

## **Attachment K.1      Decommissioning**

In the unlikely event that activity ceases operation the facility will be closed and decommissioned in accordance with the requirements of Condition 10 of the current Licence. The actions that will be implemented are set out in the Decommissioning Management Plan that has been approved by the Agency. A copy of the Plan is included in this Attachment.

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**ENVIRONMENTAL LIABILITIES RISK  
ASSESSMENT (ELRA), CLOSURE,  
RESTORATION, AFTERCARE  
MANAGEMENT PLAN AND FINANCIAL  
PROVISION FOR THE ADVANCED  
ENVIRONMENTAL SOLUTIONS IRELAND  
LTD SITE AT CAPPINCUR, TULLAMORE,  
CO. OFFALY.**

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**FOR THE ATTENTION OF:**

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ECS 3158

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February 2009

### Executive Summary

Bord na Móna Environmental Consultancy Services were commissioned by Advanced Environmental Solutions (Ireland) Ltd herein referred to as AES, Cappincur to complete an Environmental Liabilities Risk Assessment (ELRA) and Closure Plan for their facility at Cappincur, Tullamore, Co. Offaly.

The site was subsequently visited on 17<sup>th</sup> of November 2008 by two Environmental Consultants to carry out an audit of the environmental risks associated with activities at the facility.

The cost of a Closure Plan as identified in Chapter 4 of this report is estimated at €61,800 and includes but is not limited to decommissioning of the buildings, flushing and removal of tanks and pipe work, residual diesel disposal, residual waste disposal and final environmental monitoring activities, performance of an exit audit and fulfilment of EPA monitoring and reporting requirements.

Unknown Environmental liabilities have been evaluated for the site and with mitigation measures in place the costing for the most likely scenario is estimated at €47,183.

The total financial provision for AES, Cappincur, Co. Offaly has been calculated at €130,780, including a 20% contingency costing of €21,796.

Financial Provision for a total of €130,780 shall be provided by way of a Company Guarantee by Advanced Environmental Solutions to ensure that the liabilities arising from any environmental incident occurring during the operation or closure phases of the facility are financially provided for.

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**APPENDICES**

- 1. LIST OF ENVIRONMENTAL MANAGEMENT PROCEDURES**
- 2. SITE LAYOUT MAP**

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## 1.0 INTRODUCTION

Bord na Móna Environmental Consultancy Services was commissioned by Advanced Environmental Solutions (Ireland) Ltd to complete an Environmental Liabilities Risk Assessment (ELRA) and Closure Plan for their waste transfer station at Cappincur, Tullamore, County Offaly.

AES Cappincur is licensed by the Environmental Protection Agency (EPA) by waste licence (W104-01). As part of the requirements of their Waste Licence for their facility, they are required to undertake a fully costed Environmental Liabilities Risk Assessment.

The basis for this assessment arises from Condition 12.2.1 of Waste Licence W104-01, which states that:

Condition 12.2.1

*'The licensee shall arrange for an independent third party risk assessment of the facility to be carried out. The risk assessment shall have particular regard to any accidents, emergencies, or other incidents, which might occur at the facility and their effect on the environment. The risk assessment shall include a comprehensive and fully costed Environmental Liabilities Risk Assessment for the facility together with a proposal for Financial Provision arising from the carrying on of the activities to which this licence relates including the restoration of the facility.'*

To order to complete this study a site risk assessment was conducted by two Environmental Consultants from Bord na Móna Ltd on the 17<sup>th</sup> of November 2008.

### 1.1 General

Advanced Environmental Solutions Ireland Ltd operates a waste transfer facility at Cappincur, Tullamore Co. Offaly. This assessment was undertaken to determine the potential environmental liabilities associated with previous and ongoing activities taking place at the facility during normal and emergency situations.

The Environmental Liabilities Risk Assessment (ELRA) and Residuals Management Plan (RMP) have been prepared in line with the Guidance Document "Guidance on Environmental Liabilities Risk Assessments, Residuals Management Plans and Financial Provision" as published by the EPA in 2006.

## 1.2 Environmental Liabilities Risk assessment and Residuals Management Plan

The requirements for an Environmental Liabilities Risk Assessment and Residual Management Plan stems from a risk assessment of all operations at the facility. This risk assessment is based on a decision matrix, as developed with the EPA Guidelines, which assigns a facility as being Low, Medium or High Risk.

The matrix is based on three key aspects: Complexity, Environmental Sensitivity and Pollution Record. Complexity refers to the extent and magnitude of potential hazards present due to the operation of the facility. Environmental Sensitivity is the sensitivity of the receiving environment in terms of proximity to sensitive receptors such as aquifers, surface water features, sensitive human receptors etc. Pollution record refers to the compliance history of the facility and whether soil and/or groundwater contamination is present below the site.

The score for each aspect is totalled to give the total score for the facility, and this can be used to place the facility into an appropriate Risk Category (Low, Medium or High). Once this is completed, the relevant steps of CRAMP, ELRA and FP that are considered appropriate for the risk category are followed.

Environmental Liabilities can be divided into two main types, known and unknown liabilities. Known liabilities are those anticipated and associated with facility closure, restoration and aftercare management. Unknown liabilities comprise the risk of environmental liabilities occurring due to unexpected events. The ELRA and RMP process quantifies the environmental liabilities, both known and unknown, and sets out a methodology to make provision financially for the known and unknown environmental liabilities.

The structure of the process as laid out in the guidelines is as follows:

**Step 1:** Initial Screening and Operational Risk Assessment;

**Step 2:** Site Evaluation;

**Step 3:** Preparation of Closure, Restoration and Aftercare Management Plan (CRAMP) for known Liabilities;

**Step 4:** Environmental Liability Risk Assessment (ELRA) for unknown Liabilities

**Step 5:** Identification of Financial Provision (FP) and Instruments

This report sets out the above steps for the AES facility at Cappincur, Co. Offaly.

### 1.3 Objectives and Scope of Work

The objectives of the study were:

- Identification of major operational and post closure risks to sensitive receptors resulting from activities at the facility;
- Identification of existing control/mitigation measures to reduce identified risks (engineering works, operational procedures, emergency response plans and fire fighting measures);
- Identification of new mitigation measures where risk levels remain unacceptable after implementation of existing measures;
- Determine potential costs of environmental liabilities at the site to allow for financial provision to be made in accordance with the requirements of Waste Licence W104-01.

This report presents the main findings of the risk assessment and outlines the current status of the site with respect to the requirements to provide financial provision in the case of occurrence of environmental incidents at the site.

This report is structured as follows:

- Chapter 2.0: describes the existing environment in the vicinity of the site, and gives a brief description of on-going activities at the site and materials held on-site;
- Chapter 3.0: details of the site evaluation; sensitivity of facility, compliance record, overall risk category assessment;
- Chapter 4.0: summarises the existing RMP for the site, including known liabilities for the facility at closure and an outline of the closure plan for the site (CRAMP);
- Chapter 5.0: describes the potential unknown environmental liabilities associated with the on-site activities, determines the level of risk associated with each liability and,
- Chapter 6.0: gives a list of the cost implications and the estimated financial provision required for environmental liability at the site.

