004.10
22					5	364		11003100				55.02	4005.13
23					5	362		10504900				52.52	3802.77
24					5	360		10537900				52.69	3793.64
25					5	354		10787900				53.94	3818.92
26	8.2	83	0.02	0.05	5	370	80	11139300	924.56	0.22	0.56	55.70	4121.54
27					5	364		10517900				52.59	3828.52
28					5	372		11602500				58.01	4316.13
29					6	364		10341700				62.05	3764.38
30					5	364		9521870				47.61	3465.96
31					5	344		11417900				57.09	3927.76

Month				Parameters							Daily Totals		
August	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	362		11143300				55.72	4033.87
2	8.1	22	0.62	0.05	5	368	63	11220100	246.84	6.96	0.56	56.10	4129.00
3					5	366		10383200				51.92	3800.25
4					5	374		10982600				54.91	4107.49
5					5	344		10514900				52.57	3617.13
6					5	374		10547500				52.74	3944.77
7					5	364		11503100				57.52	4187.13
8					5	374		11220400				56.10	4196.43
9	8.1	35	0.67	0.05	7	366	60	10680000	373.80	7.16	0.53	74.76	3908.88
10					5	354		10604200				53.02	3753.89
11					5	338		12079200				60.40	4082.77
12					5	318		11097000				55.49	3528.85
13					5	288		11585800				57.93	3336.71
14					5	272		11158300				55.79	3035.06
15					5	312		10980400				54.90	3425.88
16	8.2	36	0.37	0.08	5	298	82	12092700	435.34	4.47	0.97	60.46	3603.62
17					5	336		11055900				55.28	3714.78
18					5	318		10890700				54.45	3463.24
19					5	298		11400500				57.00	3397.35
20					5	330		11462400				57.31	3782.59
21					5	338		10796500				53.98	3649.22
22					5	335		10289200				51.45	3446.88
23	8.2	29	0.18	0.17	5	312	76	9913380	287.49	1.78	1.69	49.57	3092.97
24					5	338		10636300				53.18	3595.07
25					5	354		12147700				60.74	4300.29
26					5	340		11309800				56.55	3845.33
27					5	340		11182300				55.91	3801.98
28					5	338		10704700				53.52	3618.19
29					5	340		10076300				50.38	3425.94
30	8.3	81	0.3	0.05	5	346	64	10007100	810.58	3.00	0.50	50.04	3462.46
31					5	340		9974460				49.87	3391.32

Month				Parameters							Daily Totals		
Sept	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	338		9851910				49.26	3329.95
2					5	342		9942610				49.71	3400.37
3					5	336		12274400				61.37	4124.20
4					5	336		11377200				56.89	3822.74
5					5	322		12599400				63.00	4057.01
6	8.1	70	0.8	0.05	8	250	150	12795400	895.68	10.24	0.64	102.36	3198.85
7					5	242		11177400				55.89	2704.93
8					5	286		12746600				63.73	3645.53
9					5	282		11816700				59.08	3332.31
10					5	292		11444800				57.22	3341.88
11					5	274		11631500				58.16	3187.03
12					5	296		12369900				61.85	3661.49
13	8.1	35	0.52	0.05	5	330	148	11611800	406.41	6.04	0.58	58.06	3831.89
14					5	126		11473300				57.37	1445.64
15					5	296		11620600				58.10	3439.70
16					5	324		12389900				61.95	4014.33
17					8	290		14038300				112.31	4071.11
18					8	278		11691500				93.53	3250.24
19					5	276		13117300				65.59	3620.37
20	7.9	54	0.94	0.05	5	284	169	11106200	599.73	10.44	0.56	55.53	3154.16
21					5	300		12057900				60.29	3617.37
22					5	288		12045300				60.23	3469.05
23					5	300		11988300				59.94	3596.49
24					5	303		11928900				59.64	3614.46
25					5	334		12638100				63.19	4221.13
26					5	336		11982200				59.91	4026.02
27	8.2	20	0.36	0.05	5	336	110	11873100	237.46	4.27	0.59	59.37	3989.36
28					5	310		11501000				57.51	3565.31
29					5	306		11295400				56.48	3456.39
30					5	302		12599200				63.00	3804.96

Month				Parameters							Daily Totals		
Oct	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	228		25773100				128.87	5876.27
2					5	236		25773100				128.87	6082.45
3					5	278		25773100				128.87	7164.92
4	7.9	57	0.57	0.05	5	282	202	25773100	1469.07	14.69	1.29	128.87	7268.01
5					5	282		25773100				128.87	7268.01
6					5	292		25773100				128.87	7525.75
7					5	290		25773100				128.87	7474.20
8					5	292		25773100				128.87	7525.75
9					5	302		25773100				128.87	7783.48
10					5	304		25773100				128.87	7835.02
11	7.9	54	0.38	0.05	5	268	157	25773100	1391.75	9.79	1.29	128.87	6907.19
12					5	274		25773100				128.87	7061.83
13					5	278		25773100				128.87	7164.92
14					5	244		25773100				128.87	6288.64
15					5	293		25836500				129.18	7570.09
16					5	274		24111900				120.56	6606.66
17					5	268		27138300				135.69	7273.06
18	7.8	68	0.71	0.07	12	230	181	24397300	1659.02	17.32	1.71	292.77	5611.38
19					5	266		23374300				116.87	6217.56
20					5	278		24254300				121.27	6742.70
21					5	284		25097300				125.49	7127.63
22					5	296		29355300				146.78	8689.17
23					6	232		28399700				170.40	6588.73
24					10	212		25801200				258.01	5469.85
25	7.5	75	0.27	0.05	10	214	229	25977400	1948.31	7.01	1.30	259.77	5559.16
26					5	182		24662600				123.31	4488.59
27					5	186		25155300				125.78	4678.89
28					5	200		24594700				122.97	4918.94
29					7	217		24734300				173.14	5367.34
30					5	264		23571500				117.86	6222.88
31					5	282		27340700				136.70	7710.08

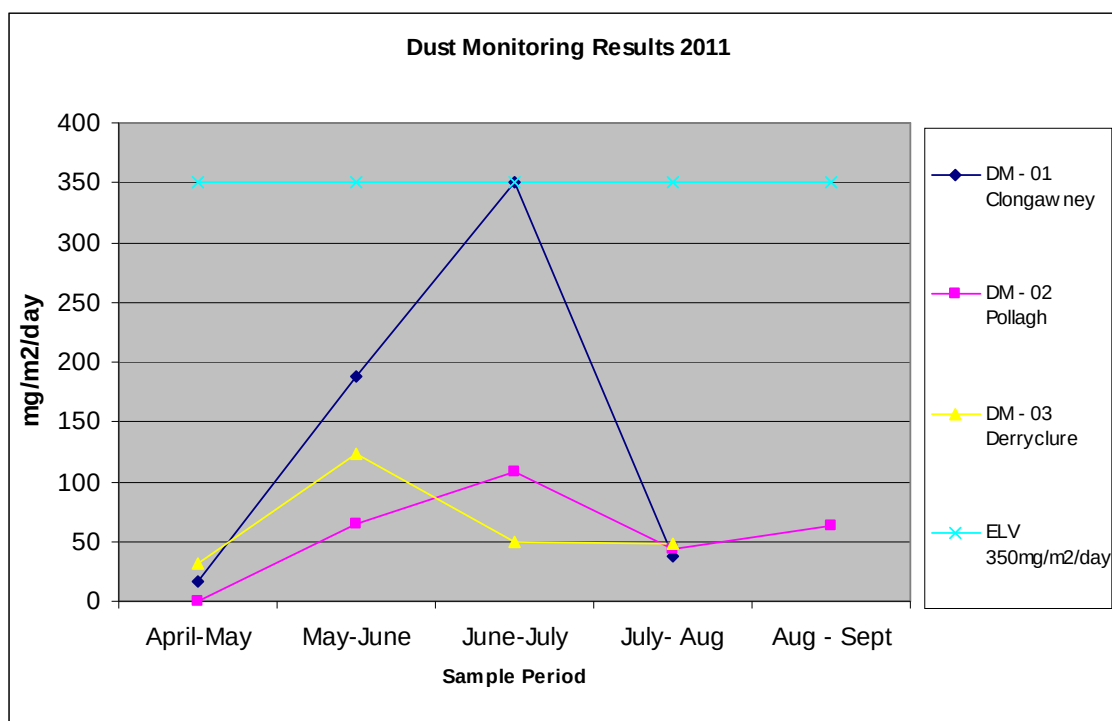
Month				Parameters							Daily Totals		
Nov	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	7.7	72	0.34	0.05	5	228	268	23630400	1701.39	8.03	1.18	118.15	5387.73
2					5	260		25191200				125.96	6549.71
3					5	236		25492100				127.46	6016.14
4					5	248		23676700				118.38	5871.82
5					5	278		22986900				114.93	6390.36
6					5	278		23783500				118.92	6611.81
7					5	292		24824400				124.12	7248.72
8	7.7	57	0.51	0.05	5	296	173	25498000	1453.39	13.00	1.27	127.49	7547.41
9					5	278		25404300				127.02	7062.40
10					5	274		25071000				125.36	6869.45
11					5	296		28364700				141.82	8395.95
12					5	304		23293500				116.47	7081.22
13					5	334		24310800				121.55	8119.81
14					5	340		24645000				123.23	8379.30
15	7.9	61	0.4	0.05	5	278	166	24751200	1509.82	9.90	1.24	123.76	6880.83
16					5	290		25101800				125.51	7279.52
17					5	270		32180500				160.90	8688.74
18					0	0		24456500				0.00	0.00
19					0	0		27381200				0.00	0.00
20					0	0		24452900				0.00	0.00
21					0	0		24425300				0.00	0.00
22	7.2	73	0.7	0.05	9	214	279	24425300	1783.05	17.10	1.22	219.83	5227.01
23					0	0		24425300				0.00	0.00
24					0	0		24425300				0.00	0.00
25					0	0		24425300				0.00	0.00
26					0	0		24425300				0.00	0.00
27					0	0		24425300				0.00	0.00
28					5	262		25220400				126.10	6607.74
29	8	67	0.35	0.05	12	140	228	28509900	1910.16	9.98	1.43	342.12	3991.39
30					5	159		25496700				127.48	4053.98

Month				Parameters							Daily Totals		
Dec	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	200		25963800				129.82	5192.76
2					5	222		25936200				129.68	5757.84
3					5	274		25662900				128.31	7031.63
4					5	228		25861300				129.31	5896.38
5					5	176		25311600				126.56	4454.84
6	7.6	80	0.75	0.08	6	252	231	26118200	2089.46	19.59	2.09	156.71	6581.79
7					5	246		25499600				127.50	6272.90
8					20	218		26775700				535.51	5837.10
9					5	230		23814100				119.07	5477.24
10					5	254		24627400				123.14	6255.36
11					5	250		28722800				143.61	7180.70
12					5	218		27965600				139.83	6096.50
13		69	0.54	0.05	10	185	234	26815700	1850.28	14.48	1.34	268.16	4960.90
14					5	222		25656600				128.28	5695.77
15					5	228		25631200				128.16	5843.91
16					5	258		23400700				117.00	6037.38
17					5	244		26373700				131.87	6435.18
18					5	252		23825800				119.13	6004.10
19					5	277		31732700				158.66	8789.96
20	7.5	59	0.56	0.07	5	218	183	26460500	1561.17	14.82	1.85	132.30	5768.39
21					5	219		26452800				132.26	5793.16
22					5	270		23786000				118.93	6422.22
23					5	307		26378200				131.89	8098.11
24					5	196		24351900				121.76	4772.97
25					5	248		26301800				131.51	6522.85
26					5	266		23977100				119.89	6377.91
27	7.9	62	0.58	0.08	10	250	282	24878500	1542.47	14.43	1.99	248.79	6219.63
28					5	206		28347500				141.74	5839.59
29					5	196		26948700				134.74	5281.95
30					5	192		26903600				134.52	5165.49
31					5	203		25437400				127.19	5163.79

APPENDIX 4

Dust Monitoring Results.

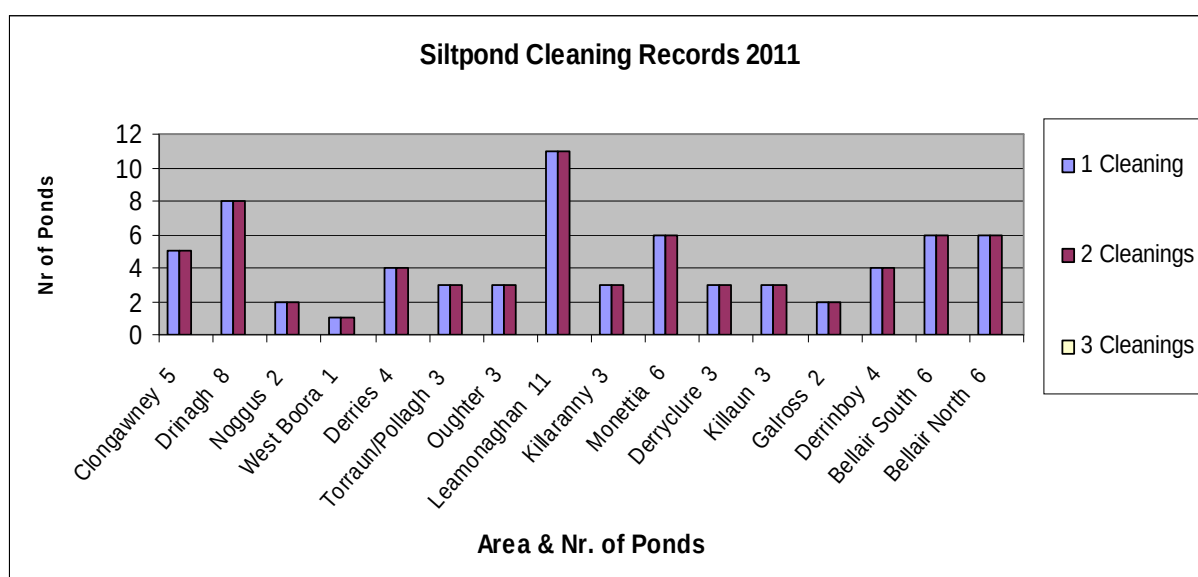
Dust Monitoring Results 2011			
Licence: P0500-01			
Works: Boora			
Sample Period	DM - 01 Clongawney	DM - 02 Pollagh	DM - 03 Derryclure
April-May	16	0	32
May-June	188	65	124
June-July	350	108	50
July- Aug	38	43	48
Aug - Sept		63	



APPENDIX 5

De-silting Programme Review.

Siltpond Cleaning Programme 2011			
IPPC Licence: P0500-01			
Works: Boora			
Bog Area & No. of Ponds	1 Cleaning	2 Cleanings	3 Cleanings
Clongawney 5	5	5	
Drinagh 8	8	8	
Noggus 2	2	2	
West Boora 1	1	1	
Derries 4	4	4	
Torraun/Pollagh 3	3	3	
Oughter 3	3	3	
Leamonaghan 11	11	11	
Killaranny 3	3	3	
Monettia 6	6	6	
Derryclure 3	3	3	
Killaun 3	3	3	
Galross 2	2	2	
Derrinboy 4	4	4	
Bellair South 6	6	6	
Bellair North 6	6	6	





Annual Environmental Report 2011
P0500-01

March 2012

Bord na Móna today operates 5 main subsidiary companies in more than 20 locations throughout Ireland, the UK and USA. The principal businesses are in the Energy, Resource Recovery, Horticulture, Home Heating and Wastewater Treatment and Air Pollution Abatement markets. The company also engages in an extensive rehabilitation program to develop its peat lands in an environmentally sustainable manner.



Bord na Móna has long recognised the need to diversify its activities in order to secure a sustainable future. In this context we identified the energy and resource recovery sectors as appropriate areas of growth and development, given our assets, strengths and skills. Significant challenges face Ireland in meeting the country's needs to provide secure sustainable energy and manage waste while minimising the impact on the environment.

Bord na Móna is in a strong position to contribute to dealing with these challenges. We have a unique mixture of assets, experience and innovation which will enable us to cross-link our activities in energy, water and resource recovery to provide products and services which will meet Ireland's needs. We also have the capacity to become an exemplar for others to follow in these fields.

With this background we have scoped out a new vision for the future sustainable development of Bord na Móna.

Following on from our vision, we have developed a new mission for Bord na Móna which the Company is committed to achieving.

In 1934 the Turf Development Board was formed to 'develop and improve the turf industry.' The experience of fuel shortages during the war re-enforced the Irish State's commitment to developing the country's bogs. In 1944 the TDB was asked to devise and submit a comprehensive programme, the outcome was the transformation in 1946 of the TDB into Bord na Móna. The Board was given a mandate to increase the use of peat as a fuel and in energy production. Markets for the use of moss peat in horticulture were also developed.

In 1990 Bord na Móna implemented a divisionalised and decentralised structure, designed to delegate responsibility downwards ensuring a sharper focus on each profit centre and a greater spirit of enterprise.

Group Vision



The vision statement defines the Company's purpose, in terms of its values.

Values are guiding beliefs about how things should be done.

The vision statement communicates both the purpose and values of Bord na Móna.

For employees, it gives direction about how they are expected to behave and inspires them to give their best. Shared with customers, it shapes the customers' understanding of why they should work with Bord na Móna.

Bord na Móna will seek solutions that optimise the creative energy and potential of the organisation, driven by long term goals and the organisation's vision and mission.

In this context our devolved business units will align their vision and strategic planning with the global direction provided.

Consistent with our vision, innovation will once again return to the core of everything we do. We will capitalise on opportunities to cross fertilise our unique range of skills and technologies that add value and are socially and environmentally sustainable.

Greater focus will be placed on managing and developing our land assets in a responsible and sustainable manner. Our award winning initiatives at Lough Boora (Co. Offaly) and Oweninny (Co Mayo), provide shining examples of what can be achieved

Group Mission

We conduct our affairs with openness, honesty and integrity.

We are Ireland's leading environmentally responsible integrated utility service provider encompassing electricity, heating solutions, resource recovery, water, horticulture and related services.

We capitalise on international opportunities where we have a competitive advantage.

We achieve continuing growth through superior customer service, outstanding quality and innovation delivered through the excellence and commitment of our people.

We engage in sustainable profitable business in the communities we serve, which is rewarding and challenging for employees and other stakeholders.

Contents

1.0 Introduction

- 1.1 IPPC Licence Register No
- 1.2 Name & Location of Site
- 1.3 Brief Description of Activities
- 1.4 Environmental Management of the Company
- 1.5 Environmental Policy Statement

2.0 Summary Information

- 2.1 Emissions to Water Summary
 - 2.1.1 Silt Pond Emissions
 - 2.1.2 Yard Discharges
 - 2.1.3 Composite Sampler Report
 - 2.1.4 Emissions to Water Non-compliance's

2.2 Emissions to Air Summary

- 2.2.1 Dust Monitoring
- 2.2.2 Emissions to Air Non-compliance's

2.3 Waste Arising

- 2.3.1 Non-Hazardous Waste
- 2.3.2 Hazardous Waste

2.4 Energy and Water Consumption

- 2.4.1 Energy Consumption

2.5 Environmental Incidents and Complaints

- 2.5.1 Incidents
- 2.5.2 Complaints

3.0 Management of the Activity

- 3.1 Environmental Management Programme Report
- 3.2 Environmental Management Programme Proposal
- 3.3 Environmental Expenditure

4.0 Licence Specific Reports

- 4.1 Surface Water Discharge Monitoring Location Programme Review
- 4.2 Bunding Programme
- 4.3 Boiler Combustion Efficiency
- 4.4 Resource Consumption Summary
- 4.5 Report on de-silting Programme
- 4.6 Bog Development and Operational Programme
- 4.7 Bog Rehabilitation Report
- 4.8 Archaeological Report

5.0 Summary

- Appendix 1:** Emissions to Water Monitoring Results. (Bogs)
- Appendix 2:** Emissions to Water Monitoring Results. (Yards)
- Appendix 3:** Emissions to Water Monitoring Results. (Composite)
- Appendix 4:** Emissions to Air Monitoring Results.
- Appendix 5:** De-silting Programme Review

1.0 Introduction

1.1 IPPC Licence No P0500-01

1.2 Name & Location of Site

Name: Bord na Mona Energy Limited.- Boora Works

Address: Leabeg, Tullamore Co Offaly

Telephone No: 05793 45900

Contact Name John Mc Niff

Position Resource Manager, Blackwater /Boora

National Grid Reference E180050 N319540

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 one of the following locations.

Power station

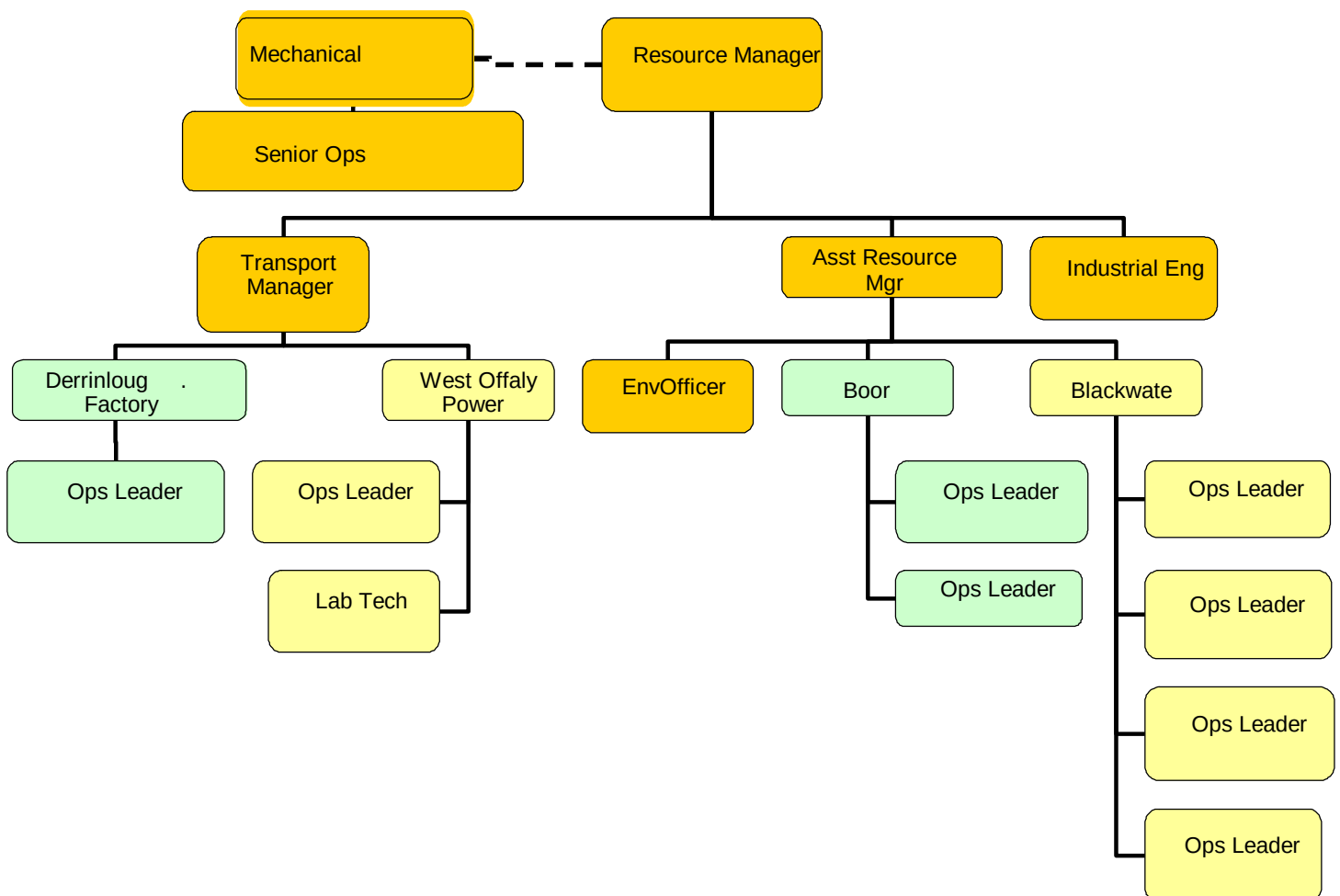
Horticultural Factory.

Briquette Factory.

1.4 Environmental Management of the Company

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

Boora Group Environmental Responsibilities



1.5 Environmental Policy



Bord na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's 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 operates 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 Quarterly during the reporting period. In total analysis was carried out at five different locations. These locations were as follows: Noggus @ SW10, Bellair @ SW34, Clongawney @ SW 6, Derryclure @ SW 28 and Killaun @ SW 31. 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. March was the driest month with 29.4mm of rainfall recorded, with October being the wettest with 123.5mm recorded.

pH values were between 7.1 and 8.2 pH units, with an average value of 7.75 pH units. Acceptable emissions limit values being of the range 6 and 9. In general pH values remained constant throughout the monitoring regime.

Suspended solids varied from 5 mg/l to 60 mg/l, with a mean value of 11.9 mg/l. Results would depend on activities (piping, ditching) etc in the catchments at the time of sampling as well as climatic conditions. There was one non-compliance at Noggus SW10 where a result of 60mg/l was returned and the Agency was informed. In general suspended solid results were quite satisfactory for the period.

Ammonia levels ranged from 0.04mg/l to 3.38mg/l. The mean value being 1.07mg/l. The I/PV for A3 water's is of the range 4mg/l. It is however not unusual for surface waters emanating from production peatlands to be slightly elevated. In general results were quite satisfactory.

COD readings ranged between 10mg/l and 109mg/l, the latter reading being above Bord na Mona set trigger levels. This occurred at Killaun SW31 in the 4th quarter and investigations showed no obvious reason for the elevated result. The I/PV for A3 waters is of the range 40mg/l. The 1st quarter 2012 results will be watched with interest to see if the trend continues. All other results were satisfactory.

Flow monitoring showed increased flow in the 2nd quarter 2011 at Noggus SW10. In fact due to water backing up from the receiving water no flow measurement was attainable and was the probable cause of the emission limit exceedence at the site.

Total Phosphorus results were consistently low across all monitoring locations in 2011. Results were of the range 0.05mg/l to 0.14mg/l with a mean value of 0.064mg/l

Sampling will continue at the same locations during 2012.

At the request of the Agency, analysis results are now demonstrated in both tabular and graphical format.

Surface Water Results are attached in Appendix 1.

2.1.2 Yard Discharges (Monthly Grab)

Comment

Yard runoff monitoring can potentially take place at fourteen 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.

Visits are made to the oil interceptor sampling points once a month. The primary aim is to secure a water sample for analysis and to observe the workings of the oil interceptor insuring that things are in order. It can be difficult even in showery conditions to secure a sample as the run off areas are quiet small.

Since 2010 the practice of adding water at the concrete apron in order to generate a flow was discontinued as it did not appear to be the proper procedure. Also leaving a bottle under a dripping pipe and collecting it the next day meant the integrity of the sample could not vouch for.

Following on from this it has been difficult trying to get samples every month at some locations. Visits to these locations to obtain samples have been recorded on an Excel spreadsheet and a comment as to the outcome. This was made available to the Agency Auditors at our most recent audit.

Monitoring will take place at the same locations in 2012.

Yard discharge results are contained in Appendix 2

2.1.3 Composite Sampler Report (Weekly - Continuous)

Comment

The composite sampler operated at SW 7 Drinagh Bog 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 results were very satisfactory with one non-compliance being recorded for the period which the Agency was informed about. The sampler was also calibrated by an outside contractor during the reporting period.

It is proposed to leave the sampler at this location for the foreseeable future.

Composite Sample Results are contained in Appendix 3

2.1.4 Emissions to Water Non-compliance's

Emissions to Water Non-Compliances 2011		
Licence: P0500-01		
Works: Boora		
Type	Non-Compliances	Location / SW Nr
Composite	1	SW07
Quarterly Grab	1	SW10
Monthly Yard		
Totals	2	

Note: There were two non-compliance's in relation to emissions to water, which were recorded at the composite sampler (SW7) and during quarterly grab sampling at Noggus (SW10), with the Agency informed on both occasion's.

2.2 Emissions to Air

2.2.1 Dust Monitoring

Comment

Dust monitoring was carried out on four occasions between April and September 2011. Each monitoring event lasted between 28 and 32 days and the Bergerhoff method of analysis was used.

The monitoring locations were as follows: Clongawney @ DM01, Pollagh @ DM02, and Derryclure @ DM03. Monitoring was carried out to coincide with production at each area. The sample pot was vandalised at Pollagh during the first monitoring event which accounts for the missing result at that location, however that location was additionally sampled in September to account for the shortfall. There was no dust non-compliance recorded for the period.

Sampling will continue at the same locations during 2012.

Dust Sample Results are contained in Appendix 4

2.2.2 Emissions to Air Non-compliance's

Dust Non-Compliances 2011	
Licence: P0500-01	
Works: Boora	
Location / DM Nr	Non-Compliances
Clongawney DM-01	0
Pollagh DM-02	0
Derryclure DM-03	0
Total	0

Note: Dust monitoring was 100% compliant during the reporting period.

2.3 Waste Arising

2.3.1 Non-Hazardous Waste

Non Hazardous Waste Data 2011				
Licence: P0500-01				
Works: Boora.				
Type	Tonnes	EWG Code	Contractor	Licence Nr
Skips	22.32	20 03 01	AES	WP-OY-08-601-01
Wheelie Bins	19.29	20 03 01	AES	WP-OY-08-601-01
Polyethylene	218.78	02 01 04	Leinster Environmentals	WP 2008/06
Scrap Steel	79.06	17 04 07	AES	WP-OY-08-601-01
Timber Pallets	8.76	15 01 03	AES	WP-OY-08-601-01
Silt Pond Cleanings	549.00	01 01 02	Bord na Mona	IPPC P0500-01
Soil	0.12	17 05 04	Drehid Landfill	W0201-03
Peat Screenings	1169.00	01 01 02	Bord na Mona	IPPC P0500-01
Totals	2066.33			

Note: Polyethylene and scrap steel are recycled through AES Ltd. Skips and Wheelie Bins are brought to a mixed recycling centre with the residue going to landfill.

2.3.2 Hazardous Waste

Hazardous Waste Data 2011					
Licence: P0500-01					
Works: Boora					
Type	Tonnes	EWG Code	Contractor	Licence Nr	Destination
Waste Oil	3.40	13 02 05	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	1.17	16 01 07	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oily Rags	0.86	15 02 02	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Lead Acid Batt	1.98	16 06 01	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Total	7.40				

2.4 Energy and Water Consumption

2.4.1 Energy

Energy Consumption 2011				
Licence: P0500-01				
Works: Boora				
Units	Diesel (Litres)	Petrol (Litres)	Electricity (Units)	Peat Briquettes (Tonnes)
Totals	1443716.00	3669.50		8.94
MW Hours	14669.60	34.30		46.04
Total MW Hours	14749.94			

Note: Due to issues with Electric Ireland's web site which is outside Bord Na Mona's control, accurate electrical consumption figures were not available. We are informed that this will be resolved in the coming weeks. This is important as the figures are also required in relation to the implementation of the energy standard ISO50001 at Mountdillon Works.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

Environmental Incidents 2011	
Licence: P0500-01	
Works: Boora	
Incidents	6
Requiring corrective action	6
Category	
Water	1
Air	5
Procedural	
Miscellaneous	
Total	6

There were six incidents during 2011, five of which related to bog fires at Lemanaghan and Bellair bogs. The sixth related to a small oil spill at the fuel pump at Boora Works. In all cases the Agency was informed.

2.5.2 Complaints

Environmental Complaints 2011	
Licence:P0500-01	
Works: Boora	
Complaints	7
Requiring corrective action	6
Category	
Water	
Air	6
Procedural	
Miscellaneous	1
Total	7

Five of the above complaints are included in the incident table above, the remaining two relate to a dust complaint at Pollagh and a potential flooding issue at Dernagun. All were reported to the Agency.

3.0 Management of the Activity

3.1 Achievement of Objectives & Targets 2011

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. The training will be reviewed in 2011. Status 45 Employees received environmental training during the reporting period. Hydraulic Harrows. Hydraulic harrows will be deployed at dust sensitive locations during the 2011 production season Additional harrows are also budgeted for in the five year plan. Status All existing Hydraulic Harrows were in operation during the 2011 production season. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations. Status Headland peat was collected as part of the general peat harvesting process and deposited into the existing stockpile
Project 2: Waste Management	Waste Streamlining. Waste streamlining is a project we are particularly interested in pursuing and hope to reduce wastes in future and be more efficient in dealing with all aspects of waste management. Status We are continuing to work with A.E.S. Ltd. to bring about improvements and efficiencies where they are at present not up to the optimum standard.
Project 3: Minimisation of Suspended Solids.	Training. Continue to train all employees in environmental matters .Training will be by means of the screening of an environmental DVD, followed by a power point presentation .The training programme is to be reviewed in 2011. Status 45 Employees received environmental training during the reporting period. This review took place.

Project 4: Effective spill leak management of mobile fuelling units.	Bund Provision Increased bund provisions where required will be provided in 2011. Status We took delivery of a new double skinned service tanker in 2011.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing. Status There were 218.78 tonnes of polythene removed for recycling in 2011. One of our contractors ceased trading with the result that we were confined to one contractor.
Project 6: Septic Tank Survey	Septic Tank Survey Carry out remedial work on septic tanks identified as requiring attention. Status This ongoing operation gave priority to the areas where the need was greatest.
Project 7: Energy Management	Energy Management.. Continue with energy management by means of a review of energy aspects, identifying areas of significant energy use that can be targeted for energy reduction projects. Status All electrical and fuel costs being monitored and tracked with a view to reduction and improvement in efficiency.

3.2 Environmental Management Programme Proposal for 2012

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Training will be by means of a new four module training programme delivered by dedicated Bord na Mona Training Specialists. This new training programme includes Environmental Compliance - IPPC, Biodiversity, Archaeology and Energy Management. Hydraulic Harrows. Hydraulic harrows will continue to be deployed across the licence area in 2012. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations.
Project 2: Waste Management	Waste Streamlining. Continue to use AES as a waste management provider. Using their expertise in identifying potential recyclers of waste streams generated.
Project 3: Minimisation of Suspended Solids.	Training. Continue to train all employees in environmental matters. Training will be by means of a new four module training programme delivered by dedicated Bord na Mona Training Specialists. This new training programme includes Environmental Compliance - IPPC, Biodiversity, Archaeology and Energy Management.
Project 4: Silt Pond Upgrade	Silt Control Silt Ponds will be upgraded where necessary.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.
Project 6: Septic Tank Survey	Survey. Following the septic tank survey it is proposed to carry out remedial work where necessary.
Project 7: Energy Management	Energy Management As part of an energy management process, a review of energy aspects will continue to take place identifying the significant energy users of the licensee.

3.3 Environmental Expenditure

Environmental Expenditure 2011	
Licence:P0500-01	
Works: Boora	
Description	Cost €
Capital Costs	€42,585
Silt Control	€134,205
Analytical & Consultancy Costs	€10,509
EPA Fees	€14,484
Bog Rehabilitation	€7,000
Waste Management	€28,469
Total	€237,252

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

Sampling went well in 2011, with results at both the Quarterly Grab and Composite locations being very favourable and with one non-compliance being recorded from each regime. It is proposed to sample the same locations during 2012.

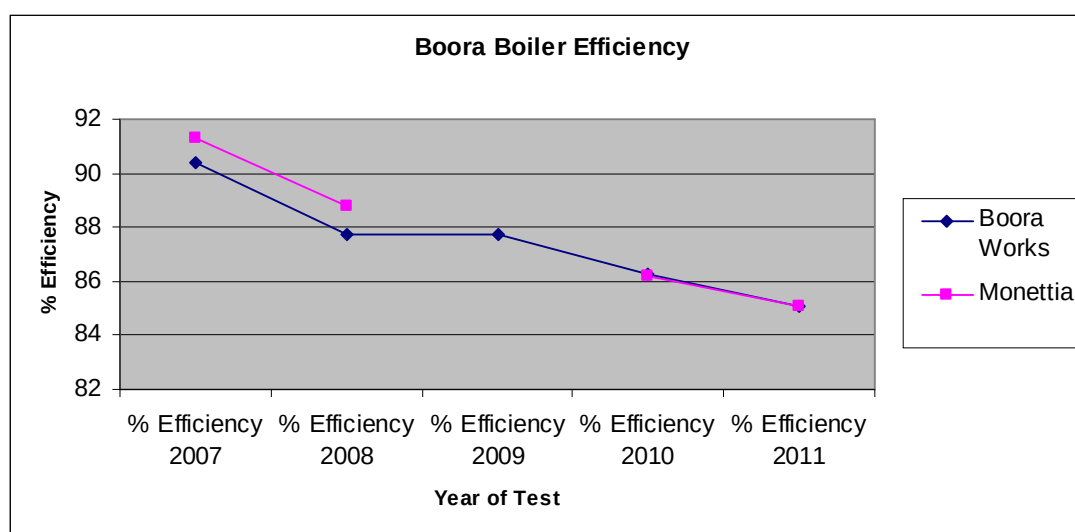
4.2 Bunding Programme

Bund Locations & Numbers Boora Works					
IPPC Licence: P0500-01					
Location	Bund Number	Last Tested	Status Pass/Fail	Repair Date	Next Test Due
Briquette Factory (Bog Area Tank)	500-15-01	Aug-11	Pass	N/A	Aug-13
Briquette Factory (Transport Tank)	500-15-02	Nov-10	Pass	N/A	Nov-12
Derrinboy Bund	500-15-03	Nov-10	Pass	N/A	Nov-12
Killaun Bund	500-15-04	Sep-09	Pass	N/A	Sep-11
Bellair Bund	500-15-05	Nov-10	Pass	N/A	Nov-12
Leamanaghan Bund	500-15-06	Nov-10	Pass	N/A	Nov-12
Derryclure Bund	500-15-07	Nov-10	Pass	N/A	Nov-12
Boora Main Bund	500-15-08	Nov-10	Pass	N/A	Nov-12
Monettia Bund	500-15-09	Double Skinned Tank in situ in Bund			

The bund at the briquette factory was the only bund that required testing during 2011. The bund at Killaun is not in use but will be tested in the coming months regardless. The Monettia bund is now only used to accommodate a double skinned tank and therefore does not require testing anymore.

4.3 Boiler Combustion Efficiency

Boiler Efficiency 2011					
Licence: P0500-01					
Works: Boora					
Boiler Location	% Efficiency 2007	% Efficiency 2008	% Efficiency 2009	% Efficiency 2010	% Efficiency 2011
Boora Works	90.4	87.75	87.75	86.25	85.1
Monettia	91.3	88.75	0	86.2	85.1



Note: Due to an error no boiler efficiency test took place at Monettia in 2009.

4.4 Resource consumption summary

Resource Consumption 2011			
Licence: P0500-01			
Works: Boora			
Product	Tonnes Produced	Tonnes Sold	Customer
Milled Peat	540000	318503	ESB and Briquette Fac
Moss	110000	73949	BNM Horticulture
Mini Sod	0	0	
Turf	250	250	Domestic Customers
Totals	650250	392702.00	

Proposed Production 2012	
Licence: P0500-01	
Works: Boora	
Product	Proposed Target
Milled Peat	530000
Moss	120000
Mini Sod	0
Turf	250
Totals	650250

4.5 De-Silting Report

All ponds were cleaned twice during the reporting period. Cleanings were dictated by the inspections programme.

Silt Pond Cleaning Programme is contained in Appendix 5

4.6 Bog Development and Operational Programme

Work is continuing on bringing sections of bog back into production that have been out of production for a number of years.

4.7 Bog Rehabilitation Report

- The greater area is still in peat production with some isolated cutaway bog areas in Boora, Turraun, Derries, Drinagh and Oughter.
- Small scale rehabilitation measures have been developed on these sites but the greater bog units remain in peat production.
- The ecology survey of the Boora Bogs is complete and habitat maps, ecology reports and draft rehabilitation plans for each of the sites have been developed.
- The *Lough Boora Parklands* is a significant development in terms of informing further rehabilitation and after-use plans.
- Partnership projects on parts of the Boora Group have been developed with BirdWatch Ireland (Drinagh Bog) and the Grey Partridge Trust (Lough Boora, Lough Cloghan) and local communities (www.loughbooraparklands.ie)
- Consultation with Heritage groups, NPWS is ongoing.

The above is an overview of the ongoing rehabilitation plan associated with this licence. There is a fully prepared plan retained at the licence site office, which includes Land Use maps for each licensed area updated in January 2012 and the habitat maps, future maps and ecology reports for each site.

4.8 Archaeological Report

There were no archaeological excavations in Boora during 2011.

5.0 Summary

This reporting period covers the calendar year 2011.

Overall performance would be considered to be good with the dust samples fully compliant and one composite sample and one quarterly sample exceeding the ELV. We had a particularly difficult year with the spread of gorse fires on to our bogs, with 7 complaints in total during the year, 6 of which required corrective actions. The majority of the complaints were as a result of the bog fires.

Environmental protection procedures in all situations are regularly re-affirmed to staff through the training programme and the Environmental Co-ordinator.

The silt pond cleaning programme went very well with all ponds cleaned at least twice with others cleaned more as required. We carried out a survey of all silt ponds as to their size, suitability and upgrades will be made where it is deemed necessary.

We continued in our efforts to recycle or reuse as many products as we possibly can and strive to reduce fuel and lubricant usage by the full utilisation of the available products.

Weather conditions made operations difficult during the year. The dry windy weather in late spring/early summer, together with the high rainfall during the later summer presented challenges to our operations.

A new four module training programme delivered by dedicated Bord na Mona Training Specialists has also been developed during 2011/2012 and will be rolled out in the coming weeks. This new training programme includes Environmental Compliance - IPPC, Biodiversity, Archaeology and Energy Management.

There is also ongoing replacement and improvement of signage,

The issues raised in the 2011 audit have either been rectified or are underway.

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

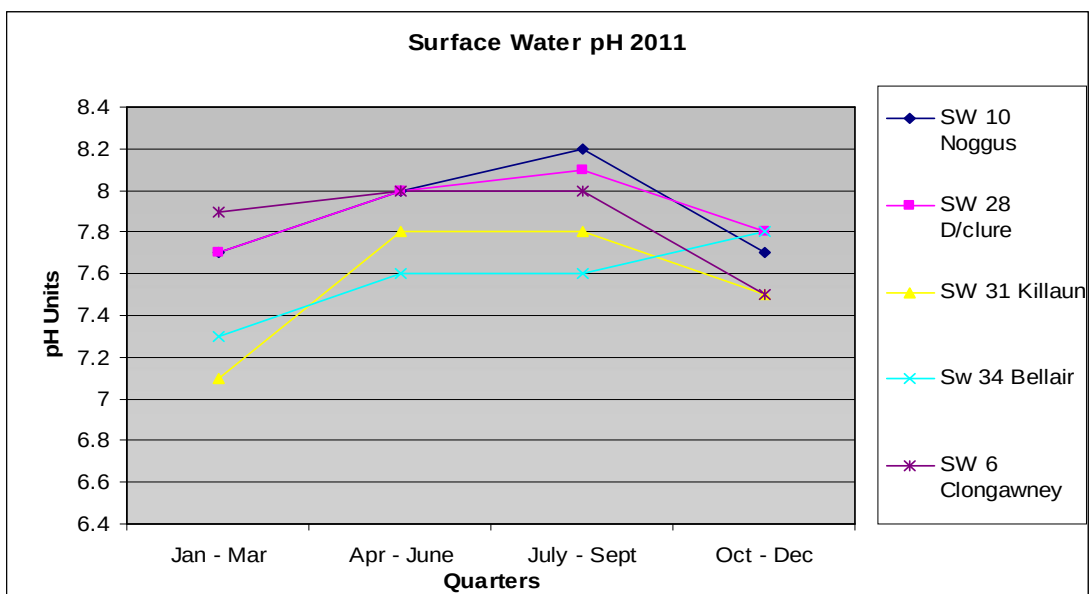
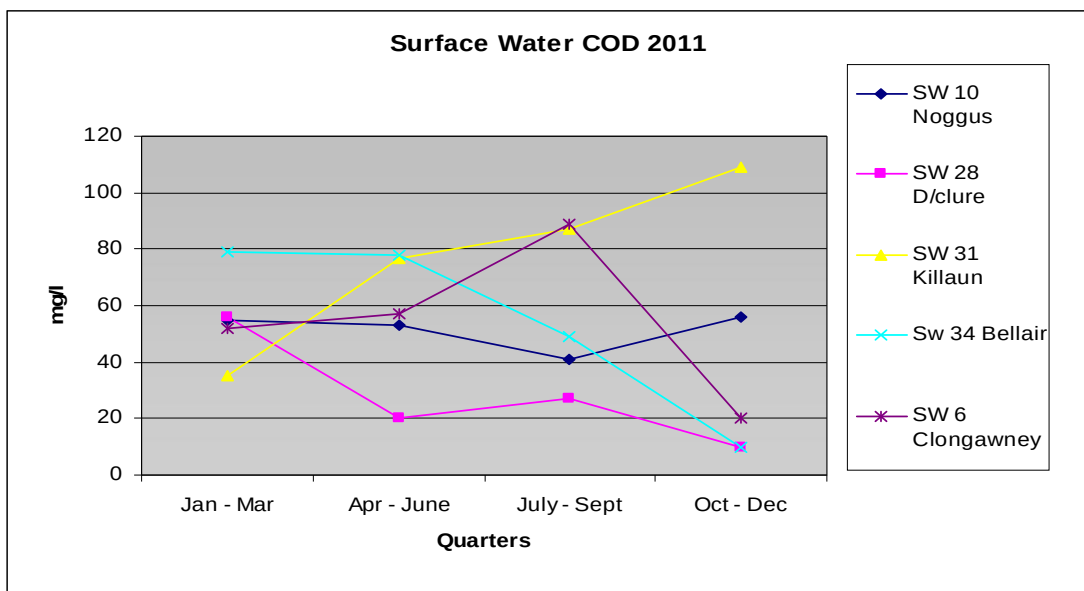
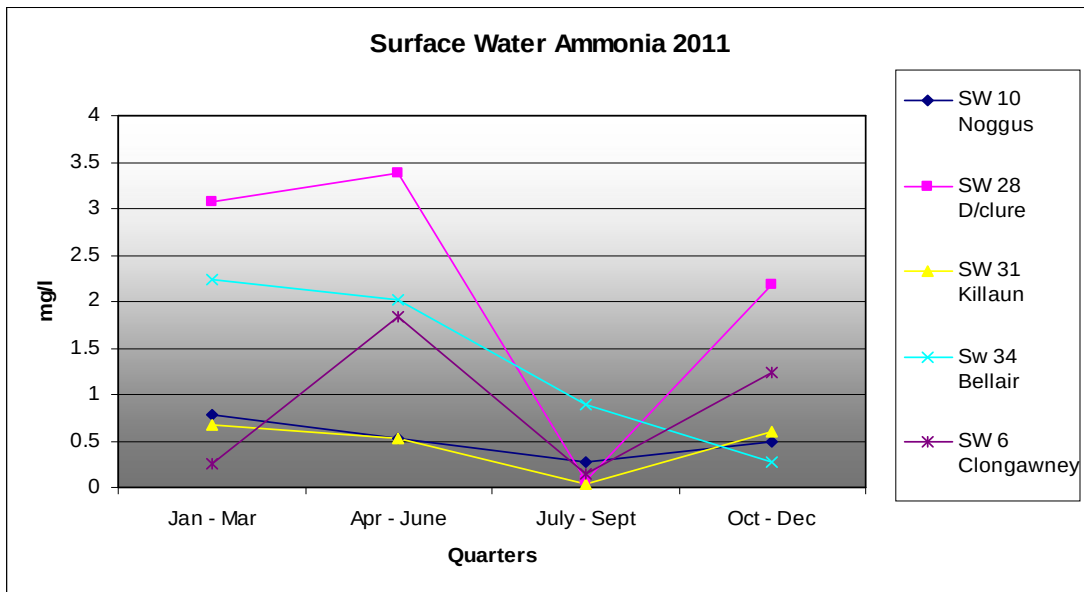
This will be communicated to all staff through the ongoing training programme.

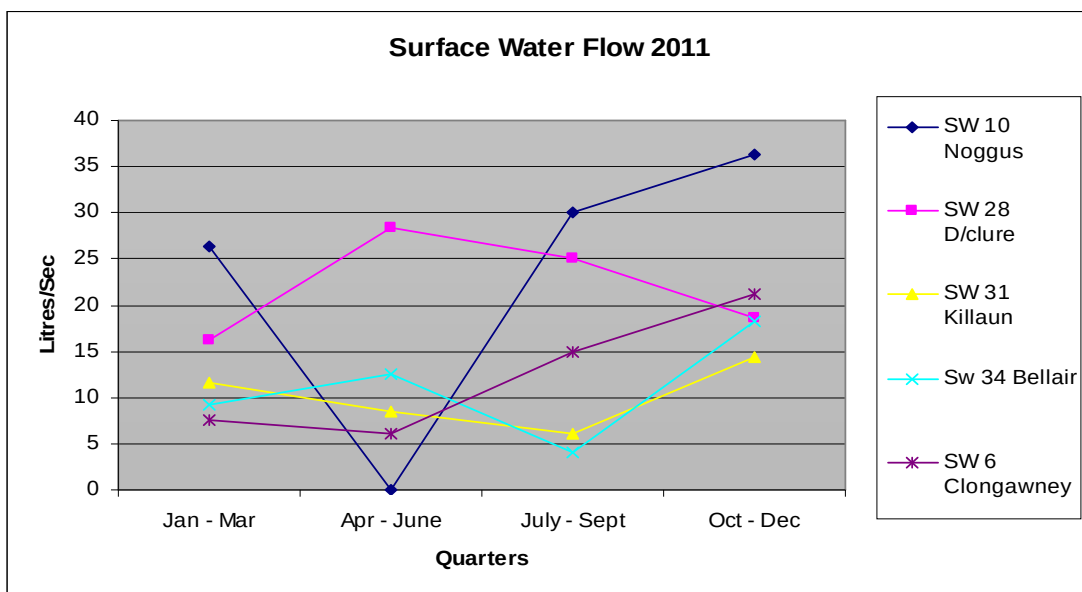
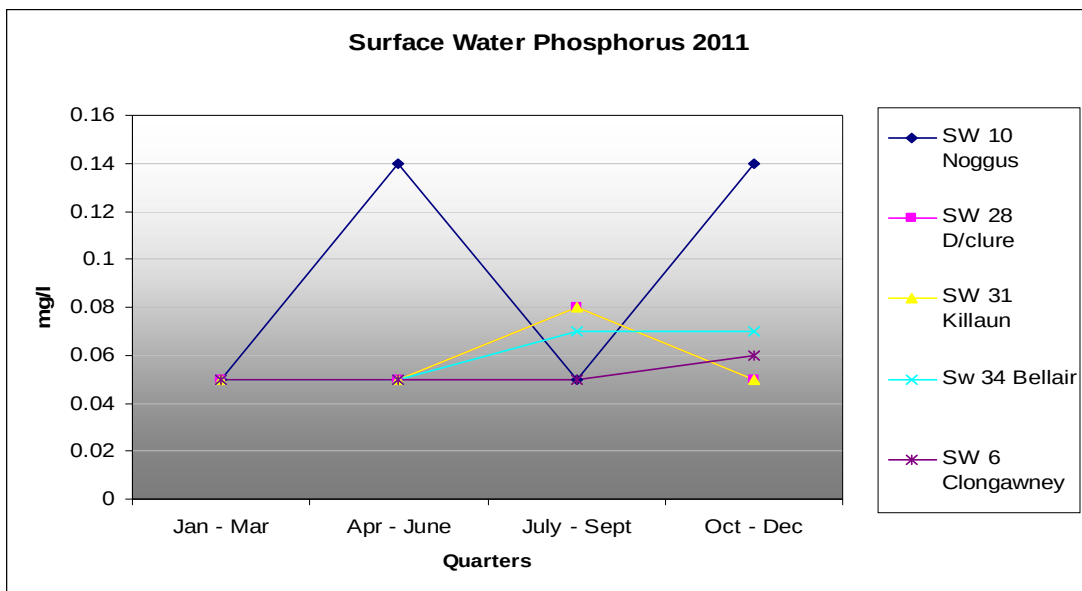
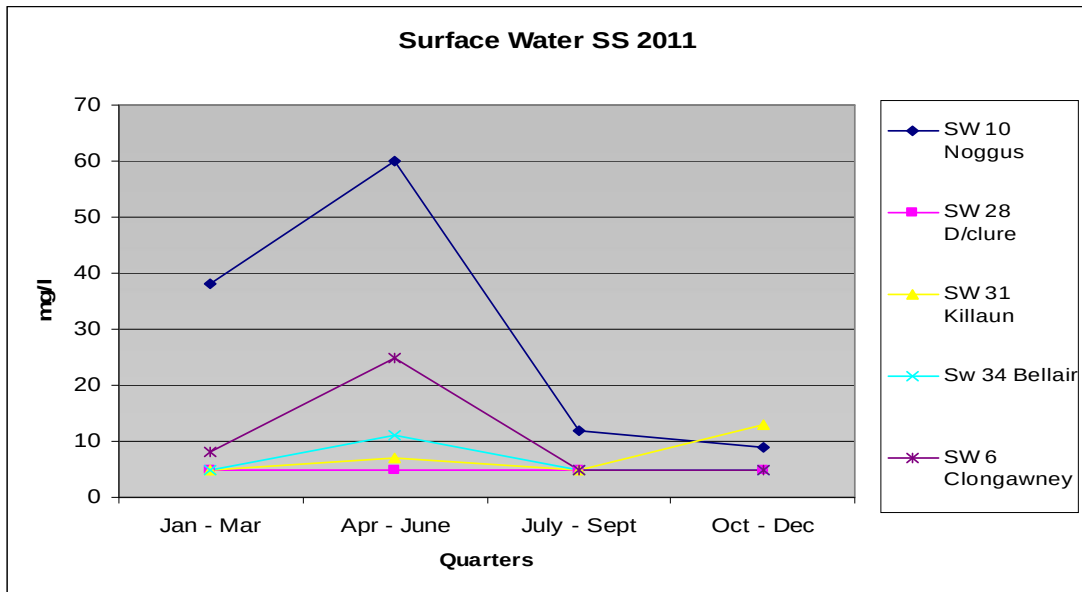
Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management on the River Barrow

APPENDIX 1

Surface Water Discharge Monitoring Results - Bogs

BNM Group:	Boora		Quarterly Grabs	
IPPC Licence No.	PO500-01	2011		
Ammonia as N (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	0.78	0.52	0.27	0.5
SW 28 D/clure	3.08	3.38	0.08	2.18
SW 31 Killaun	0.67	0.52	0.04	0.6
Sw 34 Bellair	2.23	2.02	0.89	0.27
SW 6 Clongawney	0.26	1.84	0.14	1.24
COD (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	55	53	41	56
SW 28 D/clure	56	20	27	10
SW 31 Killaun	35	77	87	109
Sw 34 Bellair	79	78	49	10
SW 6 Clongawney	52	57	89	20
pH (units)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	7.7	8	8.2	7.7
SW 28 D/clure	7.7	8	8.1	7.8
SW 31 Killaun	7.1	7.8	7.8	7.5
Sw 34 Bellair	7.3	7.6	7.6	7.8
SW 6 Clongawney	7.9	8	8	7.5
Suspended Solids (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	38	60	12	9
SW 28 D/clure	5	5	5	5
SW 31 Killaun	5	7	5	13
Sw 34 Bellair	5	11	5	5
SW 6 Clongawney	8	25	5	5
Total Phosphorus (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	0.05	0.14	0.05	0.14
SW 28 D/clure	0.05	0.05	0.08	0.05
SW 31 Killaun	0.05	0.05	0.08	0.05
Sw 34 Bellair	0.05	0.05	0.07	0.07
SW 6 Clongawney	0.05	0.05	0.05	0.06
Flow (l/s)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	26	0	30	36
SW 28 D/clure	16	28	25	19
SW 31 Killaun	12	8	6	14
Sw 34 Bellair	9	13	4	18
SW 6 Clongawney	8	6	15	21





Note: No flow recording at Noggus SW 10 during second quarter monitoring event due to flood conditions.

