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2.1 Proposed Operations

2.1.1 General Overview

O'Toole Composting Ltd. (OTCL) has been operating at the Ballinrane, Fenagh, Co. Carlow facility since 2005. They are currently permitted by Carlow County Council – Waste Permit number WFP-CW-10-0003-01 as reviewed by WFP-CW-14-5. OTCL operates a biodegradable waste recovery facility (composting), dry recyclables, construction and demolition waste, and general skip and household waste transfer for recovery facility and a small Civic Amenity Facility at this site.

OTCL wish to apply for planning permission and an EPA licence under the Industrial Emissions Directive in order to be able to accept up to 40,000 tonnes per annum of biodegradable waste for composting. They also wish to install a new bio-filter on both the composting and waste transfer (skip) buildings. The latter will accept up to 20,000 tonnes of household bulky waste, mixed dry recyclables, commercial and industrial wastes and allow them to expand their current waste management customer base. The proposed development also includes construction of a purpose built Bring Centre for use by members of the public for recycling.

This will allow OTCL to expand their current waste management customer base and expand their pre-treatment of municipal waste in accordance with the Landfill Directive (1999/31/EC). The pre-treatment of waste can include processes such as;

- Source separation (e.g. home composting, packaging waste)
- Separate collections (e.g. '2 Bin' or '3 Bin' systems)
- Diversion to non-disposal waste management routes
- Manual sorting
- Composting
- Mechanical treatment (crushing, grading, magnetic separation, eddy-current separation, ballistic separation, trommeling, sorting, etc)
- Biological stabilization of 'black bin' residues (after mechanical treatment)

Waste treatment options will then span the following classes of processes: manual, mechanical and biological. It is proposed that the subject development will utilise a combination of the above processes.

2.1.2 Site Location

The subject site is located at Ballintrane, Fenagh, Co. Carlow immediately adjacent to the N80 Carlow to Wexford road. It is surrounded by predominately agricultural land uses with some large commercial and industrial installations along the N80 within 2 km of the OTCL facility. The site is accessed from the N80 via a small local road – Jocks Lane on the western boundary. There is adequate vehicle turning at the entrance which does not impact on the N80. It is a large existing site with a total area of circa 4.87 Ha.

2.1.3 Proposed Site Layout

In general the site layout will remain unchanged, save for the addition of an airlock and new bio-filter at the compost building, a proposed bio-filter attached to the skip shed and a purpose built Bring Centre located adjacent to the site entrance. The proposed site layout is shown in Appendix 2.

2.1.4 Proposed Additional Treatment for Composting

OTCL are proposing to accept and process up to 40,000 tonnes of biodegradable waste through their existing compost facility. The buildings and plant currently in place have been designed and installed with a capacity of 40,000 tonnes per annum in mind. Currently one of the compost tunnels is being used as a bio-filter but this will no longer be required once the new bio-filter work is in place. Once this is complete the entire building will be under negative pressure and there will be a full complement of 4 tunnels dedicated to the process.

The composting building has a floor area of 4,500sq.m. The entire building will be operated under negative air pressure. The new building will be located to the south west of the site. All biodegradable waste for composting entering the site will be delivered to the waste reception/inspection area. Biodegradable waste will be mixed with screen over flow. It will then be fed into a shredder where the waste will be produced to a uniform size and any bags opened.

The material is loaded into a composting tunnel. When the tunnel is full it is closed and the composting process is commenced by introduction of airflow via the fans. The contents of the tunnel are carefully monitored to ensure that the first temperature barrier is reached. After 1 week (7 days) in the tunnel and if the material has achieved a temperature of 60 degrees for a minimum of 48 hours, the batch is removed from the first tunnel from the rear and placed in a second tunnel for the second stage of the process to begin. The process is again monitored carefully and when the batch has achieved the second temperature barrier of 60 degrees for a minimum of 48 hours, it is then removed from the tunnel and placed on the maturation pad. Once maturation is complete the product is screened and despatched to the customers.

All the composting plant including the maturation area is and will be operated indoors under negative air pressure to ensure control of odour and fugitive dust emissions from the activity.

