ENRICH ENVIRONMENTAL LTD.

LARCH HILL STUD

NEWTOWNRATHGANLY

KILCOCK

CO. MEATH

INDUSTRIAL EMISSIONS LICENCE P1013-01

CLOSURE RESTORATION AND AFTERCARE MANAGEMENT PLAN

2017

May 2017

CONTENTS

LIST OF TABLES

EXECUTIVE SUMMARY

Operating since 2005, Enrich Environmental Ltd is an EPA licenced and Animal By-Products (ABP) from the Department of Agriculture, approved composting facility utilising both in-vessel batch tunnel technology and open windrows to produce high-quality compost and soil improvement products for agricultural, horticultural, landscaping and gardening markets. This therefore, provides a facility for the composting of organic and green waste materials.

The facility utilises a state-of-the-art process control system that allows the operators to fully manage the composting process and track batches through the facility for traceability purposes. The company has invested heavily in recent years on infrastructure and technology and operates a policy of continuous improvement. The company provides local employment.

In March 2017 an Industrial Emissions Licence reference P1013-01 was issued to Enrich Environmental Ltd by the Environmental Protection Agency. The activities permitted are as follows under Section 83(1) of the Environmental Protection Agency Act 1992 as amended:

Class 11.1

The recovery or disposal of waste at a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required.

Class 11.4:

(b) Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply):

(i) biological treatment;

The RBME Category for the activity is not available at this time.

This Closure Restoration and Aftercare Management Plan is being prepared in accordance with Conditions 10.2 and 10.3 of the licence which state:

10.2 Closure Restoration and Aftercare Management Plan (CRAMP)

10.2.1 The licensee shall maintain to the satisfaction of the Agency, a fully detailed and costed plan for the decommissioning or closure of the site or part thereof.

10.2.2 The Closure Restoration and Aftercare Management Plan (CRAMP) received as part of the licence application shall be reviewed and submitted to the Agency for agreement within three months of the date of grant of the licence.

10.2.3 The plan shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the agreement of the Agency.

10.2.3 The licensee shall have regard to the Environmental Protection Agency's Guidance on Assessing and Costing Environmental Liabilities (2014) and, as appropriate Guidance on Financial Provision for Environmental Liabilities (2015) and the baseline report, when implementing Conditions 10.2.1 and 10.2.3 above.

10.3 The CRAMP shall include, as a minimum, the following:

(i) a scope statement for the plan
(ii) the criteria that define the successful decommissioning of the activity or part thereof, which ensures minimum impact on the environment;
(iii) a programme to achieve the stated criteria;
(iv) where relevant, a test programme to demonstrate the successful implementation of the decommissioning plan; and
(v) details of the costings of the plan and the financial provisions to underwrite those costs.

This report has been prepared for Enrich Environmental Ltd by Enviroguide Consulting of 3D Core C, Block 71, The Plaza, Park West D12F9TN.

The scope of this plan addresses the key issues, which would occur in an orderly shutdown of all the site activities on a phased basis over an estimated time period of 3 months. The basis of the plan is to ensure that, upon completion of the plan, the facility would be in a suitable state for future industrial use and its condition would not pose a risk to public health and safety or the environment.

The costs associated with decommissioning are generally related to the disposal of waste and the recycling of equipment and the use of external resources to implement the closure plan and restoration/aftercare plan. In certain instances, costs will be recouped through the sale of equipment or materials.

A full list of resources required and associated costs is shown in Table 4.

Enrich Environmental Ltd will make the necessary financial provision to cover this in agreement with the EPA.

The Closure Restoration and Aftercare Management Plan will be reviewed annually and any updates will be notified to the EPA.

1. INTRODUCTION

1.1 Facility and Licence Details

Enrich Environmental Ltd. is a Licenced and ABP approved composting facility utilising both in-vessel batch tunnel technology and open windrows to produce high-quality compost and soil improvement products for agricultural, horticultural, landscaping and gardening markets. This provides a facility for the composting of both green and organic waste types.The company has been operating for the past 12 years and has had an excellent reputation both within the recycling industry and among its significant customer base.

