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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
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WASTE RESOURCE MANAGEMENT

VALENCIA WASTE (SOMERSET) LIMITED

APPLICATION TO VARY PERMIT NUMBER EPR/BK6785IE

OPERATING TECHNIQUES

JUNE 2023

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JUNE 2023

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APPENDICES

DRAWINGS	TITLE	Scale
WAL175	Proposed MRF Location	1:500 A1

1 INTRODUCTION

1.1.1 Wardell Armstrong have been appointed to prepare an application to vary the permit for Walpole Landfill Site at Pawlett, near Bridgwater, Somerset. The site is operated by Valencia Waste (Somerset) Limited, under permit number EPR/BK6785IE.

1.1.2 The site is permitted to accept non-hazardous commercial, industrial and household waste as well as having a separate cell for asbestos.

1.1.3 Valencia is seeking to move waste up the waste hierarchy by treating mixed non-hazardous waste arriving at the landfill to recover materials for recycling and recover a high energy RDF/SRF from which remove non-combustible material has been removed. The residual non-combustible waste will be utilised in landfill engineering or will be placed in the landfill.

1.1.4 The waste treatment will take place inside a Materials Recycling Facility (MRF) building before being sent off site for recycling elsewhere.

1.1.5 No asbestos will be treated. The measures in place for the safe disposal of asbestos into a dedicated cell within the landfill will continue.

1.1.6 Section 2 sets out the new activities to be undertaken at the site, whilst Section 3 sets out the waste acceptance procedures for the treatment process.

1.1.7 Section 4 describes the waste treatment activity and the way in which it is managed, and Section 5 describes the measures in place to minimise any impacts on the amenity of the locality from the new activity. Otherwise, the site will continue to operate in accordance with the agreed management system and plans set out in the Environmental Permit.

1.1.8 The site layout is shown on drawing WAL175.

2 NEW ACTIVITIES

2.1.1 A new installation will be included in the permit, listed under Section 5.4 A(1) (b) (ii) , i.e. a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day involving pre-treatment of waste for incineration or co-incineration.

2.1.2 The activities and their relevant waste disposal and waste recovery codes are set out in Table 2-1, below.

Table 2-1: Waste Activities

Activity	R or D Code
Separation of combustible waste from non-combustible waste where EfW has R1 status	**R3** Recycling /reclamation of organic substances that are not used as solvents
Separation of wood and plastic for recycling.	**R3** Recycling/reclamation of organic substances that are not used as solvents
Separation of ferrous metal and non-ferrous metal from mixed waste pending recycling elsewhere	**R4** Recycling /reclamation of metals and metal compounds
Separation of stone, brick, glass etc for use in roads	**R5** recycling/reclamation of other in-organic materials
Storage of incoming waste and storage of treated wastes pending transfer to R1 status EfW, or a recycling site.	**R13** storage of waste pending any of the operations numbered R1 to R12
Storage of waste pending transfer to landfill	**D15** storage of waste pending any of the operations D1 to D14.

2.1.3 The wastes that may be stored or treated in the MRF building would be as listed in Table 3-1. These wastes will undergo mechanical treatment to recover metals, wood, plastic and inert materials and prepare the waste for incineration.

3 WASTE ACCEPTANCE

3.1.1 Up to 150,000 tonnes of additional waste may be accepted at the site each year with approximately 150,000 tonnes being treated through the recycling plant. Waste for treatment may be a mix of those waste streams already accepted at the landfill and new waste streams.

3.1.2 The waste types are very similar to those already accepted on site. Waste Pre-Acceptance and Acceptance will therefore continue in line with the existing procedures, other than, at the pre-application stage, each waste stream will be allocated to either the treatment plant or the landfill and this will be clearly recorded in the pre-application form so it is apparent to weighbridge staff when the waste arrives on site.

3.1.3 On arrival at the site all waste will be weighed in at the weighbridge. The transfer note will be checked against the pre-acceptance information and, where it is possible, a visual inspection of the waste will be made. The weighbridge operator will direct the load to the appropriate unloading point, whether that is the asbestos cell, the active non-hazardous landfill cell or the MRF building.