APPENDIX 2

Surface Water Discharge Monitoring Results - Yards

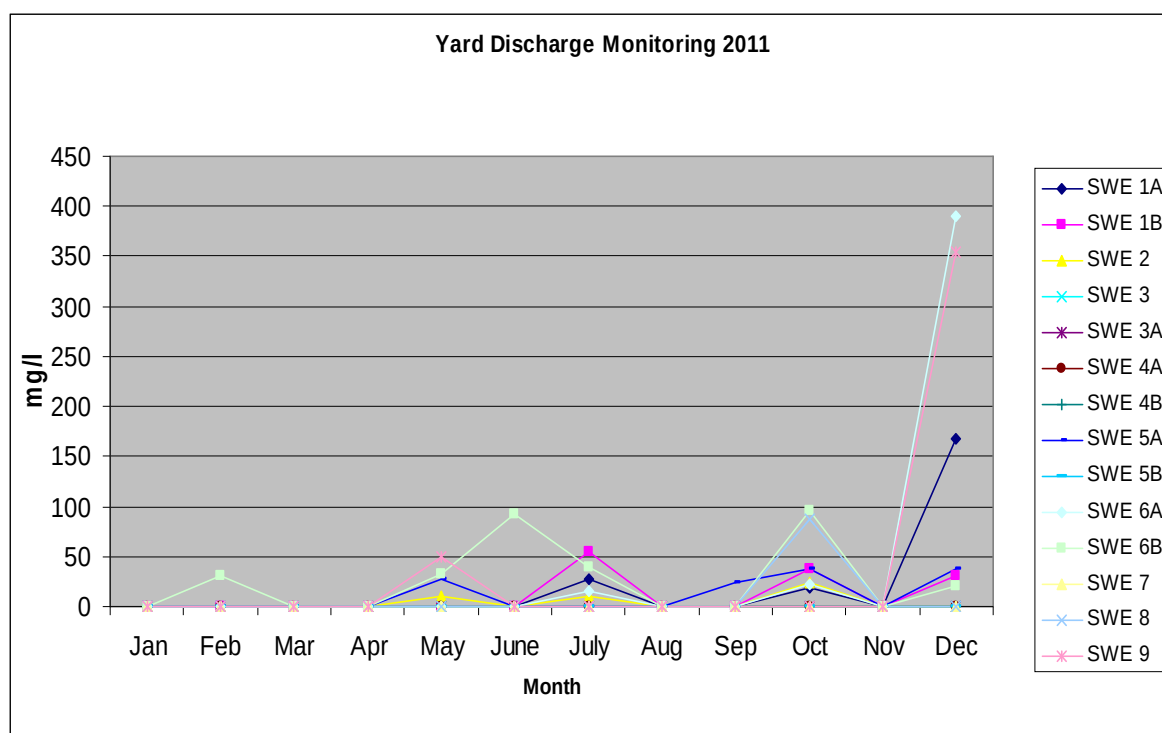
Yard Discharge Results 2011

Licence: P0500-01

Works: Boora

Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	30	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	10	0	0	0	0	27	0	0	33	0	0	49
June	0	0	0	0	0	0	0	0	0	0	93	0	0	0
July	28	54	10	0	0	0	0	0	0	15	39	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	24	0	0	0	0	0	0
Oct	19	37	24	0	0	0	0	38	0	23	95	0	87	0
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	168	31	0	0	0	0	0	37	0	390	21	0	0	355

Note: 0 denotes no flow at emission point on day of sampling



APPENDIX 3

Surface Water Discharge Monitoring Results Composite

Month				Parameters							Daily Totals		
Jan	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	228		12674690				63.37	2889.83
2					5	226		11715230				58.58	2647.64
3					5	234		10598110				52.99	2479.96
4	7.6	54	0.93	0.05	7	246	138	11904640	642.85	11.07	0.60	83.33	2928.54
5					6	210		13138050				78.83	2758.99
6					5	194		14522410				72.61	2817.35
7					7	190		12833850				89.84	2438.43
8					8	181		12820110				102.56	2320.44
9					5	206		14073410				70.37	2899.12
10					6	182		14509790				87.06	2640.78
11					5	216		17272560				86.36	3730.87
12	7.5	78	0.68	0.05	6	220	254	16800720	1310.46	11.42	0.84	100.80	3696.16
13					6	188		18049380				108.30	3393.28
14					6	194		13060870				78.37	2533.81
15					5	196		13048950				65.24	2557.59
16					11	206		14564990				160.21	3000.39
17					5	206		12571420				62.86	2589.71
18					33	276		11214940				370.09	3095.32
19	7.4	64	0.71	0.05	9	276	183	9340176	597.77	6.63	0.47	84.06	2577.89
20					5	228		10897090				54.49	2484.54
21					0	0		9446070				0.00	0.00
22					0	0		6566400				0.00	0.00
23					0	0		6566400				0.00	0.00
24					0	0		6566400				0.00	0.00
25					0	0		6566400				0.00	0.00
26	7.4	65	0.79	0.05	5	234	161	6566400	426.82	5.19	0.33	32.83	1536.54
27					0	0		6566400				0.00	0.00
28					0	0		7785708				0.00	0.00
29					0	0		8968320				0.00	0.00
30					6	252		8968320				53.81	2260.02
31					6	258		8968320				53.81	2313.83

Month				Parameters							Daily Totals		
Feb	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	7.8	59	1.09	0.05	6	250	120	8968320	529.13	9.78	0.45	53.81	2242.08
2					5	0		8968320				44.84	0.00
3					5	210		11399300				57.00	2393.85
4					5	216		13982440				69.91	3020.21
5					5	140		16618940				83.09	2326.65
6					5	154		16480980				82.40	2538.07
7					5	168		13968780				69.84	2346.76
8	7.5	91	0.62	0.05	5	114	282	13067000	1189.10	8.10	0.65	65.34	1489.64
9					7	226		12634830				88.44	2855.47
10					9	221		13163290				118.47	2909.09
11					8	222		12988310				103.91	2883.40
12					5	224		13130970				65.65	2941.34
13					10	220		13038950				130.39	2868.57
14					11	218		14131100				155.44	3080.58
15	7.5	87	0.52	0.05	9	226	217	13144070	1143.53	6.83	0.66	118.30	2970.56
16					6	182		12613340				75.68	2295.63
17					7	196		11994510				83.96	2350.92
18					7	182		12340800				86.39	2246.03
19					6	208		13160630				78.96	2737.41
20					6	198		13308470				79.85	2635.08
21					10	204		13286530				132.87	2710.45
22	7.7	61	0.43	0.05	6	190	167	13265450	809.19	5.70	0.66	79.59	2520.44
23					5	370		13093030				65.47	4844.42
24					6	266		13255610				79.53	3525.99
25					5	246		12507850				62.54	3076.93
26					5	266		12029210				60.15	3199.77
27					5	250		12729010				63.65	3182.25
28					5	260		13368440				66.84	3475.79

Month				Parameters							Daily Totals		
March	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	7.6	57	0.93	0.05	5	273	125	12332920	702.98	11.47	0.62	61.66	3366.89
2					8	88		12902070				103.22	1135.38
3					8	52		12751020				102.01	663.05
4					7	50		13073320				91.51	653.67
5					5	90		13288890				66.44	1196.00
6					18	84		13202000				237.64	1108.97
7					5	98		12906600				64.53	1264.85
8	6.6	68	1.02	0.05	5	78	217	12773090	868.57	13.03	0.64	63.87	996.30
9					5	338		12892360				64.46	4357.62
10					7	280		12771830				89.40	3576.11
11					5	320		13091920				65.46	4189.41
12					5	231		14846900				74.23	3429.63
13					5	220		16778950				83.89	3691.37
14					5	258		11788250				58.94	3041.37
15	7.9	51	0.55	0.05	5	242	164	12300490	627.32	6.77	0.62	61.50	2976.72
16					5	260		12180090				60.90	3166.82
17					5	280		12455560				62.28	3487.56
18					5	288		13106820				65.53	3774.76
19					6	300		12658740				75.95	3797.62
20					7	298		12868210				90.08	3834.73
21					5	280		13628030				68.14	3815.85
22	8	48	0.62	0.05	22	300	117	12407360	595.55	7.69	0.62	272.96	3722.21
23					5	282		12182240				60.91	3435.39
24					5	294		11953710				59.77	3514.39
25					5	318		12144700				60.72	3862.01
26					5	326		12143270				60.72	3958.71
27					5	308		12083670				60.42	3721.77
28					5	308		12403440				62.02	3820.26
29	7.9	57	1.08	0.05	5	317	77	12721370	725.12	13.74	0.64	63.61	4032.67
30					5	355		12444230				62.22	4417.70
31					5	328		13770200				68.85	4516.63

Month				Parameters							Daily Totals		
April	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					6	324		364867				2.19	118.22
2					6	320		591840				3.55	189.39
3					7	236		1663110				11.64	392.49
4					0			700963				0.00	0.00
5	7.8	47	0.39	0.05	21	292	113	834538	39.22	0.33	0.04	17.53	243.69
6					0	0		1638320				0.00	0.00
7					0	0		413424				0.00	0.00
8					0	0		177725				0.00	0.00
9					0	0		177725				0.00	0.00
10					0	0		177725				0.00	0.00
11					62	340		177725				11.02	60.43
12	8	39	1.22	0.05	9	238	86	177725	6.93	0.22	0.01	1.60	42.30
13					0	0		177725				0.00	0.00
14					0	0		177725				0.00	0.00
15					0	0		177725				0.00	0.00
16					0	0		177725				0.00	0.00
17					0	0		177725				0.00	0.00
18					0	0		177725				0.00	0.00
19	7.8	40	1.38	0.05	13	318	64	177725	7.11	0.25	0.01	2.31	56.52
20					5	342		177725				0.89	60.78
21					5	306		184032				0.92	56.31
22					5	335		33955.2				0.17	11.37
23					5	320		180317				0.90	57.70
24					5	346		0				0.00	0.00
25					5	344		0				0.00	0.00
26	8.2	37	0.85	0.05	8	348	71	0				0.00	0.00
27					5	368		0				0.00	0.00
28					5	366		0				0.00	0.00
29					5	378		0				0.00	0.00
30					5	360		0				0.00	0.00

Month				Parameters							Daily Totals		
May	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	376		0				0.00	0.00
2					5	384		0				0.00	0.00
3	8.2	29	0.65	0.06	7	382	55	0				0.00	0.00
4					20	358		0				0.00	0.00
5					8	368		0				0.00	0.00
6					6	368		1181950				7.09	434.96
7					5	366		487728				2.44	178.51
8					5	344		667958				3.34	229.78
9					14	378		368755				5.16	139.39
10	8.1	35	0.54	0.05	18	308	77	1031010	36.09	0.56	0.05	18.56	317.55
11					5	262		913507				4.57	239.34
12					5	266		84844.8				0.42	22.57
13					5	286		448502				2.24	128.27
14					5	298		537062				2.69	160.04
15					5	298		345254				1.73	102.89
16					15	320		381542				5.72	122.09
17	8	56	0.51	0.05	7	310	83	334627	18.74	0.17	0.02	2.34	103.73
18					5	345		181008				0.91	62.45
19					5	356		390355				1.95	138.97
20					5	356		0				0.00	0.00
21					5	342		0				0.00	0.00
22					5	352		0				0.00	0.00
23					5	354		1456010				7.28	515.43
24	8.1	20	0.48	0.05	9	338	76	814925	16.30	0.39	0.04	7.33	275.44
25					6	340		70243.2				0.42	23.88
26					19	342		0				0.00	0.00
27					12	332		1080430				12.97	358.70
28					5	314		94953.6				0.47	29.82
29					5	321		468029				2.34	150.24
30					5	318		0				0.00	0.00
31	8	36	0.66	0.05	6	328	78	0				0.00	0.00

Month				Parameters							Daily Totals		
June	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	342		0				0.00	0.00
2					5	346		0				0.00	0.00
3					5	331		0				0.00	0.00
4					5	340		0				0.00	0.00
5					5	350		0				0.00	0.00
6					5	348		0				0.00	0.00
7	8.2	31	0.78	0.05	5	338	70	0				0.00	0.00
8					5	220		4618430				23.09	1016.05
9					5	230		752458				3.76	173.07
10					5	228		0				0.00	0.00
11					5	275		0				0.00	0.00
12					5	304		236736				1.18	71.97
13					5	314		959731				4.80	301.36
14	8	60	0.87	0.05	5	338	114	552787	33.17	0.48	0.03	2.76	186.84
15					5	296		114739				0.57	33.96
16					5	290		205718				1.03	59.66
17					5	348		0				0.00	0.00
18					5	348		1109120				5.55	385.97
19					5	300		297216				1.49	89.16
20					5	296		180317				0.90	53.37
21	8	44	0.37	0.06	7	314	100	147658	6.50	0.05	0.01	1.03	46.36
22					5	262		1204500				6.02	315.58
23					5	266		364781				1.82	97.03
24					5	274		0				0.00	0.00
25					5	234		2329860				11.65	545.19
26					5	266		930787				4.65	247.59
27					5	270		0				0.00	0.00
28	7.9	50	0.48	0.05	5	282	171	0				0.00	0.00
29					5	322		0				0.00	0.00
30					5	336		0				0.00	0.00

Month				Parameters							Daily Totals		
July	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	356		11290400				56.45	4019.38
2					5	360		11155000				55.78	4015.80
3					5	362		10795100				53.98	3907.83
4					5	364		10423300				52.12	3794.08
5	8.1	33	0.29	0.07	7	372	84	10906100	359.90	3.16	0.76	76.34	4057.07
6					5	360		12064000				60.32	4343.04
7					5	292		15151300				75.76	4424.18
8					8	256		12521800				100.17	3205.58
9					5	226		10309000				51.55	2329.83
10					5	254		10138600				50.69	2575.20
11					5	266		11248600				56.24	2992.13
12	8	122	0.53	0.05	5	286	204	11150600	1360.37	5.91	0.56	55.75	3189.07
13					5	360		11000000				55.00	3960.00
14					5	350		10855900				54.28	3799.57
15					5	376		10907800				54.54	4101.33
16					5	346		11553300				57.77	3997.44
17					5	362		11656900				58.28	4219.80
18					5	316		11746200				58.73	3711.80
19	8.2	13	0.04	0.05	5	320	131	11812800	153.57	0.47	0.59	59.06	3780.10
20					5	375		11376200				56.88	4266.08
21					5	360		11122500				55.61	4004.10
22					5	364		11003100				55.02	4005.13
23					5	362		10504900				52.52	3802.77
24					5	360		10537900				52.69	3793.64
25					5	354		10787900				53.94	3818.92
26	8.2	83	0.02	0.05	5	370	80	11139300	924.56	0.22	0.56	55.70	4121.54
27					5	364		10517900				52.59	3828.52
28					5	372		11602500				58.01	4316.13
29					6	364		10341700				62.05	3764.38
30					5	364		9521870				47.61	3465.96
31					5	344		11417900				57.09	3927.76

Month				Parameters							Daily Totals		
August	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	362		11143300				55.72	4033.87
2	8.1	22	0.62	0.05	5	368	63	11220100	246.84	6.96	0.56	56.10	4129.00
3					5	366		10383200				51.92	3800.25
4					5	374		10982600				54.91	4107.49
5					5	344		10514900				52.57	3617.13
6					5	374		10547500				52.74	3944.77
7					5	364		11503100				57.52	4187.13
8					5	374		11220400				56.10	4196.43
9	8.1	35	0.67	0.05	7	366	60	10680000	373.80	7.16	0.53	74.76	3908.88
10					5	354		10604200				53.02	3753.89
11					5	338		12079200				60.40	4082.77
12					5	318		11097000				55.49	3528.85
13					5	288		11585800				57.93	3336.71
14					5	272		11158300				55.79	3035.06
15					5	312		10980400				54.90	3425.88
16	8.2	36	0.37	0.08	5	298	82	12092700	435.34	4.47	0.97	60.46	3603.62
17					5	336		11055900				55.28	3714.78
18					5	318		10890700				54.45	3463.24
19					5	298		11400500				57.00	3397.35
20					5	330		11462400				57.31	3782.59
21					5	338		10796500				53.98	3649.22
22					5	335		10289200				51.45	3446.88
23	8.2	29	0.18	0.17	5	312	76	9913380	287.49	1.78	1.69	49.57	3092.97
24					5	338		10636300				53.18	3595.07
25					5	354		12147700				60.74	4300.29
26					5	340		11309800				56.55	3845.33
27					5	340		11182300				55.91	3801.98
28					5	338		10704700				53.52	3618.19
29					5	340		10076300				50.38	3425.94
30	8.3	81	0.3	0.05	5	346	64	10007100	810.58	3.00	0.50	50.04	3462.46
31					5	340		9974460				49.87	3391.32

Month				Parameters							Daily Totals		
Sept	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	338		9851910				49.26	3329.95
2					5	342		9942610				49.71	3400.37
3					5	336		12274400				61.37	4124.20
4					5	336		11377200				56.89	3822.74
5					5	322		12599400				63.00	4057.01
6	8.1	70	0.8	0.05	8	250	150	12795400	895.68	10.24	0.64	102.36	3198.85
7					5	242		11177400				55.89	2704.93
8					5	286		12746600				63.73	3645.53
9					5	282		11816700				59.08	3332.31
10					5	292		11444800				57.22	3341.88
11					5	274		11631500				58.16	3187.03
12					5	296		12369900				61.85	3661.49
13	8.1	35	0.52	0.05	5	330	148	11611800	406.41	6.04	0.58	58.06	3831.89
14					5	126		11473300				57.37	1445.64
15					5	296		11620600				58.10	3439.70
16					5	324		12389900				61.95	4014.33
17					8	290		14038300				112.31	4071.11
18					8	278		11691500				93.53	3250.24
19					5	276		13117300				65.59	3620.37
20	7.9	54	0.94	0.05	5	284	169	11106200	599.73	10.44	0.56	55.53	3154.16
21					5	300		12057900				60.29	3617.37
22					5	288		12045300				60.23	3469.05
23					5	300		11988300				59.94	3596.49
24					5	303		11928900				59.64	3614.46
25					5	334		12638100				63.19	4221.13
26					5	336		11982200				59.91	4026.02
27	8.2	20	0.36	0.05	5	336	110	11873100	237.46	4.27	0.59	59.37	3989.36
28					5	310		11501000				57.51	3565.31
29					5	306		11295400				56.48	3456.39
30					5	302		12599200				63.00	3804.96

Month				Parameters							Daily Totals		
Oct	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	228		25773100				128.87	5876.27
2					5	236		25773100				128.87	6082.45
3					5	278		25773100				128.87	7164.92
4	7.9	57	0.57	0.05	5	282	202	25773100	1469.07	14.69	1.29	128.87	7268.01
5					5	282		25773100				128.87	7268.01
6					5	292		25773100				128.87	7525.75
7					5	290		25773100				128.87	7474.20
8					5	292		25773100				128.87	7525.75
9					5	302		25773100				128.87	7783.48
10					5	304		25773100				128.87	7835.02
11	7.9	54	0.38	0.05	5	268	157	25773100	1391.75	9.79	1.29	128.87	6907.19
12					5	274		25773100				128.87	7061.83
13					5	278		25773100				128.87	7164.92
14					5	244		25773100				128.87	6288.64
15					5	293		25836500				129.18	7570.09
16					5	274		24111900				120.56	6606.66
17					5	268		27138300				135.69	7273.06
18	7.8	68	0.71	0.07	12	230	181	24397300	1659.02	17.32	1.71	292.77	5611.38
19					5	266		23374300				116.87	6217.56
20					5	278		24254300				121.27	6742.70
21					5	284		25097300				125.49	7127.63
22					5	296		29355300				146.78	8689.17
23					6	232		28399700				170.40	6588.73
24					10	212		25801200				258.01	5469.85
25	7.5	75	0.27	0.05	10	214	229	25977400	1948.31	7.01	1.30	259.77	5559.16
26					5	182		24662600				123.31	4488.59
27					5	186		25155300				125.78	4678.89
28					5	200		24594700				122.97	4918.94
29					7	217		24734300				173.14	5367.34
30					5	264		23571500				117.86	6222.88
31					5	282		27340700				136.70	7710.08

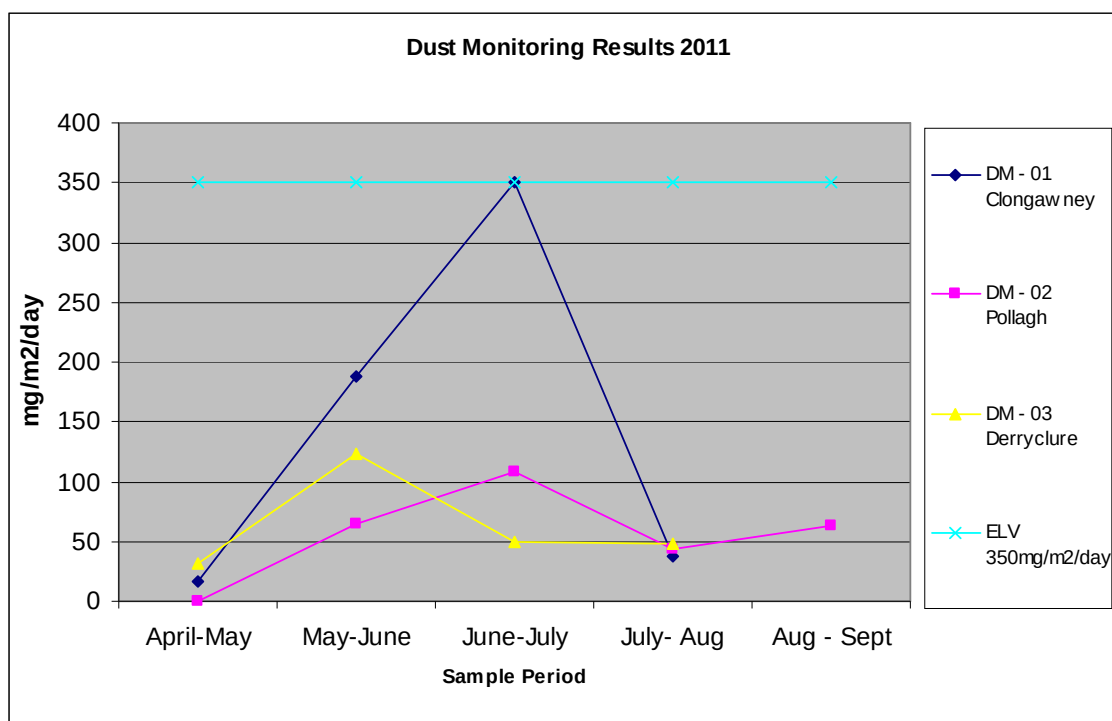
Month				Parameters							Daily Totals		
Nov	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	7.7	72	0.34	0.05	5	228	268	23630400	1701.39	8.03	1.18	118.15	5387.73
2					5	260		25191200				125.96	6549.71
3					5	236		25492100				127.46	6016.14
4					5	248		23676700				118.38	5871.82
5					5	278		22986900				114.93	6390.36
6					5	278		23783500				118.92	6611.81
7					5	292		24824400				124.12	7248.72
8	7.7	57	0.51	0.05	5	296	173	25498000	1453.39	13.00	1.27	127.49	7547.41
9					5	278		25404300				127.02	7062.40
10					5	274		25071000				125.36	6869.45
11					5	296		28364700				141.82	8395.95
12					5	304		23293500				116.47	7081.22
13					5	334		24310800				121.55	8119.81
14					5	340		24645000				123.23	8379.30
15	7.9	61	0.4	0.05	5	278	166	24751200	1509.82	9.90	1.24	123.76	6880.83
16					5	290		25101800				125.51	7279.52
17					5	270		32180500				160.90	8688.74
18					0	0		24456500				0.00	0.00
19					0	0		27381200				0.00	0.00
20					0	0		24452900				0.00	0.00
21					0	0		24425300				0.00	0.00
22	7.2	73	0.7	0.05	9	214	279	24425300	1783.05	17.10	1.22	219.83	5227.01
23					0	0		24425300				0.00	0.00
24					0	0		24425300				0.00	0.00
25					0	0		24425300				0.00	0.00
26					0	0		24425300				0.00	0.00
27					0	0		24425300				0.00	0.00
28					5	262		25220400				126.10	6607.74
29	8	67	0.35	0.05	12	140	228	28509900	1910.16	9.98	1.43	342.12	3991.39
30					5	159		25496700				127.48	4053.98

Month				Parameters							Daily Totals		
Dec	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW7				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	200		25963800				129.82	5192.76
2					5	222		25936200				129.68	5757.84
3					5	274		25662900				128.31	7031.63
4					5	228		25861300				129.31	5896.38
5					5	176		25311600				126.56	4454.84
6	7.6	80	0.75	0.08	6	252	231	26118200	2089.46	19.59	2.09	156.71	6581.79
7					5	246		25499600				127.50	6272.90
8					20	218		26775700				535.51	5837.10
9					5	230		23814100				119.07	5477.24
10					5	254		24627400				123.14	6255.36
11					5	250		28722800				143.61	7180.70
12					5	218		27965600				139.83	6096.50
13		69	0.54	0.05	10	185	234	26815700	1850.28	14.48	1.34	268.16	4960.90
14					5	222		25656600				128.28	5695.77
15					5	228		25631200				128.16	5843.91
16					5	258		23400700				117.00	6037.38
17					5	244		26373700				131.87	6435.18
18					5	252		23825800				119.13	6004.10
19					5	277		31732700				158.66	8789.96
20	7.5	59	0.56	0.07	5	218	183	26460500	1561.17	14.82	1.85	132.30	5768.39
21					5	219		26452800				132.26	5793.16
22					5	270		23786000				118.93	6422.22
23					5	307		26378200				131.89	8098.11
24					5	196		24351900				121.76	4772.97
25					5	248		26301800				131.51	6522.85
26					5	266		23977100				119.89	6377.91
27	7.9	62	0.58	0.08	10	250	282	24878500	1542.47	14.43	1.99	248.79	6219.63
28					5	206		28347500				141.74	5839.59
29					5	196		26948700				134.74	5281.95
30					5	192		26903600				134.52	5165.49
31					5	203		25437400				127.19	5163.79

APPENDIX 4

Dust Monitoring Results.

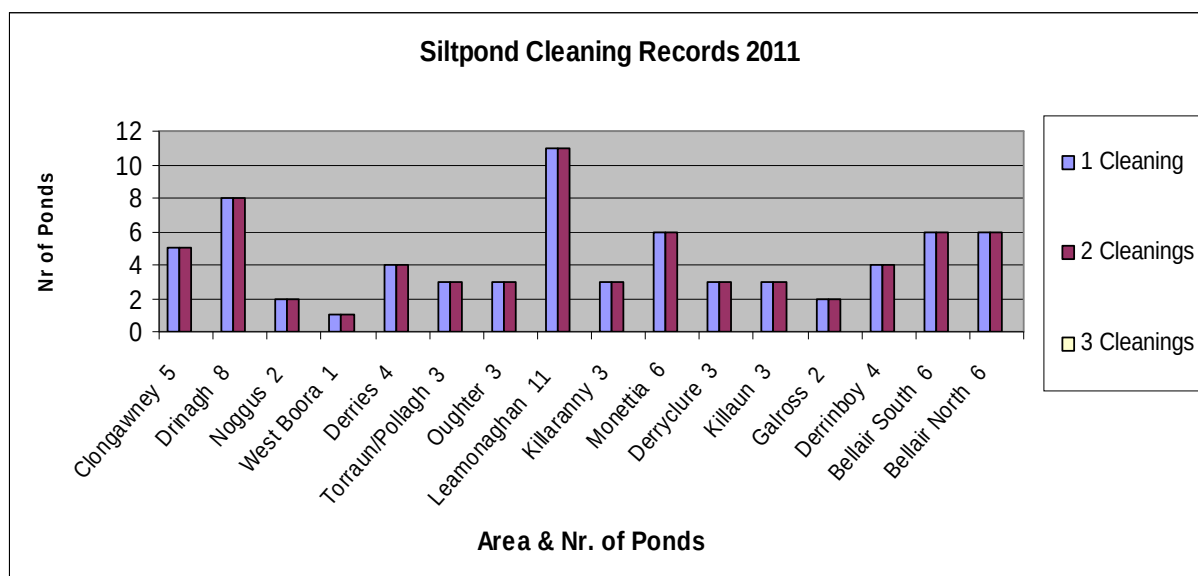
Dust Monitoring Results 2011			
Licence: P0500-01			
Works: Boora			
Sample Period	DM - 01 Clongawney	DM - 02 Pollagh	DM - 03 Derryclure
April-May	16	0	32
May-June	188	65	124
June-July	350	108	50
July- Aug	38	43	48
Aug - Sept		63	



APPENDIX 5

De-silting Programme Review.

Siltpond Cleaning Programme 2011			
IPPC Licence: P0500-01			
Works: Boora			
Bog Area & No. of Ponds	1 Cleaning	2 Cleanings	3 Cleanings
Clongawney 5	5	5	
Drinagh 8	8	8	
Noggus 2	2	2	
West Boora 1	1	1	
Derries 4	4	4	
Torraun/Pollagh 3	3	3	
Oughter 3	3	3	
Leamonaghan 11	11	11	
Killaranny 3	3	3	
Monettia 6	6	6	
Derryclure 3	3	3	
Killaun 3	3	3	
Galross 2	2	2	
Derrinboy 4	4	4	
Bellair South 6	6	6	
Bellair North 6	6	6	



Facility Information Summary

AER Reporting Year
 Licence Register Number
 Name of site
 Site Location
 NACE Code
 Class/Classes of Activity
 National Grid Reference (6E, 6 N)

2012

P0500-01

Bord na Mona Boora

Leabeg, Boora, Tullamore, Co Offaly

0892

1.4

180050, 319540

Activities on site can be divided into two components, firstly the milling, harrowing, ridging and harvesting of peat into stockpiles and secondly the transportation of that peat via an internal rail network to the Power Station and lorry outloading facilities. Due to the unprecedented inclement weather experienced during the 2012 production season, 31.7% of production target was achieved. This equates to approximately 207054 tonnes which is a reduction of 62% of the 2011 production achieved. Infrastructurally, there was no bog development. There were three non-compliances / incidents, one related to an Agency audit, one regarding an oil spill during the course of an attempted fuel theft and one for a dust non-compliance at DM-03 Derryclare. Dust monitoring overall was 92% compliant. There were no environmental complaints received during the reporting period. In relation to silt pond cleaning, 96% of ponds received two cleanings inspections dictating if a pond required cleaning. Silt pond upgrade work was ongoing during 2012. Decommissioning and Rehabilitation works are described in an attachment.

A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year and an overview of **compliance with your licence listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise.**

Declaration:

All the data and information presented in this report has been checked and certified as being accurate. The quality of the information is assured to meet licence requirements.

Signature

Group/Facility manager

(or nominated, suitably qualified and experienced deputy)

Date

27/3/2013

AIR-summary template

Lic No:

P0500-01

Year

2012

Answer all questions and complete all tables where relevant

Additional information

- 1 Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If **you do not have** licenced emissions and **do not complete a solvent management plan** (table A4 and A5) you do not need to complete the tables

No

Periodic/Non-Continuous Monitoring

- 2 Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below

Yes

There was a breach of the ELV at DM03 Derryclure bog

- 3 Was all monitoring carried out in accordance with EPA guidance [Basic air monitoring checklist](#) note AG2 and using the basic air monitoring checklist? [AGN2](#)

Yes

Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision thereof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments - reason for change in % mass load from previous year if applicable
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		

Note 1: Volumetric flow shall be included as a reportable parameter

AIR-summary template	Lic No:	P0500-01	Year	2012
Continuous Monitoring				

4	Does your site carry out continuous air emissions monitoring?	No	
	If yes please review your continuous monitoring data and report the required fields below in Table 3 and compare it to its relevant Emission Limit Value (ELV)		
5	Did continuous monitoring equipment experience downtime? If yes please record downtime in table 3 below	No	
6	Do you have a proactive service agreement for each piece of continuous monitoring equipment?	No	
7	Did your site experience any abatement system bypasses? If yes please detail them in table 4 below	No	

Table A2: Summary of average emissions -continuous monitoring

Emission reference no:	Parameter/ Substance	ELV in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
DM01	Total Particulates	350mg/m2/day	112 days	Daily average < ELV	mg/m2/day	10136	118	0	0	
DM02	Total Particulates	350mg/m2/day	112 days	Daily average < ELV	mg/m2/day	7756	89	0	0	
DM03	Total Particulates	350mg/m2/day	112 days	Daily average < ELV	mg/m2/day	15540	371	0	1	Dust result of 371 EPA informed.
	SELECT				SELECT					
	SELECT				SELECT					

note 1: Volumetric flow shall be included as a reportable parameter.

Table A3: Abatement system bypass reporting table

[Bypass protocol](#)

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

* this should include all dates that an abatement system bypass occurred

** an accurate record of time bypass beginning and end should be logged on site and maintained for future
Agency inspections please refer to bypass protocol link

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)

Lic No:

P0500-01

Year

2012

1 Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If **you do not have** licensed emissions you only need to complete table W1 and or W2 for surface water analysis and visual inspections

2 Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising only any evidence of contamination noted during visual inspections

Additional information	
Yes	
Yes	Monthly COD analysis of yard runoff is attached.

Table W1 Surface water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licensed Parameter	Monitoring date	ELV or trigger level in licence or any revision thereof*	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	

* trigger values may be agreed by the Agency outside of licence conditions

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
			SELECT		
			SELECT		

Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

3 Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below

Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box

[External /Internal](#)
[Lab Quality](#)
[checklist](#)
[Assessment of](#)
[results checklist](#)

Additional information	
No	
Yes	Surface water monitoring was carried out on a quarterly basis. The results of which are attached.

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereof ^{Note 2}	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source	Procedural reference standard number	Annual mass load (kg)	Comments
	SELECT	SELECT	SELECT		SELECT		SELECT		SELECT	SELECT	SELECT	SELECT			

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)

Lic No:

P0500-01

Year

2012

Continuous monitoring

5 Does your site carry out continuous emissions to water/sewer monitoring?

Additional Information	
Yes	See Note above

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

6 Did continuous monitoring equipment experience downtime? If yes please record downtime in table W4 below

Yes	

7 Do you have a proactive service contract for each piece of continuous monitoring equipment on site?

Yes	Annual calibration schedule and trouble shooting service

8 Did abatement system bypass occur during the reporting year? If yes please complete table W5 below

No

Table W4: Summary of average emissions -continuous monitoring

Emission reference no:	Emission released to	Parameter/ Substance	ELV or trigger values in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission for current reporting year (kg)	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments
SW7	Water	Suspended Solids	35mg/l	24 hour	All results < 1.5 times ELV, plus 8 from ten results must be < ELV	mg/L	18267	-26%	240	0	Down time was primarily due to battery failure.
SW7	Water	Ammonia (as N)	NA	Weekly	NA	mg/L	240.84	-31%	0	NA	Down time was primarily due to battery failure.
SW7	Water	Total phosphorus	NA	Weekly	NA	mg/L	24.66	-32%	0	NA	Down time was primarily due to battery failure.
SW7	Water	COD	NA	Weekly	NA	mg/L	25834	-34%	0	NA	Down time was primarily due to battery failure.
SW7	Water	volumetric flow	NA	24 hour	NA	m3/day	3257943524	-28	0	NA	Down time was primarily due to battery failure.
SW7	Water	Total Dissolved Solids	NA	Weekly	NA	mg/L	798776	-28	0	NA	Down time was primarily due to battery failure.

note 1: Volumetric flow shall be included as a reportable parameter.

Table W5: Abatement system bypass reporting table

Date	Duration (hours)	Location	Resultant emissions	Reason for bypass	Corrective action*	Was a report submitted to the EPA?	When was this report submitted?
						SELECT	

*Measures taken or proposed to reduce or limit bypass frequency

Bund/Pipeline testing template	Lic No:	P0500-01	Year	2012	

Bund testing

dropdown menu click to see options

Additional information

Are you required by your licence to undertake integrity testing on bunds and containment structures ? if yes please fill out table B1 below listing all **new bunds and containment structures** on site, **in addition to all bunds which failed the integrity test-all bunding structures which failed including mobile bunds must be listed in the table below**

1

2 Please provide integrity testing frequency period

Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to "Chemstore")

3 type units and mobile bunds)

4 How many bunds are on site?

5 How many of these bunds have been tested witin the required test schedule?

6 How many mobile bunds are on site?

7 Are the mobile bunds included in the bund test schedule?

8 How many of these mobile bunds have been tested witin the required test schedule?

9 How many sumps on site are included in the integrity test schedule?

10 How many of these sumps are integrity tested within the test schedule?

Please list any sump integrity failures in table B1

11 Do all sumps and chambers have high level liquid alarms?

12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?

Yes	Included are details of bund test results, however going forward only new and failed bunds will be included.
Other (2 Yearly)	
Yes	
8	
0	
27	This includes barrel trays located within workshops
No	
NA	
NA	
NA	
NA	
NA	
NA	

Table B1: Summary details of bund /containment structure integrity test													Results of retest(if in current reporting year)
Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest
500-15-01	reinforced concrete		Fuel Oil	75240	30800	Hydraulic test		Aug-11	Yes	Pass		NA	Aug-13
500-15-02	reinforced concrete		Fuel Oil	20832	11000	Hydraulic test		Nov-10	Yes	Pass		NA	May-13
500-15-03	reinforced concrete		Fuel Oil	16800	11000	Hydraulic test		Nov-10	Yes	Pass		NA	May-13
500-15-04	reinforced concrete		Fuel Oil	25200	5500	Hydraulic test		Sep-09	Yes	Pass		NA	May-13
500-15-05	reinforced concrete		Fuel Oil	36720	22000	Hydraulic test		Nov-10	Yes	Pass		NA	May-13
500-15-06	reinforced concrete		Fuel Oil	60588	66000	Hydraulic test		Nov-10	Yes	Pass		NA	May-13
500-15-07	reinforced concrete		Fuel Oil	29400	1100	Hydraulic test		Nov-10	Yes	Pass		NA	May-13
500-15-08	reinforced concrete		Fuel Oil	207060	97900	Hydraulic test		Nov-10	Yes	Pass		NA	May-13
* Capacity required should comply with 25% or 110% containment rule as detailed in your licence													
Has integrity testing been carried out in accordance with licence requirements and are all structures tested in line with BS8007/EPA Guidance?													
14 Are channels/transfer systems to remote containment systems tested?													
15 Are channels/transfer systems compliant in both integrity and available volume?													
16 Are channels/transfer systems compliant in both integrity and available volume?													
Commentary													
Yes													
NA													
NA													

Has integrity testing been carried out in accordance with licence requirements and are all structures tested in line with BS8007/EPA Guidance?

14 Are channels/transfer systems to remote containment systems tested?

15 Are channels/transfer systems compliant in both integrity and available volume?

16 Are channels/transfer systems compliant in both integrity and available volume?

Yes	
NA	
NA	

Pipeline/underground structure testing

Are you required by your licence to undertake integrity testing on underground structures e.g. pipelines or sumps etc ? if yes please fill out table 2 below listing all

 1 underground structures and pipelines on site **which failed the integrity test**

2 Please provide integrity testing frequency period

SELECT	
3 years	

Table B2: Summary details of pipeline/underground structures integrity test											
Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
Petrol Tank	Process	steel	No	SELECT	Air	Yes	Pass			Apr-13	NA

Please use commentary for additional details not answered by tables/ questions above

Groundwater/Soil monitoring template

Lic No:

P0500-01

Year

2012

	Comments
1 Are you required to carry out groundwater monitoring as part of your licence requirements?	no
2 Are you required to carry out soil monitoring as part of your licence requirements?	no
3 Do you extract groundwater for use on site? If yes please specify use in comment section	no
4 Is there contaminated land and /or groundwater on site? If yes please answer q's 5-12	no
5 Is the contamination related to operations at the facility (either current and/or historic)	N/A
6 Have actions been taken to address contamination issues? If yes please summarise remediation strategies proposed/undertaken for the site	N/A
7 Please specify the proposed time frame for the remediation strategy	N/A
8 Is there a licence condition to carry out/update ELRA for the site?	N/A
9 Has any type of risk assessment been carried out for the site?	N/A
10 Has a Conceptual Site Model been developed for the site?	N/A
11 Have potential receptors been identified on and off site?	N/A
12 Is there evidence that contamination is migrating offsite?	N/A

Table 1: Upgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+	unit	GTV's*	SELECT**	% change in average concentration previous year +/-	Upward trend in pollutant concentration over last 5 years of monitoring data
							SELECT				SELECT
							SELECT				SELECT

.+ where average indicates arithmetic mean

.++ maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

Table 2: Downgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	SELECT**	% change in average concentration previous year +/-	Upward trend in yearly average pollutant concentration over last 5 years of monitoring data
							SELECT				SELECT
							SELECT				SELECT

* please note exceedance of a relevant Groundwater threshold value (GTV) at a representative monitoring point does not indicate non compliance, an exceedance triggers further investigation to confirm whether the criteria for poor groundwater chemical status are being met.

**Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS). If the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)

[Groundwater regulations](#) [Drinking water \(private supply\) standards](#) [Drinking water \(public supply\) standards](#) [Interim Guideline Values \(IGV\)](#)

Groundwater/Soil monitoring template	Lic No:	P0500-01	Year	2012

Table 3: Soil results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
							SELECT
							SELECT

Where additional detail is required please enter it here in 200 words or less

Environmental Liabilities template

Lic No:

P0500-01

Year

2012

[Click here to access EPA guidance on Environmental Liabilities and Financial provision](#)

		Commentary	
1	ELRA initial agreement status	Not a Licence Requirement	
2	ELRA review status	NA	
3	Amount of Financial Provision cover required as determined by the latest ELRA	NA	
4	Financial Provision for ELRA status	NA	
5	Financial Provision for ELRA - amount of cover	NA	
6	Financial Provision for ELRA - type	NA	
7	Financial provision for ELRA expiry date	NA	
8	Closure plan initial agreement status	Required but not submitted	
9	Closure plan review status	Review required and completed	
10	Financial Provision for Closure status	Required but not submitted	
11	Financial Provision for Closure - amount of cover	NA	Internal Budget Provision
12	Financial Provision for Closure - type	Other please specify	Budgeted Financial Provision
13	Financial provision for Closure expiry date	2030	

Environmental Management Programme/Continuous Improvement Programme template		Lic No:	P0500-01	Year	2012

Highlighted cells contain dropdown menu click to view		Additional Information	
1	Do you maintain an Environmental Mangement System (EMS) for the site. If yes, please detail in additional information	Yes	Internal unaccredited EMS.
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site	Yes	
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements	Yes	
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence	Yes	

Environmental Management Programme (EMP) report

Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
Reduction of emissions to Air	Training.Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.	80	In total 78 Personnel received training in 2012. Hydraulic harrows were deployed at dust sensitive areas. Due to the particularly bad year headland peat was not collected in the	Section Head	Reduced emissions
Waste reduction/Raw material usage efficiency	Waste Streamlining.It is planned to continue with and where possible improve the	100	Installed a waste management system. Quarterly waste reports are returned for records/filing	Individual	Improved Environmental Management Practices
Reduction of emissions to Water	Training. Continue to train all employees in environmental matters. Training will be by	100	In total 78 Personnel received training in 2012.	Section Head	Reduced emissions
Silt Pond Upgrade	All Silt Ponds to be brought to design specification.	70	Pond extension work is ongoing with remeasurement scheduled	Individual	Reduced emissions
Waste reduction/Raw material usage efficiency	Continue with the recycling of polyethylene. The sourcing of	100	In total 158 tonnes were sent off site for recycling. Procurement	Individual	Reduced emissions
Septic Tank Assessments	Carry out remedial works on septic tanks identified as requiring attention.	0	Other than licence bi-annual inspections no assessments carried out.	Individual	Reduced emissions
Energy Efficiency/Utility conservation	As part of an energy management process, a review of energy aspects will take place identifying the significant energy users of the licensee.	60	As expected gas oil used in the production and transportation of peat is the most significant energy user followed by electrical consumption at workshops and bog pumps.	Individual	Improved Environmental Management Practices

Noise monitoring summary report

Lic No: P0500-01

Year

2012

1 Was noise monitoring a licence requirement for the AER period?

No

If yes please fill in table N1 noise summary below

2 Was noise monitoring carried out using the EPA Guidance note including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?

Noise
Guidance
note NG4

NA

3 Does your site have a noise reduction plan

NA

4 When was the noise reduction plan last updated?

5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

NA

Table N1: Noise monitoring summary

Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA _{eq}	LA ₉₀	LA ₁₀	LA _{max}	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is <u>site</u> compliant with noise limits (day/evening/night)?
								SELECT	SELECT		SELECT

*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

SELECT

** please explain the reason for not taking action/resolution of noise issues?

Any additional comments? (less than 200 words)

Resource Usage/Energy efficiency summary

Lic No:

P0500-01

Year

2012

Additional information

1 When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below

Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information

[SEAI - Large Industry Energy Network \(LIEN\)](#)

2 Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information

yes	
SELECT	

Table R1 Energy usage on site

Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*
Total Energy Used (MWHrs)	15417	12057	-62%	-22%
Total Energy Generated (MWHrs)				
Total Renewable Energy Generated (MWHrs)				
Electricity Consumption (MWHrs)	702	802	-62%	14%
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)				
Light Fuel Oil (m3)	1443	1104	-62%	-23%
Natural gas (CMN)				
Coal/Solid fuel (metric tonnes)	8.94	7.33	-62%	-18%
Peat (metric tonnes)				
Renewable Biomass				
Renewable energy generated on site				

* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site

					Water Emissions	Water Consumption
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m ³ /yr):	Volume used i.e not discharged to environment e.g. released as steam m3/yr
Groundwater						
Surface water						
Public supply						
Recycled water						
Total						

* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R3 Waste Stream Summary

	Total	Landfill	Incineration	Recycled	Other
Hazardous (Tonnes)	35.71	0	0.81	34.9	
Non-Hazardous (Tonnes)	1892.85	35.93	0	244.18	1612.74

Resource Usage/Energy efficiency summary	Lic No:	P0500-01	Year	2012

Table R4: Energy Audit finding recommendations								
Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
			SELECT					
			SELECT					
			SELECT					

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology					
Primary Fuel					
Thermal Efficiency					
Unit Date of Commission					
Total Starts for year					
Total Running Time					
Total Electricity Generated (GWH)					
House Load (GWH)					
KWH per Litre of Process Water					
KWH per Litre of Total Water used on Site					

Complaints and Incidents summary template

Lic No:

P0500-01

Year

2012

Complaints

Additional information

Have you received any environmental complaints in the current reporting year? If yes please complete summary details of complaints received on site in table 1 below

No

Table 1 Complaints summary

Date	Category	Other type (please specify)	Brief description of complaint (Free txt <20 words)	Corrective action< 20 words	Resolution status	Resolution date	Further information
	SELECT				SELECT		
	SELECT				SELECT		
	SELECT				SELECT		
	SELECT				SELECT		
	SELECT				SELECT		
Total complaints open at start of reporting year		0					
Total new complaints received during reporting year		0					
Total complaints closed during reporting year		0					
Balance of complaints end of reporting year		0					

Incidents

Additional information

Have any incidents occurred on site in the current reporting year? Please list all incidents for current reporting year in Table 2 below

Yes

*For information on how to report and what constitutes an incident

[What is an incident](#)

Table 2 Incidents summary

Date of occurrence	Incident nature	Location of occurrence	Incident category* please refer to guidance	Receptor	Cause of incident	Other cause(please specify)	Activity in progress at time of incident	Communication	Occurrence	Corrective action<20 words	Preventative action <20 words	Resolution status	Resolution date	Likelihood of reoccurrence
10/05/2012	Spillage	Other location (Clongawney T Centre)	1. Minor	Ground	Other (add details)	During the course of an attempted fuel theft a small amount of fuel oil was spilled by the thieves.	No activity as during the night	EPA	New	Absorbent mats were deployed to soak up the spilled fuel		Complete	May-12	Low
18/07/2012	Other(EPA Audit Findings)	Other location (Boora Works)	1. Minor	No Uncontrolled release	Operational controls	Incomplete waste records	Normal activities	EPA	New	Ensure waste records are kept up to date	Informed waste provider of our responsibilities in relation to waste management	Complete	Aug-12	Low

WASTE SUMMARY	Lic No:	P0500-01	Year	2012

Table 4 Environmental monitoring-landfill only [Landfill Manual-Monitoring Standards](#)

Was meteorological monitoring in compliance with Landfill Directive (LD) standard in reporting year +	Was leachate monitored in compliance with LD standard in reporting year	Was Landfill Gas monitored in compliance with LD standard in reporting year	Was SW monitored in compliance with LD standard in reporting year	Have GW trigger levels been established	Were emission limit values agreed with the Agency (ELVs)	Was topography of the site surveyed in reporting year	Has the statement under S53(A)(5) of WMA been submitted in reporting year	Comments

.-+ please refer to Landfill Manual linked above for relevant Landfill Directive monitoring standards

Table 5 Capping-Landfill only

Area uncapped*	Area with temporary cap	Area with final cap to LD Standard m2 ha, a	Area capped other	Area with waste that should be permanently capped to date under licence	What materials are used in the cap	Comments
SELECT UNIT	SELECT UNIT					

*please note this includes daily cover area

Table 6 Leachate-Landfill only

9 Is leachate from your site treated in a Waste Water Treatment Plant?

SELECT

10 Is leachate released to surface water? If yes please complete leachate mass load information below

SELECT

Volume of leachate in reporting year(m3)	Leachate (BOD) mass load (kg/annum)	Leachate (COD) mass load (kg/annum)	Leachate (NH4) mass load (kg/annum)	Leachate (Chloride) mass load kg/annum	Leachate treatment on-site	Specify type of leachate treatment	Comments

Please ensure that all information reported in the landfill gas section is consistent with the Landfill Gas Survey submitted in conjunction with PRTR returns

Table 7 Landfill Gas-Landfill only

Gas Captured&Treated by LFG System m3	Power generated (MW / KWh)	Used on-site or to national grid	Was surface emissions monitoring performed during the reporting year?	Comments
			SELECT	

**Boora
Decommissioning and Rehabilitation
AER Overview 2012.**

Bog decommissioning took place between Boora yard and the old Ferbane Power Station. Work extended to the removal and recycle of obsolete rail line. In relation to rehabilitation, draft rehabilitation plans have been drawn up for all licensed areas and are available on file with the local environmental co-ordinators. The plans will be submitted to the EPA for review in April 2013. Consultation with statutory and non-statutory consultees is ongoing as part of Bord na Mona rehabilitation planning under its Biodiversity Objective. A review day of the Bord na Mona Biodiversity Action Plan 2010-2015 for the period 2012 was held in January 2013 and attended by up to 90 interest groups including members of the NPWS, BWI, EPA, Bord na Mona, Coillte, ESBi, IPCC, Golden Eagle Trust, Butterfly Conservation Ireland, NARGC, local game councils, Midland Regional Planning Authority as well as a range of local community groups and Heritage Officers from counties Laois, Offaly, Kildare, Roscommon, Longford, Meath, Galway, Westmeath and Dublin.

Licence: P0500-01															
Works: Boora															
Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9	
Jan	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Feb	634	85	NF	NF	NF	NF	NF	NF	NF	17	NF	NF	NF	NF	
Mar	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Apr	92	46	26	NF	NF	NF	NF	NF	NF	91	NF	NF	NF	NF	
May	NF	NF	58	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	
June	10	10	10	NF	NF	NF	NF	NF	NF	41	10	14	53	388	
July	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Aug	18	28	10	NF	NF	NF	NF	NF	NF	35	10	NF	NF	192	
Sep	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Oct	28	34	36	NF	125	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Nov	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	
Dec	NF	NF	13	NF	NF	NF	NF	NF	NF	NF	NF	NF	86	NF	
Note: NF denotes no flow at emission point on day of sampling															

BNM Group:	Boora		Quarterly Grabs	
IPPC Licence No.	PO500-01	2012		
Ammonia as N (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	0.7	1.07	0.36	0.97
SW 28 D/clure	2.54	0.33	2.9	1.5
SW 31 Killaun	0.68	3.52	0.13	0.39
Sw 34 Bellair	1.5	0.04	0.78	0.28
SW 6 Clongawney	1.33	0.72	1.4	0.22
COD (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	38	70	62	61
SW 28 D/clure	22	77	28	52
SW 31 Killaun	66	28	87	98
Sw 34 Bellair	99	137	66	47
SW 6 Clongawney	36	93	43	90
Colour (pt Co Units)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	141	201	181	169
SW 28 D/clure	66	223	66	196
SW 31 Killaun	244	170	367	301
Sw 34 Bellair	160	495	300	236
SW 6 Clongawney	110	280	167	369
pH (units)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	7.7	7.7	7.8	7.5
SW 28 D/clure	7.8	7.6	7.6	7.2
SW 31 Killaun	7.5	7.8	7.2	7.1
Sw 34 Bellair	7.4	6.7	7.1	7.6
SW 6 Clongawney	7.6	7.2	7.6	7
Suspended Solids (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	5	28	6	6
SW 28 D/clure	5	12	5	5
SW 31 Killaun	5	13	5	7
Sw 34 Bellair	5	14	5	6
SW 6 Clongawney	5	15	5	28
Total Solids (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	234	268	281	204
SW 28 D/clure	268	258	418	184
SW 31 Killaun	174	379	232	228
Sw 34 Bellair	268	192	180	300
SW 6 Clongawney	207	196	302	258
Total Phosphorus (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	0.05	0.05	0.05	0.05
SW 28 D/clure	0.05	0.05	0.05	0.07
SW 31 Killaun	0.05	0.05	0.05	0.05
Sw 34 Bellair	0.05	0.05	0.05	0.05
SW 6 Clongawney	0.05	0.05	0.05	0.05
Flow (l/s)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 10 Noggus	26	30	15	20
SW 28 D/clure	12	20	15	9
SW 31 Killaun	15.0	6	8	4
Sw 34 Bellair	13	14	3	10
SW 6 Clongawney	17	10	12	7



| PRTR# : P0500 | Facility Name : Bord Na Mona Energy Limited | Filename : P0500_2012(1).xls | Return Year : 2012 |

[Guidance to completing the PRTR workbook](#)

AER Returns Workbook

Version 1.1.15

REFERENCE YEAR	2012

1. FACILITY IDENTIFICATION

Parent Company Name	Bord Na Mona Energy Limited
Facility Name	Bord Na Mona Energy Limited
PRTR Identification Number	P0500
Licence Number	P0500-01

Waste or IPPC Classes of Activity

No.	class_name
1.4	The extraction of peat in the course of business which involves an area exceeding 50 hectares.

Address 1	Boora
Address 2	Leabeg
Address 3	Tullamore
Address 4	Co Offaly
	Offaly
Country	Ireland
Coordinates of Location	-7.72946 53.2273
River Basin District	IEGBNISH
NACE Code	0892
Main Economic Activity	Extraction of peat
AER Returns Contact Name	Enda McDonagh
AER Returns Contact Email Address	enda.mcdonagh@bnm.ie
AER Returns Contact Position	Head of Environment
AER Returns Contact Telephone Number	057 9345911
AER Returns Contact Mobile Phone Number	086 2370816
AER Returns Contact Fax Number	057 9345160
Production Volume	207325.0
Production Volume Units	tonnes
Number of Installations	13
Number of Operating Hours in Year	2232
Number of Employees	124
User Feedback/Comments	
Web Address	www.bnm.ie

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

[Guidance on waste imported/accepted onto site](#)

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	No

27/03/2013 11:27

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Page 1 of 1

4.2 RELEASES TO WATERS [Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord Na Mona Energy Limited | Filename : P0500_2012(1).xls | Return Year : 2012 |

27/03/2013 11:28

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only concerns Releases from your facility

RELEASES TO WATERS		Please enter all quantities in this section in KGs						
POLLUTANT		Method Used			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS		Please enter all quantities in this section in KGs						
POLLUTANT		Method Used			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in KGs									
POLLUTANT													QUANTITY	
Pollutant No.	Name	M/C/E	Method Used		SW10	SW28	SW31	SW34	SW6	SW7	T (Total) KG/Year	A (Accident al) KG/Year	F (Fugitive) KG/Year	
			Method Code	Designation or Description	Emission Point 1	Emission Point 2	Emission Point 3	Emission Point 4	Emission Point 5	Emission Point 6				
240	Suspended Solids	E	OTH	G/19 Based on ALPHA,1998,20th Edition, Method 2540D	8071.0	2980.0	1951.0	2365.0	4805.0	18267.0	38439.0	0.0	0.0	

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
								0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

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* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

[PRTR# : P0500 | Facility Name : Bord Na Mona Energy Limited | Filename : P0500_2012(1).xls | Return Year : 2012]

27/03/2013 11:31

Please enter all quantities on this sheet in Tonnes

3

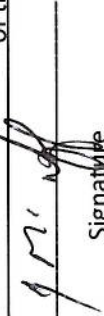
Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste : Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste : Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	01 01 02	No	560.74	wastes from mineral non-metalliferous excavation	D1	E	Volume Calculation	Onsite of generatic	Bord na Mona Boora,P0500-01	Boora,Leabeg,Tullamore,Co Offaly,Ireland		
Within the Country	01 01 02	No	1052.0	wastes from mineral non-metalliferous excavation	D1	M	Weighed	Onsite of generatic	Bord na Mona Boora,P0500-01	Boora,Leabeg,Tullamore,Co Offaly,Ireland		
Within the Country	02 01 04	No	158.38	waste plastics (except packaging)	R3	M	Weighed	Offsite in Ireland	Leinster Environmental Ltd,WP 2008/06	Haggardstown,Dundalk,Co Louth,,Ireland		
To Other Countries	13 02 05	Yes	32.18	mineral-based non-chlorinated engine, gear and lubricating oils	R1	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,,,Belgium	Houthalen,Belgium,,,,Belgium
Within the Country	15 01 03	No	2.72	wooden packaging absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by	R1	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
To Other Countries	15 02 02	Yes	0.81	dangerous substances	R1	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	Lindenschmidt,Reg no E97095037,Kreuztal,,,,,Germany	Kreuztal,,,,,Germany
To Other Countries	16 01 07	Yes	0.58	oil filters	R4	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,,,Belgium	Houthalen,Belgium,,,,Belgium
To Other Countries	16 06 01	Yes	2.13	lead batteries	R6	M	Weighed	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	Campine Recycling,MLAV/05-173/GVDA,Beerse,,,,,Belgium	Beerse,,,,,Belgium
Within the Country	17 04 07	No	83.08	mixed metals	R4	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Offaly,,Ireland		
Within the Country	17 05 04	No	0.0	soil and stones other than those mentioned in 17 05 03	D1	M	Weighed	Offsite in Ireland	Bord na Mona Drehid,W0201-03	Drehid,Allenwood,Nass,Co Kildare,Ireland		
Within the Country	20 03 01	No	24.53	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	11.4	mixed municipal waste	D1	C	Volume Calculation	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		

* Select a row by double-clicking the Description of Waste then click the delete button

Facility Information Summary	
AER Reporting Year	2013
Licence Register Number	P0500-01
Name of site	Bord na Mona Boora
Site Location	Leabeg, Boora, Tullamore, Co Offaly
NACE Code	0892
Class/Clauses of Activity	1.4
National Grid Reference (6E, 6 N)	180050, 319540
A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year and an overview of compliance with your licence listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise. Activities on site can be divided into two components, firstly the milling, harrowing, ridging and harvesting of peat into stockpiles and secondly the transportation of that peat via an internal rail network to the Power Station and lorry outloading facilities. Due to the exceptional weather experienced during the 2013 production season there was approximately a 5 fold increase on the 2012 figure. The final 2013 figure being 996952 tonnes. Infrastructurally, there was bog development in Killaranny and Clongawney bogs. Works extended to scrub clearing and ditching and the area involved extended to approximately 72 hectares. There was 1 non-compliance / incident and this related to elevated suspended solids at the composite sampler at SW7. Dust monitoring was fully compliant for the reporting period. There were no environmental complaints received during 2013. In relation to silt pond cleaning, 100% of ponds received two cleanings inspections dictating if a pond required cleaning. Silt pond upgrade work was ongoing during 2013 with approximately an additional 6000 m3 being achieved. Decommissioning works included the lifting, refurbishing and redeployment of approximately two kilometers of rail line. Decommissioning Rehabilitation works are described in an attachment.	

Declaration:

All the data and information presented in this report has been checked and certified as being accurate. The quality of the information is assured to meet licence requirements.

	<u>27/3/14</u>
Signature	Date
Group/Facility manager (or nominated, suitably qualified and experienced deputy)	

AIR-summary template

Lic No:

P0500-01

Year

2013

Answer all questions and complete all tables where relevant

- 1 Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If **you do not have** licenced emissions and **do not complete a solvent management plan** (table A4 and A5) you do not need to complete the tables

Additional information	
No	Fugitive Dust Monitoring

Periodic/Non-Continuous Monitoring

- 2 Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below
- 3 Was all monitoring carried out in accordance with EPA guidance note AG2 and using the basic air monitoring checklist? [Basic air monitoring checklist](#) [AGN2](#)

No	
Yes	

Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision thereof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments - reason for change in % mass load from previous year if applicable
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		

Note 1: Volumetric flow shall be included as a reportable parameter

AIR-summary template	Lic No:	P0500-01	Year	2013
Continuous Monitoring				

4	Does your site carry out continuous air emissions monitoring?	No	
	If yes please review your continuous monitoring data and report the required fields below in Table A2 and compare it to its relevant Emission Limit Value (ELV)		
5	Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below	No	
6	Do you have a proactive service agreement for each piece of continuous monitoring equipment?	No	
7	Did your site experience any abatement system bypasses? If yes please detail them in table A3 below	No	

Table A2: Summary of average emissions -continuous monitoring

Emission reference no:	Parameter/ Substance	ELV in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
DM01	Total Particulates	350mg/m2/day	56 days	Daily average < ELV	mg/m2/day	10388	296	0	0	
DM02	Total Particulates	350mg/m2/day	84 days	Daily average < ELV	mg/m2/day	6944	86	0	0	
DM03	Total Particulates	350mg/m2/day	84 days	Daily average < ELV	mg/m2/day	6804	129	0	0	
	SELECT				SELECT					
	SELECT				SELECT					

note 1: Volumetric flow shall be included as a reportable parameter.

Table A3: Abatement system bypass reporting table

[Bypass protocol](#)

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

* this should include all dates that an abatement system bypass occurred

** an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

AIR-summary template		Lic No: P0500-01		Year: 2013				
Solvent use and management on site								
8 Do you have a total Emission Limit Value of direct and fugitive emissions on site? if yes please fill out tables A4 and A5					SELECT			
Table A4: Solvent Management Plan Summary Total VOC Emission limit value			Solvent regulations Please refer to linked solvent regulations to complete table 5 and 6					
Reporting year	Total solvent input on site (kg)	Total VOC emissions to Air from entire site (direct and fugitive)	Total VOC emissions as % of solvent input	Total Emission Limit Value (ELV) in licence or any revision thereof	Compliance			
					SELECT			
					SELECT			
Table A5: Solvent Mass Balance summary								
	(I) Inputs (kg)	(O) Outputs (kg)						
Solvent	(I) Inputs (kg)	Organic solvent emission in waste	Solvents lost in water (kg)	Collected waste solvent (kg)	Fugitive Organic Solvent (kg)	Solvent released in other ways e.g. by-	Solvents destroyed onsite through	Total emission of Solvent to air (kg)
Total								

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)			Lic No:	P0500-01	Year	2013

- 1 Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If **you do not have** licenced emissions you only need to complete table W1 and or W2 for storm water analysis and visual inspections

- 2 Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising only any evidence of contamination noted during visual inspections

	Additional information
Yes	
Yes	Monthly COD analysis of yard runoff is attached.

Table W1 Storm water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licensed Parameter	Monitoring date	ELV or trigger level in licence or any revision thereof*	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	

* trigger values may be agreed by the Agency outside of licence conditions

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
			SELECT		
			SELECT		

Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

- 3 Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below

- Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box
- [External /Internal Lab Quality checklist](#) [Assessment of results checklist](#)

No	Additional information
Yes	Surface water monitoring was carried out on a quarterly basis. The results of which are attached.

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereof ^{Note 2}	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source	Procedural reference standard number	Annual mass load (kg)	Comments
							SELECT		SELECT	SELECT	SELECT	SELECT			

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)

Lic No:

P0500-01

Year

2013

Continuous monitoring

5 Does your site carry out continuous emissions to water/sewer monitoring?

Additional Information	
Yes	See Note above

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

6 Did continuous monitoring equipment experience downtime? If yes please record downtime in table W4 below

Yes	Down for 60 days @ 24/day

7 Do you have a proactive service contract for each piece of continuous monitoring equipment on site?

Yes	Annual calibration schedule and trouble shooting service

8 Did abatement system bypass occur during the reporting year? If yes please complete table W5 below

No

Table W4: Summary of average emissions -continuous monitoring

Emission reference no:	Emission released to	Parameter/ Substance	ELV or trigger values in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission for current reporting year (kg)	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments
SW7	Water	Suspended Solids	35mg/l	24 hour	All results < 1.5 times ELV, plus 8 from ten results must be < ELV	mg/L	10996.73	-39.8	1440		Down time was primarily due to battery failure, no flow and frozen pipes.
SW7	Water	Ammonia (as N)	NA	Weekly	NA	mg/L	204.45	-15.11	0		
SW7	Water	Total phosphorus	NA	Weekly	NA	mg/L	15.56	-36.89	0		
SW7	Water	COD	NA	Weekly	NA	mg/L	17397	-32.66	0		
SW7	Water	volumetric flow	NA	24 hour	NA	m3/day	1927414900	-40.84	2328		
SW7	Water	Total Dissolved Solids	NA	Weekly	NA	mg/L	440317	-44.88	0		

note 1: Volumetric flow shall be included as a reportable parameter.

Table W5: Abatement system bypass reporting table

Date	Duration (hours)	Location	Resultant emissions	Reason for bypass	Corrective action*	Was a report submitted to the EPA?	When was this report submitted?
						SELECT	

*Measures taken or proposed to reduce or limit bypass frequency

Bund/Pipeline testing template	Lic No:	P0500-01	Year	2013	

Bund testing

dropdown menu click to see options

Additional information

Are you required by your licence to undertake integrity testing on bunds and containment structures ? If yes please fill out table B1 below listing all **new bunds and containment structures** on site, in addition to **all bunds which failed the integrity test-all bunding structures which failed including mobile bunds must be listed in the table below, please include all bunds outside the licenced testing period** (mobile bunds and chemstore included)

- 1
2 Please provide integrity testing frequency period
Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to "Chemstore" type units and mobile bunds)
3
4 How many bunds are on site?
5 How many of these bunds have been tested within the required test schedule?

6 How many mobile bunds are on site?
7 Are the mobile bunds included in the bund test schedule?
8 How many of these mobile bunds have been tested within the required test schedule?
9 How many sumps on site are included in the integrity test schedule?
10 How many of these sumps are integrity tested within the test schedule?

Please list any sump integrity failures in table B1

- 11 Do all sumps and chambers have high level liquid alarms?
12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?
13 Is the Fire Water Retention Pond included in your integrity test programme?

Yes	
Other (2 Yearly)	
Yes	
8	
0	All bunds will be tested in 2014
27	This includes barrel trays located within workshops
No	
NA	
NA	
NA	

NA	
NA	
SELECT	

Table B1: Summary details of bund /containment structure integrity test

Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT					SELECT			SELECT	SELECT		SELECT		
	SELECT					SELECT			SELECT	SELECT		SELECT		

* Capacity required should comply with 25% or 110% containment rule as detailed in your licence

Has integrity testing been carried out in accordance with licence requirements and are all structures tested in line with BS8007/EPA Guidance?

16 Are channels/transfer systems to remote containment systems tested?

17 Are channels/transfer systems compliant in both integrity and available volume?

[bundings and storage guidelines](#)

SELECT	
SELECT	
SELECT	

Commentary

Pipeline/underground structure testing

Are you required by your licence to undertake integrity testing* on underground structures e.g. pipelines or sumps etc ? If yes please fill out table 2 below listing all

1 underground structures and pipelines on site **which failed the integrity test and all which have not been tested within the integrity test period as specified**

2 Please provide integrity testing frequency period

*please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)

Yes	
3 years	

Table B2: Summary details of pipeline/underground structures integrity test

Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT				SELECT

Please use commentary for additional details not answered by tables/ questions above

Groundwater/Soil monitoring template	Lic No:	P0500-01	Year	2013

Comments			
1 Are you required to carry out groundwater monitoring as part of your licence requirements?	no		Please provide an interpretation of groundwater monitoring data in the interpretation box below or if you require additional space please include a groundwater/contaminated land monitoring results interpretaion as an additional section in this AER
2 Are you required to carry out soil monitoring as part of your licence requirements?	no		
3 Do you extract groundwater for use on site? If yes please specify use in comment section	no	Small scale domestic use.	
4 Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below. Groundwater monitoring template	NA		Please enter interpretation of data here
5 Is the contamination related to operations at the facility (either current and/or historic)	NA		
6 Have actions been taken to address contamination issues?If yes please summarise remediation strategies proposed/undertaken for the site	NA		
7 Please specify the proposed time frame for the remediation strategy	NA		
8 Is there a licence condition to carry out/update ELRA for the site?	NA		
9 Has any type of risk assesment been carried out for the site?	NA		
10 Has a Conceptual Site Model been developed for the site?	NA		
11 Have potential receptors been identified on and off site?	NA		
12 Is there evidence that contamination is migrating offsite?	NA		

Table 1: Upgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+	unit	GTV's*	SELECT**	Upward trend in pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

.+ where average indicates arithmetic mean

.++ maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

Table 2: Downgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	SELECT**	Upward trend in yearly average pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

Groundwater/Soil monitoring template		Lic No:	P0500-01	Year	2013															
*please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA.		Groundwater monitoring template																		
More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA published guidance (see the link in G31)		Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA 2013).																		
**Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS), If the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)		<table> <tr> <td>Groundwater</td> <td>Drinking water</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Surface water EQS</td> <td>regulations</td> <td>(private supply)</td> <td>Drinking water (public supply) standards</td> <td>Interim Guideline Values (IGV)</td> </tr> <tr> <td></td> <td>GTV's</td> <td>standards</td> <td></td> <td></td> </tr> </table>				Groundwater	Drinking water				Surface water EQS	regulations	(private supply)	Drinking water (public supply) standards	Interim Guideline Values (IGV)		GTV's	standards		
Groundwater	Drinking water																			
Surface water EQS	regulations	(private supply)	Drinking water (public supply) standards	Interim Guideline Values (IGV)																
	GTV's	standards																		

Table 3: Soil results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
							SELECT
							SELECT

Where additional detail is required please enter it here in 200 words or less

Environmental Liabilities template	Lic No:	P0500-01	Year	2013

[Click here to access EPA guidance on Environmental Liabilities and Financial provision](#)

		Commentary	
1	ELRA initial agreement status	Not a Licence Requirement	
2	ELRA review status	NA	
3	Amount of Financial Provision cover required as determined by the latest ELRA	NA	
4	Financial Provision for ELRA status	NA	
5	Financial Provision for ELRA - amount of cover	NA	
6	Financial Provision for ELRA - type	NA	
7	Financial provision for ELRA expiry date	NA	
8	Closure plan initial agreement status	NA	Internal Budget Provision
9	Closure plan review status	NA	Internal Budget Provision
10	Financial Provision for Closure status	NA	Internal Budget Provision
11	Financial Provision for Closure - amount of cover	NA	Internal Budget Provision
12	Financial Provision for Closure - type	NA	Internal Budget Provision
13	Financial provision for Closure expiry date	NA	

Environmental Management Programme/Continuous Improvement Programme template				Lic No:	P0500-01	Year	2013

Highlighted cells contain dropdown menu click to view		Additional Information	
1	Do you maintain an Environmental Mangement System (EMS) for the site. If yes, please detail in additional information	Yes	Internal unaccredited EMS
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site	Yes	
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements	Yes	
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence	Yes	

Environmental Management Programme (EMP) report

Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
Reduction of emissions to Air	Training.Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Deploy Hydraulic Harrows at dust sensitive areas Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations. □	90	In total 38 Personnel received training in 2013. Hydraulic harrows were deployed at dust sensitive areas. Due to the particularly good year headland peat was collected at six bog areas in 2013.	Section Head	Reduced emissions
Waste reduction/Raw material usage efficiency	Waste Streamlining.It is planned to continue with and where possible improve the current waste management service provided by AES Ltd	100	Installed a waste management system. Quarterly waste reports are returned for records/filing and waste streams are segregated on site to maximise recycling potential.	Individual	Improved Environmental Management Practices
Reduction of emissions to Water	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.	90	In total 38 Personnel received training in 2012. All ponds were cleand twice as per licence condition.	Section Head	Reduced emissions
Silt Pond Upgrade	All Silt Ponds to be brought to design specification.	70	Pond extension work was ongoing with an additional 6000m3 capacity provided for.	Individual	Reduced emissions

Environmental Management Programme/Continuous Improvement Programme template				Lic No:	P0500-01	Year	2013
Waste reduction/Raw material usage efficiency	Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.	100	In total 182.62 tonnes were sent off site for recycling. Procurement also exploring the possibility of securing further recyclers.	Individual	Reduced emissions		
Septic Tank Assessments	Carry out remedial works on septic tanks identified as requiring attention.	0	Other than licence bi-annual inspections no assessments carried out as no remediation works required.	Individual	Reduced emissions		
Energy Efficiency/Utility conservation	As part of an energy management process, a review of energy aspects will take place identifying the significant energy users of the licensee.	60	All electrical and fuel cost are being monitored and tracked, with a view to reducing consumption. Procurement now specify fuel efficient plant and equipment. Add Blue also being used to improve efficiency and emissions on tractors.	Section Head	Improved Environmental Management Practices		

Noise monitoring summary report

Lic No: P0500-01

Year

2013

1 Was noise monitoring a licence requirement for the AER period?

No

If yes please fill in table N1 noise summary below

2 Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?