Enrich has been operating at the Kilcock site since 2005 and currently employs 15 full time people mainly from the local community. The site itself has an area of approximately 1.2 hectares. It is located in a rural location with the neighboring areas occupied by farms or woodland.

The site is located to the northeast of Kilcock, near the Kildare/Meath border (the subject site itself is situated in Co. Meath), approximately 6km north east of the M4 Dublin/Sligo Motorway and approximately 8km south west of the M3 Motorway. The main entrance serving the facility is located at the Northern side of the site, just off a local access road. The lands are approximately 35km by road from Dublin and 95km from Athlone. More specifically, the complex comprising the composting facility is located circa. 8 km to the north of Kilcock and is accessible from Kilcock via both the R158 and R125.

The company has invested significantly in recent years in the development of this site. In 2010, the facility was expanded to increase capacity and improve environmental management systems, especially in relation to odour control. The company utilises a state-of-the-art process control system that allows the operators to fully manage the composting process and track batches through the facility for traceability purposes.

The facility is regulated by the Environmental Protection Agency through an Industrial Emissions Licence number P1013-01.

The operational hours are from 08.00 to 18.00, Monday to Saturday inclusive (excluding Bank and National Holidays). Waste will only be accepted or despatched from the installation between 08.00 and 18.00 hours Monday to Friday.

The activities licensed are:

Class 11.1

The recovery or disposal of waste at a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required.

Class 11.4:

(b) Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply):

(i) biological treatment;

The Licence allows for a total amount of material to be imported of 50,000 tonnes (Schedule A2) per annum, within the boundary of the site outlined in the boundary maps submitted and agreed with the Planning Authorities. The maximum amount of waste and compost permitted to be stored on the site is defined in Schedule A3 as 6840 tonnes. However there is provision to amend this under Note 2 to this schedule as follows:

'The maximum amount may be amended after the completion of the Waste and Materials Storage Plan (Condition 8.6) and establishment of appropriate financial provision (Condition 12.2.3) and subject to agreement by the Agency'.

This Closure Restoration and Aftercare Management Plan is based on an acceptance of 50,000 and storage on site of up to 6840 tonnes at any one time.

This Closure Restoration and Aftercare Management plan includes the proposed closure of the processing facility and associated infrastructure. It is anticipated that clean closure will be achieved – ie there will be no residual liabilities following the closure.

This Closure Restoration and Aftercare Management Plan is being prepared in accordance with the Environmental Protection Agency's guidance note entitled 'Guidance on Assessing and Costing Environmental Liabilities July 2014'. It will focus on the planned and or anticipated liabilities associated with closure and restoration/aftercare and the financial provisions required for these liabilities.

1.2 Facility Closure Scenarios Covered in this Plan

There are no current plans to decommission either all or part of the site. Two possible scenarios in the event of a shutdown of the facility were considered.

- Do-Nothing
- Do-Something

The do-nothing scenario describes the situation of potential risks if the facility was vacated without implementing the closure and restoration/aftercare plan. The do-something scenario describes the potential risks if the plan was implemented.

It should be noted that a do-nothing scenario is not consistent with the policy of Enrich Environmental Ltd. Consequently, Enrich Environmental Ltd propose to implement the do-something scenario, i.e. implement the plan.

The scope of this plan addresses the key issues, which would occur in an orderly shutdown of all the site activities on a phased basis over an estimated time period of 2-3 months. The basis of the plan is to ensure that, upon completion of the plan, the facility would be in a suitable state for future use/development and its condition would not pose a risk to public health and safety or the environment.

It is intended to remove all structures and systems from the site. In general, specialist equipment may be distributed to other composting facilities in the event of a shut down.

Enrich Environmental Ltd. intends to utilise existing staff resources to form a team to manage and execute the plan, supplemented where appropriate by outside resources. This team would be responsible for managing and executing the complete plan. Outside contractors required for cleaning, waste disposal, or recycling activities would be fully approved and licensed.

