

APPENDIX 11

DECOMMISSIONING PLAN

ENVIRONMENTAL PROTECTION
AGENCY WASTE LICENSING
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Decommissioning Plan

Introduction

The Decommissioning Plan is based on the following:

1. A review of the types of activities to be carried out on the site, including waste handling and recovery operations.
2. Identification of potential hazards, including an evaluation of the raw materials and waste products typically stored on-site, site hydrogeology, sewer and bund integrity.
3. Identification of control measures to prevent incidents.
4. Identification of all items of plant and other materials, including buildings that may be decommissioned, rendered safe or removed from site for disposal or recovery in the event of closure of the facility.
5. Identification of all possible on-site locations where cleaning, decontamination or remediation works may be required in the event of decommissioning to prevent environmental pollution.

Description of On-Site Activities

The proposed site is located at Foxhole, Youghal, Co. Cork. It is proposed to construct and operate a Materials Recovery and Sludge Drying Facility on the site. The facility will be operated under a Waste Management Licence issued by the Environmental Protection Agency (EPA).

Proposed Site Operations

Materials Recovery Facility

The facility will be used for materials recovery and transfer of solid, non-hazardous waste. On-site operations will include waste inspection, waste segregation, waste recovery, waste storage and transfer into vehicles for removal off-site. Residual wastes and materials transferred from the facility for disposal and/or recovery will be compacted and/or baled to facilitate transportation. There will be no on-site waste disposal. Only non-hazardous commercial and industrial (C&I) waste will be accepted at the facility. Hazardous waste, liquid waste and sludges will not be accepted at the Materials Recovery Facility.

Approximately 60% of the C&I waste will consist of Dry Waste (paper, plastic, cardboard, metal and glass), with the balance comprising timber and wood. It is anticipated that in the first year of operation approximately 15,000 tonnes of waste will be accepted at the facility. It is envisaged that the waste inputs will increase over the lifetime of the facility to a maximum annual throughput

of 70,000 tonnes. While it is assumed that the ratios between the different waste types will remain the same, market conditions will dictate the actual composition of the waste over time. The timescale for achieving the maximum volume is dependent on market conditions, but is expected to be reached within 5 years of commissioning.

Sludge Drying Facility

It is proposed that the sludge drying facility will provide an alternative to landfill for industrial clients who produced sludge. The sludge will arrive at the sludge reception area in tankers. Offloading will take place under negative pressure conditions to limit the potential for odour escape. The sludge drying facility will reduce the moisture levels to approximately 90% dry solids. The end-product will be pelletised and stored on-site in a storage silo before sale as a fuel. Water emissions from the process will be sent to the on-site Waste Water Treatment Plant and the final effluent discharged to sewer.

It is anticipated that the sludge drying facility will accept up to 29,000 tonnes of sludge per annum. The timescale for achieving the maximum volume is dependent on market conditions, but is expected to be reached within 5 years of commissioning.

Scope of the Decommissioning Plan

Scope of the Plan

This Plan sets out the actions to be taken by AVR - Environmental Solutions Ltd. in the unlikely event of facility shut down, or a planned cessation for a period of greater than six months of all or part of the site involved in the licensed activity. In the event that either of the above conditions occur, AVR - Environmental Solutions Ltd. will decommission, render safe or remove for disposal/recovery, all materials, waste, ground, plant and equipment that may result in environmental pollution. This plan will be reviewed annually by AVR - Environmental Solutions Ltd.

Criteria Which Determines Successful Implementation

Successful decommissioning will only be complete when all buildings, equipment, materials, wastes or any other materials, which could result in environmental pollution, are removed from the site and recycled, recovered or disposed of in accordance with all regulations in force at the time.

Areas Addressed by the Plan

The following aspects of the proposed facility operation were assessed.

Materials

It is anticipated that any shutdown of all or part of the site operations would be preceded by a scaling down of activities therefore further reducing the quantities of materials, particularly oils and fuel to be dealt with.