Noise
Guidance
note NG4

NA

3 Does your site have a noise reduction plan

NA

4 When was the noise reduction plan last updated?

Enter date

5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

NA

Table N1: Noise monitoring summary

Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA _{eq}	LA ₉₀	LA ₁₀	LA _{max}	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is site compliant with noise limits (day/evening/night)?
								SELECT	SELECT		SELECT

*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

SELECT

** please explain the reason for not taking action/resolution of noise issues?

Any additional comments? (less than 200 words)

Resource Usage/Energy efficiency summary

Lic No:

P0500-01

Year

2013

Additional information

- 1 When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below
- Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information
- 2 Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information
- 3

Enter date of audit	
Yes	
SELECT	

Table R1 Energy usage on site				
Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*
Total Energy Used (MWHrs)	12057	18429.48	380	52
Total Energy Generated (MWHrs)				
Total Renewable Energy Generated (MWHrs)				
Electricity Consumption (MWHrs)	802	769.334	380	-4
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)				
Light Fuel Oil (m3)	1104	1736.36	380	57
Natural gas (m3)				
Coal/Solid fuel (metric tonnes)	7.33	3.3	380	-55
Peat (metric tonnes)				
Renewable Biomass				
Renewable energy generated on site				

* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site					Water Emissions	Water Consumption
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m ³ /yr):	Volume used i.e not discharged to environment e.g. released as steam m3/yr
Groundwater						Unaccounted for Water:
Surface water						
Public supply						
Recycled water						
Total						

* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R3 Waste Stream Summary					
	Total	Landfill	Incineration	Recycled	Other
Hazardous (Tonnes)	6022	0	0	6.22	
Non-Hazardous (Tonnes)	887.99	31.03	0	313.04	543.92

Resource Usage/Energy efficiency summary	Lic No:	P0500-01	Year	2013

Table R4: Energy Audit finding recommendations								
Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
			SELECT					
			SELECT					
			SELECT					

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology					
Primary Fuel					
Thermal Efficiency					
Unit Date of Commission					
Total Starts for year					
Total Running Time					
Total Electricity Generated (GWH)					
House Load (GWH)					
KWH per Litre of Process Water					
KWH per Litre of Total Water used on Site					

Lic No: P0500-01

Year

2013

Additional information

No

Table 1 Complaints summary			Brief description of complaint (Free txt <20 words)	Corrective action< 20 words	Resolution status	Resolution date	Further information
Date	Category	Other type (please specify)					
	SELECT				SELECT		
	SELECT				SELECT		
	SELECT				SELECT		
	SELECT				SELECT		
	SELECT				SELECT		
Total complaints open at start of reporting year	0						
Total new complaints received during reporting year	0						
Total complaints closed during reporting year	0						
Balance of complaints end of reporting year	0						

Incidents	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
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86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

Yes

What is an incident

[illegible]

WASTE SUMMARY	Lic No:	P0500-01	Year	2013

Table 4 Environmental monitoring-landfill only [Landfill Manual-Monitoring Standards](#)

Was meteorological monitoring in compliance with Landfill Directive (LD) standard in reporting year +	Was leachate monitored in compliance with LD standard in reporting year	Was Landfill Gas monitored in compliance with LD standard in reporting year	Was SW monitored in compliance with LD standard in reporting year	Have GW trigger levels been established	Were emission limit values agreed with the Agency (ELVs)	Was topography of the site surveyed in reporting year	Has the statement under S53(A)(5) of WMA been submitted in reporting year	Comments

.-+ please refer to Landfill Manual linked above for relevant Landfill Directive monitoring standards

Table 5 Capping-Landfill only

Area uncapped*	Area with temporary cap	Area with final cap to LD Standard m2 ha, a	Area capped other	Area with waste that should be permanently capped to date under licence	What materials are used in the cap	Comments
SELECT UNIT	SELECT UNIT					

*please note this includes daily cover area

Table 6 Leachate-Landfill only

9 Is leachate from your site treated in a Waste Water Treatment Plant?

SELECT

10 Is leachate released to surface water? If yes please complete leachate mass load information below

SELECT

Volume of leachate in reporting year(m3)	Leachate (BOD) mass load (kg/annum)	Leachate (COD) mass load (kg/annum)	Leachate (NH4) mass load (kg/annum)	Leachate (Chloride) mass load kg/annum	Leachate treatment on-site	Specify type of leachate treatment	Comments

Please ensure that all information reported in the landfill gas section is consistent with the Landfill Gas Survey submitted in conjunction with PRTR returns

Table 7 Landfill Gas-Landfill only

Gas Captured&Treated by LFG System m3	Power generated (MW / KWh)	Used on-site or to national grid	Was surface emissions monitoring performed during the reporting year?	Comments
			SELECT	

Comments on liner type

Boora
Decommissioning and Rehabilitation
AER Overview 2013.

Within the Boora licensed area (P0500-01) there were no bogs available for rehabilitation in 2013. Ongoing monitoring of cutaway within the Boora licensing area included a re-survey of Oughter and The Derries bogs.

Draft rehabilitation plans for the Boora bogs licensed area, including more detailed draft plans for each component bog unit were submitted to the EPA in 2013. The plans will be reviewed in Winter 2014/2015 and updated accordingly. The BNM Ecology Team (who plan and manage rehabilitation) met with the EPA inspectorate in 2013 to outline the general content and a review process was agreed. This will involve a biannual review and update of plans as well as more detail and finalisation of plans for sites that have been taken out of production.

The annual Biodiversity Action Plan review day was held in December 2013 and this included an update on progress of this plan, bog restoration and cutaway rehabilitation for a wide range on statutory and non-statutory consultees including members of the NPWS, BWI, Bord na Mona, Coillte, Inland Fisheries Ireland, An Taisce, IPCC, Irish Red Grouse Association, Irish Wildlife Trust, NARGC, local game councils, Midland Regional Planning Authority as well as a range of local community groups and Heritage Officers from counties Laois, Offaly, Kildare, Roscommon, Longford, Meath, Galway, Westmeath and Dublin.

The Restoration and Aftercare Plans for the Boora Group of Bogs was submitted to the Agency in April 2013.

A copy of our Biodiversity Action Plan is available to view and download at <http://www.bordnamona.ie/our-company/biodiversity/>

Bord na Mona Boora	
IPPC Licence P0500-01	

Siltpond Monitoring Frequency & Results

X	Y	Bog	SW	Monitoring	Sampled	pH	SS	TS	Ammonia	TP	COD	Colour
213631.82	220692.54	Noggusboy	SW 10	Q1 13	27/03/2013	7.9	30	250	1.3	0.05	35	95
221729.61	226112.15	Pollagh	SW 17A	Q1 13	27/03/2013	7.8	48	390	0.35	0.05	39	54
224321.91	224780.07	Kilaranny	SW 24	Q1 13	27/03/2013	7.6	5	286	0.16	0.05	61	222
208127.88	210599.82	Galros	SW 32	Q1 13	27/03/2013	8	5	388	0.77	0.05	25	46
217008.23	222986.75	Turraun	SW-15	Q2 13	27/06/2013	7.7	5	480	0.14	0.05	53	57
236128.81	221965.17	Derryclure	SW-28	Q2 13	27/06/2013	7.9	5	386	3.4	0.05	36	34
236939.60	220629.01	Derryclure	SW-27	Q2 13	27/06/2013	7.9	8	450	0.18	0.05	50	68
219056.10	234057.41	Bellair North	SW-37	Q2 13	27/06/2013	7.4	5	262	1	0.05	104	335
204681.49	214416.93	Clongawney	SW-1	Q3 13	26/09/2013	7.7	5	326	0.97	0.05	50	117
205641.50	213067.71	Clongawney	SW-3	Q3 13	26/09/2013	7.9	5	284	0.03	0.06	56	142
206319.95	215656.92	Clongawney	SW-4	Q3 13	26/09/2013	7.4	5	456	1.2	0.07	53	81
207679.57	215615.99	Clongawney	SW-5	Q3 13	19/08/2013	7.9	9	342	0.91	0.05	57	84
208818.04	215648.99	Drinagh	SW-7	Q4 13	09/12/2013	No flow						
212017.45	214103.39	Drinagh	SW-8	Q4 13	09/12/2013	7.8	5	320	3.4	0.05	44	130
212352.39	217427.89	Drinagh	SW-9	Q4 13	09/12/2013	7.2	5	286	0.02	0.05	55	83
212948.34	217756.09	Derrybrat	SW-9A	Q4 13	09/12/2013	7.9	5	358	0.31	0.05	32	76

Licence: P0500-01															
Works: Boora															
Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9	
Jan	129	65	0	0	0	0	0	47	69	0	0	38	21	20	
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Oct	12	15	0	0	0	0	0	0	0	69	0	0	0	0	
Nov	10	15	0	0	0	0	0	0	0	70	0	0	0	0	
Dec	64	70	26	0	0	0	0	89	0	78	55	40	63	93	
Note: 0 denotes no flow at emission point on day of sampling															



| PRTR# : P0500 | Facility Name : Bord Na Mona Energy Limited | Filename : P0500_2013(1).xls | Return Year : 2013 |

31/03/2014 10:46

[Guidance to completing the PRTR workbook](#)

AER Returns Workbook

Version 1.1.18

REFERENCE YEAR	2013

1. FACILITY IDENTIFICATION

Parent Company Name	Bord Na Mona Energy Limited
Facility Name	Bord Na Mona Energy Limited
PRTR Identification Number	P0500
Licence Number	P0500-01

Waste or IPPC Classes of Activity

No.	class_name
1.4	The extraction of peat in the course of business which involves an area exceeding 50 hectares.

Address 1	Boora
Address 2	Leabeg
Address 3	Tullamore
Address 4	Co Offaly
	Offaly
Country	Ireland
Coordinates of Location	-7.72946 53.2273
River Basin District	IEGBNISH
NACE Code	0892
Main Economic Activity	Extraction of peat
AER Returns Contact Name	Enda McDonagh
AER Returns Contact Email Address	enda.mcdonagh@bnm.ie
AER Returns Contact Position	Head of Environment
AER Returns Contact Telephone Number	057 9345911
AER Returns Contact Mobile Phone Number	086 2370816
AER Returns Contact Fax Number	057 9345160
Production Volume	996952.0
Production Volume Units	tonnes
Number of Installations	13
Number of Operating Hours in Year	2232
Number of Employees	124
User Feedback/Comments	In accordance with licence condition 6.2 of Technical Amendment A, quarterly sampling is now rotated every quarter and therefore suspended solids results are not factored into loading.
Web Address	www.bnm.ie

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

[Guidance on waste imported/accepted onto site](#)

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	No

This question is only applicable if you are an IPPC or Quarry site

31/03/2014 10:47

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Page 1 of 1

4.2 RELEASES TO WATERS [Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord Na Mona Energy Limited | Filename : P0500_2013(1).xls | Return Year : 2013 |

31/03/2014 10:48

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only co

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		M/C/E	Method Used		QUANTITY			
No. Annex II	Name		Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		M/C/E	Method Used		QUANTITY			
No. Annex II	Name		Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		M/C/E	Method Used		QUANTITY			
Pollutant No.	Name		Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
240	Suspended Solids	E	OTH	G/19 Based on ALPHA,1998,20th Edition, Method 2540D	Sw 7 10996.73	10996.73	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

31/03/2014 10:49

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

[PRTR# : P0500 | Facility Name : Bord Na Mona Energy Limited | Filename : P0500_2013(1).xls | Return Year : 2013]

31/03/2014 10:50

Please enter all quantities on this sheet in Tonnes

16

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste : Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste : Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	01 01 02	No	542.92	wastes from mineral non-metalliferous excavation	D1	E	Volume Calculation	Onsite of generati	Bord na Mona Boora,P0500-01	Boora,Leabeg,Tullamore,Co Offaly,Ireland		
Within the Country	02 01 04	No	182.62	waste plastics (except packaging)	R3	M	Weighed	Offsite in Ireland	Leinster Environmental Ltd,WP 2008/06	Haggardstown,Dundalk,Co Louth,,Ireland		
To Other Countries	13 02 05	Yes	4.92	mineral-based non-chlorinated engine, gear and lubricating oils	R1	C	Volume Calculation	Abroad	Envva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,,,Belgium	Houthalen,Belgium,,,,Belgium
Within the Country	15 01 03	No	4.04	wooden packaging absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	R1	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
To Other Countries	15 02 02	Yes	0.74		R1	C	Volume Calculation	Abroad	Envva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	Lindenschmidt,Reg no E97095037,Kreuztal,,,,,Germany	Kreuztal,,,,,Germany
To Other Countries	16 01 07	Yes	0.3	oil filters	R4	C	Volume Calculation	Abroad	Envva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,,,Belgium	Houthalen,Belgium,,,,Belgium
To Other Countries	16 06 01	Yes	1.91	lead batteries	R6	M	Weighed	Abroad	Envva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	Campine Recycling,MLAV/05-173/GVDA,Beerse,,,,,Belgium	Beerse,,,,,Belgium
Within the Country	17 04 07	No	125.22	mixed metals	R4	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	17.9	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	11.53	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 01 21	Yes	0.072	fluorescent tubes and other mercury-containing waste	R13	M	Weighed	Offsite in Ireland	Irish Lamp Recycling ,WFP-KE-08-0348-01	Athy,,,,Kildare,Ireland	Irish Lamp Recycling,WFP-KE-08-0348-01,Athy,,,,Kildare,Ireland	Athy,,,,Kildare,Ireland
Within the Country	16 02 14	No	0.32	discarded equipment other than those mentioned in 16 02 09 to 16 02 13	R4	M	Weighed	Offsite in Ireland	KMK Recycling,WCP-OY-08-0607-01	Cappincur,Daingean Rd,Tullamore,,Ireland		
Within the Country	20 01 39	No	1.6	plastics	R3	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		

* Select a row by double-clicking the Description of Waste then click the delete button

Facility Information Summary	
AER Reporting Year	2014
Licence Register Number	P0500-01
Name of site	Bord na Mona Boora
Site Location	Leabeg, Boora, Tullamore, Co Offaly
NACE Code	0892
Class/Classes of Activity	1.4
National Grid Reference (6E, 6 N)	180050, 319540
A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year and an overview of compliance with your licence listing all <u>exceedances of licence limits (where applicable)</u> and what they relate to e.g. <u>air</u>, <u>water</u>, <u>noise</u>. Activities on site can be divided into two components, firstly the milling, harrowing, ridging and harvesting of peat into stockpiles and secondly the transportation of that peat via an internal rail network to the Power Station and lorry outloading facilities. Production achieved was approximately 712567 tonnes. Infrastructurally, there was no new bog development, however previous development at Killaranny bog was completed during 2014. There were 2 non-compliances during the reporting period, one at the composite sampler and one associated with the quarter grab sampling regime, both related to suspended solids. Dust monitoring was fully compliant for the reporting period. There were no environmental complaints received during 2014. In relation to silt pond cleaning, 100% of ponds received two cleanings. Inspections dictating if a pond required further cleaning. Silt pond upgrade work was ongoing during 2014 with approximately 4255 m3 of additional silt pond capacity achieved. An energy efficient initiative was used in the selection process prior to the leasing of four new leased lorries. Decommissioning works included the lifting, refurbishing and redeployment of rail line. Rehabilitation works are described in an attachment.	

Declaration:

All the data and information presented in this report has been checked and certified as

	
Signature Group/Facility manager (or nominated, suitably qualified and	Date

AIR-summary template

Lic No:

#REF!

Year

#REF!

Answer all questions and complete all tables where relevant

- 1 Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If **you do not have** licenced emissions and **do not complete a solvent management plan** (table A4 and A5) you do not need to complete the tables

Additional information	
No	Fugitive Dust Monitoring

Periodic/Non-Continuous Monitoring

- 2 Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below
- 3 Was all monitoring carried out in accordance with EPA guidance note AG2 and using the basic air monitoring checklist? [Basic air monitoring checklist](#) [AGN2](#)

No	
Yes	

Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision thereof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments - reason for change in % mass load from previous year if applicable
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		

Note 1: Volumetric flow shall be included as a reportable parameter

AIR-summary template				Lic No:	#REF!	Year	#REF!
Continuous Monitoring							

4	Does your site carry out continuous air emissions monitoring?	No	
If yes please review your continuous monitoring data and report the required fields below in Table A2 and compare it to its relevant Emission Limit Value (ELV)			
5	Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below	No	
6	Do you have a proactive service agreement for each piece of continuous monitoring equipment?	No	
7	Did your site experience any abatement system bypasses? If yes please detail them in table A3 below	No	

Table A2: Summary of average emissions -continuous monitoring

Emission reference no:	Parameter/ Substance	ELV in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
DM01	Total Particulates	350mg/m2/day	56 days	Daily average < ELV	mg/m2/day	460	275	0	0	
DM02	Total Particulates	350mg/m2/day	84 days	Daily average < ELV	mg/m2/day	643	264	0	0	
DM03	Total Particulates	350mg/m2/day	84 days	Daily average < ELV	mg/m2/day	445	310	0	0	
	SELECT				SELECT					
	SELECT				SELECT					

note 1: Volumetric flow shall be included as a reportable parameter.

Table A3: Abatement system bypass reporting table

[Bypass protocol](#)

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

* this should include all dates that an abatement system bypass occurred

** an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

AIR-summary template		Lic No:	#REF!	Year	#REF!			
Solvent use and management on site								
8 Do you have a total Emission Limit Value of direct and fugitive emissions on site? if yes please fill out tables A4 and A5				SELECT				
Table A4: Solvent Management Plan Summary Total VOC Emission limit value		Solvent regulations Please refer to linked solvent regulations to complete table 5 and 6						
Reporting year	Total solvent input on site (kg)	Total VOC emissions to Air from entire site (direct and fugitive)	Total VOC emissions as %of solvent input	Total Emission Limit Value (ELV) in licence or any revision thereof	Compliance			
					SELECT			
					SELECT			
Table A5: Solvent Mass Balance summary								
	(I) Inputs (kg)	(O) Outputs (kg)						
Solvent	(I) Inputs (kg)	Organic solvent emission in waste	Solvents lost in water (kg)	Collected waste solvent (kg)	Fugitive Organic Solvent (kg)	Solvent released in other ways e.g.	Solvents destroyed onsite through	Total emission of Solvent to air (kg)
Total								

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)					Lic No:	#REF!	Year	#REF!

1 Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If **you do not have** licensed emissions you only need to complete table W1 and or W2 for storm water analysis and visual inspections

2 Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising only any evidence of contamination noted during visual inspections

Additional information	
Yes	
Yes	Monthly COD analysis of yard runoff is attached.

Table W1 Storm water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licensed Parameter	Monitoring date	ELV or trigger level in licence or any revision thereof*	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	

* trigger values may be agreed by the Agency outside of licence conditions

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
			SELECT		
			SELECT		

Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

3 Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below

Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas

4 require improvement in additional information box

[External /Internal](#)

[Lab Quality](#)

[checklist](#)

[Assessment of](#)

[results checklist](#)

Additional information	
Yes	
Yes	Surface water monitoring was carried out on a quarterly basis. The results of which are attached.

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereof ^{Note 2}	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source	Procedural reference standard number	Annual mass load (kg)	Comments
SW18 Oughter	Water	Suspended Solids	discrete		SELECT	35	75% of results < 35mg/l and no	80	mg/L	no (if no please	Gravimetric analysis	APHA / AWWA	Method 2540D	NA	Elevated ss during

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)

Lic No:

#REF!

Year

#REF!

Continuous monitoring

5 Does your site carry out continuous emissions to water/sewer monitoring?

Yes

Additional Information

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

6 Did continuous monitoring equipment experience downtime? If yes please record downtime in table W4 below

Yes

Down for 96 days over 365

7 Do you have a proactive service contract for each piece of continuous monitoring equipment on site?

Yes

Annual calibration schedule and trouble shooting service

8 Did abatement system bypass occur during the reporting year? If yes please complete table W5 below

NA

Table W4: Summary of average emissions -continuous monitoring

Emission reference no:	Emission released to	Parameter/ Substance	ELV or trigger values in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission for current reporting year (kg)	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments
SW7	Water	Suspended Solids	35mg/l	24 hour	All results < 1.5 times ELV, plus 8 from ten results must be < ELV	mg/L	18070	+64%	2304	0	Down time was primarily due to battery failure, no flow and frozen pipes. Mechanical failure and software issues also affected the samplers performance in 2014. All automatic samplers will be reviewed in 2015.
SW7	Water	Ammonia (as N)	NA	Weekly	NA	mg/L	417.54	+108%			The percentage increase can be attributed to 100% increase in measured flow, which greatly affects the annual loadings.
SW7	Water	Total phosphorus	NA	Weekly	NA	mg/L	31.7	+103%			The percentage increase can be attributed to 100% increase in measured flow, which greatly affects the annual loadings.
SW7	Water	COD	NA	Weekly	NA	mg/L	34449	+97%			The percentage increase can be attributed to 100% increase in measured flow, which greatly affects the annual loadings.
SW7	Water	volumetric flow	NA	24 hour	NA	m3/day	4098653	+112%			The percentage increase can be attributed to 100% increase in measured flow, which greatly affects the annual loadings.
SW7	Water	Total Dissolved Solids	NA	Weekly	NA	mg/L	776752	+76%			The percentage increase can be attributed to 100% increase in measured flow, which greatly affects the annual loadings.

note 1: Volumetric flow shall be included as a reportable parameter.

Table W5: Abatement system bypass reporting table

Date	Duration (hours)	Location	Resultant emissions	Reason for bypass	Corrective action*	Was a report submitted to the EPA?	When was this report submitted?
						SELECT	

*Measures taken or proposed to reduce or limit bypass frequency

Bund/Pipeline testing template	Lic No:	#REF!	Year	#REF!

Bund testing

dropdown menu click to see options

Additional information

Are you required by your licence to undertake integrity testing on bunds and containment structures ? If yes please fill out table B1 below listing all **new bunds and containment structures** on site, in addition to **all bunds which failed the integrity test-all bunding structures which failed including mobile bunds must be listed in the table below, please include all bunds outside the licenced testing period** (mobile bunds and chemstore included)

- 1
2 Please provide integrity testing frequency period
Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to "Chemstore" type units and mobile bunds)
3
4 How many bunds are on site?
5 How many of these bunds have been tested within the required test schedule?

6 How many mobile bunds are on site?
7 Are the mobile bunds included in the bund test schedule?
8 How many of these mobile bunds have been tested within the required test schedule?
9 How many sumps on site are included in the integrity test schedule?
10 How many of these sumps are integrity tested within the test schedule?
Please list any sump integrity failures in table B1
11 Do all sumps and chambers have high level liquid alarms?
12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?
13 Is the Fire Water Retention Pond included in your integrity test programme?

Yes	
Other (2 Yearly)	
Yes	
9	
8	All Tested passed
27	This includes barrel trays located within workshops
No	
NA	
NA	
NA	
SELECT	
SELECT	
SELECT	

Table B1: Summary details of bund /containment structure integrity test														
Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT					SELECT			SELECT	SELECT		SELECT		
	SELECT					SELECT			SELECT	SELECT		SELECT		

* Capacity required should comply with 25% or 110% containment rule as detailed in your licence

Has integrity testing been carried out in accordance with licence requirements and are all structures tested in line with BS8007/EPA Guidance?

[bundings and storage guidelines](#)

- 15
16 Are channels/transfer systems to remote containment systems tested?
17 Are channels/transfer systems compliant in both integrity and available volume?

SELECT	
SELECT	
SELECT	

Commentary

Pipeline/underground structure testing

Are you required by your licence to undertake integrity testing* on underground structures e.g. pipelines or sumps etc ? If yes please fill out table 2 below listing all

- 1 underground structures and pipelines on site **which failed the integrity test and all which have not been tested within the integrity test period as specified**
2 Please provide integrity testing frequency period

*please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)

Yes	Tested and passed in 2013
3 years	

Table B2: Summary details of pipeline/underground structures integrity test											
Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT				SELECT

Please use commentary for additional details not answered by tables/ questions above

Groundwater/Soil monitoring template	Lic No:	#REF!	Year	#REF!

Comments			
1 Are you required to carry out groundwater monitoring as part of your licence requirements?	no		Please provide an interpretation of groundwater monitoring data in the interpretation box below or if you require additional space please include a groundwater/contaminated land monitoring results interpretaion as an additional section in this AER
2 Are you required to carry out soil monitoring as part of your licence requirements?	no		
3 Do you extract groundwater for use on site? If yes please specify use in comment section	no	Domestic use only	
4 Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Groundwater monitoring template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below.	NA		Please enter interpretation of data here
5 Is the contamination related to operations at the facility (either current and/or historic)	NA		
6 Have actions been taken to address contamination issues?If yes please summarise remediation strategies proposed/undertaken for the site	NA		
7 Please specify the proposed time frame for the remediation strategy	NA		
8 Is there a licence condition to carry out/update ELRA for the site?	NA		
9 Has any type of risk assesment been carried out for the site?	NA		
10 Has a Conceptual Site Model been developed for the site?	NA		
11 Have potential receptors been identified on and off site?	NA		
12 Is there evidence that contamination is migrating offsite?	NA		

Table 1: Upgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+	unit	GTV's*	SELECT**	Upward trend in pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

.+ where average indicates arithmetic mean

.++ maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

Table 2: Downgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	SELECT**	Upward trend in yearly average pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

Groundwater/Soil monitoring template		Lic No:	#REF!	Year	#REF!
*please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA.			Groundwater monitoring template		
More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA published guidance (see the link in G31)			Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA 2013).		
**Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS), If the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)			Groundwater regulations	Drinking water (private supply) standards	Drinking water (public supply) standards
	Surface water EQS	GTV's	Interim Guideline Values (IGV)		

Groundwater/Soil monitoring template	Lic No:	#REF!	Year	#REF!

Table 3: Soil results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
							SELECT
							SELECT

Where additional detail is required please enter it here in 200 words or less

Environmental Liabilities template		Lic No:	#REF!	Year	#REF!

[Click here to access EPA guidance on Environmental Liabilities and Financial provision](#)

		Commentary	
1	ELRA initial agreement status	Not a Licence Requirement	
2	ELRA review status	NA	
3	Amount of Financial Provision cover required as determined by the latest ELRA	NA	
4	Financial Provision for ELRA status	NA	
5	Financial Provision for ELRA - amount of cover	NA	
6	Financial Provision for ELRA - type	NA	
7	Financial provision for ELRA expiry date	NA	
8	Closure plan initial agreement status	NA	Internal Budget Provision
9	Closure plan review status	NA	Internal Budget Provision
10	Financial Provision for Closure status	NA	Internal Budget Provision
11	Financial Provision for Closure - amount of cover	NA	Internal Budget Provision
12	Financial Provision for Closure - type	NA	Internal Budget Provision
13	Financial provision for Closure expiry date	NA	

Environmental Management Programme/Continuous Improvement Programme template		Lic No:	#REF!	Year	#REF!
Highlighted cells contain dropdown menu click to view		Additional Information			
1	Do you maintain an Environmental Mangement System (EMS) for the site. If yes, please detail in additional information	Yes	Internal unaccredited EMS		
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site	Yes			
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements	Yes			
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence	Yes			

Environmental Management Programme (EMP) report

Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
Reduction of emissions to Air	Training.Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Deploy Hydraulic Harrows at dust sensitive areas Headland Peat Collection. Continue with the	90	In total 71 Personnel received training in 2014. Training now also includes an energy awareness component. Ten hydraulic harrows were depolyed at five production areas including all dust sensitive areas. Headland peat was collected at six production areas and returned as part of overall production.	Section Head	Improved Environmental Management Practices
Waste reduction/Raw material usage efficiency	Waste Streamlining .It is planned to continue with and where possible improve the current waste management service provided by AES Ltd	100	Installed a waste management system. Quarterly waste reports are returned for records/filing and waste streams are segregated on site to maximise recycling	Section Head	Improved Environmental Management Practices
Reduction of emissions to Water	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.	90	In total 71 Personnel received training in 2014. All silt ponds were cleand twice as per licence condition.	Individual	Improved Environmental Management Practices

Environmental Management Programme/Continuous Improvement Programme template					Lic No:	#REF!	Year	#REF!
Silt Pond Upgrade	All Silt Ponds to be brought to design specification.	70	Pond extension work was ongoing with an additional 4255m3 capacity provided for in 2014.		Individual			Improved Environmental Management Practices
Waste reduction/Raw material usage efficiency	Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.	100	In total 297.72 tonnes were sent off site for recycling. Procurement also exploring the possibility of securing further recyclers.		Section Head			Improved Environmental Management Practices
Energy Efficiency/Utility conservation	As part of an energy management process, a review of energy aspects will take place identifying the significant energy users of the licensee. An Energy Awareness Campaign to be commenced, with all personnel especially Team Leaders and Supervisors to be targeted.	60	All electrical and fuel cost are being monitored and tracked, with a view to reducing consumption. Procurement now specify fuel efficient plant and equipment. Add Blue also being used to improve efficiency and emissions on tractors. A new pumping station at Bellair is currently being planned which will include an energy efficient pump and control panel. The Energy Awareness Campaign was launched during 2014		SELECT			Improved Environmental Management Practices

Noise monitoring summary report	Lic No:	#REF!	Year	#REF!

1 Was noise monitoring a licence requirement for the AER period?
If yes please fill in table N1 noise summary below

No

2 Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?

[Noise Guidance note NG4](#)
NA

3 Does your site have a noise reduction plan

NA

4 When was the noise reduction plan last updated?

Enter date

5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

NA

Table N1: Noise monitoring summary

Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA _{eq}	LA ₉₀	LA ₁₀	LA _{max}	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is <u>site</u> compliant with noise limits (day/evening/night)?
								SELECT	SELECT		SELECT

*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

SELECT

** please explain the reason for not taking action/resolution of noise issues?

Any additional comments? (less than 200 words)

Resource Usage/Energy efficiency summary	Lic No:	#REF!	Year	#REF!

		Additional information	
1	When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below	Jul-13	
2	Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information	Yes	
3	Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information	No	

Table R1 Energy usage on site				
Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*
Total Energy Used (MWHrs)	18429.48	14172.25	-28%	-23%
Total Energy Generated (MWHrs)				
Total Renewable Energy Generated (MWHrs)				
Electricity Consumption (MWHrs)	769.334	718.29		-6.60%
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)				
Light Fuel Oil (m3)	1736.36	1322.1		-23.85%
Natural gas (m3)				
Coal/Solid fuel (metric tonnes)	3.3	4.07		+23%
Peat (metric tonnes)				
Renewable Biomass				
Renewable energy generated on site				

* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site					Water Emissions	Water Consumption	
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m ³ /yr):	Volume used i.e not discharged to environment e.g. released as steam m3/yr	Unaccounted for Water:
Groundwater							
Surface water							
Public supply							
Recycled water							
Total							

* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R3 Waste Stream Summary					
	Total	Landfill	Incineration	Recycled	Other
Hazardous (Tonnes)	5.79	0	0	5.79	0
Non-Hazardous (Tonnes)	2003.45	30.48	0	367.1	1605.87

Resource Usage/Energy efficiency summary	Lic No:	#REF!	Year	#REF!

Table R4: Energy Audit finding recommendations								
Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
			SELECT					
			SELECT					
			SELECT					

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology					
Primary Fuel					
Thermal Efficiency					
Unit Date of Commission					
Total Starts for year					
Total Running Time					
Total Electricity Generated (GWH)					
House Load (GWH)					
KWH per Litre of Process Water					
KWH per Litre of Total Water used on Site					

Lic No:

#REF!

Year

#REF!

Additional information

No

Table 1 Complaints summary			Brief description of complaint (Free txt <20 words)	Corrective action< 20 words	Resolution status	Resolution date	Further information
Date	Category	Other type (please specify)					
	SELECT				SELECT		
	SELECT				SELECT		
	SELECT				SELECT		
	SELECT				SELECT		
	SELECT				SELECT		
Total complaints open at start of reporting year		0					
Total new complaints received during reporting year		0					
Total complaints closed during reporting year		0					
Balance of complaints end of reporting year		0					

Incidents

Yes

What is an incident

[illegible]

WASTE SUMMARY	Lic No:	#REF!	Year	#REF!

Table 4 Environmental monitoring-landfill only [Landfill Manual-Monitoring Standards](#)

Was meteorological monitoring in compliance with Landfill Directive (LD) standard in reporting year +	Was leachate monitored in compliance with LD standard in reporting year	Was Landfill Gas monitored in compliance with LD standard in reporting year	Was SW monitored in compliance with LD standard in reporting year	Have GW trigger levels been established	Were emission limit values agreed with the Agency (ELVs)	Was topography of the site surveyed in reporting year	Has the statement under S53(A)(5) of WMA been submitted in reporting year	Comments

.-+ please refer to Landfill Manual linked above for relevant Landfill Directive monitoring standards

Table 5 Capping-Landfill only

Area uncapped*	Area with temporary cap	Area with final cap to LD Standard m2 ha, a	Area capped other	Area with waste that should be permanently capped to date under licence	What materials are used in the cap	Comments
SELECT UNIT	SELECT UNIT					

*please note this includes daily cover area

Table 6 Leachate-Landfill only

9 Is leachate from your site treated in a Waste Water Treatment Plant?

SELECT

10 Is leachate released to surface water? If yes please complete leachate mass load information below

SELECT

Volume of leachate in reporting year(m3)	Leachate (BOD) mass load (kg/annum)	Leachate (COD) mass load (kg/annum)	Leachate (NH4) mass load (kg/annum)	Leachate (Chloride) mass load kg/annum	Leachate treatment on-site	Specify type of leachate treatment	Comments

Please ensure that all information reported in the landfill gas section is consistent with the Landfill Gas Survey submitted in conjunction with PRTR returns

Table 7 Landfill Gas-Landfill only

Gas Captured&Treated by LFG System m3	Power generated (MW / KWh)	Used on-site or to national grid	Was surface emissions monitoring performed during the reporting year?	Comments
			SELECT	

Comments on liner type

Boora
Decommissioning and Rehabilitation
AER Overview 2014.

Within the Boora licensed area (P0500-01) there was no entire bog units available for rehabilitation in 2014. Ongoing monitoring of cutaway areas was carried out within the Boora area and Derrybrat and Clongawney Bogs were re-surveyed.

Draft rehabilitation plans for the Boora bogs licensed area, including more detailed draft plans for each component bog unit were submitted to the EPA in 2013. The BNM Ecology Team (who plan and manage rehabilitation) met with the EPA inspectorate in 2013 to outline the general content of the rehab plans and a review process was agreed. This will involve a biannual review and update of plans as well as more detail and finalisation of plans for sites that have been taken out of production. The plans are currently under review (March-April 2015).

The annual Biodiversity Action Plan review day was held in February 2015 and this included an update on progress of this plan, bog restoration and cutaway rehabilitation for a wide range on statutory and non-statutory consultees including members of the EPA, NPWS, BWI, Bord na Mona, Coillte, Inland Fisheries Ireland, An Taisce, IPCC, Irish Red Grouse Association, Irish Wildlife Trust, NARGC, local game councils, Midland Regional Planning Authority as well as a range of local community groups and Heritage Officers from counties Laois, Offaly, Kildare, Roscommon, Longford, Meath, Galway, Westmeath and Dublin.

A copy of our Biodiversity Action Plan is available to view and download at <http://www.bordnamona.ie/our-company/biodiversity/>

Bord na Mona Boora		Siltpond Monitoring Frequency & Results											
IPPC Licence P0500-01													
X	Y	Bog	SW	Monitoring	Sampled	Suspended solids	Total solids	NH3-N	COD	Colour (True)	P04-P	pH	Total Phosphorous
213631.82	220692.54	Noggusboy	SW-10	Q1 14	31/03/2014	19	233	0.71	75	130	<0.01	7.4	<0.05
214515.48	219480.49	West Boora	SW-11	Q1 14	31/03/2014	10	342	0.77	111	193	<0.01	7.4	<0.05
215354.86	221941.82	Derries	SW-14	Q1 14	31/03/2014	<5	260	<0.02	111	306	<0.01	7.3	<0.05
214889.87	221778.27	Derries	SW-14A	Q1 14	31/03/2014	<5	178	0.44	108	411	<0.01	7.3	<0.05
219378.47	224050.10	Turraun	SW-16	Q2 14	26/06/2014	<5	392	2.1	29	111	0.02	7.2	<0.05
219721.73	224554.04	Pollagh	SW-17	Q2 14	26/06/2014	7	444	1.6	33	55	<0.01	7.7	<0.05
221729.61	226112.15	Pollagh	SW-17A	Q2 14	26/06/2014	29	328	3	75	155	<0.01	7.9	0.06
220331.44	222549.88	Oughter	SW-18	Q2 14	26/06/2014	80	514	0.26	99	73	0.01	7.4	0.07
214970.51	226491.33	Lemonaghan	SW-19B	Q3 14	30/09/2014	<5	412	0.18	35	54	<0.16	7.6	<0.05
218645.63	229597.18	Lemonaghan	SW-22	Q3 14	30/09/2014	<5	376	0.03	<10	44	<0.16	7.8	<0.05
216900.19	229545.11	Lemonaghan	SW-22A	Q3 14	30/09/2014	<5	210	1.5	38	84	<0.16	7.6	<0.05
216151.75	230069.09	Lemonaghan	SW-22B	Q3 14	30/09/2014	9	172	2.6	71	144	<0.16	7.2	0.07
217216.92	227527.32	Lemonaghan	SW-19	Q4 14	18/12/2014	14	192	0.66	59	183	<0.16	7.5	<0.05
215947.19	230315.10	Lemonaghan	SW-22C	Q4 14	18/12/2014	5	165	0.09	49	64	0.52	5	0.11
215079.20	231196.83	Lemonaghan	SW-22D	Q4 14	18/12/2014	<5	106	0.01	30	392	0.12	7.3	<0.05
218809.08	227041.46	Lemonaghan	SW-23	Q4 14	18/12/2014	11	217	0.03	41	72	0.5	6.7	0.06

Yard Discharge Results 2014															
Licence: P0500-01															
Works: Boora															
Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9	
Jan	56	45	62	0	0	0	0	0	0	34	45	0	0	0	
Feb	94	123		0	0	0	0	0	0	128	32	0	0	0	
Mar	42	44	18	0	0	0	0	0	0	21	34	0	0	0	
Apr	136	0	0	0	0	0	0	0	0	0	0	0	0	0	
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
June	0	0	46	0	0	0	0	0	0	0	0	0	0	0	
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Aug	0	10		0	0	0	0	0	0	0	0	122	0	41	
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Oct	18	31	179	0	0	0	0	54	0	50	0	0	0	0	
Nov	12	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Note: 0 denotes no flow at emission point on day of sampling															



Environmental Protection Agency

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2014.xls | Return Year : 2014 |

[Guidance to completing the PRTR workbook](#)

AER Returns Workbook

Version 1.1.18

REFERENCE YEAR	2014

1. FACILITY IDENTIFICATION

Parent Company Name	Bord na Mona Energy Limited
Facility Name	Bord na Mona Energy Limited Leabeg
PRTR Identification Number	P0500
Licence Number	P0500-01

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Boora Group
Address 2	c/o Boora Works
Address 3	Leabeg, Tullamore,
Address 4	
	Offaly
Country	Ireland
Coordinates of Location	-7.72946 53.2273
River Basin District	IEGBNISH
NACE Code	0892
Main Economic Activity	Extraction of peat
AER Returns Contact Name	Enda McDonagh
AER Returns Contact Email Address	enda.mcdonagh@bnm.ie
AER Returns Contact Position	Head of Environment
AER Returns Contact Telephone Number	057 9345911
AER Returns Contact Mobile Phone Number	086 2370816
AER Returns Contact Fax Number	057 9345160
Production Volume	712567.0
Production Volume Units	Tonnes
Number of Installations	13
Number of Operating Hours in Year	2232
Number of Employees	124
User Feedback/Comments	In accordance with licence condition 6.2 of Technical Amendment A, quarterly sampling is now rotated every quarter and therefore suspended solids results are not factored into loading.
Web Address	www.bnm.ie

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE[Guidance on waste imported/accepted onto site](#)

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	No

02/04/2015 09:19

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Page 1 of 1

4.2 RELEASES TO WATERS [Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2014.xls | Return Year : 2014 |

02/04/2015 09:19

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only co

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		Method Used			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		Method Used			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		Method Used			QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
240	Suspended Solids	E	OTH	G/19 Based on ALPHA,1998,20th Edition, Method 2540D	18071.0	18071.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2014.xls | R

02/04/2015 09:20

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
								0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.4 RELEASES TO LAND

[Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2014.xls | Return Year : 2014 |

02/04/2015 09:21

SECTION A : PRTR POLLUTANTS

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
Pollutant No.	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2014.xls | Return Year : 2014 |

02/04/2015 09:23

Please enter all quantities on this sheet in Tonnes

0

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste : Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste : Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	01 01 02	No	585.87	wastes from mineral non-metalliferous excavation	D1	E	Volume Calculation	Onsite of generatic	Bord na Mona Boora,P0500-01	Boora,Leabeg,Tullamore,Co Offaly,Ireland		
Within the Country	02 01 04	No	297.72	waste plastics (except packaging)	R3	M	Weighed	Offsite in Ireland	Leinster Environmental Ltd,WP 2008/06	Haggardstown,Dundalk,Co Louth,,Ireland		
To Other Countries	13 02 05	Yes	5.0	mineral-based non-chlorinated engine, gear and lubricating oils	R1	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,,,Belgium	Houthalen,Belgium,,,,Belgium
Within the Country	15 01 03	No	5.1	wooden packaging absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	R1	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
To Other Countries	15 02 02	Yes	0.15		R1	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	Lindenschmidt,Reg no E97095037,Kreuztal,,,,,Germany	Kreuztal,,,,,Germany
To Other Countries	16 01 07	Yes	0.64	oil filters	R4	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,,,Belgium	Houthalen,Belgium,,,,Belgium
Within the Country	17 04 07	No	64.28	mixed metals	R4	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	10.91	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	19.57	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		

* Select a row by double-clicking the Description of Waste then click the delete button

Facility Information Summary

AER Reporting Year	2015
Licence Register Number	P0500-01
Name of site	Bord na Mona Boora
Site Location	Leabeg, Boora, Tullamore, Co Offaly
NACE Code	0892
Class/Classes of Activity	1.4
National Grid Reference (6E, 6 N)	180050, 319540

A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year and an overview of compliance with your licence listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise.

Activities on site can be divided into two components, firstly the milling, harrowing, ridging and harvesting of peat into stockpiles and secondly the transportation of that peat via an internal rail network to the Power Station and lorry outloading facilities. Production achieved was approximately 469122 tonnes. Infrastructurally, there was no new bog development. Dust monitoring was fully compliant for the reporting period. There was one environmental complaint received during 2015. The high rainfall at the end of the year presented us with many challenges. In relation to silt pond cleaning, 97.66% of ponds received two cleanings inspections dictating if a pond required cleaning. Silt pond upgrade work was ongoing during 2015 with approximately 2170 m3 of additional silt pond capacity achieved. Decommissioning works included the lifting, refurbishing and redeployment of rail line. In September two Railway Bridges and one Pedestrian Bridge at Lumcloon were removed, these were no longer in use since the closure of the ESB Power Station at Ferbane. A new door was fitted at Lemonaghan Workshop which will conserve heat and improve security. There was reduced activity at Boora Workshop with the centralisation of activities to Blackwater.

Declaration:

All the data and information presented in this report has been checked and certified as being accurate. The quality of the information is assured to meet licence requirements.

Signature Group/Facility manager (or nominated, suitably qualified and experienced deputy)	 8/4/2016 Date

AIR-summary template

Lic No:

#REF!

Year

#REF!

Answer all questions and complete all tables where relevant

- 1 Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If **you do not have** licenced emissions and **do not complete a solvent management plan** (table A4 and A5) you do not need to complete the tables

Additional information	
No	Fugitive Dust Monitoring

Periodic/Non-Continuous Monitoring

- 2 Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below
- 3 Was all monitoring carried out in accordance with EPA guidance note AG2 and using the basic air monitoring checklist? [Basic air monitoring checklist](#) [AGN2](#)

No	
Yes	

Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision thereof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments - reason for change in % mass load from previous year if applicable
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		

Note 1: Volumetric flow shall be included as a reportable parameter

AIR-summary template				Lic No:	#REF!	Year	#REF!
Continuous Monitoring							

4	Does your site carry out continuous air emissions monitoring?	No	
	If yes please review your continuous monitoring data and report the required fields below in Table A2 and compare it to its relevant Emission Limit Value (ELV)		
5	Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below	No	
6	Do you have a proactive service agreement for each piece of continuous monitoring equipment?	No	
7	Did your site experience any abatement system bypasses? If yes please detail them in table A3 below	No	

Table A2: Summary of average emissions -continuous monitoring

Emission reference no:	Parameter/ Substance	ELV in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
DM01	Total Particulates	350mg/m2/day	84 days	Daily average < ELV	mg/m2/day	9940	172	0	0	
DM02	Total Particulates	350mg/m2/day	84 days	Daily average < ELV	mg/m2/day	11004	215	0	0	
DM03	Total Particulates	350mg/m2/day	84 days	Daily average < ELV	mg/m2/day	15652	317	0	0	
	SELECT				SELECT					
	SELECT				SELECT					

note 1: Volumetric flow shall be included as a reportable parameter.

Table A3: Abatement system bypass reporting table

[Bypass protocol](#)

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

* this should include all dates that an abatement system bypass occurred

** an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

AIR-summary template		Lic No:	#REF!	Year	#REF!			
Solvent use and management on site								
8 Do you have a total Emission Limit Value of direct and fugitive emissions on site? if yes please fill out tables A4 and A5				SELECT				
Table A4: Solvent Management Plan Summary Total VOC Emission limit value		Solvent regulations Please refer to linked solvent regulations to complete table 5 and 6						
Reporting year	Total solvent input on site (kg)	Total VOC emissions to Air from entire site (direct and fugitive)	Total VOC emissions as %of solvent input	Total Emission Limit Value (ELV) in licence or any revision thereof	Compliance			
					SELECT			
					SELECT			
Table A5: Solvent Mass Balance summary								
	(I) Inputs (kg)	(O) Outputs (kg)						
Solvent	(I) Inputs (kg)	Organic solvent emission in waste	Solvents lost in water (kg)	Collected waste solvent (kg)	Fugitive Organic Solvent (kg)	Solvent released in other ways e.g.	Solvents destroyed onsite through	Total emission of Solvent to air (kg)
							Total	

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)	Lic No:	#REF!	Year	#REF!

1 Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If **you do not have** licenced emissions you only need to complete table W1 and or W2 for storm water analysis and visual inspections

2 Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising only any evidence of contamination noted during visual inspections

Yes	Additional information	
	Monthly COD analysis of yard runoff is attached.	

Table W1 Storm water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licensed Parameter	Monitoring date	ELV or trigger level in licence or any revision thereof*	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	

*trigger values may be agreed by the Agency outside of licence conditions

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
			SELECT		
			SELECT		

Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

3 Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below

4 Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box

Yes	Additional information	
	Surface water monitoring was carried out on a quarterly basis. The results of which are attached.	

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereof ^{Note 2}	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source	Procedural reference standard number	Annual mass load (kg)	Comments

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)	Lic No:	#REF!	Year	#REF!

Continuous monitoring

5 Does your site carry out continuous emissions to water/sewer monitoring?

Yes	Additional Information

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

6 Did continuous monitoring equipment experience downtime? If yes please record downtime in table W4 below

Yes	Down for 105 days over 365

7 Do you have a proactive service contract for each piece of continuous monitoring equipment on site?

Yes	Annual calibration schedule and trouble shooting service

8 Did abatement system bypass occur during the reporting year? If yes please complete table W5 below

NA

Table W4: Summary of average emissions -continuous monitoring

Emission reference no:	Emission released to	Parameter/ Substance	ELV or trigger values in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission for current reporting year (kg)	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments
SW7	Water	Suspended Solids	35mg/l	24 hour	All results < 1.5 times ELV, plus 8 from ten results must be < ELV	mg/L	14118.36		2520	0	Down time primarily due to battery failure and flooding. The site experienced severe flooding during the year. This caused backflow which give a negative flow reading and seriously affected the efficiency of the sampling.
SW7	Water	Ammonia (as N)	NA	Weekly	NA	mg/L	203.03				
SW7	Water	Total phosphorus	NA	Weekly	NA	mg/L	16.7				
SW7	Water	COD	NA	Weekly	NA	mg/L	16112.99				
SW7	Water	volumetric flow	NA	24 hour	NA	m3/day	NA				Due to prolonged flooding the volumetric flow monitoring regime is unreliable and a proposal to introduce time based sampling is being considered
SW7	Water	Total Dissolved Solids	NA	Weekly	NA	mg/L	374325.27				

note 1: Volumetric flow shall be included as a reportable parameter.

Table W5: Abatement system bypass reporting table

Date	Duration (hours)	Location	Resultant emissions	Reason for bypass	Corrective action*	Was a report submitted to the EPA?	When was this report submitted?
						SELECT	

*Measures taken or proposed to reduce or limit bypass frequency

Bund/Pipeline testing template	Lic No:	#REF!	Year	#REF!

Bund testing

dropdown menu click to see options

Additional information

Are you required by your licence to undertake integrity testing on bunds and containment structures? If yes please fill out table B1 below listing all **new bunds and containment structures** on site, in addition to **all bunds which failed the integrity test-all bunding structures which failed including mobile bunds must be listed in the table below, please include all bunds outside the licenced testing period** (mobile bunds and chemstore included)

1 Please provide integrity testing frequency period

Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to

3 "Chemstore" type units and mobile bunds)

4 How many bunds are on site?

5 How many of these bunds have been tested within the required test schedule?

6 How many mobile bunds are on site?

7 Are the mobile bunds included in the bund test schedule?

8 How many of these mobile bunds have been tested within the required test schedule?

9 How many sumps on site are included in the integrity test schedule?

10 How many of these sumps are integrity tested within the test schedule?

Please list any sump integrity failures in table B1

11 Do all sumps and chambers have high level liquid alarms?

12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?

13 Is the Fire Water Retention Pond included in your integrity test programme?

Yes	
Other (2 Yearly)	
Yes	
9	1 additional bund to be included in future tests
8	All Tested passed
27	This includes barrel trays located within workshops
No	
NA	
NA	
NA	
SELECT	
SELECT	
SELECT	

Table B1: Summary details of bund /containment structure integrity test

Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT					SELECT			SELECT	SELECT		SELECT		
	SELECT					SELECT			SELECT	SELECT		SELECT		

* Capacity required should comply with 25% or 110% containment rule as detailed in your licence

Has integrity testing been carried out in accordance with licence requirements and are all structures tested

15 in line with BS8007/EPA Guidance?

[bundings and storage guidelines](#)

16 Are channels/transfer systems to remote containment systems tested?

17 Are channels/transfer systems compliant in both integrity and available volume?

Commentary	
SELECT	
SELECT	
SELECT	

Pipeline/underground structure testing

Are you required by your licence to undertake integrity testing* on underground structures e.g. pipelines or sumps etc? If yes please fill out table 2 below listing

1 all underground structures and pipelines on site **which failed the integrity test and all which have not been tested within the integrity test period as specified**

2 Please provide integrity testing frequency period

*please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)

Yes	Tested and passed in 2013
3 years	

Table B2: Summary details of pipeline/underground structures integrity test

Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT				SELECT

Please use commentary for additional details not answered by tables/ questions above

Groundwater/Soil monitoring template	Lic No:	#REF!	Year	#REF!

		Comments		
1	Are you required to carry out groundwater monitoring as part of your licence requirements?	no	Please provide an interpretation of groundwater monitoring data in the interpretation box below or if you require additional space please include a groundwater/contaminated land monitoring results interpretaion as an additional section in this AER	
2	Are you required to carry out soil monitoring as part of your licence requirements?	no		
3	Do you extract groundwater for use on site? If yes please specify use in comment section	no		Domestic use only
4	Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Groundwater monitoring template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below.	NA		
5	Is the contamination related to operations at the facility (either current and/or historic)	NA		
6	Have actions been taken to address contamination issues?If yes please summarise remediation strategies proposed/undertaken for the site	NA		
7	Please specify the proposed time frame for the remediation strategy	NA		
8	Is there a licence condition to carry out/update ELRA for the site?	NA		
9	Has any type of risk assesment been carried out for the site?	NA		
10	Has a Conceptual Site Model been developed for the site?	NA		
11	Have potential receptors been identified on and off site?	NA		
12	Is there evidence that contamination is migrating offsite?	NA		Please enter interpretation of data here

Table 1: Upgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+	unit	GTV's*	SELECT**	Upward trend in pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

.+ where average indicates arithmetic mean

.++ maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

Table 2: Downgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	SELECT**	Upward trend in yearly average pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

Groundwater/Soil monitoring template		Lic No:	#REF!	Year	#REF!
*please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA.			Groundwater monitoring template		
More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA published guidance (see the link in G31)			Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA 2013)		
**Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS), If the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)			Groundwater Drinking water regulations (private supply) Drinking water (public Interim Guideline water EQS GTV's standards supply) standards Values (IGV)		

Groundwater/Soil monitoring template	Lic No:	#REF!	Year	#REF!

Table 3: Soil results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
							SELECT
							SELECT

Where additional detail is required please enter it here in 200 words or less

Environmental Liabilities template		Lic No:	#REF!	Year	#REF!
	Click here to access EPA guidance on Environmental Liabilities and Financial provision				
					Commentary
1	ELRA initial agreement status	Not a Licence Requirement			
2	ELRA review status	NA			
3	Amount of Financial Provision cover required as determined by the latest ELRA	NA			
4	Financial Provision for ELRA status	NA			
5	Financial Provision for ELRA - amount of cover	NA			
6	Financial Provision for ELRA - type	NA			
7	Financial provision for ELRA expiry date	NA			
8	Closure plan initial agreement status	NA			Internal Budget Provision
9	Closure plan review status	NA			Internal Budget Provision
10	Financial Provision for Closure status	NA			Internal Budget Provision
11	Financial Provision for Closure - amount of cover	NA			Internal Budget Provision
12	Financial Provision for Closure - type	NA			Internal Budget Provision
13	Financial provision for Closure expiry date	NA			

Environmental Management Programme/Continuous Improvement Programme template				Lic No:	#REF!	Year	#REF!
Highlighted cells contain dropdown menu click to view				Additional Information			
1	Do you maintain an Environmental Mangement System (EMS) for the site. If yes, please detail in additional information			Yes	Internal unaccredited EMS		
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site			Yes			
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements			Yes			
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence			Yes			

Environmental Management Programme (EMP) report

Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
Reduction of emissions to Air	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Deploy Hydraulic Harrows at dust sensitive areas Headland Peat Collection.	90	In total 34 Personnel received training in 2015. Training now also includes an energy awareness component. Ten hydraulic harrows were depolyed at five production areas including all dust sensitive areas. Headland peat was collected at six production areas and returned as part of overall production.	Section Head	Improved Environmental Management Practices
Waste reduction/Raw material usage efficiency	Waste Streamlining .It is planned to continue with and where possible improve the current waste management service provided by AES Ltd	100	Installed a waste management system. Quarterly waste reports are returned for records/filing and waste streams are segreated on site to maximise recycling	Section Head	Improved Environmental Management Practices
Reduction of emissions to Water	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.	90	In total 34 Personnel received training in 2015. All silt ponds were cleand twice as per licence condition.	Individual	Improved Environmental Management Practices

Environmental Management Programme/Continuous Improvement Programme template				Lic No:	#REF!	Year	#REF!
Silt Pond Upgrade	All Silt Ponds to be brought to design specification.	70	Pond extension work was ongoing with an additional 2170 m3 capacity provided for in 2015.	Individual	Improved Environmental Management Practices		
Waste reduction/Raw material usage efficiency	Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.	100	In total 0000 tonnes were sent off site for recycling. Procurement also exploring the possibility of securing further recyclers.	Section Head	Improved Environmental Management Practices		
Energy Efficiency/Utility conservation	As part of an energy management process, a review of energy aspects will take place identifying the significant energy users of the licensee. An Energy Awareness Campaign to be commenced, with all personnel especially Team Leaders and Supervisors to be targeted.	60	All electrical and fuel cost are being monitored and tracked, with a view to reducing consumption. Procurement now specify fuel efficient plant and equipment. Add Blue also being used to improve efficiency and emissions on tractors. A new pumping station at Bellair is currently being planned which will include an energy efficient pump and control panel. The Energy Awareness Campaign was launched last year	SELECT	Improved Environmental Management Practices		

Noise monitoring summary report	Lic No:	#REF!	Year	#REF!

1 Was noise monitoring a licence requirement for the AER period?
If yes please fill in table N1 noise summary below

No

2 Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?

Noise Guidance note NG4
NA

3 Does your site have a noise reduction plan

NA

4 When was the noise reduction plan last updated?

Enter date

5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

NA

Table N1: Noise monitoring summary

Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA _{eq}	LA ₉₀	LA ₁₀	LA _{max}	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is <u>site</u> compliant with noise limits (day/evening/night)?
								SELECT	SELECT		SELECT

*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

SELECT

** please explain the reason for not taking action/resolution of noise issues?

Any additional comments? (less than 200 words)

Resource Usage/Energy efficiency summary

Lic No:

#REF!

Year

#REF!

Additional information

- 1 When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below
- Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information
- 2 Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information
- 3

[SEAI - Large](#)
[Industry Energy](#)
[Network \(LIEN\)](#)

Jul-13	
Yes	
No	

Table R1 Energy usage on site				
Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*
Total Energy Used (MWHrs)	14172.25	14074.38		
Total Energy Generated (MWHrs)				
Total Renewable Energy Generated (MWHrs)				
Electricity Consumption (MWHrs)	718.29	956.73		
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)				
Light Fuel Oil (m3)	13221	1290.98		
Natural gas (m3)				
Coal/Solid fuel (metric tonnes)	4.07	3.41		
Peat (metric tonnes)				
Renewable Biomass				
Renewable energy generated on site				

* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site					Water Emissions	Water Consumption
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m ³ /yr):	Volume used i.e not discharged to environment e.g. released as steam m3/yr
Groundwater						
Surface water						
Public supply						
Recycled water						
Total						

* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R3 Waste Stream Summary					
	Total	Landfill	Incineration	Recycled	Other
Hazardous (Tonnes)	0.72	0	0	0.72	0
Non-Hazardous (Tonnes)	865.42	31.08	0	278.88	555.47

Resource Usage/Energy efficiency summary	Lic No:	#REF!	Year	#REF!

Table R4: Energy Audit finding recommendations								
Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
			SELECT					
			SELECT					
			SELECT					

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology					
Primary Fuel					
Thermal Efficiency					
Unit Date of Commission					
Total Starts for year					
Total Running Time					
Total Electricity Generated (GWH)					
House Load (GWH)					
KWH per Litre of Process Water					
KWH per Litre of Total Water used on Site					

WASTE SUMMARY	Lic No:	#REF!	Year	#REF!

Table 4 Environmental monitoring-landfill only [Landfill Manual-Monitoring Standards](#)

Was meteorological monitoring in compliance with Landfill Directive (LD) standard in reporting year +	Was leachate monitored in compliance with LD standard in reporting year	Was Landfill Gas monitored in compliance with LD standard in reporting year	Was SW monitored in compliance with LD standard in reporting year	Have GW trigger levels been established	Were emission limit values agreed with the Agency (ELVs)	Was topography of the site surveyed in reporting year	Has the statement under SS3(A)(5) of WMA been submitted in reporting year	Comments

.* please refer to Landfill Manual linked above for relevant Landfill Directive monitoring standards

Table 5 Capping-Landfill only

Area uncapped*	Area with temporary cap	Area with final cap to LD Standard m2 ha, a	Area capped other	Area with waste that should be permanently capped to date under licence	What materials are used in the cap	Comments
SELECT UNIT	SELECT UNIT					

*please note this includes daily cover area

Table 6 Leachate-Landfill only

9 Is leachate from your site treated in a Waste Water Treatment Plant?

SELECT

10 Is leachate released to surface water? If yes please complete leachate mass load information below

SELECT

Volume of leachate in reporting year(m3)	Leachate (BOD) mass load (kg/annum)	Leachate (COD) mass load (kg/annum)	Leachate (NH4) mass load (kg/annum)	Leachate (Chloride) mass load kg/annum	Leachate treatment on-site	Specify type of leachate treatment	Comments

Please ensure that all information reported in the landfill gas section is consistent with the Landfill Gas Survey submitted in conjunction with PRTR returns

Table 7 Landfill Gas-Landfill only

Gas Captured&Treated by LFG System m3	Power generated (MW / KWh)	Used on-site or to national grid	Was surface emissions monitoring performed during the reporting year?	Comments
			SELECT	

Boora
Decommissioning and Rehabilitation
AER Overview 2015.

Within the Boora licensed area (P0500-01) there was no entire bog units available for rehabilitation in 2015. Ongoing monitoring of cutaway areas was carried out within the Boora area and Drinagh and Galros Bogs were re-surveyed.

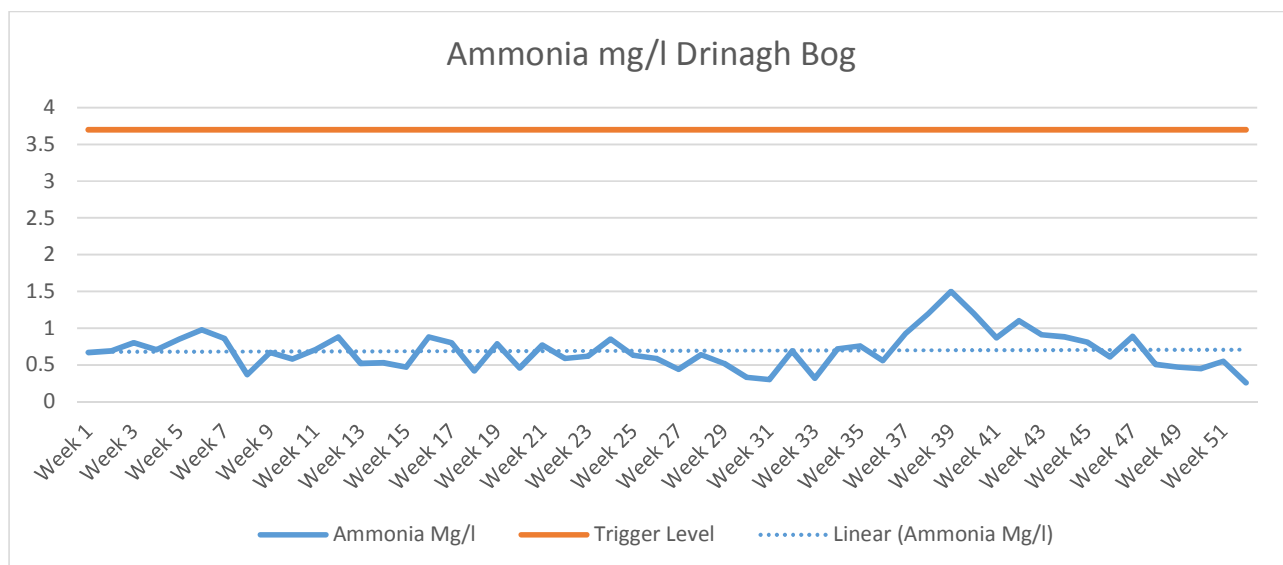
Draft rehabilitation plans for the Boora bogs licensed area, including more detailed draft plans for each component bog unit were submitted to the EPA in 2013 and these were reviewed and updated in 2015.

The annual Biodiversity Action Plan review day was held in November 2015 and this included an update on progress of this plan, bog restoration and cutaway rehabilitation for a wide range on statutory and non-statutory consultees including members of the EPA, NPWS, BWI, Bord na Mona, Coillte, Inland Fisheries Ireland, An Taisce, IPCC, Irish Red Grouse Association, Irish Wildlife Trust, NARGC, local game councils, Midland Regional Planning Authority as well as a range of local community groups and Heritage Officers from counties Laois, Offaly, Kildare, Roscommon, Longford, Meath, Galway, Westmeath and Dublin. At this meeting the draft of the new Biodiversity Action Plan was discussed, with a further extensive engagement with consultees held online.

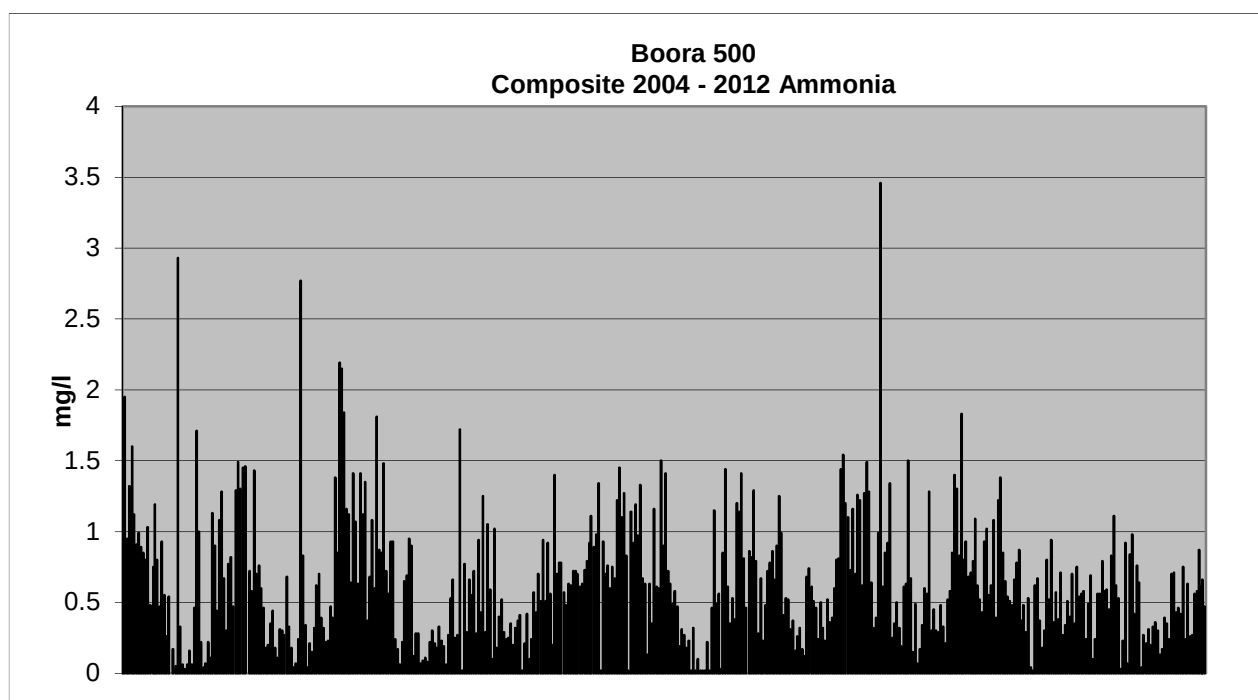
The new Biodiversity Action Plan will be available from April 2016.

