

BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED
Mountdillon Group, C/O Mountdillon Works
Lanesboro,
Co Longford, Ireland



Annual Environmental Report

March 2003

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1 Introduction

1.1 Company Details

Name Bord na Mona Energy Limited

I.P.C. Licence No. 504

Full Address Mountdillon Group
C/o Mountdillon Works
Lanesboro
Co Longford

Telephone No. 043 21117 Fax No 043 21259

National Grid Reference No. E204720 N268880

1.2 Activities

Mountdillon group of bogs is situated in Counties Longford Roscommon, and Westmeath.

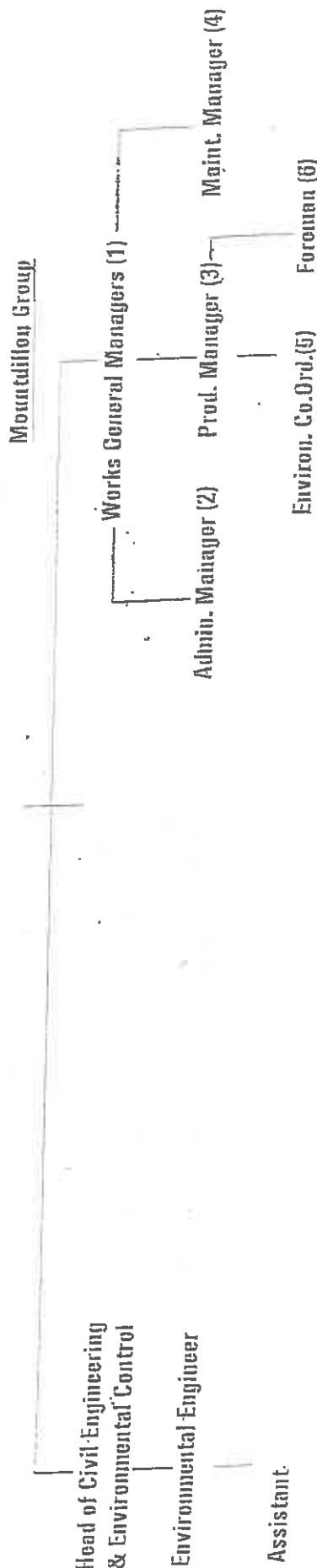
This group of bogs drain into the upper Shannon Catchment. Gross working hectares for Mountdillon is 4,950 and it is a completely milled peat operation.

Our sole customer is the E.S.B. Mountdillon is divided into 10 working areas namely Lough Bannow, Derryadd, Derryarogue, Knappoge, Begnagh, Clooneeny, Derrycolumb, Derryshannoge, Cloontuskert, Cloonshannagh, Derrymoylin, Mt/Dillon, Derrycashel, and Eddera. Cuil na gCun and Milkernagh

Bord na Mona Energy Limited

Environmental Responsibilities

Chief Executive



1. Overall Environmental Responsibility
2. Records and Complaints Register
3. All Production related issues (silt, dust, noise, waste, code of practice)
4. Machine maintenance, stores, workshops, yards, waste
5. Monitoring maintenance records
6. Silt settlement pond maintenance, codes of practice, post loading, tea centres

1.3 Environmental Policy

BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED 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

Monitoring and sampling from agreed discharge points are carried out quarterly in the form of grab samples. Samples were taken each quarter from each of the agreed outlets in accordance with the regular sampling programme. The results of the analyses of these samples are presented below in Tables 1A – 1G.

Bord na Mona

Group :

IPC Licence No.:

504

Emissions to water summary

TABLE 1A

Silt Pond No: BH 64 SW No. SW 55 Reporting Period (Jan-Dec 2002) Quarterly Monitoring					
Parameter	Jan/Feb/Mar Emission (mg/l)	April/May/June Emission (mg/l)	July/Aug/Sept Emission (mg/l)	Oct/Nov/Dec Emission (mg/l)	Emission Limit Value (mg/l)
pH units	7.8	7.6	7.5	7.3	~
Flow (L/sec)	No flow	139	No flow	397	~
Suspended Solids (mg/l)	<5	<5	8	10	35mg/l
Total Solids (mg/l)	352	318	404	280	~
Total Phosphorus (mg/l)	<0.05	<0.1	0.33	<0.05	~
Ammonia (mg/l)	<0.2	<0.2	1.0	<0.2	~
Colour (Pt Co units)	88	218	130	139	~
COD (mg/l)	32	73	68	53	~

Bord na Mona

Group :

IPC Licence No.: 504

Emissions to water summary

TABLE 1B

Silt Pond No: CY 70 SW No. SW61 Reporting Period (Jan-Dec 2002) Quarterly Monitoring					
Parameter	Jan/Feb/Mar Emission (mg/l)	April/May/June Emission (mg/l)	July/Aug/Sept Emission (mg/l)	Oct/Nov/Dec Emission (mg/l)	Emission Limit Value (mg/l)
pH units	7.0	7.0	7.1	6.9	~
Flow (L/sec)	47.7	32	No flow	41.7	~
Suspended Solids (mg/l)	<5	9	<5	<5	35mg/l
Total Solids (mg/l)	230	122	198	96	~
Total Phosphorus (mg/l)	0.16	0.07	<0.05	<0.05	~
Ammonia (mg/l)	0.7	0.8	0.2	0.3	~
Colour (Pt Co units)	255	258	267	266	~
COD (mg/l)	97	86	89	84	~