It is estimated that the duration of decommissioning and decontamination would be 2 to 3 months. Environmental monitoring would continue while the plan is in operation and for a period following the completion of the plan to be determined by the Environmental Protection Agency (EPA). The EPA would be informed of the results of the monitoring programme and of the status of the plan.

2. SITE EVALUATION

2.1 Operator Performance

The site of the Enrich Environmental Ltd composting facility at Newtownrathganley Co. Meath is in a rural location with the neighbouring areas occupied by farms or woodland. The current site consists of a 1.2 ha. site with approximately 5000 square metres of composting buildings.

Lands surrounding the subject site can be described as rural in character with substantial forestry plantation of mixed broadleaved and conifer trees bounding the site to south, west and east, and with agricultural fields further encompassing these lands. The subject premises are substantially set back from the entrance to the site to the north. The woodlands adjoining the site create a buffer to the surrounding agricultural lands and ensure that the site is well screened.

The overall landholding in the ownership of Peter Joseph Barry is c.83 hectares and includes the surrounding woodlands. The site itself was historically used as agricultural land until it was developed by Peter Joseph Barry as a composting facility in 2005 and it comprises 1.2 ha of the overall landholding. It is located adjacent to an agricultural based business for the processing and storage of firewood also owned by Peter Joseph Barry (Log-on Firewood). The composting facility is made up of an outdoor open windrow composting pad and associated wetlands and an indoor in-vessel composting facility complete with associated infrastructure such as bio-filter.

The nearest residences (sensitive receptors) are approximately 200 metres from the site. The facility does not/will not have any significant impacts with respect to human health, socio-economic factors, land use, or the amenity value and tourism potential of the area.

There are to be no significant environmental emissions from the facility which could give rise to adverse effects.

The following monitoring will take place in accordance with the conditions of the Licence.

- Noise monitoring carried out on site in line with Schedule C 5 Licence requirements.
- Air monitoring is carried out on site as per Schedule C1.1 and 1.2 and Schedule C 6 of the licence. This includes ambient air and monitoring of the bio-filter.
- Biological Treatment/Compost monitoring as per Schedule C2 of the licence.
- Storm water monitoring as per the requirements of Schedule C3.4 of the licence.
- Groundwater monitoring as per Schedule C7 of the licence.
- Soil monitoring as per Schedule C8 of the licence.

There were no significant or persistent exceedences of emission limit values recorded by the monitoring in 2016. Rain water runoff from building roofs and from the clean area is harvested for use in the composting process or retained as firewater. There were 19 complaints received in 2016, 18 of those for odour and one for noise. It should be noted that the facility was undergoing planning and licencing processes at the time.

2.2 Environmental Pathways and Sensitivity

There are no geological features of significance either at or beneath the site (as confirmed by the Geological Survey of Ireland in their scoping response to the Environmental Impact Statement) therefore the facility will have little or no impact on local geology.

Process wastewaters are directed to the site's on-site wastewater holding tank before being reused in the composting process. Surface water from other hardstanding areas will be diverted to a percolation area in adjoining forestry via a silt-trap. Roof water is harvested for use in the composting process or for use as fire water.

The water quality assessments are largely based on biological surveys. Biological Quality Ratings or Biotic Indices (Q values) ranging from Q1 to Q5 are defined as part of the biological river quality classification system. The relationship of these indices to the water quality classes defined above, are set out in Table 2.

The relevant water quality monitoring stations are located on the Rye River at Balfeaghan Bridge and Anne's Bridge.

The Biological Quality ratings and other details for Balfeaghan Bridge, Anne's Bridge and Kildare Bridge are given in Table 3. These figures represent the most up to date analysis from the EPA monitoring Programme running from 2004 to the present.

The Balfeaghan Bridge station (Station Code: 09R010100) conferred a Q3-4 status on the Rye River. This is located 4.5km upstream of the facility. Whilst the Anne's Bridge station (Station Code: 09R010300) is located 8km downstream of the Composting Facility, reported a river water quality value of Q2-3 – Q3.