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## 2.0 SITE DESCRIPTION

### 2.1 Site Location

The AES Cappincur site is located east approximately 2km to the east of the town of Tullamore on the Daingean Road. The facility is located within the Cappincur Industrial Estate with similar sized industrial units adjacent to the site. The site location is shown in Figure 1 below.

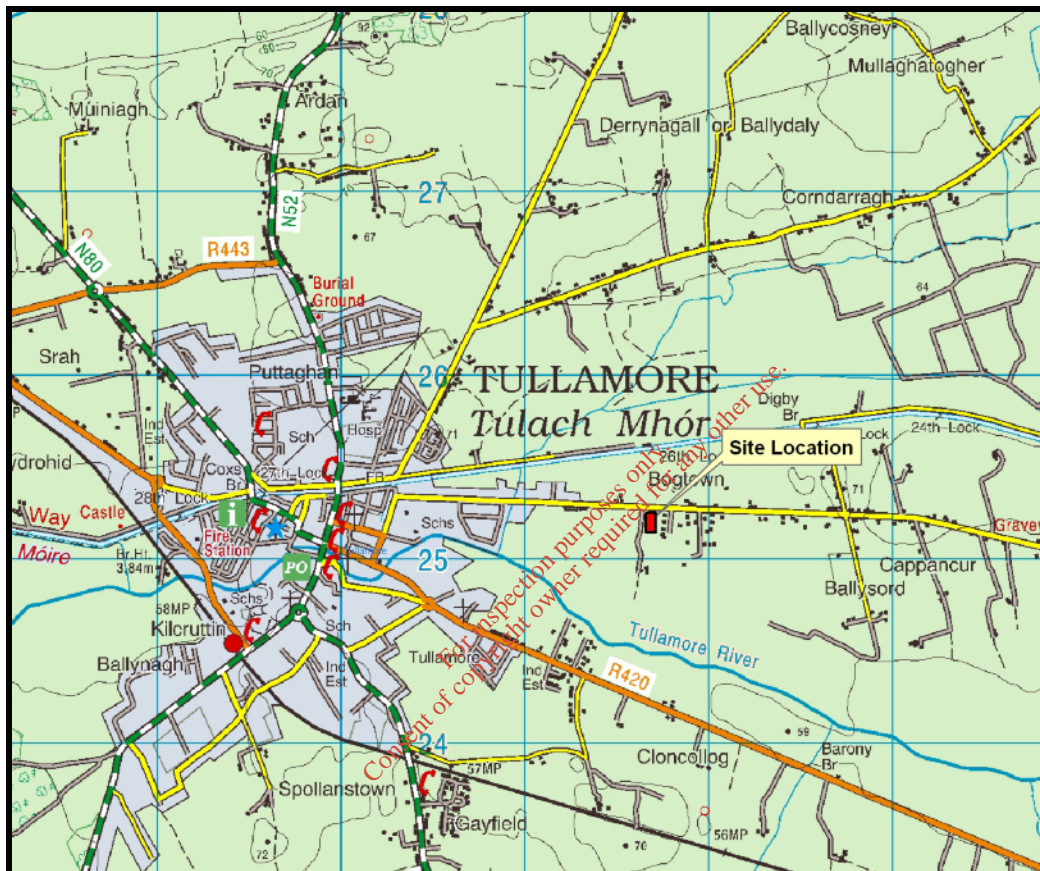


Figure 1 Site Location

The land uses surrounding the facility is a mixture of industrial and agricultural. The main agricultural activity would be grazing. On the eastern boundary of the site are some light industrial units including a sawmill and there is a dog pound at the south end of the facility. There is also a new bypass under construction along the northern boundary of the site.

### 2.2 Site Description

The site is located within an existing industrial estate. The site was purchased from Rentabin Ltd in 2002.

All the waste processing and handling is conducted in the confines of the main waste processing building. The site surface is hard stand for the most part. There is a large hard standing car parking area to the front of the building and hard standing area at the rear of the building. There is also a hardcore yard area to the rear of the building along the perimeter fence. There is a large portacabin located adjacent to the front gate which is used for administration purposes and a weighbridge located to the east of the building. There is a compulsory purchase order for an area of land of approximately 0.12 hectares on the northern boundary of the site to facilitate road upgrades and the construction of a new bypass.

### 2.3 Facility Operations

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 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.

Waste is accepted at the facility from waste collection trucks and skips, which is weighed at the weighbridge and subsequently tipped inside the waste transfer building, where it is inspected, sorted and segregated for disposal and recovery. All waste processing is conducted inside the confines of this building. C&D waste and Municipal Solid Waste will be segregated using the following items of mobile and stationary plant: Material Recovery Line comprising of conveyor, metallic separator, eddy current separator and a Bollograf baler, Bobcat, 2 Excavators, Katamuso, Forklift and a grablift.

The segregated recyclables namely cardboard, plastics and paper are baled and sent off-site for recovery. The timber and metal fractions of the C&D waste are segregated into skips and sent off site for recovery. Any residual wastes are sent to an appropriately licensed landfill for disposal. (Derryclure W0029-2, KTK Landfill W0081-3 and Greenstar W0146-1)

The opening hours of operation of the facility are from 7:00 to 20:00 Monday to Saturday inclusive. Waste is accepted at the facility between the hours of 8:00 to 19:00 Monday to Saturday inclusive. Waste is not accepted at the facility on Sundays or on Bank Holidays.

Ancillary services on site include waste water treatment for domestic purposes, administration offices and water supply from the Ballinager Group water scheme. It is not foreseen that the administration office and water supply will give rise to significant environmental liability.

Baled waste is normally stored inside the confines of the building or transferred to a container for transport off site to a waste broker. However at the time of the risk assessment there were several tiers of baled plastic wastes being temporarily stored at the rear of the facility. This area is a hardcore area and not hardstanding. Management advised that this strip of land is under the ownership of Offaly County Council. It is used by AES in agreement with Offaly County Council and who were subsequently informed that baled waste was being temporarily stored there. At the time the report was being compiled, assurance was given from the management of the facility that the activity of waste storage in this area had ceased.

## 2.4 Materials Storage and Handling

Raw materials used on site include diesel for trucks which is stored in a 1,100 Litre bunded tank located to the eastern side of the waste processing building. The tank is stored in a roofed area which is open to the front, which allows for easy access for diesel loading and offloading. The tank is used to re-fuel on site machinery.

A second hydrocarbon store is located immediately adjacent to the diesel storage area. This is a fully enclosed storage unit with a bund. This area is used for the storage of hydraulic oils, waste oils and other hydrocarbons which are used for maintenance of waste processing equipment.