Bord na Mona

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IPC Licence No.: 504

Emissions to water summary

TABLE 1C

Silt Pond No: CA 38 SW No. SW 29 Reporting Period (Jan-Dec 2002) Quarterly Monitoring					
Parameter	Jan/Feb/Mar Emission (mg/l)	April/May/June Emission (mg/l)	July/Aug/Sept Emission (mg/l)	Oct/Nov/Dec Emission (mg/l)	Emission Limit Value (mg/l)
pH units	77.4	7.3	7.3	7.0	~
Flow (L/sec)	47.8	121	No flow	375	~
Suspended Solids (mg/l)	10	20	9	6	35mg/l
Total Solids (mg/l)	158	110	254	242	~
Total Phosphorus (mg/l)	<0.05	0.08	<0.05	<0.05	~
Ammonia (mg/l)	0.5	0.8	1.3	0.5	~
Colour (Pt Co units)	174	270	171	233	~
COD (mg/l)	73	101	72	66	~

Bord na Mona

Group :

IPC Licence No.: 504

Emissions to water summary

TABLE 1D

Silt Pond No: CA 43 SW No. SW 34 Reporting Period (Jan-Dec 2002) Quarterly Monitoring					
Parameter	Jan/Feb/Mar Emission (mg/l)	April/May/June Emission (mg/l)	July/Aug/Sept Emission (mg/l)	Oct/Nov/Dec Emission (mg/l)	Emission Limit Value (mg/l)
pH units	77.4	7.6	7.5	7.2	~
Flow (L/sec)	47.8	282	No flow	420	~
Suspended Solids (mg/l)	10	10	14	5	35mg/l
Total Solids (mg/l)	158	246	244	106	~
Total Phosphorus (mg/l)	<0.05	0.17	0.36	<0.05	~
Ammonia (mg/l)	0.5	<0.2	1.9	0.2	~
Colour (Pt Co units)	174	158	186	134	~
COD (mg/l)	73	68	98	54	~

Bord na Mona

Group :

IPC Licence No.: 504

Emissions to water summary

TABLE 1E

Silt Pond No: CH 7 SW No. SW 6 Reporting Period (Jan-Dec 2002) Quarterly Monitoring					
Parameter	Jan/Feb/Mar Emission (mg/l)	April/May/June Emission (mg/l)	July/Aug/Sept Emission (mg/l)	Oct/Nov/Dec Emission (mg/l)	Emission Limit Value (mg/l)
pH units		7.2	7.1	7.4	~
Flow (L/sec)		Backed up	No flow	Backed up	~
Suspended Solids (mg/l)		9	6	10	35mg/l
Total Solids (mg/l)		134	166	136	~
Total Phosphorus (mg/l)		0.06	<0.05	0.05	~
Ammonia (mg/l)		0.8	0.2	0.5	~
Colour (Pt Co units)		258	262	175	~
COD (mg/l)		79	86	57	~

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Group :

IPC Licence No.: 504

Emissions to water summary

TABLE 1F

Silt Pond No: DR 48 SW No. SW 39 Reporting Period (Jan-Dec 2002) Quarterly Monitoring					
Parameter	Jan/Feb/Mar Emission (mg/l)	April/May/June Emission (mg/l)	July/Aug/Sept Emission (mg/l)	Oct/Nov/Dec Emission (mg/l)	Emission Limit Value (mg/l)
pH units		7.6	7.7	7.2	~
Flow (L/sec)		238	No flow	18.6	~
Suspended Solids (mg/l)		8	5	15	35mg/l
Total Solids (mg/l)		246	316	191	~
Total Phosphorus (mg/l)		0.47	<0.05	<0.05	~
Ammonia (mg/l)		1.0	<0.2	0.5	~
Colour (Pt Co units)		277	128	180	~
COD (mg/l)		89	56	69	~

Bord na Mona

Group :

IPC Licence No.: 504

Emissions to water summary

TABLE 1G

Silt Pond No: GN 30 SW No. SW 23 Reporting Period (Jan-Dec 2002) Quarterly Monitoring					
Parameter	Jan/Feb/Mar Emission (mg/l)	April/May/June Emission (mg/l)	July/Aug/Sept Emission (mg/l)	Oct/Nov/Dec Emission (mg/l)	Emission Limit Value (mg/l)
pH units	7.4	7.4	7.4	7.2	~
Flow (L/sec)	24	24	No flow	198	~
Suspended Solids (mg/l)	<5	<5	<5	11	35mg/l
Total Solids (mg/l)	62	254	172	114	~
Total Phosphorus (mg/l)	<0.05	0.08	<0.05	0.06	~
Ammonia (mg/l)	0.4	0.3	<0.2	0.5	~
Colour (Pt Co units)	202	257	233	223	~
COD (mg/l)	53	81	75	66	~

2.1.2 Monitoring of workshop/depot surface water run off

Reporting Period: January – December 2002		COD (mg/l)												Emission Limit Value
Surface Water Emission pt.		January	February	March	April	May	June	July	August	September	October	November	December	
SWE-1 w/shop		56	64	No run off	72	93	67	61	64	80	61	No run off	77	N/A
SWE-2 w/shop		61	47	No run off	263	103	74	295	85	No run off	67	98	67	"
SWE-1 yard		68	No run off	No run off	No run off	No run off	36	No run off	No run off	No run off	No run off	60	40	"
SWE-2 yard										No run off	No run off	109	No run off	"
SWE-1 p/stat *		No run off	No run off	No run off	No run off	No run off	No run off	No run off	No run off	No run off	No run off	No run off	No run off	"
														"

* No run off due to refueling area totally roofed

All of the yard run-off in the Mountdillon Group have oil interceptors installed at the works. Condition 9.1.8 calls for all surface water discharges to be fitted with an oil-interceptor within 12 mths of the date of licence.