3.1.4 On arrival at the MRF building the load will be tipped into the waste reception bay. Loads will be inspected during unloading to ensure that they are compliant with the permit and whether they are suitable for waste treatment.

3.1.5 Those wastes listed in Table 3-1 will be stored in a dedicated bay pending treatment through the mechanical treatment plant.

Table 3-1: Permitted Waste Types

Waste Code	Description
01	WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS
01 01	Wastes from mineral excavation
01 01	Wastes from mineral metalliferous excavation
01 01 02	Wastes from mineral non-metalliferous excavation
01 04	Wastes from physical and chemical processing of non-metalliferous minerals
01 04 08	Waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	Waste sand and clays

Table 3-1: Permitted Waste Types	
Waste Code	**Description**
02	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING
10 12	Wastes from manufacture of ceramic goods, bricks, tiles and construction products
10 12 06	Discarded moulds
10 12 08	Waste ceramics, bricks, tiles and construction products (after thermal processing)
10 12 10	Solid wastes from gas treatment other than those mentioned in 10 12 09
10 12 12	Wastes from glazing other than those mentioned in 10 12 11
10 13	Wastes from manufacture of cement, lime and plaster and articles and products made from them
10 13 14	Waste concrete
12	WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS
12 01	Wastes from shaping and physical and mechanical surface treatment of metals and plastics
12 01 01	Ferrous metal filings and turnings
12 01 03	Non-ferrous metal filings and turnings
12 01 05	Plastics shavings and turnings
12 01 13	Welding wastes
12 01 17	Waste blasting material other than those mentioned in 12 01 16
12 01 21	Spent grinding bodies and grinding materials other than those mentioned in 12 01 20
15	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 01	Packaging (including separately collected municipal packaging waste)
15 01 01	Paper and cardboard packaging
15 01 02	Plastic packaging
15 01 03	Wooden packaging
15 01 04	Metallic packaging
15 01 05	Composite packaging
15 01 06	Mixed packaging
15 01 07	Glass packaging
15 01 09	Textile packaging
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 01	Concrete, bricks, tiles and ceramics

Table 3-1: Permitted Waste Types	
Waste Code	**Description**
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	Wood, glass and plastic
17 02 01	Wood
17 02 02	Glass
17 02 03	Plastic
17 03	Bituminous mixtures, coal tar and tarred products
17 03 02	Bituminous mixtures other than those mentioned in 17 03 01
17 04	Metals (including their alloys)
17 04 01	Copper, bronze, brass
17 04 02	Aluminium
17 04 03	Lead
17 04 04	Zinc
17 04 05	Iron and steel
17 04 06	Tin
17 04 07	Mixed metals
17 04 11	Cables other than those mentioned in 17 04 10
17 05	Soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 04	Soil and stones other than those mentioned in 17 05 03
17 09	Other construction and demolition wastes
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE TREATMENT PLANTS AND PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION/INDUSTRIAL USE
19 01	Wastes from incineration or pyrolysis of waste
19 01 02	Ferrous materials removed from bottom ash
9 02	Wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)
19 02 03	Premixed wastes composed only of non-hazardous wastes

Table 3-1: Permitted Waste Types	
Waste Code	**Description**
19 02 10	Combustible wastes other than those mentioned in 19 02 08 and 19 02 09
19 04	Vitrified waste and wastes from vitrification
19 04 01	Vitrified waste
19 12	Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 01	Paper and cardboard
19 12 02	Ferrous metal
19 12 03	Non-ferrous metal
19 12 04	Plastic and rubber
19 12 05	Glass
19 12 07	Wood other than that mentioned in 19 12 06
19 12 08	Textiles
19 12 09	Minerals (for example sand, stones)
19 12 10	Combustible waste (refuse derived fuel)
19 13	Wastes from soil and groundwater remediation
19 13 02	Solid wastes from soil remediation other than those mentioned in 19 13 01
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 01	Separately collected fractions (except 15 01)
20 01 01	Paper and cardboard
20 01 02	Glass
20 01 38	Wood other than that mentioned in.20 01.37
20 01 39	Plastics
20 01 40	Metals
20 02	Garden and park wastes (including cemetery waste)
20 02 02	Soil and stones
20 03	Other municipal wastes
20 03 01	Mixed municipal waste
20 03 02	Waste from markets
20 03 07	Bulky waste

4 MECHANCIAL TREATMENT

4.1.1 Non-hazardous waste arriving at the site will be received inside a building to provide containment for litter, dust and noise.