During the waste sorting process any waste which is deemed to be hazardous is stored in the designated waste quarantine area located inside the confines of the waste sorting building. Hazardous household waste accepted at the facility includes the following: batteries, paint, waste oil, white goods, fluorescent tubes and electrical goods at quantities as specified in Schedule A of Waste Licence W104-01.

Clean wheelie bins are stored at the facility. Historically there was a wheelie bin washing process on site however this practice has ceased following instruction from the Agency in May 2008.

Spill kits have been provided and placed at strategic locations (i.e. near Hydrocarbon use and storage areas) around the facility. Spill kits are routinely checked to ensure that absorbent material and booms are replenished.

## 2.5 Environmental Emissions

Details of environmental emissions on site are given in Schedule C and D of Waste Licence W104-01. They can be summarised as follows:

**Emissions to Water:** Surface Water run-off from buildings/roofs hardstanding areas of the site is collected within drainage channels and then discharged to a drainage ditch at the southern boundary of the site via an oil interceptor.

**Air Emissions:** There are no major emissions to air. However, dust deposition and noise levels are monitored regularly as specified in Schedule C of the Waste Licence.

**Wastewater Emissions:** There are no emissions to sewer. All foul water and sewerage generated from the domestic amenities on site is treated in on-site in a septic tank treatment system. The system is desludged and contents are brought to Tullamore wastewater treatment plant on a regular basis (approximately monthly).

## 2.6 Environmental Management Systems

The AES facility at Cappincur, Tullamore is governed by Waste Licence No. W 104-01. Advanced Environmental Solutions also has an Environmental Management System which is audited annually by a third party. The Environmental Management System consists of, but is not limited to the following procedures:

- Environmental Corrective and Preventative action
- Environmental Incident Investigation and Reporting
- Waste Acceptance and Handling
- Environmental Complaints
- Emergency Response Procedures

A list of all Environmental Procedures in the Environmental Management System has been detailed in Appendix 1.

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### 3.0 SITE EVALUATION

#### 3.1 Environmental Sensitivity

##### 3.1.1 Geology and Hydrogeology

Information on the underlying geology of the site was acquired from the GSI website ([www.gsi.ie](http://www.gsi.ie)) and from the 'Environmental Impact Statement for the Intensification & Development of the AES Ltd. Waste Management Facility at Cappancur, Tullamore, Co. Offaly' (Fehily Timoney & Co., 2008).

The site of the AES Ltd. facility at Cappancur lies within an area of Glacial Till, underlain by Carboniferous Basinal Limestones.

The underlying aquifer is classified as a "Locally Important Aquifer (LI)" which is "moderately productive in local zones only". A "Regionally Important Aquifer" is located approximately 500 m west of the site. The Groundwater Vulnerability of the majority of the area is classified as "Moderate Vulnerability" (M).

##### 3.1.2 Hydrology

Information on the hydrology of the surrounding area of the site was acquired from the EPA website ([www.epa.ie](http://www.epa.ie)) and from the 'Environmental Impact Statement for the Intensification & Development of the AES Ltd. Waste Management Facility at Cappancur, Tullamore, Co. Offaly' (Fehily Timoney & Co., 2008).

The AES Ltd. facility at Cappancur is located within the Shannon International River Basin District (ShIRBD) (Hydrometric Area 25). All surface water run-off generated on-site is discharged to the drainage ditch which runs along the southern boundary of the site. This drainage ditch drains to the Tullamore River, located approximately 750 metres south of the facility.

The EPA monitors water quality of the Tullamore River at Springfield Bridge (Station No. 0100) located approximately 3 km upstream of the facility and Ballycowan Bridge (Station No. 0400) located approximately 7 km downstream of the facility, which is approximately 4 km downstream of Tullamore town. These locations were last monitored by the EPA in 2005. A Q value of Q3-4 (slight pollution) was assigned to the upstream location; a Q value of Q2 (heavy pollution) was assigned to the downstream location. Under the Water Framework Directive the river has been classified as a water body which is at risk of failing to meet good status by 2015 (Environmental Objective Score: 1a), the stretch of the river receiving the surface water run-off has been assigned a Quality Class of Class B.

### 3.1.3 Sensitive Receptors

The facility is located on the western edge of Cappincur Industrial Estate, with adjacent industrial units. The nearest residential property is located approximately 200m from the site. The industrial estate is bordered on the North, South and West by agricultural land (predominantly pasture lands); however, the fields to the north-west, west and south-west have been acquired under a compulsory acquisition order for the construction of the N52 Tullamore bypass.

There is a proposed protected site (Proposed NHA, Site code 002104: Grand Canal) situated, <1km from the site. This area is not directly adjacent to the site.

The site scored 9 on the environmental sensitivity sub-matrix and therefore can be classified as Moderate, class 2 sensitivity, due to its proximity to residential properties and the sensitivity of the receiving waters.

### 3.2 Compliance Record

The Pollution Record Score is derived from the compliance record of the facility and whether significant ground contamination exists below the facility. The scores assigned are between 1 and 3.

- A score of 1 is assigned to newly licensed facilities and those operating without a non-compliance of emission limits; these are classified as *Compliant/New Facility*.
- A score of 2 is assigned to facilities classified as *Minor Non-Compliant* with minor non-compliances (<5 non-compliances in 12 month period) and facilities with minor soil and groundwater contamination. In the EPA Guidelines, minor soil and groundwater contamination is defined as: “concentrations above background but not posing risk to the environment”.
- Licensed facilities with a major non-compliance history ( $\geq 5$  non-compliances in 12-month period) and or those with significant soil and groundwater contamination are classified as *Major Non-Compliant/Significant Ground Contamination* and are assigned a score of 3. Significant soil and groundwater contamination is defined as “requiring remediation and/or long-term monitoring requirements”.

AES, Cappincur has shown a good compliance record with a number of minor emission exceedences recorded. The site is a brown field site as the site was used previous to AES as waste contracting business by Rentabin. The site was purchased by AES Ltd. in 2002. In May 2007, AES Ltd. was acquired by Bord na Mona PLC but continues to operate as an independent company. There has been no history of soil or groundwater contamination while the site was under AES.

Based on the calendar year of 2008 there were 8 reportable non-compliances. Three non-compliances in 2008 were associated with elevated ammonia results in the Surface water emissions and four of the non-compliances were associated with elevated dust monitoring results. However monitoring results are generally compliant with limits set out in Waste licence W0104-01.

### 3.4 Completion of Risk Category Assessment

Using the Complexity Score, the Environmental Sensitivity Score and the Pollution Record Score, the product of these scores is used to calculate a total score which is then used to assign the site specific risk category. Table 3.1, based on the matrix within the EPA Guidelines (Page 16) illustrates this.