Cuil na gCun have installed an oil-interceptor in December.02 it will be included in the monthly monitoring programme, and reported on quarterly in 2003.

2.1.3 Composite Sampler Programme

The Composite Sampler Proposal was submitted to the EPA in November 2000 for agreement.

A Composite Sampler has been purchased, ISCO 6700 from WATER TECHNOLOGY in Togher Cork. A site has been prepared and a secure box has been fabricated.

The Composite Sampler has been operational since May 2001, it has been visited on a weekly basis since, the samples have been removed and returned to Bord na Mona Laboratory in accordance to sampling protocol, on the few occasions samples have not been recorded it has been due to one of the following 1 No Flow 2 Power failure 3 Pond frozen

The following are the parameters to be monitored .

Parameter	Monitoring Frequency	Location of analysis
pH (pH units)	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 (hazen units)	Weekly	Laboratory
COD (mg/l)	Weekly	Laboratory

2.1.4 Non compliance

DATE	Non - Compliance	Cause	Corrective – Action
JAN 02 – DEC 02	No Non compliance		

2.2 Emissions to Air

2.2.1 Dust Monitoring Locations Programme

Emission Point	DATE	Parameter	Average Emission (mg/m ³ /day)	Emission Limit Value
DM-01	AUG	Dust	300	(350mg/m ³ /Day)
DM-02	AUG	Dust		(350mg/m ³ /Day)

Emission Point	DATE	Parameter	Average Emission (mg/m ³ /day)	Emission Limit Value
DM-01	SEPT	Dust	<17	(350mg/m ³ /Day)
DM-02	SEPT	Dust	<17	(350mg/m ³ /Day)

2.2.2 Non compliance

DATE	Non - Compliance Cause	Corrective -- Action
Aug 02 – Sept 02	No Non compliance	

2.3 Waste Arisings**2.3.1 Hazardous Waste****BORD NA MÓNA**

BORD NA MÓNA ENERGY LIMITED

Waste Management Record (Hazardous)

Group : BORD NA MÓNA IPC Licence no. : 504

Works : **MOUNTDILLON**

WASTE DESCRIPTION	EWG CODE	TONNES	NAME OF CONTRACTOR	NAME OF PERSON ULTIMATELY RESPONSIBLE	DESTINATION	DATE
2 Bins oil filters	13.06.01	0.312	ATLAS Oil Ltd	ATLAS Oil Ltd	Metal ret. To Irish steel	04/02/02
4 Bins oil filters	13.06.01	0.624	ATLAS Oil Ltd	ATLAS Oil Ltd	Metal ret. To Irish steel	29/04/02
2 Bins oil filters	13.06.01	0.312	ATLAS Oil Ltd	ATLAS Oil Ltd	Metal ret. To Irish steel	09/07/02
3 Bins oil filters	13.06.01	0.468	ATLAS Oil Ltd	ATLAS Oil Ltd	Metal ret. To Irish steel	09/10/02
1 Bin oil filters	13.06.01	0.156	ATLAS Oil Ltd	ATLAS Oil Ltd	Metal ret. To Irish steel	18/10/02
1 Bin oil filters	13.06.01	0.156	ATLAS Oil Ltd	ATLAS Oil Ltd	Metal ret. To Irish steel	10/12/02
Waste oil	13.50.03	1.5	ATLAS Oil Ltd	ATLAS Oil Ltd	Portlaoise	28/03/02
Waste oil	13.50.03	2.4	ATLAS Oil Ltd	ATLAS Oil Ltd	Portlaoise	30/04/02
Waste oil	13.50.03	2.3	ATLAS Oil Ltd	ATLAS Oil Ltd	Portlaoise	14/06/02
Waste oil	13.50.03	2.9	ATLAS Oil Ltd	ATLAS Oil Ltd	Portlaoise	28/06/02
Waste oil	13.50.03	1.8	ATLAS Oil Ltd	ATLAS Oil Ltd	Portlaoise	17/07/02
Waste oil	13.50.03	11.5	ATLAS Oil Ltd	ATLAS Oil Ltd	Portlaoise	04/10/02

WASTE DESCRIPTION	EWG	TONNES	NAME OF	NAME OF PERSON	DESTINATION	DATE
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[illegible]

Group : BORD NA MONA

IPC Licence no. : 504

[illegible]

* = Tonnes dry Weight

2.4 Energy and Water Consumption

**Bord na Mona Group :
Mountdillon
IPC Licence No.: 504
Energy Consumption
Summary**

Fuel	Megawatt / HRS	Volume cu/mts	Tonnes
JAN – Dec 2002			
Diesel	6969	711.55	
Petrol	21.51	2.38	
Electricity	1752		
Heating Oil	233	23.35	
Peat Biquettes	575		115

The only water used in Mountdillon is in teacentres, workshops and office's

2.5 Environmental Incidents and Complaints

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

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 procedures have been developed and communicated to all concerned. Little progress has been achieved regarding test modifications to 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 file.
Project 2. Minimisation of Suspended Solids	Procedures have been put in place regarding best practice in all elements of production and are posted at all teacentres, and brought to the attention of all personnel involved. Little progress has been achieved regarding test modifications to 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 file.
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 the final polishing 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 from production run-off have been completed.
Project 6. Effective spill/leak management of mobile fuelling tanks	50% of stationary tanks have been decommissioned, all relevant personnel have received training and emergency response procedures have been put in place
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 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 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 and tie it, leaving 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 Business & 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 BNM's pumping requirements.