It may be possible to return some materials to the suppliers, e.g. diesel and disinfectants to the suppliers for resale or reuse. The remaining materials may have to be disposed of as waste, some of which may be deemed hazardous waste due to their composition e.g. oils. Such materials will be disposed of off-site in accordance with appropriate waste management regulatory requirements and facility waste management procedures.

Equipment & Processes

The main pieces of plant associated with the Materials Recovery Facility include the shredder, grab machine, loading shovels, forklift and conveyors. Some of the equipment would be suitable for use in other similar facilities. Given the nature of the waste to be handled at the facility, none of the items of equipment intended for resale or disposal would require specialist decontamination prior to removal off-site.

The sludge drying facility will be decommissioned in a two parts process:

- Shut down and cleaning for the Facility pending restart or sale as an on-going concern. This section details the steps that would be taken to render the facility clean, safe, and incapable of developing into an environmental hazard, in event of a shut down of longer than six months.
- Preparations for the use of the site for other uses including dismantling of all equipment.

Environmental Monitoring Results & Reports

Environmental monitoring will be carried out in accordance with the conditions set out in the Waste License and will include routine monitoring of surface water quality, air and noise emissions. The monitoring programs will be designed to identify any impact associated with the operation of the facility so as to allow effective remedial action and prevent or minimise environmental pollution.

Environmental Incidents

The site has been designed to minimise the impact of any environmental incident that may arise e.g. spills/leaks of oils/chemicals. Any environmental incidents that do occur will be thoroughly investigated and where necessary remedial measures will be implemented. A detailed review of all historic incidents will be completed as part of the decommissioning plan to assess the potential for residual soil contamination arising from such incidents.

Implementation Programme

Consumable Materials

All materials and wastes will be stored in the areas designated banded areas. In the event of closure materials and waste will be returned to the supplier, or be disposed of or recovered by a licensed waste disposal contractor. All wastes will be removed for recovery/treatment/disposal at a licensed waste management facility.

Table 5.1 below presents the maximum quantities of consumable materials, broken down by generic types that it is anticipated would need to be removed off-site in the event of activation of the plan. The actual quantities may be smaller as any shutdown of all or part of the facility would most likely be preceded by a scaling down of activities that would allow a stage reduction in inventory.

| Type of Material | Quantity |
|-------------------------------|---------------|
| Diesel | 50,000 litres |
| Hydraulic oil | 8,250 litres |
| Disinfectant and Detergents | 60 litres |
| Engine Oil | 1,850 litres |
| Chemicals inc. WWTP additives | 500 kg |

Table 5.1 Maximum Quantities of Consumable Materials to be Removed Off-Site

The largest contributors to the above are diesel, hydraulic and engine oil which could be returned to their respective suppliers. When these streams are taken out of the total figure the maximum total quantity of consumable materials to be disposed of would be 150,000 tonnes.

Equipment & Processes Materials

In the event of activation of the plan some equipment may be transferred to other AVR - Environmental Solutions Ltd. sites. The remaining equipment will be either sold for operational use or scrap at an approved waste disposal/recovery facility.

At the time of the preparation of this plan it is not possible to accurately quantify every item of equipment that would be suitable, either for use at other AVR - Environmental Solutions Ltd. facilities or for resale, as this would be dependent on current operational and market needs at the time of execution of the plan. Those items of plant that cannot be sold either for reuse or scrap will, where required, be cleaned and left in position.

AVR - Environmental Solutions Ltd. will seek approval from the EPA for any cleaning procedures and monitoring requirements to be employed during the implementation of the Plan. It is anticipated that the cleaning of the majority of the plant and equipment can be carried out on-site and will primarily involve power washing. The decontamination will only be carried out in areas where the wash water can be collected and directed to the WWTP.