<b>Table 3.1 ELRA/RMP/FPA Operational Risk Matrix</b>		
		<b>Score</b>
<b>Complexity</b>	G1 (1)	
	G2 (2)	
	G3(3)	
	G4 (4)	4
	G5 (5)	
<b>Environmental Sensitivity Classification</b>	Low (1)	
	Moderate (2)	2
	High (3)	
<b>Pollution Record</b>	Compliant/New Facility (1)	
	Minor Non-Compliant (2)	
	Major Non-Compliant/Significant Ground Contamination (3)	3
<b>OVERALL RISK SCORE</b>		24
<b>OVERALL RISK CATEGORY</b>		<b>(Category 3)</b>

The Risk Category for the facility is determined based on the risk matrix score. If the score is less than 5, a “low” risk category is indicated, if the score is between 5 and 23 a “medium” risk category is indicated and if the score is greater than 23, a risk category of “high” is indicated.

In this instance a risk score of 24 falls within the >23 risk category and therefore the operation risk of the AES Cappincur facility is “high”.

## 4.0 CLOSURE PLAN – KNOWN LIABILITIES

### 4.1 Introduction

Based on the complexity look-up table in the EPA's 2006 Guidance document on Environmental Liability Risk Assessment, Residuals Management Plans and Financial Provision the AES facility at Cappincur, Tullamore can be assigned a complexity Band G4. The complexity score has been assigned based on Class 13 activities from the Third Schedule of the Waste Management Act 1996,

*'Storage prior to submission to any activity referred to in a proceeding paragraph of this schedule, other than temporary storage, pending collection, on the premises where the waste concerned was produced'*

The complexity rating directly relates to the storage of household hazardous waste. The guidance document categorises any facility that stores <10,000 tonnes per annum with a G4 rating. AES Tullamore is licensed to accept 100 tonnes of household hazardous waste per annum so therefore falls under this category.

A complexity of G4 automatically assigns a Risk Category 3 to a facility. Risk Category 3 requires a Closure Plan and a Restoration, Aftercare Management Plan to be considered. However where Category 3 facilities (excluding mining and landfill) have demonstrated by way of previous investigations that long term liabilities are not present, the requirements for RAMP are reduced.

### 4.2 Closure Plan

#### 4.2.1 Closure Considerations

In the event of decommissioning and closure of the facility a fully costed plan as detailed below shall be implemented. Following the cessation of activity a clean closure of the site is envisaged given that there is no history of ground or water contamination at the site.

In the event of closure it is expected that the site shall be reused as an industrial unit given its location within the Cappincur Industrial Estate and existing utility services to the site. Therefore clean closure for the site would represent (1) The removal of all, equipment, waste materials, management products and raw materials from the site (2) ensuring that there are no remaining environmental liabilities (i.e. any remaining infrastructure shall be decontaminated). Therefore removal of the infrastructure and services and building demolition shall not be considered.



## **Plant & Services**

The main pieces of fixed plant are as follows:

- Material Recovery Line (conveyors, motors, belts etc),
- Baler,
- Weighbridge,
- Portacabin offices.
  
- The mobile plant on site consists of
  - Katamuso,
  - Bolocat,
  - Forklift,
  - Grablift,
  - Diggers (x 2).

In the event of site closure it is anticipated that all existing equipment will be transferred to another AES site for re-use. If there is (1) no requirement for them or (2) in the case of liquidation of the company; the equipment shall be sold off to a suitable vendor. The following activities will take place in this event:

- All equipment shall be disassembled,
- All contaminates shall be removed or drained from the plant,
- All residues of fuels or oils shall be removed off site for recovery or disposal by an appropriately licensed contractor,
- Each piece of equipment shall be washed down,
- The wash water shall be appropriately contained and disposed off by a suitably licensed contractor,
- Records for the disposal of all wastes and the transfer of all equipment shall be maintained.

## **Buildings**

The main waste processing and storage buildings shall be decontaminated as appropriate. They shall be washed down using water. The subsequent leachate generated shall be captured and sent off site for treatment.

## ***Materials and Residues***

There is the assumption that if the site were to close that all waste activities would be wound down as per Business Closure Plan and that there would be no remaining process wastes on site which would require disposal.

Provision shall be made for the appropriate and authorised disposal or recovery of any remaining processed waste. This may include cardboard, plastic, metallic packaging, mixed packaging, glass packaging, newsprint, woods plasterboard, C&D wastes, municipal wastes and small volumes of household hazardous wastes. All the wastes associated with the offices (paper, electrical, white goods, IT, furnishings) will be re-used at an alternative AES location, sold or disposed of appropriately.

The diesel fuel storage tank shall be drained and the contents transported and recycled or disposed of off-site in accordance with the relevant waste management regulations and best practice guidance for waste management of waste/raw materials. Such activities will be carried out with the supervision of site management to reduce the risk of potential incidents.

The hydrocarbon bunds shall be decontaminated and removed from site. Any residual hydrocarbon on the hardstanded area of the storage area shall be removed. All the tanks are currently above ground and shall be flushed out and dismantled prior to removal off-site to another AES site or for disposal if there is no requirement for them. This shall include leachate storage tanks that are planned to be installed as part of the new Waste Water Treatment Plant and leachate collection system. All the flushed material shall be collected and disposed off by an appropriate waste contractor and in accordance with the relevant waste management regulations. All drums and barrels containing hydrocarbons will be removed from the site by an approved waste contractor. All hydraulic oils from fixed plan shall be drained will be handled according to site procedures for hazardous waste storage.

It is planned that all plant, vehicles, skips, wheelie bins and skips stored on site shall be removed from the facility and transferred to another AES site for re-use. In addition all wastes which in temporary storage on site and remedial waste from operations at the facility shall also be removed by a suitably licensed Waste contractor.

Currently there are plans to relocate (due to compulsory purchase order) and to upgrade the existing Waste Water Treatment Plant to include a facility to store any leachate generated from washing of the waste processing building. Therefore closure plans should take into consideration the decontamination of either system. In both cases the wastewater treatment plant shall receive a final desludging and go through a decontamination process of being flushed out. All the leachate

generated shall be stored within the effluent holding tanks and disposed of by an appropriate waste contractor. The system shall be removed and the area shall be backfilled.

In addition as part of the site closure plan the oil inceptor shall be cleaned out and the drainage system will be inspected to ensure that there is no build up of debris, preventing them from efficiently draining the site.

It is proposed that the on site services shall remain on site, as in the event of site closure the site it is expected that the site shall be reused for industrial purposes. Therefore the removal of site services shall not be detailed as part of the closure plan. The site is serviced by electricity from a 38kV line. There is also a pole mounted transformer on the south western end of the site which shall remain following decommissioning of the site. The site is also connected to the telephone network and the Ballinager Group Water Scheme.

### ***Environmental Monitoring***

During the decommissioning and closure phase the facility shall continue to operate under the constraints of the IPPC licence W0104-01 until such time that it is surrendered to the agency. Also the Environmental Management System shall remain in force throughout the decommissioning and closure process. Therefore the monitoring programme agreed with the agency under licence W0104-01 shall also be continued during the decommissioning and closure process.

