

ANNUAL ENVIRONMENTAL REPORT – 2009
CAPPINCUR WASTE TRANSFER STATION
TULLAMORE, COUNTY OFFALY
WASTE LICENCE REG. NO. W0104-02
ORIGINAL
MARCH 2010

ANNUAL ENVIRONMENTAL REPORT – 2009
CAPPINCUR WASTE TRANSFER STATION
TULLAMORE, COUNTY OFFALY
WASTE LICENCE REG. NO. W0104-02
COPY
MARCH 2010

ANNUAL ENVIRONMENTAL REPORT – 2009
CAPPINCUR WASTE TRANSFER STATION
TULLAMORE, COUNTY OFFALY
WASTE LICENCE REG. NO. W0104-02
MARCH 2010

User is Responsible for Checking the Revision Status of This Document

| Rev. Nr. | Description of Changes | Prepared by: | Checked by: | Approved by: | Date: |
|-----------------|-------------------------------|---------------------|--------------------|---------------------|--------------|
| 0 | Issue to Client | DB/DD/MT | DM/ Elaine Murray | BG | 30.10.10 |

Client: Bord na Móna

Keywords: Cappincur Waste Transfer Station, Annual Environmental Report (AER), waste recovery & disposal, environmental monitoring

Abstract: This report presents the Annual Environmental Report for Cappincur Waste Transfer Station, Tullamore, Co. Offaly to the Environmental Protection Agency. The report covers the annual reporting period of 2009.

TABLE OF CONTENTS

PAGE

| | |
|--|-----------|
| 1. INTRODUCTION | 1 |
| 1.1. SITE DESCRIPTION AND ACTIVITIES..... | 1 |
| 1.1.1. Waste Handling Procedure..... | 1 |
| 2. EMISSIONS FROM THE FACILITY | 3 |
| 3. WASTE MANAGEMENT RECORD | 4 |
| 3.1. WASTE ACTIVITIES CARRIED OUT AT THE FACILITY..... | 4 |
| 3.2. WASTE QUANTITIES AND COMPOSITION..... | 5 |
| 3.2.1. Waste Recovery Report..... | 5 |
| 4. RESOURCE AND ENERGY CONSUMPTION | 8 |
| 4.1. RESOURCE CONSUMPTION SUMMARY..... | 8 |
| 4.2. ENERGY EFFICIENCY AUDIT REPORT SUMMARY..... | 8 |
| 4.3. RAW MATERIALS CONSUMPTION & WASTE GENERATION..... | 8 |
| 5. ENVIRONMENTAL OBJECTIVES & TARGETS | 9 |
| 5.1. PROGRESS AGAINST TARGETS FOR 2009..... | 9 |
| 5.2. SCHEDULE OF OBJECTIVES AND TARGETS FOR 2010..... | 9 |
| 6. SUMMARY OF ENVIRONMENTAL MONITORING | 10 |
| 6.1. NOISE MONITORING REPORT SUMMARY..... | 10 |
| 6.2. AMBIENT MONITORING..... | 11 |
| 6.3. GROUNDWATER MONITORING..... | 11 |
| 6.4. SURFACE WATER MONITORING..... | 12 |
| 6.5. BUND INTEGRITY TESTING & INSPECTION REPORTS..... | 12 |
| 6.6. ENVIRONMENTAL MANAGEMENT PROGRAMME..... | 13 |
| 7. SITE DEVELOPMENT/INFRASTRUCTURAL WORKS | 14 |
| 7.1. CURRENT INFRASTRUCTURE IN PLACE..... | 14 |
| 7.2. SITE DEVELOPMENT WORKS DURING 2009 / PROPOSED FOR 2010..... | 14 |
| 7.3. REVIEW OF DECOMMISSIONING MANAGEMENT PLAN..... | 14 |
| 8. ENVIRONMENTAL LIABILITIES | 15 |
| 9. FACILITY MANAGEMENT | 16 |
| 9.1. NEW PROCEDURES DEVELOPED DURING 2009..... | 16 |
| 9.2. REVIEW OF NUISANCE CONTROLS..... | 16 |
| 9.3. INCIDENTS & COMPLAINTS SUMMARY..... | 16 |
| 9.4. MANAGEMENT & STAFFING STRUCTURE..... | 17 |

APPENDICES

- Appendix I Drawings
- Appendix II Monitoring Results
- Appendix III Energy Efficiency Report
- Appendix IV Bund Integrity Assessment Report
- Appendix V New Procedures Developed During 2009

LIST OF TABLES

| | <u>PAGE</u> |
|--|-------------|
| TABLE 3.1: OUTGOING WASTE RECOVERED / DISPOSED FROM CAPPINCURE WASTE TRANSFER STATION..... | 6 |
| TABLE 5.1: INITIAL OBJECTIVES & TARGETS FOR 2009 | 9 |
| TABLE 5.2: PROPOSED OBJECTIVES & TARGETS FOR 2010 | 9 |
| TABLE 6.1: NOISE MONITORING LOCATIONS..... | 10 |
| TABLE 6.2: NOISE MONITORING RESULTS..... | 10 |
| TABLE 6.3: DUST MONITORING LOCATIONS | 11 |
| TABLE 6.4: DUST MONITORING RESULTS | 11 |
| TABLE 6.5: GROUNDWATER MONITORING LOCATIONS | 11 |
| TABLE 6.6: SURFACE WATER MONITORING LOCATIONS | 12 |
| TABLE 7.1: MACHINERY AND EQUIPMENT CURRENTLY ON-SITE..... | 14 |
| TABLE 9.1: INCIDENTS & COMPLAINTS SUMMARY | 16 |

LIST OF FIGURES

| | <u>Page</u> |
|--|-------------|
| FIGURE 9.1 MANAGEMENT AND STAFFING STRUCTURE | 17 |

1. INTRODUCTION

The Environmental Protection Agency (EPA) issued Advanced Environmental Solutions (Ireland) Ltd. with a waste licence for its Waste Transfer Station at Cappincur Industrial Estate, Tullamore, Co. Offaly (E5770 N4520), on 5th October 2009. The waste licence reference number is W0104-02.

The facility is currently licensed to accept a maximum of 50,000 tonnes of waste per annum. The site is located in Cappincur, east of Tullamore town. Fehily Timoney & Company (FTC) was retained to prepare and submit the Annual Environmental Report (AER) for the facility in compliance with Condition 11.7 and Schedule E of the waste licence.

This report addresses Condition 11.7 of the waste licence for the facility.

Condition 11.7 states that:

The licensee shall submit to the Agency, by the 31st March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in Schedule E: Annual Environmental Report of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.

This report addresses the items listed in *Schedule E: Annual Environmental Report* of the waste licence for the facility. This AER covers the reporting period from 1st January 2009 up to 31st December 2009.

1.1. Site Description and Activities

As previously referred to, AES operates a waste licence (W0104-01) for its Waste Transfer Station at Cappincur Industrial Estate, Tullamore, Co. Offaly. Operations at the facility include the receipt of domestic, commercial, industrial and construction and demolition waste, which is sorted and segregated for onward recycling/recovery in accordance with the recycling potential. Waste deemed unsuitable for recycling/recovery is segregated and compacted for disposal off-site.

This report addresses the items listed in Schedule E (Content of the Annual Environmental Report) of the waste licence for the facility. This AER covers the reporting period from 1st January 2009 up to 31st December 2009.

1.1.1. Waste Handling Procedure

Normal operational hours at the site are between the hours of 08.00 to 19.00 Monday to Saturday inclusive. Waste is not accepted at the facility on Sundays or Bank Holidays.

Current waste acceptance procedures involve the use of a computer based programme called Integrated Waste System (IWS). The software is linked to the on-site weighbridge and is used for recording of waste quantities accepted on-site. The vehicle registration number, customer and product is inputted into the system and from this detail, the source of the waste can be obtained.

After weighing, each waste load is brought to the enclosed Recycling Plant Building where it is deposited on the floor for visual inspection to ensure that all wastes comply with the requirements of the Waste licence, W0229-01. Written records of each inspection are recorded on the incoming waste inspection sheet at the end of each working day. Only after visual inspection can the waste be identified for recovery or disposal.

Within the Recycling Plant Building the waste is sorted according to its recycling potential and is either deemed suitable for further onward recycling/recovery or transported off-site for final disposal (non-recoverable waste) to an authorised landfill. The categories of waste deemed suitable for segregation and recycling is dependent on available markets for such materials. Materials commonly accepted for recycling Steel/Iron, Cardboard/ Newsprint, Timber, Construction & Demolition (suitable for backfill material), Green Waste, Plastic, Glass and on-occasion empty gas cylinders. Household mixed recyclables are collected and accepted at the facility, waste is sorted and segregated and bailed for further recycling off-site. All waste deemed unsuitable for recycling/ recovery is loaded into designated compactor bins, which are sealed and then transported to authorised facilities.

Section 1

All loads transported from the facility are weighed on the weighbridge. An individual weigh docket is printed for each waste load.

The site location map and monitoring location maps are included in Appendix I.

2. EMISSIONS FROM THE FACILITY

Summary of emissions to water from storm water runoff is the only environmental media to which discharges were made from the site during the 2009 reporting period. 144.5 t of storm water / effluent was tankered off site during the reporting period.

Please note that the calculation of the total emissions is based on the product of concentrations from the chemical analysis of grab samples and the area of the hard-standing yard and the annual rainfall data.

Environmental monitoring results and reports are included in Appendix II.

3. WASTE MANAGEMENT RECORD

The waste that arrives at the site may be characterised as follows:

- Household Waste
- Commercial Waste
- Industrial-Non hazardous Waste
- Construction and Demolition
- Household Hazardous Waste

These waste classifications, subsequent to inspection, can be further categorised as been either suitable for recycling/recovery offsite or disposed to off-site authorised disposal facilities. Household hazardous waste in the form of batteries and fluorescent tubing that are accepted to the site are segregated into individual storage skips/ areas within the plant and subsequently by authorised contractors for further treatment/disposal. Any materials that are suspect in nature (i.e. hazardous or not acceptable at the facility) are routed to the Waste Quarantine Area within the Recycling Plant for further examination and processing prior to removal off-site for appropriate treatment/disposal by an appropriate hazardous waste contractor.

3.1. Waste Activities carried out at the Facility

Waste activities at the facility are restricted to those outlined in *Part 1 - Activities Licensed* of the Waste Licence.

Licensed waste disposal activities, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2008

- Class 11.** Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 12.** Repacking prior to submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 13.** Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned was produced.

Licensed waste recovery activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2008

- Class 2.** Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes). (P)
- Class 3.** Recycling or reclamation of metals and metal compounds:
- Class 4.** Recycling or reclamation of other inorganic materials:
- Class 12.** Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.
- Class 13.** Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced:

3.2. Waste Quantities and Composition

In accordance with the conditions of the Waste Licence, W0104-01, details of all waste arriving at and departing from the facility are recorded.

3.2.1. Waste Recovery Report

In compliance with Condition 11.10 a report on the contribution of the facility to the achievement of waste recovery objectives requires records to be maintained on:

- (i) the recovery of metals
- (ii) the recovery of C&D derived waste materials
- (iii) the recovery/treatment of biowaste (including contribution of facility to the pre-treatment targets in the EU Landfill Directive)
- (iv) the separation and recovery of other recyclable materials

The waste summary recorded for this reporting is presented in 3.1.

Table 3.1: Outgoing Waste Recovered / Disposed from Cappincur Waste Transfer Station

| EWC Code | Outgoing Waste Volume (tonne) | Waste Recovery / Disposal Destination Name | Waste Recovery / Disposal Destination Address | Licence/ Permit No. |
|----------------------------|----------------------------------|--|---|------------------------|
| 15 01 01 BC – Cardboard | 247.22 | Failand Paper Services Ltd., | 11 Triangle South, Clifton, Bristol UK BS8 1EY | |
| 15 01 01 BC – Cardboard | 698.04 | Fibre Brokers International Ltd., | PO Box 8, Troon, Ayrshire, Scotland | |
| 15 01 01 BC – Cardboard | 315.91 | International Recycling Ltd., | Heath House, 5 Woolgate Court, St. Benedicts St., Norwich NR2 2AP, England | |
| 15 01 01 BC – Cardboard | 70.44 | Irish Packaging Recycling, | Ballymount Road, Walkinstown, Dublin 12 | WPR 021/02 |
| 15 01 01 BC – Cardboard | 6059.32 | (MLM) ACN Europe (UK), | Adamson House, Towers Business Park, Wilmslow Road, Didsbury, Manchester M20 2YY | |
| 15 01 01 BC – Cardboard | 55.36 | Irish Packaging Recycling, | Ballymount Road, Walkinstown, Dublin 12 | WPR 021/02 |
| 15 01 01 C – Cardboard | 29.78 | Irish Packaging Recycling, | Ballymount Road, Walkinstown, Dublin 12 | WPR 021/02 |
| 15 01 01 MX – Cardboard | 170.08 | Cellmark Recycling | Benelux BV, Heuel 7, NL 5664, Geldrop Netherlands | |
| 15 01 01 MX – Cardboard | 23.4 | Fibre Brokers International Ltd., | PO Box 8, Troon, Ayrshire, Scotland | |
| 15 01 01 MX - Cardboard | 15.84 | Irish Packaging Recycling, | Ballymount Road, Walkinstown, Dublin 12 | WPR 021/02 |
| 15 01 02 PL – Plastic | 257.34 | AGT | Suite 5, 30 Lancaster Gate, London, W2 3LP. | |
| 15 01 02 PL – Plastic | 902.78 | AWS Eco PlasticsLtd., | Unit 2 Britannia Business Park, Point Pleasant Industrial Estate, Wallsend, Tyne & Wear NE28 6HA, EA | WML/73274 |
| 15 01 02 PL – Plastic | 241.46 | Cherry Polymers | Unit 5, Nutts Corner Business Park, Dundrod Road, Crumlin, Co. Anrrim BT29 4SR | WMEX 01/31 |
| 15 01 02 PL – Plastic | 15.02 | (Colmmac) Colm MacDowell & Associates | 96 Patrick St., Dun Laoighaire, Co. Dublin. | |
| 15 01 02 PL – Plastic | 25.68 | Danelle Recycling LTD., | Tinypark, Quinagh, Co. Carlow | WP01/08 |
| 15 01 02 PL – Plastic | 1076.88 | Greenway Ireland Ltd | 11 Porthill Road, Mountmorris, BT60 2TY | WML 03/02 |
| 15 01 02 PL – Plastic | 4.86 | Irish Packaging Recycling, | Ballymount Road, Walkinstown, Dublin 12 | WPR 021/02 |
| 15 01 02 PL – Plastic | 115.12 | Leinster Environmental | Clermont Business Park, Haggardstown, Dundalk, Co. Louth | WP 2008/06 |
| 15 01 04 – Metal Packaging | 65.86 | (Colmmac) Colm MacDowell & Associates | 96 Patrick St., Dun Laoighaire, Co. Dublin. | |
| 15 01 04 – Metal Packaging | 432.92 | Hammond Lane Metal Co., Ltd. | Garrycastle, Athlone, Co. Westmeath | WP-173-2008 |
| 15 01 04 – Metal Packaging | 42.56 | Monoworld Ltd., | Monoworld Business Park., Rushden Road, Berkshire, MK44 1NB, UK | |
| 15 01 06 – Metal Packaging | 814.26 | AGT | Suite 5, 30 Lancaster Gate, London, W2 3LP | |
| 15 01 06 – Metal Packaging | 271.67 | AVT, International Ltd., | 12 Finnsview, Finnstown Cloisters, Lucan, Co. Dublin | |
| 15 01 06 – Metal Packaging | 3378.4 | Cellmark Recycling | Benelux BV, Heuel 7, NL 5664, Geldrop Netherlands | |
| 15 01 06 – Metal Packaging | 4780.746 | Fibre Brokers International Ltd., | PO Box 8, Troon, Ayrshire, Scotland | |
| 15 01 06 – Metal Packaging | 2207.78 | International Recycling Ltd., | Heath House, 5 Woolgate Court, St. Benedicts St., | |