A copy of our Biodiversity Action Plan is available to view and download at <http://www.bordnamona.ie/our-company/biodiversity/>

Bord na Mona Boora		Siltpond Monitoring Frequency & Results								
IPPC Licence P0500-01										
X	Y	Bog	SW	Monitoring	Sampled	TS	Ammonia	TP	COD	Colour
224321.91	224780.07	Kilaranny	SW-24	Q1 15	31/03/2015	308	0.07	0.05	54	234
224248.46	223524.04	Kilaranny	SW-24A	Q1 15	31/03/2015	254	1.2	0.05	43	174
234556.96	216406.12	Monettia	SW-25	Q1 15	31/03/2015	134	1.5	0.05	49	163
208557.05	205482.23	Killaun	SW-29	Q1 15	25/06/2015	152	0.51	0.05	58	203
208726.96	206088.96	Killaun	SW-29A	Q2 15	25/06/2015	124	0.05	0.05	48	202
209922.39	207800.47	Killaun	SW-30	Q2 15	25/06/2015	324	0.36	0.06	73	183
208127.88	210599.82	Galros	SW-32	Q2 15	25/06/2015	476	0.29	0.05	10	29
215361.95	232964.99	Bellair South	SW-33	Q2 15	26/06/2015	482	0.02	0.05	10	25
214495.84	232937.68	Bellair South	SW-34	Q3 15	30/09/2015	176	0.83	0.05	57	215
214987.18	232598.43	Bellair South	SW-34A	Q3 15	30/09/2015	198	2.1	0.05	55	174
213906.46	231884.67	Bellair South	SW-35	Q3 15	30/09/2015	132	0.19	0.05	79	234
216202.99	234373.11	Bellair North	SW-37A	Q3 15	30/09/2015	154	0.19	0.05	103	313
215477.01	233062.25	Bellair North	SW-37B	Q4 15	17/12/2015	368	0.27	0.09	68	193
217481.75	227345.36	Lemonaghan	SW-19A	Q4 15	17/12/2015	196	0.33	0.55	71	325
216627.57	234827.38	Bellair North	SW-36	Q4 15	31/12/2015	136	0.17	0.05	70	172
237185.96	215178.41	Monettia	SW-26	Q4 15	17/12/2015	226	0.74	0.05	70	271



Drinagh bog is an active production bog with the composite sampler located here during 2015. The composite sampler takes a flow proportional composite sample over a 24 hour period. The sampler had 28% downtime during the period, but suitable weekly grab samples were taken during these downtimes, primarily due to battery fault or flooding events. The ammonia trigger level of 3.7mg/l, as agreed with the Agency, was not exceeded during the period. Overall the results are trending level as peat extraction continues and this is in-line with the level or downwards trends submitted to the EPA in 2013 as required by condition 6.14 below. Due to the new licence condition 6.2, where all monitoring locations are required to be sampled at least once in a 5 yr period, it is not possible to trend these ammonia results for each individual location due to the new licence requirement. However the ammonia trends on the 24/7 composite sampler provided, gives a good representation of the ammonia in the Boora bogs which are generally on a level or downward trend.



Licence: P0500-01															
Works: Boora															
Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9	
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	211	
Feb	17	0	0	0	0	0	0	0	0	0	0	0	0	0	
Mar	53	19	0	0	0	0	0	0	0	44	10	0	0	0	
Apr	165	0	0	0	0	0	0	0	0	0	0	0	0	0	
May	46	19	0	0	0	0	0	32	0	178	0	0	0	0	
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
July	0	10	0	0	0	0	0	0	0	0	0	0	0	0	
Aug	17	10	0	0	0	0	0	0	0	0	0	0	0	0	
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Oct	37	0	0	0	0	0	0	0	0	0	0	0	0	0	
Nov	20	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dec	28	18	0	0	0	0	0	0	0	36	36	0	0	0	
Note: 0 denotes no flow at emission point on day of sampling															



| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename :
Copy of P0500_2015.xls | Return Year : 2015 |

08/04/2016 15:13

[Guidance to completing the PRTR workbook](#)

PRTR Returns Workbook

Version 1.1.19

REFERENCE YEAR	2015

1. FACILITY IDENTIFICATION

Parent Company Name	Bord na Mona Energy Limited
Facility Name	Bord na Mona Energy Limited Leabeg
PRTR Identification Number	P0500
Licence Number	P0500-01

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Boora Group
Address 2	c/o Boora Works
Address 3	Leabeg, Tullamore,
Address 4	
	Offaly
Country	Ireland
Coordinates of Location	-7.72946 53.2273
River Basin District	IEGBNISH
NACE Code	0892
Main Economic Activity	Extraction of peat
AER Returns Contact Name	Enda McDonagh
AER Returns Contact Email Address	enda.mcdonagh@bnm.ie
AER Returns Contact Position	Head of Environment
AER Returns Contact Telephone Number	057 9345911
AER Returns Contact Mobile Phone Number	086 2370816
AER Returns Contact Fax Number	057 9345160
Production Volume	560276.0
Production Volume Units	Tonnes
Number of Installations	13
Number of Operating Hours in Year	2232
Number of Employees	124
User Feedback/Comments	In accordance with licence condition 6.2 of Technical Amendment A, quarterly sampling is now rotated every quarter and therefore suspended solids results are not factored into loading.
Web Address	www.bnm.ie

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

[Guidance on waste imported/accepted onto site](#)

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	No

This question is only applicable if you are an IPPC or Quarry site

4.1 RELEASES TO AIR

[Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : Copy of P0500_2015.xls | Return Year : 2015 |

08/04/2016 15:15

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0
* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button								

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
		Method Used						
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR				Please enter all quantities in this section in KGs						
POLLUTANT		METHOD			QUANTITY					
Pollutant No.	Name	M/C/E	Method Used		DM-01	DM-02	DM-03	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description	Emission Point 1	Emission Point 2	Emission Point 3			
210	Dust	E	OTH	VDI 2119 Blatt 2/Part 2	0.0	0.0	0.0	0.036596	0.0	0.036596

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill: [Bord na Mona Energy Limited Leabeg](#)

Please enter summary data on the quantities of methane flared and / or utilised

T (Total) kg/Year	M/C/E	Method Used		Facility Total Capacity m3 per hour
		Method Code	Designation or Description	
Total estimated methane generation (as per site model)	0.0			N/A
Methane flared	0.0			0.0 (Total Flaring Capacity)
Methane utilised in engine/s	0.0			0.0 (Total Utilising Capacity)
Net methane emission (as reported in Section A above)	0.0			N/A

4.2 RELEASES TO WATERS [Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : Copy of P0500_2015.xls | Return Year : 2015 |

08/04/2016 15:16

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	SW7 Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
240	Suspended Solids	E	OTH	G/19 Based on ALPHA,1998,20th Edition, Method 2540D	14118.0	14118.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : Copy of P050C

08/04/2016 15:16

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.4 RELEASES TO LAND

[Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : Copy of P0500_2015.xls | Return Year : 2015 |

08/04/2016 15:17

SECTION A : PRTR POLLUTANTS

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
			Method Code	Designation or Description			

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
			Method Code	Designation or Description			
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : Copy of P0500_2015.xls | Return Year : 2015 |

08/04/2016 15:18

Please enter all quantities on this sheet in Tonnes

3

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Haz Waste : Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	01 01 02	No	555.47	wastes from mineral non-metalliferous excavation	D1	E	Volume Calculation	Onsite of generation	Bord na Mona Boora,P0500-01	Boora,Leabeg,Tullamore,Co Offaly,Ireland		
Within the Country	02 01 04	No	252.36	waste plastics (except packaging)	R3	M	Weighed	Offsite in Ireland	Leinster Environmental Ltd,WP 2008/06	Haggardstown,Dundalk,Co Louth,,Ireland		
To Other Countries	13 02 05	Yes	0.0	mineral-based non-chlorinated engine, gear and lubricating oils	R1	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,Belgium	Houthalen,Belgium,,Belgium
Within the Country	15 01 03	No	0.0	wooden packaging absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by	R1	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
To Other Countries	15 02 02	Yes	0.0	dangerous substances	R1	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	Lindenschmidt,Reg no E97095037,Kreuztal,,Germany	Kreuztal,,Germany
To Other Countries	16 01 07	Yes	0.72	oil filters	R4	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,Belgium	Houthalen,Belgium,,Belgium
Within the Country	17 04 07	No	26.52	mixed metals	R4	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	11.3	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	19.78	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		

* Select a row by double-clicking the Description of Waste then click the delete button

Facility Information Summary

AER Reporting Year
 Licence Register Number
 Name of site
 Site Location
 NACE Code
 Class/Classes of Activity
 National Grid Reference (5E, 6 N)

2016
P0500-01
Bord na Mona Boora
Leabeg, Boora, Tullamore, Co Offaly
0892
1.4
180050, 319540

A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year and an overview of **compliance with your licence listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise.**

Activities on site can be divided into two components, firstly the milling, harrowing, ridging and harvesting of peat into stockpiles and secondly the transportation of that peat via an internal rail network to the Power Station and lorry outloading facilities. Production achieved was approximately 526575 tonnes. Infrastructurally, there was no new bog development. Dust monitoring was fully compliant for the reporting period. There was one environment related complaint received and dealt with in relation to water. In relation to silt pond cleaning, 100% of ponds received two cleanings with inspections dictating if a pond required further cleaning. A new silt cleaning excavator was put into operation during the year. Decommissioning works included the lifting, refurbishing and redeployment of rail line. Lubricant training for better management of oils, greases and coolant is being rolled out to all areas. Workplace organisation 5s and Visual Management is being extended to all area centres.

Declaration:

All the data and information presented in this report has been checked and certified as being

Signature <i>gibby</i>	Date 6-3-2017
Group/Facility manager (or nominated, suitably qualified and experienced deputy)	

AIR-summary template	Lic No:	P0500-01	Year	2016

Answer all questions and complete all tables where relevant

- 1 Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If **you do not have** licenced emissions and **do not complete a solvent management plan** (table A4 and A5) you do not need to complete the tables

Additional information	
No	Fugitive emissions only

Periodic/Non-Continuous Monitoring

- 2 Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below

No	
Yes	

- 3 Was all monitoring carried out in accordance with EPA guidance note AG2 and using the basic air monitoring checklist?

[Basic air monitoring checklist](#) [AGN2](#)

Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision thereof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments - reason for change in % mass load from previous year if applicable
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		

Note 1: Volumetric flow shall be included as a reportable parameter

AIR-summary template			
Lic No:		P0500-01	Year
			2016
Continuous Monitoring			

4	Does your site carry out continuous air emissions monitoring?	No	
	If yes please review your continuous monitoring data and report the required fields below in Table A2 and compare it to its relevant Emission Limit Value (ELV)		
5	Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below	No	
6	Do you have a proactive service agreement for each piece of continuous monitoring equipment?	No	
7	Did your site experience any abatement system bypasses? If yes please detail them in table A3 below	No	

Table A2: Summary of average emissions -continuous monitoring

Emission reference no:	Parameter/ Substance	ELV in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
DM-01	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	21168	344	0	0	
DM-02	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	23744	322	0	0	
DM-03	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	15456	208	0	0	

note 1: Volumetric flow shall be included as a reportable parameter.

Table A3: Abatement system bypass reporting table

[Bypass protocol](#)

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

* this should include all dates that an abatement system bypass occurred

** an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

AIR-summary template		Lic No:	P0500-01	Year	2016			
Solvent use and management on site								
8 Do you have a total Emission Limit Value of direct and fugitive emissions on site? if yes please fill out tables A4 and A5				No				
Table A4: Solvent Management Plan Summary Total VOC Emission limit value		Solvent regulations Please refer to linked solvent regulations to complete table 5 and 6						
Reporting year	Total solvent input on site (kg)	Total VOC emissions to Air from entire site (direct and fugitive)	Total VOC emissions as %of solvent input	Total Emission Limit Value (ELV) in licence or any revision thereof	Compliance			
					SELECT			
					SELECT			
Table A5: Solvent Mass Balance summary								
	(I) Inputs (kg)	(O) Outputs (kg)						
Solvent	(I) Inputs (kg)	Organic solvent emission in waste	Solvents lost in water (kg)	Collected waste solvent (kg)	Fugitive Organic Solvent (kg)	Solvent released in other ways e.g.	Solvents destroyed onsite through	Total emission of Solvent to air (kg)
							Total	

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)			Lic No:	P0500-01	Year	2016

		Additional information
1	Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If you do not have licensed emissions you <u>only</u> need to complete table W1 and or W2 for storm water analysis and visual inspections	Yes
2	Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising <u>only</u> any evidence of contamination noted during visual inspections	Yes Monthly COD analysis of yard runoff is attached in a separate document.

Table W1 Storm water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licensed Parameter	Monitoring date	ELV or trigger level in licence or any revision thereof*	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	

*trigger values may be agreed by the Agency outside of licence conditions

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
			SELECT		
			SELECT		

Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

3	Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below	No	Additional information
4	Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box	Yes	Surface water monitoring was carried out on a quarterly basis. The results of which are attached. Monthly COD yard runoff results are also attached.

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereof ^{Note 2}	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source APHA / AWWA "Standard Methods"	Procedural reference standard number	Annual mass load (kg)	Comments
												APHA / AWWA "Standard Methods"	4500-NH3	NA	One off Grab sample
												APHA / AWWA "Standard Methods"	4500-NH3	NA	One off Grab sample

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQ5 for Surface water or relevant receptor quality standards

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)

Lic No:

P0500-01

Year

2016

Continuous monitoring

5 Does your site carry out continuous emissions to water/sewer monitoring?

Additional Information	
Yes	

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

6 Did continuous monitoring equipment experience downtime? If yes please record downtime in table W4 below

Yes	101 days
Yes	Annual calibration schedule and trouble shooting service
No	

7 Do you have a proactive service contract for each piece of continuous monitoring equipment on site?

8 Did abatement system bypass occur during the reporting year? If yes please complete table W5 below

Table W4: Summary of average emissions -continuous monitoring

Emission reference no:	Emission released to	Parameter/ Substance	ELV or trigger values in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission for current reporting year (kg)	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments
SW7	Water	Suspended Solids	35mg/l	24 hour	All results < 1.5 times ELV, plus 8 from ten results must be < ELV	mg/L	17296.1		2424		Down time is usually due to no flow and battery failure issues. Increased SS loading could be attributed to less down time of sampler. Flooding greatly affected the operation of the sampler in the early months of 2016. A proposal to relocate the sampler to a catchment under pressure from Peat is currently being prepared.
SW7	Water	Ammonia (as N)	NA	Weekly	NA	mg/L	290.85				Annual loading not representative as parameter only carried out weekly
SW7	Water	Total phosphorus	NA	Weekly	NA	mg/L	35.08				Annual loading not representative as parameter only carried out weekly
SW7	Water	COD	NA	Weekly	NA	mg/L	28780				Annual loading not representative as parameter only carried out weekly
SW7	Water	volumetric flow	NA	24 hour	NA	m3/day	10250				Total flow divided by 365
SW7	Water	Total Dissolved Solids	NA	Weekly	NA	mg/L	856632				Annual loading not representative as flooding impacted the flow accuracy of the sampler.

note 1: Volumetric flow shall be included as a reportable parameter.

Table W5: Abatement system bypass reporting table

Date	Duration (hours)	Location	Resultant emissions	Reason for bypass	Corrective action*	Was a report submitted to the EPA?	When was this report submitted?
						SELECT	

*Measures taken or proposed to reduce or limit bypass frequency

Bund/Pipeline testing template	Lic No:	P0500-01	Year	2016	

Bund testing

dropdown menu click to see options

Additional information

Are you required by your licence to undertake integrity testing on bunds and containment structures ? if yes please fill out table B1 below listing all **new bunds and containment structures** on site, in addition to **all bunds which failed** the integrity test-**all bunding structures which failed including mobile bunds must be listed in the table below, please include all bunds outside the licenced testing period** (mobile bunds and chemstore included)

1 Please provide integrity testing frequency period

2 Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to "Chemstore" type units and mobile bunds)

4 How many bunds are on site?

5 How many of these bunds have been tested within the required test schedule?

6 How many mobile bunds are on site?

7 Are the mobile bunds included in the bund test schedule?

8 How many of these mobile bunds have been tested within the required test schedule?

9 How many sumps on site are included in the integrity test schedule?

10 How many of these sumps are integrity tested within the test schedule?

Please list any sump integrity failures in table B1

11 Do all sumps and chambers have high level liquid alarms?

12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?

13 Is the Fire Water Retention Pond included in your integrity test programme?

Yes	
Other (2 Yearly)	
Yes	
	Two bunds missed out on testing and are scheduled to be tested in
	7 March 2017
	5 All passed
27	
No	
NA	
NA	
NA	
N/A	
N/A	
N/A	

Table B1: Summary details of bund /containment structure integrity test

Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT					SELECT			SELECT	SELECT		SELECT		
	SELECT					SELECT			SELECT	SELECT		SELECT		

* Capacity required should comply with 25% or 110% containment rule as detailed in your licence

Has integrity testing been carried out in accordance with licence requirements and are all structures tested in

15 line with BS8007/EPA Guidance?

[bundings and storage guidelines](#)

16 Are channels/transfer systems to remote containment systems tested?

17 Are channels/transfer systems compliant in both integrity and available volume?

SELECT	
SELECT	
SELECT	

Pipeline/underground structure testing

Are you required by your licence to undertake integrity testing* on underground structures e.g. pipelines or sumps etc ? if yes please fill out table 2 below listing all

1 underground structures and pipelines on site **which failed the integrity test and all which have not been tested within the integrity test period as specified**

2 Please provide integrity testing frequency period

*please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)

Yes	
Other (2 Yearly)	

Table B2: Summary details of pipeline/underground structures integrity test

Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT				SELECT

Please use commentary for additional details not answered by tables/ questions above

Groundwater/Soil monitoring template	Lic No: P0500-01	Year 2016

Comments		
1 Are you required to carry out groundwater monitoring as part of your licence requirements?	no	Please provide an interpretation of groundwater monitoring data in the interpretation box below or if you require additional space please include a groundwater/contaminated land monitoring results interpretaion as an additional section in this AER
2 Are you required to carry out soil monitoring as part of your licence requirements?	no	
3 Do you extract groundwater for use on site? If yes please specify use in comment section	no	
4 Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below. Groundwater monitoring template	SELECT	Please enter interpretation of data here
5 Is the contamination related to operations at the facility (either current and/or historic)	N/A	
6 Have actions been taken to address contamination issues?If yes please summarise remediation strategies proposed/undertaken for the site	N/A	
7 Please specify the proposed time frame for the remediation strategy	N/A	
8 Is there a licence condition to carry out/update ELRA for the site?	N/A	
9 Has any type of risk assesment been carried out for the site?	N/A	
10 Has a Conceptual Site Model been developed for the site?	N/A	
11 Have potential receptors been identified on and off site?	N/A	
12 Is there evidence that contamination is migrating offsite?	N/A	

Groundwater/Soil monitoring template

Lic No:

P0500-01

Year

2016

Table 1: Upgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+	unit	GTV's*	SELECT**	Upward trend in pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

.+ where average indicates arithmetic mean

.++ maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

Table 2: Downgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	SELECT**	Upward trend in yearly average pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

*please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA.

[Groundwater monitoring template](#)

More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA published guidance (see the link in G31)

[Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites \(EPA 2013\).](#)

**Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS), if the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)

[Groundwater](#) [Drinking water](#)
[Surface](#) [regulations](#) [\(private supply\)](#) [Drinking water \(public](#) [Interim Guideline](#)
[water EQS](#) [GTV's](#) [standards](#) [supply\) standards](#) [Values \(IGV\)](#)

Table 3: Soil results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
							SELECT
							SELECT

Where additional detail is required please enter it here in 200 words or less

Environmental Liabilities template	Lic No:	P0500-01	Year	2016

[Click here to access EPA guidance on Environmental Liabilities and Financial provision](#)

		Commentary	
1	ELRA initial agreement status	Not a Licence Requirement	
2	ELRA review status	NA	
3	Amount of Financial Provision cover required as determined by the latest ELRA	NA	
4	Financial Provision for ELRA status	NA	
5	Financial Provision for ELRA - amount of cover	NA	
6	Financial Provision for ELRA - type	NA	
7	Financial provision for ELRA expiry date	NA	
8	Closure plan initial agreement status	NA	Internal Budget Provision
9	Closure plan review status	NA	Internal Budget Provision
10	Financial Provision for Closure status	NA	Internal Budget Provision
11	Financial Provision for Closure - amount of cover	NA	Internal Budget Provision
12	Financial Provision for Closure - type	NA	Internal Budget Provision
13	Financial provision for Closure expiry date	NA	

Environmental Management Programme/Continuous Improvement Programme template			Lic No:	P0500-01	Year	2016

Highlighted cells contain dropdown menu click to view		Additional Information	
1	Do you maintain an Environmental Management System (EMS) for the site. If yes, please detail in additional information	Yes	Internal unaccredited EMS
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site	Yes	
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements	Yes	
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence	Yes	

Environmental Management Programme (EMP) report					
Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
Reduction of emissions to Air	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Deploy Hydraulic Harrows at dust sensitive areas headland Peat collection.	90	In total 66 Personnel received training in 2016. Training now also includes an energy awareness component. Ten hydraulic harrows were deployed at five production areas including all dust sensitive areas. Headland peat was collected at six production areas and returned as part of overall production.	Individual	Improved Environmental Management Practices
Waste reduction/Raw material usage efficiency	Waste Streamlining. It is planned to continue with and where possible improve the current waste management service provided by AES Ltd	100	Quarterly waste reports are returned for records/filing and waste streams are segregated on site to maximise recycling potential which was installed in 2015	Section Head	Improved Environmental Management Practices
Reduction of emissions to Water	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.	90	In total 66 Personnel received training in 2016. All silt ponds were cleaned at least twice as per licence condition .	Individual	Improved Environmental Management Practices
Waste reduction/Raw material usage efficiency	Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.	100	In total 138.08 tonnes were sent off site for recycling. Procurement also exploring the possibility of securing further recyclers.	Individual	Improved Environmental Management Practices
Energy Efficiency/Utility conservation	As part of an energy management process, an ongoing review of energy usage is in place.	100	There was reduced activity at Boora Workshop .The unoccupied areas are sectioned of. Consequently ,there is no requirement for lighting or heating in those areas.	Section Head	Improved Environmental Management Practices

Noise monitoring summary report	Lic No: P0500-01	Year 2016

1 Was noise monitoring a licence requirement for the AER period?
If yes please fill in table N1 noise summary below

No

2 Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?

Noise Guidance note NG4
NA

3 Does your site have a noise reduction plan

NA

4 When was the noise reduction plan last updated?

Enter date

5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

NA

Table N1: Noise monitoring summary

Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA _{eq}	LA ₉₀	LA ₁₀	LA _{max}	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is <u>site</u> compliant with noise limits (day/evening/night)?
								SELECT	SELECT		SELECT

*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

SELECT

** please explain the reason for not taking action/resolution of noise issues?

Any additional comments? (less than 200 words)

Resource Usage/Energy efficiency summary

Lic No:

P0500-01

Year

2016

Additional information

1 When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below

2 Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information

3 Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information

Yes	
NA	No specific licence limit

Table R1 Energy usage on site				
Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*
Total Energy Used (MWHrs)	14074.38	13280.71		
Total Energy Generated (MWHrs)				
Total Renewable Energy Generated (MWHrs)				
Electricity Consumption (MWHrs)	956.73	678.142		
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)				
Light Fuel Oil (m3)	1290.98	1240.28		
Natural gas (m3)				
Coal/Solid fuel (metric tonnes)	3.41	17.6		
Peat (metric tonnes)				
Renewable Biomass				
Renewable energy generated on site				

* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site					Water Emissions	Water Consumption	
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m³/yr):	Volume used i.e not discharged to environment e.g. released as steam m3/yr	Unaccounted for Water:
Groundwater							
Surface water							
Public supply							
Recycled water							
Total							

* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Resource Usage/Energy efficiency summary	Lic No:	P0500-01	Year	2016

Table R3 Waste Stream Summary					
	Total	Landfill	Incineration	Recycled	Other
Hazardous (Tonnes)	8.29	0	0	8.29	0
Non-Hazardous (Tonnes)	880.98	53.79	0	241.32	585.87

Table R4: Energy Audit finding recommendations								
Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
			SELECT					
			SELECT					
			SELECT					

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology					
Primary Fuel					
Thermal Efficiency					
Unit Date of Commission					
Total Starts for year					
Total Running Time					
Total Electricity Generated (GWH)					
House Load (GWH)					
KWH per Litre of Process Water					
KWH per Litre of Total Water used on Site					

Table 1 Complaints summary			Brief description of complaint (Free txt <20 words)	Corrective action< 20 words	Resolution status	Resolution date	Further information
Date	Category	Other type (please specify)					
05/07/2016	Water		Complaint of silt from Bord Na Mona peatlands	Both parties agreed a solution. New silt pond installed.	Complete	29/11/2016	Alder No. IR027722
Total complaints open at start of reporting year		0					
Total new complaints received during reporting year		1					
Total complaints closed during reporting year		1					
Balance of complaints end of reporting year		0					

[illegible]

WASTE SUMMARY		
Lic No:	P0500-01	Year 2016
SECTION A-PRTR ON SITE WASTE TREATMENT AND WASTE TRANSFERS TAB- TO BE COMPLETED BY ALL IPPC AND WASTE FACILITIES		PRTR facility login dropdown list click to see options

SECTION B- WASTE ACCEPTED ONTO SITE-TO BE COMPLETED BY ALL IPPC AND WASTE FACILITIES

Additional Information

Were any wastes accepted onto your site for recovery or disposal or treatment prior to recovery or disposal within the boundaries of your facility ?; (waste generated within your boundaries is **1 to be captured through PRTR reporting**)

If yes please enter details in table 1 below

2 Did your site have any rejected consignments of waste in the current reporting year? If yes please give a brief explanation in the additional information

3 Was waste accepted onto your site that was generated outside the Republic of Ireland? If yes please state the quantity in tonnes in additional information

N/A	

SELECT	

SELECT	

Table 1 Details of waste accepted onto your site for recovery, disposal or treatment (do not include wastes generated at your site, as these will have been reported in your PRTR workbook)

Licensed annual tonnage limit for your site (total tonnes/annum)	EWIC code European Waste Catalogue EWIC codes	Source of waste accepted	Description of waste accepted Please enter an accurate and detailed description - which applies to relevant EWIC code European Waste Catalogue EWIC codes	Quantity of waste accepted in current reporting year (tonnes)	Quantity of waste accepted in previous reporting year (tonnes)	Reduction/ Increase over previous year +/- %	Reason for reduction/ increase from previous reporting year	Packaging Content (%)- only applies if the waste has a packaging component	Disposal/Recovery or treatment operation carried out at your site and the description of this operation	Quantity of waste remaining on site at the end of reporting year (tonnes)	Comments -

SECTION C-TO BE COMPLETED BY ALL WASTE FACILITIES (waste transfer stations, Composters, Material recovery facilities etc) EXCEPT LANDFILL SITES

- 4 Is all waste processing infrastructure as required by your licence and approved by the Agency in place? If no please list waste processing infrastructure required onsite
- 5 Is all waste storage infrastructure as required by your licence and approved by the Agency in place? If no please list waste storage infrastructure required on site
- 6 Does your facility have relevant nuisance controls in place?
- 7 Do you have an odour management system in place for your facility? If no why?
- 8 Do you maintain a sludge register on site?

SELECT	
SELECT	
SELECT	
SELECT	
SELECT	

SECTION D-TO BE COMPLETED BY LANDFILL SITES ONLY

Table 2 Waste type and tonnage-landfill only

Waste types permitted for disposal	Authorised/licenced annual intake for disposal (tpa)	Actual intake for disposal in reporting year (tpa)	Remaining licensed capacity at end of reporting year (m3)	Comments

WASTE SUMMARY				Lic No:	P0500-01	Year	2016

Table 3 General information-Landfill only

Area ID	Date landfilling commenced	Date landfilling ceased	Currently landfilling	Private or Public Operated	Inert or non-hazardous	Predicted date to cease landfilling	Licence permits asbestos	Is there a separate cell for asbestos?	Accepted asbestos in reporting year	Total disposal area occupied by waste	Lined disposal area occupied by waste	Unlined area	Comments on liner type
										SELECT UNIT	SELECT UNIT	SELECT UNIT	
Cell 8													

Table 4 Environmental monitoring-landfill only [Landfill Manual-Monitoring Standards](#)

Was meteorological monitoring in compliance with Landfill Directive (LD) standard in reporting year +	Was leachate monitored in compliance with LD standard in reporting year	Was Landfill Gas monitored in compliance with LD standard in reporting year	Was SW monitored in compliance with LD standard in reporting year	Have GW trigger levels been established	Were emission limit values agreed with the Agency (ELVs)	Was topography of the site surveyed in reporting year	Has the statement under S53(A)(5) of WMA been submitted in reporting year	Comments

+ please refer to Landfill Manual linked above for relevant Landfill Directive monitoring standards

Table 5 Capping-Landfill only

Area uncapped*	Area with temporary cap	Area with final cap to LD Standard m2 ha, a	Area capped other	Area with waste that should be permanently capped to date under licence	What materials are used in the cap	Comments
SELECT UNIT	SELECT UNIT					

*please note this includes daily cover area

Table 6 Leachate-Landfill only

9 Is leachate from your site treated in a Waste Water Treatment Plant?

SELECT
SELECT

10 Is leachate released to surface water? If yes please complete leachate mass load information below

Volume of leachate in reporting year(m3)	Leachate (BOD) mass load (kg/annum)	Leachate (COD) mass load (kg/annum)	Leachate (NH4) mass load (kg/annum)	Leachate (Chloride) mass load kg/annum	Leachate treatment on-site	Specify type of leachate treatment	Comments

Please ensure that all information reported in the landfill gas section is consistent with the Landfill Gas Survey submitted in conjunction with PRTR returns

Table 7 Landfill Gas-Landfill only

Gas Captured&Treated by LFG System m3	Power generated (MW / KWh)	Used on-site or to national grid	Was surface emissions monitoring performed during the reporting year?	Comments
			SELECT	

Boora
Decommissioning and Rehabilitation
AER Overview 2016.

Within the Boora licensed area (P0500-01) there was no entire bog units available for rehabilitation in 2016. Ongoing monitoring of cutaway areas was carried out within the Boora area. An invasive aquatic plant species (Parrots Feather *Myriophyllum aquaticum*) was identified in the amenity areas of Boora in 2016, actions to control its spread have been enacted along with the notification of the presence of this species to the relevant authorities.

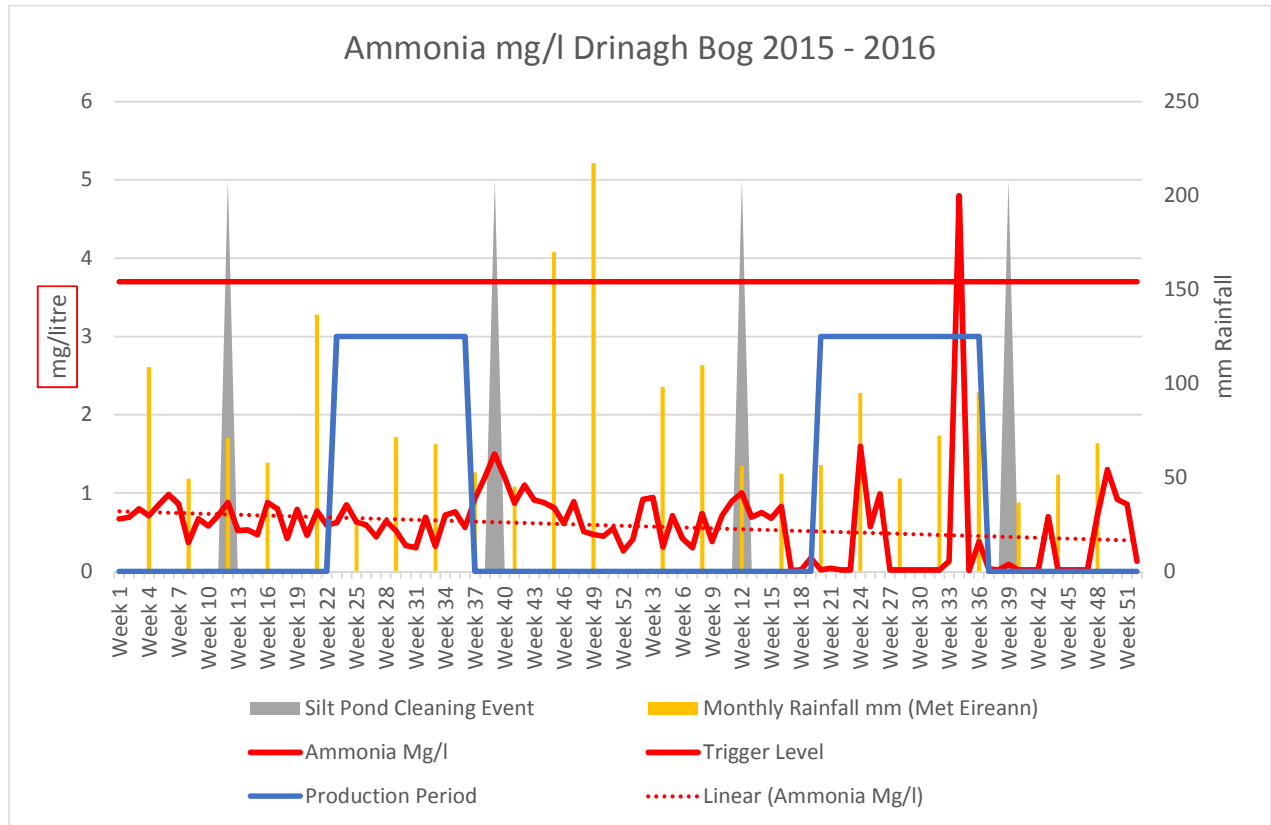
Draft rehabilitation plans for the Boora bogs licensed area, including more detailed draft plans for each component bog unit were submitted to the EPA in 2013 and these were reviewed and updated in 2015.

The new Biodiversity Action Plan (2016-2021) was launched in 2016 with the annual Biodiversity Action Plan review day being held in February 2017, this included an update on the progress of this plan, bog restoration and cutaway rehabilitation for a wide range on statutory and non-statutory consultees including members of the EPA, NPWS, BWI, Bord na Mona, Coillte, Inland Fisheries Ireland, An Taisce, IPCC, Irish Red Grouse Association, Irish Wildlife Trust, NARGC, local game councils, Midland Regional Planning Authority as well as a range of local community groups and Heritage Officers from counties Laois, Offaly, Kildare, Roscommon, Longford, Meath, Galway, Westmeath and Dublin.

A copy of our Biodiversity Action Plan is available to view and download at <http://www.bordnamona.ie/our-company/biodiversity/>

As required by condition 10.2 *Cutaway Bog Rehabilitation Plans*, draft peatland rehabilitation plans for all the individual bog units were submitted to the agency in 2013, reviewed and amended in 2015 and re-submitted to the agency in 2015. All draft rehabilitation plans are currently in the process of being reviewed (2017). These reviewed and amended plans will be re-submitted to the agency in due course.

Bord na Mona Boora												
IPPC Licence P0500-01												
X	Y	Bog	SW	Monitoring	Sampled	pH	SS	TS	Ammonia	TP	COD	Colour
237043.63	216670.04	Monettia	SW-26A	Q1 16	10/03/2016	7.8	5	414	0.78	0.05	43	92
220650.17	210315.60	Derrinboy	SW-38	Q1 16	24/03/2016	7.7	5	212	0.54	0.07	37	109
220483.33	210276.48	Derrinboy	SW-39	Q1 16	24/03/2016	7.4	6	140	1	0.05	49	139
219663.49	210038.82	Derrinboy	SW-40	Q1 16	24/03/2016	7.2	5	78	0.57	0.06	41	137
217008.23	222986.75	Turraun	SW-15	Q2 16	22/06/2016	7.8	5	407	0.04	0.11	41	83
236128.81	221965.17	Derryclure	SW-28	Q2 16	29/06/2016	7.5	5	114	0.21	0.13	54	204
236939.60	220629.01	Derryclure	SW-27	Q2 16	29/06/2016	7.6	15	276	0.44	0.13	49	166
219056.10	234057.41	Bellair North	SW-37	Q2 16	22/06/2016	7.5	6	182	0.52	0.09	89	342
204681.49	214416.93	Clongawney	SW-1	Q3 16	29/09/2016	7.5	5	256	0.79	0.05	79	124
205641.50	213067.71	Clongawney	SW-3	Q3 16	29/09/2016	7.9	5	298	1.4	0.05	52	116
206319.95	215656.92	Clongawney	SW-4	Q3 16	29/09/2016	7.2	5	274	0.12	0.07	67	243
207679.57	215615.99	Clongawney	SW-5	Q3 16	29/09/2016	7.7	6	244	0.73	0.05	47	132
208818.04	215648.99	Drinagh	SW-7	Q4 16	14/12/2016	7.6	28	180	1.1	0.01	93	73
212017.45	214103.39	Drinagh	SW-8	Q4 16	14/12/2016	7.6	25	214	3.6	0.01	77	142
212352.39	217427.89	Drinagh	SW-9	Q4 16	14/12/2016	7.7	13	319	0.1	0.01	49	48
212948.34	217756.09	Derrybrat	SW-9A	Q4 16	14/12/2016	7.5	9	376	0.5	0.01	78	102



Drinagh bog is an active production bog with the composite sampler located here during 2015 and 2016. The composite sampler takes a flow proportional composite sample over a 24 hour period. The sampler had 27% downtime during the period being reported, but suitable weekly grab samples were taken during these downtimes, primarily due to battery fault or flooding events. The ammonia trigger level of 3.7mg/l, as agreed with the Agency, was exceeded once during the period being reported. Combining the 2015 and 2016 results above show concentrations trending downwards over the two year period as peat extraction continues and this is in line with the downwards trends submitted to the EPA in 2013 as required by condition 6.14. There is no obvious link between the summer production, winter maintenance or silt pond maintenance events on the concentration of ammonia discharging from the peatlands. The only link expected would be that related to rainfall events and seasonal weather patterns and the subsequent surfacewater runoff and associated ammonia concentrations.

Licence: P0500-01														
Works: Boora														
Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9
Jan	24	16	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	32	18	0	0	0	0	0	0	0	118	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	22	40	0	0	0	0	0	0	0	16	48	0	0	153
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Note: 0 denotes no flow at emission point on day of sampling. A concerted effort will be made in 2017 to retrieve more samples which may involve sampling during periods of prolonged rainfall.														



| PRTR#: P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2016.xls | Return Year : 2016 |

28/02/2017 15:36

[Guidance to completing the PRTR workbook](#)

PRTR Returns Workbook

Version 1.1.19

REFERENCE YEAR	2016

1. FACILITY IDENTIFICATION

Parent Company Name	Bord na Mona Energy Limited
Facility Name	Bord na Mona Energy Limited Leabeg
PRTR Identification Number	P0500
Licence Number	P0500-01

Classes of Activity

No.	class name
-	Refer to PRTR class activities below

Address 1	Boora Group
Address 2	c/o Boora Works
Address 3	Leabeg, Tullamore,
Address 4	
	Offaly
Country	Ireland
Coordinates of Location	-7.72946 53.2273
River Basin District	IEGBNISH
NACE Code	0892
Main Economic Activity	Extraction of peat
AER Returns Contact Name	Enda McDonagh
AER Returns Contact Email Address	enda.mcdonagh@bnm.ie
AER Returns Contact Position	Head of Environment
AER Returns Contact Telephone Number	057 9345911
AER Returns Contact Mobile Phone Number	086 2370816
AER Returns Contact Fax Number	057 9345160
Production Volume	526825.0
Production Volume Units	Tonnes
Number of Installations	13
Number of Operating Hours in Year	2232
Number of Employees	124
User Feedback/Comments	In accordance with licence condition 6.2 of Technical Amendment A, quarterly sampling is now rotated every quarter and therefore suspended solids results are not factored into loading.
Web Address	www.bnm.ie

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

[Guidance on waste imported/accepted onto site](#)

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	

This question is only applicable if you are an IPPC or Quarry site

4.1 RELEASES TO AIR [Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2016.xls | Return Year : 2016 |

28/02/2017 15:37

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR		Please enter all quantities in this section in KGs		
POLLUTANT		METHOD		QUANTITY
No. Annex II	Name	Method Used		
		M/C/E	Designation or Description	

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR		Please enter all quantities in this section in KGs		
POLLUTANT		METHOD		QUANTITY
No. Annex II	Name	Method Used		
		M/C/E	Designation or Description	

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR		Please enter all quantities in this section in KGs					
POLLUTANT		METHOD			QUANTITY		
Pollutant No.	Name	Method Used					
		M/C/E	Method Code	Designation or Description	DM01	DM02	DM03

210	Dust	E	OTH	VDI 2119 Blatt 2/Part 2	0.0	0.0	0.0	0.060368	0.0	0.060368

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill:		Bord na Mona Energy Limited Leabeg			
Please enter summary data on the quantities of methane flared and / or utilised					
T (Total) kg/Year		M/C/E	Method Used		Facility Total Capacity m3 per hour
			Method Code	Designation or Description	
Total estimated methane generation (as per site model)		0.0			N/A
Methane flared		0.0			0.0 (Total Flaring Capacity)
Methane utilised in engine/s		0.0			0.0 (Total Utilising Capacity)
Net methane emission (as reported in Section A above)		0.0			N/A

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only concerns Releases from your facility

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0
* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button								

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0
* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button								

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS				Please enter all quantities in this section in KGs					
POLLUTANT					QUANTITY				
Pollutant No.	Name	M/C/E	Method Code	Method Used Designation or Description	SW7 Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year	
240	Suspended Solids	E	OTH	G/19 Based on ALPHA,1998,20th Edition, Method 2540D		17296.1	17296.1	0.0	0.0
* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button									

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.4 RELEASES TO LAND

[Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2016.xls | Return Year : 2016 |

28/02/2017 15:39

SECTION A : PRTR POLLUTANTS

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO LAND					Please enter all quantities in this section in KGs		
POLLUTANT		METHOD			QUANTITY		
Pollutant No.	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2016.xls | Return Year : 2016 |

28/02/2017 15:40

Please enter all quantities on this sheet in Tonnes

3

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	01 01 02	No	585.87	wastes from mineral non-metalliferous excavation	D1	E	Volume Calculation	Onsite of generati	Bord na Mona Boora,P0500-01	Boora,Leabeg,Tullamore,Co Offaly,Ireland		
Within the Country	02 01 04	No	138.08	waste plastics (except packaging)	R3	M	Weighed	Offsite in Ireland	Leinster Environmental Ltd,WP 2008/06	Haggardstown,Dundalk,Co Louth,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,Belgium	Houthalen,Belgium,,Belgium
To Other Countries	13 02 05	Yes	7.1	mineral-based non-chlorinated engine, gear and lubricating oils	R1	C	Volume Calculation	Abroad	Envva Ireland Ltd,W184-01	Enna Ireland Ltd,W184-01		
Within the Country	15 01 03	No	11.12	wooden packaging absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	R1	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
To Other Countries	15 02 02	Yes	0.0		R1	C	Volume Calculation	Abroad	Envva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	Lindenschmidt,Reg no E97095037,Kreuztal,,Germany	Kreuztal,,Germany
To Other Countries	16 01 07	Yes	1.19	oil filters	R4	C	Volume Calculation	Abroad	Envva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,Belgium	Houthalen,Belgium,,Belgium
Within the Country	17 04 07	No	92.12	mixed metals	R4	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	33.96	mixed municipal waste	D1	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	19.83	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		

* Select a row by double-clicking the Description of Waste then click the delete button

[Link to previous years waste data](#)[Link to previous years waste summary data & percentage change](#)[Link to Waste Guidance](#)

Facility Information Summary

AER Reporting Year	2017
Licence Register Number	P0500-01
Name of site	Bord na Mona Boora
Site Location	Leabeg, Boora, Tullamore, Co Offaly
NACE Code	0892
Class/Classes of Activity	1.4
National Grid Reference (6E, 6 N)	180050, 319540

A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year **and an overview of compliance with your licence listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise.**

Activities on site can be divided into two components, firstly the milling, harrowing, ridging and harvesting of peat into stockpiles and secondly the transportation of that peat via an internal rail network to the Power Station and lorry outloading facilities. Production achieved was approximately 559486 tonnes. Infrastructurally, there was no new bog development. There were no environmental complaints received during 2017. There were twelve incidents, one in relation to dust and the remainder to water. In relation to silt pond cleaning, 100% of ponds received two cleanings with inspections dictating if a pond required further cleaning. A number of energy efficient initiatives are in place in terms of fuel and electricity usage. Lubricant training for better management of oils, greases and coolant was completed. Formalised management meetings take place weekly with environmental issues on the agenda for discussion. We had a successful audit of operations in relation to our Quality Management System to I.S. EN ISO 9001:2015. We are "committed to conducting all aspects of our business activities with a focus on minimising the impact on the environment". Rehabilitation works are described in an attachment.

Declaration:

All the data and information presented in this report has been checked and certified as being

	4/4/2018
Signature Group/Facility manager (or nominated, suitably qualified and experienced deputy)	Date

AIR-summary template	Lic No:	P0500-01	Year	2017

Answer all questions and complete all tables where relevant

1	Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If you do not have licensed emissions and do not complete a solvent management plan (table A4 and A5) you <u>do not</u> need to complete the tables	Additional information	
		No	Fugitive emissions only

Periodic/Non-Continuous Monitoring

2	Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below	No	
		Yes	

3 Was all monitoring carried out in accordance with EPA guidance [Basic air monitoring checklist](#) note AG2 and using the basic air monitoring checklist? [AGN2](#)

Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision thereof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments - reason for change in % mass load from previous year if applicable
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		

Note 1: Volumetric flow shall be included as a reportable parameter

AIR-summary template	Lic No:	P0500-01	Year	2017
Continuous Monitoring				

4	Does your site carry out continuous air emissions monitoring?	No	
	If yes please review your continuous monitoring data and report the required fields below in Table A2 and compare it to its relevant Emission Limit Value (ELV)		
5	Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below	No	
6	Do you have a proactive service agreement for each piece of continuous monitoring equipment?	No	
7	Did your site experience any abatement system bypasses? If yes please detail them in table A3 below	No	

Table A2: Summary of average emissions -continuous monitoring

Emission reference no:	Parameter/ Substance	ELV in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
DM-01	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	19488	372	0	1	Reported to Agency
DM-02	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	20636	228	0	0	
DM-03	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	13216	183	0	0	
	SELECT				SELECT					

note 1: Volumetric flow shall be included as a reportable parameter.

Table A3: Abatement system bypass reporting table

[Bypass protocol](#)

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

* this should include all dates that an abatement system bypass occurred

** an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

AIR-summary template			Lic No:	P0500-01	Year	2017		
Solvent use and management on site								
8 Do you have a total Emission Limit Value of direct and fugitive emissions on site? if yes please fill out tables A4 and A5					No			
Table A4: Solvent Management Plan Summary Total VOC Emission limit value			Solvent regulations Please refer to linked solvent regulations to complete table 5 and 6					
Reporting year	Total solvent input on site (kg)	Total VOC emissions to Air from entire site (direct and fugitive)	Total VOC emissions as % of solvent input	Total Emission Limit Value (ELV) in licence or any revision thereof	Compliance			
					SELECT			
					SELECT			
Table A5: Solvent Mass Balance summary								
	(I) Inputs (kg)	(O) Outputs (kg)						
Solvent	(I) Inputs (kg)	Organic solvent emission in waste gases(kg)	Solvents lost in water (kg)	Collected waste solvent (kg)	Fugitive Organic Solvent (kg)	Solvent released in other ways e.g. by-passes (kg)	Solvents destroyed onsite through physical reaction	Total emission of Solvent to air (kg)
							Total	

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)			Lic No:	P0500-01	Year	2017

		Additional information
1	Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If you do not have licensed emissions you only need to complete table W1 and or W2 for storm water analysis and visual inspections	Yes The continuous monitoring sampler was relocated during the reporting period. The sampler experienced technical difficulties which inhibited the collection of flow data and subsequent annual loading calculations. It was therefore decided to present the sampling results in graphical form as an attachment.
2	Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising only any evidence of contamination noted during visual inspections	Yes Monthly COD analysis of yard runoff is attached in a separate document.

Table W1 Storm water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licensed Parameter	Monitoring date	ELV or trigger level in licence or any revision thereof*	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	

*trigger values may be agreed by the Agency outside of licence conditions

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
			SELECT		
			SELECT		

Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

3	Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below	Yes Additional information
4	Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box	Yes Surface water monitoring was carried out on a quarterly basis. The results of which are attached. Monthly COD yard runoff results are also attached.

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereof ^{Note 2}	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source	Procedural reference standard number	Annual mass load (kg)	Comments
												APHA / AWWA "Standard Methods"	4500-NH3	NA	One off Grab sample
												APHA / AWWA "Standard Methods"	4500-NH3	NA	One off Grab sample

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)

Lic No:

P0500-01

Year

2017

Continuous monitoring

5 Does your site carry out continuous emissions to water/sewer monitoring?

Additional Information	
Yes	See note above

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

6 Did continuous monitoring equipment experience downtime? If yes please record downtime in table W4 below

Yes	Total of 176 days over 365 days.

7 Do you have a proactive service contract for each piece of continuous monitoring equipment on site?

Yes	Annual calibration schedule and trouble shooting service

8 Did abatement system bypass occur during the reporting year? If yes please complete table W5 below

No

Table W4: Summary of average emissions -continuous monitoring

Emission reference no:	Emission released to	Parameter/ Substance	ELV or trigger values in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission for current reporting year (kg)	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments

note 1: Volumetric flow shall be included as a reportable parameter.

Table W5: Abatement system bypass reporting table

Date	Duration (hours)	Location	Resultant emissions	Reason for bypass	Corrective action *	Was a report submitted to the EPA?	When was this report submitted?
						SELECT	

*Measures taken or proposed to reduce or limit bypass frequency

Bund/Pipeline testing template	Lic No:	P0500-01	Year	2017

Bund testing

dropdown menu click to see options

Additional information

Are you required by your licence to undertake integrity testing on bunds and containment structures ? If yes please fill out table B1 below listing all **new bunds and containment structures** on site, in addition to **all bunds which failed the integrity test- all bunding structures which failed including mobile bunds must be listed in the table below, please include all bunds outside the licenced testing period** (mobile bunds and chemstore included)

- 1 Please provide integrity testing frequency period
- Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to "Chemstore" type units and mobile bunds)
- 3 How many bunds are on site?
- 5 How many of these bunds have been tested within the required test schedule?
- 6 How many mobile bunds are on site?
- 7 Are the mobile bunds included in the bund test schedule?
- 8 How many of these mobile bunds have been tested within the required test schedule?
- 9 How many sumps on site are included in the integrity test schedule?
- 10 How many of these sumps are integrity tested within the test schedule?
- Please list any sump integrity failures in table B1**
- 11 Do all sumps and chambers have high level liquid alarms?
- 12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?
- 13 Is the Fire Water Retention Pond included in your integrity test programme?

Yes	There was no requirement to test the bunds in 2017
Other (2 Yearly)	
Yes	
	Two additional bunds to be included in future tests.
	9 All passed in 2016
	This includes barrel trays located within workshops
No	
NA	
NA	
NA	
N/A	
N/A	
N/A	

Table B1: Summary details of bund /containment structure integrity test														
Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT					SELECT			SELECT	SELECT		SELECT		
	SELECT					SELECT			SELECT	SELECT		SELECT		

* Capacity required should comply with 25% or 110% containment rule as detailed in your licence

Has integrity testing been carried out in accordance with licence requirements and are all structures tested in line with BS8007/EPA Guidance?

[bundings and storage guidelines](#)

- 16 Are channels/transfer systems to remote containment systems tested?
- 17 Are channels/transfer systems compliant in both integrity and available volume?

Commentary	
SELECT	
SELECT	
SELECT	

Pipeline/underground structure testing

- Are you required by your licence to undertake integrity testing* on underground structures e.g. pipelines or sumps etc ? If yes please fill out table 2 below listing all underground structures and pipelines on site **which failed the integrity test and all which have not been tested within the integrity test period as specified**
- 2 Please provide integrity testing frequency period
- *please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)

Yes	
Other (2 Yearly)	

Table B2: Summary details of pipeline/underground structures integrity test											
Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest (if in current reporting year)
	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT				SELECT

Please use commentary for additional details not answered by tables/ questions above

Groundwater/Soil monitoring template	Lic No:	P0500-01	Year	2017

		Comments	
1	Are you required to carry out groundwater monitoring as part of your licence requirements?	no	
2	Are you required to carry out soil monitoring as part of your licence requirements?	no	
3	Do you extract groundwater for use on site? If yes please specify use in comment section	no	Domestic Use Only
4	Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below. Groundwater monitoring template	SELECT	
5	Is the contamination related to operations at the facility (either current and/or historic)	N/A	
6	Have actions been taken to address contamination issues? If yes please summarise remediation strategies proposed/undertaken for the site	N/A	
7	Please specify the proposed time frame for the remediation strategy	N/A	
8	Is there a licence condition to carry out/update ELRA for the site?	N/A	
9	Has any type of risk assesment been carried out for the site?	N/A	
10	Has a Conceptual Site Model been developed for the site?	N/A	
11	Have potential receptors been identified on and off site?	N/A	
12	Is there evidence that contamination is migrating offsite?	N/A	

Please provide an interpretation of groundwater monitoring data in the interpretation box below or if you require additional space please include a groundwater/contaminated land monitoring results interpretaion as an additional section in this AER

Please enter interpretation of data here

Table 1: Upgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+	unit	GTV's*	SELECT**	Upward trend in pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

.+ where average indicates arithmetic mean

.++ maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

Groundwater/Soil monitoring template

Lic No:

P0500-01

Year

2017

Table 2: Downgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	SELECT**	Upward trend in yearly average pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

*please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA.

[Groundwater monitoring template](#)

More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA published guidance (see the link in G31)

[Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites \(EPA 2013\).](#)

**Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS), If the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)

[Groundwater](#) [Drinking water](#)
[Surface](#) [regulations](#) [\(private supply\)](#) [Drinking water \(public](#) [Interim Guideline](#)
[water EQS](#) [GTV's](#) [standards](#) [supply\) standards](#) [Values \(IGV\)](#)

Table 3: Soil results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
							SELECT
							SELECT

Where additional detail is required please enter it here in 200 words or less

Environmental Liabilities template

Lic No:

P0500-01

Year

2017

[Click here to access EPA guidance on Environmental Liabilities and Financial provision](#)

		Commentary	
1	ELRA initial agreement status	Not a Licence Requirement	
2	ELRA review status	NA	
3	Amount of Financial Provision cover required as determined by the latest ELRA	NA	
4	Financial Provision for ELRA status	NA	
5	Financial Provision for ELRA - amount of cover	NA	
6	Financial Provision for ELRA - type	NA	
7	Financial provision for ELRA expiry date	NA	
8	Closure plan initial agreement status	NA	Internal Budget Provision
9	Closure plan review status	NA	Internal Budget Provision
10	Financial Provision for Closure status	NA	Internal Budget Provision
11	Financial Provision for Closure - amount of cover	NA	Internal Budget Provision
12	Financial Provision for Closure - type	NA	Internal Budget Provision
13	Financial provision for Closure expiry date	NA	

Environmental Management Programme/Continuous Improvement Programme template			Lic No:	P0500-01	Year	2017

Highlighted cells contain dropdown menu click to view		Additional Information	
1	Do you maintain an Environmental Management System (EMS) for the site. If yes, please detail in additional information	Yes	Internal unaccredited EMS
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site	Yes	
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements	Yes	
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence	Yes	

Environmental Management Programme (EMP) report					
Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
Reduction of emissions to Air	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Deploy Hydraulic Harrows at dust sensitive areas headland Peat collection.	90	In total 33 Personnel received training in 2017. Training now also includes an energy awareness component. Ten hydraulic harrows were deployed at five production areas including all dust sensitive areas. Headland peat was collected at six production areas and returned as part of overall production.	Individual	Improved Environmental Management Practices
Waste reduction/Raw material usage efficiency	Waste Streamlining. It is planned to continue with and where possible improve the current waste management service provided by AES Ltd	100	Quarterly waste reports are returned for records/filing and waste streams are segregated on site to maximise recycling potential which was installed in 2015	Section Head	Improved Environmental Management Practices
Reduction of emissions to Water	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.	90	In total 33 Personnel received training in 2017. All silt ponds were cleaned at least twice as per licence condition.	Individual	Improved Environmental Management Practices
Waste reduction/Raw material usage efficiency	Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.	100	In total 222.82 tonnes were sent off site for recycling. Procurement also exploring the possibility of securing further recyclers.	Individual	Improved Environmental Management Practices
Energy Efficiency/Utility conservation	As part of an energy management process, an ongoing review of energy usage is in place.	100	There was reduced activity at Boora Workshop. The unoccupied areas are sectioned off. Consequently there is no requirement for lighting or heating in those areas. The site achieved the Energy standard ISO50001 during the reporting period.	Section Head	Improved Environmental Management Practices

Noise monitoring summary report	Lic No: P0500-01	Year 2017

1 Was noise monitoring a licence requirement for the AER period?
If yes please fill in table N1 noise summary below

No

2 Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?

[Noise Guidance note NG4](#)
NA

3 Does your site have a noise reduction plan

NA

4 When was the noise reduction plan last updated?

Enter date

5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

NA

Table N1: Noise monitoring summary											
Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA _{eq}	LA ₉₀	LA ₁₀	LA _{max}	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is <u>site</u> compliant with noise limits (day/evening/night)?
								SELECT	SELECT		SELECT

*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

SELECT

** please explain the reason for not taking action/resolution of noise issues?
Any additional comments? (less than 200 words)

Resource Usage/Energy efficiency summary	Lic No:	P0500-01	Year	2017

		Additional information	
1	When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below	Oct-17	
2	Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information	Yes	The site attained accreditation to the energy standard 50001
3	Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information	NA	

Table R1 Energy usage on site				
Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*
Total Energy Used (MWHrs)	13280.71	11375		
Total Energy Generated (MWHrs)				
Total Renewable Energy Generated (MWHrs)				
Electricity Consumption (MWHrs)	678.142	611.494		
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)				
Light Fuel Oil (m3)	1240.28	1057.016		
Natural gas (m3)				
Coal/Solid fuel (metric tonnes)	17.6	4.5		
Peat (metric tonnes)				
Renewable Biomass				
Renewable energy generated on site				

* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site					Water Emissions	Water Consumption	
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m³/yr):	Volume used i.e not discharged to environment e.g. released as steam m3/yr	Unaccounted for Water:
Groundwater							
Surface water							
Public supply							
Recycled water							
Total							

* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Resource Usage/Energy efficiency summary			Lic No:	P0500-01	Year	2017

Table R3 Waste Stream Summary					
	Total	Landfill	Incineration	Recycled	Other
Hazardous (Tonnes)	1.95	0	0.28	1.67	0
Non-Hazardous (Tonnes)	1104.72	57.84	0	334.95	711.94

Table R4: Energy Audit finding recommendations								
Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
			SELECT					
			SELECT					
			SELECT					

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology					
Primary Fuel					
Thermal Efficiency					
Unit Date of Commission					
Total Starts for year					
Total Running Time					
Total Electricity Generated (GWH)					
House Load (GWH)					
KWH per Litre of Process Water					
KWH per Litre of Total Water used on Site					

[illegible]

WASTE SUMMARY	Lic No:	P0500-01	Year	2017

Table 4 Environmental monitoring-landfill only [Landfill Manual-Monitoring Standards](#)

Was meteorological monitoring in compliance with Landfill Directive (LD) standard in reporting year +	Was leachate monitored in compliance with LD standard in reporting year	Was Landfill Gas monitored in compliance with LD standard in reporting year	Was SW monitored in compliance with LD standard in reporting year	Have GW trigger levels been established	Were emission limit values agreed with the Agency (ELVs)	Was topography of the site surveyed in reporting year	Has the statement under S53(A)(5) of WMA been submitted in reporting year	Comments

+ please refer to Landfill Manual linked above for relevant Landfill Directive monitoring standards

Table 5 Capping-Landfill only

Area uncapped*	Area with temporary cap	Area with final cap to LD Standard m2 ha, a	Area capped other	Area with waste that should be permanently capped to date under licence	What materials are used in the cap	Comments
SELECT UNIT	SELECT UNIT					

*please note this includes daily cover area

Table 6 Leachate-Landfill only

9 Is leachate from your site treated in a Waste Water Treatment Plant?

SELECT

10 Is leachate released to surface water? If yes please complete leachate mass load information below

SELECT

Volume of leachate in reporting year(m3)	Leachate (BOD) mass load (kg/annum)	Leachate (COD) mass load (kg/annum)	Leachate (NH4) mass load (kg/annum)	Leachate (Chloride) mass load kg/annum	Leachate treatment on-site	Specify type of leachate treatment	Comments

Please ensure that all information reported in the landfill gas section is consistent with the Landfill Gas Survey submitted in conjunction with PRTR returns

Table 7 Landfill Gas-Landfill only

Gas Captured&Treated by LFG System m3	Power generated (MW / KWh)	Used on-site or to national grid	Was surface emissions monitoring performed during the reporting year?	Comments
			SELECT	

Boora
Decommissioning and Rehabilitation
AER Overview 2017.

Within the Boora licensed area (P0500-01) there was no entire bog units available for rehabilitation in 2017. Ongoing monitoring of cutaway within the Boora area was carried out with Kilaranny, Belair North and Lemonaghan bogs being re-surveyed. An invasive aquatic plant species (Parrots Feather *Myriophyllum aquaticum*) was identified in the amenity areas of Boora in 2016, actions to control its spread have been enacted along with the notification of the presence of this species to the relevant authorities.

A section of deep peat restoration was carried out in Clongawney Bog in 2017 (28 ha). Peat dams were used to block the drains on a section of bog that had formerly been in industrial peat production.

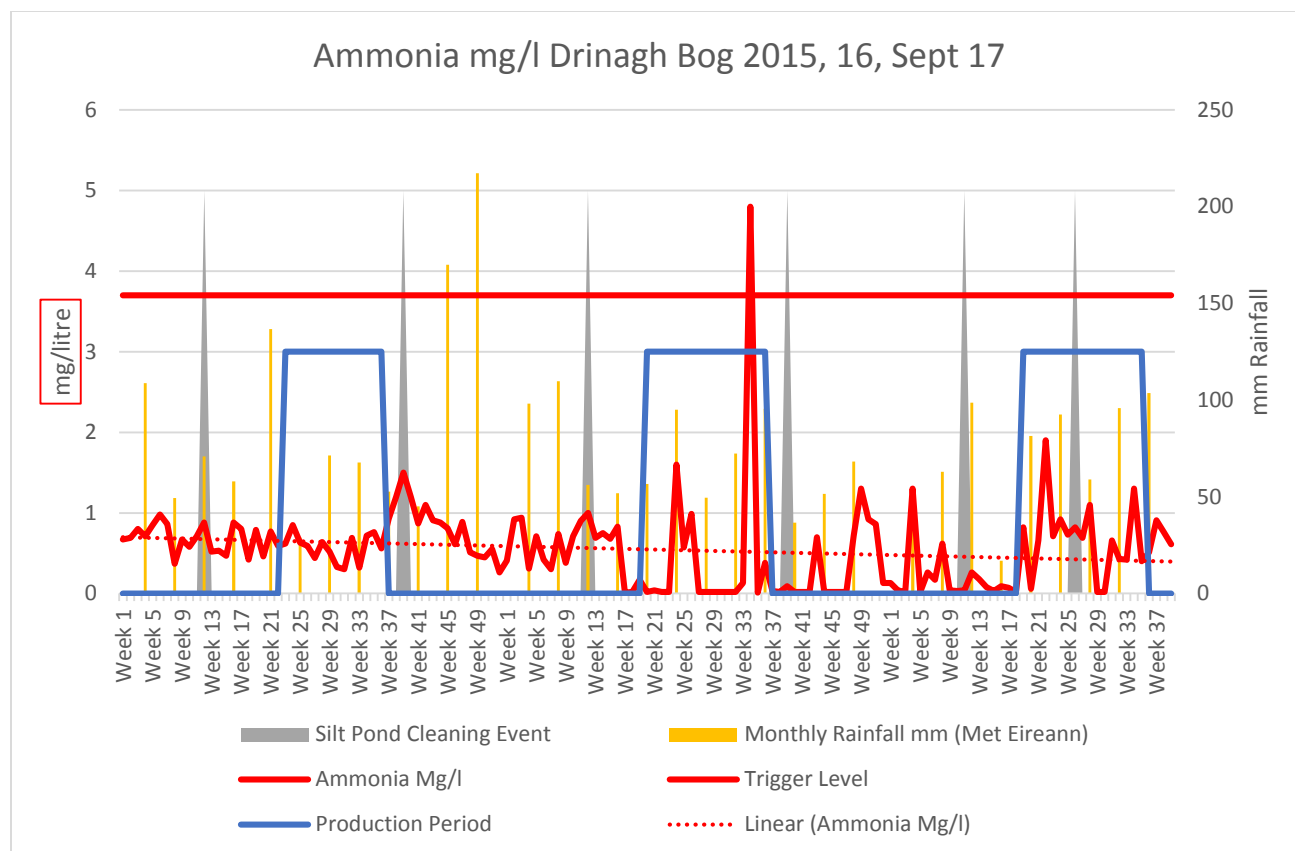
Draft rehabilitation plans for the Boora bogs licensed area, including more detailed draft plans for each component bog unit were submitted to the EPA in 2013 and these were reviewed and updated in 2015 and 2017.