Table 1: EPA Summary Data for Rye River

Station Location	Location Code (HA09)	Status
Balfeaghan Bridge	09R010100	Q3-4
Anne's Bridge	O9R010300	Q2-3,Q3

The EPA Water Quality Database indicates that the biotic water quality in the Rye River upstream of the facility at 'Balfeaghan Bridge' remained constant from 2004 to the present day with a value of Q3-4 – Moderate Status. The water quality value at the Balfeaghan station was

Q2-3 Poor in the period prior to 2004 indicating that the water quality has in fact improved since the Composting Facility was constructed in 2005.

As this composting facility has been operational since 2005 and there have been no impacts on the surface water, it is not expected that any increase in level of activity on site will increase pressure on the water quality of this river or prevent the primary objective of the Water Framework Objective from being met. The environmental controls on site will ensure the same strict compliance levels that are presently in place will continue to apply to the proposed development.

The lands at Newtownrathganley are not currently designated for any nature conservation purposes, the closest Natura 2000 site designated for nature conservation purposes is the Rye Water/Carton SAC (Site Code: 001398) which is located 8.8km to the SE of the site, while the River Boyne and Blackwater SAC (Site Code: 002299), which is also designated as an SPA (Site Code: 004232) is located 12.8km to the north.

2.3 Facility Processes and Activities

Enrich Environmental Ltd. is primarily engaged in the production of compost and soil improvement products from organic and green material. The company also treats organic fines from the mechanical separation of MSW.

On site operations include:

- Reception and classification of materials.
- Shredding/mixing of green garden waste and timber.
- In vessel composting of organic waste.
- Windrow composting of green garden waste
- Screening of material.
- Maturation of compost.
- Blending and bagging of compost and other nutrient rich materials.
- Loading trailers etc with outgoing loads.

Site waste acceptance volumes will be up to 50,000 tonnes per annum.

The Waste Process includes reception and classification of waste from commercial, industrial and households. Waste is delivered into the facility in small, medium and large loads using third party vehicles. Each load is tipped in a designated reception area and inspected to determine the quality and level of contaminants (if any). Once classified the waste is removed to a designated area for storage, sorting/processing, or loading for transport.

In-vessel composting of biodegradable waste, maturation and dispatch of finished material is conducted at the facility.

Within the facility there is a large concrete pad for outdoor composting, a blending area for the manufacture of horticultural products, a storage area for finished products and a fully enclosed air conditioned building for bio-stabilisation.

All composting of putrescible waste is conducted within an enclosed building. In addition there is a physical boundary between the areas where the different activities are conducted this eliminates the potential for cross contamination between pasteurised and unpasteurised materials.

The composting building contains a delivery area, reception hall, fully enclosed concrete composting tunnels, where the various parameters can be carefully controlled and a maturation area used to cure/store material. The cured material is then sampled to assess the level of micro-biological activity.

Air is removed from the intake building and blown up through the floor of the tunnels. This fresh air ensures that the material is kept aerobic and also regulates the temperature to optimise the rate of biodegradation. Exhaust air from the composting bunkers is removed and sent to the bioscrubber and biofilter via a fan.

By removing air from the buildings a vacuum is created within the building. The presence of this vacuum is such that it causes fresh air to enter the facility, thus removing the potential for any odour migration off site.

Any material that is non-conforming (such as loads that contain waste that the licensee is not permitted to accept) is quarantined and either returned to the generator of the waste or sent to a facility that has been approved to accept such material. Similarly any hazardous waste that is inadvertently accepted at this facility is stored in the area on site designated for this purpose.

Incoming green material is shredded and formed into long narrow piles called windrows. These are turned regularly to maintain aerobic conditions and break up any pockets that may have formed. Water is added to maintain moisture and create the optimum conditions for microbial activity. The resultant compost is blended with soil, sand other media to manufacture a range of peat free horticultural products.

2.4 Inventory of Site Buildings, Plant, Raw Materials and Wastes Description of the Plant

There is a significant amount of mobile plant and any fixed plant is installed in such a way that can facilitate a rapid and clean removal.