| EW C Code | Outgoing Waste Volume (tonne) | Waste Recovery / Disposal Destination Name | Waste Recovery / Disposal Destination Address | Licence/ Permit No. |
|-------------------------------------|----------------------------------|--|--|------------------------|
| | | | Norwich NR2 2AP, England | |
| 15 01 06 – Metal Packaging | 1872.68 | Peute Paper Recycling | Baanhoekweg 4, 3313 LA Dordrecht, Holland | |
| 15 01 06 – Metal Packaging | 4.14 | Irish Packaging Recycling, | Ballymount Road, Walkinstown, Dublin 12 | WPR 021/02 |
| 15 01 07 - Glass Packaging | 497.28 | Glassco Recycling Ltd. | Site 4, Osberstown Business Park, Naas, Co. Kildare | WP160/2004 |
| 15 01 07 - Glass Packaging | 658.38 | Glassdon Ltd., | 52 Creagh Rd., Toomebridge, Co. Antrim | LN/08/103 |
| 17 01 02 –C&D | 14.92 | Derryclure Landfill | Offaly CoCo, Derryclure, Portlaoise Rd., Tullamore, Co. Offaly | W0029-02 |
| 17 02 01 – Wood | 33.04 | Conroys Recycling Ltd., | Killdallen, Mulligar, Co. Westmeath | WP-152-206 |
| 17 02 01 – Wood | 692.24 | AES Portlaoise | Kyletalesha, Portlaoise, Co. Laois | W0194-02 |
| 17 04 07 – Mixed metals | 594.08 | Hammond Lane Metal Co., Ltd. | Garrycastle, Athlone, Co. Westmeath | WP-173-2008 |
| 17 04 07 – Mixed metals | 12.34 | Hegarty Metals | Ballysimon Road, Limerick | WP05/04 |
| 17 09 04 – C&D | 995.43 | Derryclure Landfill | Offaly CoCo, Derryclure, Portlaoise Rd., Tullamore, Co. Offaly | W0029-02 |
| 20 03 01 C – Municipal Waste | 235.04 | Derryclure Landfill | Offaly CoCo, Derryclure, Portlaoise Rd., Tullamore, Co. Offaly | W0029-02 |
| 20 03 01 C – Municipal Waste | 21057.86 | Drehid WMF | Killinagh Upper, Carbury, Co. Kildare | W0201-03 |
| 20 03 01 C – Municipal Waste | 2215.46 | AES Portlaoise | Kyletalesha, Portlaoise, Co. Laois | W0194-02 |
| Grand Total | 51201.612 | | | |

4. RESOURCE AND ENERGY CONSUMPTION

4.1. Resource Consumption Summary

Resources consumed at the Cappincur Waste Transfer Station are recorded. During the reporting period water usage on-site has been recorded at 137,540 Gallons, Road Diesel Consumption was 515,748 Litres, Green Diesel Consumption was 50,784 Litres and finally Oil consumption (oil, Grease, Coolant) was 7,660 Litres.

The total electrical consumption at the site was 403,380 kWh during the reporting period. During the same period waste water emissions septic tank waste was 144.5 Tonnes.

4.2. Energy Efficiency Audit Report Summary

As part of the implementation of the Waste Licence W0104-01 (required by Condition 7.1 & 7.2) at the Advanced Environmental Solutions facility, at Cappincur an Energy Audit was carried out on the 26th June 2009.

The scope of the audit involved an assessment of the site with respect to energy consumption and subsequently identifying opportunities for energy use reduction and efficiency. Following this audit, it was considered that given the processes undertaken at the site and the energy performance at the facility, an energy management plan would facilitate the company with assessing ongoing energy consumption. Ongoing attention to non-production items for example lighting, will identify areas where improvements can be continuously made.

An energy matrix demonstrates that some improvements in the practice of the Energy Policy are required to ensure that best practice is delivered across all areas of energy management. This is particularly important in the area of accountability and Monitoring and Targeting. The recommendations from the energy efficiency audit will be rolled out during 2010.

The complete report is included in Appendix III.

4.3. Raw Materials Consumption & Waste Generation

Report on the assessment of the efficiency of the use of raw materials in processes and the reduction in waste generated: to comply with Condition 7.4 of the waste licence

The facility has initiated an internal waste awareness campaign. AES have proactively installed recycling bins at every site and dedicated desk trays to collect office paper for recycling. Details are presented in Table 5.1.

5. ENVIRONMENTAL OBJECTIVES & TARGETS

5.1. Progress against Targets for 2009

Progress against 2009 Targets are presented in Table 5.1.

Table 5.1: Initial Objectives & Targets for 2009

| Objective | Details |
|---|---|
| Internal waste awareness campaign | AES have proactively installed recycling bins at every site and dedicated desk trays to collect office paper for recycling. |
| Installation of dust suppression system | This was not completed during 2009 |
| Obtain review of licence and planning for new site layout | A review of the licence was obtained in October 2009. |

5.2. Schedule of Objectives and Targets for 2010

Table 5.2: Proposed Objectives & Targets for 2010

| Objective and Targets - Details |
|--|
| To obtain ISO 14001 certification for the facility. |
| To obtain OHSAS 18001 certification for the facility. |
| The upgrade of infrastructure at the AES Tullamore facility (as specified in the SEW submitted to the Agency on 15 th December 2009) |
| Implement the findings from the energy efficiency audit as carried out in 2009. |
| Installation of dust suppression system. |
| Reduction in the amount of BMW being sent to landfill by July 1 st 2010 in accordance with conditions stated in the EU Landfill Directive. |
| Raise awareness with contractors/visitors of the Environmental Policy on site |
| Continue internal training programme and assessment of training needs for all staff during 2010. |
| Raising awareness to domestic customers on what can correctly go into the blue bin, by implementing a new label to demonstrate the appropriate material which may be put into this bin type. |
| Installation of surface water monitoring equipment. |

A report on the progress against the proposed Objectives and Targets for 2010 will be presented in the AER in 2011.

6. SUMMARY OF ENVIRONMENTAL MONITORING

Environmental monitoring at the facility is carried out in accordance with Condition 6 and Schedule C of the waste licence for the facility. The following sections 6.1 to 6.3 present the results of monitoring for the year 2009.

The environmental media monitored and the frequencies of monitoring at the facility are as follows:

- | | | |
|----|-------------------------|-----------------------|
| 1. | Noise | Quarterly |
| 2. | Dust Deposition | Three times per annum |
| 3. | Emissions to Air | Biannually |
| 6. | Groundwater | Quarterly |
| 4. | Surface Water Emissions | Quarterly |

6.1. Noise Monitoring Report Summary

In compliance with the requirements of the waste licence, W0104-01, noise monitoring at the Cappincur Waste Transfer Station was undertaken. Monitoring was carried out on the 20 May 2009.

Noise levels were monitored at five monitoring locations, four boundary locations and one noise sensitive location (NSL). The noise monitoring locations are presented in Table. 5.1.

Table 6.1: Noise monitoring Locations

| Map reference No. | Location Type | Location Description |
|-------------------|--------------------------|--|
| N1 | Boundary | North Western corner of the site beside the main entrance |
| N2 | Boundary | North Eastern corner of the site beside the workshop |
| N3 | Boundary | South Eastern corner at the back of the site |
| N4 | Boundary | South Western corner at the back of the site, adjacent to the dog pound |
| NSL | Noise Sensitive Location | Private dwelling, attached to petrol station on the opposite side of the main road, circa 100m from the site |

The daytime L_{Aeq} recorded at the four boundary locations ranged between 57 dB at N4 and 65 dB at N2. the daytime L_{Aeq} recorded at the NSL was 69 dB, which is above the daytime noise limit of 55 dB (A). The full set of results are presented in Table 5.2.

Table 6.2: Noise monitoring Results

| Map reference No. | Measurement Period (mins) | Time | L_{Aeq} (dB) | L_{A10} (dB) | L_{A90} (dB) | L_{A1MAX} (dB) |
|-------------------|---------------------------|-------|----------------|----------------|----------------|------------------|
| N1 | 30 | 11.25 | 62 | 64 | 55 | 81 |
| N2 | 30 | 10.29 | 65 | 66 | 56 | 89 |
| N3 | 30 | 09.17 | 62 | 64 | 55 | 87 |
| N4 | 30 | 09.54 | 57 | 57 | 50 | 77 |
| NSL | 30 | 11.59 | 69 | 73 | 58 | 92 |

The main source of noise from the facility itself originated from the waste management machinery operation within the facility, vehicles entering and exiting the site and the intermittent beeping of reversing machinery. External noise sources audible at the site boundary included nearby traffic, dogs barking from the pound adjacent to the facility and plant and machinery operating at a neighbouring facility. Tonal noise was not detected at boundary locations N1 – N3. Tonal noise was detected at location N4.

The dominant source of noise detected at the NSL was excavation machinery working on the new Tullamore by-pass on the western boundary of the facility. No audible noise was recorded as being heard emanating from the AES site. Tonal noise was detected at the NSL at 80 Hz.

The full noise report is included in Appendix II.

6.2. Ambient monitoring

In compliance with the requirements of the waste licence, W0104-01, dust monitoring at the Cappincur Waste Transfer Station was undertaken. Monitoring was carried out on three times during the reporting period.

There are four dust monitoring locations on site, detailed in Table 6.1.

Table 6.3: Dust Monitoring Locations

| Monitoring Location | Description |
|---------------------|--------------------------------------|
| D1 | North western corner of the facility |
| D2 | North eastern corner of the facility |
| D3 | South western corner of the facility |
| D4 | South eastern corner of the facility |

Four dust pots were exposed for a 32 day period between 14 May – 15 June, for a 28 day monitoring period between 29 July – 26 August and finally for a 30 day period between 27 October – 26 November, 2009. The results for monitoring are presented in Table 6.4.

Table 6.4: Dust Monitoring Results

| Monitoring Location | Dust Deposition Limit | Deposition Rate (14 May – 15 June) | Deposition Rate (29 July – 26 August) | Deposition Rate (27 October – 26 November) |
|---------------------|-----------------------|------------------------------------|---------------------------------------|--|
| | | <i>(mg.m²/day)</i> | | |
| D1 | 350 | Note 1 | 102 | 129 |
| D2 | 350 | 773 | Note 2 | 90 |
| D3 | 350 | 437 | 403 | 62 |
| D4 | 350 | 473 | Note 2 | 163 |

Note 1 – Dust gauge was missing on collection date

Note 2 – Dust gauge was knocked down during the May/ June monitoring period

The results were elevated above the EPA limits at D1, D2 and D4 during the first round of monitoring. D2 was elevated above the EPA limit during the second round of monitoring. All the results during the first round of sampling are under the licence limits.

The full dust monitoring reports are attached in Appendix II

6.3. Groundwater Monitoring

In accordance with the requirements of waste licence, W0104-01, groundwater monitoring was undertaken. Monitoring was carried out at the three monitoring locations detailed in Table 6.5.

Table 6.5: Groundwater Monitoring Locations

| Borehole | Location | Grid reference |
|----------|---------------------------------------|-----------------|
| GW-1 | North-east corner | 235717E 225243N |
| GW-2 | South-east corner, beside bin storage | 235683E 225122N |
| GW-3 | South-west, beside loading bay | 235648E 225156N |

Quarterly groundwater monitoring was carried out for the site, with the annual round of monitoring being undertaken in conjunction with quarterly monitoring during January 2009. The results of groundwater monitoring during the reporting period are included in Appendix II.

6.4. Surface water Monitoring

In accordance with the requirements of waste licence, W0104-01, surface monitoring was undertaken. Monitoring was carried out at the three monitoring locations detailed in Table 6.6.

Table 6.6: Surface water Monitoring Locations

| Sample point | Location |
|--------------|---|
| SW-1 | Upstream at the back of the AES facility (Southern boundary) |
| SW-2 | Location near south west corner of AES facility (Discharge point) (Southern boundary) |
| SW-3 | Downstream of AES facility (Southern boundary) |
| SW-4 | Upstream adjacent to AES entrance gate (North western boundary) |

Quarterly surface monitoring was carried out for the site, with the annual round of monitoring being undertaken in conjunction with quarterly monitoring during January 2009. The results of surface water monitoring during the reporting period are included in Appendix II.

6.5. Bund Integrity Testing & Inspection Reports

In accordance with the requirements of the company's Waste Licence (W0104-01) AES is required to conduct a bund integrity test, as stated under Condition 6.10.

Condition 6.10 of the waste licence states:

*The integrity and water tightness of all underground pipes, tanks, bunding structures and containers and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee at least once every three years and reported **to** the Agency on each occasion. This testing shall be carried out in accordance with any guidance published by the Agency. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee*

The survey was performed between 27/10/09 and 3/11/09. The bunded areas included in the study were referenced as

1. Oil/ Chemical Storage Bund
2. Diesel Storage Bund

The bunded areas were tested for liquid tightness for seven days in accordance with B.S. 8007; 1987 sections 9 (24 Hour Stabilisation period).

The oil bund was found to be in **compliance** with the test. The diesel bund was found to be **non-compliant**.

The complete Bund Integrity Assessment Report is attached in Appendix IV.

6.6. Environmental Management Programme

There is nothing to report on progress against Environmental Management Program (EMP) for 2009 as the EPA only issued Advanced Environmental Solutions (Ireland) Ltd. with a waste licence for its Waste Transfer Station at Cappincur Industrial Estate, Tullamore, Co. Offaly, on 5th October 2009.

A report on the progress against the proposed Objectives and Targets for 2010 will be presented in the AER in 2011.

The Proposed Environmental Management Program for 2010 includes:

- ◆ obtain ISO 14001 certification for the facility
- ◆ obtain OHSAS 18001 certification for the facility
- ◆ Implement the findings from the energy efficiency audit as carried out in 2009
- ◆ Raise awareness with contractors/visitors of the Environmental Policy on site
- ◆ Continue internal training programme and assessment of training needs for all staff during 2010
- ◆ Raising awareness to domestic customers on what can correctly go into the blue bin, by implementing a new label to demonstrate the appropriate material which may be put into this bin type
- ◆ Installation of surface water monitoring equipment

7. SITE DEVELOPMENT/INFRASTRUCTURAL WORKS

7.1. Current Infrastructure in Place

The facility is currently licensed to accept a maximum of 50,000 tonnes of waste per annum. The site has calculated the duty capacity and stand-by capacity for the plant. The current waste handling and processing equipment is capable of handling up to as follows:

MRF Line (in current configuration) – 100 tonnes per day
 Industrial bailer – 200 tonnes per day
 C&D area – 140 tonnes per day
 Total – 88,000 tonnes per annum (i.e. assuming all MRF line material is bailed).

The machinery and equipment currently on-site is presented in Table 7.1

Table 7.1: Machinery and Equipment currently on-site

| Details | Number |
|----------------------|--------|
| Roro Trucks | 6 |
| Skip Trucks | 6 |
| RCV Trucks | 7 |
| Glass Truck | 1 |
| Rigid Cardboard Tuck | 1 |
| Vans | 6 |
| Diggers | 2 |
| Cherry Picker | 1 |
| Road Sweeper | 1 |
| Bobcats | 2 |
| Forktrucks | 3 |
| Baler | 1 |
| Shredder (Paper) | 1 |
| Shunter | 1 |
| MRF | 1 |

7.2. Site Development Works during 2009 / Proposed for 2010

An SEW was submitted to the EPA for approval on 15 December 2009. These works will be carried out during 2010, once approved.