It is proposed that a site evaluation / risk assessment shall be conducted following cessation of activities to confirm whether there are any residual liabilities to the environment associated with the site. Suitable provision shall be made if there is a requirement for further monitoring by a third party following site closure. Provision for access to the site for monitoring following the transfer of the site to new owners shall also be provided for.

It is proposed that at a minimum that one monitoring event will be undertaken at the facility, which will include Surface Water and Groundwater monitoring.

#### ***4.2.2 Criteria for a Successful Closure***

1. All plant is either removed and transferred to another AES facility or safely decontaminated and disposed of using standard procedures and authorised contractors;
2. All wastes are handled, packaged, temporarily stored and disposed of or recovered in a manner which complies with regulatory requirements;
3. All relevant records relating to waste and materials movement and transfer or disposal are managed and retained throughout the closure process;

4. There is no contamination at the site. This is to be verified following assessment at the time of closure; and
5. The Environmental Management System is kept in place and is actively implemented during the closure period.
6. Establish if there is a requirement for on-going environmental monitoring or investigations.

#### 4.2.3 Closure Plan Costing

The Closure plan costing for the Advanced Environmental Solutions site at Cappincur is estimated at €61,800 a breakdown of this costing is provided in Table 4.1 Estimated Closure Costs.

TABLE 4.1 ESTIMATED CLOSURE COSTS		
CLOSURE PLAN ITEMS	ESTIMATED COST	Notes
Plant disassembly and Removal	€35,000	Removed by AES personnel & transferred to another AES site
Decontamination	€5,000	
Removal/disposal of septic tank	€1,000	Contents/septic tank removal €500 and make safe with backfill €500
Clean out of oil inceptor and drains	€2,000	
Waste disposal/recovery	€2,500	Removed to another AES site
Emptying of fuel tanks	€300	Tanks and bunding shall be reused at other AES sites
**Removal of leachate associated with decontamination	€3,500	
General site cleanup	€2,000	
Environmental Monitoring	€3,000	
Verification audit/certification	€2,000	
Exit Audit & Report to EPA	€5,500	
<b>Total</b>	<b>€61,800</b>	

\*\* Assumption is made that that the proposed leachate collection system shall be in place at site closure and leachate generated during the decontamination process can be contained.

#### 4.2.4 Closure Plan Update and Review

The closure plan shall be reviewed and updated, as required by the agency. The updated and reviewed Closure Plan will take account of any amended site activities or process technology and costing changes.

#### **4.2.5 Closure Plan Validation**

In the event of closure of the facility a decommissioning programme would be put in place. As part of decommissioning programme a Final Closure Audit Report would be conducted by independent professional auditors. This would include an inventory of all remaining assets at the site (raw materials, equipment, wastes, etc) and any environmental issues related to the facility. This inventory will be the benchmark against which successful decommissioning will be assessed.

#### **4.3 Restoration and Aftercare Management Plan (RAMP)**

##### **4.3.1 Restoration and Remediation Proposals**

As part of the Aftercare Management Plan a comprehensive round of monitoring will be conducted. This shall include surface water, ground water and soil analysis to verify the condition of the surrounding environment.

As detailed in the EPA guidelines, there are two main circumstances in which site restoration and aftercare management plans are required. These entail (i) areas of significant soil and groundwater contamination and (ii) landform changes. Neither of which apply to AES Cappincur. No other remediation measures shall be identified at this point as there is currently no known history of contamination on the site. There have been no reported incidents or spills on the site. Therefore the risk associated with soil and groundwater contamination at the site is considered to be very low. Not with standing this, as part of the closure, environmental monitoring will continue at the facility until such time as the decommissioning phase is complete. A final monitoring round will be carried out to confirm the absence of contamination.

##### **4.3.2 Aftercare Management Plan**

Based on the current environmental monitoring data there is currently no significant contamination or groundwater/soil at the site, therefore at this time no short or longterm aftercare monitoring and maintenance plan is required. The RAMP shall however be updated on an annual basis or as changing circumstances dictate, to include for any requirement for further environmental monitoring at the site if groundwater, surface water or soil contamination occurs or is identified.

##### **4.3.3 Cost of Restoration and Aftercare Management Plan**

As stated previously no specific remediation/restoration measures are currently required to be implemented during closure of this site, nor is any aftercare monitoring or maintenance required. However, should future environmental monitoring identify contamination at the site then the costs of the above may be added to the RAMP as part of its annual review.

## 5.0 ENVIRONMENTAL LIABILITY RISK ASSESSMENT (ELRA) UNKNOWN LIABILITIES

### 5.1 Introduction

Environmental liability risk assessment (ELRA) considers the risk of unplanned events occurring during the operation of the activity that could result in unknown liabilities arising. AES Cappincur are classified as a category 2 medium risk facility (refer to section 3.4) Under the EPA guidance document Category 2 facilities require a generic ELRA.

The objectives of the site specific ELRA are defined in the Draft Guidelines as follows:

- *To identify and quantify environmental liabilities at the facility focusing on: unplanned, but possible and plausible events occurring during the operational phase;*
- *To calculate the value of financial provisions required to cover unknown liabilities;*
- *To identify suitable financial instruments to cover each of the financial provisions; and*
- *To provide a mechanism to encourage continuous environmental improvement through the management of potential environmental risks.*

The following steps are set out in the Draft Guidelines:

1. Risk Identification
2. Risk Assessment
3. Risk Prevention and Mitigation
4. Development of Risk Management Programme
5. Assessment of Unknown Environmental Liabilities.

Based on the description of the activities occurring at the site in Section 2.0 the environmental liabilities of the activities on-going at the facility and in the event of an emergency situation are detailed herein. Environmental risk categories covered in this assessment include: surface water, groundwater, atmosphere and land and human health.

### 5.2 Risk Classification

Risk identification and classification was undertaken on the entire activities AES site at Cappincur by identifying all the environmental receptors and identification of the environmental risks associated with the process on site. Every risk associated with a potential environmental event was then assigned a rate of occurrence (the probability of the event occurring) and 'severity' (the magnitude of impact if the event occurs) in line with the EPA guidelines. Risk identification was undertaken by reviewing the IPPC licence application; environmental incident records, environmental reporting on the facility and conducting a site audit.

AES Cappincur is licensed under Waste Licence Reg. No.W104-01 by the EPA, with regard to activities occurring on the site that may have an impact on the environment. Currently, good housekeeping principles and material handling procedures adopted at the facility minimise the risk of inputs to, and subsequent contamination of, groundwater, air, soil and surface water environments.

### 5.2.1 Risk Classification

In assessing the information required to determine the environmental liabilities associated with the site, an environmental impact matrix was prepared in line with the EPA guidelines. The purpose of the matrix is to predict the likely impacts of the existing development. The Risk Score associated with each potential environmental event is calculated from the Occurrence (probability of an event) and Severity (the magnitude of an impact) Ratings as given in Tables 5.1 and 5.2 below.