The new Biodiversity Action Plan (2016-2021) was launched in 2016 with the annual Biodiversity Action Plan review day being held in February 2017, this included an update on the progress of this plan, bog restoration and cutaway rehabilitation for a wide range on statutory and non-statutory consultees including members of the EPA, NPWS, BWI, Bord na Mona, Coillte, Inland Fisheries Ireland, An Taisce, IPCC, Irish Red Grouse Association, Irish Wildlife Trust, NARGC, local game councils, Midland Regional Planning Authority as well as a range of local community groups and Heritage Officers from counties Laois, Offaly, Kildare, Roscommon, Longford, Meath, Galway, Westmeath and Dublin.

A copy of our Biodiversity Action Plan is available to view and download at <http://www.bordnamona.ie/our-company/biodiversity/>

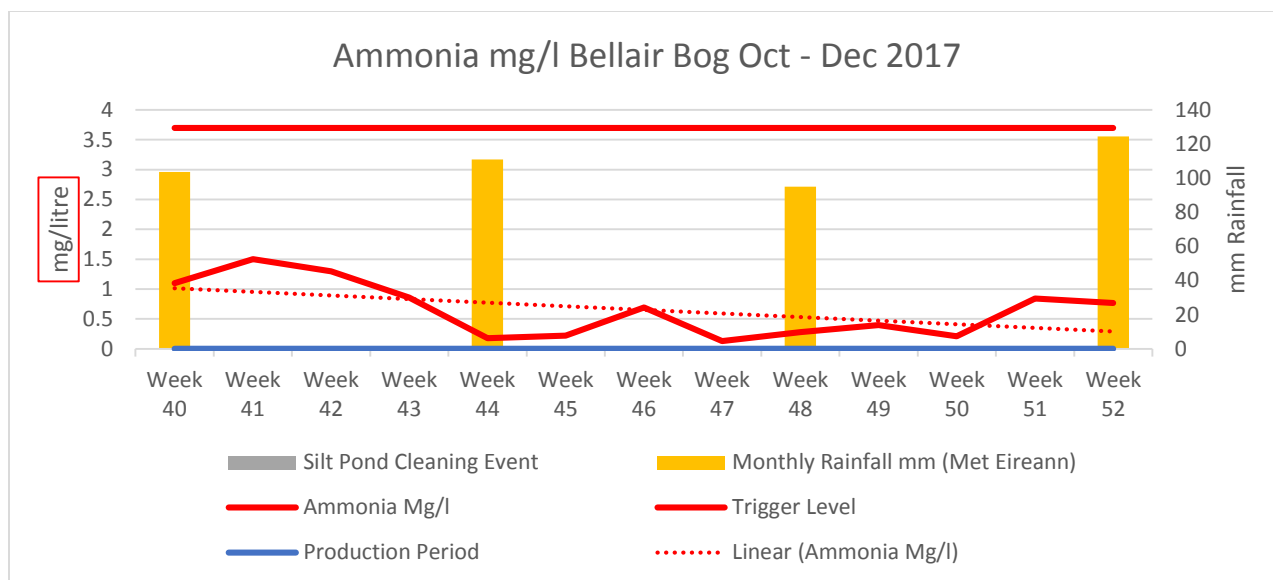
As required by condition 10.2 *Cutaway Bog Rehabilitation Plans*, draft peatland rehabilitation plans for all the individual bog units were submitted to the agency in 2013, reviewed and amended in 2015 and re-submitted to the agency in 2015. All draft rehabilitation plans have been reviewed in 2017. These reviewed and amended plans will be re-submitted to the agency in due course.

Siltpond Monitoring Frequency												
Bord na Mona Boora												
IPPC Licence P0500-01												
X	Y	Bog	SW	Monitoring	Sampled	pH	SS	TS	Ammonia	TP	COD	Colour
213631.82	220692.54	Noggusboy	SW-10	Q1 17	30/03/2017	7.5	247	488	0.35	0.05	110	127
214515.48	219480.49	West Boora	SW-11	Q1 17	30/03/2017	7.5	28	412	1.5	0.05	57	130
215354.86	221941.82	Derries	SW-14	Q1 17	30/03/2017	7.5	75	370	0.02	0.05	96	253
214889.87	221778.27	Derries	SW-14A	Q1 17	30/03/2017	7.4	53	342	0.02	0.05	89	239
220650.17	210315.60	Derrinboy	SW-38	Q2 17	29/06/2017	7.9	5	292	1.3	0.05	66	109
220483.33	210276.48	Derrinboy	SW-39	Q2 17	29/06/2017	7.4	5	188	0.35	0.05	66	204
219663.49	210038.82	Derrinboy	SW-40	Q2 17	29/06/2017	7.5	5	236	0.58	0.05	48	101
215361.95	232964.99	Bellair South	SW-33	Q2 17	29/06/2017	7.1	12	150	1.1	0.05	101	298
214495.84	232937.68	Bellair South	SW-34	Q2 17	29/06/2017	7.5	5	170	0.5	0.05	69	210
214987.18	232598.43	Bellair South	SW-34A	Q2 17	29/06/2017	6.3	14	112	0.63	0.05	92	302
213906.46	231884.67	Bellair South	SW-35	Q2 17	29/06/2017	6.3	9	129	2	0.05	121	306
215477.01	233062.25	Bellair North	SW-37B	Q2 17	29/06/2017	7.4	5	260	1.4	0.05	78	301
204681.49	214416.93	Clongawney	SW-1	Q3 17	11/10/2017	7.6	5	266	0.93	0.05	63	166
205641.50	213067.71	Clongawney	SW-3	Q3 17	11/10/2017	7.8	9	282	1.5	0.05	44	119
206319.95	215656.92	Clongawney	SW-4	Q3 17	11/10/2017	7.4	5	246	0.06	0.05	116	319
207679.57	215615.99	Clongawney	SW-5	Q3 17	11/10/2017	7.6	5	234	0.7	0.05	55	111
208818.04	215648.99	Drinagh	SW-7	Q3 17	11/10/2017	7.7	5	316	0.83	0.05	49	128
212017.45	214103.39	Drinagh	SW-8	Q3 17	11/10/2017	7.9	5	232	2.9	0.05	56	146
224321.91	224780.07	Kilaranny	SW-24	Q3 17	11/10/2017	7.8	13	512	0.06	0.05	55	161
224248.46	223524.04	Kilaranny	SW-24A	Q3 17	11/10/2017	7.7	5	490	1.3	0.05	48	122
217008.23	222986.75	Turraun	SW-15	Q4 17	13/12/2017	7.3	6	440	0.14	0.05	82	192
219378.47	224050.10	Turraun	SW-16	Q4 17	13/12/2017	7.4	7	258	0.82	0.05	70	212
219721.73	224554.04	Pollagh	SW-17	Q4 17	13/12/2017	7	5	212	1.9	0.05	63	231
221729.61	226112.15	Pollagh	SW-17A	Q4 17	13/12/2017	7.4	5	374	0.34	0.05	67	169
220331.44	222549.88	Oughter	SW-18	Q4 17	13/12/2017	7.4	8	288	0.46	0.05	64	223
216627.57	234827.38	Bellair North	SW-36	Q4 17	13/12/2017	6.8	5	82	0.37	0.05	60	182
219056.10	234057.41	Bellair North	SW-37	Q4 17	13/12/2017	7	7	140	0.44	0.05	62	223
216202.99	234373.11	Bellair North	SW-37A	Q4 17	13/12/2017	4.9	7	74	0.39	0.05	67	166



Drinagh Bog

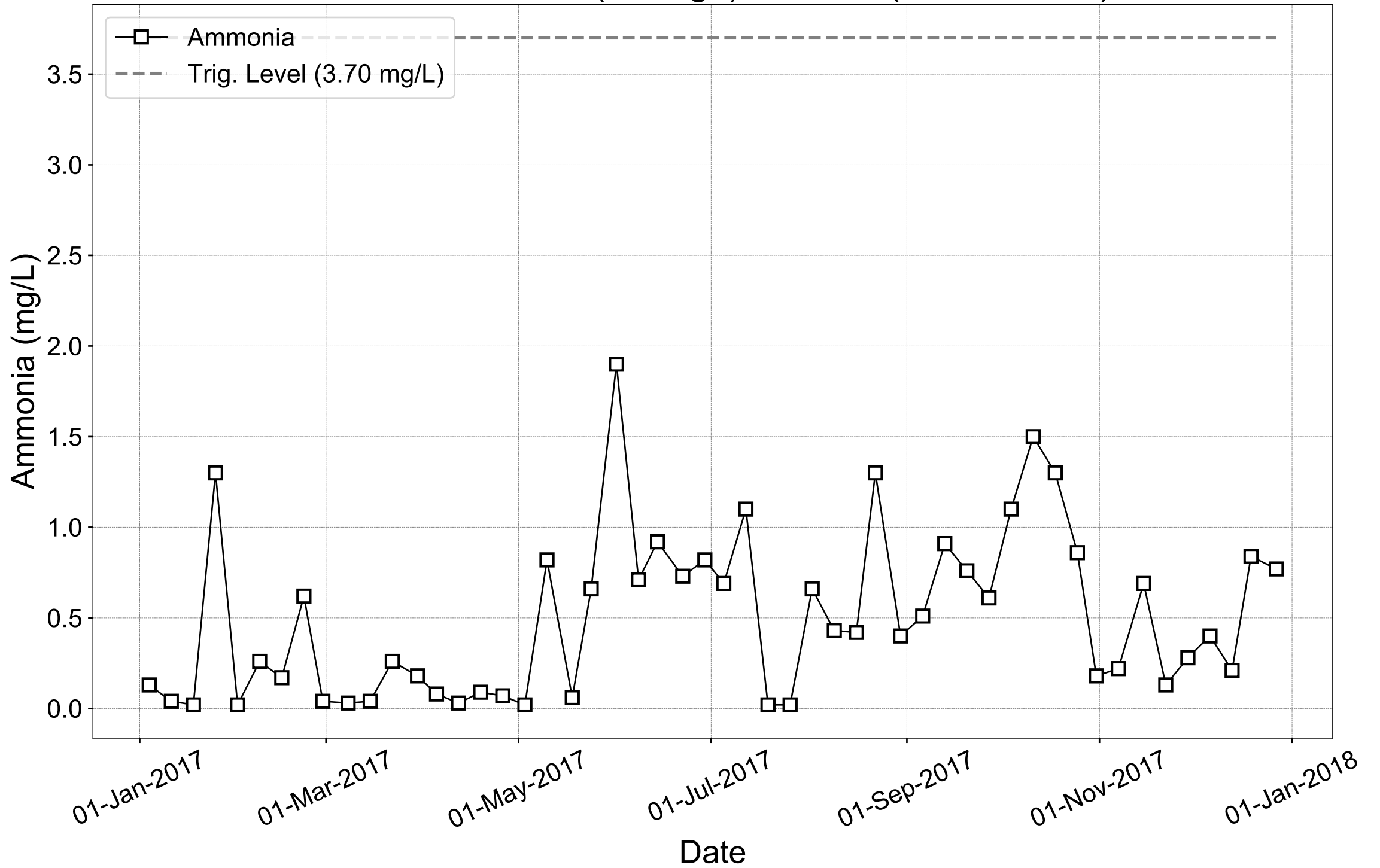
Drinagh bog is an active production bog with the composite sampler located here during 2015, 16 and up to September 2017. The composite sampler takes a flow proportional composite sample over a 24 hour period. The sampler had 35% downtime during the period being reported, but suitable weekly grab samples were taken during these downtimes, primarily due to battery fault, flooding events or sampler away for service/overhaul. The ammonia trigger level of 3.7mg/l, as agreed with the Agency, was not exceeded during the period being reported. Combining the 2015, 16 & 17 results above show concentrations trending downwards over the 2-3 year period as peat extraction continues and this is in line with the downwards trends submitted to the EPA in 2013 as required by condition 6.14. There is no obvious link between the summer production, winter maintenance or silt pond maintenance events on the concentration of ammonia discharging from the peatlands. The only link expected would be that related to rainfall events and seasonal weather patterns and the subsequent surfacewater runoff and associated ammonia concentrations.



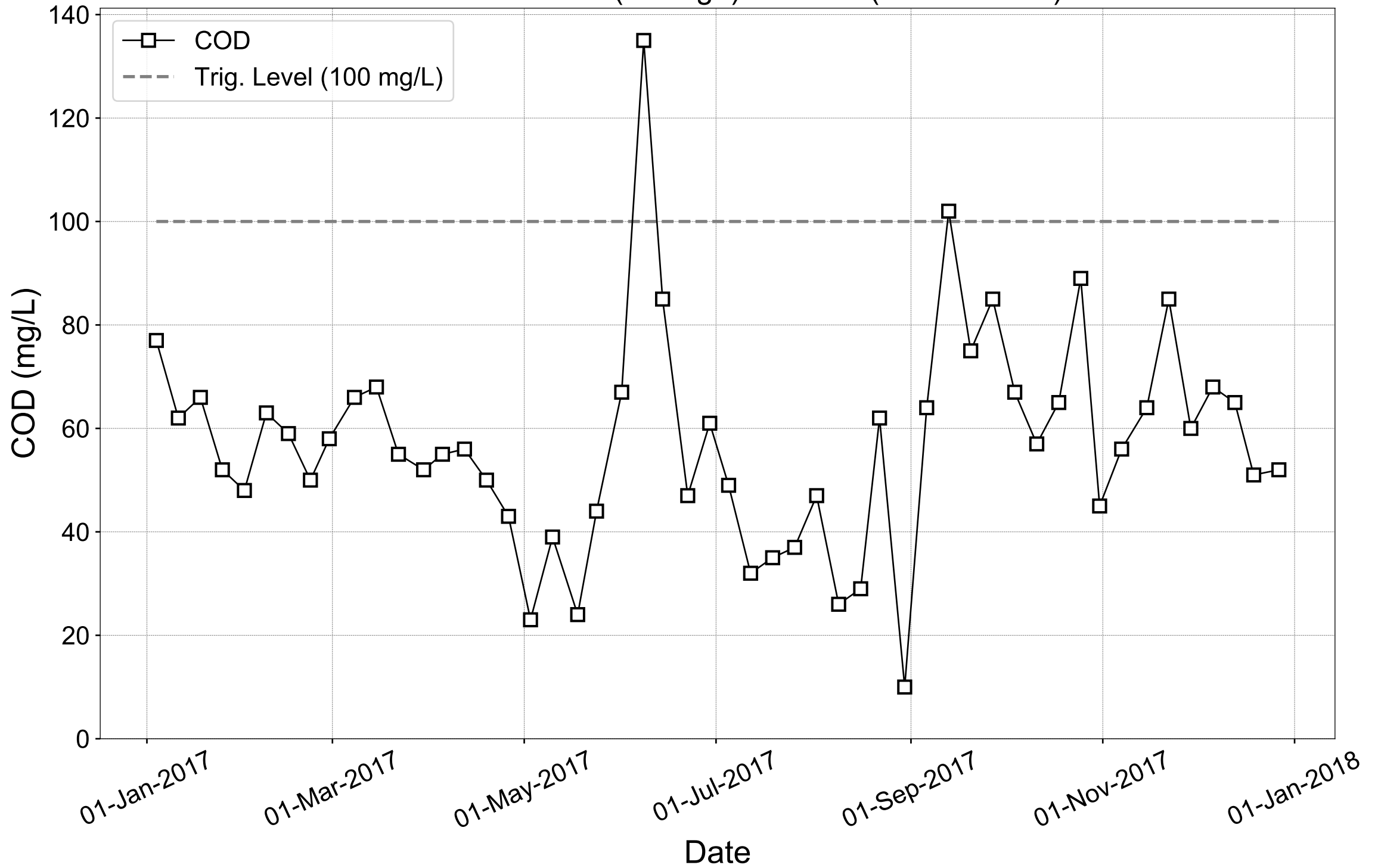
Bellair Bog

Bellair bog is an active production bog with the composite sampler located here from the last week in September 2017. The composite sampler takes a flow proportional composite sample over a 24 hour period. The sampler had 85% downtime during the period being reported, but suitable weekly grab samples were taken during these downtimes, primarily due to battery fault, flooding events or the sampler was being serviced/overhauled. The ammonia trigger level of 3.7mg/l, as agreed with the Agency, was exceeded once during the period being reported. The above graph show concentrations trending downwards over the initial 3 month period as peat extraction continues and this is in line with the downwards trends submitted to the EPA in 2013 as required by condition 6.14. The sampler will remain at this emission point for 2018 and in Aer 2018, data will give a better indication of ongoing trends. It is not possible to identify any obvious link between the summer production, winter maintenance or silt pond maintenance events on the concentration of ammonia discharging from the peatlands, as these all occurred in the months prior to the location of the sampler at Bellair bog. The only link expected would be that related to rainfall events and seasonal weather patterns and the subsequent surfacewater runoff and associated ammonia concentrations.

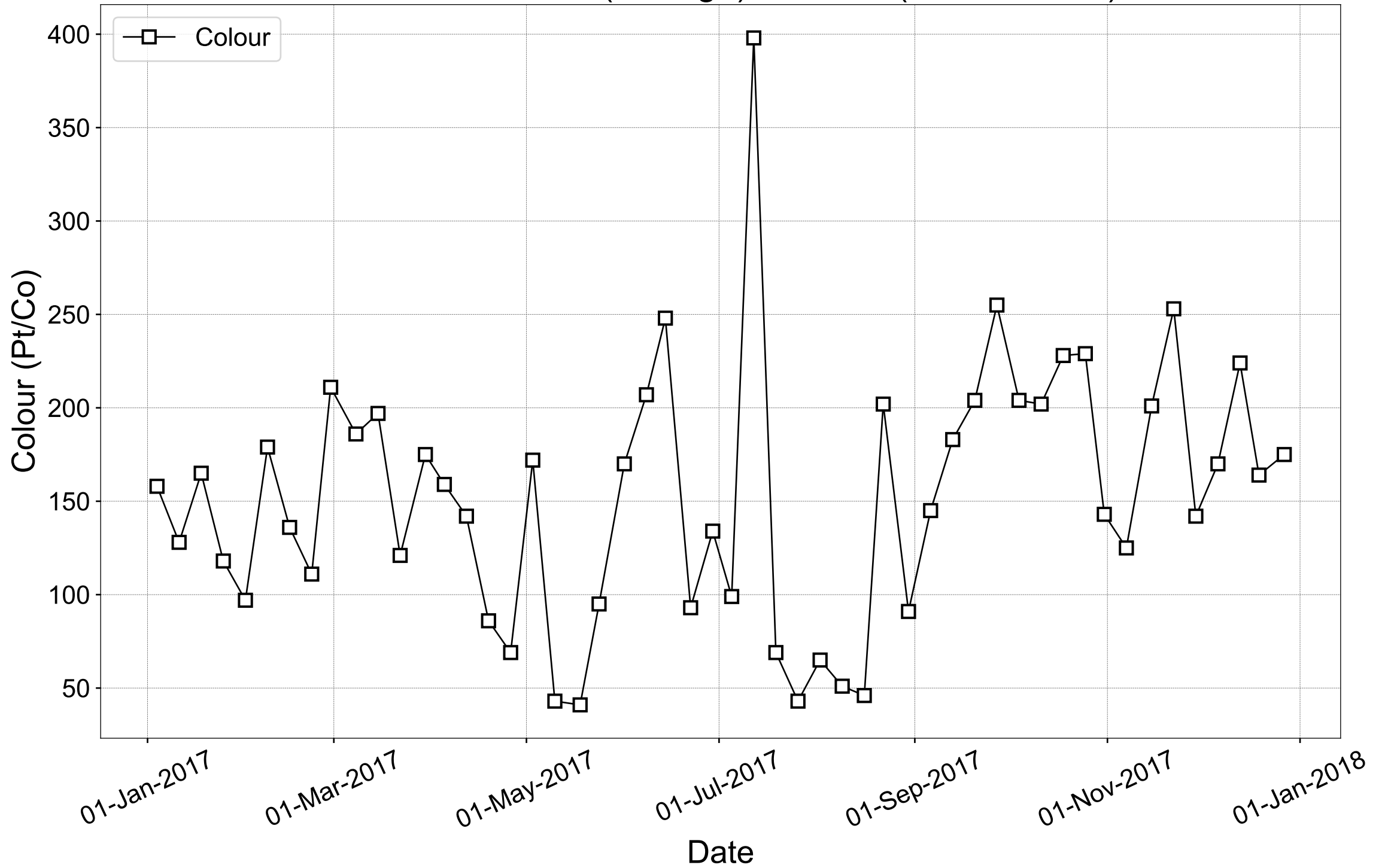
Boora 500 - SW7 (Drinagh) & SW34 (Bellair South)



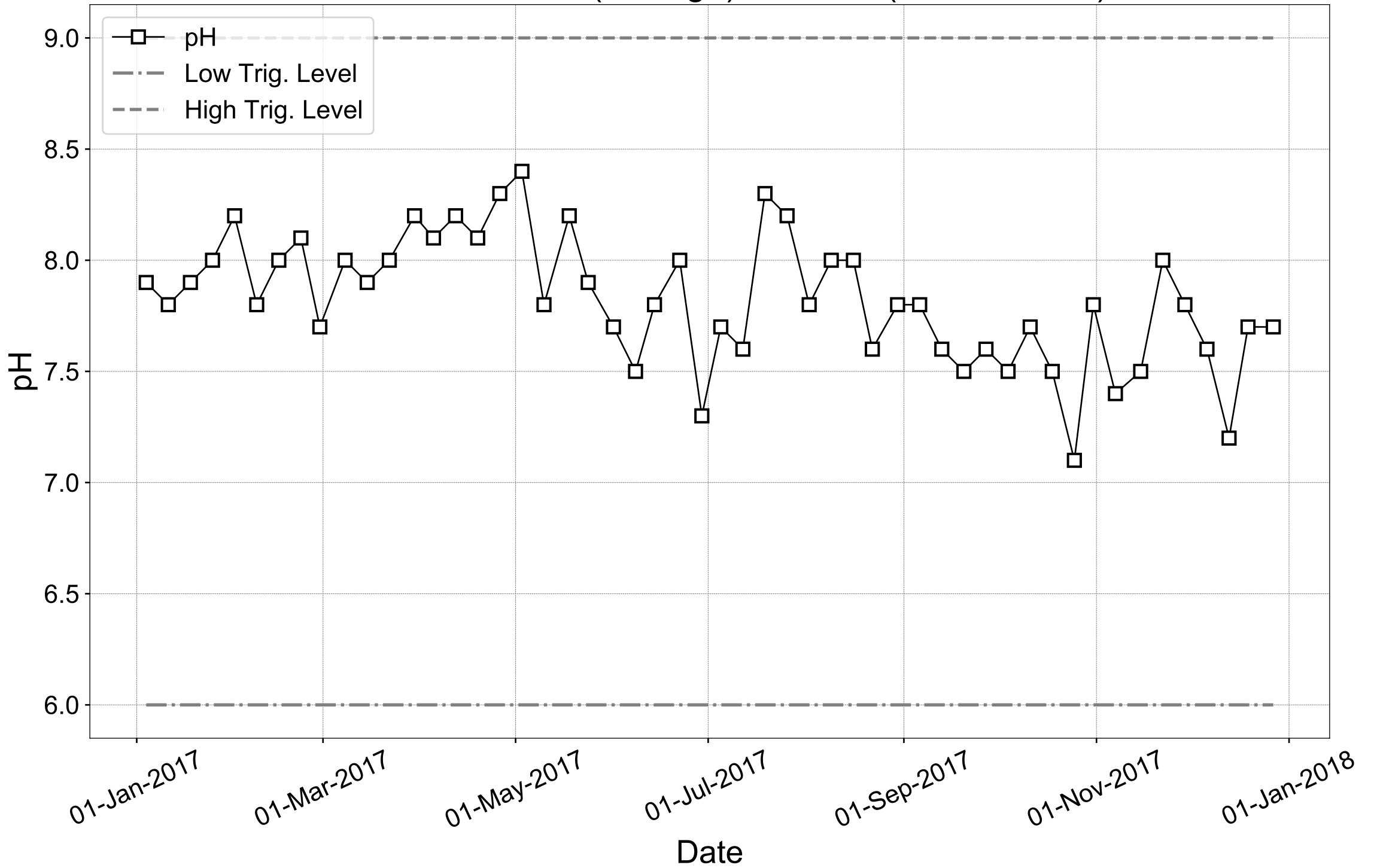
Boora 500 - SW7 (Drinagh) & SW34 (Bellair South)



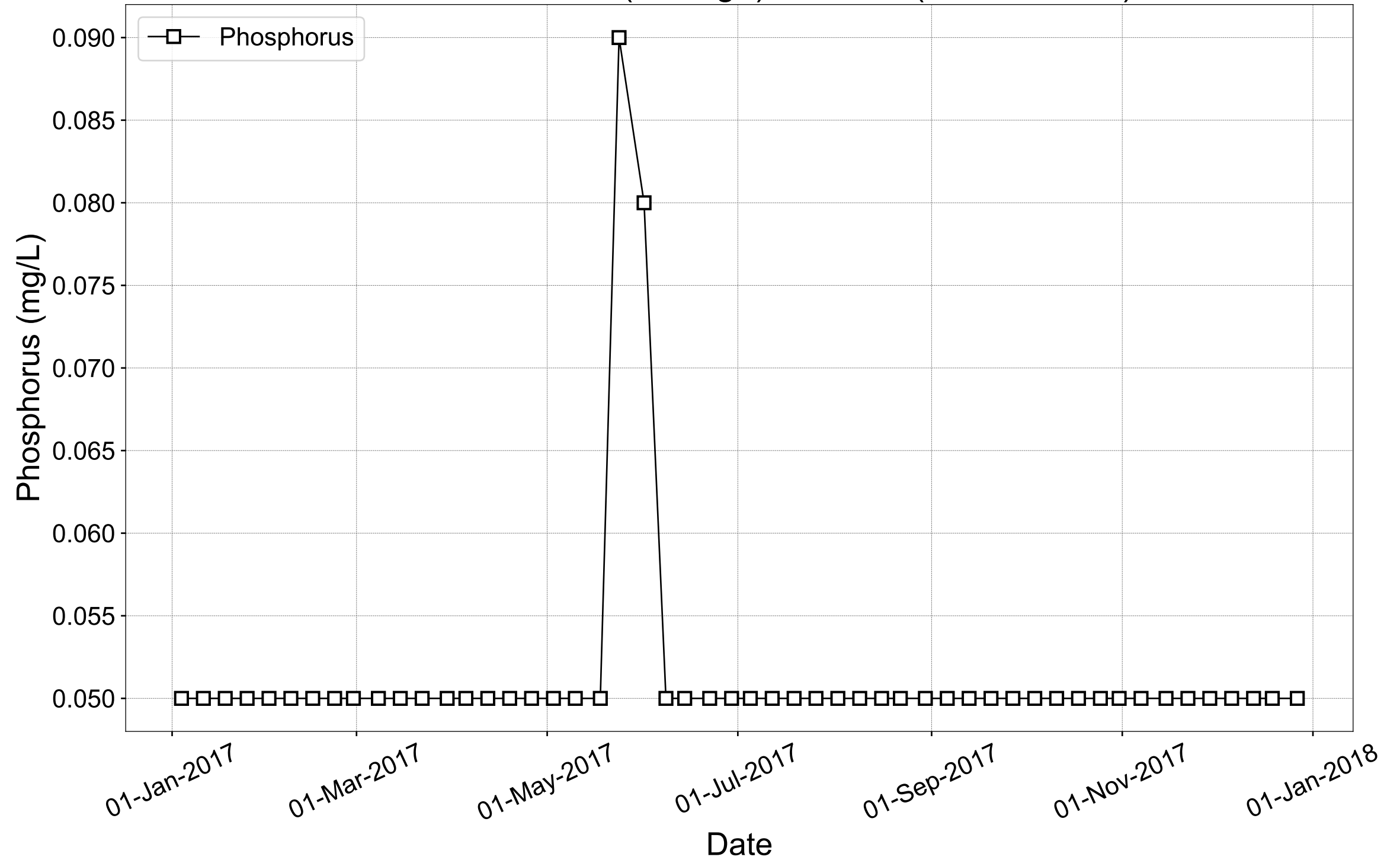
Boora 500 - SW7 (Drinagh) & SW34 (Bellair South)



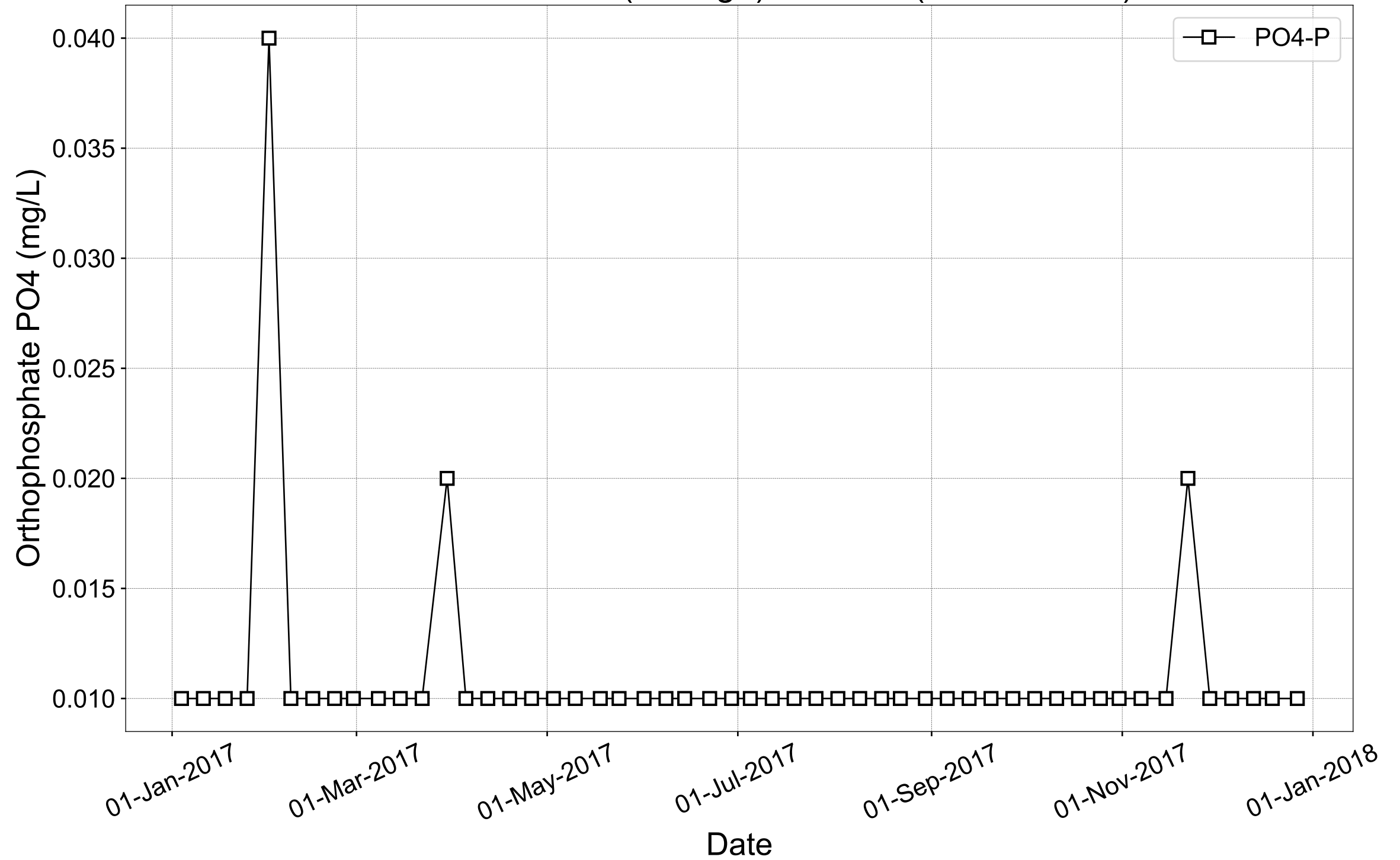
Boora 500 - SW7 (Drinagh) & SW34 (Bellair South)



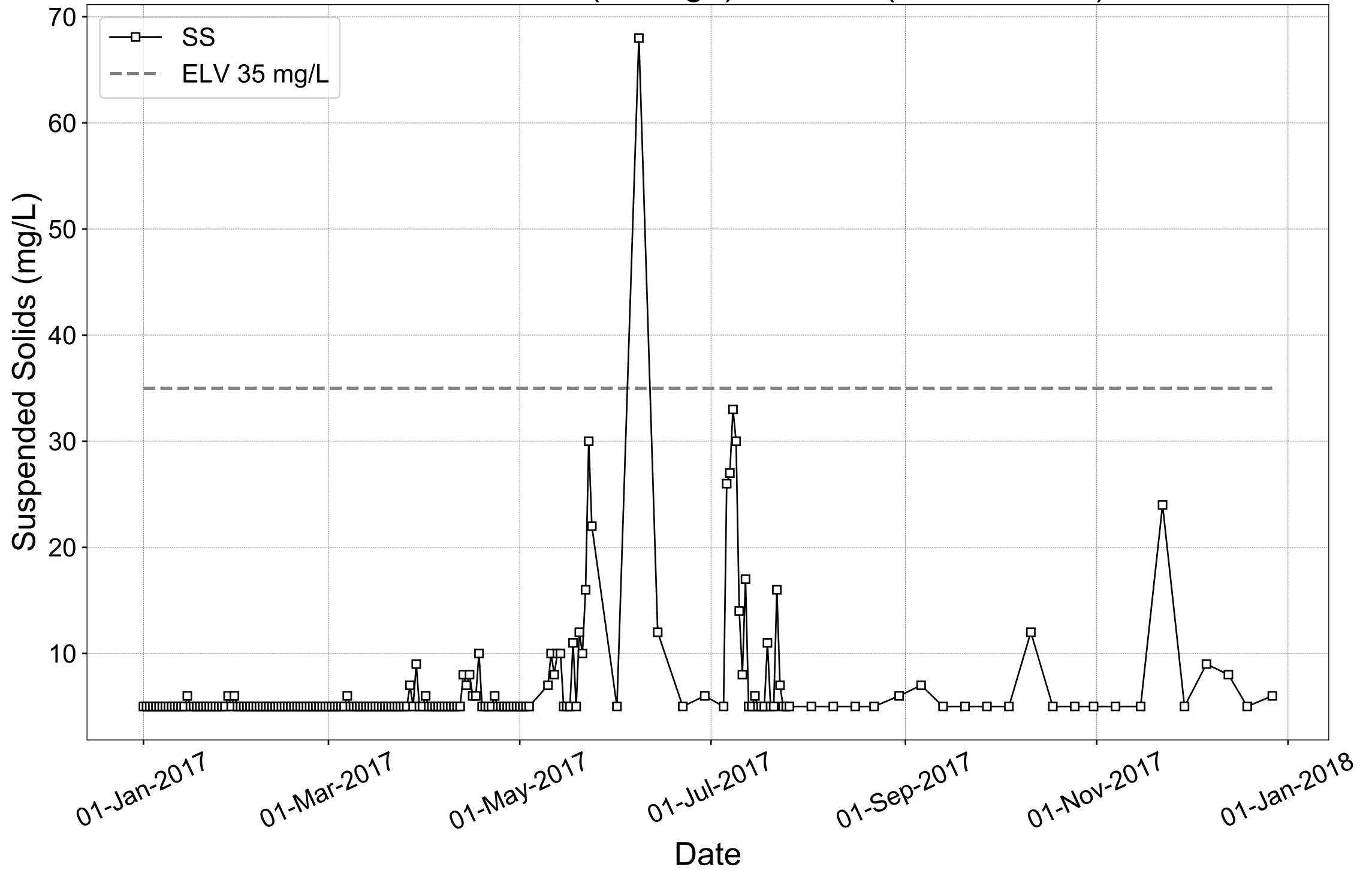
Boora 500 - SW7 (Drinagh) & SW34 (Bellair South)



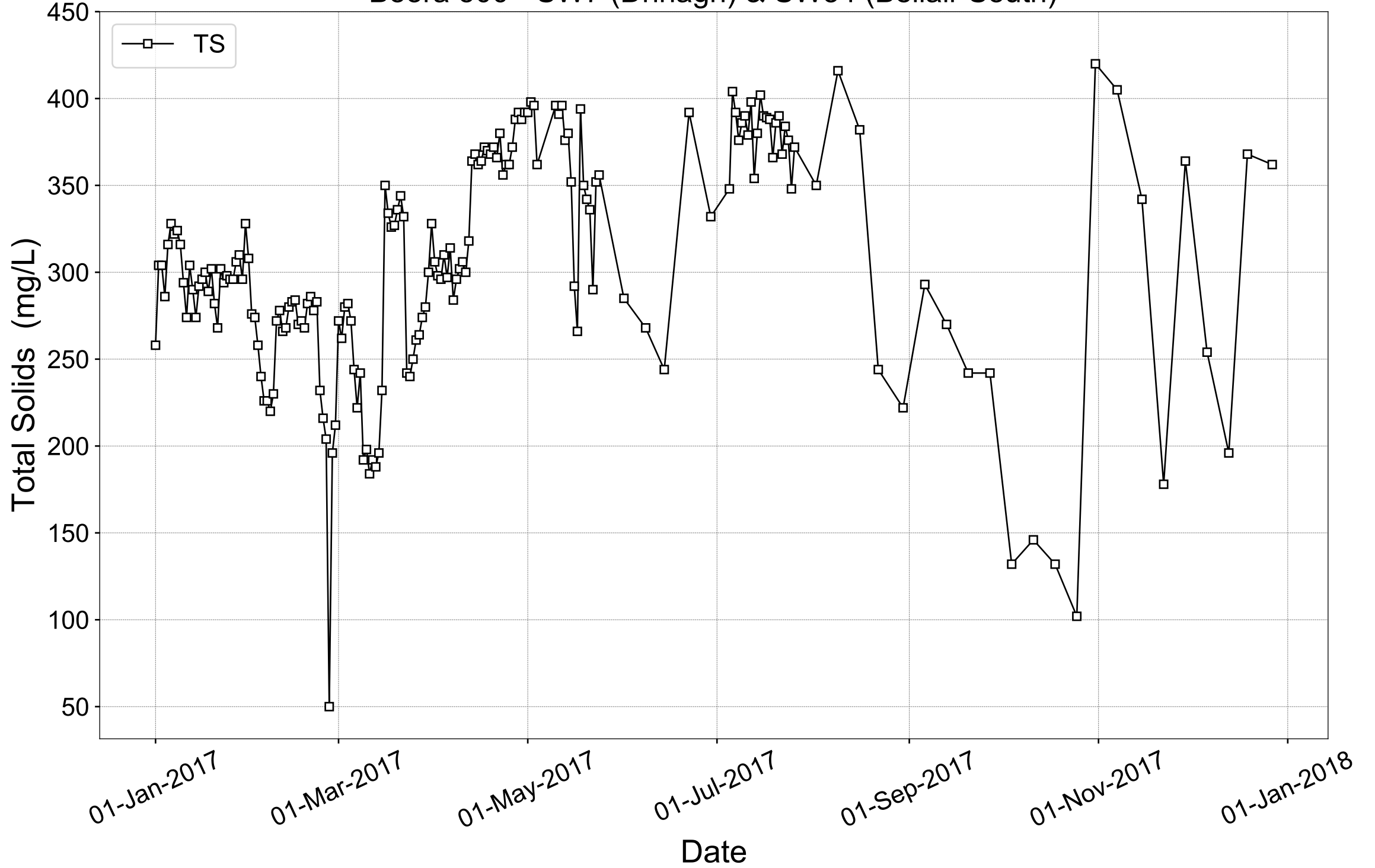
Boora 500 - SW7 (Drinagh) & SW34 (Bellair South)



Boora 500 - SW7 (Drinagh) & SW34 (Bellair South)



Boora 500 - SW7 (Drinagh) & SW34 (Bellair South)



Licence: P0500-01															
Works: Boora															
Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9	
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
June	51	21	48	0	0	0	0	0	0	66	0	0	0	0	
July	51	36	32	0	0	0	0	0	0	31	30	25	29	24	
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	57	
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	42	
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Nov	31	15	54	52	0	0	0	0	0	50	0	0	0	0	
Dec	22	13	0	0	0	0	0	19	0	51	24	0	0	0	
Note: 0 denotes no flow at emission point on day of sampling															



| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2017.xls | Return Year : 2017 |

04/04/2018 12:09

[Guidance to completing the PRTR workbook](#)

PRTR Returns Workbook

Version 1.1.19

REFERENCE YEAR		2017
1. FACILITY IDENTIFICATION		
Parent Company Name	Bord na Mona Energy Limited	
Facility Name	Bord na Mona Energy Limited Leabeg	
PRTR Identification Number	P0500	
Licence Number	P0500-01	
Classes of Activity		
No.	class name	
	Refer to PRTR class activities below	
Address 1	Boora Group	
Address 2	c/o Boora Works	
Address 3	Leabeg, Tullamore,	
Address 4		
	Offaly	
Country	Ireland	
Coordinates of Location	-7.72946 53.2273	
River Basin District	IEGBNISH	
NACE Code	0892	
Main Economic Activity	Extraction of peat	
AER Returns Contact Name	Enda McDonagh	
AER Returns Contact Email Address	enda.mcdonagh@bnm.ie	
AER Returns Contact Position	Head of Environment	
AER Returns Contact Telephone Number	057 9345911	
AER Returns Contact Mobile Phone Number	086 2370816	
AER Returns Contact Fax Number	057 9345160	
Production Volume	559486.0	
Production Volume Units	Tonnes	
Number of Installations	13	
Number of Operating Hours in Year	2232	
Number of Employees	124	
User Feedback/Comments	In accordance with licence condition 6.2 of Technical Amendment A, quarterly sampling is now rotated every quarter and therefore suspended solids results are not factored into loading. Due to technical difficulties experienced with the composite sampler annual loading was not possible to calculate. All composite sampler results are attached for review in the AER document.	
Web Address	www.bnm.ie	
2. PRTR CLASS ACTIVITIES		
Activity Number	Activity Name	
50.1	General	
3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)		
Is it applicable?	No	
Have you been granted an exemption?		
If applicable which activity class applies (as per Schedule 2 of the regulations)?		
Is the reduction scheme compliance route being used?		
4. WASTE IMPORTED/ACCEPTED ONTO SITE		
Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities)?		
No		
This question is only applicable if you are an IPPC or Quarry site		

[Guidance on waste imported/accepted onto site](#)

4.1 RELEASES TO AIR [Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2017.xls | Return Year : 2017 |

04/04/2018 12:11

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR		METHOD		Please enter all quantities in this section in KGs			
POLLUTANT		Method Used		QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
							F (Fugitive) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR		METHOD		Please enter all quantities in this section in KGs			
POLLUTANT		Method Used		QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
							F (Fugitive) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR		METHOD		Please enter all quantities in this section in KGs				QUANTITY	
POLLUTANT		Method Used		DM01	DM02	DM03		A (Accidental) KG/Year	F (Fugitive) KG/Year
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	Emission Point 3	T (Total) KG/Year	
210	Dust	E	OTH	VDI 2119 Blatt 2/Part 2	0.0	0.0	0.0	0.05334	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill: Please enter summary data on the quantities of methane flared and / or utilised					Bord na Mona Energy Limited Leabeg	
T (Total) kg/Year		M/C/E	Method Code	Designation or Description	Facility Total Capacity m3 per hour	
Total estimated methane generation (as per site model)		0.0			N/A	
Methane flared		0.0			0.0 (Total Flaring Capacity)	
Methane utilised in engine/s		0.0			0.0 (Total Utilising Capacity)	
Net methane emission (as reported in Section A above)		0.0			N/A	

4.2 RELEASES TO WATERS [Link to previous years emissions data](#)

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2017.xls | Return Year : 2017 |

04/04/2018 12:12

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only concerns Releases from your facility

RELEASES TO WATERS					Please enter all quantities in this section in KGs				
POLLUTANT					QUANTITY				
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year	
			Method Code	Designation or Description					
					0.0	0.0	0.0	0.0	

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS				Please enter all quantities in this section in KGS				
POLLUTANT					QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Method Used	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
240	Suspended Solids	E	OTH	Designation or Description G/19 Based on ALPHA,1998,20th Edition, Method 2540D		0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
			Method Code	Designation or Description				
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

04/04/2018 12:14

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : P0500 | Facility Name : Bord na Mona Energy Limited Leabeg | Filename : P0500_2017.xls | Return Year : 2017 |

04/04/2018 12:15

Please enter all quantities on this sheet in Tonnes

3

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Licence/Permit No of Next Destination Facility Haz Waste: Name and Licence/Permit No of Recover/Disposer Non Haz Waste: Address of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	01 01 02	No	711.94	wastes from mineral non-metalliferous excavation	D1	E	Volume Calculation	Onsite of generation	Bord na Mona Boora,P0500-01	Boora,Leabeg,Tullamore,Co Offaly,Ireland		
Within the Country	02 01 04	No	222.82	waste plastics (except packaging)	R3	M	Weighed	Offsite in Ireland	Leinster Environmental Ltd,WP 2008/06	Haggardstown,Dundalk,Co Louth,,Ireland		
To Other Countries	13 02 05	Yes	0.0	mineral-based non-chlorinated engine, gear and lubricating oils	R1	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,,,Belgium	Houthalen,Belgium,,,,Belgium
Within the Country	15 01 03	No	2.13	wooden packaging absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	R3	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
To Other Countries	15 02 02	Yes	0.28		R1	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	Lindenschmidt,Reg no E97095037,Kreuztal,,,,Germany	Kreuztal,,,,Germany
To Other Countries	16 01 07	Yes	0.37	oil filters	R4	C	Volume Calculation	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	R.D. Recycling,Reg no 51727/1KD,Houthalen,Belgium,,,,Belgium	Houthalen,Belgium,,,,Belgium
Within the Country	17 04 07	No	110.0	mixed metals	R4	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	32.5	mixed municipal waste	D5	M	Weighed	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
Within the Country	20 03 01	No	25.34	mixed municipal waste	D5	M	Volume Calculation	Offsite in Ireland	AES Ltd,WP-OY-08-601-01	Cappincur,Tullamore,Co Offaly,,Ireland		
To Other Countries	16 06 01	Yes	1.32	lead batteries	R6	M	Weighed	Abroad	Enva Ireland Ltd,W184-01	Clonminam Ind Estate,Portlaoise,Co Laois,,Ireland	Campine Recycling,MLAV/05-173/GUDA,Beerse,,,,Belgium	Beerse,,,,Belgium

* Select a row by double-clicking the Description of Waste then click the delete button

[Link to previous years waste data](#)[Link to previous years waste summary data & percentage change](#)[Link to Waste Guidance](#)



Annual Environmental Report 2018

Bord na Mona Energy Ltd
(Boora Group of Bogs)
IPC Licence P0500-01

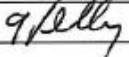
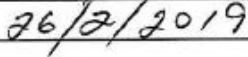
Facility Information Summary	
AER Reporting Year	2018
Licence Register Number	P0500-01
Name of site	Bord na Mona Boora
Site Location	Leabeg, Boora, Tullamore, Co Offaly
NACE Code	0892
Class/Classes of Activity	1.4
National Grid Reference (6E, 6 N)	180050, 319540

A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year and an overview of compliance with your licence listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise.

Activities at the site can be divided into two components, firstly the milling, harrowing, ridging and harvesting of peat into stockpiles and secondly the transportation of that peat via an internal rail network to the Electricity Generating Station and lorry outloading facilities. Production achieved was approximately 748996 tonnes. Infrastructurally, there was no new bog development. There were no environmental complaints received during 2018. There were 5 incidents 1 in relation to dust and the remainder to water. In relation to silt pond cleaning, 100% of ponds received two cleanings with inspections dictating if a pond received further cleaning. A number of initiatives are in place in terms of fuel and electricity usage. Formalised management meetings take place weekly with environmental issues on the agenda for discussion. We are operating a Quality Management System to I.S. EN ISO 9001:2015. We are "committed to conducting all aspects of our business activities with a focus on minimising the impact on the environment". Rehabilitation works are described in an attachment.

Declaration:

All the data and information presented in this report has been checked and certified as being

	
Signature	Date
Group/Facility manager (or nominated, suitably qualified and experienced deputy)	

AIR-summary template	Lic No:	P0500-01	Year	2018

Answer all questions and complete all tables where relevant

1	Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If you do not have licenced emissions and do not complete a solvent management plan (table A4 and A5) you <u>do not</u> need to complete the tables	Additional information	
		No	Fugitive emissions only

Periodic/Non-Continuous Monitoring

2	Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below	No	
3	Was all monitoring carried out in accordance with EPA guidance note AG2 and using the basic air monitoring checklist? Basic air monitoring checklist AGN2	Yes	

Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision thereof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments - reason for change in % mass load from previous year if applicable
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		

Note 1: Volumetric flow shall be included as a reportable parameter

Continuous Monitoring

4	Does your site carry out continuous air emissions monitoring?	No	
	If yes please review your continuous monitoring data and report the required fields below in Table A2 and compare it to its relevant Emission Limit Value (ELV)		
5	Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below	No	
6	Do you have a proactive service agreement for each piece of continuous monitoring equipment?	No	
7	Did your site experience any abatement system bypasses? If yes please detail them in table A3 below	No	

AIR-summary template	Lic No:	P0500-01	Year	2018

Table A2: Summary of average emissions -continuous monitoring

Emission reference no:	Parameter/ Substance	ELV in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
DM-01	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	29120	651	0	1	Reported to Agency
DM-02	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	14224	250	0	0	
DM-03	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	19348	360	0	0	
	SELECT				SELECT					

note 1: Volumetric flow shall be included as a reportable parameter.

Table A3: Abatement system bypass reporting table [Bypass protocol](#)

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

* this should include all dates that an abatement system bypass occurred

** an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

Solvent use and management on site									
8 Do you have a total Emission Limit Value of direct and fugitive emissions on site? if yes please fill out tables A4 and A5								No	
Table A4: Solvent Management Plan Summary Total VOC Emission limit value				Solvent regulations Please refer to linked solvent regulations to complete table 5 and 6					
Reporting year	Total solvent input on site (kg)	Total VOC emissions to Air from entire site (direct and fugitive)	Total VOC emissions as %of solvent input	Total Emission Limit Value (ELV) in licence or any revision thereof	Compliance				
					SELECT				
					SELECT				
Table A5: Solvent Mass Balance summary									
		(I) Inputs (kg)		(O) Outputs (kg)					
Solvent	(I) Inputs (kg)	Organic solvent emission in waste gases(kg)	Solvents lost in water (kg)	Collected waste solvent (kg)	Fugitive Organic Solvent (kg)	Solvent released in other ways e.g. by-passes	Solvents destroyed onsite through physical	Total emission of Solvent to air (kg)	
Total									

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)	Lic No: P0500-01	Year 2018

Additional information	
Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If you do not have licenced emissions you <u>only</u> need to complete table W1 and or W2 for storm water analysis and visual inspections 1	The continuous monitoring sampler was relocated during the reporting period. The sampler experienced technical difficulties. It was therefore decided to present the sampling results in graphical form as an attachment. Yes
Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising <u>only any evidence of contamination noted during visual inspections</u> 2	Monthly COD analysis of yard runoff is attached in a separate document. Yes

Table W1 Storm water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licenced Parameter	Monitoring date	ELV or trigger level in licence or any revision thereof*	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	

*trigger values may be agreed by the Agency outside of licence conditions

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
			SELECT		
			SELECT		

Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

3 Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box 4	Yes Additional information Surface water monitoring was carried out on a quarterly basis. The results of which are attached. Monthly COD yard runoff results are also attached. Yes

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereof ^{Note 2}	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source	Procedural reference standard number	Annual mass load (kg)	Comments
												APHA / AWWA "Standard Methods"	4500-NH3	NA	One off Grab sample
												APHA / AWWA "Standard Methods"	4500-NH3	NA	One off Grab sample

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)	Lic No:	P0500-01	Year	2018

Continuous monitoring

5	Does your site carry out continuous emissions to water/sewer monitoring?	Yes	Additional Information See note above

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

6	Did continuous monitoring equipment experience downtime? If yes please record downtime in table W4 below	Yes	Total of 166 days over 365 days.
7	Do you have a proactive service contract for each piece of continuous monitoring equipment on site?	Yes	Annual calibration schedule and trouble shooting service
8	Did abatement system bypass occur during the reporting year? If yes please complete table W5 below	No	

Table W4: Summary of average emissions -continuous monitoring

Emission reference no:	Emission released to	Parameter/ Substance	ELV or trigger values in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission for current reporting year (kg)	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments

note 1: Volumetric flow shall be included as a reportable parameter.

Table W5: Abatement system bypass reporting table

Date	Duration (hours)	Location	Resultant emissions	Reason for bypass	Corrective action*	Was a report submitted to the EPA?	When was this report submitted?
						SELECT	

*Measures taken or proposed to reduce or limit bypass frequency

Bund/Pipeline testing template	Lic No:	P0500-01	Year	2018

Bund testing dropdown menu click to see options

Are you required by your licence to undertake integrity testing on bunds and containment structures ? if yes please fill out table B1 below listing all **new bunds and containment structures** on site, in addition to **all bunds which failed** the integrity test **all bunding structures which failed including mobile bunds must be listed in the table below, please include all bunds outside the licenced testing period** (mobile bunds and chemstore included)

- 1
- 2 Please provide integrity testing frequency period
- 3 Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to "Chemstore" type units and mobile bunds)
- 4 How many bunds are on site?
- 5 How many of these bunds have been tested within the required test schedule?
- 6 How many mobile bunds are on site?
- 7 Are the mobile bunds included in the bund test schedule?
- 8 How many of these mobile bunds have been tested within the required test schedule?
- 9 How many sumps on site are included in the integrity test schedule?
- 10 How many of these sumps are integrity tested within the test schedule?
- 11 **Please list any sump integrity failures in table B1**
- 12 Do all sumps and chambers have high level liquid alarms?
- 13 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?
- 14 Is the Fire Water Retention Pond included in your integrity test programme?

Additional information	
Yes	
Other (2 Yearly)	
Yes	
11	
2 remaining bunds scheduled to be tested in 9 2019	
27	This includes barrel trays located within workshops
No	
NA	
NA	
NA	
N/A	
N/A	
N/A	

Table B1: Summary details of bund /containment structure integrity test

Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT					SELECT			SELECT	SELECT		SELECT		
	SELECT					SELECT			SELECT	SELECT		SELECT		

* Capacity required should comply with 25% or 110% containment rule as detailed in your licence

- 15 Has integrity testing been carried out in accordance with licence requirements and are all structures tested in line with BS8007/EPA Guidance?
- 16 Are channels/transfer systems to remote containment systems tested?
- 17 Are channels/transfer systems compliant in both integrity and available volume?

[bundling and storage guidelines](#)

Commentary	
SELECT	
SELECT	
SELECT	

Pipeline/underground structure testing

Are you required by your licence to undertake integrity testing* on underground structures e.g. pipelines or sumps etc ? if yes please fill out table 2 below listing all underground structures and pipelines on site **which failed the integrity test and all which have not been tested withing the integrity test period as specified**

- 2 Please provide integrity testing frequency period
- *please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)

Yes	
Other (2 Yearly)	

Table B2: Summary details of pipeline/underground structures integrity test

Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT				SELECT

Please use commentary for additional details not answered by tables/ questions above

Groundwater/Soil monitoring template	Lic No:	P0500-01	Year	2018

Comments			
1 Are you required to carry out groundwater monitoring as part of your licence requirements?	no		Please provide an interpretation of groundwater monitoring data in the interpretation box below or if you require additional space please include a groundwater/contaminated land monitoring results interpretation as an additional section in this AER
2 Are you required to carry out soil monitoring as part of your licence requirements?	no		
3 Do you extract groundwater for use on site? If yes please specify use in comment section	no	Domestic Use Only	
4 Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below.	SELECT		
5 Is the contamination related to operations at the facility (either current and/or historic)	N/A		
6 Have actions been taken to address contamination issues? If yes please summarise remediation strategies proposed/undertaken for the site	N/A		
7 Please specify the proposed time frame for the remediation strategy	N/A		
8 Is there a licence condition to carry out/update ELRA for the site?	N/A		
9 Has any type of risk assessment been carried out for the site?	N/A		
10 Has a Conceptual Site Model been developed for the site?	N/A		
11 Have potential receptors been identified on and off site?	N/A		
12 Is there evidence that contamination is migrating offsite?	N/A		

Please enter interpretation of data here

Table 1: Upgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+	unit	GTVs*	SELECT**	Upward trend in pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

+. where average indicates arithmetic mean

++. maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

Table 2: Downgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTVs*	SELECT**	Upward trend in yearly average pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

*please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA.

[Groundwater monitoring template](#)

More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA published guidance (see the link in G31) [Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites \(EPA 2013\)](#).

**Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS). If the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)

[Groundwater](#), [Drinking water](#), [Drinking water](#), [Surface water EQS](#), [regulations](#), [GTV's](#), [\(private supply\) standards](#), [\(public supply\) standards](#), [Interim Guideline Values \(IGV\)](#)

Table 3: Soil results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
							SELECT
							SELECT

Where additional detail is required please enter it here in 200 words or less

Environmental Liabilities template

Lic No:

P0500-01

Year

2018

[Click here to access EPA guidance on Environmental Liabilities and Financial provision](#)

[complete](#)

Commentary

ELRA initial agreement status	Not a Licence Requirement	
ELRA review status	NA	
Amount of Financial Provision cover required as determined by the latest ELRA	NA	
Financial Provision for ELRA status	NA	
Financial Provision for ELRA - amount of cover	NA	
Financial Provision for ELRA - type	NA	
Financial provision for ELRA expiry date	NA	
Closure plan initial agreement status	NA	Internal Budget Provision
Closure plan review status	NA	Internal Budget Provision
Financial Provision for Closure status	NA	Internal Budget Provision
Financial Provision for Closure - amount of cover	NA	Internal Budget Provision
Financial Provision for Closure - type	NA	Internal Budget Provision
Financial provision for Closure expiry date	NA	

Environmental Management Programme/Continuous Improvement Programme template		Lic No:	P0500-01	Year	2018

Highlighted cells contain dropdown menu click to view		Additional Information	
1	Do you maintain an Environmental Mangement System (EMS) for the site. If yes, please detail in additional information	Yes	Internal unaccredited EMS
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site	Yes	
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements	Yes	
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence	Yes	

Environmental Management Programme (EMP) report					
Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
Reduction of emissions to Air	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Deploy Hydraulic Harrows at dust sensitive areas headland Peat collection.	90	In total 71 Personnel received training in 2018. Training now also includes an energy awareness component. Ten hydraulic harrows were deployed at five production areas including all dust sensitive areas. Headland peat was collected at six production areas and returned as part of overall production.	Individual	Improved Environmental Management Practices
Waste reduction/Raw material usage efficiency	Waste Streamlining.It is planned to continue with and where possible improve the current waste management service provided by AES Ltd	100	Quarterly waste reports are returned for records/filing and waste streams are segreated on site to maximise recycling potential.	Section Head	Improved Environmental Management Practices
Reduction of emissions to Water	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.	90	All silt ponds were cleaned at least twice as per licence condition .	Individual	Improved Environmental Management Practices
Waste reduction/Raw material usage efficiency	Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.	100	In total 49.54 tonnes were sent off site for recycling. Procurement also exploring the possibility of securing further recyclers.	Individual	Improved Environmental Management Practices
Energy Efficiency/Utility conservation	As part of an energy management process, an ongoing review of energy usage is in place.	100	There was further reduced activity at Boora Workshop .The unoccupied areas are sectioned of. Consequently there is no requirement for lighting or heating in those areas. The site achieved the Energy standard ISO50001 during the reporting period.	Section Head	Improved Environmental Management Practices

Noise monitoring summary report	Lic No: P0500-01	Year 2018

Was noise monitoring a licence requirement for the AER period?

No

If yes please fill in table N1 noise summary below

Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?

[Noise Guidance note NG4](#)

NA

Does your site have a noise reduction plan

NA

When was the noise reduction plan last updated?

Enter date

Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

NA

Table N1: Noise monitoring summary

Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA _{eq}	LA ₉₀	LA ₁₀	LA _{max}	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is <u>site</u> compliant with noise limits (day/evening/night)?
								SELECT	SELECT		SELECT

*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

SELECT

** please explain the reason for not taking action/resolution of noise issues?

Any additional comments? (less than 200 words)

Resource Usage/Energy efficiency summary

Lic No:

P0500-01

Year

2018

1 When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below

2 Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information

3 Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information

Additional information

Sep-18	Report on file
Yes	ISO50001 accreditation attained from Certification Europe
NA	

Table R1 Energy usage on site				
Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*
Total Energy Used (MWHrs)	11375	14335.26		
Total Energy Generated (MWHrs)				
Total Renewable Energy Generated (MWHrs)				
Electricity Consumption (MWHrs)	611.494	657.287		
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)				
Light Fuel Oil (m3)	1057.016	1346.125		
Natural gas (m3)				
Coal/Solid fuel (metric tonnes)	4.5	0		
Peat (metric tonnes)				
Renewable Biomass				
Renewable energy generated on site				

* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site					Water Emissions	Water Consumption
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m ³ yr)	Volume used i.e not discharged to environment e.g. released as steam m3/yr
Groundwater						
Surface water						
Public supply						
Recycled water						
Total						

* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Resource Usage/Energy efficiency summary		Lic No:	P0500-01	Year	2018

Table R3 Waste Stream Summary		Landfill	Incineration	Recycled	Other
	Total				
Hazardous (Tonnes)	4.5	0	0	0	0
Non-Hazardous (Tonnes)	821.12	0	0	0	0

Table R4: Energy Audit finding recommendations								
Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
			SELECT					
			SELECT					
			SELECT					

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology					
Primary Fuel					
Thermal Efficiency					
Unit Date of Commission					
Total Starts for year					
Total Running Time					
Total Electricity Generated (GWH)					
House Load (GWH)					
KWH per Litre of Process Water					
KWH per Litre of Total Water used on Site					

Complaints and Incidents summary template

Lic No:

P0500-01

Year

2018

Complaints

Additional information

Have you received any environmental complaints in the current reporting year? If yes please complete summary details of complaints received on site in table 1 below

No

Table 1 Complaints summary

Date	Category	Other type (please specify)	Brief description of complaint (Free txt <20 words)	Corrective action< 20 words	Resolution status	Resolution date	Further information
	SELECT				SELECT		
Total complaints open at start of reporting year		0					
Total new complaints received during reporting year		0					
Total complaints closed during reporting year		0					
Balance of complaints end of reporting year		0					

Incidents

Additional information

Have any incidents occurred on site in the current reporting year? Please list all incidents for current reporting year in Table 2 below

Yes

*For information on how to report and what constitutes an incident

[What is an incident](#)

Complaints and Incidents summary template	Lic No:	P0500-01	Year	2018

Complaints and Incidents summary template	Lic No:	P0500-01	Year	2018

Complaints and Incidents summary template	Lic No:	P0500-01	Year	2018

Complaints and Incidents summary template	Lic No:	P0500-01	Year	2018

Table 2 Incidents summary

[illegible]

WASTE SUMMARY	Lic No:	P0500-01	Year	2018
SECTION A-PRTR ON SITE WASTE TREATMENT AND WASTE TRANSFERS TAB- TO BE COMPLETED BY ALL IPPC AND WASTE FACILITIES		PRTR facility logon	dropdown list click to see options	

SECTION B- WASTE ACCEPTED ONTO SITE-TO BE COMPLETED BY ALL IPPC AND WASTE FACILITIES

Additional Information

Were any wastes accepted onto your site for recovery or disposal or treatment prior to recovery or disposal within the boundaries of your facility ?; (waste generated within your boundaries is to be captured through PRTR reporting)

If yes please enter details in table 1 below

2 Did your site have any rejected consignments of waste in the current reporting year? If yes please give a brief explanation in the additional information

3 Was waste accepted onto your site that was generated outside the Republic of Ireland? If yes please state the quantity in tonnes in additional information

Table 1 Details of waste accepted onto your site for recovery, disposal or treatment (do not include wastes generated at your site, as these will have been reported in your PRTR workbook)

Licenced annual tonnage limit for your site (total tonnes/annum)	EWC code	Source of waste accepted	Description of waste accepted Please enter an accurate and detailed description - which applies to relevant EWC code	Quantity of waste accepted in current reporting year (tonnes)	Quantity of waste accepted in previous reporting year (tonnes)	Reduction/ Increase over previous year +/- %	Reason for reduction/ increase from previous reporting year	Packaging Content (%) - only applies if the waste has a packaging component	Disposal/Recovery or treatment operation carried out at your site and the description of this operation	Quantity of waste remaining on site at the end of reporting year (tonnes)	Comments -
	European Waste Catalogue EWC codes		European Waste Catalogue EWC codes								

SECTION C-TO BE COMPLETED BY ALL WASTE FACILITIES (waste transfer stations, Composters, Material recovery facilities etc) EXCEPT LANDFILL SITES

4 Is all waste processing infrastructure as required by your licence and approved by the Agency in place? If no please list waste processing infrastructure required onsite

5 Is all waste storage infrastructure as required by your licence and approved by the Agency in place? If no please list waste storage infrastructure required on site

6 Does your facility have relevant nuisance controls in place?

7 Do you have an odour management system in place for your facility? If no why?

8 Do you maintain a sludge register on site?

WASTE SUMMARY	Lic No:	P0500-01	Year	2018

SECTION D-TO BE COMPLETED BY LANDFILL SITES ONLY

Table 2 Waste type and tonnage-landfill only

Waste types permitted for disposal	Authorised/licenced annual intake for disposal (tpa)	Actual intake for disposal in reporting year (tpa)	Remaining licensed capacity at end of reporting year (m3)	Comments

Table 3 General information-Landfill only

Area ID	Date landfilling commenced	Date landfilling ceased	Currently landfilling	Private or Public Operated	Inert or non-hazardous	Predicted date to cease landfilling	Licence permits asbestos	Is there a separate cell for asbestos?	Accepted asbestos in reporting year	Total disposal area occupied by waste	Lined disposal area occupied by waste	Unlined area	Comments on liner type
										SELECT UNIT	SELECT UNIT	SELECT UNIT	
Cell 8													

Table 4 Environmental monitoring-landfill only [Landfill Manual-Monitoring Standards](#)

Was meteorological monitoring in compliance with Landfill Directive (LD) standard in reporting year +	Was leachate monitored in compliance with LD standard in reporting year	Was Landfill Gas monitored in compliance with LD standard in reporting year	Was SW monitored in compliance with LD standard in reporting year	Have GW trigger levels been established	Were emission limit values agreed with the Agency (ELVs)	Was topography of the site surveyed in reporting year	Has the statement under S53(A)(5) of WMA been submitted in reporting year	Comments

+.+ please refer to Landfill Manual linked above for relevant Landfill Directive monitoring standards

Table 5 Capping-Landfill only

Area uncapped*	Area with temporary cap	Area with final cap to LD Standard m2 ha, a	Area capped other	Area with waste that should be permanently capped to date under licence	What materials are used in the cap	Comments
SELECT UNIT	SELECT UNIT					

*please note this includes daily cover area

Table 6 Leachate-Landfill only

9 Is leachate from your site treated in a Waste Water Treatment Plant?

SELECT

10 Is leachate released to surface water? If yes please complete leachate mass load information below

SELECT

Volume of leachate in reporting year(m3)	Leachate (BOD) mass load (kg/annum)	Leachate (COD) mass load (kg/annum)	Leachate (NH4) mass load (kg/annum)	Leachate (Chloride) mass load kg/annum	Leachate treatment on-site	Specify type of leachate treatment	Comments

Please ensure that all information reported in the landfill gas section is consistent with the Landfill Gas Survey submitted in conjunction with PRTR returns

Table 7 Landfill Gas-Landfill only

Gas Captured&Treated by LFG System m3	Power generated (MW / KWh)	Used on-site or to national grid	Was surface emissions monitoring performed during the reporting year?	Comments
			SELECT	

Waste Summary Continued	Lic No:	P0500-01	Year	2018

European Waste Code (EWC)	Description of Waste (in line with applicable EWC code)	Hazardous – YES/NO	Quantity (Tonnes)	Name & Permit No. of Agent/Carrier	Treatment Type – Recovered / Disposed / Recycled	Name, Address & Licence/Permit No. of FINAL Destination	Country
02 01 04	waste plastics (except packaging)	No	49.54	ADN Materials Ltd.WFP-MN-12-0001-04	R03 - Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)	ADN Materials Ltd., Lossetts, Carrickmacross, Co. Monaghan - WFP-MN-12-0001-04	Ireland
13 02 05*	mineral-based non-chlorinated engine, gear and lubricating oils	Yes	4.5	Enva Ireland Limited - L1745	R01 - Use principally as a fuel or other means to generate energy	R.D. Recycling, Houthalen, Reg No: 51727/1KD	Belgium
17 04 07	mixed metals	No	73.74	AES Ltd WP-OY-08-601-02	R04 - Recycling/reclamation of metals and metal compounds	AES LTD, Cappincur, Tullamore, Co. Offaly - WP-OY-08-601-01	Ireland
20 03 01 B	Municipal mixed residual non-household	No	11.82	AES Ltd WP-OY-08-601-02	D05 - Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)	AES LTD, Cappincur, Tullamore, Co. Offaly - WP-OY-08-601-01	Ireland
20 03 01 A	Municipal mixed residual household	No	9.68	AES Ltd WP-OY-08-601-02	D05 - Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)	AES LTD, Cappincur, Tullamore, Co. Offaly - WP-OY-08-601-01	Ireland
11 01 13*	degreasing wastes containing hazardous substances	Yes	1.75	Safety Kleen Ireland Ltd - W0099	R11 - Use of waste obtained from any of the operations numbered R 1 to R 10	Solvent Recovery Management, PP33345F, Wheeland Rd., Knottingly, West Yorks	UK

Boora

Decommissioning and Rehabilitation Bog Rehabilitation Progress Report 2018.