2.1.5 Waste Transfer Facility (Skip shed)

This facility is used to accept, process and transfer a variety of waste streams that are collected for recycling/recovery. Wastes are sorted, bulked up on-site and transferred off-site to appropriately licensed or permitted facilities for further recycling or recovery.

The processing plant installed at the waste transfer station comprises a feed hopper which is loaded by a mechanical grab machine. This ensures that material is fed at a constant rate onto the plant. It also ensures that oversize material does not progress beyond this point.

The next item of plant is a windshifter for the recovery of light plastics. This material is then fed onto a picking line where aggregates, timber paper and hard plastics are hand-picked. Finally the flow of material passes under an overband magnet for the recovery of ferrous metals. The remaining material is then shredded and sent offsite to be manufactured into refuse derived fuel (RDF).

2.1.6 Civic Amenity Facility

O'Toole Composting Ltd. currently provides a small on-site recycling service to the local community. They currently accept household and commercial waste for recycling in the form of green waste, cardboard, timber, rubble, paper and plastic, mixed municipal and C&D wastes from domestic and commercial sources. OTCL may offer other waste streams for recycling in the future at the proposed Bring Centre. These may include: Waste Electrical and Electronic Equipment, Dry mixed recyclables and bulky waste. It will also provide a means to distribute compost to the CA site customers in the local community.

2.1.7 Proposed Odour Control Unit

The system OTCL has installed is a negative extraction odour control unit consisting of a dust filtration and bio-filtration system. The odour control unit works on the principle of negative air extraction from the waste reception and maturation buildings using an approximate 80 metre run of ductwork fitted with volume control open blade dampers, which are installed at equidistance over the length of the ductwork. The ductwork is located along the back wall so as to have maximum effect whereby odorous air is extracted across the building, thereby reducing the potential of odorous air release from the opening of the doors.

In order to ensure the full potential of the negative ventilation system various containment principles will be implemented within the proposed building. These will include:

- Ensuring that the building is constructed without any gaps in the building fabric using combined flashing and expanding foam;
- Installation of roller doors on the entrance and exit of the waste reception hall;

Once extracted, the odorous air will be filtered for dust whereby at least 95% of all dust particles will be removed from the air stream before entering the filter. The dust filter will consist of a dual bank of filters including a roughing and polishing filter.

The odorous air will enter the bio-filter bed filtration system whereby the medium which is a mixture of mainly woodchip, shredded root wood, logs, and bark which will filter odorous molecules from the air stream. Once filtered the odorous air will be exhausted through the bed, 625 sq m, although a single stack 3 meters above the edge of the building at an efflux of approximately 15 to 18 m s⁻¹ may be installed thereby providing greater dispersion and plume rise. A similar bed of dimensions 164 square is proposed for the Waste Transfer building (Skip shed).

The system is designed to achieve less than 800 O_{uE} m⁻³ at the bed, however experience has shown that the exhaust odour concentrations are generally less than this amount.

The overall odour control system will be PLC controlled providing reduced night time capacity whereby no operations occur. This will reduce the energy consumption and elongate the lifetime of the overall system. The system will achieve a predicted ground level odour concentration less than 1.5 O_{uE} m⁻³ at the 98th percentile, which is in accordance with the EPA's target levels for odour generation processes in Ireland.

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2.2 Proposed Construction Development

This section of the EIS describes the construction phase of the proposal including the infrastructure. The proposed development will require the construction of;

- A new bio-filter for the composting building
- A new bio-filter for the skip shed
- An airlock for the composting building
- A purpose built Bring Centre

The groundworks for the construction will require the clearance of the area to the north east of the site. Any soil that needs to be excavated in order to level off the site shall be used to reinforce the existing earthen banks that run along the south western perimeter. This boundary will then be planted with additional trees and hedgerow for screening purposes.

It is expected that the proposed works will be completed within 3 months of a grant of planning permission, with the new building being fully operational by the end of Quarter 1 2015. In general the construction works for the proposed development will comprise the steps set out below;

2.2.1 Site Development Works

The site development works will be undertaken as follows:

- 1) Identification of existing services on site;
- 2) Diversion of necessary services e.g. electricity supply, etc.;
- 3) Undertaking of earthworks cut and fill to include cart away of topsoil to establish ground level; (minor requirement);
- 4) Construction of below ground services to the new building-surface;
- 5) Construction of additional hardstanding area surrounding proposed building;
- 6) Construction of Mechanical and Electrical above and below ground services such as Telecom and Electricity in agreement with service providers as required;
- 7) Construction of a new Bring Centre and bio-filters;
- 8) Installation of all plant and machinery in new buildings.