The following infrastructure is present on site:

- Composting Buildings
- Blower Gallery
- Storm drain network including interceptor and silt trap.
- Process water network
- Fuel storage – one bunded fuel tank 2,200 litre capacity (for storage of marked gas oil)
- Waste water storage tank.

- Concrete hardstanding areas
- Store Room
- Administration buildings including canteen.
- Weighbridge.
- Supporting site infrastructure includes a concreted yard, underground services, roads and car parking.

A number of front-end loaders, forklift trucks and grab-loaders are present on site. A list of the machinery present on site is listed in Table 2 below.

Table 2: Machinery on Site

Machine	Make	Model	Registration	Serial Number
Loading Shovel	JCB	2007/JCB 426	07D33210	
Loading Shovel	JCB	2006/ 436		1410127
Loading Shovel	VOLVO	2006/ L150	06D66226	
Loading Shovel	JCB	437	142D5871	
Loading Shovel	JCB	2012/426	142D5871	JCB42600P01789666
Teleporter	JCB	2005/353-75		1167026
Trommel Screen	Doppstadt	2006 SM518		1011
Trommel Screen	Doppstadt	SM518		5181585
Trailer	Dooley			10906A02203
Mobile elevated platform	Niftylift			123932
Shredder	TANA	Shark 5430		Sf01182007
Tractor	Case	105A	161MH2255	
Power Washer	CAT	350		

Table 3 below lists the environmental equipment that is available on site.

Table 3: Environmental Equipment Log

Equipment	Make
Ventilation Fan	Rippert
Primary Composting Bay 1,2 & 3 Inlet Fan	Rippert
Primary Composting Bays Extraction Fan	Rippert
Scrubber Pump	KSB
ABP 1,2,3 & 4 Inlet & Outlet Fans	Rippert
Manual Temperature Probes	PT100
Temperature Probes	PT100
Leachate Recirculation pump	KSB
Manual PH Metres	Lennox
Fire Extinguishers	Apex
Process Control Software Program	WTT

2.5 Inventory of Raw Materials, Product and Wastes

Table 4 provides an inventory of raw materials and waste stored on site. The Licence allows an annual intake tonnage of 50,000 tonnes per annum of waste.

Table 4: Inventory of Raw Materials (Including Waste)

Type	Storage Area	Storage Type	Maximum Storage Capacity	Measurement Unit
Waste	Composting shed	Input material	250	Tonnes
Waste	Green Waste Yard	Input material	400	Tonnes
Fuel (gas oil)	Tank	1 tank	2200	Litres
Waste water	Waste water tank farm	2 tanks	500	Cubic Metres
Lubricants	Upper yard	Drums	1000	Litres

3. CLOSURE TASKS AND PROGRAMMES

In the event of the closure of Enrich Environmental Ltd, there is a set of checklists to be completed, which cover such aspects as environment, quality and compliance, safety and industrial hygiene, sterilisation, and loss prevention.

Upon cessation of operations and subsequent decommissioning at the facility, it is anticipated that there will be no remaining environmental liabilities, i.e. clean closure is expected.

The purpose of the closure process is to ensure that the site no longer poses a risk of environmental pollution. It is not envisaged that any of the plant and/or equipment will have to be demolished. These elements once decommissioned and decontaminated, will be tested to ensure there is no risk of environmental pollution remaining. The following steps will be carried out to achieve closure of the production area of the site.