4.1.2 Waste is to be sorted into a range of different waste streams for recycling or recovery. Appendix 1 provides the specification of the waste sorting equipment to be used on site, including a process flow, whilst a written description is given below.

4.1.3 Wastes to be treated through the MRF should be less than 300mm in any direction. To facilitate this a shredder will be provided and, where necessary, waste will be treated through the shredder to ensure the correct particle size entering the plant. As an additional safeguard a long part separator will be placed between the shredder and the other MRF equipment to remove any long pieces of material that might damage the plant. Long parts unable to be shredded to the necessary dimensions to be processed through the MRF will be sent to the landfill.

4.1.4 The waste will pass on a conveyor under an overband magnet in order to remove ferrous metal. this will be placed in a dedicated bay pending removal to a permitted metal recycling site.

4.1.5 Then the waste will pass via a combi screen which will separate the waste into three sizes:

- <10mm fines, treated as residual waste;
- <50mm, sent to the fan blower to separate light materials; and
- 50 -300mm, sent to the 3 way separator.

4.1.6 The <50mm fraction will pass through a fan blower to remove light material, for example small pieces of card or plastic. This is followed by a water bath where further light materials will be floated off. The light material will be passed to a dedicated refuse derived fuel (RDF) bay pending removal to an energy from waste plant.

4.1.7 The RDF will have a lower metal content and higher calorific value compared to the incoming waste.

4.1.8 The <50mm waste will then pass a further magnet to remove any remaining ferrous metal before, finally, the material will pass through an eddy current separator to separate any non-ferrous metal from the remaining heavy waste. Ferrous and non-ferrous metal will be directed to dedicated storage bays pending removal to a metal recycling site.

4.1.9 The mid-sized heavies will be combined with the larger heavies from the other line (described below).

4.1.10 The larger material (50mm to 300mm) will pass to a three-way separator. This will separate waste be weight, producing a light fraction a mid-heavy fraction and a heavy fraction. The light fraction will be sent off site as RDF to an energy from waste facility.

4.1.11 The heavy fraction will pass via another overband magnet, with ferrous metal being collected and sent to the ferrous metal bay, pending recycling off-site.

4.1.12 The mid-heavy fraction will contain plastic, wood and similar materials. This will be sent to an optical sorter which will separate wood, plastic and residual waste.

4.1.13 Following mechanical treatment, the plastic, wood, residual waste and heavy waste will pass through a picking station to allow final quality control on the outputs. Staff will sort the waste by hand to remove any materials remaining in the wrong stream and ensure it is directed to the correct storage bay.

4.1.14 Wood and plastic will be stored in dedicated storage bays pending recycling off-site. Where it is confirmed to be non-hazardous all residual waste will be placed in the landfill.

4.1.15 The heavy fraction is expected to contain a high content of grit, stone, glass etc it will be used within the landfill for maintaining site roads and for daily cover.

4.1.16 Once it has been evidenced that it is non-hazardous, the <10mm fines and the residual waste will be placed in the landfill or where appropriate used as landfill cover. Any hazardous fines will be sent off site to a permitted hazardous waste facility.

5 OUTGOING WASTES

5.1 Fate of Sorted Materials

5.1.1 Ferrous and non-ferrous will be stored in dedicated bays and then will be loaded into a vehicle and removed to a permitted metal recycling site. Metals will not be stored for more than 1 month.

5.1.2 The heavy material is expected to be largely inert. This material will be stored in a dedicated bay or may be stockpiled on the landfill awaiting use in engineering works. Heavy material will not be stored for more than 6 months.