<b>Table 5.1 Risk Classification Table – Occurrence</b>			
<b>Rating</b>	<b>Occurrence</b>		
	<b>Category</b>	<b>Description</b>	<b>Likelihood of Occurrence (%)</b>
1	Very low	Very Low Chance (0-5%) of hazard occurring in 30 yr period	0-5
2	Low	Low chance (5-10%) of hazard occurring in 30 yr period	5-10
3	Medium	Medium chance (10-20%) of hazard occurring in 30 yr period	10-20
4	High	High Chance (20-50%) of hazard occurring in 30 yr period	20-50
5	Very High	Greater than 50% chance of hazard occurring in 30 yr period	>50

For the purposes of this assessment the range of severity ratings has been defined as follows:

<b>Table 5.2 Risk Classification Table – Severity</b>			
<b>Rating</b>	<b>Severity</b>		
	<b>Category</b>	<b>Description</b>	<b>Cost of Remediation</b>
1	Trivial	No damage or negligible change to the environment	€0 - €1,000
2	Minor	Minor impact/localised or nuisance	€1,000-€20, 000
3	Moderate	Moderate damage to the environment	€20,000 to €100,000
4	Major	Severe damage to the local environment	€100,000 to €1,000,000
5	Massive	Massive damage to a large area, irreversible in the medium term	€1,000,000 to €3,000,000

The risks were subsequently ranked based on the individual Risk Scores to aid in the prioritisation of mitigation and management measures (Table 5.3).

The following hazards/processes that may cause risk to the environment (unknown risks) were identified:

### 1. Hydrocarbon spill (Storage and handling)

Diesel is stored in a bunded 1,100L tank located to the north-eastern side of the waste processing building. There is also a second bund in this area which is used to store 25 L drums of miscellaneous oil based materials. There is the potential for a rupture or a leak from the storage tanks/area resulting from damage from a refuelling truck or from a vehicle operating in the immediate area. Therefore there is a potential risk to soils and groundwater underlying the site as well as to surface waters near the site directly from the spill and potentially smaller volumes carried by rainwater. The tank is however bunded to the required specifications and are securely contained within two small portable cabins. The bunds are integrity tested as required. The surface water from this area also must pass through an oil interceptor before it can pass into the receiving surface water body. In addition, there has been a manual shut off-valve installed, so in the event of a spill the shut off valve can be closed in order to prevent the spill from entering the surface water. There are also spill kits available on site in event of a hydrocarbon spill. The severity of the risk is considered to be **major** and the likelihood of occurrence is considered to be **medium**.

### 2. Waste Storage : leachate generation from waste

The hardcore yard area at the rear of the facility was being used to temporarily store waste that is awaiting transfer for off-site recovery. The waste is pre-sorted, dry recyclable material such as baled PET. There is a risk that small volumes of leachate that may be generated from rainwater which has come in contact with the waste could escape from the waste and pass down through the hardcore area and result in soil, groundwater and potentially surface water contamination. Therefore the severity of the risk is considered to be **moderate** while the likelihood of occurrence is considered to be **very high**.

### 3. Fire

In general there is the potential risk of fire spreading on site, due to the storage of combustible wastes such as cardboard and dry recyclables. In this instance there is a risk that contaminated firewater could potentially damage the groundwater, surface water and soils as there is currently no facility on site for holding the contaminated firewater. In the case of fire, emergency response procedures have been identified for the site and training is undertaken. There is also fire fighting equipment strategically placed around the facility. There is limited hazardous waste stored on site, therefore there would be minimal contamination of the firewater run-off. However due to the nature of the process (storage of wastes) the severity of the impact has been classified as **major**. A shut off valve has also been installed which will reduce the risk of the firewater escaping to the receiving environment. Therefore the likelihood of occurrence is considered to be **low** given the fire prevention controls in place at the facility.



#### 4. Dust Emissions

There is a risk at the facility that dust shall be generated from the site process as there is constant site traffic and the also due to the nature of some of the process wastes i.e. C&D wastes. The facility currently has plans to install a dust suppression system. Until such time as these improvements are made the severity rating is considered to be **minor** due to the localised nature of dust emissions. The likelihood of occurrence is considered to be **high** due to the large volumes of site traffic and also there are currently no dust control measures implemented on the site.

#### 5. Hazardous waste

Hazardous wastes are stored in a designated quarantine area in the main sorting building. Spillages of hazardous material could potentially occur, if a truck or mobile plant damaged the container. At the time of audit there was very little hazardous waste stored on site. The severity rating of this is considered to be **minor** due to the small volumes of hazardous wastes stored in this area and on site as all waste is inspected prior to acceptance of waste at the facility. The likelihood of occurrence is considered to be **low** also as there is a designated hazardous waste storage area for the storage of this material.

#### 6. Leachate generation from waste vehicles (No Wheelwash)

There is currently no wheel wash facility at the site. There are two potential scenarios arising from this: within the boundary of the facility and on public roadways. Firstly, the activity of waste vehicles moving across sections may potentially result in waste residues being transferred onto the surrounding areas of the site. Rainwater contact with any waste residue may generate leachate, which in turn drains into the surface water drainage system. Secondly, unwashed wheels exiting the facility could potentially contain waste residues thereby giving rise to the generation of leachate once water comes in contact with the vehicles. This may in turn combine with surface water wash-off public roads and enter into road drains which may discharge into surface water bodies. The severity rating for this risk is considered to be **minor** as it would represent a localised nuisance only. The likelihood of occurrence would be considered to be **very high** as there is potential for the risk to arise on a regular basis.

#### 7. Leaking from the wastewater treatment system.

Currently there is a septic tank which is used for the treatment of toilet and canteen wastewater. However, the wastewater from this tank is tankered off-site. The severity rating on this risk is considered to be **minor** as it would be localised in nature and the contents of the tank are currently being tankered off-site to a wastewater treatment plant. The occurrence rating is considered to be **low**.

## 8. Leachate generation (from the waste sorting area).

Waste is accepted at the facility from waste collection trucks and skips. It is subsequently tipped inside the waste transfer building, where it is inspected, sorted and segregated for disposal and recovery. There is a risk that small amounts of leachate could be generated within the building and pose a risk to the groundwater and surface water if created in the building and transferred by mobile plant to the areas around the building. The building is hardstanding. The risk has been assigned a severity rating of **minor** as potentially only low volume of leachate is produced as the majority of the waste is dry recyclables. The likelihood of occurrence would be considered to be **medium**. The rating has been assigned on the basis that the small volumes of leachate generated would be soaked up by the waste within the confines of the sorting building and also there is a gradient on the floor at the front of the building which ensures any leachate remains in the building.