3.2 Environmental Expenditure

Expenditure Related to the Operation of the Mountdillon IPC Licence During the Period JAN 2002 – DEC 2002	
Description	Cost Euros
Capital Costs	
Plant	
Labour	167,460
Materials	112,117
Overheads (ESB, Phones, Consumables)	6,000
External Environmental Consultancy	
EPA Fees	6,268
Monitoring Cost	10,674
Total	€ 302, 519

N.B. materials include monitoring costs

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

The surface water discharge monitoring location programme remains the same as was submitted and accepted by the Agency in July 2000.

Monitoring will be carried out at the same locations in the forthcoming year

4.2 Bunding Programme

Tanks have been Bunded at the power station and a service pit installed. A concrete spill area has been installed at the refuelling area. The work was carried out by an external Contractor namely, VERSTONE.

MOUNTDILLON YARD

New floor and sealing of existing bund carried out to required specifications by Verstone Construction

MAIN WORKSHOP MOUNTDILLON

Complete new bunding for all Diesel, Oil, and Derv, Tanks at main workshop work carried out to required specifications by Verstone Construction LTD. Pipework has been completed.

New Derv Oil Tank fitted inside Bunding, all connecting Pipework is complete

Underground Petrol Tank Tested to required specifications by Irish Truck and Tank precision

Testing

4.3 Boiler Combustion Efficiency

Boiler has been tested by Boiler Services Allenstown Broadway Co Wexford on 25/09/02 with efficiency levels of 87.3% to 88.4%

4.4 Resource Consumption Summary

There was a total of 596, 942 tonnes of peat sold to Lanesboro Power station during the reporting period

4.5 Report on de – silting Programme

De-silting Report JAN – Dec 2002

Area Cleaned	No of Cleanings			
	0	1	2	3
1				100%
2			100%	
3			100%	
4			100%	
5			100%	
6			100%	
7			100%	
8			100%	
9			100%	
10		100%		

1 = Lough Bannow 2 = Derryadd 3 = D/aroge Cloonbony 4 = Knappoge 5 = Begnagh Clooneeny 6 = D/colum 7 = D/shannoge 8 = Cloontuskert Cloonadra 9 = Cloonshannagh D/moylin 10 = Mt/dillon D/cashel

4.6 Bog Development and Operational Programme

Edera Bog is the only bog under development in the Mountdillon Group. Peat production took place on approx. 50% of Edera bog in 2002

4.7 Bog rehabilitation progress report

Bog rehabilitation plan has been submitted in January 2002 and a copy is currently available on file at Mountdillon office

5.0 Summary

Summary

With regard to environmental compliance at the Mountdillon Group of Bogs, there were no exceedences in the quarterly grab sampling of the ponds in the Surface Water Discharge Monitoring Location Programme. There were no non-compliances in relation to the Composite Sampler during the operation period of mid June to the end of December. Dust monitoring results at the dust sensitive locations were also below the Emission Limit Value and there were no complaints of an environmental nature received during the reporting period.

The staff awareness through training and involvement in the operation of the licence has also improved immensely. A full programme of training and awareness has been conducted at the works and has targeted all personnel ie. office, workshop, transport and production.

Bord na Mona is also represented on the Operational Management Group of the Lough Ree & Lough Derg Catchment Management System and is working with it on a variety of pilot projects.

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 (i)

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

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
January 2002													
1								68662					
2								1508084					
3								15020180					
4								7250929					
5								12402270					
6								5787292					
7								2478542					
8					5	148		2456957				12.39	366.82
9	7.3	83	0.2	0.08	5	178		2456957				12.28	437.34
10	-	-	-	-	5	162	290	2456957	203.93	0.49	0.20	12.28	398.03
11	-	-	-	-	5	212	-	2456957				12.28	520.87
12	-	-	-	-	IS	218	-	2456957					535.62
13	-	-	-	-	IS	144	-	2456957					353.80
14	-	-	-	-	IS	136	-	2456957					334.15
15	-	-	-	-	5	100	-	2456957				12.28	245.70
16	-	-	-	-	IS	226	-	2456957					555.27
17	7.6	89	1.1	0.05	6	456	300	2182079	194.21	2.40	0.11	13.09	995.03
18	-	-	-	-	5	260	-	6196842					
19	-	-	-	-	5	120	-	7432510				37.16	1932.45
20	-	-	-	-	5	162	-	10353910				51.77	1242.47
21	-	-	-	-	5	162	-	8937262				44.69	1447.84
22	-	-	-	-	5	146	-	7054986				35.27	1142.91
23	-	-	-	-	5	96	-	5526300				27.63	806.84
24	7.1	67	0.5	0.05	8	96	234	22806780	1528.05	11.40	1.14	182.45	2189.45
25								14109800					
26								20401830					
27								17832960					
28								17832960					
29								14131880					
30								6554740					
31	-	-	-	-	5	102	-	6371326				63.00	1285.19
								12599890					