7.3. Review of Decommissioning Management Plan

No changes to the submitted Decommissioning Management Plan were made during the reporting period.

8. ENVIRONMENTAL LIABILITIES

In March/April 2007 100% of the share capital was acquired by Bord Na Móna. AES now have access to the reserves of its parent company.

The environmental liabilities are those considered to be restricted to the confines of the facility, therefore, any costs incurred in addressing same will be limited to the removal and safe disposal of the waste remaining on-site following an emergency event (e.g. fire or spillage event) or the decommissioning and closure of the site. Such environmental liabilities cover should account for the cost of the clean up and removal of the maximum amount of waste that may be stored on-site at any given time.

AES have arranged insurance to cover the liability arising from damage to property and injury to parties as a result of sudden and unforeseen environmental impairment. AES have insurance cover for "Business Interruption" and have adequate reserves for the cost of removing the maximum amount of waste that may be stored on-site at any given time and to ensure that said material is transported to an authorised and capable facility.

9. FACILITY MANAGEMENT

9.1. New Procedures Developed During 2009

A number of new procedures were developed during the 2009 reporting period, namely:

- ◆ EP-ERP-01_General Emergency Preparedness & Response.doc
- ◆ EP-ERP-02_Spill Clean Up Procedure.doc
- ◆ EP-ERP-03_Fire Explosion Procedure.doc
- ◆ EP-ERP-04_Malicious Damage Procedure.doc
- ◆ EP-ERP-05_Unforeseen Emergencies & Fugitive Emissions.doc
- ◆ EPL 5.1_Emergency Contact List.doc

Full details on these new procedures are included in the Appendix V.

9.2. Review of Nuisance Controls

The current procedures, those in operation during 2008/2009 for Nuisance control are fit for purpose and are summarised below. No new controls are proposed for 2010.

In compliance with Condition 7.2 – 7.4 of Waste Licence, W0104-01 environmental nuisance are controlled to ensure they cause minimal impact on the immediate area.

- ◆ Waste destination for disposal may be stored within the Waste Transfer station and is generally removed from the facility within 48 hours of its arrival on-site during normal working times and within 72 hours of its arrival on-site during bank holidays. This is a waste handling procedure as part of the odour management system on-site
- ◆ A daily inspection of the environmental nuisance controls for Vermin, Birds, Flies, Mud, Dust, Odour and litter is carried out. Nuisance inspection sheets are documented on-site on a weekly basis. A contract with a pest control company is in place to minimise environmental nuisance caused by vermin.
- ◆ All vehicles delivering waste to and removing waste and materials from the site are appropriately covered.

9.3. Incidents & Complaints Summary

Only 5 No. incidents were recorded for the facility during the reporting period. No complaints were received during the reporting period. The incidents for the site are presented in Table 9.1.

Table 9.1: Incidents & Complaints Summary

| Date | Type of Incident | Location of Incident |
|------------|--|-----------------------|
| 27/10/2009 | Diesel Bund Integrity Test Diesel bund found to be in non compliance | Diesel bund |
| July 2009 | Excessive DRO | GW-2 |
| May 2009 | Excessive BOD, COD and Ammonia | SW 2 |
| May 2009 | Excessive noise volume | N1, N2, N3,N4 and NSL |
| Oct 2009 | Excessive BOD, COD and Suspended Solids | SW -2 |

9.4. Management & Staffing Structure

The management and staffing structure of the facility is described in Figure 9.1.

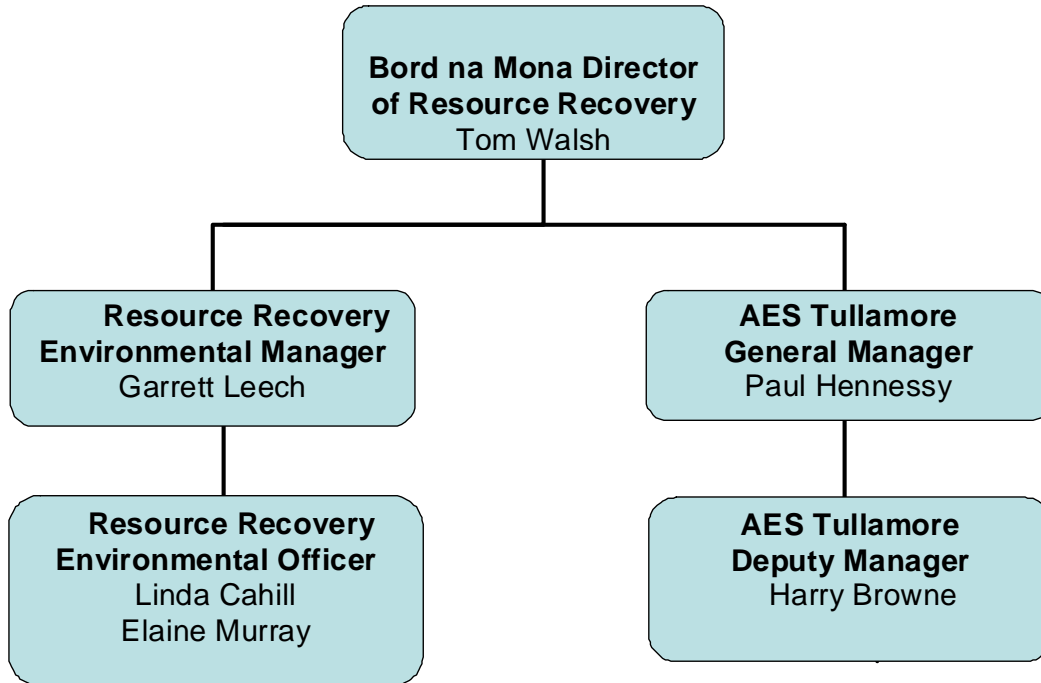


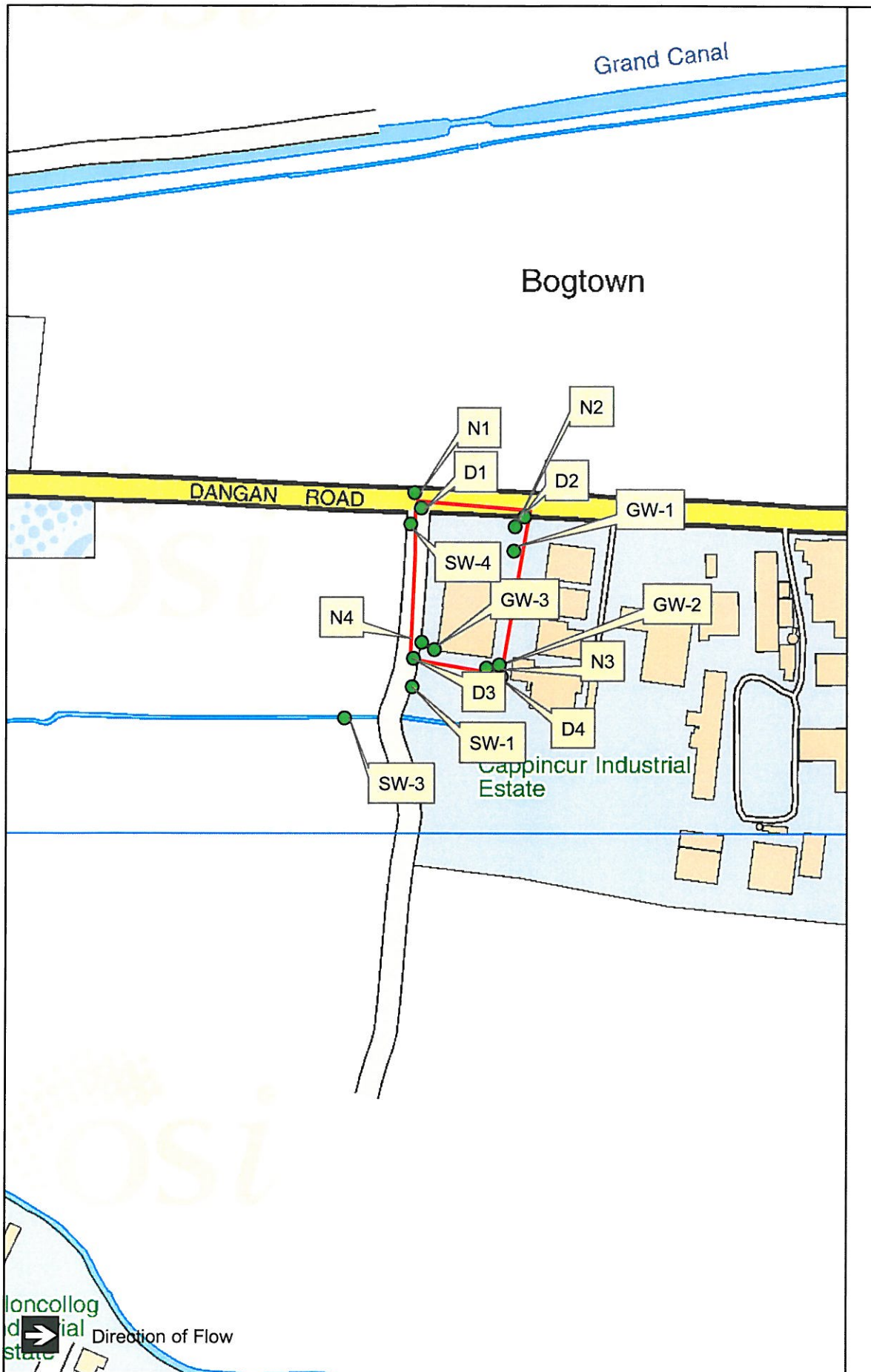
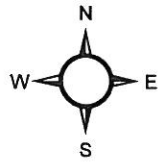
Figure 9.1 Management and Staffing Structure

Appendix I

Drawings



AES Tullamore - Monitoring Locations



Surface Water
 SW-1
 SW-3
 SW-4

Ground Water
 GW-1
 GW-2
 GW-3

Dust
 D1
 D2
 D3
 D4

Noise
 N1
 N2
 N3
 N4

● Surface Water Monitoring point

0 20 40 80 120 160
 Unknown Units

Appendix II

Monitoring Results



Monitoring Results are included in the hard copy of the Annual Environmental Report, as submitted to the EPA.

Appendix III

Energy Efficiency Report



***AUDIT OF ENERGY EFFICIENCY AS
REQUIRED BY CONDITIONS 7.1 AND 7.2 OF
WASTE LICENCE REG NO. W104-02 FOR
ADVANCED ENVIRONMENTAL SOLUTIONS
(IRELAND) LIMITED (CAPPINCUR,
TULLAMORE, CO.OFFALY.)***

For the Attention of:

Mr. Paul Hennessey
Advanced Environmental Solutions
Cappincur,
Tullamore,
Co. Offaly.

Prepared by:

Adele Woods
Environmental Consultant

Reviewed by:

Sean Creedon
Senior Environmental Consultant

Report No: ECS 3321

Date: January 2010

Executive Summary

As part of the implementation of the Waste Licence W0104-01 at the Advanced Environmental Solutions facility, at Cappincur an Energy Audit was carried out on the 26th June 2009 by Bord Na Móna Environmental Consultancy Services. The scope of the audit involved an assessment of the site with respect to energy consumption and subsequently identifying opportunities for energy use reduction and efficiency.

Following this audit, it was considered that given the processes undertaken at the site and the energy performance at the facility, an energy management plan would facilitate the company with assessing ongoing energy consumption. Ongoing attention to non-production items for example lighting, will identify areas where improvements can be continuously made.

An energy matrix demonstrates that some improvements in the practice of the Energy Policy are required to ensure that best practice is delivered across all areas of energy management. This is particularly important in the area of accountability and Monitoring and Targeting.

Implementation of the recommendations outlined in this report will assist in improving energy performance at the site. The recommendations included in this audit should be implemented over a reasonable time frame, with the recommendations incorporated into the facility's EMS and the Schedule of Objectives and Targets included in the AER.

Respectfully submitted,

Adele Woods
Environmental Consultant

Mr. Sean Creedon
Senior Environmental Consultant

TABLE OF CONTENTS

1.0 INTRODUCTION

2.0 OBJECTIVES

3.0 DESCRIPTION OF ACTIVITIES AT AES Cappincur.

- 3.1 Facility Background
- 3.2 Production Process
 - 3.2.1 Raw Materials
 - 3.2.2 Storage and Transport of Raw Materials
 - 3.2.3 Processing building
 - 3.2.4 Administration Offices
 - 3.2.5 Canteen Building
 - 3.2.6 Mobile Plant

4.0 ENERGY CONSUMPTION AT THE TULLAMORE WASTE TRANSFER FACILITY

- 4.1 Audit Details
- 4.2 Main Energy Consumers at the Facility
- 4.3 Amount of Energy Consumed at the Facility
- 4.4 Emissions Summary
- 4.5 Energy Savings Measures Installed to Date
- 4.6 Basic Energy Savings

5.0 ELECTRICITY

- 5.1 Energy Supply
- 5.2 Consumption
- 5.3 Maximum Import Capacity (MIC)
- 5.4 Wattless Charges
- 5.5 Recommendations

6.0 LIGHTING

- 6.1 Audit Observations
- 6.2 Recommendations

7.0 HOT WATER

- 7.1 Audit Observations
- 7.2 Recommendations

8.0 HEATING

8.1 Audit Observations

8.2 Recommendations

9.0 DIESEL

9.1 Energy Supply

9.2 Consumption

9.3 Recommendations

10.0 ENERGY MANAGEMENT AND REPORTING SYSTEMS

10.1 Reporting/Performance Management

10.2 Monitoring and Targeting

10.3 Staff Involvement/Training

10.4 Matrix Assessment

10.5 Recommendations

11.0 ENERGY PERFORMANCE OF THE SITE

12.0 COMMENTS AND CONCLUSIONS

1.0 INTRODUCTION

Bord na Móna Environmental Consultancy Services was commissioned by Advanced Environmental Solutions (Ireland) Ltd to complete an Energy Audit for their waste transfer station at Cappincur, Tullamore, County Offaly.

The audit was conducted on the 26th of June 2009 by two Environmental Consultants from Bord Na Móna Environmental Ltd. Assistance was provided by the Facility manager Mr. Paul Hennessy. The scope of the audit was to examine the site with respect to energy consumption and subsequently identify opportunities for energy use reduction and efficiency.

This report presents the main findings of the audit and outlines the current status of the site in terms of its potential for a reduction in energy consumption. A schedule for the implementation of energy efficiency measures should be set out to achieve energy reduction goals.

2.0 OBJECTIVES

The objectives of the energy audit were as follows:

- To gain an overall impression of the energy status of the AES Cappincur facility;
- To establish the main energy consumers at the site;
- To evaluate the carbon emissions for the site from energy sources; and
- To propose energy efficiency measures and outline a schedule for the implementation of these measures.

3.0 DESCRIPTION OF ACTIVITIES AT THE ADVANCED ENVIRONMENTAL SOLUTIONS FACILITY AT CAPPINCUR.

3.1 Facility Background

Advanced Environmental Solutions Ireland Ltd is a waste management company who provide waste management services for both residential and commercial customers primarily in the Midland Region. The AES Facility at Cappincur is licensed by the Environmental Protection Agency under Waste Licence Register Number W104-2. The principle classes of activity at the facility are as follows:

4.2 'Recycling or reclamation of organic substances which are not used as solvents'

4.3 Recycling or reclamation of metals and metal compounds

4.47 Recycling or reclamation of other inorganic materials

3.12 Repackaging prior to submission to any activity

The facility at Cappincur is a waste transfer station. The facility is licensed to accept 24,000 Tonnes of waste per annum. The facility is licensed to accept 6,500 tonnes of Municipal Solid Waste, 14,100 tonnes of Commercial and Industrial Waste(C&I), 3,300 of Construction and Demolition (C&D) waste and 100 tonnes of Household Hazardous Waste.