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Table 5.3 Risk Assessment Table

Risk ID	Process	Potential Hazards	Environmental Effect	Severity Rating	Basis of Severity	Occurrence Rating	Basis of Occurrence	Risk Score *
1	Hydrocarbon Storage	Rupture of diesel tank	Contamination of surface water, groundwater and soils	4	Damage to soils, Groundwater and surface water. Cost of Remediation	3	Storage tank could be damaged by passing vehicles or vehicles that are refuelling	12
2	Waste Storage at the rear of the facility	Leachate generation	Discharge of leachate to ground water as waste is stored on hard core area	3	Waste at the rear of the building is baled & sorted plastic. Low volumes of leachate from waste	5	Waste is currently being stored on a hard core area on a consistent basis	15
3	Fire	Firewater that has come in contact with the waste being discharged to groundwater and surface water	Contamination of groundwater and soils	4	Localised cleanup of firewater. No firewater retention facility.	2	Active equipment in operation on site. Storage of dry recyclables which are combustible. No smoking on site. ERP in place on site	8
4	Dust emissions	Dust emissions generated by traffic	Dust emitted to the surrounding environment	2	Localised nuisance	4	No dust curtains installed at facility. Constant traffic on site	8
5	Hazardous Waste Storage	Potential risk of the hazardous waste storage area being damaged by truck movements	Contamination of surface water	2	Small volumes of Hazardous waste are stored on site	2	Designated Hazardous Waste Storage area & inspection of waste is conducted before waste is brought on-site	4

Table 5.3 Risk Assessment Table continued...

Risk ID	Process	Potential Hazards	Environmental Effect	Severity Rating	Basis of Severity	Occurrence Rating	Basis of Occurrence	Risk Score*
6	Absence of Wheel wash	Leachate generation	Contamination of surface water, groundwater and soils	2	Small volumes of leachate generated in this manner	5	Occurrence shall be linked to days when there is rain	10
7	Waste water treatment	Leaks may be present in system	Groundwater & soil contamination	2	Currently being tankered off site, issue is localised in nature.	2	System was approved on installation.	4
8	Waste Sorting	Leachate generation in the waste sorting area	Contamination of surface water and groundwater	2	Low volumes of leachate produced as majority of waste is dry recyclables	3	Any leachate generated shall be soaked up by the waste within the sorting building	6

\* The risk score is calculated by multiplying the severity rating by the occurrence rating.

TABLE 5.4 Risk Register Ranked by Risk Scores				
Risk ID	Description	Severity (S) <sup>a</sup>	Occurrence (O) <sup>b</sup>	Risk Score (S x O)
2	Leachate generation from waste stored at rear of facility	3	5	15
1	Hydrocarbon storage	4	3	12
6	Leachate generation from wheels of waste vehicles	2	5	10
3	Fire	4	2	8
4	Dust Emissions	2	4	8
8	Leachate contamination from waste sorting activities	2	3	6
7	Leaks from waste water treatment system	2	2	4
5	Contamination from hazardous waste storage	2	2	4

<sup>a</sup> Rating for Severity based on Risk Classification Table – Severity in the EPA 2006 Guidance Document

<sup>b</sup> Rating for Occurrence based on Risk Classification Table – Occurrence in the EPA 2006 Guidance Document

### 5.3 Assessment of Risks

These scores were compared with the risk matrix as published in the EPA guidelines and presented below. Each risk, as numbered in the table above, is placed in the appropriate category:

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**Table 5.5 Risk Matrix**

<b>OCCURRENCE</b>	<b>V.High</b>	<b>5</b>		<b>6</b>	<b>2</b>		
	<b>High</b>	<b>4</b>		<b>4</b>			
	<b>Medium</b>	<b>3</b>		<b>8</b>		<b>1</b>	
	<b>Low</b>	<b>2</b>		<b>5, 7</b>		<b>3</b>	
	<b>V.Low</b>	<b>1</b>					
			<b>Trivial</b>	<b>Minor</b>	<b>Moderate</b>	<b>Major</b>	<b>Massive</b>
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
			<b>SEVERITY</b>				

	Green (light)	These are lowest-level risks and indicate a need for continuing awareness and monitoring on a regular basis. Whilst they are currently low or minor risks, some have the potential to increase to medium or even high-level risks and must therefore be regularly monitored, and if cost effective mitigation can be carried out to reduce the risk even further, this should be pursued.
	Green (dark)	These are medium-level risks requiring action, but not as critical as those coded red.
	Yellow/amber	These are considered to be high-level risks requiring priority attention. These risk have the potential to be catastrophic and as such should be addressed quickly
	Red	

Comparison of the identified risks with the risk matrix indicate that there are no risks in the “Red” area or in the “Yellow” area of the matrix. All of the identified risks are located in the green portion of the site, indicating ongoing monitoring is required and cost-effective mitigation measures should be implemented.

**5.4 Risk Prevention/Mitigation**

The mitigation measures provided in Table 5.7, overleaf, would reduce some of the risks associated with activities at the site. The table provides the risks in descending order of risk score with the proposed mitigation measure. A revised risk matrix, based on full implementation of the recommended measures, is provided below.

**Table 5.6 Risk Matrix with mitigation**

<b>OCCURRENCE</b>	<b>V.High</b>	<b>5</b>					
	<b>High</b>	<b>4</b>					
	<b>Medium</b>	<b>3</b>		<b>3</b>			
	<b>Low</b>	<b>2</b>		<b>6, 4</b>		<b>1</b>	
	<b>V.Low</b>	<b>1</b>		<b>5, 8, 7</b>	<b>2</b>		
			<b>Trivial</b>	<b>Minor</b>	<b>Moderate</b>	<b>Major</b>	<b>Massive</b>
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**SEVERITY**

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TABLE 5.7 Proposed Risk Mitigation Measures for Advanced Environmental Solutions, Cappincur.

Risk ID	Potential Risk	Recommended Mitigation Measure	Risk Score Before Mitigation	Revised S Rating	Revised O Rating	Revised Risk Score (S x O)
2	Leachate emissions from waste stored at rear of facility	All waste should be stored indoors and all areas of the site should be hardstanded	15	3	1	3
1	Spill of hydrocarbons	Installation of crash bollards to prevent trucks from damaging the tank and bund	12	4	2	8
6	Leachate emissions from the wheels of trucks	A Wheelwash facility should be installed at the site	10	2	2	4
3	Fire	All areas of the site should be hard core in order to prevent firewater draining into the groundwater, firewater retention should be provided on site.	8	2	3	6
4	Dust Emissions	Install dust curtains or appropriate dust suppression technique.	8	2	2	4
8	Leachate contamination from waste sorting activities	All leachate should be collected on site in a leachate collection system and tankered off to an appropriate waste water treatment plant.	6	2	1	2
7	Leaks from the water treatment systems	Confirm the operation and integrity of the existing Waste Water Treatment Plant or replace if required.	4	2	1	2
5	Contamination from hazardous waste storage	Protect the area with crash bollards	4	2	1	2



Table 5.8 shows the risk register ranked by risk score taking into account the implementation of mitigation measures outlined in table 5.7