Within the Boora licensed area (P0500-01) there was one entire bog unit (Derrybrat) available for rehabilitation in 2018. Ongoing monitoring of cutaway sites within the Boora Bog Group was carried out with bogs such as Noggusboy West, Belair South and Turraun re-surveyed in 2018. The surveys comprised of baseline walkover surveys to identify and map pioneer and established habitats on the cutaway.

An invasive aquatic plant species (Parrots Feather *Myriophyllum aquaticum*) was identified in the amenity areas of Boora in 2016, actions to control its spread have been enacted along with the notification of the presence of this species to the relevant authorities.

Cutaway rehabilitation commenced at Derrybrat Bog in 2018 (68 ha). Peat dams were used to block the drains on a section of bog that had formerly been managed for industrial peat production. The work aims to raise water levels at this site to stabilise the bog (establish wetland habitats), control silt run-off and slow water movement off the bog.

Rehabilitation of the cutaway at the Derries was also undertaken in 2018. Targeted drain blocking was undertaken in a section of cutaway (16 ha) in the western section of the site while surface water levels were adjusted to optimal levels where wetlands have established in the centre of the site.

Draft rehabilitation plans for the Boora bogs licensed area, including more detailed draft plans for each component bog unit were submitted to the EPA in 2013 and these were reviewed and updated in 2015 and 2017.

The new Biodiversity Action Plan (2016-2021) was launched in 2016 with the annual Biodiversity Action Plan review day being held in May 2018, this included an update on the progress of this plan, bog restoration and cutaway rehabilitation for a wide range on statutory and non-statutory consultees including members of the EPA, NPWS, BWI, Bord na Mona, Coillte, Inland Fisheries Ireland, An Taisce, IPCC, Irish Red Grouse Association, Irish Wildlife Trust, NARGC, local game councils, Midland Regional Planning Authority as well as a range of local community groups and Heritage Officers from counties Laois, Offaly, Kildare, Roscommon, Longford, Meath, Galway, Westmeath and Dublin.

A copy of our Biodiversity Action Plan is available to view and download at <http://www.bordnamona.ie/our-company/biodiversity/>

As required by condition 10.2 *Cutaway Bog Rehabilitation Plans*, draft peatland rehabilitation plans for all the individual bog units were submitted to the agency in 2013, reviewed and amended in 2015 and re-submitted to the agency in 2015. All draft rehabilitation plans have been reviewed in 2017. These reviewed and amended plans will be re-submitted to the agency in due course.

Organic certification was sought for the majority of the Bord na Móna property with the aim of using some areas for the cultivation of plants for use in herbal medicine (Mona Herbs), this project is ongoing.

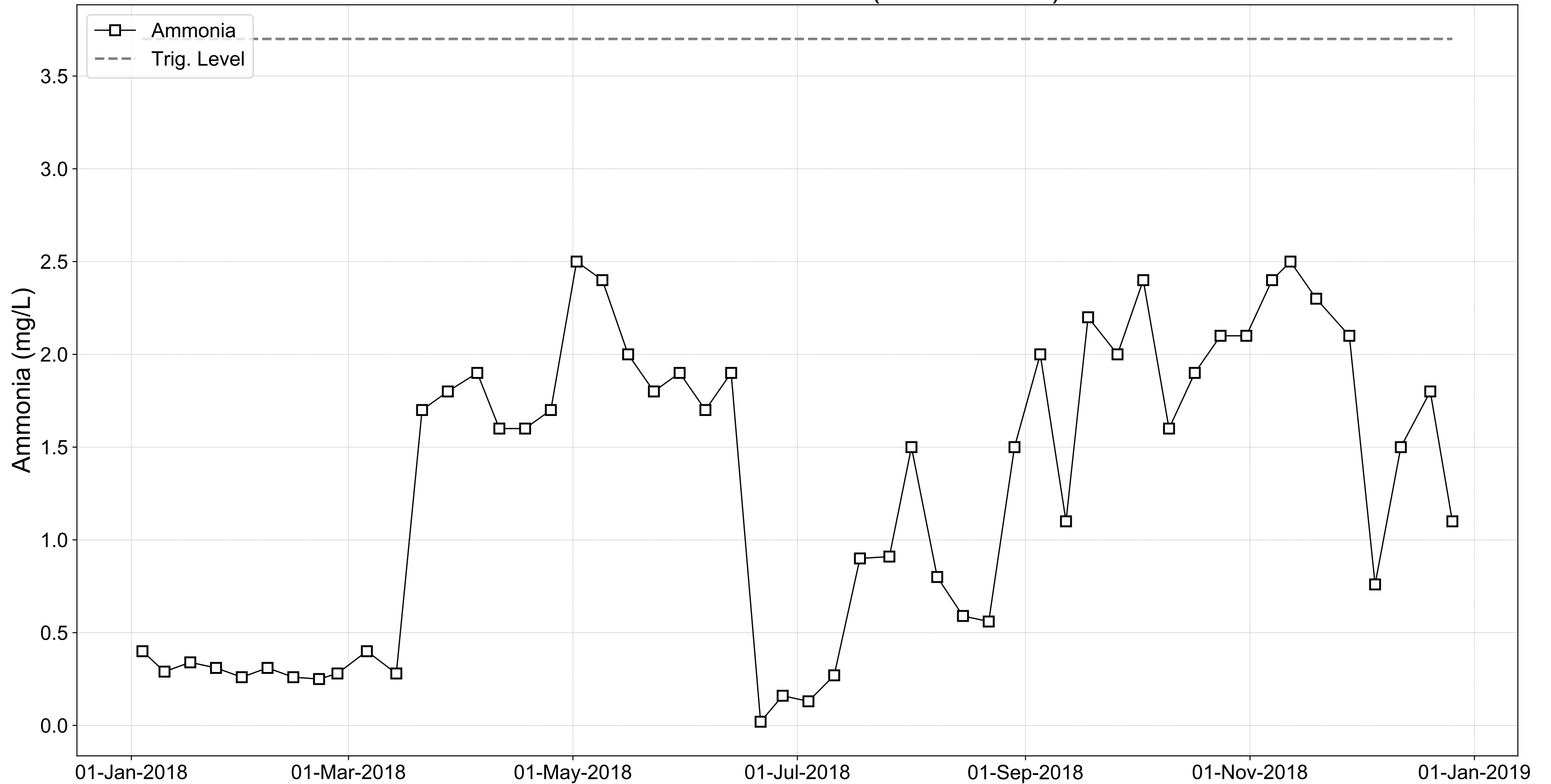
Bord na Mona Boora PO500-01

Grab Sampling 2018

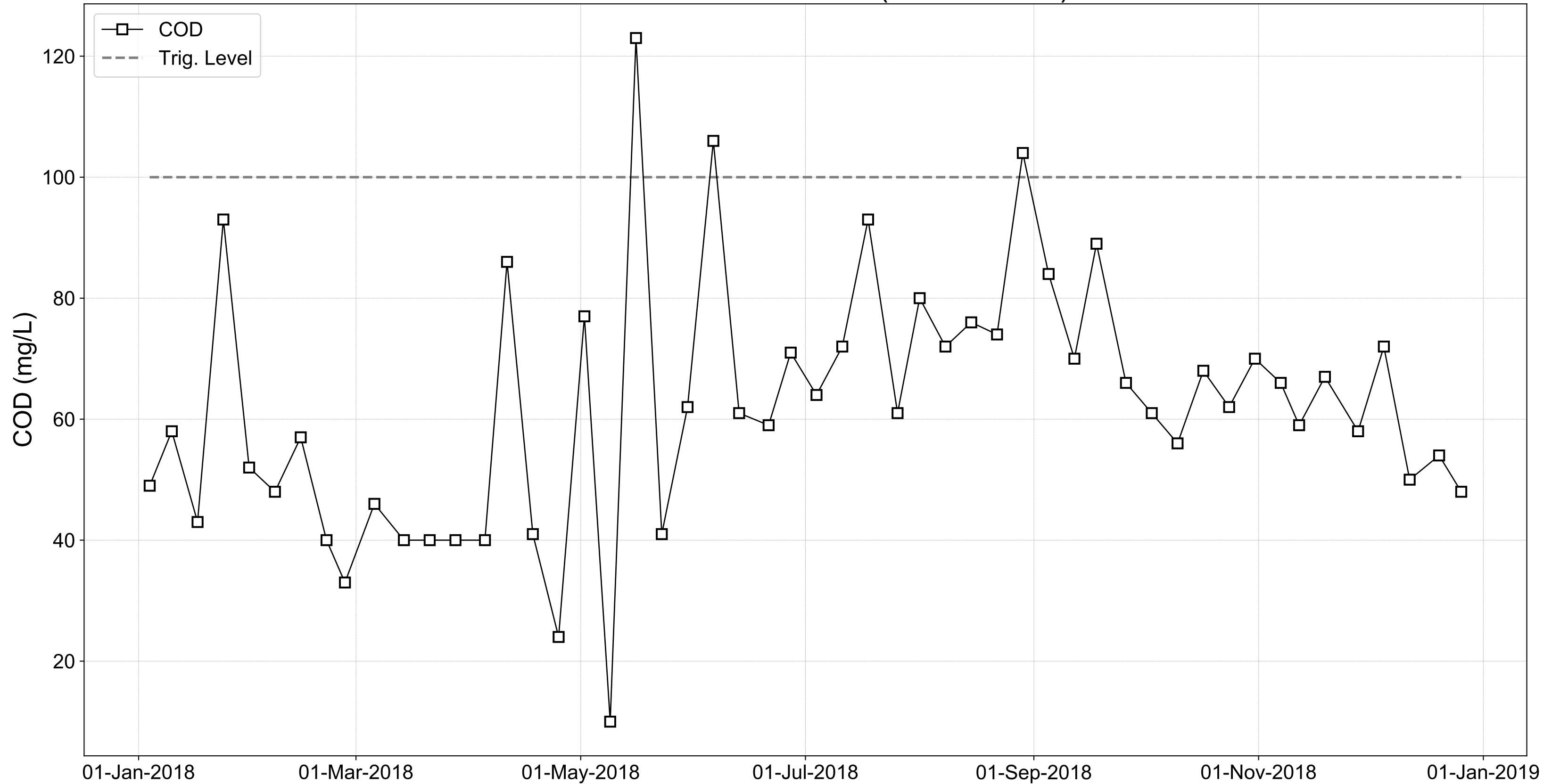
X	Y	Bog	SW	Monitoring	Sampled	pH	SS	TS	Ammonia	TP	COD	Colour
217216.92	227527.32	Lemonaghan	SW-19	Q1 18	Grab	7.4	5	222	1.4	0.05	56	217
217481.75	227345.36	Lemonaghan	SW-19A	Q1 18	Grab	8	5	356	0.51	0.05	43	86
214970.51	226491.33	Lemonaghan	SW-19B	Q1 18	Grab	8.1	5	330	0.61	0.05	35	88
218645.63	229597.18	Lemonaghan	SW-22	Q1 18	Grab	7.9	5	364	0.16	0.05	16	69
216900.19	229545.11	Lemonaghan	SW-22A	Q1 18	Grab	7.8	5	180	2.6	0.05	34	90
216151.75	230069.09	Lemonaghan	SW-22B	Q1 18	Grab	7.9	5	190	3	0.05	43	118
215947.19	230315.10	Lemonaghan	SW-22C	Q1 18	Grab	6.2	5	70	0.26	0.05	46	189
215079.20	231196.83	Lemonaghan	SW-22D	Q1 18	Grab	5.6	5	60	0.7	0.05	57	164
218809.08	227041.46	Lemonaghan	SW-23	Q2 18	Grab	8.1	11	408	0.28	0.23	50	67
208557.05	205482.23	Killaun	SW-29	Q2 18	Grab	8.1	5	240	0.05	0.06	97	307
208726.96	206088.96	Killaun	SW-29A	Q2 18	Grab	7.8	5	282	0.03	0.05	87	182
209922.39	207800.47	Killaun	SW-30	Q2 18	Grab	7.7	5	305	0.65	0.05	77	177
208127.88	210599.82	Galros	SW-32	Q2 18	Grab	8	5	452	0.67	0.05	14	25
234556.96	216406.12	Monettia	SW-25	Q2 18	Grab	7.8	5	546	0.32	0.05	30	37
237185.96	215178.41	Monettia	SW-26	Q2 18	Grab	7.6	5	352	1.7	0.06	25	67
237043.63	216670.04	Monettia	SW-26A	Q2 18	Grab	7.8	5	426	0.29	0.05	20	48
212352.39	217427.89	Drinagh	SW-9	Q3 18	Grab	8.1	5	420	0.02	0.05	29	40
212948.34	217756.09	Derrybrat	SW-9A	Q3 18	Grab	8	5	314	0.05	0.05	37	38
213631.82	220692.54	Noggusboy	SW-10	Q3 18	Grab	7.6	5	560	0.19	0.017	57	-
214515.48	219480.49	West Boora	SW-11	Q3 18	Grab	7.7	5	358	1.5	0.05	52	173
215354.86	221941.82	Derries	SW-14	Q3 18	grab	7.6	5	396	0.02	0.05	33	66
214889.87	221778.27	Derries	SW-14A	Q3 18	grab	7.9	21	336	0.78	0.05	60	125
236128.81	221965.17	Derryclure	SW-28	Q3 18	grab	7.6	12	392	0.02	0.31	72	-
236939.60	220629.01	Derryclure	SW-27	Q3 18	grab	7.8	5	430	0.52	0.05	44	45
220650.17	210315.60	Derrinboy	SW-38	Q4 18	Grab	7.3	18	136	0.67	0.06	84	145
220483.33	210276.48	Derrinboy	SW-39	Q4 18	Grab	7.2	18	174	0.65	0.05	83	140
219663.49	210038.82	Derrinboy	SW-40	Q4 18	Grab	7.1	8	84	0.83	0.06	48	170
215361.95	232965	Bellair South	SW-33	Q4 18	Grab	6.7	5	78	1.3	0.05	66	199
214495.84	232938	Bellair South	SW-34	Q4 18	Grab	7.2	5	98	1.3	0.05	62	236
214987.18	232598	Bellair South	SW-34A	Q4 18	Grab	7.1	5	128	1.8	0.07	59	228
213906.46	231885	Bellair South	SW-35	Q4 18	Grab	5.8	5	100	0.44	0.06	73	186
215477.01	233062	Bellair North	SW-37B	Q4 18	Grab	7.2	5	368	0.46	0.05	72	217

The sampler at this location may be relocated to fill any information gaps on other peatland catchments and to reflect the need to support the information gathering required for the Water Framework Directive's River Basin Management Plan. There is also an EPA lead research project commencing in 2019, called the SWAMP project, whose aims are to appraise and understand the nutrient impact from peatlands, to evaluate treatment technologies and to propose predictive tools for watershed management.

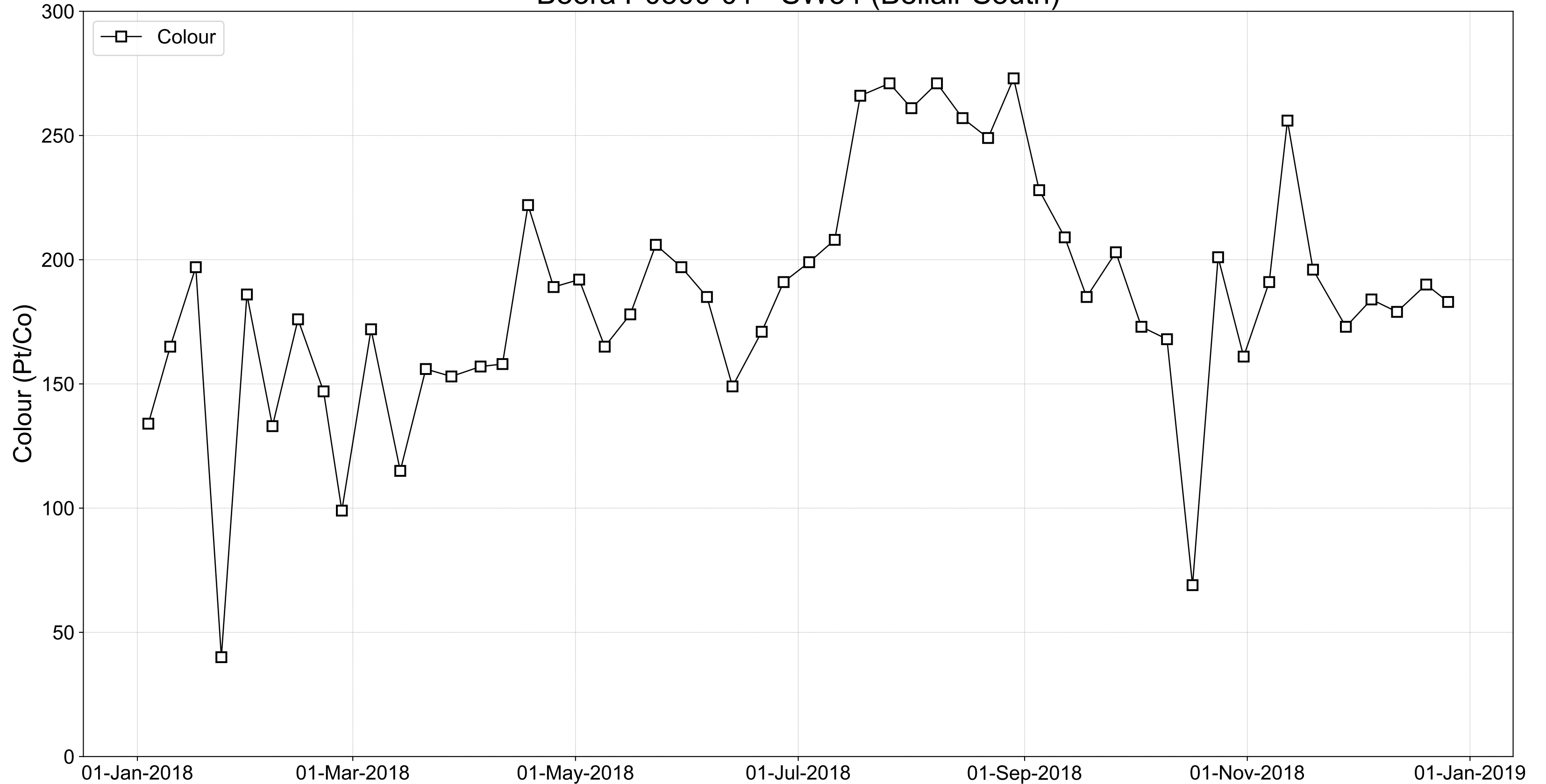
Boora P0500-01 - SW34 (Bellair South)



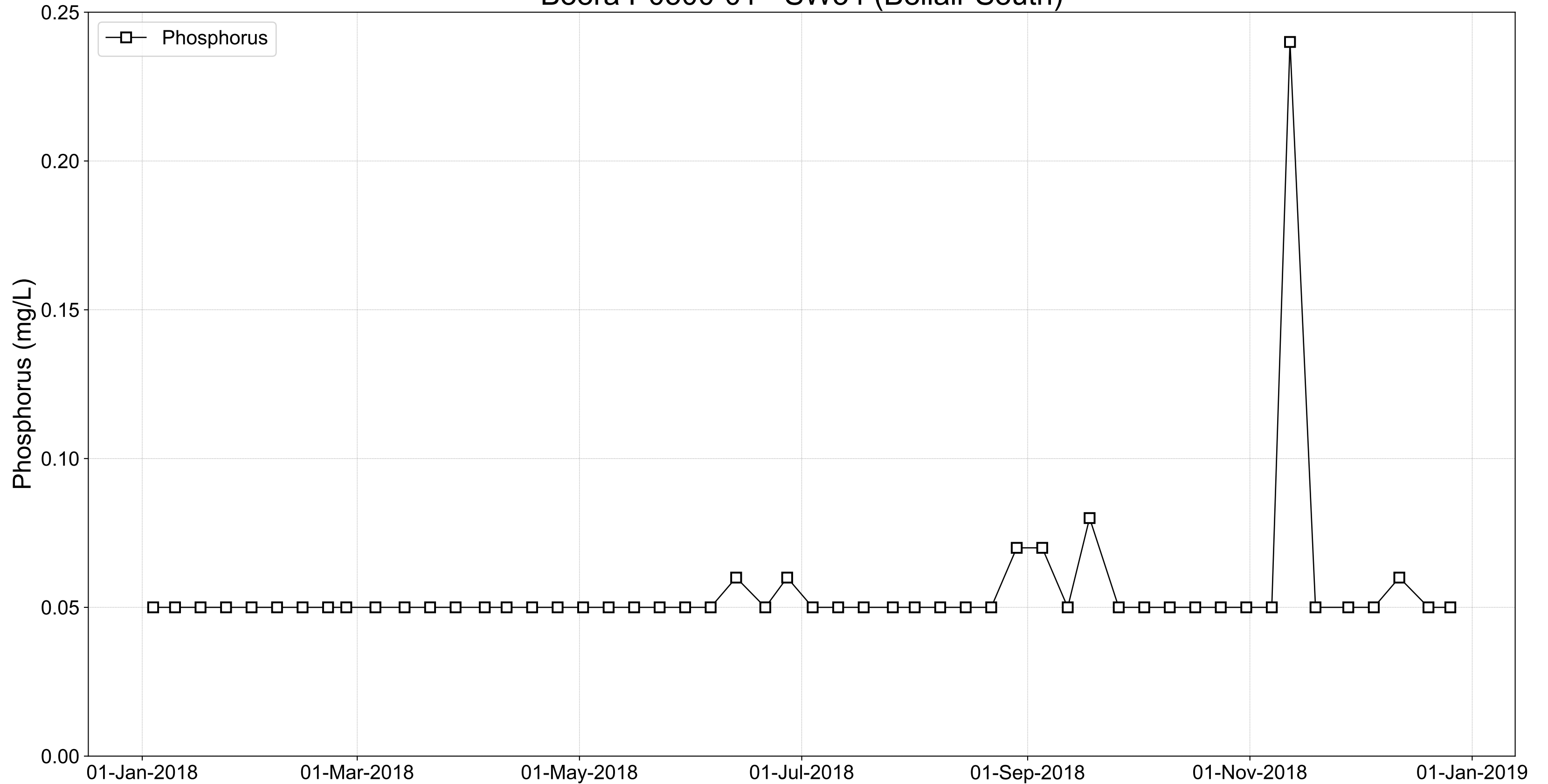
Boora P0500-01 - SW34 (Bellair South)



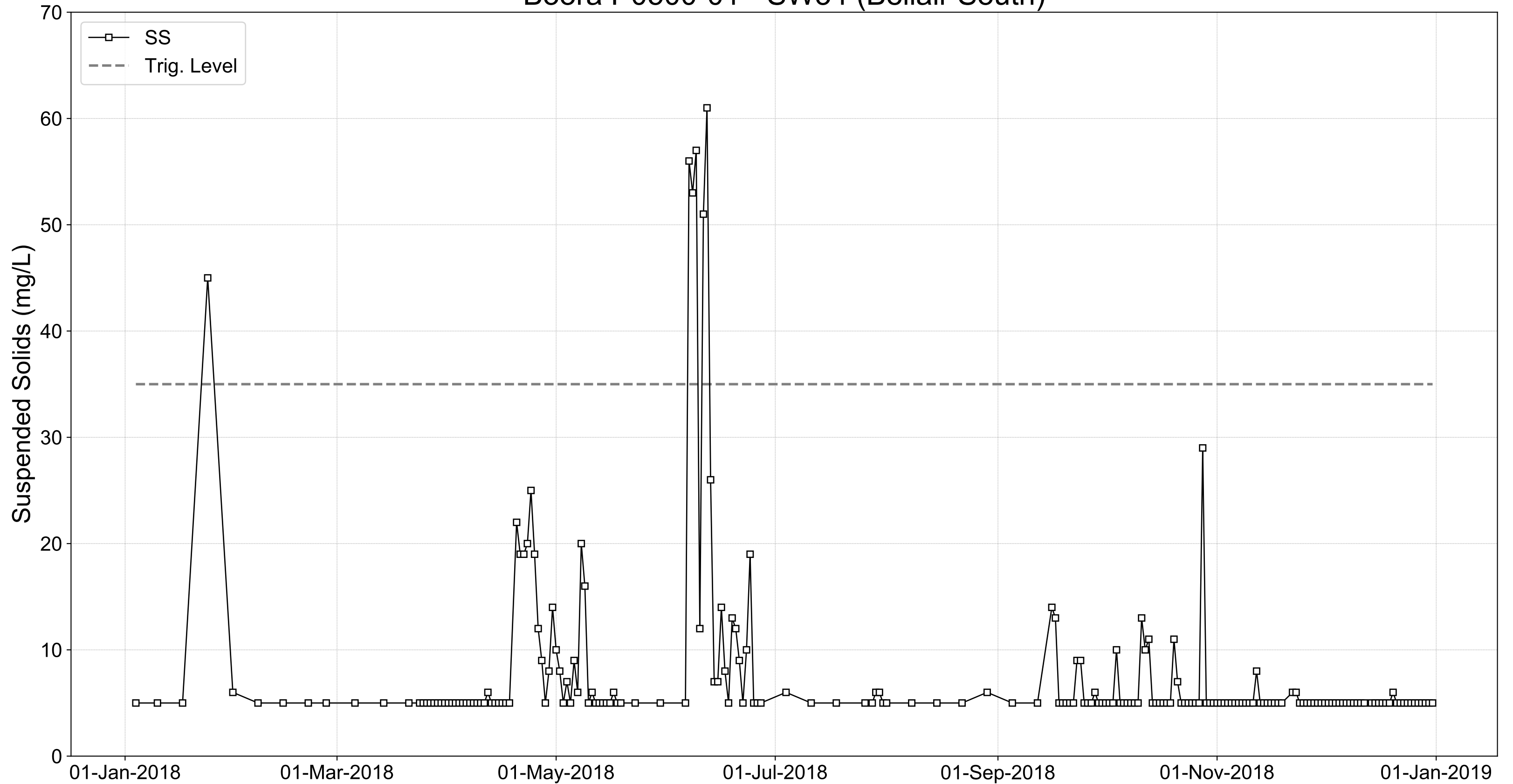
Boora P0500-01 - SW34 (Bellair South)



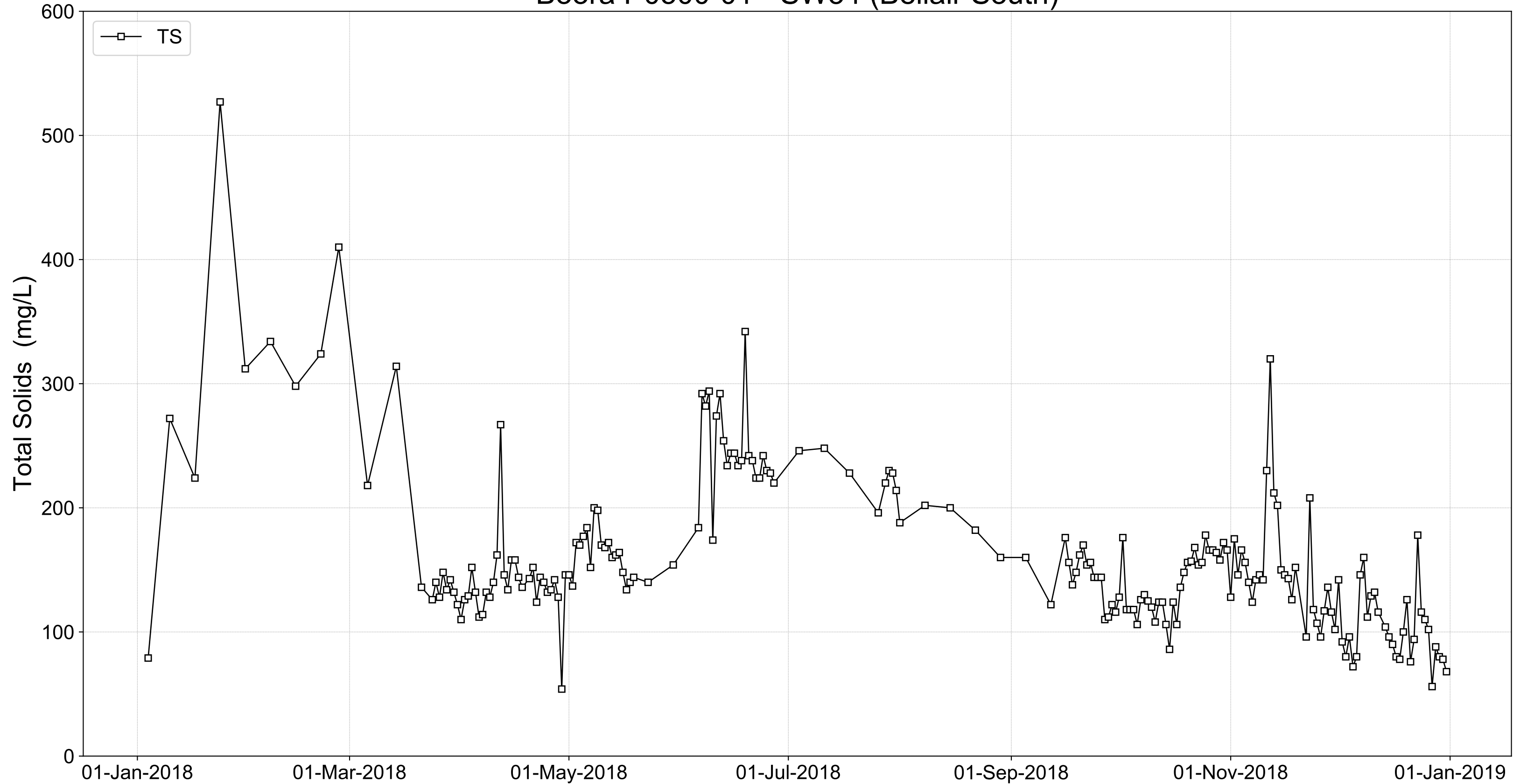
Boora P0500-01 - SW34 (Bellair South)



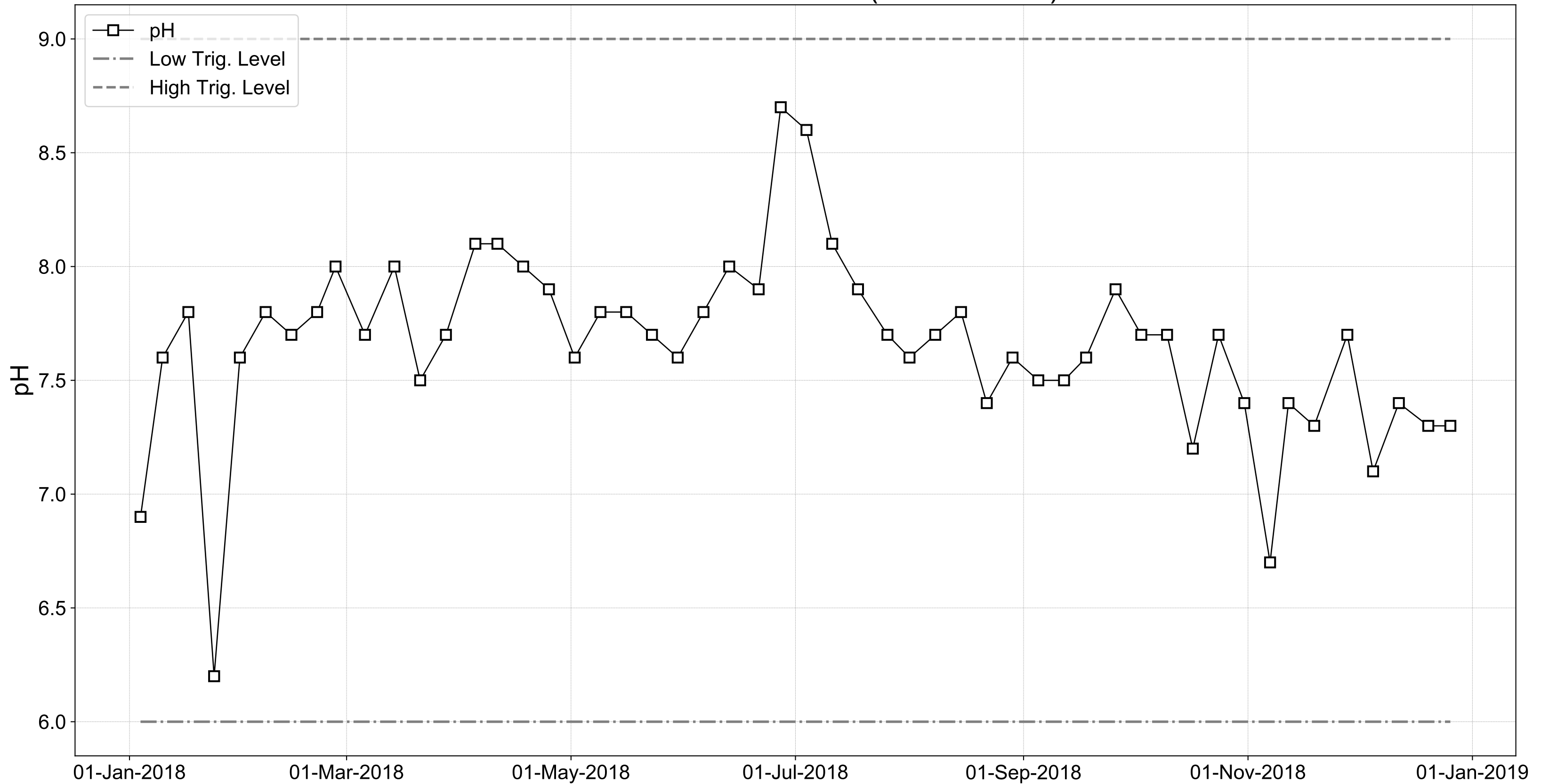
Boora P0500-01 - SW34 (Bellair South)



Boora P0500-01 - SW34 (Bellair South)



Boora P0500-01 - SW34 (Bellair South)



Yard Discharge Results 2018

Licence: P0500-01

Works: Boora

Month	SWE 1A	SWE 1B	SWE 2	SWE 3	SWE 3A	SWE 4A	SWE 4B	SWE 5A	SWE 5B	SWE 6A	SWE 6B	SWE 7	SWE 8	SWE 9
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	83	13	0	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	39	51	0	0	0	0	0	0	0	48	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	18	10	0	0	0	0	0	0	0	68	10	0	0	0
Dec	10	32	12	0	0	0	0	0	0	53	56	0	0	0

Note: 0 denotes no flow at emission point on day of sampling

Extractive Waste Management Plan Implementation AER Update.

March 2019.

IPC Licence P0500-01.

1.0 Extractive Wastes.

Waste classified as extractive waste from peat extraction operations arise from two operations associated with this activity.

- Silt Pond excavations and maintenance
- Bog Timbers

There has been no change to the type and nature of these three waste streams and no new waste streams added to this list. These wastes streams continue to be stored and maintained at between 1 and 3 metres in height.

2.0 Condition 7.5 Extractive Waste Management

- An extractive waste management plan (EWMP) was submitted to the Agency in September 2012 and was approved.
- The EWMP was reviewed in September 2017. There were no substantial changes to the operation of the plan, associated waste facilities or to the waste deposited.

3.0 Minimisation

- The IPC Licence has various conditions that require the installation, inspections and maintenance of silt ponds for operational areas and as such these requirements dictate the need for silt ponds and associated excavation materials and cleanings.
- Bog timbers arise from the active production footprint and are naturally occurring. The active footprint is dictated by the peat production targets and customer supply contract and service level agreements.

4.0 Treatment

- Silt pond excavation and maintenance materials do not require any treatment and are stored as per the EWMP, adjacent to the associated silt pond.
- There is no treatment of bog timbers arising and these are stockpiled at various locations in associated bogs.

5.0 Recovery

- As per the EWMP, there is still no opportunity to recover these silt pond associated materials
- Bog timbers stored on the bog are natural to the peat bog and while there have been trails to recover this waste material, these have not proved viable.

6.0 Disposal

- Silt pond cleanings continue to be disposed of adjacent to the associated silt pond and will be incorporated back into the rehabilitation plans for these bogs, post production and decommissioning.
- Bog timbers will continue to be stockpiled at suitable locations to be either incorporated back into the bog, as a supply of bog timbers for the crafting industry or will continue to decay naturally.



Annual Environmental Report 2019
Bord na Mona Energy Ltd
(Boora Group of Bogs)
IPC Licence P0500-01

Facility Information Summary

AER Reporting Year	2019
Licence Register Number	P0500-01
Name of site	Bord na Mona Boora
Site Location	Leabeg, Boora, Tullamore, Co Offaly
NACE Code	0892
Class/Classes of Activity	1.4
National Grid Reference (6E, 6 N)	180050, 319540

A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year and an overview of compliance with your licence listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise.

Activities on site can be divided into two components, firstly the milling, harrowing, ridging and harvesting of peat into stockpiles and secondly the transportation of that peat via an internal rail network to the Power Station, Briquette factory and lorry outloading facilities. Production achieved was 309319 tonnes which was a 58% reduction on 2018. Dust monitoring was fully compliant for the reporting period. There was one environmental complaint received during 2019 which was a dust nuisance complaint and was resolved and reported to the Agency. There was one exceedance in the ELV for suspended solids from a quarterly grab sample at a silt pond outlet, however on investigation this was found to be due to the pond having been cleaned immediately prior to the sampling event. In relation to silt pond cleaning, 100% of the silt ponds received two cleanings with inspections dictating if a pond required further cleaning. During the reporting period, there were a number of notifications to the Agency including notification of an interim cessation of peat extraction at Boora Bogs, pending regularisation. Decommissioning and Rehabilitation works are described in an attachment.

Declaration:

All the data and information presented in this report has been checked and certified as

	
Signature Group/Facility manager (or nominated, suitably qualified and experienced deputy)	Date 01-04-2020

AIR-summary template

Lic No:

P0500-01

Year

2019

Answer all questions and complete all tables where relevant

Additional information

- 1 Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If **you do not have** licenced emissions and **do not complete a solvent management plan** (table A4 and A5) you do not need to complete the tables

No	Fugitive emissions only

Periodic/Non-Continuous Monitoring

- 2 Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below
- 3 Was all monitoring carried out in accordance with EPA guidance [Basic air monitoring checklist](#) note AG2 and using the basic air monitoring checklist? [AGN2](#)

No	
Yes	

Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision thereof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments - reason for change in % mass load from previous year if applicable
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		
	SELECT			SELECT		SELECT	SELECT	SELECT		

Note 1: Volumetric flow shall be included as a reportable parameter

AIR-summary template		Lic No:	P0500-01	Year	2019
Continuous Monitoring					
4	Does your site carry out continuous air emissions monitoring?	No			
If yes please review your continuous monitoring data and report the required fields below in Table A2 and compare it to its relevant Emission Limit Value (ELV)					
5	Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below	No			
6	Do you have a proactive service agreement for each piece of continuous monitoring equipment?	No			
7	Did your site experience any abatement system bypasses? If yes please detail them in table A3 below	No			

AIR-summary template		Lic No:	P0500-01	Year	2019

Table A2: Summary of average emissions -continuous monitoring

Emission reference no:	Parameter/ Substance	ELV in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
DM-01	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	9968	153	0	0	
DM-02	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	11900	209	0	0	
DM-03	Total Particulates	350mg/m2/day	84	Daily average < ELV	mg/m2/day	10220	231	0	0	
	SELECT				SELECT					

note 1: Volumetric flow shall be included as a reportable parameter.

Table A3: Abatement system bypass reporting table

[Bypass protocol](#)

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

* this should include all dates that an abatement system bypass occurred

** an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

AIR-summary template				Lic No:	P0500-01	Year	2019	
Solvent use and management on site								
8 Do you have a total Emission Limit Value of direct and fugitive emissions on site? if yes please fill out tables A4 and A5						No		
Table A4: Solvent Management Plan Summary Total VOC Emission limit value			Solvent regulations Please refer to linked solvent regulations to complete table 5 and 6					
Reporting year	Total solvent input on site (kg)	Total VOC emissions to Air from entire site (direct and fugitive)	Total VOC emissions as % of solvent input	Total Emission Limit Value (ELV) in licence or any revision thereof	Compliance			
					SELECT			
					SELECT			
Table A5: Solvent Mass Balance summary								
	(I) Inputs (kg)	(O) Outputs (kg)						
Solvent	(I) Inputs (kg)	Organic solvent emission in waste gases(kg)	Solvents lost in water (kg)	Collected waste solvent (kg)	Fugitive Organic Solvent (kg)	Solvent released in other ways e.g. by-passes (kg)	Solvents destroyed onsite through physical	Total emission of Solvent to air (kg)
							Total	

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)	Lic No:	P0500-01	Year	2019

Additional information	
1 Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If you do not have licensed emissions you <u>only</u> need to complete table W1 and or W2 for storm water analysis and visual inspections	Yes
2 Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising <u>only</u> any evidence of contamination noted during visual inspections	Yes Monthly COD analysis of yard runoff is attached in a separate document.

Table W1 Storm water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licensed Parameter	Monitoring date	ELV or trigger level in licence or any revision thereof*	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	
	SELECT	SELECT	SELECT			SELECT		SELECT	SELECT	

*trigger values may be agreed by the Agency outside of licence conditions

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
			SELECT		
			SELECT		

Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

3 Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below	Yes	Additional information
4 Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box	Yes	Surface water monitoring was carried out on a quarterly basis. The results of which are attached. Monthly COD yard runoff results are also attached. The lack of samples was due to

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereof ^{Note 2}	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source	Procedural reference standard number	Annual mass load (kg)	Comments
												APHA / AWWA "Standard Methods"	4500-NH3	NA	One off Grab sample
												APHA / AWWA "Standard Methods"	4500-NH3	NA	One off Grab sample

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)	Lic No:	P0500-01	Year	2019

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)	Lic No:	P0500-01	Year	2019

Continuous monitoring

5 Does your site carry out continuous emissions to water/sewer monitoring?

Yes	Additional Information
	See note above

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

6 Did continuous monitoring equipment experience downtime? If yes please record downtime in table W4 below

Yes	Total of 233 days over 365 days.

7 Do you have a proactive service contract for each piece of continuous monitoring equipment on site?

Yes	Annual calibration schedule and trouble shooting service

8 Did abatement system bypass occur during the reporting year? If yes please complete table W5 below

No

Table W4: Summary of average emissions -continuous monitoring

Emission reference no:	Emission released to	Parameter/ Substance	ELV or trigger values in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission for current reporting year (kg)	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments
SW-34	Water	Suspended Solids	35	24 hour	Not Listed	mg/L			223	1	Down time primarily due to battery failure. Its not possible to report average continuous emissions as this sampler is located on one of many silt ponds and samplers are moved around periodically to allow for analysis of other silt pond performance.
SW-34	Water	Ammonia (as N)	3.7	Weekly	NA	mg/L					
SW-34	Water	Total phosphorus	NA	Weekly	NA	mg/L					
SW-34	Water	COD	100	Weekly	NA	mg/L					
SW-34	Water	Volumetric flow	NA	24 hour	NA	m3/day					
SW-34	Water	Total Dissolved Solids	NA	Weekly	NA	mg/L					

note 1: Volumetric flow shall be included as a reportable parameter.

Table W5: Abatement system bypass reporting table

Date	Duration (hours)	Location	Resultant emissions	Reason for bypass	Corrective action*	Was a report submitted to the EPA?	When was this report submitted?
						SELECT	

*Measures taken or proposed to reduce or limit bypass frequency

Bund/Pipeline testing template	Lic No:	P0500-01	Year	2019	

Bund testing	dropdown menu click to see options	Additional information
Are you required by your licence to undertake integrity testing on bunds and containment structures ? If yes please fill out table B1 below listing all new bunds and containment structures on site, in addition to all bunds which failed the integrity test- all bunding structures which failed including mobile bunds must be listed in the table below, please include all bunds outside the licenced testing period (mobile bunds and chemstore included)		
1	Please provide integrity testing frequency period	Yes
2	Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to "Chemstore" type units and mobile bunds)	Other (2 Yearly)
3	How many bunds are on site?	Yes
4	How many of these bunds have been tested within the required test schedule?	9
5	How many mobile bunds are on site?	9 2 remaining bunds scheduled to be tested in 2020
6	Are the mobile bunds included in the bund test schedule?	This includes barrel trays located within workshops
7	How many of these mobile bunds have been tested within the required test schedule?	No
8	How many sumps on site are included in the integrity test schedule?	NA
9	How many of these sumps are integrity tested within the test schedule?	NA
Please list any sump integrity failures in table B1		
11	Do all sumps and chambers have high level liquid alarms?	N/A
12	If yes to Q11 are these fail-safe systems included in a maintenance and testing programme?	N/A
13	Is the Fire Water Retention Pond included in your integrity test programme?	N/A

Table B1: Summary details of bund /containment structure integrity test														
Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	reinforced concrete					SELECT			Yes	SELECT		SELECT		
	SELECT					SELECT			SELECT	SELECT		SELECT		
* Capacity required should comply with 25% or 110% containment rule as detailed in your licence														
Has integrity testing been carried out in accordance with licence requirements and are all structures tested in line with BS8007/EPA Guidance?														
16 Are channels/transfer systems to remote containment systems tested?														
17 Are channels/transfer systems compliant in both integrity and available volume?														
Commentary														
SELECT														
SELECT														
SELECT														

Pipeline/underground structure testing	
Are you required by your licence to undertake integrity testing* on underground structures e.g. pipelines or sumps etc ? if yes please fill out table 2 below listing all underground structures and pipelines on site which failed the integrity test and all which have not been tested within the integrity test period as specified	
1	Please provide integrity testing frequency period
2	*please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)
Yes	
Other (2 Yearly)	

Table B2: Summary details of pipeline/underground structures integrity test											
Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT				SELECT

Please use commentary for additional details not answered by tables/ questions above

Groundwater/Soil monitoring template	Lic No:	P0500-01	Year	2019

		Comments
1 Are you required to carry out groundwater monitoring as part of your licence requirements?	no	
2 Are you required to carry out soil monitoring as part of your licence requirements?	no	
3 Do you extract groundwater for use on site? If yes please specify use in comment section	no	Domestic Use Only
4 Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below. Groundwater monitoring template	SELECT	
5 Is the contamination related to operations at the facility (either current and/or historic)	N/A	
6 Have actions been taken to address contamination issues? If yes please summarise remediation strategies proposed/undertaken for the site	N/A	
7 Please specify the proposed time frame for the remediation strategy	N/A	
8 Is there a licence condition to carry out/update ELRA for the site?	N/A	
9 Has any type of risk assessment been carried out for the site?	N/A	
10 Has a Conceptual Site Model been developed for the site?	N/A	
11 Have potential receptors been identified on and off site?	N/A	
12 Is there evidence that contamination is migrating offsite?	N/A	

Please provide an interpretation of groundwater monitoring data in the interpretation box below or if you require additional space please include a groundwater/contaminated land monitoring results interpretation as an additional section in this AER

Please enter interpretation of data here

Table 1: Upgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+	unit	GTV's*	SELECT**	Upward trend in pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

.* where average indicates arithmetic mean

.*+ maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

Groundwater/Soil monitoring template

Lic No:

P0500-01

Year

2019

Table 2: Downgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	SELECT**	Upward trend in yearly average pollutant concentration over last 5 years of monitoring data
							SELECT			SELECT
							SELECT			SELECT

*please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA.

[Groundwater monitoring template](#)

More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA published guidance (see the link in G31)

[Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites \(EPA 2013\).](#)

**Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS), If the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)

[Groundwater](#) [Drinking water](#)
[Surface water EQS](#) [regulations](#) [\(private supply\)](#) [Drinking water \(public supply\) standards](#) [Interim Guideline Values \(IGV\)](#)

Table 3: Soil results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
							SELECT
							SELECT

Where additional detail is required please enter it here in 200 words or less

Environmental Liabilities template

Lic No:

P0500-01

Year

2019

[Click here to access EPA guidance on Environmental Liabilities and Financial provision](#)

[complete](#)

		Commentary	
1	ELRA initial agreement status	Not a Licence Requirement	
2	ELRA review status	NA	
3	Amount of Financial Provision cover required as determined by the latest ELRA	NA	
4	Financial Provision for ELRA status	NA	
5	Financial Provision for ELRA - amount of cover	NA	
6	Financial Provision for ELRA - type	NA	
7	Financial provision for ELRA expiry date	NA	
8	Closure plan initial agreement status	NA	
9	Closure plan review status	NA	
10	Financial Provision for Closure status	NA	
11	Financial Provision for Closure - amount of cover	NA	
12	Financial Provision for Closure - type	NA	
13	Financial provision for Closure expiry date	NA	

Environmental Management Programme/Continuous Improvement Programme template			Lic No:	P0500-01	Year	2019

Highlighted cells contain dropdown menu click to view		Additional Information	
1	Do you maintain an Environmental Mangement System (EMS) for the site. If yes, please detail in additional information	Yes	Internal unaccredited EMS
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site	Yes	
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements	Yes	
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence	Yes	

Environmental Management Programme (EMP) report					
Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
Reduction of emissions to Air	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Deploy Hydraulic Harrows at dust sensitive areas headland Peat collection.	100	In total 10 Personnel received training in 2019. Training now also includes an energy awareness component. Ten hydraulic harrows were deployed at five production areas including all dust sensitive areas. Headland peat was collected at applicable production areas and returned as part of overall production.	Individual	Improved Environmental Management Practices
Waste reduction/Raw material usage efficiency	Waste Streamlining.It is planned to continue with and where possible improve the current waste management service provided by AES Ltd	100	Quarterly waste reports are returned for records/filing and waste streams are segregated on site to maximise recycling potential.	Section Head	Improved Environmental Management Practices

Environmental Management Programme/Continuous Improvement Programme template				Lic No:	P0500-01	Year	2019
Reduction of emissions to Water	Training. Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.	100	All silt ponds were cleaned at least twice as per licence condition .	Individual	Improved Environmental Management Practices		
Waste reduction/Raw material usage efficiency	Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.	100	In total 0 tonnes were sent off site for recycling. However all plastic collected is due for collection in 2020.	Individual	Improved Environmental Management Practices		
Energy Efficiency/Utility conservation	As part of an energy management process, an ongoing review of energy usage is in place.	100	The site achieved the Energy standard ISO50001 during the reporting period.	Section Head	Improved Environmental Management Practices		

Noise monitoring summary report	Lic No: P0500-01	Year 2019

1 Was noise monitoring a licence requirement for the AER period?
If yes please fill in table N1 noise summary below

No

2 Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?

[Noise Guidance note NG4](#)
NA

3 Does your site have a noise reduction plan

NA

4 When was the noise reduction plan last updated?

Enter date

5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

NA

Table N1: Noise monitoring summary											
Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA _{eq}	LA ₉₀	LA ₁₀	LA _{max}	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is <u>site</u> compliant with noise limits (day/evening/night)?
								SELECT	SELECT		SELECT

*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

SELECT

** please explain the reason for not taking action/resolution of noise issues?
Any additional comments? (less than 200 words)

Resource Usage/Energy efficiency summary	Lic No:	P0500-01	Year	2019

1 When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below

2 Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information

3 Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information

[SEAI - Large Industry Energy Network \(LIEN\)](#)

Additional information	
Sep-19	Report on file
Yes	ISO50001 accreditation attained from Certification Europe
NA	

Table R1 Energy usage on site				
Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*
Total Energy Used (MWHrs)	14335.26	9583.06		
Total Energy Generated (MWHrs)				
Total Renewable Energy Generated (MWHrs)				
Electricity Consumption (MWHrs)	657.287	498.09		
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)				
Light Fuel Oil (m3)	1346.125	905.478		
Natural gas (m3)				
Coal/Solid fuel (metric tonnes)	0	0		
Peat (metric tonnes)				
Renewable Biomass				
Renewable energy generated on site				

* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site					Water Emissions	Water Consumption	
			Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m ³ yr):	Volume used i.e not discharged to environment e.g. released as steam m3/yr	
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.					Unaccounted for Water:
Groundwater							
Surface water							
Public supply							
Recycled water							
Total							

* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

Resource Usage/Energy efficiency summary	Lic No:	P0500-01	Year	2019

Resource Usage/Energy efficiency summary			Lic No:	P0500-01	Year	2019

Table R3 Waste Stream Summary					
	Total	Landfill	Incineration	Recycled	Other
Hazardous (Tonnes)	9.44	0	8.96	0.48	0
Non-Hazardous (Tonnes)	957.17	34.97	0	87.92	0

Table R4: Energy Audit finding recommendations								
Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
			SELECT					
			SELECT					
			SELECT					

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology					
Primary Fuel					
Thermal Efficiency					
Unit Date of Commission					
Total Starts for year					
Total Running Time					
Total Electricity Generated (GWH)					
House Load (GWH)					
KWH per Litre of Process Water					
KWH per Litre of Total Water used on Site					

Waste Summary Continued

Lic No:

P0500-01

Year

2019

European Waste Code (EWC)	Description of Waste (in line with applicable EWC code)	Hazardous – YES/NO	Quantity (Tonnes)	Name & Permit No. of Agent/Carrier	Treatment Type – Recovered / Disposed / Recycled	Name, Address & Licence/Permit No. of FINAL Destination	Country
13 02 05*	mineral-based non-chlorinated engine, gear and lubricating oils	Yes	8.96	Enva Ireland Limited - L1745	R01 - Use principally as a fuel or other means to generate energy	R.D. Recycling, Houthalen, Reg No: 51727/1KD	Belgium
17 04 07	mixed metals	No	87.44	AES Ltd WP-OY-08-601-02	R04 - Recycling/reclamation of metals and metal compounds	AES LTD, Cappincur, Tullamore, Co. Offaly - WP-OY-08-601-01	Ireland
20 03 01 B	Municipal mixed residual non-household	No	26.18	AES Ltd WP-OY-08-601-02	D05 - Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)	AES LTD, Cappincur, Tullamore, Co. Offaly - WP-OY-08-601-01	Ireland
20 03 01 A	Municipal mixed residual household	No	8.79	AES Ltd WP-OY-08-601-02	D05 - Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)	AES LTD, Cappincur, Tullamore, Co. Offaly - WP-OY-08-601-01	Ireland
11 01 13*	degreasing wastes containing hazardous substances	Yes	0.48	Safety Kleen Ireland Ltd - W0099	R11 - Use of waste obtained from any of the operations numbered R 1 to R 10	Solvent Recovery Management, PP33345F, Wheeland Rd., Knottingly, West Yorks	UK

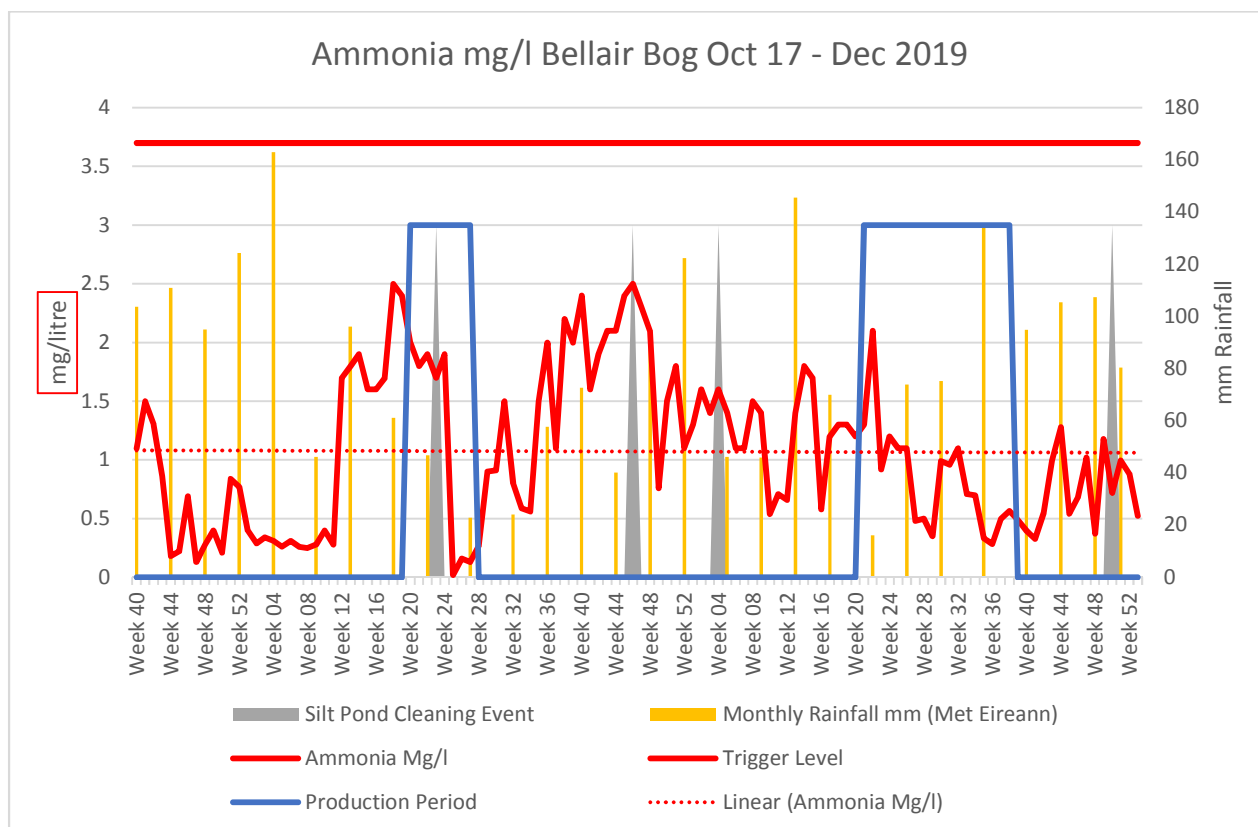
Boora IPC Licence

Decommissioning and Rehabilitation

Bog Rehabilitation Progress Report 2019.

- Some rehabilitation maintenance work was carried at Derries Bog in 2019. This was to re-block an outfall from a wetland and raise water-levels.
- There was ongoing monitoring of peatland rehabilitation carried out in previous years at Derrybrat, Derries, Clonganwy and Drinagh Bogs. Drain-blocking has re-wetted the targeted areas and the sites are developing typical pioneer cutaway habitats.
- The site rehabilitation plans for Clongawny and Drinagh Bogs were updated to take account of a renewable energy development being proposed by Bord na Mona on these cutaway sites (Derrynlough Windfarm).
- The majority of the Bord na Móna property in this bog group has been organically certified with the aim of using some areas for the cultivation of plants for use in herbal medicine into the future. This project is ongoing. Bord na Mona have committed not to use herbicides in organically certified areas to maintain industrial railways and other infrastructure.
- Draft rehabilitation plans for the Boora bogs licensed area, including more detailed draft plans for each component bog unit were submitted to the EPA in 2013 and these were reviewed and updated in 2015 and 2017, and again submitted to the EPA May 2018.
- The new Biodiversity Action Plan (2016-2021) was launched in 2016 with the annual Biodiversity Action Plan review day being held in May 2018. This included an update on the progress of this plan, bog restoration and cutaway rehabilitation for a wide range on statutory and non-statutory consultees including members of the EPA, NPWS, BWI, Bord na Mona, Coillte, Inland Fisheries Ireland, An Taisce, IPCC, Irish Red Grouse Association, Irish Wildlife Trust, NARGC, local game councils, Midland Regional Planning Authority as well as a range of local community groups and Heritage Officers from counties Laois, Offaly, Kildare, Roscommon, Longford, Meath, Galway, Westmeath and Dublin.
- A copy of our Biodiversity Action Plan is available to view and download at <http://www.bordnamona.ie/our-company/biodiversity/>

Bord na Mona Boora					Siltpond Monitoring Frequency							
IPPC Licence P0500-01												
X	Y	Bog	SW	Monitoring	Sampled	pH	SS	TS	Ammonia	TP	COD	Colour
220650.17	210315.60	Derrinboy	SW-38	Q1 19	25/04/2019	8	<5	295	0.72	<0.05	41	87
220483.33	210276.48	Derrinboy	SW-39	Q1 19	25/04/2019	7.7	8	262	1.8	0.06	39	106
219663.49	210038.82	Derrinboy	SW-40	Q1 19	25/04/2019	7.4	<5	162	1.6	<0.05	27	129
215361.95	232964.99	Bellair South	SW-33	Q1 19	25/04/2019	7.4	<5	70	1.7	0.05	62	240
214495.84	232937.68	Bellair South	SW-34	Q1 19	25/04/2019	7.7	<5	116	1.2	<0.05	38	184
214987.18	232598.43	Bellair South	SW-34A	Q1 19	25/04/2019	7.6	<5	250	0.02	0.02	107	250
213906.46	231884.67	Bellair South	SW-35	Q1 19	25/04/2019	7.6	32	374	<0.02	0.53	216	374
215477.01	233062.25	Bellair North	SW-37B	Q1 19	25/04/2019	7.7	<5	296	0.28	<0.05	52	243
204681.49	214416.93	Clongawney	SW-1	Q2 19	19/06/2019	7.3	<5	250	0.2	<0.05	130	330
205641.50	213067.71	Clongawney	SW-3	Q2 19	27/06/2019	7.6	<5	336	1.6	0.06	40	75
206319.95	215656.92	Clongawney	SW-4	Q2 19	19/06/2019	7.8	8	256	0.3	<0.05	89	113
207679.57	215615.99	Clongawney	SW-5	Q2 19	19/06/2019	7.8	<5	276	0.33	<0.05	78	115
208818.04	215648.99	Drinagh	SW-7	Q2 19	19/06/2019	7.9	<5	272	0.46	<0.05	80	91
212017.45	214103.39	Drinagh	SW-8	Q2 19	19/06/2019	7.8	<5	264	3.9	<0.05	72	107
224321.91	224780.07	Kilaranny	SW-24	Q2 19	19/06/2019	7.9	5	284	0.06	<0.05	77	140
224248.46	223524.04	Kilaranny	SW-24A	Q2 19	19/06/2019	7.7	<5	272	1.3	<0.05	80	146
217008.23	222986.75	Turraun	SW-15	Q3 19	10/09/2019	7.7	6	437	0.19	<0.05	48	103
219378.47	224050.10	Turraun	SW-16	Q3 19	02/09/2019	7.5	<2	467	0.069	<0.05	45	127
219721.73	224554.04	Pollagh	SW-17	Q3 19	02/09/2019	7.6	4	484	0.646	<0.05	26	95.8
221729.61	226112.15	Pollagh	SW-17A	Q3 19	02/09/2019	8.2	10	476	0.117	<0.05	15	84
220331.44	222549.88	Oughter	SW-18	Q3 19	10/09/2019	7.1	<2	424	0.188	<0.05	36	110
216627.57	234827.38	Bellair North	SW-36	Q3 19	02/09/2019	7.4	<2	218	0.521	<0.05	75	335
219056.10	234057.41	Bellair North	SW-37	Q3 19	02/09/2019	7.4	4	195	0.585	<0.05	76	404
216202.99	234373.11	Bellair North	SW-37A	Q3 19	02/09/2019	6.5	18	138	0.131	<0.05	99	357
217216.92	227527.32	Lemonaghan	SW-19	Q4 19	07/10/2019	7.4	14	260	0.571	<0.05	72	306
217481.75	227345.36	Lemonaghan	SW-19A	Q4 19	07/10/2019	6.5	3	129	1.26	<0.05	67	339
214970.51	226491.33	Lemonaghan	SW-19B	Q4 19	07/10/2019	5.1	10	154	0.094	<0.05	112	483
218645.63	229597.18	Lemonaghan	SW-22	Q4 19	07/10/2019	7.3	5	271	0.373	<0.05	55	243
216900.19	229545.11	Lemonaghan	SW-22A	Q4 19	07/10/2019	6.9	8	283	0.489	<0.05	75	384
216151.75	230069.09	Lemonaghan	SW-22B	Q4 19	07/10/2019	7	4	112	1.52	<0.05	56	273
215947.19	230315.10	Lemonaghan	SW-22C	Q4 19	07/10/2019	4.8	7	89	0.388	<0.05	57	254
215079.20	231196.83	Lemonaghan	SW-22D	Q4 19	07/10/2019	7.2	3	334	0.048	<0.05	47	186



Bellair Bog

Bellair bog is an active production bog with the composite sampler located here from the last week in September 2017 to December 2019. The composite sampler takes a flow proportional composite sample over a 24 hour period. The sampler had x% downtime during the period being reported, but suitable weekly grab samples were taken during these downtimes, primarily due to battery fault, flood events, the sampler was being serviced/overhauled or due to technical faults. The ammonia trigger level of 3.7mg/l, as agreed with the Agency, was not exceeded during the period being reported. The above graph show concentrations trending flat, as opposed to the upwards trend as reported in the 2018 AER-month period.