The waste activities at the facility consist of sorting and segregating the wastes with recycling potential via a picking line, optical and mechanical sorters. Bulking and bailing of wastes and finally forwarding the remaining wastes to other sites for further processing. Waste deemed unsuitable for recycling and recovery is segregated and compacted and sent for disposal off-site.

Currently, thirty people are employed at the facility. The facility operates Monday to Friday 8 a.m. to 5.30 p.m. and from 8 a.m. to 12 p.m. on Saturdays.

3.2 Production Process

3.2.1 Raw Materials

The following raw materials are used at the AES Waste Transfer Facility at Cappincur:

- Electricity – power supply for the processing plant the offices & Canteen etc

- Diesel – to power the on site plant & equipment and the 100kVA generator

3.2.2 Storage and Transport of Raw Materials

- (i) Diesel was supplied by Suttons and stored in a 1,100 litre diesel tank, which is used to fuel all the on-site mobile plant & equipment. This tank is located to the eastern side of the waste processing building. There is also a second diesel storage tank (1000 litres), located within the diesel generator.
- (ii) Three phase electricity is supplied to the site by the ESB. There is a 200 kVA substation at the site
- (iii) Water is supplied to the AES Cappincur facility by Ballingar Group water scheme. There are no water meters installed at the facility to monitor water usage. Water is used on site for domestic purposes only.

3.2.3 Processing Building

The waste processing building is powered directly from the electricity supply (ESB).

The processing building is constructed of half cladding and half block work. This building is approximately 10% open to the outdoors. There is approximately 6 inches of fibreglass insulation on the building, which is serviced by 63 skylights. The building can be divided into two different areas:

1. General Waste Sorting Line
2. Mixed Recyclables Line

General Waste Sorting

Waste Tipping and segregation are the main activities that occur within this area. General Waste consists of mainly construction and demolition wastes and domestic wastes. Material generally accepted for recycling are metals (Steel, Iron), green waste, plastics, glass, cardboard and timber. These materials are recovered from the tipped waste, segregated, bulked and bailed for recycling off-site. Construction and Demolition wastes are sent on to AES Portlaoise for further processing in the trommel to remove the fines. Any residual wastes not suitable for recycling are sent for landfilling at Drehid Waste Management Facility.

Mixed Recovery Facility (MRF line)

The main activities that occur in this area are mixed dry recyclables tipping and sorting. The waste is mainly from domestic sources (approximately 80%) but will also include commercial wastes. The MRF line has mechanical, optical and manual sorters.

The wastes are initially placed onto a conveyor by the grab lift. This material then passes on to a picking deck. The first pick is used to take out all large items. The material then passes through a star screen. The star screen separates the large items such as newspaper, cardboard and plastic. There are emergency stops in place on the lines. Smaller items are removed by a banana screen and a loophole screen. These remove primarily medium sized pieces of newspaper and plastic. The material then passes on to the second picking line.

There is a second stream from the banana screen which processes all the smaller items. The stream passes through two large magnets which removes all the steel and tin from the stream. The material passes through a finger screen to remove all the fines. An Eddie current removes all the aluminium cans. The remaining material in the stream at this point is mainly plastic and papers. This material is passed through an optical sorter which blows off all the plastic and gravity pulls the paper. There is also a manual quality check in place which ensures that all contaminants and materials that should not be there are removed.

The remaining material on line at this point is small pieces of plastics. A second optical sorter removes plastics such as High Impact Polystyrene and Polyethylene terephthalate bottles. The remaining material is recycled back into the sorting line for a second time. All remaining residues are sent to a landfill site.

All the equipment in the Processing building was in operation at the time of the audit. The facility manager informed the auditors that the processing building equipment operates from 7.00 a.m. to 12 midnight. Occasionally the line may be operated on a single shift from 7 am to 6 pm.). All of the equipment is powered off during staff breaks. (Staff lunch breaks are from 12.30 p.m. to 1.00 a.m. and from 20.30 p.m. to 21.00 p.m., there are also 2 fifteen minute tea breaks and shut down for cleaning between 2.45 p.m. and 3.30 p.m.). The facility manager informed the auditors that one employee is charged with powering down and up the equipment before and after staff breaks

The equipment used in this process includes the following: Mc Donald 12 x 4 single deck finger screen (4 Kw), Transfer Conveyor no. 1 (3 Kw), Eddy Current Separation Unit (2 motors 2.2 Kw and 3 Kw), Drive motor (7.5 Kw), Transfer conveyor No. 2 (5.5 Kw) Acceleration belt no. 1 (7.5 Kw), belt feeder no. 1 (2.2 Kw), Transfer Conveyor no 3 (5.5 Kw), acceleration belt no.2 (5.5 Kw), Belt Feeder no. 2 (2.2 Kw). All this equipment was in good condition and was approximately 2 months old. There are also 2 compressors 22kW and 30 kW which were powered by the diesel generator (100kVA). There was also a Bollegraaf Bailer (80kW), a conveyor (5.5kw) an industrial shredder (30kW) and an industrial Hoover (Nilfisk 2400 Watts). The Hoover is used to clean out the panels on the compressors once a week. The entire processing line is regularly maintained by the maintenance department. There are daily and weekly check sheets for all the processing equipment. The diesel generated is leased and serviced by external contractors on a monthly basis. The two compressors are also serviced by external contractors, Harold Engineering.

The lighting in the processing building is supplied from 31 halogen lamps (35 watt), two of which were turned off at the time of the audit. There were also 42 Fluorescent lights (58 Watt), 5 of which were off at the time of the audit.

3.2.4 Administration Offices

The administration offices are located at the front of the facility on the North-west side of the waste processing building. The administration offices are housed within a temporary portacabin building. The portacabin comprises of a wooden floor, flat roof, steel cladding and double glazing windows. The building integrity is good, however the insulation properties of the building would be considered poor. Details of each of the individual offices are given below.

Finance Office

The main energy usage in this office was from a convection heater (2000watt), a 58 watt fluorescent light (on) and a PC. There were two doors one of which was an external fire exit. There were 4 double glazed windows all of which were closed at the time of the audit.

Invoicing office

This office was unoccupied as the staff have been relocated the head office in Newbridge. The temperature in the room was 24°C. The door was opened into the main corridor. There were two 58 watt fluorescent lights, both of which were turned off. There was also a 2000 watt heater which was also turned off as the room is not in use.

Sales Office

The Sales office was unoccupied at the time of the audit. The door was open and the temperature in the room was 26°C. There were 2 double glazed windows, both of which were closed. The main energy consumer in the office were two 58 watt fluorescent tubes (1 on), Photocopier, 2000 watt Convection heater (off). The heating in the room is manually operated as there is no timer switch on it.

Facility Managers Office

The facility managers office was occupied at the time of the audit. The temperature in the room was 24°C. There were two double glazed windows both of which were closed. The room is heated by a 2000 watt convection heater that was turned off. The heater is not controlled on a timer.

Boardroom

This room was unoccupied at the time of the audit. The temperature in the room was 23°C. The room is heated by two 2000 watt convection heaters (one on and one off). There were two 58 watt fluorescent lights in the room, both of which were on. There were three single glazed windows in the room, two of which were opened at the time of the audit.

Production Managers Office

The room was occupied by two employees at the time of the audit. The temperature in the room was 25°C. There were three single glazed windows in the office, two of which were open. The main energy consumers in this office are two fluorescent lights (58W), two 2000W convection heaters (off), an air-conditioning unit (48W), radio (10W), the controls for 16 CCTV cameras (1.4W), and a battery charger (10.8W).

Main Office & Hallway

The temperature in the main office was 25°C. The room was occupied by three employees during the audit. This open-plan office has 10 internal doors, six of which were open. There were six double glazed windows in the office all of which were closed. The office is heated by four 2000W convection heaters (3 off). Two of the heaters had timer switches, the remaining two were manually controlled only. The main energy consumers in the room are 14 58W fluorescent lights (3 off), four PCs, label printer, and a photocopier.

Weighbridge Offices

The temperature in the offices was 25°C. There were 2 employees in these offices at the time of the audit. There were six windows in the offices, three of which were open. The office is heated by two 2000W convection heaters (off), both of which are manually controlled. The main energy consumers are six 58 watt fluorescent lights (on), two fans (45 watts), two 2000 watt convection heaters (off) which is manually controlled and four personal computers.

Staff Canteen

The main electricity users in the canteen were a 2 x fluorescent tubes (58 Watts) both of which were on, a convection heater (2000W) which was off, a kettle (2200W), an electric grill (750 watt), a microwave (1200 Watts), a toaster (700 Watt), a hot water boiler (2000W). The occupancy of the building at the time of the audit was zero.

3.2.5 Canteen Building

The Canteen building is located at the North-east side of the waste processing building. The canteen building is a portacabin which comprises of a wooden floor, flat roof, steel cladding and five double glazing windows (4 open). The main energy consumers in the canteen are a coffee machine (2000 watts), a radio (15 watts), two microwaves (700 & 750 watts), a water boiler (2000 watts), four fluorescent lights (58 watts), and a 2000 watt convection heater (off). The heater is manually controlled.

3.2.6 Mobile Plant

The AES facility at Cappincur has the following mobile plant which is used by both the Mixed Recovery Line and the general waste sorting area:

- 2 x Bobcats,
- 3 x diggers (Katamuso & 2 x Caterpillar)
- forklift,
- 2 x grab lift
- Roadsweeper

The mobile plant is powered with diesel, which is stored in the 1,100 litre which is located to the eastern side of the waste building. The mobile plant receives regular maintenance checks which are conducted approximately once every 500 hours of use.

4.0 ENERGY CONSUMPTION AT THE AES CAPPINCUR FACILITY

4.1 Audit Details

The Audit was carried out on the 26th June 2009. The visit involved a tour around the site through each structure, operational area and surrounds. This tour included assistance from facility manager, Mr. Paul Hennessey. Potential areas for improvement and reduction in energy consumption were identified and discussed during the energy audit.

There have been no previous energy audit reports to incorporate in this report. This audit can therefore be used as a baseline study to establish energy consumption and efficiency for this site. This data can then be used to assess future energy programmes.

The electricity invoices were made available for the purpose of this report. Also made available was an excel spreadsheet detailing the diesel usage. At the end of the site visit a meeting was convened with Mr. Paul Hennessey.

During the site visit, a list of potential items to be investigated was considered to this particular site. The list of items was taken from Appendix III – Energy Audit Checklist outlined in the Guidance note on Energy Efficiency Auditing published by the EPA. The following topics were determined to be relevant to the existing facility.

- *Energy inputs*
- *Buildings*
- *Space Heating*
- *Waste*
- *Domestic hot water*
- *Lighting*
- *Electrical power*

As part of the audit, energy efficiency measures already in place at the site were noted. These are summarised in Section 4.5.

The audit period covered is from June 2008 to June 2009. Waste Acceptance figures for the AES facility at Cappincur indicate that the energy consumed during the audit period is considered to be representative of the full production capacity of the facility at this time.

4.2 Main Energy Consumers at the Facility

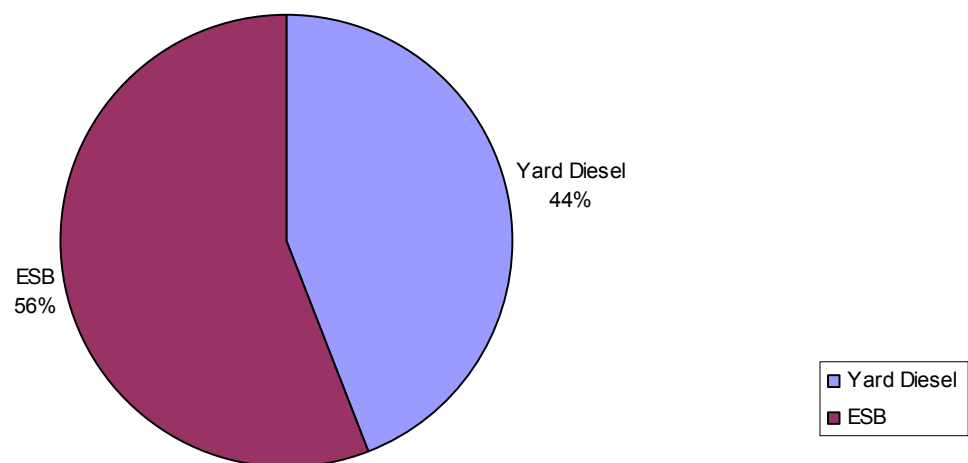
Energy consumption at the site can be divided into three main types:

- 1) *Electricity to power the processing building including the processing lines the administration buildings, the convective heaters and the domestic appliances.*
- 2) *Diesel to power the mobile plant unit and the diesel generator that powers the two compressors.*

4.3 Amount of Energy Consumed at the Facility

The most significant energy inputs into the existing facility are electricity supplied by ESB, and diesel supplied by Sutton Oil Ltd. Table 4.1 below outlines these inputs.

Figure 4.1 Percentage Distribution of Energy Costs for the AES facility at Cappincur during Audit Period June '08 to June '09



| Table 4.1 Energy Usage (Electricity) | | | | | | |
|--|------------------------------|--------|--------------------------|-----------------------|-------------------------------|-----------------------------------|
| Electricity Usage Period | Cost per unit (c/kWh) | | Total units (kWh) | Total cost (€) | Wattless units (kVARh) | Cost of wattless units (€) |
| 10 Jul 08 – 5 Sept 08 | Day | 0.1650 | 2882 | 475.53 | 28260 | 123.55 |
| | | 0.1550 | 7558 | 1171.49 | | |
| | | 0.1949 | 4716 | 919.15 | | |
| | | 0.1831 | 12504 | 2289.48 | | |
| | Night | 0.0690 | 3600 | 248.40 | | |
| | | 0.0844 | 6000 | 506.40 | | |
| 6 Sept 08 – 6 Nov 08 | Day | 0.1949 | 8122 | 1582.98 | 36060 | 148.20 |
| | | 0.1831 | 32018 | 5862.50 | | |
| | Night | 0.0844 | 11040 | 931.78 | | |
| 7 Nov 08 – 12 Jan 09 | Day | 0.1949 | 7205 | 1404.25 | 31860 | 87.18 |
| | | 0.1831 | 33475 | 6129.27 | | |
| | | 0.1946 | 1572 | 305.91 | | |
| | | 0.1828 | 7368 | 1346.87 | | |
| | Night | 0.0844 | 10380 | 876.07 | | |
| | | 0.0872 | 2280 | 198.82 | | |
| 13 Jan 08 – 9 Mar 09 | Day | 0.1946 | 7336 | 1427.59 | 26640 | 69.50 |
| | | 0.1828 | 35804 | 6544.97 | | |
| | Night | 0.0872 | 11040 | 962.69 | | |
| 10 Mar 09 – 11 May 09 | Day | 0.1946 | 6812 | 1325.62 | 29940 | 0 |
| | | 0.1828 | 58948 | 10775.69 | | |
| | | 0.1711 | 1441 | 246.56 | | |
| | | 0.1607 | 12539 | 2015.02 | | |
| | Night | 0.0872 | 12960 | 1130.11 | | |
| | | 0.0767 | 2760 | 211.69 | | |
| 12 May 09 – 9 Jul 09 | Day | 0.1711 | 7729 | 1322.43 | 88260 | 551.61 |
| | | 0.1607 | 40931 | 6577.61 | | |
| | Night | 0.0767 | 11820 | 906.59 | | |
| Total | | | 360,840 | 57695.47 | 241,020 | 980.04 |
| Total Cost including Standing Charges, Capacity Charges and VAT | | | | | | €65,805 |

| Table 4.1 Continued Energy Usage (Diesel) | | | |
|--|---------------------------|---------------------|-------------------|
| Diesel | | | |
| Period | Cost per Litre (€) | Total Litres | Total Cost |
| July 08 | 0.83 | 7,135 | 5,152.16 |
| August 08 | 0.98 | 6,235 | 5,825.00 |
| September 08 | 0.81 | 5,945 | 5,332.84 |
| October 08 | 0.70 | 6,613 | 3,852.30 |
| November 08 | 0.64 | 5,481 | 3,449.45 |
| December 08 | 0.49 | 5,416 | 3,586.92 |
| January 09 | 0.38 | 7,382 | 3,436.21 |
| February 09 | 0.40 | 8,993 | 4,309.29 |
| March 09 | 0.35 | 10,717 | 3,429.34 |
| April 09 | 0.36 | 9,860 | 3,078.16 |
| May 09 | 0.38 | 8,591 | 3,102.31 |
| June 09 | 0.39 | 8,253 | 3,179.87 |
| Total | | 98,859 | 52,340 |

Based on the above figures the total energy bill for the site was €118,145 over the audit period. As shown in Figure 4.1, the electricity bill accounts for €65,805 or 56% of the total cost. Diesel accounts for €52,340 or 44%.