<b>TABLE 5.8 Revised Risk Register Ranked by Risk Scores</b>				
<b>Risk ID</b>	<b>Description</b>	<b>Severity (S)<sup>a</sup></b>	<b>Occurrence (O)<sup>b</sup></b>	<b>Risk Score (S x O)</b>
<b>1</b>	Spill of hydrocarbons	4	2	8
<b>3</b>	Fire	2	3	6
<b>4</b>	Dust Emissions	2	2	4
<b>6</b>	Leachate generation from wheels of trucks	3	1	3
<b>2</b>	Leachate generation from waste stored at rear of facility	3	1	3
<b>7</b>	Leaks from foul water treatment system	2	1	2
<b>8</b>	Leachate contamination from waste sorting activities	2	1	2

<sup>a</sup> Rating for Severity based on Risk Classification Table – Severity in the EPA 2006 Guidance Document

<sup>b</sup> Rating for Occurrence based on Risk Classification Table – Occurrence in the EPA 2006 Guidance Document

### 5.5 Cost of unknown risks

The Environmental liabilities of each unknown risk can be estimated based on a simple financial model that estimates the environmental liability associated with each risk. Each risk has two characteristics which determine its environmental liability: the range of probability of the risk occurring and the range in cost implications if the risk occurs. The cost of the unknown environmental liabilities associated with the facility have been estimated for the 'worst case scenario' and 'most likely case scenario' following implementation of the mitigation measures. Table 5.9 displays the worst case scenario.

TABLE 5.9. Worst-Case Scenario Financial Model for Unknown Liabilities							
Risk ID	O	O Range	S	Cost Range	Worst-Case Probability	Worst Case Severity	Cost
1	2	5-10%	4	€100,000-€1,000,000	10%	€1,000,000	€100,000
3	3	10-20%	2	€1,000-€20,000	20%	€20,000	€4,000
4	2	5-10%	2	€1,000-€20,000	10%	€20,000	€2,000
6	1	0-5%	3	€20,000-€100,000	5%	€100,000	€5,000
2	1	0-5%	3	€20,000-€100,000	5%	€100,000	€5,000
7	1	0-5%	2	€1,000-€20,000	5%	€20,000	€1,000
8	1	0-5%	2	€1,000-€20,000	5%	€20,000	€1,000
<b>Total</b>							<b>€118,000</b>

The total cost calculated for the 'worst case scenario' is €118,000. However for the purposes of financial provision through environmental liabilities insurance the most likely case scenario is calculated for the facility. Table 5.10 displays the 'most Likely Scenario' costing.

TABLE 5.10 Most Likely-Case Scenario Financial Model for Unknown Liabilities							
Risk ID	O	O Range	S	Cost Range	Most likely-Case Probability	Most Likely-Case Severity	Cost
1	2	5-10%	4	€100,000-€1,000,000	7.5%	€550,000	€41,250
3	3	10-20%	2	€1,000-€20,000	15%	€10,500	€1,575
4	2	5-10%	2	€1,000-€20,000	7.5%	€10,500	€788
6	1	0-5%	3	€20,000-€100,000	2.5%	€60,000	€1,500
2	1	0-5%	3	€20,000-€100,000	2.5%	€60,000	€1,500
7	1	0-5%	2	€1,000-€20,000	2.5%	€10,500	€263
8	1	0-5%	2	€1,000-€20,000	2.5%	€10,500	€263
<b>Total</b>							<b>€47,138</b>

The resultant most likely case scenario for the facility was calculated to be €47,138. For comparison purposes the most likely scenario should no mitigation measures be implemented is €182,663.

## 5.6 Review of Environmental Liabilities Risk Assessment

In order to ensure that the risk assessment is updated, it is recommended that the risk assessment is reviewed on an annual basis, with updates included as an appendix to the Annual Environmental Report. This review will also include ensuring that the financial provision continues to cover the environmental liabilities at the facility and that the financial instruments continue to provide the financial provision.

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## 6. 0 FINANCIAL PROVISION

The objective of the financial provision is to ensure that sufficient financial resources are available to cover both the known environmental liabilities that will arise at the time the facility closes and unknown environmental liabilities that may occur during the operating life of the facility. The total financial provision required for Advanced Environmental Solutions, Cappincur, Co. Offaly has been calculated based on the environmental liabilities for the site as identified in the CRAMP (known liabilities: €61,800) and ELRA (unknown liabilities: most likely scenario: €47,183). This totals €108,983. The total cost of the environmental liabilities including a 20% contingency is €130,780. A breakdown is provided in Table 6.1

Financial Provision by way of a Company Guarantee to the value of €130,780 shall be provided by Advanced Environmental Solutions and Bord na Mona plc to ensure that the liabilities arising from any environmental accident occurring during the operational or closure phases of the facility are finally provided for. This figure will be reviewed annually.

<b>TABLE 6.1 Outline of Financial Provisions</b>			
<b>Liability Type</b>	<b>Description</b>	<b>Method of Quantification</b>	<b>Amount of Provision</b>
Known Liability Closure	Site closure and decommissioning, including:	Cost estimates provided in Closure Plan in Chapter 4	€61,800
	Decommissioning of the buildings, tanks, pipe work		
	Residual chemical and diesel disposal Residual waste disposal Final environmental monitoring activities		
Unknown Liability	Risk of unplanned events occurring on site, including but not limited to:	Environmental Liability Risk Assessment report and analysis of most likely cost scenario	€47,183
	Escape of chemicals or fuels into surface water drainage system		
	Seepage from hard stand on interior or exterior areas Fire/explosion		
Liability	Contingency	20%	€21,796

## **Appendix 1: List of Environmental Procedures**

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**AES, Cappincur, Co, Offaly**  
**Environmental Management System**

**Environmental Procedures**

- EP 1.0 Environmental Corrective and Preventive Action
- EP 2.0 Environmental Incident Investigation and Reporting
- EP 3.0 Waste Acceptance and Handling
- EP 4.0 Hazardous Waste Consignment Note (C1 Forms) Procedure
- EP 5.0 Unacceptable Waste Handling
- EP 6.0 Environmental Training and Awareness Procedure
- EP 7.0 Environmental Complaints
- EP 8.0 Environmental Communications
- EP 9.0 EMS Management Review

**Environmental Work Instructions**

- EWI 1.0 Weekly site Inspection & Monitoring
- EWI 1.1 Weekly site drainage System, Bunds, inceptors and Spill kits Inspection Forms
- EWI 1.2 Weekly Environmental Nuisance Inspection'/ Foulwater Removal Logsheet.

**Emergency Response Procedures**

- ERP 1.0 Emergency Response Procedure
- ERP 2.0 Spill Clean Up Procedure
- ERP 3.0 General Fire/Explosion Procedure
- ERP 4.0 Flooding Procedure
- ERP 5.0 Malicious Damage Procedure
- ERP 6.0 Unforeseen Emergency Procedure

**Appendix 2: Site Layout Map**

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