5.1.3 RDF will be stored in a dedicated bay and then loaded onto vehicles for direct transfer to an Energy from Waste Plant (EfW). As the material is loose, RDF will be removed when a load is available, and all such waste will be transferred to the EfW within 72 hours of being received on site.

5.1.4 Wood and plastic will be stored in dedicated storage bays before being loaded into vehicle and sent off site for recycling. Wood and plastic will not be stored for more than 72 hours.

5.1.5 Fines and residual waste will be removed to the landfill within 72 hours, except where they need to be held for a longer period pending results from the laboratory to confirm their classification. Should any fines be classed as hazardous waste they will be loaded onto a vehicle and removed to a permitted hazardous waste site. A consignment note will be completed. Non-hazardous fines may be used as landfill cover providing that they are not dusty or odorous. Any other fines/residual waste will be landfilled.

5.1.6 All fines and residual waste will be stored in a dedicated bay inside the building until they are moved for final disposal.

5.2 Testing of Trommel Fines

5.2.1 There is an expectation that as only non-hazardous wastes are to be treated on site, the fines will also be non-hazardous. However, 19 12 12 is a mirror entry in the list of waste codes and it is known that trommel fines from other sites have been proved to be hazardous waste.

5.2.2 Only a limited number of wastes will be treated through the trommel, in order to ensure the quality of the outputs. The composition of the fines is therefore expected to be relatively consistent.

5.2.3 To ensure the fines are properly classified 2 samples per day will be taken during the first month of operation. These samples will be subject to testing in line with the Environment Agency's WM3 guidance to confirm their classification.

5.2.4 Where the results show that the wastes are non-hazardous throughout this period testing will cease after the first month. Thereafter one sample of trommel fines will be taken each year and when there is any significant change to the incoming waste streams, to assess whether anything has changed.

5.2.5 Should any samples within the first month return a result showing that the fines are hazardous an assessment will be made to determine whether the results are statistically significant and, where necessary, a sampling programme will be drawn up to ensure that all wastes are correctly classified and disposed of legally going forward.

6 ENVIRONMENTAL PROTECTION

6.1 General

6.1.1 The main purpose of the variation is to move waste further up the waste hierarchy. There will therefore be an overall environmental benefit in reduced use of raw materials (by recycling materials) and reduced carbon emissions (by recycling and recovering energy from combustible waste).

6.1.2 Nevertheless, it is important that this is carried out without harm to the local environment. To minimise emissions, the activities will take place inside a building to ensure containment.

6.1.3 The site will be kept tidy and will be inspected on a daily basis to make sure that no pollution is occurring. Any significant emissions of dust, odour, litter or noise will be investigated and remedied.

6.1.4 All plant and equipment will be properly maintained so that it is fit for purpose and operates without excessive noise.

6.1.5 The site will be managed by a technically competent manager in accordance with Valencia's written Environmental Management System.

6.2 Receptors

6.2.1 The site is close to some sensitive receptors, although it is anticipated that there is a low risk of emissions being able to reach these receptors. The main landfill lies to the north and northwest of the Materials Recycling Facility (MRF) building, an AD plant lies to the immediate north, whilst 200m to the south is an existing WTS and Open Windrow Composting facility that already operate under containment measures.

6.2.1 The MRF site perimeter lies 250m from the M5 Motorway, and 50m from a significant train line (Bristol to Exeter West Coast).

6.2.2 The closest residential site and business site is Rye Farm, c.800m to the south-east of the site, on the other side of the M5 Motorway and railway line.

6.2.3 A fish farm exists to the north of the site, 900m away and is the nearest major residential and commercial development.

6.2.4 The closest major residential receptor is the village of Pawlett c.1.5km to the south-west of the MRF site, with the village of Puriton c.1.5km to the south-east.

6.2.5 A number of solar farm developments also exist to the south-east of the site within c.1km, as well as a number of smaller farms, commercial developments and fish farms within 2km.

6.2.6 The boundary of the Severn Estuary Ramsar site has been identified as being c.2km away from MRF, with the Somerset Wetlands National Nature Reserve (NNR) boundary is just over c.1 km away from the MRF (Huntspill River).