4.4 Emissions Summary

Estimates of carbon dioxide (CO₂) produced by facility operations are based on the energy consumption information in Table 4.1 and are shown in Table 4.2. Figure 4.2 shows the percentage of CO₂ produced by consumption of the individual energy types at the site. As shown in Figure 4.1, Electricity represents 56% of the total cost of energy at the site. It is also the main CO₂ producer at the site at 58% as shown in Figure 4.2 below.

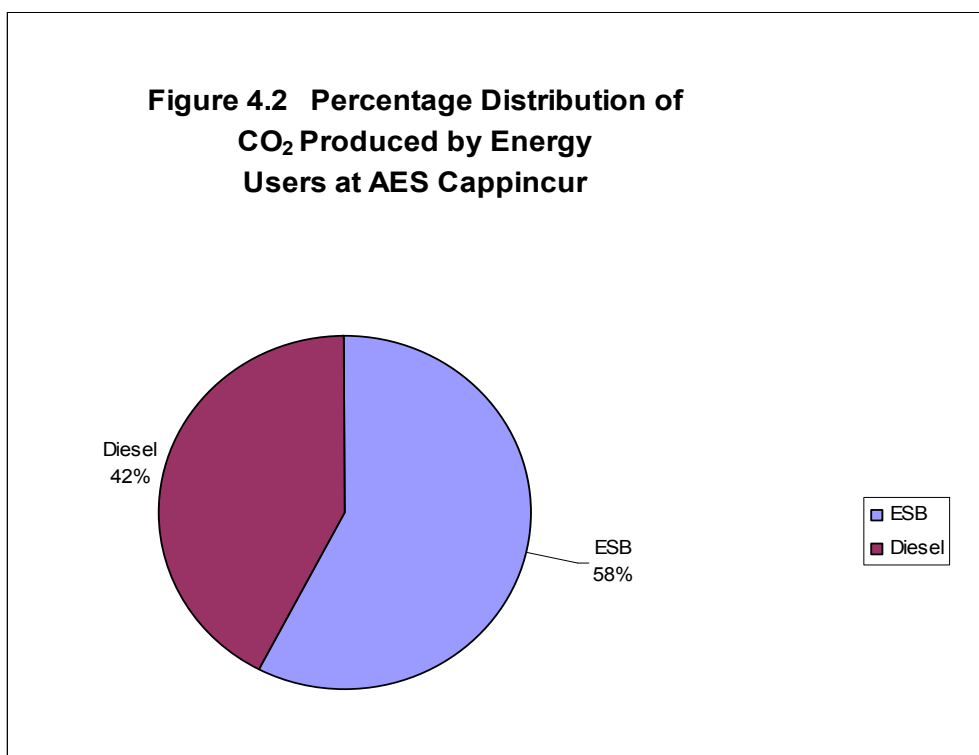
| Table 4.2 Estimates of Carbon Dioxide Produced by Facility Operation | | | |
|---|--------------------|------------------------------------|-------------------------------------|
| Fuel | Units (kWh) | Conversion Factor | CO₂ Produced (kg) |
| Electricity | 601,860 | 0.601 kg CO ₂ / kWh [1] | 361,718 |
| Diesel | 98,859 | 2.7 kg CO ₂ / lt [2] | 266,919 |

[1] Sustainable Energy Ireland, Emission Factors 2006 (average value). This is an indirect emission from the site

[2] Smith, A. Browne, K., Ogilvie, S., Rushton, K., Bates, J., (2001) Waste Management Options and Climate Change. 2001, European Commission: Luxembourg. P. 224

[3] A Primer on Green house Gas Emissions from Energy and Transportation:
http://www.klima.ph/ghg_calculator/primer/primer.html

Figure 4.2 Percentage Distribution of CO₂ Produced by Energy Users at AES Cappincur



4.5 Energy Savings Measures Installed to Date

The following energy efficiency measures are in use at the site:

- There are timers on the external lightening
- There are skylights in the waste processing building and in the picking deck which reduce lighting usage and costs
- There are timers on a number of the heaters within the administration building
- Routine maintenance and upkeep of machinery
- There is surge protection on the processing line equipment
- There are double glazed windows in the majority of the offices.
- There are skylights in the processing building which reduce the lighting requirement and subsequent costs.

The weather conditions on the day of auditing were light showers, mostly dry. The outdoor temperature was 22°C. The indoor temperature range was between 23°C and 27°C. The site audit visit was carried out between the hours of 10am-5pm.

4.6 Basic Energy Savings

Based on implementation of low cost management systems, typically it is possible to save between **2 to 3% of a facility's energy costs (Sustainable Energy Ireland), this could equate to up to €3,544 for AES Cappincur.** Reductions are not necessarily associated

with technical changes, and therefore financial savings can be made as a result of better organisation and management of improved economic efficiency.

5.0 ELECTRICITY

5.1 Energy Supply

The AES facility at Cappincur has a maximum import capacity of 150kVA (kilovolt-Ampere). The site is set up with a general purpose night saver tariff.

5.2 Consumption

The AES facility at Cappincur consumed a total of 360,840 kWh (kilo Watt Hours) during the audit period of June 2008 to June 2009.

Electricity supply from the ESB is used to power the material recovery lines and the administration offices including the conveyors, bailer, shredder, external lightening, domestic lighting, Domestic appliances; convective heaters, CCTV cameras, water coolers, and water heaters.

A diesel generator was required to be added to the site following the upgrade of the MRF line. The generator is used to power the two compressors. The facility Manager also advised that there was a peak overload at the site, which occurs when the bailing machine is pressing in on a bale. This is reported to last 4-5 seconds every cycle (3-4 minutes)

5.3 Maximum Import Capacity (MIC)

The MIC is the level of electrical capacity agreed between the business owner and ESB network. The AES facility at Cappincur has a contracted MIC value established in their connection agreement. A site's MIC value represents the extent to which the transmission network has been designed to serve the consumer and places an upper limit on the total demand that a consumer can place on the network. The MIC value for the AES facility at Cappincur is 150 kVA. If the MIC is too high a higher PSO levy than necessary is charged. If the MIC is too low for a facility's needs, technical/safety problems can occur for the business. Unauthorised use charges will be incurred to discourage use above the MIC. There were no unauthorised use charges charged during the reporting period. However the ESB have not measured whether the usage is higher or alternatively much lower than the MIC level for the site.

The site has a requirement for an increased MIC value, in order to supply enough electricity to run the two compressors. Currently the two compressors are powered from the diesel generator, which is not ideal. However a review and an upgrade of the network would be required to facilitate this.

5.4 Wattless Charges

Electric power consists of two components, 'active power' and 'reactive power'. Active power is recorded on the normal electricity meter and appears on the electricity bill as general day and night units. Reactive power is also recorded by the electricity meter for large industrial and commercial business customers. Reactive power units are usually referred to as 'wattless units'. All businesses consume reactive power in their business operation. Equipment such as motors and fluorescent lights require reactive power to operate. If the number of wattless units exceeds a limit of one-third of all general units (day and night units) in the billing period then a charge will apply to the excess wattless units. The number of wattless units consumed over the audit period was 241,020 kVARh. The charge incurred to the facility for wattless units was €980. Wattless charges could potentially be eliminated from the site by ensuring that there are sufficient power factor corrector capacitors in place on site.

5.5 Recommendations

An increased MIC is required at the site as was advised by the electrical engineers following a review of the new loads required following the upgrade of the MRF line. An increased MIC rating may be requested from the ESB, who then would advise if there are upgrades required at the site to accommodate this.

A change in MIC value will incur a change in tariff with the ESB; at this point the package for the site should be reviewed. The site may benefit from a maximum demand tariff, which would offer lower unit price costs for the electricity. There would however be charges for exceeding the MIC value set.

Additional Recommendations to help improve energy efficiency and reducing costs include:

- Upgrade the canteen and office appliances to A-grade to improve energy efficiency
- Power off all office equipment overnight
- Switching off or placing PC monitor's on standby over lunch and any other time when not in use. (Two thirds of the energy used by a typical PC is consumed by the monitor).
- A review of the power factor corrector capacitors in place on site should be conducted. The review should advise if there are sufficient capacitors on site and if are running correctly. This should eliminate the costs associated with the Wattless charges on the ESB bill which came to a total of €980 for the audit period June 2008 to June 2009.

6.0 Lighting

6.1 Audit Observations

Lighting is supplied in the processing building, administration offices, weighbridge offices and in exterior areas of the site. Fluorescent lights are mainly used to illuminate the office and canteen interiors (58W). The lighting in the processing building was supplied by both fluorescent lights (58W) and by Halogen lamps (240 Watt). The lighting in the processing building is turned on and off based on demand. It is manually switched on at 7 am and switched off when the second shift finishes at 12.30am.

Floodlighting is used to light the exterior of the building. (240W and 400W lights) The external lighting was off at the time of the audit and are operated on a timer.

The lighting has not been assessed to determine if illumination is sufficient for work practices, however the area was observed to be adequately lit during the audit.

It was noted that energy saving light bulbs are not used at the facility. It was also noted that, although no formal procedure has been put in place to ensure that lights are switched off after use, lights in most of the unoccupied rooms was found to be off.

Also noted was the absence of sensors for any of the indoor lights. In addition, the external lighting is on a timer switch, they do not contain photodiode sensors which would aid additional control and save energy on exterior illumination.

It was also noted that the skylights (69 in total) in the processing building were not clean on the day of the audit. Clean skylights would optimise the availability of natural light and reduce the requirement for lighting in the processing area. There is no maintenance programme in place for cleaning of the skylights.

There is no signage in place to remind employees to switch off lights.

6.2 Recommendations

Recommendations to help improve energy efficiency include:

- Assess the feasibility of replacing the lights with energy saving alternatives. A low energy lamp gives the same light output but consumes 80% less electricity and can last 10 times longer.(Ref: ESB report: Energy Efficiency Made Easy)
- Assess the feasibility of replacing the lights in the processing building with energy saving alternatives which contain daylight linking sensors to harness the daylight available in the building through the skylights and doors. Switching to lights of this kind can significantly reduce the connected load and increase lighting levels

(ref: <http://www.patinalighting.ie/applications/index.php>)

- Access the feasibility of installing occupancy sensor lighting in some areas of the facility, such as the toilets and canteen areas. Occupancy sensor lighting can provide savings of between 10% and 80%. (Ref: ESB Report: Energy Efficiency Made Easy)
- Clean skylights on a regular basis to optimise availability of natural light into the main production building. Reflectors and louvers which are not cleaned on a regular basis will reduce light output by 20%. (Ref: ESB report: Energy Efficiency Made Easy)
- Standard fluorescent lamps should be replaced after 8,000 hours of use as old lamps give about 30% of full output (Ref: ESB report: Energy Efficiency Made Easy)
- A simple check list created for each building, with a designated person or persons on a rota could perform routine visual checks on light fittings at no financial cost to the company; this would demonstrate good practice and raise awareness about energy efficiency
- Report action items to a co-ordinator
- Create check sheets, for convenience, for specific areas should be drawn up and be filed in a central documentation area for review
- Although it appears that good practices are in place it is recommended that light switches be clearly labelled with notices to encourage regular energy saving and the staff energy awareness programme discussed in the following sections should stress the importance of switching off lights as a way to reduce energy use.
- Access the feasibility of long life energy bulbs in the light fixtures.

7.0 Hot Water

7.1 Audit Observations

The AES facility at Cappincur has a number of manually operated hot water boilers in its buildings. Each of these hot water boilers is 2000W and they are all manually controlled.

7.2 Recommendations

Recommendations to help improve energy efficiency include:

- Boil only the minimum amount of water and use tight fitting lids
- Ensure that the boiler is well insulated so that water stays hotter for longer
- Install a timer device and a thermostat and identify when hot water is required for the canteens.
- Switch off the boiler at night

8.0 Heating

8.1 Audit Observations

The administration building and canteens are heated by 2000W convective heaters, the majority of which are controlled by timers. There is currently no programme in place at the facility to audit heating within the buildings. In most of the unoccupied rooms, the heating was found to be off.

Some of the heaters in the administration building are on timer controlled devices. Each timer switch would normally be manually set and controlled by the occupants of the room. This needs to be reviewed. Also there are a significant number of heaters which were manually controlled, this also need to be reviewed. In addition, there are no thermostats on any of the radiators at the facility.

8.2 Recommendations

Recommendations to help improve energy efficiency include:

- Use electronic thermostats in preference to mechanical ones as they provide a faster response to changing temperatures
- Timers should be place on all heaters. Consider having standardised heating hours on the timers
- Reduce heating during non-working hours (bank holidays or weekends) by ensuring that all convection heaters are turned off.
- Reducing the heat setting by 1°C can save up to 8% on energy costs (Ref: ESB report: Energy Efficiency Made Easy)
- Ensure that heat energy escape is minimised by closing doors and windows and insulating non-insulated areas. Up to 20% heat can be lost through an un-insulated ceiling. Floor insulation is just as important. (Ref: ESB report: Energy Efficiency Made Easy)

9.0 DIESEL

9.1 Supply

The diesel was supplied by Suttons Oil Ltd. It is used to power the mobile plant unit and the generator. The diesel generator is used to produce electricity for two compressors. The generator is serviced by a contractor (Electrogen International Limited) based on the hourly usage of the generator. The generator appeared to be in good condition at the time of the audit.

The onsite plant mobile plant is serviced on a regular basis by the maintenance team. The maintenance is scheduled based on hours of use of each of the machines.

9.2 Consumption

The facility consumed 98,859 litres of diesel during the audit period. The diesel was used to supply both the mobile plant and the on-site generator. The cost of this was €52,340 during the audit period of June 2008 to July 2009. Diesel accounts for 44% of the total energy spend.

It was not possible to separate the costs of running the diesel generator and cost of running the mobile plant in the yard. Therefore it is not possible to determine if the impact of the diesel cost at the site would be reduced if the decision was taken to power all the processing building including the two compressors from the electricity supply rather than the current fuel (diesel). There are however a number of measures that can be taken to help improve the energy efficiency of the diesel plant.

9.3 Recommendations

Recommendations to help improve energy efficiency include:

Mobile Plant

- Switching off engines when vehicles not in use
- Do not leave vehicles/machinery idling
- Reduce unnecessary revving up of engines
- Routine servicing of vehicles to ensure optimum operation
- Consider alternative fuel sources including renewable energy sources and those fuels with incentives and grant schemes attached

Diesel Generators

- Routine servicing of generator to ensure optimum operation
- Consider a long-term solution of changing from the diesel generator to an electricity supply from the ESB to power the compressors.