- Decontamination of process equipment is a normal part of the operations. Equipment requiring decontamination is foreseen to consist of composting process equipment. In addition to process equipment, decontamination will be extended to any demolitions to be undertaken, and to the vacant areas created by such demolitions. Decontamination will extend to all drains and sewers, to guarantee that any sludge and residues are removed from the site and are appropriately disposed of. The decontamination programme will be based on an updated risk assessment and will be submitted to the EPA for prior approval.
- The process equipment will be decontaminated in accordance with normal operating procedures ensuring removal of all traces of pre-compost material and any chemical material such as hydraulic oils that could cause harm. Plant may be removed for use at other locations, left in place as part of the asset to be disposed of, or scrapped, based on the risk assessment and cost benefit analysis. The most likely scenario in the event of a cessation of activity on site by Enrich Environmental Ltd is that the process equipment will be removed for sale and use at another location. Utility plant will be left with the asset, as mothballed equipment or ready-to–operate, depending on the best economic option.
- Cleaning and decontamination of all concrete hardstand areas where necessary using a steam cleaning process and employing the use of a road sweeper. Emptying and decontamination of all outdoor storage bays.
- All other wastes to be removed offsite for recovery or disposal. Safe and compliant storage of all relevant documentation to an off-site location. Removal from site any temporary offices or storage areas.
- The water supply system would be maintained due to the needs for fire protection and sanitary services.
- Retention of standard security as required with defined site access procedures
- Wastes to be managed in the circumstances of closure of the facility which may be present for management over and above the normal range or volumes are foreseen as the following:

- Any waste arising from the composting process;
- Sludge from the wastewater drains;
- Scrapped decontaminated equipment;
- Ducting and decontaminated process equipment;
- Residues of oils e.g. hydraulic oils and fuel oils;
- Non-hazardous waste arising from the disposal of residual packaging documentation, and waste arising from the cleaning of offices, workshops and welfare facilities.

The disposal of these wastes will be according to the current good practice as applicable to hazardous and non-hazardous waste, through licensed operators.

It should be noted that any remaining compost stock on site at the time of closure will treated as normal, i.e. sold for the best market price available.

Given the following:

- The quantities of non organic materials stored and used on site is relatively small
- The nature of the materials held onsite are not harmful to the environment
- The site is concreted
- Foul effluent is directed into a closed system
- A surface water management plan is in place at the facility.

It is therefore anticipated that there will be no contaminated ground, soil or spoil arising at the site that would require specialist recovery or disposal.

4. CRITERIA FOR SUCCESSFUL CLOSURE

Successful clean closure will be expected to be achieved when it can be demonstrated that there are no remaining environmental liabilities at the site. In practice this will require demonstration that the following criteria have been met:

- All plant was safely decontaminated using standard procedures and authorised contractors;
- All wastes were handled, packaged, temporarily stored and disposed of or recovered in a manner which complies with regulatory requirements;
- All relevant records relating to waste and materials movement and transfer or disposal were managed and retained throughout the closure process;
- There was no soil or groundwater contamination at the site. This was verified using monitoring data and a soil/groundwater assessment at the time of closure (if required);
- The Site Management System remained in place and was actively implemented during the closure period;

- Sufficient funds are available to cover the full cost of closure;
- The asset is suitable for use as an agricultural or related development site, as demonstrated by an environmental due diligence assessment. This due diligence must contain a summary and a detailed explanation of the following issues:
    - Environmental liabilities, past and present;
    - Regulatory non-compliance issues along with a ranking of their severity and implications;
    - Potential limitations on business expansion and business interruption potential;
    - Major environmental risks;
    - Approximate cost estimate to bring closure to these issues.

The above is in line with the Baseline Report prepared by Enviroguide Consulting and submitted with the licence application to the Agency.

5. CLOSURE PLAN VALIDATION

Upon completion of implementation of the closure plan, the operator will conduct a validation audit to demonstrate to the EPA that the closure plan has been implemented. The qualification and experience of the independent auditor will be provided and agreed with the competent authority prior to the validation commencing. The scope of the validation audit will be agreed in advance with the EPA and following approval, the chosen independent auditor will complete the validation audit. The completed Validation Audit report will be submitted to the EPA for approval.

6. CLOSURE PLAN COSTING

The estimated costs associated with the closure plan implementation are outlined in Table 5 on the following page.

7. CLOSURE PLAN UPDATE AND REVIEW

Enrich Environmental Ltd commits to reviewing the closure plan annually and updating to reflect any significant alterations on site.