2.2.2 Preliminary Works

The first step of the initial site development works will be to identify all the existing site services i.e. surface water and electricity, etc. The identification of these services at the earliest possible stages will allow safe uninterrupted development of the site and will reduce the potential for any environmental hazards to occur. Once these services have been identified any service which requires diversion will be moved or altered, in liaison/agreement with the service providers.

It will be necessary for minor excavations to occur to achieve a level foundation for the proposed new bio-filters and Bring Centre. This will be carried out using standard construction methods. Hardcore may also be imported at this stage of the development, if required, to establish the formation level of the proposal.

2.2.3 Construction Works

The construction of all the proposed below ground services to the site will be installed prior to the commencement of this stage. The proposed connections will connect to existing surface water systems in compliance with planning conditions. The ground works for the connecting pipe network shall be developed at this stage.

The external lighting scheme will be in accordance with the Guideline Notes for the Reduction of Light Pollution as issued by the Institute of Lighting Engineers and with existing planning permissions on site to ensure that:

- Lights are switched off when not required and outside of agreed operating hours;
- The use of specifically designed lighting equipment that minimises glare and the spread of light; and
- Areas are not over lit. In non process areas a general luminance level of 20 lux will be provided in the low risk areas and 50 lux in the high risk areas. In loading bays, a general luminance level of 150 lux will be provided.

The additional hardstand areas will be constructed at this stage of the development, and shall be completed to the same standard as the existing hardcore material. Surface water runoff from these areas will discharge via the newly constructed surface water drainage system.

2.2.5 Construction Procedures

The earthworks contractor will be required to manage the works and control dust emissions, run-off, noise, stockpiling etc. As the proposed construction works are minimal in nature there will not be any significant impacts from this stage of the development.

Earthworks are programmed to commence immediately following receipt of a commencement notice from Carlow County Council. Details of the construction procedures shall be submitted to the Environmental Protection Agency for agreement if appropriate, when final designs and construction schedules have been formulated.

Site development works will be restricted to normal working hours with the exception of essential activities such as repairs and refuelling. Generally, site work will not be permitted on Sunday or at night-time except where programme constraints or safety concerns necessitate it. The site will be managed by the main contractor. The site manager will oversee all of the construction activities including:

- Traffic management on site i.e. scheduling of deliveries, minimising disruption to normal activities etc.;
- Site security;
- Control and management of site services; and
- Approval of development proposals.

2.2.6 Wastes and Emissions

During the construction phase the generation of waste and emissions on site will be as follows;

2.2.6.1 Solid Waste

Where possible solid waste arising during the construction phase of the proposal will be retained on site. However not all of the material will be suitable for re-use or will be acceptable at the on-site waste recycling and processing facility. Any off-site waste disposal will be agreed in a waste management plan with Carlow County Council prior to transport off site.

2.2.6.2 Emissions to Atmosphere

The operation of mobile plant and equipment will give rise to emissions to atmosphere of combustion gasses, sulphur dioxide, oxides of nitrogen and particulates. Fugitive dust emissions will arise through wind assisted dust generation during earthworks as topsoil is stripped and the site is levelled. A mobile rotary atomiser probe is part of the on-site equipment and can be deployed in areas of activity if dust nuisance arises. Where required, water bowsers will be used to dampen down soil, thereby minimising fugitive dust emissions. A temporary wheelwash and road sweeper will also be used if required to control and minimise the effects of dust generation on the site.

2.2.6.3

Noise

The operation of mobile plant and equipment, will give rise to temporary noise emissions during the construction stage of the proposed building. However the nature of the proposed means that construction will be minimal and as such any increase in noise will not be for a prolonged period. All construction equipment will comply with SI 320 of 1998: EC (Construction Plant and Equipment Permissible Noise Levels) Regulations, 1998, with consideration to be given to BS 5228 1984: Noise Control in Construction and Open Sites.