10.0 ENERGY MANAGEMENT AND REPORTING SYSTEMS

10.1 Reporting/Performance Management

At present there is no documented energy reporting system or policy in place at the site, with the utility bills forming the only basis for energy reporting/performance management. The consumption of electricity and diesel is traceable by means of billing. An operational maintenance programme of on-site plant to help improve the efficiency of equipment at the facility has been put into place.

10.2 Monitoring and Targeting

There is currently no automated Monitoring and Targeting system in place at the site. Monitoring of energy use helps to identify waste and has other benefits such as the ability to spot the deterioration of machine performance. The installation of a monitoring and targeting system will also assist in maintaining costs for energy at as low as possible a level. The monitored levels of usage of diesel and electricity can for a given period of time be directly related to productivity.

The advantage of Monitoring and Targeting is that it is the best defence against avoidable waste occurring at random and remaining undetected, which a one-off survey would miss. Monitoring and Targeting works by combining regular consumption data (usually weekly or monthly) with corresponding data on production throughput, weather or other driving factors. The deviation between actual and expected consumption indicates the extent of any unexpected loss, which can then be converted into implied cost in order to establish significance. This system can also be used to evaluate the impact of energy saving actions or faults in equipment and its operation and set realistic targets for improvement.

Part of an effective Monitoring and Targeting System is the establishment of a representative energy performance indicator, which can be expressed as:

$$\text{Energy per unit produced} = \text{energy used} / \text{saleable product}$$

Or

$$\text{Product per unit energy} = \text{Product} / \text{energy used}$$

These are simple means of assigning energy use to some unit of output and do not necessarily mean that energy is related to output, as in some cases some or all of a facility's energy is independent of production (e.g. a facility's fixed energy component)

10.3 Staff Involvement/Training

There is currently no specific staff training at the site directed at reducing on-site energy consumption.

10.4 Matrix Assessment

As part of the energy audit, the site's energy management system was reviewed against best practice. This involved comparison of the existing activities at the site against the energy management matrix included in Appendix II of the EPA's Guidance note. Level 4 of the matrix represents Best Practice in the field. It is recommended that site operators should strive to develop their energy management systems on a prioritized basis as part of a continuous and cyclical process of improvement.

A comparison of existing site practice and best practice is outlined in the matrix table overleaf.

Energy Management Matrix

| LEVEL | ENERGY POLICY | ORGANISING | MOTIVATION | INFORMATION SYSTEMS | MARKETING | INVESTMENT |
|---------|---|---|--|---|---|--|
| Level 4 | Energy policy, action plan and regular review have commitment of top management as part of environmental strategy | Energy management fully integrated into management structure. Clear delegation of responsibility for energy consumption | Formal and informal channels of communication regularly exploited by energy manager and energy staff at all levels | Comprehensive system sets targets, monitors consumption, identifies faults, quantifies savings and provides budget tracking | Marketing the value of energy efficiency and the performance of energy management both within the organisation and outside it | Positive discrimination in favour of 'green' schemes with detailed investment appraisal of all new-build and refurbishment opportunities |
| Level 3 | Formal energy policy, but no active commitment from top management | Energy manager accountable to energy committee representing all users chaired by a member of the managing board | Energy committee used as main channel together with direct contact with major users | M&T reports for individual premises based on sub-metering, but savings not reported effectively to users | Programme of staff awareness and regular publicity campaigns | Same pay back criteria employed as for all other investment |
| Level 2 | Un-adopted energy policy set by energy manager or senior departmental manager | Energy manager in post reporting to ad-hoc committee, but line management and authority are unclear | Contact with major users through ad-hoc committee chaired by senior departmental manager | Monitoring and targeting reports based on supply meter data. Energy unit has ad-hoc involvement in budget setting | Some ad-hoc staff awareness training | Investment using short-term payback criteria only |
| Level 1 | An unwritten set of guidelines | Energy management is the part-time responsibility of someone | Informal contacts between engineer and a few users | Cost reporting based on invoice data. Engineer compiles reports for internal use within technical department | Informal contacts used to promote energy efficiency | Only low cost measures taken |
| Level 0 | No explicit policy | No energy management or any formal delegation of responsibility for energy consumption | No contact with users | No information system. No accounting for energy consumption | No promotion of energy efficiency | No investment in increasing energy efficiency in premises |

10.5 Recommendations

- (1) It is recommended that AES initiate an in house awareness training programme for all staff to raise consciousness of energy issues. A small contribution from staff towards energy savings can contribute greatly to overall efficiency in general.

- (2) It is recommended that a Monitoring and Targeting System be installed at the site to assist in establishing energy costs attributable to the individual energy consumers at the site. This will allow targeted reductions in energy use at the site and should lead to reduced costs and environmental effects.

- (3) As part of the EMS for the facility a representative energy performance indicator should be developed and tracked to determine if energy efficiency at the site is improving. This would be linked to the Monitoring and Targeting System recommended above which would allow the costs of the energy supplies to be monitored and the costs for the same over given periods to be attributable to productivity.

11.0 ENERGY PERFORMANCE OF THE SITE

The standard approach to assessing the energy performance of the site is to investigate the appropriate energy performance indicators. In this case, the site energy performance is generally good and the management at the site has actively demonstrated a desire to improve energy performance through operational practices at the site (e.g. the use of timers on the heating and outdoor lighting etc).

However, it is possible to implement a series of recommendations as previously outlined which will assist in improving energy performance at the site. The most important of these is the Monitoring and Targeting program. Correlation of accurate energy use figures with the level of occupancy, production demands, time of day and external weather will aid in the development of a more accurate picture of the sites activity, and also monitor the effectiveness of the planned efficiency measures as well as those already in place.

12.0 COMMENTS AND CONCLUSIONS

Energy consumption has previously been recorded but an in-depth analysis of usages has not been performed at the AES facility in Tullamore. However, the company has demonstrated initiative to reduce energy consumption on an environmental and financial basis. Based on the Energy Audit there are a number of comments on the site as a whole.

Monitoring of energy use for diesel and electricity will be very beneficial for the company. When the facility understands where it lies in terms of energy consumption and become aware of the need to monitor energy users at the site improvements and targets are realistic and achievable.

AES Cappincur should consider a permanent move from diesel generated power from their 100kVA generator to electricity.

Consideration should be given to monitoring and improving on the existing infrastructure at the site. All the office buildings are designed to be temporary buildings and would not be very energy efficient (poor insulation and poor heating distribution systems). AES Cappincur should review the condition and energy efficiency of the buildings at their facility and implement improvements as part of their annual performance objectives.

Although not documented, it was evident from the audit that staff takes responsibility for lights, machine maintenance and general energy savings that will make a difference in the long-term.

As there is no explicit policy set out as yet, the company is showing to be low in the matrix averaging out around level 2. The energy management matrix indicates that management should initiate policy that will drive an energy management programme for the facility.

It is recommended that the results of this audit are implemented over a reasonable time frame and are prioritised as part of the annual Targets and Objectives.

Appendix IV

Bund Integrity Assessment Report



***BUND INTEGRITY ASSESSMENT
AT THE ADVANCED ENVIRONMENTAL
SOLUTIONS (IRELAND) LTD. SITE,
CAPPINCUR, TULLAMORE, CO. OFFALY,
IN ACCORDANCE WITH WASTE LICENCE
REGISTER NO.
W0104-01***

For the Attention of:

Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Commercial Park
Monread Road
Naas
Co. Kildare

Prepared by:

Mr. Eamonn Lee
Environmental Scientist

Reviewed by:

Mr. Peter Coogan
Monitoring Team Leader

Report No: ECS3471
Monitoring Date: October 2009
Report Date: November 2009

CONTENTS

1.0 Executive Summary

2.0 Scope

3.0 Survey Methodology

3.1 Monitoring Requirements

3.2 Assessment Techniques

3.3 Determination of fill level.

3.4 Reporting

4.0 Discussion

Appendix 1. Determination of required fill level
 Photographic Evidence

1.0 Executive Summary

Bord na Mona Technical Services were commissioned by Advanced Environmental Solutions (AES) Ltd., to carry out bund integrity assessments of its Diesel and Oil bunds at its site at Cappincur, Tullamore, Co. Offaly.

In accordance with the requirements of the company's Waste Licence (Register No. W0104-01), AES Offaly is required to conduct a bund integrity test, as stated under condition 3.11.4;

'The integrity and tightness of all the bunds and their resistance to penetration by water or other materials stored therein shall be confirmed by the licensee and shall be reported to the Agency within six months of the date of grant of this licence or following its installation and prior to its use as a storage area.

This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion'.

The survey was performed between 27/10/09 and 3/11/09. The bunded areas included in this study were referenced as follows:

1. Oil/Chemical Storage Bund
2. Diesel Storage Bund

The above bunded areas were tested for liquid tightness for seven days in accordance with B.S. 8007:1987 sections 9 (24 Hr Stabilisation period).

The oil bund was found to be in **compliance** with the test.

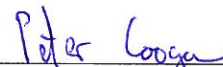
The diesel bund was found to be in **non-compliance**.

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,



Mr. Eamonn Lee
Environmental Scientist



Mr. Peter Coogan
Monitoring Team Leader

2.0 Scope

Bord na Móna Technical Services was contracted by Advanced Environmental Solutions Ltd. (AES) Ltd to carry out Bund testing at their facility in Cappincur, Tullamore, Co. Offaly. The scope of the survey is limited to the following:

- a. Identification and Inspection of the bunded area.
- b. Test the bunded area for 'liquid tightness' as specified in section nine of B.S. 8007: 1987 as required for **seven** days.
- c. Reporting and interpretation of the assessment results.

3.0 Survey Methodology

3.1 Monitoring requirements

As part of the ongoing assessment of the bunded areas on site as required by Waste Licence Register No. W0104-01, *Condition 3.11.4*, this test was performed to determine the integrity of the bunds. The bund areas tested was referenced as follows:

Bund I.D.

1. Oil / Chemical Storage Bund
2. Diesel Storage Bund

3.2 Assessment Techniques

The bunded area was filled with clean tap water to the fill level, marked and allowed to stabilise for 24 hours on the 27th of October 2009.

After stabilisation, the level of the liquid surface was recorded by means of a photograph at 24-hour intervals for the test period of seven days.

3.3 Determination of required fill level.

The required retention volume for each bund was determined prior to commencing filling. Details of the bund are available in appendix 1.

3.4 Reporting

Photographic evidence for the bunded area is reported in Appendix 1.

4.0 Discussion

The criteria used for testing of bunds, tanks and sumps are as follows:

1. A bund containing one vessel should have a nominal capacity of 110 % of the vessel's maximum capacity.
2. A bund containing more than one vessel should have a nominal capacity of 110% of the largest vessel or 25% of the total capacity of all the vessels, which ever is the greater.
3. Sumps, built with double skins (i.e. an inner and outer layer) should have no water in between the two layers.

The bunded areas, as detailed in previous sections, were allowed stabilise for 24 hours and tested. During this 7-day test period the total permissible dip in level (allowing for evaporation) should not exceed 1/500th of the average water depth of the full bund in all cases.

The oil bund 1 was found to be in compliance with the bund assessment.

The diesel bund 2 was not found to be in compliance with the bund assessment for the following reasons;

1. The diesel bund does not have the capacity to hold 110% of the diesel tank capacity.
2. The diesel bund was also found to be the exact width of the tank. For this reason any potential spills from rupturing of the diesel tank would not be completely captured by the bund area.

*This report shall not be reproduced except in full, without the approval of Bord na Móna Technical Services.
All queries concerning the report or its contents should be forwarded to the Monitoring Team leader.*

APPENDIX 1

BUND TESTING REPORT

CLIENT: Advanced Environmental Solutions Ltd

BUND LOCATION: Bund 1 – Oil/Chemical Storage Bund
Bund 2 – Diesel Storage Bund

SURVEY DATES: 27/10/09 -03/11/09

PERSONNEL: Eamonn Lee and Peter Coogan

Oil bund 1.

| DATE | | WATER LEVEL | EVAPORATION /24hr | PHOTO I.D. | PERSONNEL |
|----------|---------------------|-------------|-------------------|------------|-----------|
| 27/10/09 | Fill/ Stabilisation | 300 mm | +/- 1mm | Yes | EL+PC |
| 28/10/09 | Stabilisation/Test | 300 mm | +/- 1mm | Yes | EL |
| 29/10/09 | Test | | +/- 1mm | No | - |
| 30/10/09 | Test | | +/- 1mm | No | - |
| 31/10/09 | Test | | +/- 1mm | No | - |
| 1/11/09 | Test | | +/- 1mm | No | - |
| 2/11/09 | Test | | +/- 1mm | No | - |
| 3/11/09 | Test | 300 mm | +/- 1mm | Yes | EL |

Largest Vessel = 250L

Total Capacity of all vessels = 950 litres

Total Area of Bund – 1720mm x 1720mm x 340mm

Total Bund Capacity = 1005 litres

As the oil bund is roofed there was no need to record rainfall during the assessment period, as it would not have any impact on surface water levels within the oil bund.

COMMENTS

This oil bund (Bund 1) was tested for Seven days in accordance to B.S. 8007: 1987

Conformance to B.S. 8007: 1987 Section 9 (24 Hr Stabilising Period)

Compliant

Diesel bund 2.

| DATE | | WATER LEVEL | EVAPORATION /24hr | PHOTO I.D. | PERSONNEL |
|----------|---------------------|-------------|-------------------|------------|-----------|
| 27/10/09 | Fill/ Stabilisation | 700 mm | +/- 1mm | Yes | EL+PC |
| 28/10/09 | Stabilisation/Test | 700 mm | +/- 1mm | No | EL |
| 29/10/09 | Test | | +/- 1mm | No | EL |
| 30/10/09 | Test | | +/- 1mm | No | EL |
| 31/10/09 | Test | | +/- 1mm | No | EL |
| 1/11/09 | Test | | +/- 1mm | No | EL |
| 2/11/09 | Test | | +/- 1mm | No | EL |
| 3/11/09 | Test | 700 mm | +/- 1mm | Yes | EL |

Diesel Tank Capacity – 1300 litres**Total Area of Bund – 1115mm x 1500mm x 700mm****Total Bund Capacity = 1170 litres**

As the diesel bund is roofed there was no need to record rainfall during the assessment period, as it would not have any impact on surface water levels within the oil bund.

The bund does not have the capacity to hold 110% of the diesel tank capacity. The bund was also found to be the exact width of the tank. For this reason any potential spills from rupturing of the diesel tank would not be completely captured by the bund area.

COMMENTS

This diesel bund (Bund 2) was tested for Seven days in accordance to B.S. 8007: 1987

The water tightness of the diesel bund was found to be in compliance. However the capacity of the bund is found to be non-compliant.

Conformance to B.S. 8007: 1987 Section 9 (24 Hr Stabilising Period)**Non-Compliant**

It is recommended that the bund be replaced with a bund of larger capacity.