Composite Sampler Results

[illegible]

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

Month	pH	COD mg/l	Ammonia-as N mg/l	Parameters		Total Solids mg/l	Suspended Solids mg/l	Total Solids mg/l	Colour- Pt Co units	Flow Daily Total (litres)	COD Kg/Day	Ammonia-as Kg/Day	Daily Totals		Suspended Solids Kg/Day	Total, Solids Kg/Day	
				Phosphorus mg/l	Phosphorus Kg/Day								Total Phosphorus Kg/Day	Total, Solids Kg/Day			
March 2002																	
1										11421720							
2										5262996							
3										3775323							
4										2137054							
5										611303							
6										4127120							
7										1747284							
8										1695432							
9										17370210							
10										43490870							
11										23245090							
12	-	-	-	-	-	176	17	176	-	12006240					204.11	2113.10	
13	-	-	-	-	-	126	20	126	-	4049906					81.00	510.29	
14	7.7	60	0.2	0.05	136	8	6	136	216	2334148	140.05	0.47	0.12		18.67	317.44	
15										2649341					15.90		
16										4220126					25.32		
17							10			5151588					51.52		
18							6			5355133					32.13		
19							5			5370965					26.85		
20	7.6	69	2	0.12	130	5	5	130	238	4704826	324.63	9.41	0.56		23.52	611.63	
21	-	-	-	-	104	5	5	104	-	3752864					18.76	390.30	
22	-	-	-	-	134	5	5	134	-	2825272					14.13	378.59	
23	-	-	-	-	224	8	8	224	-	1995507					15.96	446.99	
24	-	-	-	-	144	7	7	144	-	1831696					12.82	263.76	
25	-	-	-	-	162	7	7	162	-	1624118					11.37	263.11	
26	-	-	-	-	194	14	14	194	-	1407851					19.71	273.12	
27	7.9	86	0.4	0.06	162	7	7	162	281	1650354	141.93	0.66	0.10		11.55	267.36	
28										1245631							
29										666371							
30										-80553							
31										-31437							

Composite Sampler Results

[illegible]

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

Month	pH		COD		Ammonia as N		Parameters		Suspended		Total		Colour		Flow		COD		Ammonia as N		Daily Totals		Suspended		Total	
May			mg/l		N mg/l	mg/l	mg/l	Solids	mg/l	Solids	mg/l	Solids	Pt Co	units	Total (litres)	Kg/Day	Kg/Day	Kg/Day	Kg/Day	Kg/Day	Phosphorus	Kg/Day	Solids	Kg/Day	Solids	Kg/Day
2002																										
1	7.7	99	0.7	0.08	16	138	255	6656256	658.97	4.66	0.53	106.50	918.56													
2	-	-	-	-	5	176	-	4661008	23.31	820.34	23.31	820.34														
3	-	-	-	-	5	182	-	1706997	8.53	310.67	8.53	310.67														
4	-	-	-	-	5	184	-	697544	3.49	128.35	3.49	128.35														
5	-	-	-	-	5	194	-	237943	1.19	46.16	1.19	46.16														
6	-	-	-	-	IS	186	-	7186	-	-	-	-	-													
7	-	-	-	-	IS	280	-	150440	-0.03	-	-	-	-													
8	7.4	84	0.7	0.07	5	220	310	-41990	-3.53	0.00	-0.21	42.12														
9	-	-	-	-	-	-	-	-37528	-	-	-	-	-													
10	-	-	-	-	-	-	-	-123091	-	-	-	-	-													
11	-	-	-	-	-	-	-	-174741	-	-	-	-	-													
12	-	-	-	-	-	-	-	-147926	-	-	-	-	-													
13	-	-	-	-	-	-	-	4169904	-	-	-	-	-													
14	-	-	-	-	-	-	-	5053371	-	-	-	-	-													
15	-	-	-	-	-	-	-	1126631	-	-	-	-	-													
16	-	-	-	-	-	-	-	132381	-	-	-	-	-													
17	-	-	-	-	-	-	-	15423400	-	-	-	-	-													
18	-	-	-	-	-	-	-	8144364	-	-	-	-	-													
19	-	-	-	-	-	-	-	3305318	-	-	-	-	-													
20	-	-	-	-	-	-	-	3305318	-	-	-	-	-													
21	-	-	-	-	-	-	-	3305318	-	-	-	-	-													
22	7.4	92	0.3	0.07	5	188	331	3226281	296.82	0.97	0.23	16.13	606.54													
23	-	-	-	-	5	150	-	2819789	14.10	422.97	14.10	422.97														
24	-	-	-	-	5	128	-	17222900	86.11	2204.53	86.11	2204.53														
25	-	-	-	-	5	144	-	17461570	87.31	2514.47	87.31	2514.47														
26	-	-	-	-	5	134	-	15556780	77.78	2084.61	77.78	2084.61														
27	-	-	-	-	5	158	-	12944790	64.72	2045.28	64.72	2045.28														
28	-	-	-	-	5	164	-	18730690	93.65	3071.83	93.65	3071.83														
29	7.8	91	0.3	0.05	5	148	371	20084620	1827.70	6.03	1.00	100.42	2972.52													
30	-	-	-	-	5	158	-	7518755	37.59	1187.96	37.59	1187.96														
31	-	-	-	-	5	170	-	2104113	10.52	357.70	10.52	357.70														