2.2.6.4 Employment

Employment within the development stage of the proposal is estimated at 8-10 employees which will be construction based employment. Additional employment for the operational phase of the development is estimated at 2 personal to oversee the mechanical operation of the plant.

2.2.7 Waste Acceptance and Handling

All wastes accepted at the facility will be in line with the waste acceptance procedures as developed in line with the conditions of the waste permit number no. WFP-CW-10-0003-01as reviewed by WFP-CW-14-5 and any future consents including an EPA licence if granted.

Waste is delivered to the site by O'Toole Composting Ltd own vehicles, suitably permitted/licensed waste contractors and to the civic amenity facility by members of the public. The first point of waste inspection is at source. The waste skip/bin is visually inspected by the vehicle operator and if non-conforming waste is present it will not be accepted. All materials entering the facility must first be inspected by the weighbridge operative and weighed. Waste type (according to EWC code), source, date and time, vehicle registration, and gross weight are recorded on the weighbridge software system. This weighbridge system ensures fully compliant, accurate and watertight recording of all waste. The driver of the vehicle is then directed to the appropriate tipping area depending on what sort of waste they are carrying, each tipping area is

numbered and clearly labelled. The weighbridge should use the CPC Radio System or to inform the Processing Supervisor of the load approaching and the classification of the waste therein.

After the vehicle has tipped, they proceed back to the weighbridge where their tare weight is taken to provide a nett weight. The weighbridge ticket is then automatically completed and printed out.

The load is inspected by the Processing Supervisor upon tipping to make sure that the waste is conforming and to ensure the accurate recording of waste type. They can then confirm the waste type to the weighbridge or ask them to change it using the radio system. Any loads that have arrived already source segregated are immediately transferred to the dedicated segregated bay and bulked up prior to transfer off site for further recovery or recycling. The weighbridge can communicate with the Processing Supervisor via the CPC radio system. This allows the waste characterisation to be changed on the weighbridge if needs be.

Any unacceptable or non- conforming waste types are transferred to a quarantine area and depending on makeup are sent to, or collected by, an appropriate waste facility.

If the material presented is found to be unacceptable at any time after it has entered the site it is immediately loaded back into the container in which it arrived. If this is not possible, or if the unacceptable waste makes up only a fraction of the load, it shall be separated and placed in the waste quarantine area. The Processing Manager/Supervisor will inform the Facility Manager of any such incident and a Complaints Handling/Corrective Action Form, shall be completed by the Weighbridge Operative or Facility Manager and filed. An appropriate and approved facility for the recovery or disposal of the material will be identified immediately and the materials will be sent there to be properly dealt with at the earliest possible time. The customer will be notified as to the offending material that has been found in the skip or bin. Where waste is taken into the facility from a third party, it will only be accepted from appropriately licensed hauliers.

The sorting and segregation process is described below:

Composting

Material for composting is received and inspected in the reception building of the compost plant. Once the materials have been classified as acceptable then it is shredded and screened prior to the composting process. It is then loaded by front end loader into the composting tunnel and when the tunnel is full the first phase of the composting process begins. When this first phase is complete (60 degrees temperature barrier for 48 hours) the material is transferred into another tunnel to begin the second phase. (60 degrees temperature barrier for 48 hours). When complete the compost is transferred into the maturation building until mature. It is then screened to individual customer's requirements.

Commercial Waste

Mixed loads of commercial waste are tipped in the general waste pile and are then subject to the segregation process. Large and bulky items of waste such as sheets of metal and wood are initially separated using a grab machine. The machine then crunches the general waste and feeds it into the bay. Additional bays are designated for segregated waste streams including metals, wood, mixed waste, cardboard, rubble etc.

The processing plant installed at the waste transfer station comprises a feed hopper which leads to a windshifter for the recovery of plastics, a picking line for the recovery of aggregates, timber and paper and a magnet for the recovery of ferrous metals. The remainder is then shredded and sent offsite to be manufactured into refuse derived fuel (RDF).

Dry Recycling

Dry Recycling material is tipped in front of the dry recycling bay in the Transfer shed. It is then visually inspected for contamination. Once accepted it is pushed into the storage bay. If there is an unacceptable level of contamination in it then it is either rejected or sent off site for processing. In extreme cases it may be disposed of if the contamination levels are too high for recycling. The material is bulked and stored before being shipped out for further recycling.