Photo ID: Oil Bund 1 - Day 1 – prior to filling (27/10/09)

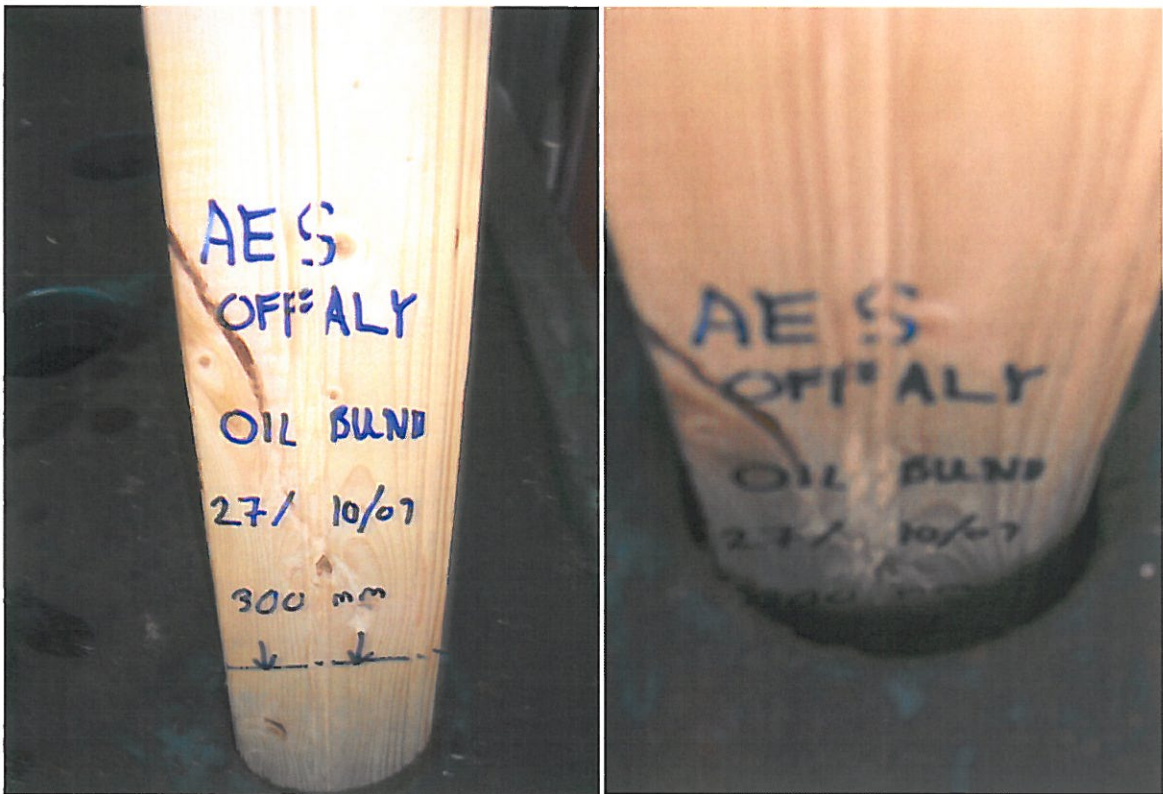


Photo ID: Oil Bund 1 - Day 1 (27/10/09)

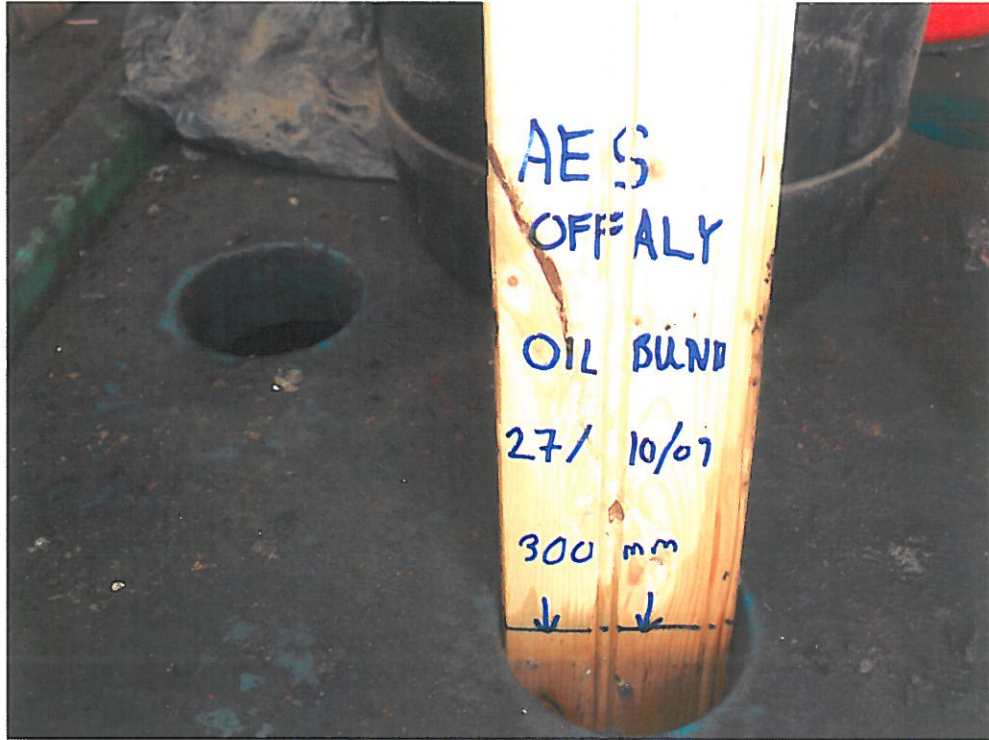


Photo ID: Oil Bund 1 - Day 2 (28/10/2009)

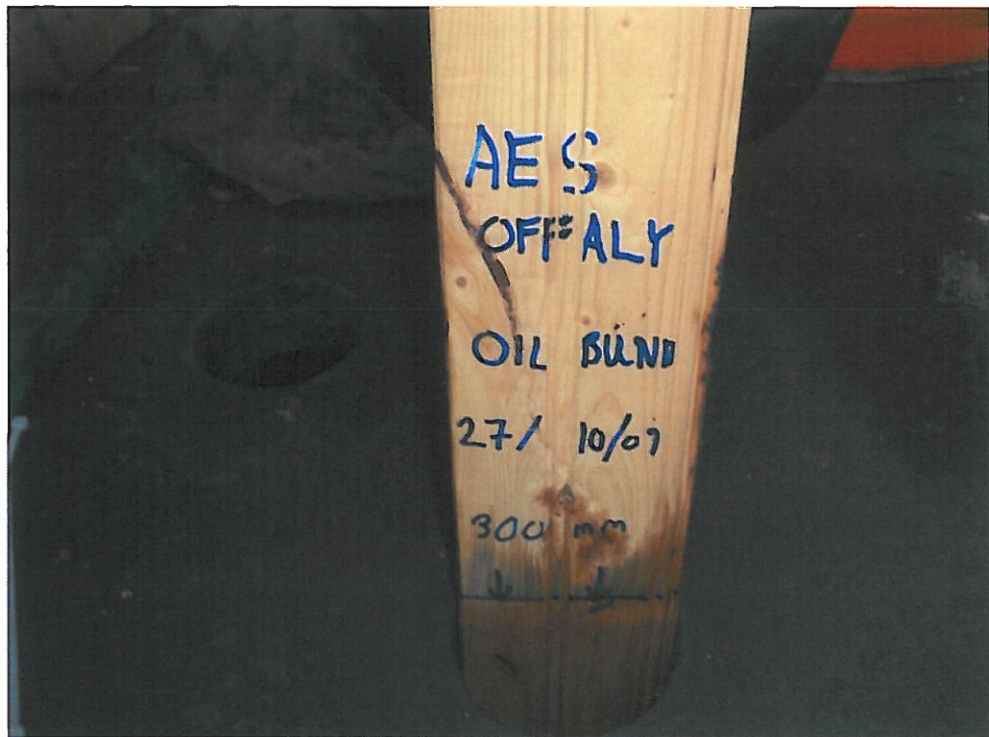


Photo ID: Oil Bund 1 - Day 7 (3/11/2009)



Photo ID: Diesel Bund 2 - Day 1 – prior to filling (27/10/09)

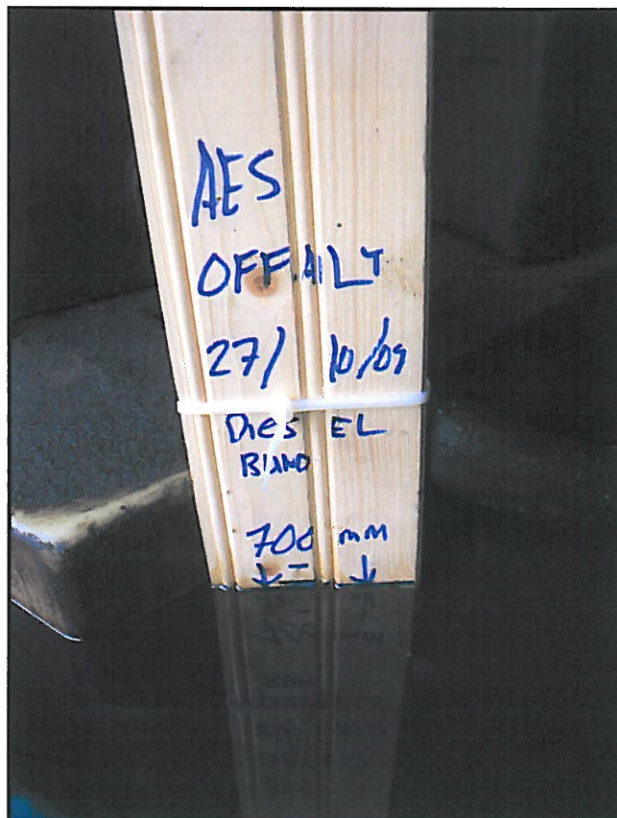


Photo ID: Diesel Bund 2 - Day 1 – (27/10/09)



Photo ID: Diesel Bund 2 - Day 2 (03/11/2009)

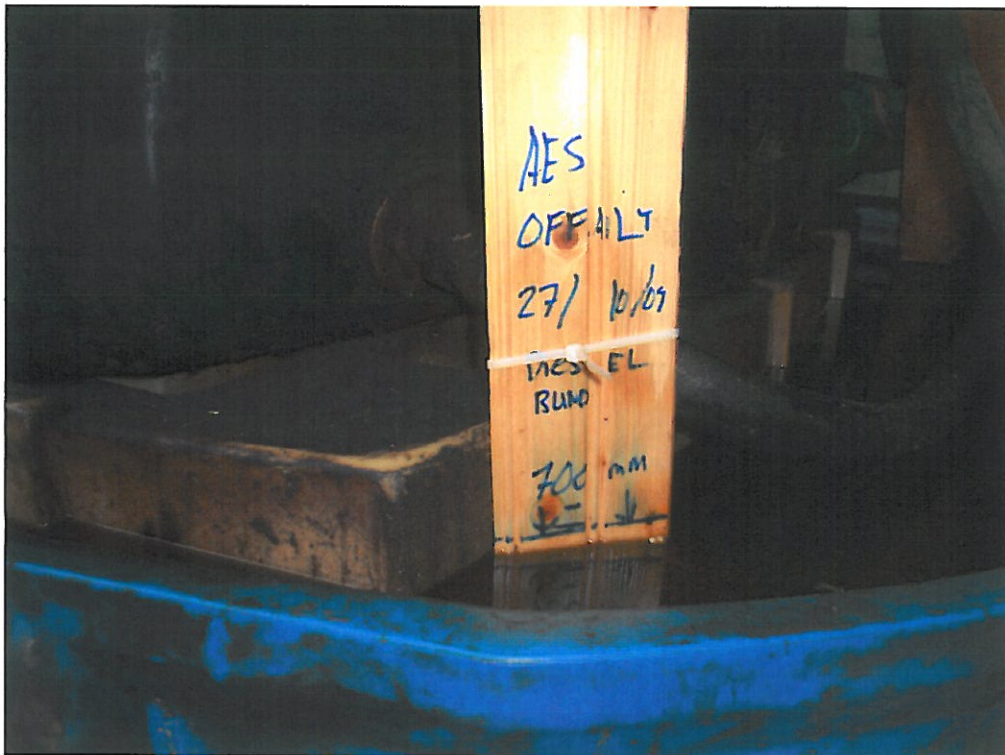



Photo ID: Diesel Bund 2 - Day 7 (03/11/2009)

Appendix V

New Procedures Developed During 2009



| | | |
|--|---|---|
| Emergency Response Plan |  <p>AES ADVANCED ENVIRONMENTAL SOLUTIONS IRELAND</p> <p>AES Tullamore Emergency Response Plan</p> | Document: EP 5.0-ERP-01 |
| Document Approved by: | | Revision: 0 |
| _____ Site Manager | | Issue Date: 10/11/09 Page: Page 1 of 3 |
| Title General Emergency Preparedness & Response | | |

Purpose: To identify the potential for, and to respond to, accidents and emergency situations, and to prevent and mitigate the environmental impacts that may be associated with them.


Scope: The Scope of this procedure is the application of the Environmental Emergency Plan

References: [EP 5.0 Emergency Preparedness and Response](#)
[EPL 5.1 Emergency Contact List](#)
[EP 6.0 Environmental Incident Investigation and Reporting](#)
[EP 7.0 Non Conformance Procedure](#)
[EP 8.0 Corrective and Preventive Action Procedure](#)
[Emergency Plan](#)
Safety Statement
Material Safety Data Sheets

Incident Contact List:

| Emergency Contact List for AES Nenagh | | | |
|--|---|----------------------------|--------------------------------|
| Service / Agency | Address | Telephone Numbers | Fax / e-mail |
| EPA Headquarters | Johnstown Castle Estate Wexford | 053 9160600 1890 335599 | 053 9160699 info@epa.ie |
| Offaly County Council | Aras an Chontae, Charleville Road, Tullamore, Co. Offaly | 057-93467800 | webmaster@offalycoco.ie |
| Southern Regional Fisheries Board | Anglesea Street Clonmel, Co. Tipperary | 052-80055 | 052-23971 enquiries@srfb.ie |
| Eastern Regional Fisheries Board | 15a Main Street, Blackrock, Co. Dublin | 01-2787022 | 01-2787025 info@erfb.ie |

Procedure:

| | | |
|--|---|---|
| Emergency Response Plan |  <p>AES ADVANCED ENVIRONMENTAL SOLUTIONS IRELAND</p> <p>AES Tullamore Emergency Response Plan</p> | Document: EP 5.0-ERP-01 |
| Document Approved by: | | Revision: 0 |
| Site Manager | | Issue Date: 10/11/09 Page: Page 2 of 3 |
| Title General Emergency Preparedness & Response | | |


1. An Emergency Plan is prepared and maintained by AES Nenagh. This Plan details any emergency situation which could occur on site and the proposed response should this emergency occur. The Emergency Plan details procedures for the following occurrences:

| Reference | Description |
|-----------|----------------------------|
| ERP 02 | Spill Clean-up Procedure |
| ERP 03 | Fire / Explosion Procedure |
| ERP 04 | Malicious Damage Procedure |
| ERP 05 | Unforeseen Emergencies |


2. Should an emergency situation occur, the relevant response procedure documented within the Emergency Plan is implemented. Each procedure details the emergency situation, the proposed response should this emergency occur and the potential environmental impacts of this occurrence.
3. The Site Manager shall assume the role of Site Incident Controller, with responsibility for
 - (i) assessing the scale of the incident
 - (ii) informing emergency services
 - (iii) directing rescue and fire-fighting operations.

In the absence of the Site Manager, the Deputy Site Manager shall assume the role of Site Incident Controller.