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

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
June 2002													
1	-	-	-	-	18	214	-	1468525				26.43	314.26
2	-	-	-	-	5	202	-	1214228				6.07	245.27
3	-	-	-	-	5	160	-	1158884				5.79	185.42
4	-	-	-	-	5	208	-	1657143				8.29	344.69
5	7.5	89	0.4	0.05	5	178	403	1339198	119.19	0.54	0.07	6.70	238.38
6	-	-	-	-	5	154	-	940617				4.70	144.86
7	-	-	-	-	5	154	-	687865				3.44	105.93
8	-	-	-	#VALUE!	5	170	-	1264130				6.32	214.90
9	-	-	-	-	6	132	-	2656670				15.94	350.68
10	-	-	-	-	5	148	-	2027176				10.14	300.02
11	-	-	-	-	5	62	-	1797588				8.99	111.45
12	7.8	88	0.4	0.11	8	166	330	1376261	121.11	0.55	0.15	11.01	228.46
13	-	-	-	-	5	130	-	1531346				7.66	199.07
14	-	-	-	-	5	148	-	2924106				14.62	432.77
15	-	-	-	-	5	104	-	2248394				11.24	233.83
16	-	-	-	-	6	126	-	5514692				33.09	694.85
17	-	-	-	-	5	168	-	7217922				36.09	1212.61
18	-	-	-	-	11	166	-	2442405				26.87	405.44
19	7.6	100	0.6	0.08	17	168	387	1832164	183.22	1.10	0.15	31.15	307.80
20	-	-	-	-	10	196	-	1470545				14.71	288.23
21	-	-	-	-	6	180	-	1413299				8.48	254.39
22	-	-	-	-	6	198	-	1543802				9.26	305.67
23	-	-	-	-	5	182	-	1758423				8.79	320.03
24	-	-	-	-	-	-	-	1473840				-	-
25	-	-	-	-	-	-	-	1061840				-	-
26	7.6	93	0.4	0.07	5	186	353	856731	79.68	0.34	0.06	4.28	159.35
27	-	-	-	-	5	IS	-	764508				3.82	-
28	-	-	-	-	7	IS	-	108574				0.76	-
29	-	-	-	-	6	100	-	412371				2.47	41.24
30	-	-	-	-	5	172	-	968124				4.84	166.52
31	-	-	-	-	-	-	-	-				-	-

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

Month	pH	COD mg/l	mmonia a N mg/l	Parameters			Colour Pt Co	Flow Daily total (litres)	COD Kg/Day	mmonia a Kg/Day		Daily Totals		Total Solids Kg/Day
				Total mg/l	Suspended Solids mg/l	Total Solids mg/l						Total Phosphoru Kg/Day	Suspended Solids Kg/Day	
July 2002														
1	-	-	-	-	5	176	-	1416494					7.08	249.30
2	-	-	-	-	5	162	-	1466667					7.33	237.60
3	7.8	90	0.2	0.06	5	160	346	645779	58.12	0.13	0.04		3.23	103.32
4	-	-	-	-	5	178	-	1060726					5.30	188.81
5	-	-	-	0	5	160	-	3307570					16.54	529.21
6	-	-	-	-	5	194	-	1143088					5.72	221.76
7	-	-	-	-	5	164	-	1350654					6.75	221.51
8	-	-	-	-	5	176	-	3979113					19.90	700.32
9	-	-	-	-	10	176	-	2605937					26.06	458.64
10	7.6	95	0.5	0.05	7	152	304	2110656	200.51	1.06	0.11		14.77	320.82
11	-	-	-	-	5	146	-	2317089					11.59	338.29
12	-	-	-	-	5	186	-	2589283					12.95	481.61
13	-	-	-	-	9	202	-	1363383					12.27	275.40
14	-	-	-	-	5	206	-	1114375					5.57	229.56
15	-	-	-	-	5	218	-	1038657					5.19	226.43
16	-	-	-	-	8	108	-	914982					7.32	98.82
17	8.1	105	0.2	0.05	12	270	339	677724	71.16	0.14	0.03		8.13	182.99
18	-	-	-	-	16	196	-	505970					8.10	99.17
19	-	-	-	-	6	172	-	916262					5.50	157.60
20	-	-	-	-	26	230	-	894586					23.26	205.75
21	-	-	-	-	24	210	-	894586					21.47	187.86
22	-	-	-	-	16	296	-	894586					14.31	264.80
23	-	-	-	-	23	212	-	894586					20.58	189.65
24	8.1	94	0.2	0.08	15	178	337	894586	84.09	0.18	0.07			159.24
25	-	-	-	-	7	206	-	894586					6.26	184.28
26	-	-	-	-	5	232	-	894586					4.47	207.54
27	-	-	-	-	20	146	-	894586					17.89	130.61
28	-	-	-	-	14	90	-	894586					12.52	80.51
29	-	-	-	-	8	224	-	894586					7.16	200.39
30	7.6	97	0.5	0.05	9	132	339	894586	86.77	0.45	0.04		8.05	118.09
31								441754						