When enough of a particular material type has been stored it is then loaded into forty-foot containers and trailers and further delivered to EPA approved facilities. A list of approved facilities is kept on site in accordance with the Waste Facility Permit requirements. A file containing the relevant licences/permits for all facilities used for recovery or disposal is maintained on site at all times.

Municipal Solid Waste

Municipal Solid Waste is accepted at the facility primarily from kerbside waste collections or from waste compactors. This waste is bulked up in a storage bay until an appropriate amount is accumulated for drying. It is then shredded and placed into a composting tunnel. Once in the tunnel it is retained there until it is dry – approximately 14 days. It is then screened and the mechanically separated organic material removed. This material can be used for landfill cover. The remaining material (non-organic fraction) is sent off site for recovery into RDF (Refuse Derived Fuel) or landfilled.

Bring Centre

Waste from the Bring Centre that cannot be treated on site such as fluorescent lights, paints, and batteries will be segregated into banded storage units before being transferred to an approved outlet for further recovery.

2.2.7.1 Waste Quantities

OTCL are applying to the EPA for the following waste types with corresponding maximum quantities to be accepted at the facility:

Table 1: Licensed Waste Types and Quantities

WASTE TYPE	TONNES PER ANNUM (proposed)
Household	35,000
Commercial	15000
Sewage Sludge	1500
Construction and Demolition	6000
Industrial Non-Hazardous Sludges	500
Industrial Non-Hazardous Solids	2000

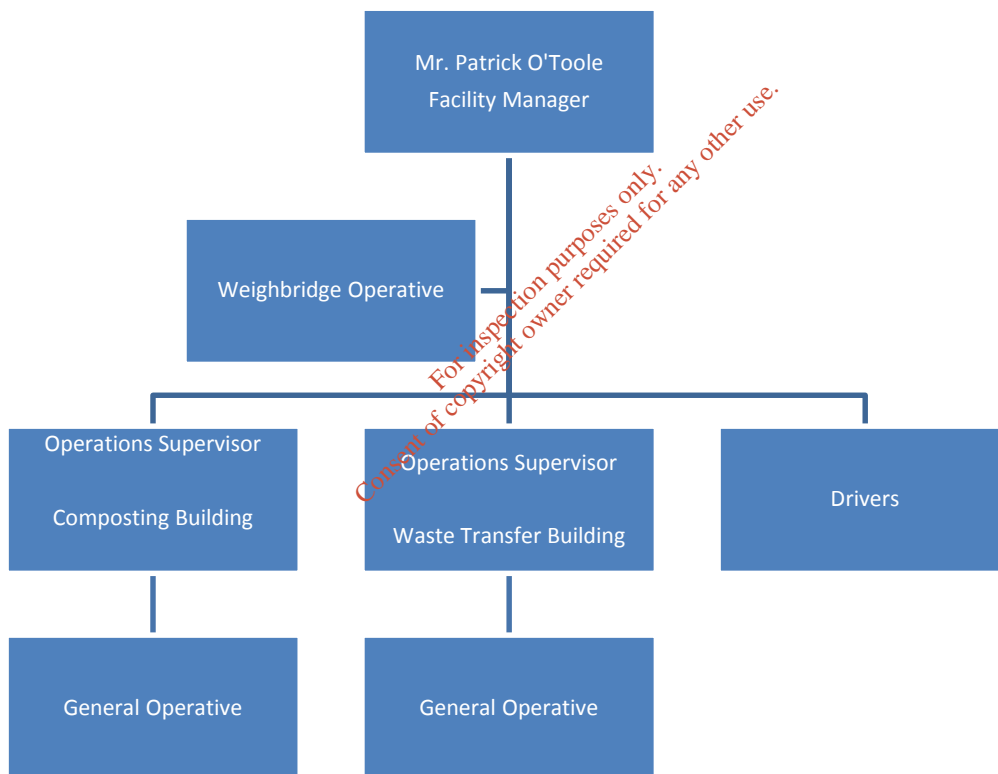
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2.3 Operational Details

O'Toole Composting currently operates its composting facility at Ballintrane 24 hours a day, seven days a week, as is necessary with a composting facility. Waste acceptance will be restricted to between 07.00 and 19.00 Monday to Friday and 08.00 to 16.00 on Saturday. Most of the traffic movements from the site normally occur between 07:00 and 19:00 Monday to Friday with limited movements outside of these hours. The proposed development will not result in any changes to the operational hours.