4. Following an emergency, the Site Manager (or in his/her absence Deputy Site Manager) shall record the details of the incident. Environmental Incident Investigation and Reporting Form EPF 6.1 shall be completed which is located within the procedure for Environmental Incident Investigation and Reporting (EMS Environmental Procedure EP 6.0). Following the environmental incident, appropriate procedures shall be implemented accordingly i.e. Environmental Incident Investigation and Reporting Procedures EP 6.0, Environmental Non-Conformance Procedures EP 7.0 and Environmental Corrective and Preventative Action Procedure EP 8.0.

| | | |
|--|---|--|
| Emergency Response Plan |  <p style="text-align: center;">AES ADVANCED ENVIRONMENTAL SOLUTIONS IRELAND</p> <p style="text-align: center;">AES Tullamore Emergency Response Plan</p> | Document: EP 5.0-ERP-01 |
| Document Approved by: <hr/> Site Manager | | Revision: 0 Issue Date: 10/11/09 Page: Page 3 of 3 |
| Title General Emergency Preparedness & Response | | |

5. This procedure shall be reviewed by the Environmental Management team, annually or after the occurrence of an emergency situation. Additional procedures may be prepared as identified by environmental reviews/audits, environmental compliance monitoring reports, personnel during routine working hours or other communications which bring potential emergency situations to the attention of the Environmental Management Team.
6. The Site Manager shall notify the Environmental Protection Agency as soon as possible after the occurrence of an incident as per procedure EP 15.0 Reporting
7. In the case of any incident which relates to discharges to water, the Site Manager shall notify the Local Authorities and the Southern Regional Fisheries Board as soon as practicable after the incident
8. On a weekly basis, all emergency response equipment shall be checked to ensure it is provided in agreed quantities and in suitable working order.
9. In the case that an emergency situation arises outside the hours of operation, the contact details for the designated person on call are displayed on the Facility Notice Board at the entrance to the site.

| | | |
|--|---|--|
| Emergency Response Plan |  <p>AES ADVANCED ENVIRONMENTAL SOLUTIONS IRELAND</p> <p>AES Tullamore Emergency Response Plan</p> | Document: EP 05-ERP-02 |
| Document Approved by: <hr/> Site Manager | | Revision: 0 Issue Date: 10/11/09 Page: Page 1 of 4 |
| Title Spill Clean up procedure | | |

Purpose: This procedure details the steps to be taken when dealing with a spillage of a hazardous substance on site. It is required in order to:

- Protect Employees
- Protect the Environment
- Prevent Fugitive Emissions

Scope: This procedure applies to AES Tullamore.

Procedure:

Note:

This procedure should be followed for all small, large and massive spills, which may occur.


Definitions:

Small Spill: Less than 5 litres


Large Spill: Greater than 5 litres and less than 250 litres.

Massive Spill: Greater than 250 litres


1. Hazardous materials shall be handled (loaded, unloaded and moved) by a competent person using the correct equipment and appropriate protective clothing. Appropriate precautions should be taken at all times to minimise the risk of accidental spillage.
2. In the event of a spillage occurring, the Site Manager or the Deputy Site Manager shall initially investigate the following issues:
 - How long it has been since the incident occurred.
 - Consult the relevant data sheets (Material Safety Data Sheets or otherwise) for the method of spill containment and fire control of the affected material.
 - Contact the relevant emergency response number (local fire service, police, hospital and Environmental Protection Agency telephone numbers which are detailed on the Emergency Contact List.


| | | |
|---|--|--|
| Emergency Response Plan |  <p style="text-align: center;">AES Tullamore Emergency Response Plan</p> | Document: EP 05-ERP-02 |
| Document Approved by: <hr/> Site Manager | | Revision: 0 Issue Date: 10/11/09 Page: Page 2 of 4 |
| Title Spill Clean up procedure | | |

- Locate the nearest fire suppression system as appropriate; Dry powder extinguishers for ABC fires [wood, paper, textiles, liquid fuels and gases] Foam extinguishers for AB fires [wood, paper, textiles and liquid fuels] Carbon Dioxide [liquid fuel fires and electrical equipment].
 - Note the wind direction and any possible sources of ignition i.e. naked lights, machinery, electrical fittings, and combustible material and remove them from the area.
3. Evacuate the area (for large spills if necessary)
 - The Facility Manger or any other designated person from the Emergency Response Team shall ensure that all personnel are evacuated in a calm, efficient manner. Staff should be instructed to walk briskly to their designated evacuation locations.
 - If flammable material is involved in the spill, isolate equipment and materials that may be affected.
 - If deemed necessary, the Site Manager or any other designated person from the Emergency Response Team shall instruct for the appropriate emergency services to be contacted.
 4. The spillage must be contained using absorbent material, socks, booms or absorbent granules to create a secure dike. The Site Manager or any other designated person from the Emergency Response Team shall ensure that all appropriate personal protective equipment is worn [as detailed in the Material Safety Data Sheet for the spilled material(s)].
 5. If the spillage emanated from a drum, position the drum so that the ruptured section is in an upwards direction, thereby preventing a further leakage.
 6. Once the spill has been contained the liquid shall either be pumped, or removed into a container using non-spark shovels and labelled appropriately (contents, name and date).
 7. Clean up Operation.

| | | |
|---|--|--|
| Emergency Response Plan |  <p style="text-align: center;">AES Tullamore Emergency Response Plan</p> | Document: EP 05-ERP-02 |
| Document Approved by: <hr/> Site Manager | | Revision: 0 Issue Date: 10/11/09 Page: Page 3 of 4 |
| Title Spill Clean up procedure | | |

- Use non-sparking shovels and brushes to sweep the spilled material into containers.
 - Start on the outside and work in towards the centre of the spill.
 - Do not mix different types of waste.
 - Drum the waste and seal the container or bag and double bag.
 - Label the waste with the destination name, appropriate hazard label and name of waste giving as much information as possible on contents, plus concentrations of constituents, etc.
 - If the spill occurred due to a damaged drum, place the ruptured drum into a salvage drum container, until disposal is arranged.
 - Decontaminate personnel by using the washing facilities.
8. Any waste material resulting from a spillage clean-up shall be dispatched to an appropriate facility for disposal and/or recovery. If the affected material is considered hazardous, it is stored in a container and collected as soon as possible by a certified hazardous waste disposal contractor.
 9. Following an emergency, the Site Manager shall record details of the incident. Following a comprehensive investigation into the source of the emergency situation, a corrective action shall be formulated as per EP 10.0
 10. Offaly County Council and the EPA shall be informed if hazardous chemical or firewater infiltrates the drainage network.
 11. The Site Manager must ensure that the resultant depleted spill kit (s) is /are replenished without delay. He must also ensure that replenishment stock is re-ordered straightaway.
 12. On a weekly basis all spill response equipment shall be checked to ensure it is provided in agreed quantities and in suitable working condition.
-

| | | |
|--|--|---|
| Emergency Response Plan |  <p style="text-align: center;">AES Tullamore Emergency Response Plan</p> | Document: EP 05-ERP-02 |
| <p>Document Approved by:</p> <hr/> <p style="text-align: center;">Site Manager</p> <hr/> | | <p>Revision: 0</p> <p>Issue Date: 10/11/09</p> <p>Page: Page 4 of 4</p> |
| Title Spill Clean up procedure | | |

| | | |
|---|---|--|
| Emergency Response Plan |  <p>AES ADVANCED ENVIRONMENTAL SOLUTIONS IRELAND</p> <p>AES Tullamore Emergency Response Plan</p> | Document: EP 05-ERP-03 |
| Document Approved by: <hr/> Site Manager <hr/> | | Revision: 0 Issue Date: 10/11/09 Page: Page 1 of 2 |
| Title Fire / Explosion Procedure | | |


Purpose: A procedure to deal with fire/explosion emergencies is required for the following reasons:

- To protect Employees.
- To protect the Environment.
- To prevent fugitive emissions.


Scope: This procedure applies to AES Tullamore.

Procedure:

1. Employees shall only attempt to fight a fire if safe to do so. If an employee feels that they cannot tackle a fire safely and effectively, **EVACUATION OF ALL PERSONNEL IS THE PRIMARY PRIORITY.**
2. The Site Manager or Deputy Site Manager shall evacuate the area in a calm, efficient manner. All staff and contractors shall be instructed to walk briskly to the designated evacuation point.
3. In the event of a fire/explosion occurring, the Site Manager shall complete a role call to account for all employees and contractors that may be present on-site.
4. The Site Manager shall identify the location of the fire/explosion risk through dialogue with the individual who discovered the fire and shall take one of the following actions:
5. Determine whether the fire can be **SAFELY** isolated utilising the available fire fighting equipment.
6. If the fire is not controlled with the fire fighting equipment available, the local fire brigade shall be notified immediately. Local fire, police and hospital telephone numbers are detailed on the Emergency Contact List. These details are displayed at reception and within the site office. The Site Manager or any other designated person from the Emergency Response Team should;
 - a. Dial 112 for emergency services
 - b. Request emergency service
 - c. Give details of type of emergency and phone number in case call is inadvertently disconnected
 - d. Provide information requested by call recipient

| | | |
|--|--|--|
| Emergency Response Plan |  <p style="text-align: center;">AES Tullamore Emergency Response Plan</p> | Document: EP 05-ERP-03 |
| Document Approved by: <hr/> Site Manager | | Revision: 0 Issue Date: 10/11/09 Page: Page 2 of 2 |
| Title Fire / Explosion Procedure | | |

- e. Determine estimated time of arrival to site and communicate this information to the relevant member of ERT.
 - f. Hang up only when told to do so by call recipient
 - g. Fill out details required by emergency contact log as soon as it safe to do so.
7. If the fire can be safely isolated, locate the nearest fire suppression system as appropriate; Dry powder extinguishers for ABC fires [wood, paper, textiles, liquid fuels and gases] Foam extinguishers for AB fires [wood, paper, textiles and liquid fuels] Carbon Dioxide [liquid fuel fires and electrical equipment]. Only small localised fires should be extinguished in this manner.
 8. Note the wind direction and any possible sources of ignition i.e. naked lights, machinery, electrical fittings, and combustible material and remove them from the area.
 9. Personnel shall not re-enter buildings unless the Site Manager/Fire Officer deems it safe to do so.
 10. Once the fire has been extinguished or the explosion controlled on site, personnel shall complete a clean-up operation as per EP05-ERP-02 using the available resources.
 11. Effected areas shall be checked thoroughly in order to ensure that the fire is quenched. If the affected material is considered hazardous, it is stored in a container and collected as soon as possible by a certified hazardous waste disposal contractor.
 12. Following an emergency, the Site Manager, or other designated responsible person shall record details of the incident as per EP 6.0 Incident Investigation Procedure


| | | |
|---|--|--|
| Emergency Response Plan |  <p style="text-align: center;">AES Tullamore Emergency Response Plan</p> | Document: EP 5.0-ERP-04 |
| Document Approved by: <hr/> Site Manager <hr/> | | Revision: 0 Issue Date: 10/11/09 Page: Page 1 of 1 |
| Title Malicious Damage Procedure | | |

Purpose: This procedure is required in order to monitor and prevent malicious damage.

Scope: This procedure applies to AES Tullamore.

Procedure:

1. Where any occurrence of malicious damage is noted or where persons are observed causing malicious damage, the Site Manager shall be informed as soon as is practical.
2. Where malicious damage results in a significant environmental impact, or a potentially significant environmental impact, the Site Manager shall be advised who then undertakes to minimise and repair the damage caused.
3. Persons observed causing malicious damage shall be subjected to internal disciplinary action. The Site Manager, will report external persons to the Gardaí.
4. Following an emergency, the Site Manager, or other designated responsible person shall record details of the incident as per EP 6.0 Incident Investigation and Reporting.


| | | |
|---|--|--|
| Emergency Response Plan |  <p style="text-align: center;">AES Tullamore Emergency response Plan</p> | Document: EP 5.0-ERP-05 |
| Document Approved by: <hr/> Site Manager <hr/> | | Revision: 1 Issue Date: 10/11/09 Page: Page 1 of 2 |
| Title Unforeseen Emergencies and Fugitive emissions | | |

Purpose: The purpose of this procedure is to outline the procedure to be adhered to in the event of an unforeseen emergency.


Scope: This procedure applies to the AES Tullamore.

Procedure:

1. Following the occurrence of an incident requiring emergency action, the observant shall contact the Site Manager or in his absence most senior representative of management on-site.
 2. Access situation and severity. Request emergency services where necessary. If calling for the emergency services, local Fire, police and hospital telephone numbers are detailed on the Emergency Contact List displayed within the Main Site Office, the Weighbridge Office and the Site Managers Office.
 - a. Dial 112 for emergency services
 - b. Request emergency service
 - c. Give details of type of emergency and phone number in case call is inadvertently disconnected
 - d. Provide information requested by call recipient
 - e. Determine estimated time of arrival to site and communicate this information to the relevant member of ERT.
 - f. Hang up only when told to do so by call recipient
 - g. Fill out details required by emergency contact log as soon as it safe to do so.
 3. Should the incident be determined to be capable of being addressed in-house under the guidance of the most senior representative of management on-site, the Environmental Emergency Response Team shall be mobilised paying due regard to the appropriate emergency response procedure (EP 05-ERP-1-5).
 4. In the event the situation involves a Man Down, do not move the casualty until First Aid or Emergency Services give instruction.
 5. Once ERT arrive at the incident, all contractors and visitors must be directed to the assembly point.
 6. In the event the Emergency Services are called, ERT will cordon off the area and ensure emergency services access is clear to the incident site.
-

| | | |
|---|---|--|
| Emergency Response Plan |  <p style="text-align: center;">AES ADVANCED ENVIRONMENTAL SOLUTIONS IRELAND</p> <p style="text-align: center;">AES Tullamore Emergency response Plan</p> | Document: EP 5.0-ERP-05 |
| Document Approved by: <hr/> Site Manager <hr/> | | Revision: 1 Issue Date: 10/11/09 Page: Page 2 of 2 |
| Title Unforeseen Emergencies and Fugitive emissions | | |

7. Move all machinery not involved clear of the incident and switch engines off.
8. Once the situation is under control and has been deemed safe by the Site Manager or most senior member of management on site then the relevant report forms must be completed and the HSA informed where relevant.
9. In the event that the incident gives rise to an emission the Site Manager and the Emergency Response Team shall immediately
 - Isolate the source of any such emission
 - Carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising there from
 - Evaluate the environmental pollution if any caused by the incident
 - Identify and execute measures to minimise the emissions or malfunction and the effects thereof
6. Following an emergency, the Site Manager, or other designated responsible person shall record details of the incident as per procedure EP 6.0 Environmental Incident Investigation and Reporting. The Site Manger shall also identify and put in place measures to avoid reoccurrence and put in place any other appropriate remedial action. These corrective actions shall be documented as per procedure EP 8.0 Corrective and Preventive Action Procedure.
7. The Site Manager shall provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency.

| | | | |
|-------------------------------------|--|-------------|----------------|
| Procedures Manual |  <p>AES ADVANCED ENVIRONMENTAL SOLUTIONS IRELAND</p> <p>AES Tullamore Emergency Contact List</p> | Document: | EPL 5.1 |
| Document Approved by: | | Revision: | 0 |
| _____ | Issue Date: | 10/11/09 | |
| Site Manager | Page: | Page 1 of 1 | |
| Title Emergency Contact List | | | |

| Company | Name / Title | Phone Number/s |
|--|-------------------------------|--|
| FIRE BRIGADE / AMBULANCE / POLICE | | 999 / 112 |
| TULLAMORE HOSPITAL | | 057 9321501 |
| <u>EMERGENCY RESPONSE TEAM:</u> | | |
| Emergency Controller | Paul Hennessy | 086 8525969 |
| Deputy Emergency Controller | Harry Browne | 087-4100160 |
| News/Media Controller | Garrett Leech | 086-6738102 |
| First Aider | Thelma Mealiffe | 057-9321755 |
| Safety Representative | Michael Shanahan | 087-6195101 |
| Health & Safety Manager | Michael Whelan | 087 9868290 |
| Environmental Manager | Garrett Leech | 086 6738102 |
| Environmental Officer | Linda Cahill Elaine Murray | 087 7697465 087 6570234 |
| | | |
| | | |
| | | |