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

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 2002													
1	-	-	-	-	17	164	-	410022				6.97	67.24
2	-	-	-	-	9	202	-	492823				4.44	99.55
3	-	-	-	-	19	216	-	562200				10.68	121.44
4	-	-	-	0	12	206	-	561593				6.74	115.69
5	-	-	-	-	7	220	-	304842				2.13	67.07
6	-	-	-	-	14	189	-	1078177				15.09	203.78
7	7.8	100	0.4	0.09	9	188	354	1754501	175.45	0.70	0.16	15.79	329.85
8	-	-	-	-	5	160	-	1300642				6.50	208.10
9	-	-	-	-	26	230	-	807531				21.00	185.73
10	-	-	-	-	20	187	-	668319				13.37	124.98
11	-	-	-	-	7	218	-	565685				3.96	123.32
12	-	-	-	-	5	214	-	150642				0.75	32.24
13	-	-	-	-	14	IS	-	302780				4.24	
14	7.3	106	0.4	0.05	5	207	356	175833	18.64	0.07	0.01	0.88	36.40
15	-	-	-	-	IS	240	-	247047					59.29
16	-	-	-	-	IS	220	-	93839					20.64
17	-	-	-	-	IS	216	-	121456					26.23
18	-	-	-	-	IS	222	-	103520					22.98
19	-	-	-	-	IS	242	-	126887					30.71
20	-	-	-	-	IS	244	-	181983					44.40
21	7.4	84	0.2	0.05	5	192	301	135445	11.38	0.03	0.01	0.68	26.01
22								63987					
23								30050					
24								40168					
25								37376					
26								38887					
27								50859					
28	7.3	97	0.6	0.05	7	222	322	66275	6.43	0.04	0.00	0.46	14.71
29					IS	124		56422					7.00
30					5	164		764380				3.82	125.36
31								79595					

Composite Sampler Results

Month	Parameters					
	pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus mg/l	Suspended Solids mg/L	Total Solids mg/l
September 2002						
1					13	148
2					IS	
3					IS	
4	7.3	98	0.2	0.12	6	164
5						
6						
7						
8						
9						
10						
11	7.1	104	1.3	0.06	5	156
12						
13						
14						
15						
16						
17						
18						
19	7.2	94	0.4	0.05	5	158
20					IS	
21					IS	
22					IS	
23					IS	
24	7.4	92	0.5	0.06	5	182
25						
26						
27						
28						
29						
30						
31						

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

Month	pH	COD mg/l	Ammonia as N mg/l	Parameters Total Phosphorus 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
October 2002												
1							968109					
2							353373					
3	-	-	-	-	IS	-	125607					
4	-	-	-	14	212	-	445575					
5	-	-	-	5	202	-	450471				6.24	94.46
6	-	-	-	20	178	-	351938				2.25	91.00
7	-	-	-	5	230	-	335831				7.04	62.64
8	-	-	-	5	240	-	-253011				1.68	77.24
9	7.2	89	0.9	0.1	224	253	-4140196	-368.48	-3.73	-0.41	-1.27	-60.72
10	-	-	-	9	148	-	-2462118				-20.70	-927.40
11	-	-	-	5	146	-	-436209				-22.16	-364.39
12	-	-	-	IS	IS	-	-3383385				-2.18	-63.69
13	-	-	-	8	140	-	-1170520					
14	-	-	-	7	156	-	525371					
15	-	-	-	5	160	-	323785					
16	7.2	102	0.6	0.06	172	136	237019	24.18	0.14	0.01	1.62	51.81
17	-	-	-	7	156	-	330375					40.77
18	-	-	-	10	122	-	487679				2.31	51.54
19	-	-	-	6	172	-	463096				4.88	59.50
20	-	-	-	24	140	-	8527813				2.78	79.65
21	-	-	-	12	96	-	35245430				204.67	1193.89
22	-	-	-	20	110	-	29772790				422.95	3383.56
23	8.4	93	0.2	0.05	72	266	5931159	551.60	1.19	0.30	595.46	3275.01
24				13			3815287				77.11	427.04
25				16			9911742				61.04	0.00
26				19			3183401				188.32	0.00
27				14			12540590				44.57	0.00
28				21			1660820				263.35	0.00
29				8			14137160				13.29	0.00
30	6.7	85	0.6	0.05	138	234	8330100	708.06	5.00	0.42	183.78	1149.55
31	-	-	-	13	50	-	4406964				108.29	220.35