Shut Down and Cleaning of the Sludge Drying Facility

The following steps would be taken:

1. Deliveries of wet sludge will cease. Arrangements will be made to buy out of long term contracts.
2. All sludge on site would be dried to empty out the holding and storage bins.
3. The dried sludge would be sold as usual and the dried product hopper emptied.
4. All equipment will be washed down by site personnel and maintenance contractors and the washings sent to the waste water treatment plant.
5. All floors and other surfaces will be swept and washed by site personnel. The washings will be sent to the waste water treatment plant.
6. Excess fuel for the boiler will be removed and sold as is or sent for disposal.
7. The boiler will be cleaned by an outside contractor. Residual ash and soot will be removed and disposed of in accordance with site procedures.
8. The WWTP will be shut down and cleaned by an outside contractor. The liquor will be tested and, if non-hazardous, discharged to the sewer after filtration. The sludge will be disposed of as non-hazardous waste.
9. All hazardous materials will be removed and either returned to the supplier, (unused chemicals, oils and fuels) or sent for disposal by an approved contractor. The contractor will pack and ship the waste to suitable, approved disposal facilities.

10. All non-hazardous waste will be sent for appropriate disposal.
11. All equipment, once it is clean, will be de-energised and permanent disconnections made by a licensed electrical contractor.

At this stage the equipment would be left in a clean, decontaminated, safe, non-hazardous condition.

Dismantling the Sludge Dryer Facility

All equipment in the facility including the boiler and fuel handling system would be sold in-situ to a used equipment vendor, who would carry out all demolition work using experienced, licensed contractors. The building would be left as an empty shell. All materials possible would be resold as useful equipment or scrap. All other materials would be disposed of as non-hazardous waste. These operations are usually tendered out and generally work out at zero cost, the used equipment vendor hoping to more than recoup his costs with sales. It is estimated that it would take 3 weeks to complete the demolition once contracts were agreed.

Environmental Incidents

Any incidents that occur will be dealt with in accordance with the conditions of the Licence and the requirements of the EPA.

Environmental Monitoring Results & Reports

The environmental monitoring carried out by AVR - Environmental Solutions Ltd. as part of the licence conditions will identify if any investigations or post closure monitoring is required to ensure that the facility poses no continuing risk to the environment. The baseline data compiled as part of the Waste Licence application indicates that the site presents no such risk. This will be reviewed based on monitoring data obtained during the operational period.

TEST PROGRAMME & VALIDATION REPORT

Test Programme

The monitoring and reporting requirements, which will be set out in the Waste Licence, will be complied with until the licence is surrendered to the EPA. The monitoring will identify, if any environmental pollution has occurred during the lifetime of the Waste Licence. If the monitoring programme or the investigation of any future environmental incident identifies that any such

contamination has occurred, a test programme will be set up to identify the nature and scale of any associated environmental pollution.

Validation Report

Following implementation of the plan, AVR - Environmental Solutions Ltd. will produce a validation report that demonstrates its successful implementation. This report will confirm that there is no continuing risk of environmental pollution to the environment from the site.

This report shall address:

1. Disposal of raw materials,
2. Disposal of wastes,
3. Decommissioning of plant and equipment,
4. Disposal of obsolete equipment,
5. Results of monitoring and testing,
6. The need for ongoing monitoring or investigations.

This report will be submitted to the EPA within three months of execution of the Plan.

Financial Provisions

It is estimated that the entire decommissioning of plant and equipment, removal/disposal of materials, testing to evaluate the successful implementation of the plan and preparation of a final validation report to complete the Decommissioning Plan can be done for the sum of €110,000.

This sum includes for the following:

1. Disposal of consumable materials,
2. Cleaning of items of plant and equipment,
3. Decommissioning of plant and equipment,
4. Disposal of obsolete equipment,
5. Monitoring and testing to ensure compliance with licence conditions,
6. Preparation of reports.

The above figure is based on current disposal costs and waste quantities that would be generated in the event of activation of this plan. It will be possible to recuperate some of the costs through the sale of equipment and plant.