Entry onto the site is restricted to employees of OTCL and permitted/licensed waste contractors at all times during the operation of the facility. Outside the hours of traffic movements to the site, the gate will be closed and access is only permitted by the key personnel. A list of all relevant employees and their respective duties and responsibilities are detailed in Figure 1 below.

Figure 1: Staffing Structure



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2.4 Raw Materials

The main requirements for fuel on site are road diesel, and marked gas oils. As detailed in the previous section fuels are stored in appropriate bunded, integrity tested tanks, in accordance with the Waste License for the site and guidance published by the EPA 'IPPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities'. The proposed development will not result in any change to this methodology. This allows for safe and contained dispensing of fuels. The following plant will be used within the proposed waste transfer facility and composting facility;

- Doppstadt W3060 Slow Speed Shredder
- Doppstadt AK300 High Speed Shredder
- Doppstadt SM720 Screening Trommel
- Volvo L70F Loading Shovel
- Volvo L60E Loading Shovel
- JCB 550-80 Teleporter

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2.5 Environmental Nuisances

The following measures are currently undertaken at the facility to reduce the potential for nuisances arising from activities on-site.

Litter patrols of the site, its perimeter, and access roads are carried out daily. Where litter has escaped it is immediately collected. A designated yard operative continuously inspects the yard and collects any litter that is visible. If litter accidentally escapes from a skip or a trailer it is cleared up immediately. All spillages will be reported to the Facility Manager when they occur by drivers and yard operatives. The yard is also swept by an operative on a daily basis. During dry spells the yard is sprayed down prior to sweeping to minimise dust generation. Any large debris e.g. pieces of wood, stones, plastic and litter shall be removed from the ground by an operative to avoid damaging the machine.

Waste on site is always covered or is in sealed containers, it is never exposed so that food is available for localised bird populations. This practise will continue on site in accordance with license conditions, and any putrescible waste shall be fully contained at all times and shall be managed in accordance with EPA measures. On a weekly basis the facility and surrounding area are checked by the Facility Manager or nominated deputy for bird nuisance and a Weekly Inspection Form filled in. If a bird nuisance is detected during this monitoring, then it is dealt with immediately.

Pest control measures on site consist of:

- Daily cleaning of the shed floors;
- The laying of bait at various locations around the site to control vermin;
- Bait shall be laid at various locations around the site to control vermin. The Facility Manager shall decide where these are to be laid or may employ the services of a Pest Control Company if considered necessary;
- On a daily basis the facility and surrounding areas are checked for vermin nuisance by the Facility Manager or nominated deputy and a daily inspection form is filled in. If a vermin nuisance is detected during this monitoring, then a more intensive baiting program is undertaken;
- If a yard operative notices any vermin during the course of his/her work then he/she informs the Facility Manager; and
- Fly nuisance is minimised on site by the rapid removal of degradable waste off-site, the washing of the floor of each of the operations buildings, the covering of all compacted waste and ensuring all skips stored outside are kept empty and clean.

2.6 Decommissioning and Aftercare

O'Toole Composting Ltd. has set out decommissioning plans in the unlikely event of the facility shutting down, or a planned cessation greater than six months of all or part of the site involved in the licensed activity. In the event of the above OTCL will decommission, render safe or remove for disposal/recovery, all materials, waste, ground, plant and equipment that may result in environmental pollution in accordance with the conditions of the Waste Facility Permit WFP-CW-10-0003-01 as reviewed by WFP-CW-14-5 or any EPA License that may be granted. This plan will be reviewed annually by O'Toole Composting Ltd.

Following implementation of the decommissioning plan OTCL 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. It will be submitted to the EPA within three months of execution of the plan and shall address the following:

- Disposal of any raw material remaining on-site;
- Disposal of wastes;
- Decommissioning of plant and equipment;
- Disposal of obsolete equipment;
- Results of monitoring and testing; and
- The need for ongoing monitoring or investigations.

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