Composite Sampler Results

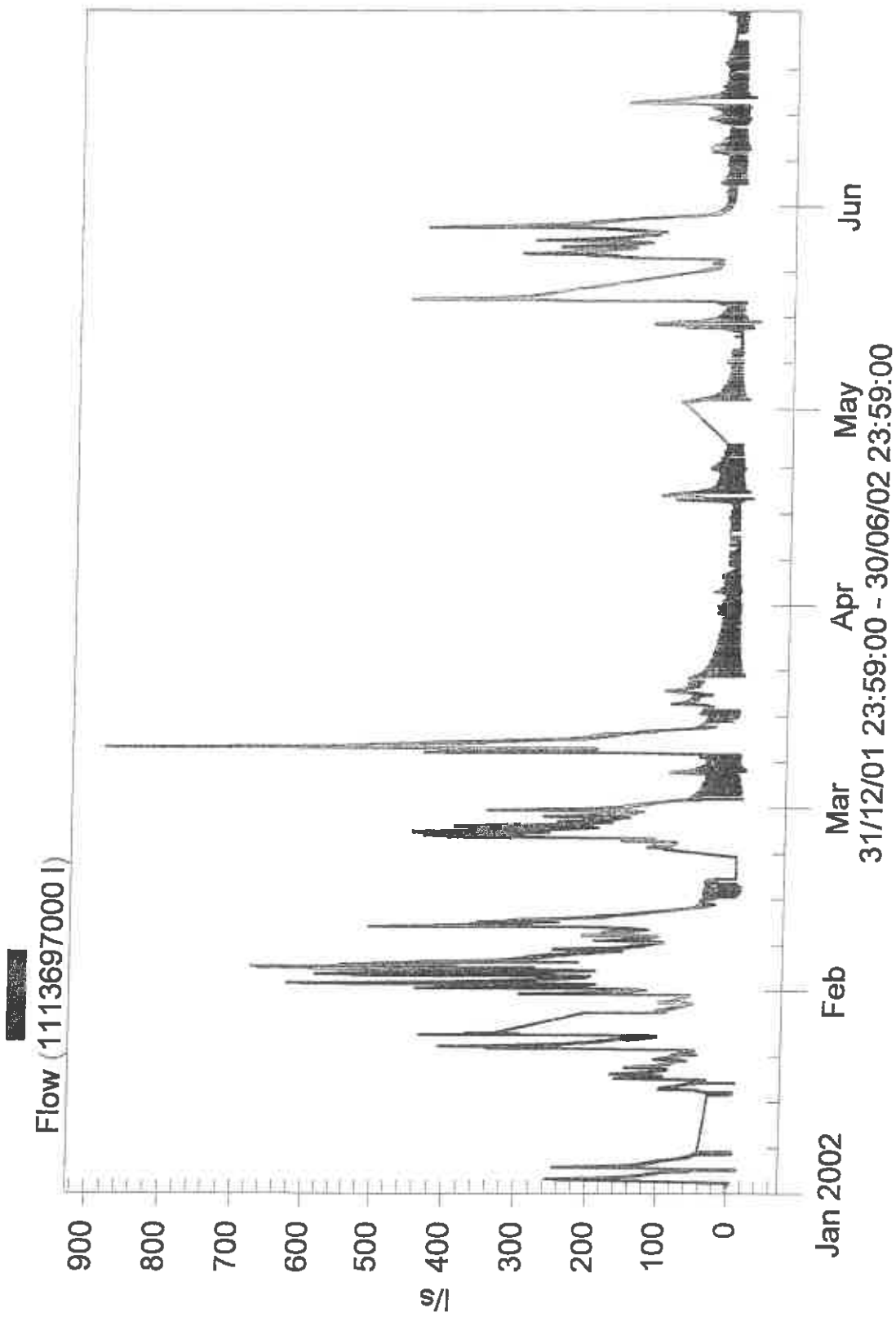
Month	November 2002	Parameters					
		pH	COD mg/l	Ammonia as N mg/l	Total Phosphorus mg/l	Suspended Solids mg/l	Total Solids mg/l
1	-	-	-	-	-	50	555083
2	-	-	-	-	20	122	9624127
3	-	-	-	-	5	158	6859862
4	-	-	-	-	5	110	5598106
5	-	-	-	-	5	126	2347923
6	7.3	85	0.3	0.06	5	172	3264994
7	-	-	-	-	5	132	922477
8	-	-	-	-	5	103	7195047
9	-	-	-	-	5	82	11351540
10	-	-	-	-	5	100	10892940
11	-	-	-	-	65	70	6681031
12	-	-	-	-	5	108	9007828
13	7.2	77	0.6	0.12	5	112	4525730
14							7540810
15							6138408
16							1702370
17							1311379
18							1311379
19							1311379
20							1599229
21							3860297
22							3226520
23							780719
24							311595
25							833703
26							1366502
27							1366502
28							1292158
29	-	-	-	-	15	80	620064
30	-	-	-	-	18	124	4047897
31							

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

Month	Parameters		Parameters		Parameters		Parameters		Parameters		Parameters		Parameters		Parameters		Parameters	
	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 a Kg/Day	Total Phosphorus Kg/Day	Suspended Solids Kg/Day	Total Solids Kg/Day					
December 2002																		
1	-	-	-	-	8	112	-	3695384				29.56	413.88					
2	-	-	-	-	13	154	-	10333730				134.34	1591.39					
3	-	-	-	-	9	116	-	7323486				65.91	849.52					
4	7.1	81	0.5	0.05	14	104	268	1677764	135.90	0.84	0.08	23.49	174.49					
5								976428										
6								776648										
7								188474										
8								88960										
9								39006										
10								5435										
11								130										
12								322										
13								7										
14								0										
15								273										
16								956										
17								1132										
18								2587										
19								4319										
20								7011										
21								2229917										
22								428693										
23								5268372										
24								2898345										
25								653467										
26					11	136		612258				6.73	83.27					
27					10	118		1724516				17.25	203.49					
28					6	120		202913				1.22	24.35					
29	6.9	78	0.2	0.07	6	124	270	11739400	915.67	2.35	0.82	70.44	1455.69					
30					8	96		5373269				42.99	515.83					
31					39	102												

Mountdillon Composite Sampler

Jan - June 02



Mountdillon Composite Sampler

July - Dec 02