Table 5: Closure Costing

Task	Description	Quantity (No.)	Measurement Unit	Unit Rate (€)	Cost (€)	Source of Unit Rates
Plant and equipment decontamination, excluding off site waste recovery or disposal dealt with below.	**Composting Sheds** Cleaning contractor personnel costs (1 supervisor, 3 operatives.)	4	Day	1385	5,540	OCS Dublin
	Bio Filter Cleaning Contractor personnel costs (1 supervisor, 3 operatives)	2	Day	1385	2,770	OCS Dublin
	Fuel Tank Bowser 1 x 1,200 litres (Decontamination and removal)	1	Unit	1000	1,000	Rilta Environmental
	Waste Storage Areas including all concrete hardstand Cleaning Contractor personnel costs (1 supervisor, 3 operatives)	3	Day	1385	4,155	OCS Dublin
	Waste water storage tank	1	Unit	1960	1,960	Mc Breen Environmental
	Drain jetting to include cleaning of silt-trap and interceptor.	2	Unit	1960	3,290	Mc Breen Environmental
Plant and equipment decommissioning Note 1	**Composting Tunnels** Decommissioning contractor, 3 operatives	15	Day	1500	22500	Shannon Valley Construction Ltd.

Task	Description	Quantity (No.)	Measurement Unit	Unit Rate (€)	Cost (€)	Source of Unit Rates
Plant Removal Note 2	Transport				20,000	J Ryan Haulage Ltd.
	Recovery	20	Tonnes	0	0	
Waste disposal and recovery Note 3	EWC Code 19 12 12 Residue from Compost process	400	Tonnes	110	44,000	Indaver Ireland Carranstown Facility
Environmental Monitoring	Surface water monitoring (2 locations quarterly)	4	Samples	130	420	IAS Labs Carlow
	Groundwater Monitoring (1 location biannually)	2	Samples	150	300	IAS Labs Carlow
	Noise monitoring (annually)	1	Event	500	500	BHP
	WWTP monitoring (loads tinkered offsite)	4	Samples	150	600	IAS Labs Carlow
Task	**Description**	**Quantity (No.)**	**Measurement Unit**	**Unit Rate (€)**	**Cost (€)**	**Source of Unit Rates**
Validation audit	Consultant costs	10	Days	500	5,000	Enviroguide Consulting
Site security Note 4	Security personnel	3	Month		5,000	
Management and utility costs Note 7	Insurance Note 5	1	Unit		5,000	
	Power Note 6	3	Monthly charge		1,500	ESB
	Water	5,000	m^3	2.00	10,000	Irish Water
	Management	3	Month	50,000	12,500	Enrich
Total (€)					146,035	
Plus contingency at 10% (€)					14,603	
Grand Total					**160,638**	

Note 1: This does not take into consideration that the plant itself will have a minimum value in the region of €100,000. This cost also includes the cost of decommissioning the wetland which will be 'backfilled' using the soil stockpile on site.

Note 2: This assumes that while a certain amount of the plant will be sold at market value there will also be some scrappage.

Note 3: Waste treatment/disposal and transport costs to include waste from the composting process including bio-stabilised materials (max 400 tonnes). Waste tonnages are based on future intake of waste which will be at or below 50,000 tonnes per annum. It should be noted that any product (i.e compost) will be sold at the current market rate. It should also be noted that a planned closure will ensure that all material accepted for composting will be composted and sold as a compost product and that production will be phased out.

Note 4: This assumes that the site will be sold for future use but will require a certain level of security during the transition period. A more likely scenario in the event of a closure is that the property will remain in the ownership of the Peter Joseph Barry family and be used for agriculture. In that scenario security will not be required.

Note 5: Restricted to public liability and buildings.

Note 6: Power requirement will be limited to security lighting and power for alarm and pumping systems.

Note 7: During a phased structured shutdown the facility will continue to operate normally and continue to sell products to the market thus offsetting a significant amount of the closure costs.

8. FUTURE PROOFING COSTS

It is anticipated that Enrich Environmental Ltd. will achieve 'clean closure' i.e. there will be no ongoing aftercare required. Therefore no provision will be made for inflation.

9. FINANCIAL PROVISION

Enrich Environmental Ltd. will make the necessary financial provision to cover the cost of closure and restoration of €160,638 by agreement with the EPA.