It is not possible to identify any obvious link between the summer production, winter maintenance or silt pond maintenance events on the concentration of ammonia discharging from the peatlands. The only link expected would be that related to rainfall events and seasonal weather patterns and the subsequent surfacewater runoff and associated ammonia concentrations.

The sampler at this location may be relocated to fill any information gaps on other peatland catchments and to reflect the need to support the information gathering required for the Water Framework Directive's River Basin Management Plan. There is also an EPA lead research project commencing in 2019, called the SWAMP project, whose aims are to appraise and understand the nutrient impact from peatlands, to evaluate treatment technologies and to propose predictive tools for watershed management.

Extractive Waste Management Plan Implementation AER Update 2019

March 2020.

IPC Licence P0500-01.

1.0 Extractive Wastes.

Waste classified as extractive waste from peat extraction operations arise from two operations associated with this activity.

- Silt Pond excavations and maintenance
- Bog Timbers

There has been no change to the type and nature of these three waste streams and no new waste streams added to this list. These wastes streams continue to be stored and maintained at between 1 and 3 metres in height.

2.0 Condition 7.5 Extractive Waste Management

- An extractive waste management plan (EWMP) was submitted to the Agency in September 2012 and was approved.
- The EWMP was reviewed in September 2017. There were no substantial changes to the operation of the plan, associated waste facilities or to the waste deposited. The EWMP will be reviewed again in September 2022. At this stage, it is envisaged that many of the bogs will be in a decommissioning and rehabilitation phase, which will see the generation of bog timbers from production cease. In addition, and depending on the progress with bog stabilisation and rehabilitation, silt generation will be significantly reducing, which will lead to reduced volumes to be removed from the silt ponds.

3.0 Minimisation

- The IPC Licence has various conditions that require the installation, inspections and maintenance of silt ponds for operational areas and as such these requirements dictate the need for silt ponds and associated excavation materials and cleanings.
- Bog timbers arise from the active production footprint and are naturally occurring. The active footprint is dictated by the peat production targets and customer supply contract and service level agreements.

4.0 Treatment

- Silt pond excavation and maintenance materials do not require any treatment and are stored as per the EWMP, adjacent to the associated silt pond.
- There is no treatment of bog timbers arising and these are stockpiled at various locations in associated bogs.

5.0 Recovery

- As per the EWMP, there is still no opportunity to recover these silt pond associated materials
- Bog timbers stored on the bog are natural to the peat bog and while there have been trails to recover this waste material, these have not proved viable.

6.0 Disposal

- Silt pond cleanings continue to be disposed of adjacent to the associated silt pond and will be incorporated back into the rehabilitation plans for these bogs, post production and decommissioning.
- Bog timbers will continue to be stockpiled at suitable locations to be either incorporated back into the bog, as a supply of bog timbers for the crafting industry or will continue to decay naturally.



Annual Environmental Report (AER)

2020

Company Name: Bord na Mona Energy Ltd (Boora Group)

Licence Number: P0500-01

Address: Bord na Mona, Leabeg, Tullamore, Co Offaly

Class of Activity¹: 1.4

¹ See Appendix I

Purpose of this Report

One of the functions of the Environmental Protection Agency (EPA) is to licence and regulate the activities² of large scale industrial (e.g. chemical, food processors, power plants) and waste facilities. Submitting an Annual Environmental Report (AER) is a requirement of all EPA licences.

An AER is a public document. To this end, this format has been developed for industrial and waste licence holders (other than the intensive agriculture sector) to use as a template. This is to assist any member of the public to interpret and understand the environmental performance of the licensed facility.

The AER is a **summary** of environmental information for a given year. It includes:

- Details of the licence holder's environmental goals achieved, goals to maintain compliance and/or improve their environmental performance;
- Answers to questions regarding their facility's activities;
- Tables of results from monitoring emissions such as air, water, noise, and odour; and
- Details of waste generated, accepted and treated.

An AER does **not** provide detailed technical data. Such information is available in three ways:

- 1) Contacting the licence holder directly. The Contact Us section of this template enables the licence holder to provide details of where a member of the public can obtain further information on topics reported in this document.

² See Appendix I

- 2) Some documents³ are available on the EPA website via the licence details page for each individual licence. This can be found by browsing either the <http://www.epa.ie/licensing/> or <http://www.epa.ie/enforcement/> pages of the EPA website.
- 3) All formal enforcement correspondence exchanged between the EPA and a licence holder during the regulatory process is available for public viewing by appointment at any EPA Office.

If you have a question or query about an AER or an individual EPA licensed facility see the EPA's website or contact the relevant EPA office. See <http://www.epa.ie/about/contactus/> for contact details.

³ This includes EPA site inspection and compliance monitoring reports, licence holders' self-monitoring reports, AERs and special reports

Contents

Glossary	5
Declaration	8
1) Introduction	9
Contact Us	10
2) How we Manage our Facility	11
3) Energy & Water	13
Energy.....	13
Water.....	16
4) Environmental Complaints.....	17
5) Environmental Incidents	19
6) Our Environmental Emissions.....	22
Storm Water	23
Waste Water	25
Air	27
Fugitive Solvent Emissions.....	29
Groundwater	30
Noise.....	32
7) Waste	33
Waste Generated	33
Waste Accepted	35
8) Financial Provision	36

Glossary

Abatement Equipment	Technology used to reduce pollution
AER	Annual Environmental Report.
CRAMP	Closure, Restoration and Aftercare Management Plan.
ELRA	Environmental Liability Risk Assessment.
Emission Limit Value	Limits set for specified emissions, typically outlined in Schedule B of an EPA licence.
EMS	Environmental Management System.
Environmental Goal	An objective or target set by a licensee as part of an environmental management system (EMS).
Environmental Pollutant	Substance or material that due to its quantity and/or nature has a negative impact on the environment.
Facility	Any site or premises that holds an EPA industrial or waste licence.
FP	Financial Provision.
GJ	Giga joules, an international unit of energy measurement.
Groundwater	All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.
Incident	As defined by an EPA industrial or waste licence.

Inert Waste	Is waste that will not undergo physical, chemical or biological change thereby, is unlikely to cause environmental pollution or harm human health.
List of Wastes (LoW)	A list of wastes drawn up by the European Commission and published as Commission Decision 2014/955/EU.
Noise Sensitive Location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Non-Renewable Resource	A resource of economic value that cannot be replaced at the same rate it is being consumed e.g. coal, peat, oil and natural gas.
Oil Separator	Separator system for light liquids (e.g. oil and petrol).
PRTR	Pollutant Release and Transfer Register.
Renewable Resource	Wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.
Sanitary Waste	Waste water from toilet, washroom and canteen facilities.
Storm Water	Rain water run-off from roof and non-process areas.

Surface Water	Lakes, rivers, streams, estuaries and coastal waters.
Trigger Level	A value set for a specific parameter, the achievement or exceedance of which requires certain actions to be taken by the licence holder.
Volatile Organic Compounds	Gases produced from solids or liquids that evaporate readily in ambient conditions.
Waste	Any substance or object which the holder discards or intends or is required to discard.

Disclaimer

These are **not** legal definitions. Legal definitions can be found in the corresponding legislation.

Declaration

I, Michael Hoey, confirm that by ticking the box below, all information in this report is truthful and accurate to the best of my knowledge and belief.

In addition, I confirm that all monitoring and performance reporting required by our EPA licence and summarised herein is available for inspection by the EPA.

Tick here

☒

1) Introduction

See below a brief description of our facility and a summary of our environmental performance this year.

- The primary activity during the reporting period was peat sales and transport. Bord na Mona had a delayed start to peat production operations in 2020, commencing on the 11th June. However, activities ceased again at the end of June.
- In the period, there were no complaints of an environmental nature, down from the one complaint received in 2019.
- In the period, there were three reported incidents of an environmental nature relating to fires and exceedances in suspended solids trigger levels. All were of minor to limited significance and were closed out during the period.
- During the period, there were approvals sought for cultivation trials of medicinal herbs and notifications regarding late commencement of production and early cessation of activities.
- During the season 66,463 tonnes of peat were produced, down 74.3 % on 2020.
- During the period, certification to ISO9001 and ISO50001 were retained.
- During the period, there was a 2% increase in waste generated and this was primarily related to lifting and recycling rail line.
- In January 2021, Bord na Mona announced it was permanently ending all peat harvesting activities on its lands. Since then Bord na Mona have been engaged in the Governments Peatlands Climate Action Scheme (<https://www.gov.ie/en/publication/136a7-bord-na-mona-bog-rehabilitation-scheme/>), with a view to commencing applicable decommissioning & rehabilitation activities on a number of bogs under the Condition 10 obligations of this licence. In addition, Bord na Mona are continuing to sell and transport existing peat stock harvested in previous years.

Contact Us

If you have any questions or would like further information on any aspect of this report, please contact us directly.

See below details:

Enda McDonagh,
Bord na Mona Energy Ltd
Leabeg
Tullamore
Co Offaly
Enda.mcdonagh@bnm.ie
0579329701
www.bnm.ie

2) How we Manage our Facility

Bord na Mona have an Environmental Compliance Department with a team of five who manage the day to day IPC Licence requirements. This licence governs the extraction of peat and associated activities and manages emission to air, water and land.

The information below sets out the environmental goals for our facility to help us prevent environmental pollution and reduce our impact on the environment. Target dates for completing each goal and progress towards achieving the goal are outlined in Table 1.

Table 1 Environmental Goals

Environmental Goal	Target Date	Progress
2020 Training (no of people trained)	Dec 2020	None trained in 2020 due to Covid 19 restrictions.
2020 Waste Management (any reduction in waste volumes on 2019)	Dec 2020	Increase of 761%
2020 Energy Efficiency (any reduction in electricity/energy use)	Dec2020	Decrease of 70%
2021 Reduction of Complaints	Dec 2021	Commenced
2021 Reduction of Incidents	Dec 2021	Commenced
2021 Communication regarding decommissioning and rehabilitation	Ongoing for applicable Bogs	Commenced
2021 Review of environmental monitoring programme	Ongoing inline with PCAS & LAWPRO	Commenced
2021 Training & Awareness	May 2021	On Track
2021 Completion of Internal Audits	June 2021	On Track

2021 Decommissioning and Rehabilitation of 5 bogs in accordance with Condition 10 of the IPC Licence and in accordance with Peatlands Climate Action Scheme https://www.gov.ie/en/publication/136a7-bord-na-mona-bog-rehabilitation-scheme/	December 2021	Not Commenced

Add rows as necessary

Comment

Bord na Mona had a delayed start to peat production operations in 2020, commencing on the 11th June. However, activities ceased again at the end of June.

In January 2021, Bord na Mona announced it was permanently ending all peat harvesting activities on its lands. Since then Bord na Mona have been engaged in the Governments Peatlands Climate Action Scheme (<https://www.gov.ie/en/publication/136a7-bord-na-mona-bog-rehabilitation-scheme/>), with a view to commencing applicable decommissioning & rehabilitation activities on a number of bogs under the Condition 10 obligations of this licence. In addition Bord na Mona are continuing to sell and transport existing peat stock harvested in previous years.

3) Energy & Water

Energy

Explanation

Fossil fuels such as coal, gas and oil are non-renewable resources. As a result, our EPA licence requires that we measure our energy use and set targets to improve the energy efficiency of our activities and reduce our overall use, where possible. Where we have the means and technology on-site to generate energy, this is also captured in this report.

The information below summarises the energy used this year compared to the previous year and includes renewable and non-renewable energy types.

Table 2 Energy Used

Energy Used (GJ)	Quantity	% Increase/ decrease on previous year
Electricity	893.73	-10%
Heavy Fuel Oil	-	
Light Fuel Oil	3086155.4	-70%
Natural Gas	-	
Coal / Solid Fuel	-	
Peat	-	
Renewable Biomass	-	
Renewable Energy Generated On-site	-	
Total Energy Used	3087049.13	-70%

Comment

Bord na Mona had a delayed start to peat production operations in 2020, commencing on the 11th June. However, activities ceased again at the end of June.

Bord na Mona Energy were certified to the energy management standard ISO50001 during the 2020 season.

The information below summarises the energy we generated on our site this year with specific focus on renewable energy generation.

Table 3 Energy Generated

Energy Generated (GJ)	Quantity	% Increase/ decrease on previous year
Renewable Energy	NA	
Total Energy Generated		

Comment

There are no renewable energy assets on this site.

Water

Explanation

Water is a natural resource and we are required by our EPA licence to identify ways to reduce our use where possible. Water used in industry can be extracted from groundwater, rivers and lakes (surface water), taken from public water supplies (Irish Water), recycled from the facility's processes or harvested from rainwater.

The information below summarises and compares the quantity of water used this year compared to the previous year.

Table 4 Water Used

Source of Water Used	Quantity (m³/year)	% Increase/decrease on previous year
Groundwater	0	
Surface Water	0	
Public Supply	0	
Recycled Water	0	
Rainwater	0	
Total Water Used		

Comment

Water is not used in any of the peat harvesting or transport processes. The only water used is that required to provide associated offices and workshop welfare facilities (canteen/toilets)

4) Environmental Complaints

Explanation

Our EPA licence requires that activities do not cause environmental nuisance such as odour, dust or noise. Our licence also requires that we have procedures in place to record, investigate and respond to environmental complaints if or when they arise.

We have an environmental complaints procedure in place where you can contact us⁴ directly. You can also contact the EPA⁵ if you wish to make an environmental complaint, confidentially or not.

See the information below for a summary of **all** the environmental complaints relating to our activities made directly to us and to the EPA this year.

Table 5 Summary of All Environmental Complaints Received in

Type of Complaint	Number of Complaints Received	Number Closed
Odour / Smells	0	0
Noise	0	0
Dust	0	0
Water Quality	0	0
Air Quality	0	0
Waste	0	0
Litter	0	0
Vermin/Flies/Birds	0	0
Soil Contamination	0	0
Vibration	0	0
Other	0	0

⁴ See Section 1, Introduction – Contact Us

⁵ If you wish to contact the EPA to make an environmental complaint about an EPA licenced facility, please go to <https://lema.epa.ie/complaints>

Comment

As required environmental complaints are reportable to the EPA and as such must be investigated. In the 2020 reporting period, this licence had 0 complaints received and there were 0 carried over into 2021.

5) Environmental Incidents

Explanation

It is our responsibility as an EPA licensed facility to ensure we have systems in place to prevent incidents that have the potential to cause environmental pollution. If an incident occurs, we are required to report it to the EPA, investigate the cause and fix the problem.

The EPA classify environmental incidents into 5 categories based on the potential impact on the environment:

- Minor
- Limited
- Serious
- Very Serious
- Catastrophic

See Table 6 for the number of the environmental incidents we reported to the EPA this year.

Table 6 Number of Environmental Incidents

Incident Category	Minor	Limited	Serious	Very Serious	Catastrophic
Abatement Equipment Offline					
Breach of Ambient ELV					
Breach of Emission Limit	1				
Explosion					
Fire	2				
Monitoring Equipment Failure					
Odour					
Spillage					
Breach of trigger Level					
Uncontrolled Release					

Incident Category	Minor	Limited	Serious	Very Serious	Catastrophic
Other					

Comment

As required, incidents of an environmental nature are reportable to the EPA and as such must be investigated. In the 2020 reporting period, this licence recorded and reported 3 incidents. These incidents were primarily related to fire nuisance and breach of emission limit of suspended solids on the Bellair south bog

6) Our Environmental Emissions

Explanation

We are required to ensure the emissions from our activities do not cause environmental pollution.

We are required to monitor any of the following emissions that we make:

- Storm water
- Waste water
- Air
- Groundwater
- Noise

We regularly test any such emissions for specific pollutants and materials to ensure they do not contain levels of pollution that exceed emission limit values (ELVs) or cause environmental pollution. If monitoring of an emission indicates an ELV is exceeded, we are required to report this to the EPA⁶.

The next sub-sections of this report summarise our compliance with any ELVs set in our EPA licence. Some emissions monitored do not have specific ELVs, but we still carry out monitoring and report all incidents that may give rise to environmental pollution.

⁶ See section 5, Incidents

Storm Water

Explanation

Storm water is rain water run-off from roof and non-process areas of a facility, e.g. car parks, and generally shall not contain any pollution.

Storm water is usually released into a local water body after a basic form of treatment. Our EPA licence requires that we manage storm water to ensure no polluting substances or materials are released into the environment.

The information below summarises how the storm water from our facility is treated, where it is released and the results of monitoring this year.

1. Storm water from our facility is managed prior to release by;

Either direct to drain where it is roof water only, or via petrol/oil interceptor.

2. Storm water from our facility is released into the following water bodies:

Boora, Brosna Clodaigh Tinamuck west stream

Table 7 Summary of Storm Water Monitoring

Parameter measured	No. of Samples	% Compliant⁷	Comment
COD	32	100%	

Add rows as necessary

Comment

As required by the licence, stormwater is required to be separated where possible from process/non-process areas. Where this is not possible, stormwater is managed via oil-interceptors which are inspected on a monthly basis and sampled for associated discharges each month. Other than visual observations, the other main criteria to define adequate treatment is COD mg/l so this and visual inspections dictate when the interceptor is cleaned by an approved hazardous waste contractor.

⁷ % compliant = [(number of samples compliant) / (number of samples taken)] x 100. Compliance could refer to emission limit values or trigger levels. The EPA commonly use trigger levels on stormwater discharges.

Waste Water

Explanation

There are two types of waste water that can be produced:

- Process waste water produced from the activities and;
- Sanitary waste water from toilets, washrooms and canteens.

Our EPA licence requires us to manage our waste water on or off-site and ensure that it does not cause environmental pollution when discharged into the environment.

The information below summarises how we treat the waste water produced from our activities, where it is released and the results of monitoring this year.

1. Waste water produced by our activities is treated as follows before discharge to a receiving waterbody;

All production area runoff is treated via an associated silt pond designed, inspected and maintained in accordance with condition 6 of the IPC Licence

2. Treated waste water from our facility is released into the following water bodies:

Boor, Brosna, Shannon, Rapemills, Boora, Silver, Pollagh, Tinamuck west, castlestrong, derrynagun, kilcolgan, Lemanaghan, Ballynahowan, Falsk, west Galros, upper clonoghill, north rathlure, knockhill, killeenmore, Cloncollog, Derrygunningan, pigeonhouse, glasshouse

Table 8 Summary of Waste Water Monitoring

Parameter measured	No. of Samples	% Compliant	Comment
Suspended Solids	336	99.7%	One exceedance
Ammonia	79	100%	
Total Solids	336	NA	
Total Phosphorus	79	NA	
pH	79	NA	
Colour	79	NA	
COD	79	100%	

Add rows as necessary

Comment

Licence requirements are quarterly grab samples on a selected number of silt pond outlets as per condition 6.2 and one 24hr flow proportional composite sampler at South Bellair bog.

The emission limit values are 35mg/l suspended solids, 3.7mg/l total ammonia and 100mg/l COD. There was one exceedance for suspended solids which was similar to 2019 and following investigation, there was no valid reason for this exceedance.

Air

Explanation

Generally, three types of air emissions are monitored from industry in Ireland: gases, dust (particulates) and odour. Our EPA licence requires us to ensure that any air emissions from our activities do not cause air pollution or create an odour nuisance.

The information below details the number of air emission points we monitor, the results from testing the air emissions and any odour assessments carried out by us and the EPA this year.

1. We monitor air emissions from the following number of emission points at our facility.

DM-01 Clongawney
DM-02 Pollagh
DM-03 Derryclure

Table 9 Summary of Air Emissions Monitoring

Parameter measured	No. of Samples	% Compliant	Comment
Fugitive Dust	9	100	

Add rows as necessary

Comment

Table 10 Summary of Odour Assessments Carried Out

Assessment Conducted By	No. of Odour Assessments	% Compliant⁸	Comment
Licence Holder	NA		Not required
EPA	NA		Not required

Add rows where necessary

Comment

There are no odour emissions of note from the activity, no requirements to monitor and no associated complaints.

⁸ A compliant odour assessment is based on EPA Odour Impact Assessment Guidance available at <http://www.epa.ie/pubs/advice/air/emissions/ag5-odourassessment.html>

Fugitive Solvent Emissions

Are you are required to monitor fugitive solvent air emissions from your facility?

Yes ☐

No ☒

Explanation

The use of solvents is regulated under Irish and European Union (EU) Regulations⁹. Solvents are chemicals that, by their nature, are volatile (evaporate readily under ambient conditions). Solvents can be found in many inks, glues and cleaning agents. Due to the volatility of solvents some emissions may be released into the atmosphere during our activities before being captured in our air treatment system. This type of emission is called a **fugitive solvent emission**.

The information below summarises the quantity of solvents used this year, the percentage of fugitive solvent emissions (% of total quantity used) and whether the percentage complied with the targets set in the EU Regulations.

Table 11 Summary of Fugitive Solvent Emissions

Quantity of Solvents Used (Kg)	% Fugitive Solvent Emissions	Compliant

Comment

⁹ See Annex VII of the Industrial Emissions Directive

<https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm>

Groundwater

Explanation

Groundwater is an important and sensitive resource in Ireland. Our EPA licence requires that we monitor groundwater to ensure our activities do not cause groundwater pollution.

Understanding how groundwater flows through soil and rock layers and eventually into surface and coastal waters is a complex science. Sometimes groundwater pollution that occurred in the past can take years and even decades to disappear. Therefore, it is important that experts help us monitor and interpret results from groundwater monitoring and testing.

The information below is a basic summary of the condition of the groundwater this year.

1. Do you have a groundwater monitoring programme in place?

Yes ☐

No ☒

2. Have the groundwater monitoring results over the last 5 years indicated the presence of groundwater pollution?

Yes ☐

No ☒

Table 12 List of Groundwater Pollutants Identified

Pollutants

Add rows as necessary

3. Give details of the investigations and subsequent actions taken, where applicable, to manage the groundwater pollution.

Comment

There are no licence requirements to monitor groundwater from the activity.

Noise

Explanation

Our EPA licence requires that we monitor noise emissions from our facility. Noise monitoring can be conducted at the boundary of our facility and/or at locations beyond the boundary referred to as “noise sensitive locations”. Noise monitoring requires the use of special noise monitoring equipment. Our EPA licence requires that noise produced by our facility shall not exceed the noise limit values and/or give rise to nuisance.

The information below gives a summary of when and where we conducted noise monitoring this year and if results complied with our EPA licence limits.

1. We conducted noise monitoring on the following dates this year:

NA

2. Was the noise monitoring carried out at:

- i. the boundary of our facility,
- ii. noise sensitive locations off-site, or
- iii. both?

NA

3. Were measured noise levels compliant with your EPA licence limits?

Yes ☐

No ☐

If No, we took the following actions to address the noise level exceedances?

NA

Comment

There are no licence requirements to monitor noise from the activity, or any complaints regarding noise impact.

7) Waste

Waste Generated

Explanation

Our EPA licence requires us to manage the waste we generate in a manner that does not cause environmental pollution.

We manage, store and record hazardous, non-hazardous and inert waste we generate in accordance with our licence. We ensure that this waste is subsequently treated or disposed of in accordance with the relevant waste Regulations.

The information in table 13 is a summary of waste we generated this year and the percentage increase or decrease on the previous year. The percentage recovery is the amount of total waste generated that was reused, recycled or recovered.

Table 13 Waste Generated

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	% Recovery
Hazardous	20.67	1%	100%
Non-Hazardous	932.01	761%	90%
Inert	n/a	n/a	
Total Tonnes	952.68	761%	90%

Comment

The main wastes generated from this activity are, scrap metal, waste oil, timber and general waste, the reason for the large increase in the waste figures is that in the previous year's AER the data for the silt pond extractions was not included in these figures as the waste is retained on site and will in the future be used to back fill the silt ponds and was omitted in error

Waste Accepted

Did you accept waste onto your facility for storage, treatment, recovery or disposal this year?

Yes ☐

No ☒

Explanation

Our EPA licence requires us to manage the waste we accept in a manner that does not cause environmental pollution.

We manage, store and record all incoming and outgoing hazardous, non-hazardous and inert waste. The waste we accept may be treated, recovered, disposed or stored at our facility depending on our licence requirements.

The information in Table 14 provides a summary of waste we accepted this year and the percentage increase or decrease on the previous year. The percentage recovery is the amount of total waste accepted that was reused, recycled or recovered.

Table 14 Waste Accepted

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	% Recovery
Hazardous			
Non-Hazardous			
Inert			
Total Tonnes			

Comment

No waste accepted at this facility

8) Financial Provision

Explanation

Our EPA licence requires us to assess the risk our activities pose to the environment if we cease our activities or if an incident occurred. If we are identified as a high-risk facility¹⁰ by the EPA, we are required to put provision in place such as a financial bond or insurance to cover the cost of restoring our site to a satisfactory condition. This financial provision can then be used to cover the cost of managing the restoration or clean up should such an event occur.

1. Are you required to have an agreed financial provision in place?

Yes ☐

No ☒

2. What year was your Closure, Restoration and Aftercare Management Plan (CRAMP) last agreed by the Agency?

Not required under the Licence. However, Bog Rehabilitation Plans are required to be submitted to the EPA. These were submitted to the Agency in May 2018. Since then, the EPA issued new Guidance on the process of preparing and implementing a bog rehabilitation plan and under the Peatlands Climate Action Plan www.bnmecas.ie & <https://www.gov.ie/en/publication/136a7-bord-na-mona-bog-rehabilitation-scheme/>, Bord na Mona are preparing new rehabilitation plans to be submitted by March/April 2021.

3. What year was your Environmental Liability Assessment Report (ELRA) agreed by the Agency?

Not required under the Licence.

¹⁰ See Appendix II

4. Has there been any significant changes on your site since the last agreements?

Yes ☐

No ☒

If yes, have you submitted details to the EPA?

Yes ☒

No ☐

N/A ☐

Appendix I

Class of Activity

Industrial and waste facilities are classed into different sectors depending on the nature of their activity and its potential impact on the environment. The EPA Act 1992 as amended, outlines these as follows:

Class 1	Minerals and other materials
Class 2	Energy
Class 3	Metals
Class 4	Mineral fibres and glass
Class 5	Chemicals
Class 6	Intensive Agriculture ¹¹
Class 7	Food and drink
Class 8	Wood, paper, textiles and leather
Class 9	Fossil fuels
Class 10	Cement, lime and magnesium oxide
Class 11	Waste

¹¹ This reporting template is not applicable to the **intensive agriculture sector**. Their annual environmental reporting structure is different and can be found at <http://www.epa.ie/pubs/advice/aerprtr/aerguid/>

Class 12 Surface Coatings

Class 13 Other Activities

Appendix II

High Environmental Risk Categories

If an industrial or waste licence falls into one of these categories it is deemed, by the EPA, as a high environmental risk. As a result, the licence holder is required to have financial provision in place. See section 8, Financial Provision.

1. Landfills
2. Non-Hazardous Waste Transfer Station
3. Incineration and Co-Incineration Waste Facilities
4. Category A – Extractive Waste Facilities
5. Upper and Lower Tier Seveso Facilities
6. Hazardous Waste Transfer Stations
7. High Risk Contaminated Land
8. Exceptional Circumstances

NOTE:

This list is subject to change.

See the link below for further information.

<http://www.epa.ie/pubs/advice/licensee/fp/epaapproachtoenvironmentalliabilitiesandfinancialprovision.html>



Annual Environmental Report (AER) 2021

Company Name: Bord na Móna Energy Ltd (Boora Group)

Licence Number: P0500-01

Address: Bord na Móna, Leabeg, Tullamore, Co Offaly

Class of Activity¹: 1.4

¹ See Appendix I

Purpose of this Report

One of the functions of the Environmental Protection Agency (EPA) is to licence and regulate the activities² of large scale industrial (e.g. chemical, food processors, power plants) and waste facilities. Submitting an Annual Environmental Report (AER) is a requirement of all EPA licences.

An AER is a public document. To this end, this format has been developed for industrial and waste licence holders (other than the intensive agriculture sector) to use as a template. This is to assist any member of the public to interpret and understand the environmental performance of the licensed facility.

The AER is a **summary** of environmental information for a given year. It includes:

- Details of the licence holder's environmental goals achieved, goals to maintain compliance and/or improve their environmental performance;
- Answers to questions regarding their facility's activities;
- Tables of results from monitoring emissions such as air, water, noise, and odour; and
- Details of waste generated, accepted and treated.

An AER does **not** provide detailed technical data. Such information is available in three ways:

- 1) Contacting the licence holder directly. The Contact Us section of this template enables the licence holder to provide details of where a member of the public can obtain further information on topics reported in this document.

² See Appendix I

- 2) Some documents³ are available on the EPA website via the licence details page for each individual licence. This can be found by browsing either the <http://www.epa.ie/licensing/> or <http://www.epa.ie/enforcement/> pages of the EPA website.
- 3) All formal enforcement correspondence exchanged between the EPA and a licence holder during the regulatory process is available for public viewing by appointment at any EPA Office.

If you have a question or query about an AER or an individual EPA licensed facility see the EPA's website or contact the relevant EPA office. See <http://www.epa.ie/about/contactus/> for contact details.

³ This includes EPA site inspection and compliance monitoring reports, licence holders' self-monitoring reports, AERs and special reports

Contents

Glossary	5
Declaration	8
1) Introduction	9
Contact Us	10
2) How we Manage our Facility	11
3) Energy & Water	13
Energy.....	13
Water.....	15
4) Environmental Complaints.....	16
5) Environmental Incidents	18
6) Our Environmental Emissions.....	20
Storm Water	20
Waste Water	23
Air	25
Fugitive Solvent Emissions.....	27
Groundwater	28
Noise.....	30
7) Waste	31
Waste Generated	31
Waste Accepted	32
8) Financial Provision	33

Glossary

Abatement Equipment	Technology used to reduce pollution
AER	Annual Environmental Report.
CRAMP	Closure, Restoration and Aftercare Management Plan.
ELRA	Environmental Liability Risk Assessment.
Emission Limit Value	Limits set for specified emissions, typically outlined in Schedule B of an EPA licence.
EMS	Environmental Management System.
Environmental Goal	An objective or target set by a licensee as part of an environmental management system (EMS).
Environmental Pollutant	Substance or material that due to its quantity and/or nature has a negative impact on the environment.
Facility	Any site or premises that holds an EPA industrial or waste licence.
FP	Financial Provision.
GJ	Giga joules, an international unit of energy measurement.
Groundwater	All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.
Incident	As defined by an EPA industrial or waste licence.

Inert Waste	Is waste that will not undergo physical, chemical or biological change thereby, is unlikely to cause environmental pollution or harm human health.
List of Wastes (LoW)	A list of wastes drawn up by the European Commission and published as Commission Decision 2014/955/EU.
Noise Sensitive Location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Non-Renewable Resource	A resource of economic value that cannot be replaced at the same rate it is being consumed e.g. coal, peat, oil and natural gas.
Oil Separator	Separator system for light liquids (e.g. oil and petrol).
PRTR	Pollutant Release and Transfer Register.
Renewable Resource	Wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.
Sanitary Waste	Waste water from toilet, washroom and canteen facilities.
Storm Water	Rain water run-off from roof and non-process areas.

Surface Water	Lakes, rivers, streams, estuaries and coastal waters.
Trigger Level	A value set for a specific parameter, the achievement or exceedance of which requires certain actions to be taken by the licence holder.
Volatile Organic Compounds	Gases produced from solids or liquids that evaporate readily in ambient conditions.
Waste	Any substance or object which the holder discards or intends or is required to discard.

Disclaimer

These are **not** legal definitions. Legal definitions can be found in the corresponding legislation.

Declaration

I, Michael Hoey, confirm that by ticking the box below, all information in this report is truthful and accurate to the best of my knowledge and belief.

In addition, I confirm that all monitoring and performance reporting required by our EPA licence and summarised herein is available for inspection by the EPA.

Tick here

☒

1) Introduction

See below a brief description of our facility and a summary of our environmental performance this year.

- During the reporting period, Bord na Móna notified the Agency, that in line with its Brown to Green strategy, it had decided to end all peat harvesting on its lands. It is now progressing with its requirements under Condition 10 of the relevant IPC Licences to decommission and rehabilitate available bogs under the Peatlands Climate Action Scheme PCAS (February 2021).
- During the reporting period the primary activities were peat sales of existing stock and decommissioning and rehabilitation of several bogs in this IPC Licence.
- During the reporting period 581 Ha's of peatland or 30%, was rehabilitated, with the balance extending into the 2022 period at Boora, the Derries, Turraun, Pollagh and Oughter Bogs.
- Similarly, 1358 Ha's of peatlands were decommissioned, with plant, equipment and waste materials removed at the same bogs.
- In the reporting period, there were 0 complaints of an environmental nature, similar to 2020.
- During the period, there was a 194% decrease in waste generated, mostly related to a decrease in activity but an increase in decommissioning.
- In the period, there 2 reported incidents of an environmental nature, one was minor dust nuisance and the other was a fuel spillage in Monettia bog, where treatment and clean-up is on going.

- During the period, there were notifications submitted regarding illegal fly tipping on bog margins and subsequent clean-up and requests regarding relocation of composite samplers.
- During 2021, Rehabilitation plans, maps and associated assessments were submitted to the Agency for the following bogs: Boora, the Derries, Turraun, Pollagh and Oughter Bogs and these are available to view at <https://www.bnmecas.ie/bogs-peatlands-climate-action-scheme/>
- Monthly water quality sampling data was submitted for sampling undertaken during the period, which included peatlands prior to the rehabilitation undertaken in 2021 and to provide baseline data for peatlands to be rehabilitated in subsequent years.
- During the period, certification to ISO9001 was retained.

Contact Us

If you have any questions or would like further information on any aspect of this report, please contact us directly.

See below details:

Enda McDonagh,
Bord na Mona Energy Ltd
Leabeg
Tullamore
Co Offaly
www.bnm.ie

2) How we Manage our Facility

Bord na Mona have an Environmental Compliance Department with a team of five who manage the day to day IPC Licence requirements. This licence governs the extraction of peat and associated activities and manages emission to air, water and land.

The information below sets out the environmental goals for our facility to help us prevent environmental pollution and reduce our impact on the environment. Target dates for completing each goal and progress towards achieving the goal are outlined in Table 1.

Table 1 Environmental Goals

Environmental Goal	Target Date	Progress
Training/awareness for all area leaders and operatives in advance of decommissioning and rehabilitation of the 2022 bogs	May 2022	Underway
Waste Management – Removal of all waste that are deemed a risk the environment in bogs scheduled to be decommissioned in 2022	December 2022	Underway
Decommissioning and Rehabilitation of 4 bogs in accordance with Condition 10 of the IPC Licence and in accordance with Peatlands Climate Action Scheme https://www.gov.ie/en/publication/136a7-bord-na-mona-bog-rehabilitation-scheme/	December 2021 to March 2023	To commence on the 1st April 2022.
Maintain surface water quality compliance with emission limit values for Suspended Solids during the proposed decommissioning and rehabilitation programme	December 2022	Underway

Communication of Decommissioning and Rehabilitation plans to all neighbours within 1km of the proposed activity for 2022	June 2022	4 Bogs have had letters and associated details delivered.
Completion of internal audits/inspections of applicable bogs scheduled for decommissioning and rehabilitation as required by condition 10 and the Peatlands Climate Action Scheme	September 2022	Not Commenced

Comment

As peat extraction on all bogs in this licence ceased in 2020, all environmental goals for 2022 are linked to the remaining bog activity which is decommissioning and rehabilitation of the 4 bogs planned for 2022

3) Energy & Water

Energy

Explanation

Fossil fuels such as coal, gas and oil are non-renewable resources. As a result, our EPA licence requires that we measure our energy use and set targets to improve the energy efficiency of our activities and reduce our overall use, where possible. Where we have the means and technology on-site to generate energy, this is also captured in this report.

The information below summarises the energy used this year compared to the previous year and includes renewable and non-renewable energy types.

Table 2 Energy Used

Energy Used (GJ)	Quantity	% Increase/ decrease on previous year
Electricity	790.75	-11.5%
Heavy Fuel Oil	-	
Light Fuel Oil	299,600	-90%
Natural Gas	-	
Coal / Solid Fuel	-	
Peat	-	
Renewable Biomass	-	
Renewable Energy Generated On-site	-	
Total Energy Used	300,390.75	-80%

Comment

Electricity and fuel usage decreased in 2021. This was mainly due to PCAS bog rehabilitation and decommissioning work.

The information below summarises the energy we generated on our site this year with specific focus on renewable energy generation.

Table 3 Energy Generated

Energy Generated (GJ)	Quantity	% Increase/ decrease on previous year
Renewable Energy	NA	
Total Energy Generated		

Comment

There are no renewable energy assets on this site.

Water

Explanation

Water is a natural resource and we are required by our EPA licence to identify ways to reduce our use where possible. Water used in industry can be extracted from groundwater, rivers and lakes (surface water), taken from public water supplies (Irish Water), recycled from the facility's processes or harvested from rainwater.

The information below summarises and compares the quantity of water used this year compared to the previous year.

Table 4 Water Used

Source of Water Used	Quantity (m³/year)	% Increase/decrease on previous year
Groundwater	0	
Surface Water	0	
Public Supply	0	
Recycled Water	0	
Rainwater	0	
Total Water Used		

Comment

Water is not used in any of the peat harvesting or transport processes. The only water used is that required to provide associated offices and workshop welfare facilities (canteen/toilets)

4) Environmental Complaints

Explanation

Our EPA licence requires that activities do not cause environmental nuisance such as odour, dust or noise. Our licence also requires that we have procedures in place to record, investigate and respond to environmental complaints if or when they arise.

We have an environmental complaints procedure in place where you can contact us⁴ directly. You can also contact the EPA⁵ if you wish to make an environmental complaint, confidentially or not.

See the information below for a summary of **all** the environmental complaints relating to our activities made directly to us and to the EPA this year.

Table 5 Summary of All Environmental Complaints Received in

Type of Complaint	Number of Complaints Received	Number Closed
Odour / Smells	0	0
Noise	0	0
Dust	0	0
Water Quality	0	0
Air Quality	0	0
Waste	0	0
Litter	0	0
Vermin/Flies/Birds	0	0
Soil Contamination	0	0
Vibration	0	0
Other	0	0

⁴ See Section 1, Introduction – Contact Us

⁵ If you wish to contact the EPA to make an environmental complaint about an EPA licenced facility, please go to <https://lema.epa.ie/complaints>

Comment

As required environmental complaints are reportable to the EPA and as such must be investigated. In the 2021 reporting period, this licence received no complaints.

5) Environmental Incidents

Explanation

It is our responsibility as an EPA licensed facility to ensure we have systems in place to prevent incidents that have the potential to cause environmental pollution. If an incident occurs, we are required to report it to the EPA, investigate the cause and fix the problem.

The EPA classify environmental incidents into 5 categories based on the potential impact on the environment:

- Minor
- Limited
- Serious
- Very Serious
- Catastrophic

See Table 6 for the number of the environmental incidents we reported to the EPA this year.

Table 6 Number of Environmental Incidents

Incident Category	Minor	Limited	Serious	Very Serious	Catastrophic
Abatement Equipment Offline	0	0	0	0	0
Breach of Ambient ELV	0	0	0	0	0
Breach of Emission Limit	0	0	0	0	0
Explosion	0	0	0	0	0
Fire	0	0	0	0	0
Monitoring Equipment Failure	0	0	0	0	0
Odour	0	0	0	0	0
Spillage	0	0	1	0	0
Breach of trigger Level	0	0	0	0	0
Uncontrolled Release	1	0	0	0	0
Other	0	0	0	0	0

Comment

As required, incidents of an environmental nature are reportable to the EPA and as such must be investigated. In the 2021 reporting period, this licence recorded and reported 2 incidents. These incidents were primarily related to dust nuisance and a spillage of fuel on the Monettia site

6) Our Environmental Emissions

Explanation

We are required to ensure the emissions from our activities do not cause environmental pollution.

We are required to monitor any of the following emissions that we make:

- Storm water
- Waste water
- Air
- Groundwater
- Noise

We regularly test any such emissions for specific pollutants and materials to ensure they do not contain levels of pollution that exceed emission limit values (ELVs) or cause environmental pollution. If monitoring of an emission indicates an ELV is exceeded, we are required to report this to the EPA⁶.

The next sub-sections of this report summarise our compliance with any ELVs set in our EPA licence. Some emissions monitored do not have specific ELVs, but we still carry out monitoring and report all incidents that may give rise to environmental pollution.

Storm Water

Explanation

Storm water is rain water run-off from roof and non-process areas of a facility, e.g. carparks, and generally shall not contain any pollution.

Storm water is usually released into a local water body after a basic form of treatment. Our EPA licence requires that we manage storm water to ensure no polluting substances or materials are released into the environment.

⁶ See section 5, Incidents

The information below summarises how the storm water from our facility is treated, where it is released and the results of monitoring this year.

1. Storm water from our facility is managed prior to release by;

Either direct to drain where it is roof water only, or via petrol/oil interceptor.

2. Storm water from our facility is released into the following water bodies:

Boor, Brosna, Shannon, Rapemills, Boora, Silver, Pollagh, Tinamuck west, castlestrong, derrynagun, kilcolgan, Lemanaghan, Ballynahowan, Falsk, west Galros, upper clonoghill, north rathlure, knockhill, killeenmore, Cloncollog, Derrygunningan, pigeonhouse, glasshouse

Table 7 Summary of Storm Water Monitoring

Parameter measured	No. of Samples	% Compliant⁷	Comment
COD	25	100%	Low level of samples this year due to dry weather or no discharge on the days of sampling.

Add rows as necessary

Comment

As required by the licence, stormwater is required to be separated where possible from process/non-process areas. Where this is not possible, stormwater is managed via oil-interceptors which are inspected on a monthly basis and sampled for associated discharges each month. Other than visual observations, the other main criteria to define adequate treatment is COD mg/l so this and visual inspections dictate when the interceptor is cleaned by an approved hazardous waste contractor.

⁷ % compliant = [(number of samples compliant) / (number of samples taken)] x 100. Compliance could refer to emission limit values or trigger levels. The EPA commonly use trigger levels on stormwater discharges.

Waste Water

Explanation

There are two types of waste water that can be produced:

- Process waste water produced from the activities and;
- Sanitary waste water from toilets, washrooms and canteens.

Our EPA licence requires us to manage our waste water on or off-site and ensure that it does not cause environmental pollution when discharged into the environment.

The information below summarises how we treat the waste water produced from our activities, where it is released and the results of monitoring this year.

1. Waste water produced by our activities is treated as follows before discharge to a receiving waterbody;

All production area runoff is treated via an associated silt pond designed, inspected and maintained in accordance with condition 6 of the IPC Licence

2. Treated waste water from our facility is released into the following water bodies:

Boor, Brosna, Shannon, Rapemills, Boora, Silver, Pollagh, Tinamuck west, castlestrong, derrynagun, kilcolgan, Lemanaghan, Ballynahowan, Falsk, west Galros, upper clonoghill, north rathlure, knockhill, killeenmore, Cloncollog, Derrygunningan, pigeonhouse, glasshouse

Table 8 Summary of Waste Water Monitoring

Parameter measured	No. of Samples	% Compliant	Comment
Suspended Solids	269	100%	
Ammonia	76	100%	
Total Solids	269	NA	
Total Phosphorus	76	NA	
pH	76	NA	
Colour	76	NA	
COD	76	100%	

Add rows as necessary

Comment

Licence requirements are quarterly grab samples on a selected number of silt pond outlets as per condition 6.2 and one 24hr flow proportional composite sampler at South Bellair bog.

The emission limit values are 35mg/l suspended solids, 3.7mg/l total ammonia and 100mg/l COD. There was no exceedances record in 2021 which is an improvement on 2020 which had one exceedance recorded.

Air

Explanation

Generally, three types of air emissions are monitored from industry in Ireland: gases, dust (particulates) and odour. Our EPA licence requires us to ensure that any air emissions from our activities do not cause air pollution or create an odour nuisance.

The information below details the number of air emission points we monitor, the results from testing the air emissions and any odour assessments carried out by us and the EPA this year.

1. We monitor air emissions from the following number of emission points at our facility.

N/A

Table 9 Summary of Air Emissions Monitoring

Parameter measured	No. of Samples	% Compliant	Comment

Add rows as necessary

Comment

Due to permanent cessation of peat production, it is no longer necessary to monitor for dust.

Table 10 Summary of Odour Assessments Carried Out

Assessment Conducted By	No. of Odour Assessments	% Compliant⁸	Comment
Licence Holder	NA		Not required
EPA	NA		Not required

Add rows where necessary

Comment

There are no odour emissions of note from the activity, no requirements to monitor and no associated complaints.

⁸ A compliant odour assessment is based on EPA Odour Impact Assessment Guidance available at <http://www.epa.ie/pubs/advice/air/emissions/ag5-odourassessment.html>

Fugitive Solvent Emissions

Are you are required to monitor fugitive solvent air emissions from your facility?

Yes ☐

No ☒

Explanation

The use of solvents is regulated under Irish and European Union (EU) Regulations⁹. Solvents are chemicals that, by their nature, are volatile (evaporate readily under ambient conditions). Solvents can be found in many inks, glues and cleaning agents. Due to the volatility of solvents some emissions may be released into the atmosphere during our activities before being captured in our air treatment system. This type of emission is called a **fugitive solvent emission**.

The information below summarises the quantity of solvents used this year, the percentage of fugitive solvent emissions (% of total quantity used) and whether the percentage complied with the targets set in the EU Regulations.

Table 11 Summary of Fugitive Solvent Emissions

Quantity of Solvents Used (Kg)	% Fugitive Solvent Emissions	Compliant

Comment

N/A

⁹ See Annex VII of the Industrial Emissions Directive

<https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm>

Groundwater

Explanation

Groundwater is an important and sensitive resource in Ireland. Our EPA licence requires that we monitor groundwater to ensure our activities do not cause groundwater pollution.

Understanding how groundwater flows through soil and rock layers and eventually into surface and coastal waters is a complex science. Sometimes groundwater pollution that occurred in the past can take years and even decades to disappear. Therefore, it is important that experts help us monitor and interpret results from groundwater monitoring and testing.

The information below is a basic summary of the condition of the groundwater this year.

1. Do you have a groundwater monitoring programme in place?

Yes ☐

No ☒

2. Have the groundwater monitoring results over the last 5 years indicated the presence of groundwater pollution?

Yes ☐

No ☒

Table 12 List of Groundwater Pollutants Identified

Pollutants

Add rows as necessary

3. Give details of the investigations and subsequent actions taken, where applicable, to manage the groundwater pollution.

Comment

There are no licence requirements to monitor groundwater from the activity.

Noise

Explanation

Our EPA licence requires that we monitor noise emissions from our facility. Noise monitoring can be conducted at the boundary of our facility and/or at locations beyond the boundary referred to as “noise sensitive locations”. Noise monitoring requires the use of special noise monitoring equipment. Our EPA licence requires that noise produced by our facility shall not exceed the noise limit values and/or give rise to nuisance.

The information below gives a summary of when and where we conducted noise monitoring this year and if results complied with our EPA licence limits.

1. We conducted noise monitoring on the following dates this year:

N/A

2. Was the noise monitoring carried out at:

- i. the boundary of our facility,
- ii. noise sensitive locations off-site, or
- iii. both?

N/A

3. Were measured noise levels compliant with your EPA licence limits?

Yes ☐

No ☐

If No, we took the following actions to address the noise level exceedances?

N/A

Comment

There are no licence requirements to monitor noise from the activity, or any complaints regarding noise impact.

7) Waste

Waste Generated

Explanation

Our EPA licence requires us to manage the waste we generate in a manner that does not cause environmental pollution.

We manage, store and record hazardous, non-hazardous and inert waste we generate in accordance with our licence. We ensure that this waste is subsequently treated or disposed of in accordance with the relevant waste Regulations.

The information in table 13 is a summary of waste we generated this year and the percentage increase or decrease on the previous year. The percentage recovery is the amount of total waste generated that was reused, recycled or recovered.

Table 13 Waste Generated

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	% Recovery
Hazardous	4	-194%	100%
Non-Hazardous	762.03	-81%	90%
Inert	n/a	n/a	
Total Tonnes	766.03	-194	90%

Comment

The main wastes generated from activities are, waste oil, interceptor waste, oil filters, parts wash, Polythene, scrap metal, silt pond waste all of which are recycled. The waste generated for landfill was from general waste skips and wheelie bins.

Waste Accepted

Did you accept waste onto your facility for storage, treatment, recovery or disposal this year?

Yes ☐

No ☒

Explanation

Our EPA licence requires us to manage the waste we accept in a manner that does not cause environmental pollution.

We manage, store and record all incoming and outgoing hazardous, non-hazardous and inert waste. The waste we accept may be treated, recovered, disposed or stored at our facility depending on our licence requirements.

The information in Table 14 provides a summary of waste we accepted this year and the percentage increase or decrease on the previous year. The percentage recovery is the amount of total waste accepted that was reused, recycled or recovered.

Table 14 Waste Accepted

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	% Recovery
Hazardous			
Non- Hazardous			
Inert			
Total Tonnes			

Comment

No waste accepted at this facility

8) Financial Provision

Explanation

Our EPA licence requires us to assess the risk our activities pose to the environment if we cease our activities or if an incident occurred. If we are identified as a high-risk facility¹⁰ by the EPA, we are required to put provision in place such as a financial bond or insurance to cover the cost of restoring our site to a satisfactory condition. This financial provision can then be used to cover the cost of managing the restoration or clean up should such an event occur.

1. Are you required to have an agreed financial provision in place?

Yes ☐

No ☒

2. What year was your Closure, Restoration and Aftercare Management Plan (CRAMP) last agreed by the Agency?

Not required under the Licence. However, the equivalent Bog Rehabilitation Plans which include closure, restoration and aftercare are required to be submitted to the Agency in advance of any decommissioning and rehabilitation.

3. What year was your Environmental Liability Assessment Report (ELRA) agreed by the Agency?

Not required under the Licence.

4. Has there been any significant changes on your site since the last agreements?

Yes ☐

No ☒

¹⁰ See Appendix II

If yes, have you submitted details to the EPA?

Yes ☐

No ☐

N/A ☒

Appendix I

Class of Activity

Industrial and waste facilities are classed into different sectors depending on the nature of their activity and its potential impact on the environment. The EPA Act 1992 as amended, outlines these as follows:

Class 1	Minerals and other materials
Class 2	Energy
Class 3	Metals
Class 4	Mineral fibres and glass
Class 5	Chemicals
Class 6	Intensive Agriculture ¹¹
Class 7	Food and drink
Class 8	Wood, paper, textiles and leather
Class 9	Fossil fuels
Class 10	Cement, lime and magnesium oxide
Class 11	Waste
Class 12	Surface Coatings
Class 13	Other Activities

¹¹ This reporting template is not applicable to the **intensive agriculture sector**. Their annual environmental reporting structure is different and can be found at <http://www.epa.ie/pubs/advice/aerprtr/aerguid/>

Appendix II

High Environmental Risk Categories

If an industrial or waste licence falls into one of these categories it is deemed, by the EPA, as a high environmental risk. As a result, the licence holder is required to have financial provision in place. See section 8, Financial Provision.

1. Landfills
2. Non-Hazardous Waste Transfer Station
3. Incineration and Co-Incineration Waste Facilities
4. Category A – Extractive Waste Facilities
5. Upper and Lower Tier Seveso Facilities
6. Hazardous Waste Transfer Stations
7. High Risk Contaminated Land
8. Exceptional Circumstances

NOTE:

This list is subject to change.

See the link below for further information.

<http://www.epa.ie/pubs/advice/licensee/fp/epaapproachtoenvironmentalliabilitiesandfinancialprovision.html>



Annual Environmental Report (AER) 2022

Company Name: Bord na Móna Energy Ltd (Boora Group)

Licence Number: P0500-01

Address: Bord na Móna, Leabeg, Tullamore, Co Offaly

Class of Activity¹: 1.4

¹ See Appendix I

Purpose of this Report

One of the functions of the Environmental Protection Agency (EPA) is to licence and regulate the activities² of large scale industrial (e.g. chemical, food processors, power plants) and waste facilities. Submitting an Annual Environmental Report (AER) is a requirement of all EPA licences.

An AER is a public document. To this end, this format has been developed for industrial and waste licence holders (other than the intensive agriculture sector) to use as a template. This is to assist any member of the public to interpret and understand the environmental performance of the licensed facility.

The AER is a **summary** of environmental information for a given year. It includes:

- Details of the licence holder's environmental goals achieved, goals to maintain compliance and/or improve their environmental performance;
- Answers to questions regarding their facility's activities;
- Tables of results from monitoring emissions such as air, water, noise, and odour; and
- Details of waste generated, accepted and treated.

An AER does **not** provide detailed technical data. Such information is available in three ways:

- 1) Contacting the licence holder directly. The Contact Us section of this template enables the licence holder to provide details of where a member of the public can obtain further information on topics reported in this document.

² See Appendix I

- 2) Some documents³ are available on the EPA website via the licence details page for each individual licence. This can be found by browsing either the <http://www.epa.ie/licensing/> or <http://www.epa.ie/enforcement/> pages of the EPA website.
- 3) All formal enforcement correspondence exchanged between the EPA and a licence holder during the regulatory process is available for public viewing by appointment at any EPA Office.

If you have a question or query about an AER or an individual EPA licensed facility see the EPA's website or contact the relevant EPA office. See <http://www.epa.ie/about/contactus/> for contact details.

³ This includes EPA site inspection and compliance monitoring reports, licence holders' self-monitoring reports, AERs and special reports

Contents

Glossary	5
Declaration	8
1) Introduction	9
Contact Us	10
2) How we Manage our Facility.....	11
3) Energy & Water.....	13
Energy.....	13
Water.....	15
4) Environmental Complaints.....	16
5) Environmental Incidents	18
6) Our Environmental Emissions	20
Storm Water	20
Waste Water	23
Air	25
Fugitive Solvent Emissions.....	27
Groundwater	28
Noise.....	30
7) Waste	31
Waste Generated	31
Waste Accepted	32
8) Financial Provision	33

Glossary

Abatement Equipment	Technology used to reduce pollution
AER	Annual Environmental Report.
CRAMP	Closure, Restoration and Aftercare Management Plan.
ELRA	Environmental Liability Risk Assessment.
Emission Limit Value	Limits set for specified emissions, typically outlined in Schedule B of an EPA licence.
EMS	Environmental Management System.
Environmental Goal	An objective or target set by a licensee as part of an environmental management system (EMS).
Environmental Pollutant	Substance or material that due to its quantity and/or nature has a negative impact on the environment.
Facility	Any site or premises that holds an EPA industrial or waste licence.
FP	Financial Provision.
GJ	Giga joules, an international unit of energy measurement.
Groundwater	All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

Incident	As defined by an EPA industrial or waste licence.
Inert Waste	Is waste that will not undergo physical, chemical or biological change thereby, is unlikely to cause environmental pollution or harm human health.
List of Wastes (LoW)	A list of wastes drawn up by the European Commission and published as Commission Decision 2014/955/EU.
Noise Sensitive Location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Non-Renewable Resource	A resource of economic value that cannot be replaced at the same rate it is being consumed e.g. coal, peat, oil and natural gas.
Oil Separator	Separator system for light liquids (e.g. oil and petrol).
PRTR	Pollutant Release and Transfer Register.
Renewable Resource	Wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.
Sanitary Waste	Waste water from toilet, washroom and canteen facilities.
Storm Water	Rain water run-off from roof and non-process areas.

Surface Water	Lakes, rivers, streams, estuaries and coastal waters.
Trigger Level	A value set for a specific parameter, the achievement or exceedance of which requires certain actions to be taken by the licence holder.
Volatile Organic Compounds	Gases produced from solids or liquids that evaporate readily in ambient conditions.
Waste	Any substance or object which the holder discards or intends or is required to discard.

Disclaimer

These are **not** legal definitions. Legal definitions can be found in the corresponding legislation.

Declaration

I, Michael Hoey, confirm that by ticking the box below, all information in this report is truthful and accurate to the best of my knowledge and belief.

In addition, I confirm that all monitoring and performance reporting required by our EPA licence and summarised herein is available for inspection by the EPA.

Tick here

☒

1) Introduction

See below a brief description of our facility and a summary of our environmental performance this year.

- During the reporting period the primary activities were peat sales of existing stock and decommissioning and rehabilitation of several bogs in this IPC Licence.
- During the reporting period 2815 Ha's of peatland or 67%, was rehabilitated, with the balance extending into the 2023 period, at Boora, Belmont, the Derries, Turraun, Pollagh, Oughter, Kilaranny, Derrinboy, Noggusboy and Derrybrat Bogs.
- Similarly, 1358 Ha's of peatlands were decommissioned, with plant, equipment and waste materials removed from the same bogs.
- In the reporting period, there were no complaints of an environmental nature as was the case 2021.
- During the period, there was a 26.96% decrease in waste generated, mostly related to a decrease in activity but an increase in decommissioning.
- In the period, there 2 reported incidents of an environmental nature, one was minor dust nuisance and the other was a fuel spillage in Monettia bog, where treatment and clean-up is on-going, in agreement with the EPA.
- During the period, there were notifications submitted regarding new activity at Bellair, the 2021 Annual Environmental Report, the Derrinlough Windfarm and general notification requirements of the Licence.
- During 2022, Rehabilitation plans, maps and associated assessments were submitted to the Agency for the following bogs: Kilaranny, Derrinboy, Noggusboy and Derrybrat Bogs and these are available to

view at <https://www.bnmecas.ie/bogs-peatlands-climate-action-scheme/>

- During the period Bord na Mona retained certification to ISO9001 for the decommissioning and rehabilitation of peatlands to support the climate action scheme.

Contact Us

If you have any questions or would like further information on any aspect of this report, please contact us directly.

See below details:

Enda McDonagh,
Bord na Mona Energy Ltd
Leabeg
Tullamore
Co Offaly
www.bnm.ie

2) How we Manage our Facility

Bord na Mona have an Environmental Compliance Department with a team of five who manage the day to day IPC Licence requirements. This licence governs the extraction of peat and associated activities and manages emission to air, water and land.

The information below sets out the environmental goals for our facility to help us prevent environmental pollution and reduce our impact on the environment. Target dates for completing each goal and progress towards achieving the goal are outlined in Table 1.

Table 1 Environmental Goals

Environmental Goal	Target Date	Progress
Training/awareness for all area leaders and operatives in advance of decommissioning and rehabilitation of the 2023 bogs	May 2023	Underway
Waste Management – Removal of all waste that are deemed a risk the environment in bogs scheduled to be decommissioned in 2023	December 2023	Underway
Decommissioning and Rehabilitation of 2 bogs in accordance with Condition 10 of the IPC Licence and in accordance with Peatlands Climate Action Scheme https://www.gov.ie/en/publication/136a7-bord-na-mona-bog-rehabilitation-scheme/	January 2023 to December 2023	To commence on the 1st April 2023.
Maintain surface water quality compliance with emission limit values for Suspended Solids during the proposed decommissioning and rehabilitation programme	December 2023	Underway

Communication of Decommissioning and Rehabilitation plans to all neighbours within 1km of the proposed activity for 2022	March 2023	Bogs have had letters and associated details delivered.
Completion of internal audits/inspections of applicable bogs scheduled for decommissioning and rehabilitation as required by condition 10 and the Peatlands Climate Action Scheme	September 2023	Not Commenced yet for 2023

Comment

As peat extraction on all bogs in this licence ceased in 2020, all environmental goals for 2023 are linked to the remaining bog activity which is decommissioning and rehabilitation of the 2 bogs planned for 2023 and the completion of the balance of the 2022 bogs at Kilaranny, Derrinboy, Noggusboy and Derrybrat.

3) Energy & Water

Energy

Explanation

Fossil fuels such as coal, gas and oil are non-renewable resources. As a result, our EPA licence requires that we measure our energy use and set targets to improve the energy efficiency of our activities and reduce our overall use, where possible. Where we have the means and technology on-site to generate energy, this is also captured in this report.

The information below summarises the energy used this year compared to the previous year and includes renewable and non-renewable energy types.

Table 2 Energy Used

Energy Used (GJ)	Quantity	% Increase/ decrease on previous year
Electricity	855.43	-4%
Heavy Fuel Oil	-	
Light Fuel Oil	299,600	-46%
Natural Gas	-	
Coal / Solid Fuel	-	
Peat	-	
Renewable Biomass	-	
Renewable Energy Generated On-site	-	
Total Energy Used	139,017.43	-46%

Comment

Electricity and fuel usage decreased in 2022. This was mainly due to PCAS bog rehabilitation and decommissioning work.

The information below summarises the energy we generated on our site this year with specific focus on renewable energy generation.

Table 3 Energy Generated

Energy Generated (GJ)	Quantity	% Increase/ decrease on previous year
Renewable Energy	NA	
Total Energy Generated		

Comment

There are no renewable energy assets on this site.

Water

Explanation

Water is a natural resource and we are required by our EPA licence to identify ways to reduce our use where possible. Water used in industry can be extracted from groundwater, rivers and lakes (surface water), taken from public water supplies (Irish Water), recycled from the facility's processes or harvested from rainwater.

The information below summarises and compares the quantity of water used this year compared to the previous year.

Table 4 Water Used

Source of Water Used	Quantity (m³/year)	% Increase/decrease on previous year
Groundwater	0	
Surface Water	0	
Public Supply	0	
Recycled Water	0	
Rainwater	0	
Total Water Used		

Comment

Water is not used in any of the peat harvesting or transport processes. The only water used is that required to provide associated offices and workshop welfare facilities (canteen/toilets)

4) Environmental Complaints

Explanation

Our EPA licence requires that activities do not cause environmental nuisance such as odour, dust or noise. Our licence also requires that we have procedures in place to record, investigate and respond to environmental complaints if or when they arise.

We have an environmental complaints procedure in place where you can contact us⁴ directly. You can also contact the EPA⁵ if you wish to make an environmental complaint, confidentially or not.

See the information below for a summary of **all** the environmental complaints relating to our activities made directly to us and to the EPA this year.

Table 5 Summary of All Environmental Complaints Received in

Type of Complaint	Number of Complaints Received	Number Closed
Odour / Smells	0	0
Noise	0	0
Dust	0	0
Water Quality	0	0
Air Quality	0	0
Waste	0	0
Litter	0	0
Vermin/Flies/Birds	0	0
Soil Contamination	0	0
Vibration	0	0
Other	0	0

⁴ See Section 1, Introduction – Contact Us

⁵ If you wish to contact the EPA to make an environmental complaint about an EPA licenced facility, please go to <https://lema.epa.ie/complaints>

Comment

As required environmental complaints are reportable to the EPA and as such must be investigated. In the 2022 reporting period, this licence received no complaints.

5) Environmental Incidents

Explanation

It is our responsibility as an EPA licensed facility to ensure we have systems in place to prevent incidents that have the potential to cause environmental pollution. If an incident occurs, we are required to report it to the EPA, investigate the cause and fix the problem.

The EPA classify environmental incidents into 5 categories based on the potential impact on the environment:

- Minor
- Limited
- Serious
- Very Serious
- Catastrophic

See Table 6 for the number of the environmental incidents we reported to the EPA this year.

Table 6 Number of Environmental Incidents

Incident Category	Minor	Limited	Serious	Very Serious	Catastrophic
Abatement Equipment Offline	0	0	0	0	0
Breach of Ambient ELV	0	0	0	0	0
Breach of Emission Limit	0	0	0	0	0
Explosion	0	0	0	0	0
Fire	0	0	0	0	0
Monitoring Equipment Failure	0	0	0	0	0
Odour	0	0	0	0	0
Spillage	0	0	0	0	0
Breach of trigger Level	0	0	0	0	0
Uncontrolled Release	0	0	0	0	0
Other	0	0	0	0	0

Comment

As required, incidents of an environmental nature are reportable to the EPA and as such must be investigated. In the 2022 reporting period, this licence recorded and reported 0 incidents.

6) Our Environmental Emissions

Explanation

We are required to ensure the emissions from our activities do not cause environmental pollution.

We are required to monitor any of the following emissions that we make:

- Storm water
- Waste water
- Air
- Groundwater
- Noise

We regularly test any such emissions for specific pollutants and materials to ensure they do not contain levels of pollution that exceed emission limit values (ELVs) or cause environmental pollution. If monitoring of an emission indicates an ELV is exceeded, we are required to report this to the EPA⁶.

The next sub-sections of this report summarise our compliance with any ELVs set in our EPA licence. Some emissions monitored do not have specific ELVs, but we still carry out monitoring and report all incidents that may give rise to environmental pollution.

Storm Water

Explanation

Storm water is rain water run-off from roof and non-process areas of a facility, e.g. carparks, and generally shall not contain any pollution.

Storm water is usually released into a local water body after a basic form of treatment. Our EPA licence requires that we manage storm water to ensure no polluting substances or materials are released into the environment.

⁶ See section 5, Incidents

The information below summarises how the storm water from our facility is treated, where it is released and the results of monitoring this year.

1. Storm water from our facility is managed prior to release by;

Either direct to drain where it is roof water only, or via petrol/oil interceptor.

2. Storm water from our facility is released into the following water bodies:

Boor, Brosna, Shannon, Rapemills, Boora, Silver, Pollagh, Tinamuck west, castlestrong, derrynagun, kilcolgan, Lemanaghan, Ballynahowan, Falsk, west Galros, upper clonoghill, north rathlure, knockhill, killeenmore, Cloncollog, Derrygunningan, pigeonhouse, glasshouse

Table 7 Summary of Storm Water Monitoring

Parameter measured	No. of Samples	% Compliant ⁷	Comment
COD	20	100%	Low level of samples this year due to dry weather or no discharge on the days of sampling.

Add rows as necessary

Comment

As required by the licence, stormwater is required to be separated where possible from process/non-process areas. Where this is not possible, stormwater is managed via oil-interceptors which are inspected on a monthly basis and sampled for associated discharges each month. Other than visual observations, the other main criteria to define adequate treatment is COD mg/l so this and visual inspections dictate when the interceptor is cleaned by an approved hazardous waste contractor.

⁷ % compliant = [(number of samples compliant) / (number of samples taken)] x 100. Compliance could refer to emission limit values or trigger levels. The EPA commonly use trigger levels on stormwater discharges.

Waste Water

Explanation

There are two types of waste water that can be produced:

- Process waste water produced from the activities and;
- Sanitary waste water from toilets, washrooms and canteens.

Our EPA licence requires us to manage our waste water on or off-site and ensure that it does not cause environmental pollution when discharged into the environment.

The information below summarises how we treat the waste water produced from our activities, where it is released and the results of monitoring this year.

1. Waste water produced by our activities is treated as follows before discharge to a receiving waterbody;

All production area runoff is treated via an associated silt pond designed, inspected and maintained in accordance with condition 6 of the IPC Licence

2. Treated waste water from our facility is released into the following water bodies:

Boor, Brosna, Shannon, Rapemills, Boora, Silver, Pollagh, Tinamuck west, Castlestrong, Derrynagun, Kilcolgan, Lemanaghan, Ballynahowan, Falsk, West Galros, Upper Clonoghill, North Rathlure, Knockhill, Killeenmore, Cloncollog, Derrygunningan, Pigeonhouse and Glasshouse Rivers.

Table 8 Summary of Waste Water Monitoring

Parameter measured	No. of Samples	% Compliant	Comment
Suspended Solids	110	100%	
Ammonia	78	100%	
Total Solids	110	NA	
Total Phosphorus	78	NA	
pH	78	NA	
Colour	78	NA	
COD	78	100%	

Add rows as necessary

Comment

Licence requirements are quarterly grab samples on a selected number of silt pond outlets as per condition 6.2 and one 24hr flow proportional composite sampler at Derrinboy bog.

The emission limit values are 35mg/l suspended solids, 3.7mg/l total ammonia and 100mg/l COD. There was no exceedances record in 2022 which is similar to 2021.

Air

Explanation

Generally, three types of air emissions are monitored from industry in Ireland: gases, dust (particulates) and odour. Our EPA licence requires us to ensure that any air emissions from our activities do not cause air pollution or create an odour nuisance.

The information below details the number of air emission points we monitor, the results from testing the air emissions and any odour assessments carried out by us and the EPA this year.

1. We monitor air emissions from the following number of emission points at our facility.

N/A

Table 9 Summary of Air Emissions Monitoring

Parameter measured	No. of Samples	% Compliant	Comment

Add rows as necessary

Comment

Due to permanent cessation of peat production, it is no longer necessary to monitor for dust.

Table 10 Summary of Odour Assessments Carried Out

Assessment Conducted By	No. of Odour Assessments	% Compliant⁸	Comment
Licence Holder	NA		Not required
EPA	NA		Not required

Add rows where necessary

Comment

There are no odour emissions of note from the activity, no requirements to monitor and no associated complaints.

⁸ A compliant odour assessment is based on EPA Odour Impact Assessment Guidance available at <http://www.epa.ie/pubs/advice/air/emissions/ag5-odourassessment.html>

Fugitive Solvent Emissions

Are you are required to monitor fugitive solvent air emissions from your facility?

Yes ☐

No ☒

Explanation

The use of solvents is regulated under Irish and European Union (EU) Regulations⁹. Solvents are chemicals that, by their nature, are volatile (evaporate readily under ambient conditions). Solvents can be found in many inks, glues and cleaning agents. Due to the volatility of solvents some emissions may be released into the atmosphere during our activities before being captured in our air treatment system. This type of emission is called a **fugitive solvent emission**.

The information below summarises the quantity of solvents used this year, the percentage of fugitive solvent emissions (% of total quantity used) and whether the percentage complied with the targets set in the EU Regulations.

Table 11 Summary of Fugitive Solvent Emissions

Quantity of Solvents Used (Kg)	% Fugitive Solvent Emissions	Compliant

Comment

N/A

⁹ See Annex VII of the Industrial Emissions Directive

<https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm>

Groundwater

Explanation

Groundwater is an important and sensitive resource in Ireland. Our EPA licence requires that we monitor groundwater to ensure our activities do not cause groundwater pollution.

Understanding how groundwater flows through soil and rock layers and eventually into surface and coastal waters is a complex science. Sometimes groundwater pollution that occurred in the past can take years and even decades to disappear. Therefore, it is important that experts help us monitor and interpret results from groundwater monitoring and testing.

The information below is a basic summary of the condition of the groundwater this year.

1. Do you have a groundwater monitoring programme in place?

Yes ☐

No ☒

2. Have the groundwater monitoring results over the last 5 years indicated the presence of groundwater pollution?

Yes ☐

No ☒

Table 12 List of Groundwater Pollutants Identified

Pollutants

Add rows as necessary

3. Give details of the investigations and subsequent actions taken, where applicable, to manage the groundwater pollution.

Comment

There are no licence requirements to monitor groundwater from the activity.

Noise

Explanation

Our EPA licence requires that we monitor noise emissions from our facility. Noise monitoring can be conducted at the boundary of our facility and/or at locations beyond the boundary referred to as “noise sensitive locations”. Noise monitoring requires the use of special noise monitoring equipment. Our EPA licence requires that noise produced by our facility shall not exceed the noise limit values and/or give rise to nuisance.

The information below gives a summary of when and where we conducted noise monitoring this year and if results complied with our EPA licence limits.

1. We conducted noise monitoring on the following dates this year:

N/A

2. Was the noise monitoring carried out at:

- i. the boundary of our facility,
- ii. noise sensitive locations off-site, or
- iii. both?

N/A

3. Were measured noise levels compliant with your EPA licence limits?

Yes ☐

No ☐

If No, we took the following actions to address the noise level exceedances?

N/A

Comment

There are no licence requirements to monitor noise from the activity, or any complaints regarding noise impact.

7) Waste

Waste Generated

Explanation

Our EPA licence requires us to manage the waste we generate in a manner that does not cause environmental pollution.

We manage, store and record hazardous, non-hazardous and inert waste we generate in accordance with our licence. We ensure that this waste is subsequently treated or disposed of in accordance with the relevant waste Regulations.

The information in table 13 is a summary of waste we generated this year and the percentage increase or decrease on the previous year. The percentage recovery is the amount of total waste generated that was reused, recycled or recovered.

Table 13 Waste Generated

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	% Recovery
Hazardous	1353.01	-333%	100%
Non-Hazardous	1488.27	-50%	90%
Inert	n/a	n/a	
Total Tonnes	2841.28	-26.96	90%

Comment

The main wastes generated from activities are, waste oil, interceptor waste, oil filters, parts wash, Polythene, scrap metal, silt pond waste all of which are recycled. The waste generated for landfill was from general waste skips and wheelie bins.

Waste Accepted

Did you accept waste onto your facility for storage, treatment, recovery or disposal this year?

Yes ☐

No ☒

Explanation

Our EPA licence requires us to manage the waste we accept in a manner that does not cause environmental pollution.

We manage, store and record all incoming and outgoing hazardous, non-hazardous and inert waste. The waste we accept may be treated, recovered, disposed or stored at our facility depending on our licence requirements.

The information in Table 14 provides a summary of waste we accepted this year and the percentage increase or decrease on the previous year. The percentage recovery is the amount of total waste accepted that was reused, recycled or recovered.

Table 14 Waste Accepted

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	% Recovery
Hazardous			
Non- Hazardous			
Inert			
Total Tonnes			

Comment

No waste accepted at this facility

8) Financial Provision

Explanation

Our EPA licence requires us to assess the risk our activities pose to the environment if we cease our activities or if an incident occurred. If we are identified as a high-risk facility¹⁰ by the EPA, we are required to put provision in place such as a financial bond or insurance to cover the cost of restoring our site to a satisfactory condition. This financial provision can then be used to cover the cost of managing the restoration or clean up should such an event occur.

1. Are you required to have an agreed financial provision in place?

Yes ☐

No ☒

2. What year was your Closure, Restoration and Aftercare Management Plan (CRAMP) last agreed by the Agency?

Not required under the Licence. However, the equivalent Bog Rehabilitation Plans which include closure, restoration and aftercare are required to be submitted to the Agency in advance of any decommissioning and rehabilitation.

3. What year was your Environmental Liability Assessment Report (ELRA) agreed by the Agency?

Not required under the Licence.

4. Has there been any significant changes on your site since the last agreements?

Yes ☐

No ☒

¹⁰ See Appendix II

If yes, have you submitted details to the EPA?

Yes ☐

No ☐

N/A ☒

Appendix I

Class of Activity

Industrial and waste facilities are classed into different sectors depending on the nature of their activity and its potential impact on the environment. The EPA Act 1992 as amended, outlines these as follows:

Class 1	Minerals and other materials
Class 2	Energy
Class 3	Metals
Class 4	Mineral fibres and glass
Class 5	Chemicals
Class 6	Intensive Agriculture ¹¹
Class 7	Food and drink
Class 8	Wood, paper, textiles and leather
Class 9	Fossil fuels
Class 10	Cement, lime and magnesium oxide
Class 11	Waste
Class 12	Surface Coatings
Class 13	Other Activities

¹¹ This reporting template is not applicable to the **intensive agriculture sector**. Their annual environmental reporting structure is different and can be found at <http://www.epa.ie/pubs/advice/aerprtr/aerguid/>

Appendix II

High Environmental Risk Categories

If an industrial or waste licence falls into one of these categories it is deemed, by the EPA, as a high environmental risk. As a result, the licence holder is required to have financial provision in place. See section 8, Financial Provision.

1. Landfills
2. Non-Hazardous Waste Transfer Station
3. Incineration and Co-Incineration Waste Facilities
4. Category A – Extractive Waste Facilities
5. Upper and Lower Tier Seveso Facilities
6. Hazardous Waste Transfer Stations
7. High Risk Contaminated Land
8. Exceptional Circumstances

NOTE:

This list is subject to change.

See the link below for further information.

<http://www.epa.ie/pubs/advice/licensee/fp/epaapproachtoenvironmentalliabilitiesandfinancialprovision.html>



Annual Environmental Report (AER) 2023

Company Name: Bord na Móna Energy Ltd (Boora Group)

Licence Number: P0500-01

Address: Bord na Móna, Leabeg, Tullamore, Co Offaly

Class of Activity¹: 1.4

¹ See Appendix I

Purpose of this Report

One of the functions of the Environmental Protection Agency (EPA) is to licence and regulate the activities² of large scale industrial (e.g. chemical, food processors, power plants) and waste facilities. Submitting an Annual Environmental Report (AER) is a requirement of all EPA licences.

An AER is a public document. To this end, this format has been developed for industrial and waste licence holders (other than the intensive agriculture sector) to use as a template. This is to assist any member of the public to interpret and understand the environmental performance of the licensed facility.

The AER is a **summary** of environmental information for a given year. It includes:

- Details of the licence holder's environmental goals achieved, goals to maintain compliance and/or improve their environmental performance;
- Answers to questions regarding their facility's activities;
- Tables of results from monitoring emissions such as air, water, noise, and odour; and
- Details of waste generated, accepted and treated.

An AER does **not** provide detailed technical data. Such information is available in three ways:

- 1) Contacting the licence holder directly. The Contact Us section of this template enables the licence holder to provide details of where a member of the public can obtain further information on topics reported in this document.

² See Appendix I

- 2) Some documents³ are available on the EPA website via the licence details page for each individual licence. This can be found by browsing either the <http://www.epa.ie/licensing/> or <http://www.epa.ie/enforcement/> pages of the EPA website.
- 3) All formal enforcement correspondence exchanged between the EPA and a licence holder during the regulatory process is available for public viewing by appointment at any EPA Office.

If you have a question or query about an AER or an individual EPA licensed facility see the EPA's website or contact the relevant EPA office. See <http://www.epa.ie/about/contactus/> for contact details.

³ This includes EPA site inspection and compliance monitoring reports, licence holders' self-monitoring reports, AERs and special reports

Contents

Glossary	5
Declaration	8
1) Introduction	9
Contact Us	10
2) How we Manage our Facility	11
Environmental Management System	11
Beyond Compliance	13
3) Energy & Water	14
Energy	14
Water	16
4) Environmental Complaints	17
5) Environmental Incidents	19
6) Our Environmental Emissions	21
Storm Water	22
Waste Water	24
Air	26
Fugitive Solvent Emissions	28
Groundwater	29
Noise	31
7) Waste	32
Waste Generated	32
Waste Accepted	33
8) Financial Provision	34

Glossary

Abatement Equipment	Technology used to reduce pollution
AER	Annual Environmental Report.
Beyond Compliance	Beyond compliance is concept to help deliver greater organisational performance and long-term value for the environment, society and the economy.
CRAMP	Closure, Restoration and Aftercare Management Plan.
ELRA	Environmental Liability Risk Assessment.
Emission Limit Value	Limits set for specified emissions, typically outlined in Schedule B of an EPA licence.
EMS	Environmental Management System.
Environmental Goal	An objective or target set by a licensee as part of an environmental management system (EMS).
Environmental Pollutant	Substance or material that due to its quantity and/or nature has a negative impact on the environment.
Facility	Any site or premises that holds an EPA industrial or waste licence.
FP	Financial Provision.
GJ	Giga joules, an international unit of energy measurement.

Groundwater	All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.
Incident	As defined by an EPA industrial or waste licence.
Inert Waste	Is waste that will not undergo physical, chemical or biological change thereby, is unlikely to cause environmental pollution or harm human health.
List of Wastes (LoW)	A list of wastes drawn up by the European Commission and published as Commission Decision 2014/955/EU.
Noise Sensitive Location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Non-Renewable Resource	A resource of economic value that cannot be replaced at the same rate it is being consumed e.g. coal, peat, oil and natural gas.
Oil Separator	Separator system for light liquids (e.g. oil and petrol).
PRTR	Pollutant Release and Transfer Register.
Renewable Resource	Wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.
Sanitary Waste	Waste water from toilet, washroom and canteen facilities.

Storm Water	Rain water run-off from roof and non-process areas.
Surface Water	Lakes, rivers, streams, estuaries and coastal waters.
Trigger Level	A value set for a specific parameter, the achievement or exceedance of which requires certain actions to be taken by the licence holder.
Volatile Organic Compounds	Gases produced from solids or liquids that evaporate readily in ambient conditions.
Waste	Any substance or object which the holder discards or intends or is required to discard.

Disclaimer

These are **not** legal definitions. Legal definitions can be found in the corresponding legislation.

Declaration

I, Michael Hoey PCAS Operations Manager, confirm that by ticking the box below, all information in this report is truthful and accurate to the best of my knowledge and belief.

In addition, I confirm that all monitoring and performance reporting required by our EPA licence and summarised herein is available for inspection by the EPA.

Tick here



1) Introduction

See below a brief description of our facility and a summary of our environmental performance this year.

- During the reporting period the primary activities were peat sales of existing stock and decommissioning and rehabilitation of several bogs in this IPC Licence.
- During the reporting period, 571 Hectares of peatlands were rehabilitated, with the balance extending into the 2024 period, at Kilaranny, Derrinboy, Noggusbp, Derrybrat, Oughter and Pollagh Bogs
- Similarly, 883 Hectares of peatlands were decommissioned, with plant, equipment and waste materials removed from the same bogs.
- In the reporting period, there were no complaints of an environmental nature, similarly to 2022.
- During the period, there was a 73.62% decrease in waste generated, mostly related to a decrease in activity but an increase in decommissioning.
- In the period, there was 1 reported incident of an environmental nature, one was minor uncontrolled release to the Clodaigh river in Tullamore.
- During the period, there were various submissions to the Agency regarding updates on remediation at Monettia, the 2022 AER, Monitoring results, mapping, silt pond maintenance requirements, the Drinagh Rehabilitation Plan and associated map book, notification regarding a proposed Velo Rail amenity and the annual monitoring returns.
- During 2023, Rehabilitation plans, maps and associated assessments were submitted to the Agency for Drinagh Bog and these are available at www.bnmpcas.ie

Contact Us

If you have any questions or would like further information on any aspect of our licensed activity, please contact us directly.

See below details:

Enda McDonagh,
Bord na Mona Energy Ltd
Leabeg
Tullamore
Co Offaly
www.bnm.ie

2) How we Manage our Facility

Environmental Management System

Explanation

To ensure our facility's activities do not cause environmental pollution we are required to have detailed documentation systems in place to help us manage and track our environmental performance. These systems are referred to as Environmental Management Systems (EMS). We review our EMS every year and set up-to-date **environmental goals** to continually improve our environmental performance.

The information below sets out the environmental goals for our facility to help us prevent environmental pollution and reduce our impact on the environment. Target dates for completing each goal and progress towards achieving the goal are outlined in Table 1.

Table 1 Environmental Goals

Environmental Goal	Target Date	Progress
Training/awareness for all area leaders and operatives in advance of decommissioning and rehabilitation of the 2024 bogs	May 2024	Underway
Waste Management – Removal of all waste that are deemed a risk the environment in bogs scheduled to be decommissioned in 2024	December 2024	Underway
Decommissioning and Rehabilitation of bogs in accordance with Condition 10 of the IPC Licence and in accordance with Peatlands Climate Action Scheme https://www.gov.ie/en/publication/136a7-bord-na-mona-bog-rehabilitation-scheme/	December 2024	To commence on the 1st April 2024.

Maintain surface water quality compliance with emission limit values for Suspended Solids during the proposed decommissioning and rehabilitation programme	December 2024	Underway
Communication of Decommissioning and Rehabilitation plans to all neighbours within 1km of the proposed activity for 2024	March 2024	Bogs have had letters and associated details delivered.
Completion of internal audits/inspections of applicable bogs scheduled for decommissioning and rehabilitation as required by condition 10 and the Peatlands Climate Action Scheme	September 2024	Not Commenced yet for 2024

Add rows as necessary

Comment

As peat extraction on all bogs in this licence ceased in 2020, all environmental goals for 2024 are linked to the remaining bog activity, which is decommissioning and rehabilitation of the bogs planned for 2024.

Beyond Compliance

Explanation

We are legally required to comply with our environmental licence. However, the EPA realise that some sites go further than just complying with their environmental licence requirements. Some projects carried out at facilities can have long term positive impacts on the environment and local communities.

The EPA's beyond compliance initiative is encouraging us to identify and report on these environmental and sustainability projects. For example, the project could involve renewable energy, biodiversity, water conservation or exemplar community engagement.

Did any project completed on your site in the reporting year go beyond your licence requirements?

Yes ☒

No ☐

If yes, provide details of one case study in Appendix III that demonstrates how the project went beyond compliance of your licence.

3) Energy & Water

Energy

Explanation

Fossil fuels such as coal, gas and oil are non-renewable resources. As a result, our EPA licence requires that we measure our energy use and set targets to improve the energy efficiency of our activities and reduce our overall use, where possible. Where we have the means and technology on-site to generate energy, this is also captured in this report.

The information below summarises the energy used this year compared to the previous year and includes renewable and non-renewable energy types.

Table 3 Energy Used

Energy Used	Quantity (GJ)	% Increase/ decrease on previous year
Electricity	1244.32	45.45
Heavy Fuel Oil	-	
Light Fuel Oil	4118.57	-22.6
Natural Gas	-	
Coal / Solid Fuel	-	
Peat	-	
Renewable Biomass	-	
Renewable Energy Generated On-site	-	
Total Energy Used	8362.90	-13.18

Comment

Electricity usage has increased, and fuel usage decreased in 2023. This was mainly due to PCAS bog rehabilitation and decommissioning work.

The information below summarises the energy we generated on our site this year with specific focus on renewable energy generation.

Table 4 Energy Generated

Energy Generated	Quantity (GJ)	% Increase/ decrease on previous year
Renewable Energy	N/A	
Total Energy Generated		

Comment

There are no renewable energy assets on this site.

Water

Explanation

Water is a natural resource and we are required by our EPA licence to identify ways to reduce our use where possible. Water used in industry can be extracted from groundwater, rivers and lakes (surface water), taken from public water supplies (Irish Water), recycled from the facility's processes or harvested from rainwater.

The information below summarises and compares the quantity of water used this year compared to the previous year.

Table 5 Water Used

Source of Water Used	Quantity (m ³ /year)	% Increase/decrease on previous year
Groundwater		
Surface Water		
Public Supply		
Recycled Water		
Rainwater		
Total Water Used	0	

Comment

Water is not used in any of the peat harvesting or transport processes. The only water used is that required to provide associated offices and workshop welfare facilities (canteen/toilets)

4) Environmental Complaints

Explanation

Our EPA licence requires that activities do not cause environmental nuisance such as odour, dust or noise. Our licence also requires that we have procedures in place to record, investigate and respond to environmental complaints if or when they arise.

We have an environmental complaints procedure in place where you can contact us⁴ directly. You can also contact the EPA⁵ if you wish to make an environmental complaint, confidentially or not.

See the information below for a summary of **all** the environmental complaints relating to our activities made directly to us and to the EPA this year.

Table 6 Summary of All Environmental Complaints Received in

Type of Complaint	Number of Complaints	Number Closed
Odour / Smells	0	0
Noise	0	0
Dust	0	0
Water Quality	0	0
Air Quality	0	0
Waste	0	0
Litter	0	0
Vermin/Flies/Birds	0	0
Soil Contamination	0	0
Vibration	0	0
Other	0	0

⁴ See Section 1, Introduction – Contact Us

⁵ If you wish to contact the EPA to make an environmental complaint about an EPA licenced facility, please go to <https://lema.epa.ie/complaints>

Comment

As required, environmental complaints are reportable to the EPA and as such must be investigated. In the 2023 reporting period, this licence received no complaints of an environmental nature.

5) Environmental Incidents

Explanation

It is our responsibility as an EPA licensed facility to ensure we have systems in place to prevent incidents that have the potential to cause environmental pollution. If an incident occurs, we are required to report it to the EPA, investigate the cause and fix the problem.

The EPA classify environmental incidents into 5 categories based on the potential impact on the environment:

- Minor
- Limited
- Serious
- Very Serious
- Catastrophic

See Table 6 for the number of the environmental incidents we reported to the EPA this year

Table 7 Number of Environmental Incidents

Incident Category	Minor	Limited	Serious	Very Serious	Catastrophic
Abatement Equipment Offline	0	0	0	0	0
Breach of Ambient ELV	0	0	0	0	0
Breach of Emission Limit	0	0	0	0	0
Explosion	0	0	0	0	0
Fire	0	0	0	0	0
Monitoring Equipment Failure	0	0	0	0	0
Odour	0	0	0	0	0
Spillage	0	0	0	0	0
Breach of trigger Level	0	0	0	0	0
Uncontrolled Release	1	0	0	0	0
Other	0	0	0	0	0

Comment

As required, incidents of an environmental nature are reportable to the EPA and as such must be investigated. In the 2023 reporting period, this licence recorded and reported 1 incident.

6) Our Environmental Emissions

Explanation

We are required to ensure the emissions from our activities do not cause environmental pollution.

We are required to monitor any of the following emissions that we make:

- Storm water
- Waste water
- Air
- Groundwater
- Noise

We regularly test any such emissions for specific pollutants and materials to ensure they do not contain levels of pollution that exceed emission limit values (ELVs) or cause environmental pollution. If monitoring of an emission indicates an ELV is exceeded, we are required to report this to the EPA⁶.

The next sub-sections of this report summarise our compliance with any ELVs set in our EPA licence. Some emissions monitored do not have specific ELVs, but we still carry out monitoring and report all incidents that may give rise to environmental pollution.

⁶ See section 5, Incidents

Storm Water

Explanation

Storm water is rain water run-off from roof and non-process areas of a facility, e.g. car parks, and generally shall not contain any pollution.

Storm water is usually released into a local water body after a basic form of treatment. Our EPA licence requires that we manage storm water to ensure no polluting substances or materials are released into the environment.

The information below summarises how the storm water from our facility is treated, where it is released and the results of monitoring this year.

1. Storm water from our facility is managed prior to release by;

Either direct to drain where it is roof water only, or via petrol/oil interceptor

2. Storm water from our facility is released into the following water bodies:

Boor, Brosna, Shannon, Rapemills, Boora, Silver, Pollagh, Tinamuck west, castlestrong, derrynagun, kilcolgan, Lemanaghan, Ballynahowan, Falsk, west Galros, upper clonoghill, north rathlure, knockhill, killeenmore, Cloncollog, Derrygunningan, pigeonhouse, glasshouse

Table 8 Summary of Storm Water Monitoring

Parameter measured	No. of Samples	% Compliant ⁷	Comment
COD	20	100%	Low level of samples this year due to dry weather or no discharge on the days of sampling.

Add rows as necessary

Comment

As required by the licence, stormwater is required to be separated where possible from process/non-process areas. Where this is not possible, stormwater is managed via oil-interceptors which are inspected monthly and sampled for associated discharges each month. Other than visual observations, the other main criteria to define adequate treatment is COD mg/l, so this and visual inspections dictate when the interceptor is cleaned by an approved hazardous waste contractor.

⁷ % compliant = [(number of samples compliant) / (number of samples taken)] x 100. Compliance could refer to emission limit values or trigger levels. The EPA commonly use trigger levels on stormwater discharges.

Waste Water

Explanation

There are two types of waste water that can be produced:

- Process waste water produced from the activities and;
- Sanitary waste water from toilets, washrooms and canteens.

Our EPA licence requires us to manage our waste water on or off-site and ensure that it does not cause environmental pollution when discharged into the environment.

The information below summarises how we treat the waste water produced from our activities, where it is released and the results of monitoring this year.

1. Waste water produced by our activities is treated as follows before discharge to a receiving waterbody;

All production area runoff is treated via an associated silt pond designed, inspected and maintained in accordance with condition 6 of the IPC Licence

2. Treated waste water from our facility is released into the following water bodies:

Boor, Brosna, Shannon, Rapemills, Boora, Silver, Pollagh, Tinamuck west, Castlestrong, Derrynagun, Kilcolgan, Lemanaghan, Ballynahowan, Falsk, West Galros, Upper Clonoghill, North Rathlure, Knockhill, Killeenmore, Cloncollog, Derrygunningan, Pigeonhouse and Glasshouse Rivers.

Table 9 Summary of Waste Water Monitoring

Parameter measured	No. of Samples	% Compliant	Comment
Suspended Solids	304	100%	
Ammonia	82	100%	
Total Solids	304	NA	
Total Phosphorus	82	NA	
pH	82	NA	
Colour	82	NA	
COD	82	100%	

Add rows as necessary

Comment

Licence requirements are quarterly grab samples on a selected number of silt pond outlets as per condition 6.2 and one 24hr flow proportional composite sampler at Derrinboy bog.

The emission limit values are 35mg/l suspended solids, 3.7mg/l total ammonia (N) and 100mg/l COD. There were no exceedances record in 2023, which is similar to 2022.

Air

Explanation

Generally, three types of air emissions are monitored from industry in Ireland: gases, dust (particulates) and odour. Our EPA licence requires us to ensure that any air emissions from our activities do not cause air pollution or create an odour nuisance.

The information below details the number of air emission points we monitor, the results from testing the air emissions and any odour assessments carried out by us and the EPA this year.

1. We monitor air emissions from the following number of emission points at our facility.

N/A

Table 10 **Summary of Air Emissions Monitoring**

Parameter measured	No. of Samples	% Compliant	Comment

Add rows as necessary

Comment

Due to permanent cessation of peat production, it is no longer necessary to monitor for dust.

Table 11 Summary of Odour Assessments Carried Out

Assessment Conducted By	No. of Odour Assessments	% Compliant⁸	Comment
Licence Holder	N/A		Not required
EPA	N/A		Not required

Add rows where necessary

Comment

There are no odour emissions of note from the activity, no requirements to monitor and no associated complaints.

⁸ A compliant odour assessment is based on EPA Odour Impact Assessment Guidance available at [Air Enforcement | Environmental Protection Agency \(epa.ie\)](#)

Fugitive Solvent Emissions

Are you required to monitor fugitive solvent air emissions from your facility?

Yes ☐

No ☒

Explanation

The use of solvents is regulated under Irish and European Union (EU) Regulations⁹. Solvents are chemicals that, by their nature, are volatile (evaporate readily under ambient conditions). Solvents can be found in many inks, glues and cleaning agents. Due to the volatility of solvents some emissions may be released into the atmosphere during our activities before being captured in our air treatment system. This type of emission is called a **fugitive solvent emission**.

The information below summarises the quantity of solvents used this year, the percentage of fugitive solvent emissions (% of total quantity used) and whether the percentage complied with the targets set in the EU Regulations.

Table 12 Summary of Fugitive Solvent Emissions

Quantity of Solvents Used (Kg)	% Fugitive Solvent Emissions	Compliant

Comment

N/A

⁹ See Annex VII of the Industrial Emissions Directive

<https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm>

Groundwater

Explanation

Groundwater is an important and sensitive resource in Ireland. Our EPA licence requires that we monitor groundwater to ensure our activities do not cause groundwater pollution.

Understanding how groundwater flows through soil and rock layers and eventually into surface and coastal waters is a complex science. Sometimes groundwater pollution that occurred in the past can take years and even decades to disappear. Therefore, it is important that experts help us monitor and interpret results from groundwater monitoring and testing.

The information below is a basic summary of the condition of the groundwater this year.

1. Do you have a groundwater monitoring programme in place?

Yes ☒

No ☐

2. Have the groundwater monitoring results over the last 5 years indicated the presence of groundwater pollution?

Yes ☒

No ☐

Table 13 List of Groundwater Pollutants Identified

Pollutants
Total petroleum hydrocarbon-Diesel.

Add rows as necessary

3. Give details of the investigations and subsequent actions taken, where applicable, to manage the groundwater pollution.

Teir -1 and Teir-2 assessments have been submitted and approved by the EPA. Extraction and treatment of the contaminated ground water is on-going.

Comment

There are no licence requirements to monitor groundwater from the activity.

Noise

Explanation

Our EPA licence requires that we monitor noise emissions from our facility. Noise monitoring can be conducted at the boundary of our facility and/or at locations beyond the boundary referred to as “noise sensitive locations”. Noise monitoring requires the use of special noise monitoring equipment. Our EPA licence requires that noise produced by our facility shall not exceed the noise limit values and/or give rise to nuisance.

The information below gives a summary of when and where we conducted noise monitoring this year and if results complied with our EPA licence limits.

1. We conducted noise monitoring on the following dates this year:

N/A

2. Where was the noise monitoring carried out?

- i. the boundary of our facility;
- ii. noise sensitive locations off-site; or
- iii. both.

N/A

3. Were measured noise levels compliant with your EPA licence limits?

Yes ☐

No ☐

If No, we took the following actions to address the noise level exceedances?

N/A

Comment

There are no licence requirements to monitor noise from the activity, or any complaints regarding noise impact.

7) Waste

Waste Generated

Explanation

Our EPA licence requires us to manage the waste we generate in a manner that does not cause environmental pollution.

We manage, store and record hazardous, non-hazardous and inert waste we generate in accordance with our licence. We ensure that this waste is subsequently treated or disposed of in accordance with the relevant waste Regulations.

The information in Table 14 is a summary of waste we generated this year and the percentage increase or decrease on the previous year. The percentage recovery is the amount of total waste generated that was reused, recycled or recovered.

Table 14 Waste Generated

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	% Recovery
Hazardous	103.89	-92.32	100
Non-Hazardous	645.76	-56.61	5.38
Inert	-		
Total Tonnes	749.65	-73.62	18.59

Comment

The main wastes generated from activities are, waste oil, interceptor waste, oil filters, parts wash, polythene, scrap metal, silt pond waste all of which are recycled. The waste generated for landfill was from general waste skips and wheelie bins.

Waste Accepted

Did you accept waste onto your facility for storage, treatment, recovery or disposal this year?

Yes ☐

No ☒

Explanation

Our EPA licence requires us to manage the waste we accept in a manner that does not cause environmental pollution.

We manage, store and record all incoming and outgoing hazardous, non-hazardous and inert waste. The waste we accept may be treated, recovered, disposed or stored at our facility depending on our licence requirements.

The information in Table 15 provides a summary of waste we accepted this year and the percentage increase or decrease on the previous year. The percentage recovery is the amount of total waste accepted that was reused, recycled or recovered.

Table 15 Waste Accepted

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	% Recovery
Hazardous			
Non- Hazardous			
Inert			
Total Tonnes			

Comment

No waste accepted.

8) Financial Provision

Explanation

Our EPA licence requires us to assess the risk our activities pose to the environment if we cease our activities or if an incident occurred. If we are identified as a high risk facility¹⁰ by the EPA, we are required to put provision in place such as a financial bond or insurance to cover the cost of restoring our site to a satisfactory condition. This financial provision can then be used to cover the cost of managing the restoration or clean up should such an event occur.

1. Are you required to have an agreed financial provision in place?

Yes ☐

No ☒

2. What year was your Closure, Restoration and Aftercare Management Plan (CRAMP) last agreed by the Agency?

3. What year was your Environmental Liability Assessment Report (ELRA) agreed by the Agency?

4. Has there been any significant changes on your site since the last agreements?

Yes ☐

No ☒

If yes, have you submitted details to the EPA?

Yes ☐

No ☐

N/A ☒

¹⁰ See Appendix II

Appendix I

Class of Activity

Industrial and waste facilities are classed into different sectors depending on the nature of their activity and its potential impact on the environment. The EPA Act 1992 as amended, outlines these as follows:

Class 1	Minerals and other materials
Class 2	Energy
Class 3	Metals
Class 4	Mineral fibres and glass
Class 5	Chemicals
Class 6	Intensive Agriculture ¹¹
Class 7	Food and drink
Class 8	Wood, paper, textiles and leather
Class 9	Fossil fuels
Class 10	Cement, lime and magnesium oxide
Class 11	Waste
Class 12	Surface Coatings
Class 13	Other Activities

¹¹ This reporting template is not applicable to the **intensive agriculture sector**. Their annual environmental reporting structure is different and can be found at [Compliance & Enforcement: Licensees: Reporting Publications | Environmental Protection Agency \(epa.ie\)](#)

Appendix II

High Environmental Risk Categories

If an industrial or waste licence falls into one of these categories it is deemed, by the EPA, as a high environmental risk. As a result, the licence holder is required to have financial provision in place. See section 8, Financial Provision.

1. Landfills
2. Non-Hazardous Waste Transfer Station
3. Incineration and Co-Incineration Waste Facilities
4. Category A – Extractive Waste Facilities
5. Upper and Lower Tier Seveso Facilities
6. Hazardous Waste Transfer Stations
7. High Risk Contaminated Land
8. Exceptional Circumstances

NOTE:

This list is subject to change.

See the link below for further information.

[Compliance & Enforcement: Financial Provisions Publications | Environmental Protection Agency \(epa.ie\)](#)

Appendix III

Beyond Compliance

The case study below shows how we went beyond the requirements of our licence in the reporting year.

The Government implemented a scheme called the 'Peatlands Climate Action Scheme' (PCAS), also known as the Peatlands Enhanced Decommissioning, Rehabilitation and Restoration Scheme (EDRRS). The Scheme commenced in 2021 and was devised so that Bord na Móna could carry out enhanced rehabilitation of its industrial peatlands, having ceased peat extraction in 2020. The scheme is supported by Government through the Climate Action Fund, and Ireland's National Recovery and Resilience Plan administered by the Department of Environment, Climate and Communications (DECC), while the National Parks and Wildlife Service (NPWS) act as the Scheme regulator and the Environmental Protection Agency regulate rehabilitation plan under Condition 10 of this IPC Licence. This Scheme will significantly go beyond what is required to meet rehabilitation and decommissioning obligations under the existing EPA IPC licence conditions. Improvements supported by the Scheme will ensure that environmental stabilisation is achieved (meaning IPC obligations are met), and importantly, significant additional benefits, particularly relating to climate action and other ecosystem services, will also be delivered.

To measure and verify the rehabilitation outcomes, the scheme has increased the water monitoring requirements of the licence, the range of parameters to be included and the frequency of monitoring.

These co-benefits include supporting the objectives of the Irelands Climate Action Plan, the preservation of wetland archaeology, the reduction of peak flows to receiving water, supporting Irelands Biodiversity objectives, reduction in carbon emissions, improvements in water quality and reduction in water abstraction pressures associated with drainage. For further details see www.bnmpcas.ie



Annual Environmental Report (AER) 2024

Company Name: Bord na Móna Energy Ltd (Boora Group)

Licence Number: P0500-01

Address: Bord na Móna, Leabeg, Tullamore, Co Offaly

Class of Activity¹: 1.4

¹ See Appendix I

Purpose of this Report

One of the functions of the Environmental Protection Agency (EPA) is to licence and regulate the activities² of large scale industrial (e.g. chemical, food processors, power plants) and waste facilities. Submitting an Annual Environmental Report (AER) is a requirement of all EPA licences.

An AER is a public document. To this end, this format has been developed for industrial and waste licence holders (other than the intensive agriculture sector) to use as a template. This is to assist any member of the public to interpret and understand the environmental performance of the licensed facility.

The AER is a **summary** of environmental information for a given year. It includes:

- Details of the licence holder's environmental goals achieved, goals to maintain compliance and/or improve their environmental performance;
- Answers to questions regarding their facility's activities;
- Tables of results from monitoring emissions such as air, water, noise, and odour; and
- Details of waste generated, accepted and treated.

An AER does **not** provide detailed technical data. Such information is available in three ways:

- 1) Contacting the licence holder directly. The Contact Us section of this template enables the licence holder to provide details of where a member of the public can obtain further information on topics reported in this document.

² See Appendix I

- 2) Some documents³ are available on the EPA website via the licence details page for each individual licence. This can be found by browsing either the <http://www.epa.ie/licensing/> or <http://www.epa.ie/enforcement/> pages of the EPA website.
- 3) All formal enforcement correspondence exchanged between the EPA and a licence holder during the regulatory process is available for public viewing by appointment at any EPA Office.

If you have a question or query about an AER or an individual EPA licensed facility see the EPA's website or contact the relevant EPA office. See <http://www.epa.ie/about/contactus/> for contact details.

³ This includes EPA site inspection and compliance monitoring reports, licence holders' self-monitoring reports, AERs and special reports

Contents

Glossary	5
Declaration	8
1) Introduction	9
Contact Us	9
2) How we Manage our Facility	11
Environmental Management System	11
Beyond Compliance	13
3) Energy & Water	14
Energy	14
Water	16
4) Environmental Complaints	17
5) Environmental Incidents	19
6) Our Environmental Emissions	21
Storm Water	22
Waste Water	24
Air	26
Fugitive Solvent Emissions	28
Groundwater	29
Noise	31
7) Waste	32
Waste Generated	32
Waste Accepted	33
8) Financial Provision	34

Glossary

Abatement Equipment	Technology used to reduce pollution
AER	Annual Environmental Report.
Beyond Compliance	Beyond compliance is concept to help deliver greater organisational performance and long-term value for the environment, society and the economy.
CRAMP	Closure, Restoration and Aftercare Management Plan.
ELRA	Environmental Liability Risk Assessment.
Emission Limit Value	Limits set for specified emissions, typically outlined in Schedule B of an EPA licence.
EMS	Environmental Management System.
Environmental Goal	An objective or target set by a licensee as part of an environmental management system (EMS).
Environmental Pollutant	Substance or material that due to its quantity and/or nature has a negative impact on the environment.
Facility	Any site or premises that holds an EPA industrial or waste licence.
FP	Financial Provision.
GJ	Giga joules, an international unit of energy measurement.

Groundwater	All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.
Incident	As defined by an EPA industrial or waste licence.
Inert Waste	Is waste that will not undergo physical, chemical or biological change thereby, is unlikely to cause environmental pollution or harm human health.
List of Wastes (LoW)	A list of wastes drawn up by the European Commission and published as Commission Decision 2014/955/EU.
Noise Sensitive Location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Non-Renewable Resource	A resource of economic value that cannot be replaced at the same rate it is being consumed e.g. coal, peat, oil and natural gas.
Oil Separator	Separator system for light liquids (e.g. oil and petrol).
PRTR	Pollutant Release and Transfer Register.
Renewable Resource	Wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.
Sanitary Waste	Waste water from toilet, washroom and canteen facilities.

Storm Water	Rain water run-off from roof and non-process areas.
Surface Water	Lakes, rivers, streams, estuaries and coastal waters.
Trigger Level	A value set for a specific parameter, the achievement or exceedance of which requires certain actions to be taken by the licence holder.
Volatile Organic Compounds	Gases produced from solids or liquids that evaporate readily in ambient conditions.
Waste	Any substance or object which the holder discards or intends or is required to discard.

Disclaimer

These are **not** legal definitions. Legal definitions can be found in the corresponding legislation.

Declaration

I, Padraig Mulryan PCAS Operations Manager, confirm that by ticking the box below, all information in this report is truthful and accurate to the best of my knowledge and belief.

In addition, I confirm that all monitoring and performance reporting required by our EPA licence and summarised herein is available for inspection by the EPA.

Tick here



1) Introduction

See below a brief description of our facility and a summary of our environmental performance this year.

- During the reporting period the primary activities were decommissioning and rehabilitation of several bogs in this IPC Licence.
- During the reporting period, 233 Hectares of peatlands were rehabilitated, with the balance extending into the 2025 period, at Drinagh and Lemanaghan Bogs .
- Similarly, 145 Hectares of peatlands were decommissioned, with plant, equipment and waste materials removed from the same bogs.
- In the reporting period, there were no complaints of an environmental nature, similarly to 2023.
- During the period, there was a 282% Increase in waste generated, mostly related to an increase in decommissioning.
- In the period, there was 2 reported incidents of an environmental nature, one was minor fuel spillage which was cleaned up and contained on site. The second was a minor breach of the ELV for suspended solids which was an isolated case.
- During the period, there were various submissions to the Agency regarding updates on remediation at Monettia, the 2023 AER, annual monitoring returns, trigger level reports and Rehab Plan Reviews.
- During 2024, Rehabilitation plans, maps and associated assessments were submitted to the Agency for Drinagh, Lemanaghan and Clongawney Bogs and these are available at www.bnmpcas.ie

Contact Us

If you have any questions or would like further information on any aspect of our licensed activity, please contact us directly.

See below details:

Enda McDonagh,
Environmental Manger,
Bord na Mona Energy Ltd
Leabeg
Tullamore
Co Offaly
www.bnm.ie

2) How we Manage our Facility

Environmental Management System

Explanation

To ensure our facility's activities do not cause environmental pollution we are required to have detailed documentation systems in place to help us manage and track our environmental performance. These systems are referred to as Environmental Management Systems (EMS). We review our EMS every year and set up-to-date **environmental goals** to continually improve our environmental performance.

The information below sets out the environmental goals for our facility to help us prevent environmental pollution and reduce our impact on the environment. Target dates for completing each goal and progress towards achieving the goal are outlined in Table 1.

Table 1 Environmental Goals

Environmental Goal	Target Date	Progress
Training/awareness for all area leaders and operatives in advance of decommissioning and rehabilitation of the 2024 bogs	May 2025	Underway
Waste Management – Removal of all waste that are deemed a risk the environment in bogs scheduled to be decommissioned in 2024	December 2025	Underway
Decommissioning and Rehabilitation of bogs in accordance with Condition 10 of the IPC Licence and in accordance with Peatlands Climate Action Scheme https://www.gov.ie/en/publication/136a7-bord-na-mona-bog-rehabilitation-scheme/	December 2025	Underway

Maintain surface water quality compliance with emission limit values for Suspended Solids during the proposed decommissioning and rehabilitation programme	December 2025	Underway
Completion of applicable internal audits/inspections of any applicable bogs scheduled for decommissioning and rehabilitation as required by condition 10 and the Peatlands Climate Action Scheme	September 2025	2025

Add rows as necessary

Comment

As peat extraction on all bogs in this licence ceased in 2020, all environmental goals for 2025 are linked to the remaining bog activity, which is any decommissioning and rehabilitation of the bogs planned for 2025.

Beyond Compliance

Explanation

We are legally required to comply with our environmental licence. However, the EPA realise that some sites go further than just complying with their environmental licence requirements. Some projects carried out at facilities can have long term positive impacts on the environment and local communities.

The EPA's beyond compliance initiative is encouraging us to identify and report on these environmental and sustainability projects. For example, the project could involve renewable energy, biodiversity, water conservation or exemplar community engagement.

Did any project completed on your site in the reporting year go beyond your licence requirements?

Yes ☒

No ☐

If yes, provide details of one case study in Appendix III that demonstrates how the project went beyond compliance of your licence.

3) Energy & Water

Energy

Explanation

Fossil fuels such as coal, gas and oil are non-renewable resources. As a result, our EPA licence requires that we measure our energy use and set targets to improve the energy efficiency of our activities and reduce our overall use, where possible. Where we have the means and technology on-site to generate energy, this is also captured in this report.

The information below summarises the energy used this year compared to the previous year and includes renewable and non-renewable energy types.

Table 3 Energy Used

Energy Used	Quantity (GJ)	% Increase/ decrease on previous year
Electricity	1,157.2	-7
Heavy Fuel Oil	-	-
Light Fuel Oil	1,695	-59
Natural Gas	-	-
Coal / Solid Fuel	-	-
Peat	-	-
Renewable Biomass	-	-
Renewable Energy Generated On-site	-	-
Total Energy Used	2852.17	-47

Comment

Electricity and fuel usage decreased in 2024. This was mainly due to PCAS bog rehabilitation and decommissioning work.

The information below summarises the energy we generated on our site this year with specific focus on renewable energy generation.

Table 4 Energy Generated

Energy Generated	Quantity (GJ)	% Increase/ decrease on previous year
Renewable Energy	N/A	
Total Energy Generated		

Comment

There are no renewable energy assets on this site.

Water

Explanation

Water is a natural resource and we are required by our EPA licence to identify ways to reduce our use where possible. Water used in industry can be extracted from groundwater, rivers and lakes (surface water), taken from public water supplies (Irish Water), recycled from the facility's processes or harvested from rainwater.

The information below summarises and compares the quantity of water used this year compared to the previous year.

Table 5 Water Used

Source of Water Used	Quantity (m³/year)	% Increase/decrease on previous year
Groundwater		
Surface Water		
Public Supply		
Recycled Water		
Rainwater		
Total Water Used	0	

Comment

Water is not used in any of the peat harvesting or transport processes. The only water used is that required to provide associated offices and workshop welfare facilities (canteen/toilets)

4) Environmental Complaints

Explanation

Our EPA licence requires that activities do not cause environmental nuisance such as odour, dust or noise. Our licence also requires that we have procedures in place to record, investigate and respond to environmental complaints if or when they arise.

We have an environmental complaints procedure in place where you can contact us⁴ directly. You can also contact the EPA⁵ if you wish to make an environmental complaint, confidentially or not.

See the information below for a summary of **all** the environmental complaints relating to our activities made directly to us and to the EPA this year.

Table 6 Summary of All Environmental Complaints Received in

Type of Complaint	Number of Complaints	Number Closed
Odour / Smells	0	0
Noise	0	0
Dust	0	0
Water Quality	0	0
Air Quality	0	0
Waste	0	0
Litter	0	0
Vermin/Flies/Birds	0	0
Soil Contamination	0	0
Vibration	0	0
Other	0	0

⁴ See Section 1, Introduction – Contact Us

⁵ If you wish to contact the EPA to make an environmental complaint about an EPA licenced facility, please go to <https://lema.epa.ie/complaints>

Comment

As required, environmental complaints are reportable to the EPA and as such must be investigated. In the 2024 reporting period, this licence received no complaints of an environmental nature.

5) Environmental Incidents

Explanation

It is our responsibility as an EPA licensed facility to ensure we have systems in place to prevent incidents that have the potential to cause environmental pollution. If an incident occurs, we are required to report it to the EPA, investigate the cause and fix the problem.

The EPA classify environmental incidents into 5 categories based on the potential impact on the environment:

- Minor
- Limited
- Serious
- Very Serious
- Catastrophic

See Table 6 for the number of the environmental incidents we reported to the EPA this year

Table 7 Number of Environmental Incidents

Incident Category	Minor	Limited	Serious	Very Serious	Catastrophic
Abatement Equipment Offline	0	0	0	0	0
Breach of Ambient ELV	0	0	0	0	0
Breach of Emission Limit	1	0	0	0	0
Explosion	0	0	0	0	0
Fire	0	0	0	0	0
Monitoring Equipment Failure	0	0	0	0	0
Odour	0	0	0	0	0
Spillage	1	0	0	0	0
Breach of trigger Level	0	0	0	0	0
Uncontrolled Release	0	0	0	0	0
Other	0	0	0	0	0

Comment

As required, incidents of an environmental nature are reportable to the EPA and as such must be investigated. In the 2024 reporting period, this licence recorded and reported 2 incidents.

6) Our Environmental Emissions

Explanation

We are required to ensure the emissions from our activities do not cause environmental pollution.

We are required to monitor any of the following emissions that we make:

- Storm water
- Waste water
- Air
- Groundwater
- Noise

We regularly test any such emissions for specific pollutants and materials to ensure they do not contain levels of pollution that exceed emission limit values (ELVs) or cause environmental pollution. If monitoring of an emission indicates an ELV is exceeded, we are required to report this to the EPA⁶.

The next sub-sections of this report summarise our compliance with any ELVs set in our EPA licence. Some emissions monitored do not have specific ELVs, but we still carry out monitoring and report all incidents that may give rise to environmental pollution.

⁶ See section 5, Incidents

Storm Water

Explanation

Storm water is rain water run-off from roof and non-process areas of a facility, e.g. car parks, and generally shall not contain any pollution.

Storm water is usually released into a local water body after a basic form of treatment. Our EPA licence requires that we manage storm water to ensure no polluting substances or materials are released into the environment.

The information below summarises how the storm water from our facility is treated, where it is released and the results of monitoring this year.

1. Storm water from our facility is managed prior to release by;

Either direct to drain where it is roof water only, or via petrol/oil interceptor

2. Storm water from our facility is released into the following water bodies:

Boor, Brosna, Shannon, Rapemills, Boora, Silver, Pollagh, Tinamuck west, Castlestrong, Derrynagun, Kilcolgan, Lemanaghan, Ballynahowan, Falsk, West Galros, Upper Clonoghill, North Rathlure, Knockhill, Killeenmore, Cloncollog, Derrygunningan, Pigeonhouse & Glasshouse

Table 8 Summary of Storm Water Monitoring

Parameter measured	No. of Samples	% Compliant ⁷	Comment
COD	19	100%	Low level of samples this year due to dry weather or no discharge on the days of sampling.

Add rows as necessary

Comment

As required by the licence, stormwater is required to be separated where possible from process/non-process areas. Where this is not possible, stormwater is managed via oil-interceptors which are inspected monthly and sampled for associated discharges each month. Other than visual observations, the other main criteria to define adequate treatment is COD mg/l, so this and visual inspections dictate when the interceptor is cleaned by an approved hazardous waste contractor.

⁷ % compliant = [(number of samples compliant) / (number of samples taken)] x 100. Compliance could refer to emission limit values or trigger levels. The EPA commonly use trigger levels on stormwater discharges.

Waste Water

Explanation

There are two types of waste water that can be produced:

- Process waste water produced from the activities and;
- Sanitary waste water from toilets, washrooms and canteens.

Our EPA licence requires us to manage our waste water on or off-site and ensure that it does not cause environmental pollution when discharged into the environment.

The information below summarises how we treat the waste water produced from our activities, where it is released and the results of monitoring this year.

1. Waste water produced by our activities is treated as follows before discharge to a receiving waterbody;

All production area runoff is treated via an associated silt pond designed, inspected and maintained in accordance with condition 6 of the IPC Licence

2. Treated waste water from our facility is released into the following water bodies:

Boor, Brosna, Shannon, Rapemills, Boora, Silver, Pollagh, Tinamuck west, Castlestrong, Derrynagun, Kilcolgan, Lemanaghan, Ballynahowan, Falsk, West Galros, Upper Clonoghill, North Rathlure, Knockhill, Killeenmore, Cloncollog, Derrygunningan, Pigeonhouse and Glasshouse Rivers.

Table 9 Summary of Waste Water Monitoring

Parameter measured	No. of Samples	% Compliant	Comment
Suspended Solids	294	99.6%	1 exceedance recorded in 2024
Ammonia	81	100%	
Total Solids	294	NA	
Total Phosphorus	81	NA	
pH	81	NA	
Colour	81	NA	
COD	81	100%	

Add rows as necessary

Comment

Licence requirements are quarterly grab samples on a selected number of silt pond outlets as per condition 6.2 and one 24hr flow proportional composite sampler at Derrinboy bog.

The emission limit values are 35mg/l suspended solids, 3.7mg/l total ammonia (N) and 100mg/l COD. There was one exceedance record in 2024.

Air

Explanation

Generally, three types of air emissions are monitored from industry in Ireland: gases, dust (particulates) and odour. Our EPA licence requires us to ensure that any air emissions from our activities do not cause air pollution or create an odour nuisance.

The information below details the number of air emission points we monitor, the results from testing the air emissions and any odour assessments carried out by us and the EPA this year.

1. We monitor air emissions from the following number of emission points at our facility.

N/A

Table 10 Summary of Air Emissions Monitoring

Parameter measured	No. of Samples	% Compliant	Comment

Add rows as necessary

Comment

Due to permanent cessation of peat production, it is no longer necessary to monitor for dust.

Table 11 Summary of Odour Assessments Carried Out

Assessment Conducted By	No. of Odour Assessments	% Compliant⁸	Comment
Licence Holder	N/A		Not required
EPA	N/A		Not required

Add rows where necessary

Comment

There are no odour emissions of note from the activity, no requirements to monitor and no associated complaints.

⁸ A compliant odour assessment is based on EPA Odour Impact Assessment Guidance available at [Air Enforcement | Environmental Protection Agency \(epa.ie\)](#)

Fugitive Solvent Emissions

Are you required to monitor fugitive solvent air emissions from your facility?

Yes ☐

No ☒

Explanation

The use of solvents is regulated under Irish and European Union (EU) Regulations⁹. Solvents are chemicals that, by their nature, are volatile (evaporate readily under ambient conditions). Solvents can be found in many inks, glues and cleaning agents. Due to the volatility of solvents some emissions may be released into the atmosphere during our activities before being captured in our air treatment system. This type of emission is called a **fugitive solvent emission**.

The information below summarises the quantity of solvents used this year, the percentage of fugitive solvent emissions (% of total quantity used) and whether the percentage complied with the targets set in the EU Regulations.

Table 12 Summary of Fugitive Solvent Emissions

Quantity of Solvents Used (Kg)	% Fugitive Solvent Emissions	Compliant

Comment

N/A

⁹ See Annex VII of the Industrial Emissions Directive

<https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm>

Groundwater

Explanation

Groundwater is an important and sensitive resource in Ireland. Our EPA licence requires that we monitor groundwater to ensure our activities do not cause groundwater pollution.

Understanding how groundwater flows through soil and rock layers and eventually into surface and coastal waters is a complex science. Sometimes groundwater pollution that occurred in the past can take years and even decades to disappear. Therefore, it is important that experts help us monitor and interpret results from groundwater monitoring and testing.

The information below is a basic summary of the condition of the groundwater this year.

1. Do you have a groundwater monitoring programme in place?

Yes ☒

No ☐

2. Have the groundwater monitoring results over the last 5 years indicated the presence of groundwater pollution?

Yes ☒

No ☐

Table 13 List of Groundwater Pollutants Identified

Pollutants
Total petroleum hydrocarbon-Diesel.

Add rows as necessary

3. Give details of the investigations and subsequent actions taken, where applicable, to manage the groundwater pollution.

Teir -1 and Teir-2 assessments have been submitted and approved by the EPA. Extraction and treatment of the contaminated ground water is on-going.

Comment

There are no licence requirements to monitor groundwater from the activity.

Noise

Explanation

Our EPA licence does not require that we monitor noise emissions from our facility. Noise monitoring can be conducted at the boundary of our facility and/or at locations beyond the boundary referred to as “noise sensitive locations”. Noise monitoring requires the use of special noise monitoring equipment. Our EPA licence requires that noise produced by our facility shall not exceed the noise limit values and/or give rise to nuisance.

The information below gives a summary of when and where we conducted noise monitoring this year and if results complied with our EPA licence limits.

1. We conducted noise monitoring on the following dates this year:

N/A

2. Where was the noise monitoring carried out?

- i. the boundary of our facility;
- ii. noise sensitive locations off-site; or
- iii. both.

N/A

3. Were measured noise levels compliant with your EPA licence limits?

Yes ☐

No ☐

If No, we took the following actions to address the noise level exceedances?

N/A

Comment

There are no licence requirements to monitor noise from the activity, or any complaints regarding noise impact.

7) Waste

Waste Generated

Explanation

Our EPA licence requires us to manage the waste we generate in a manner that does not cause environmental pollution.

We manage, store and record hazardous, non-hazardous and inert waste we generate in accordance with our licence. We ensure that this waste is subsequently treated or disposed of in accordance with the relevant waste Regulations.

The information in Table 14 is a summary of waste we generated this year and the percentage increase or decrease on the previous year. The percentage recovery is the amount of total waste generated that was reused, recycled or recovered.

Table 14 Waste Generated

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	% Recovery
Hazardous	194.85	87	100
Non-Hazardous	2765.40	228	87
Inert	-		
Total Tonnes	2960.25	282	85

Comment

The main wastes generated from activities are, waste oil, interceptor waste, oil filters, parts wash, polythene, scrap metal, silt pond waste all of which are recycled. The waste generated for landfill was from general waste skips and wheelie bins.

Waste Accepted

Did you accept waste onto your facility for storage, treatment, recovery or disposal this year?

Yes ☐

No ☒

Explanation

Our EPA licence requires us to manage the waste we accept in a manner that does not cause environmental pollution.

We manage, store and record all incoming and outgoing hazardous, non-hazardous and inert waste. The waste we accept may be treated, recovered, disposed or stored at our facility depending on our licence requirements.

The information in Table 15 provides a summary of waste we accepted this year and the percentage increase or decrease on the previous year. The percentage recovery is the amount of total waste accepted that was reused, recycled or recovered.

Table 15 Waste Accepted

Type	Quantity (Tonnes)	% Increase/ decrease on previous year	% Recovery
Hazardous			
Non-Hazardous			
Inert			
Total Tonnes			

Comment

No waste accepted.

8) Financial Provision

Explanation

Our EPA licence requires us to assess the risk our activities pose to the environment if we cease our activities or if an incident occurred. If we are identified as a high risk facility¹⁰ by the EPA, we are required to put provision in place such as a financial bond or insurance to cover the cost of restoring our site to a satisfactory condition. This financial provision can then be used to cover the cost of managing the restoration or clean up should such an event occur.

1. Are you required to have an agreed financial provision in place?

Yes ☐

No ☒

2. What year was your Closure, Restoration and Aftercare Management Plan (CRAMP) last agreed by the Agency?

3. What year was your Environmental Liability Assessment Report (ELRA) agreed by the Agency?

4. Has there been any significant changes on your site since the last agreements?

Yes ☐

No ☒

If yes, have you submitted details to the EPA?

Yes ☐

No ☐

N/A ☒

¹⁰ See Appendix II

Appendix I

Class of Activity

Industrial and waste facilities are classed into different sectors depending on the nature of their activity and its potential impact on the environment. The EPA Act 1992 as amended, outlines these as follows:

Class 1	Minerals and other materials
Class 2	Energy
Class 3	Metals
Class 4	Mineral fibres and glass
Class 5	Chemicals
Class 6	Intensive Agriculture ¹¹
Class 7	Food and drink
Class 8	Wood, paper, textiles and leather
Class 9	Fossil fuels
Class 10	Cement, lime and magnesium oxide
Class 11	Waste
Class 12	Surface Coatings
Class 13	Other Activities

¹¹ This reporting template is not applicable to the **intensive agriculture sector**. Their annual environmental reporting structure is different and can be found at [Compliance & Enforcement: Licensees: Reporting Publications | Environmental Protection Agency \(epa.ie\)](#)

Appendix II

High Environmental Risk Categories

If an industrial or waste licence falls into one of these categories it is deemed, by the EPA, as a high environmental risk. As a result, the licence holder is required to have financial provision in place. See section 8, Financial Provision.

1. Landfills
2. Non-Hazardous Waste Transfer Station
3. Incineration and Co-Incineration Waste Facilities
4. Category A – Extractive Waste Facilities
5. Upper and Lower Tier Seveso Facilities
6. Hazardous Waste Transfer Stations
7. High Risk Contaminated Land
8. Exceptional Circumstances

NOTE:

This list is subject to change.

See the link below for further information.

[Compliance & Enforcement: Financial Provisions Publications | Environmental Protection Agency \(epa.ie\)](#)

Appendix III

Beyond Compliance

The case study below shows how we went beyond the requirements of our licence in the reporting year.

The Government implemented a scheme called the 'Peatlands Climate Action Scheme' (PCAS), also known as the Peatlands Enhanced Decommissioning, Rehabilitation and Restoration Scheme (EDRRS). The Scheme commenced in 2021 and was devised so that Bord na Móna could carry out enhanced rehabilitation of its industrial peatlands, having ceased peat extraction in 2020. The scheme is supported by Government through the Climate Action Fund, and Ireland's National Recovery and Resilience Plan administered by the Department of Environment, Climate and Communications (DECC), while the National Parks and Wildlife Service (NPWS) act as the Scheme regulator and the Environmental Protection Agency regulate rehabilitation plan under Condition 10 of this IPC Licence. This Scheme will significantly go beyond what is required to meet rehabilitation and decommissioning obligations under the existing EPA IPC licence conditions. Improvements supported by the Scheme will ensure that environmental stabilisation is achieved (meaning IPC obligations are met), and importantly, significant additional benefits, particularly relating to climate action and other ecosystem services, will also be delivered.

To measure and verify the rehabilitation outcomes, the scheme has increased the water monitoring requirements of the licence, the range of parameters to be included and the frequency of monitoring.

These co-benefits include supporting the objectives of the Irelands Climate Action Plan, the preservation of wetland archaeology, the reduction of peak flows to receiving water, supporting Irelands Biodiversity objectives, reduction in carbon emissions, improvements in water quality and reduction in water abstraction pressures associated with drainage. For further details see www.bnmpcas.ie