6.2.7 The Bridgwater Bay SSSI overlaps with the Somerset Wetlands/Severn Estuary Ramsar and is c.2km away from the site.

6.2.8 There are also several priority habitats within c.2km of the MRF, including mudflats, coastal saltmarsh, as well as various areas of semi-improved grassland, lowland calcareous grassland, and deciduous woodland.

6.2.9 The Huntspill River lies c.1km the north of the site boundary, while the Black Ditch and Walpole Rhyne, two drainage ditches, are 400m and 50m from the site perimeter respectively.

6.2.10 The nearby residential and commercial receptors are unlikely to be at risk from emissions from the MRF, due to the appropriate measures in place.

6.2.11 The closest protected habitats and receptors are also unlikely to be at risk of emissions from additional activity on site, due to measures listed in the Accident and Amenity Assessment including the facility being contained within a building, restricting emissions from beyond the MRF.

6.3 Contaminated Run-Off

6.3.1 Waste is unloaded, treated and stored inside the building and therefore it is protected from precipitation and any run-off will be minimal.

6.3.2 The building is provided with an impermeable reinforced concrete floor, ensuring that no leachate will enter soils under the site. The floor is designed to drain to a 240m^3 sump, which will capture any leachate, should a load with any free liquid be received. This sump is also designed to capture fire water in the event of a fire as described in the Fire Prevention Plan.

6.3.3 A speed hump at the site entrance ensures that no liquids can run out of the building.

6.4 **Litter**

6.4.1 Measures will be in place to prevent litter. Waste will be unloaded inside the MRF building. The building will be fitted with fast acting roller shutter doors which will, as far as possible, be kept closed except for allowing vehicle access and egress.

6.4.2 Waste will be stored in dedicated storage bays or containers.

6.4.3 Daily inspections will made and any loose waste noted lying around will be collected and transferred to the appropriate bay or container.

6.4.4 Incoming and outgoing vehicles will be enclosed or have appropriate sheeting to contain any waste.

6.5 **Dust**

6.5.1 To minimise emissions of dust incoming and outgoing vehicles will be enclosed or have appropriate sheeting to contain any waste.

6.5.2 Waste will be unloaded inside the MRF and, as far as possible, the fast acting roller shutter doors will be kept closed to contain emissions.

6.5.3 Localised air extraction is provided for the 3 way separator. This will draw air from the separator via a dust filter before returning air inside the building.

6.5.4 A spray bar is provided where the light materials leave the 3 way separator to minimise dust.

6.5.5 There are no point source emissions to atmosphere external to the building.

6.5.6 Daily inspections will be made to ensure that no dust is being emitted from the building. Where emissions of dust are noted, the cause will be investigated and remedied as part of the Dust Management Plan.

6.6 **Odour**

6.6.1 Waste will be accepted and dispatched in enclosed or sheeted vehicles.

6.6.2 There is no intention to treat putrescible waste. Household waste and similar materials, with a high proportion of food waste or other putrescible material, will be identified at the pre-application stage and will be directed to the landfill. Only wastes with a low putrescible content such as construction and demolition wastes, commercial and industrial wastes, and household wastes with putrescible content removed will be directed to the MRF.

6.6.3 Waste will be dealt with on a first in first out basis and will be treated within 72 hours to minimise the risks of odour and vermin. Fines and residual wastes will be removed from site as soon as possible. All bays will be emptied on a regular basis.

6.6.1 Waste will be unloaded inside the MRF building. The building will be fitted with fast acting roller shutter doors which will, as far as possible, be kept closed except for allowing vehicle access and egress.

6.6.2 A daily inspection will be made and should there be a noticeable odour at the site boundary the source will be investigated and remedial action will be taken. Odorous loads will be prioritised for removal from site.

6.7 **Vermin and Pests**

6.7.1 Waste will be stored unloaded and sorted inside the building to limit access by pests and vermin.

6.7.2 Wastes containing a high level of putrescible waste will not be treated.

6.7.3 RDF and residual waste will be treated within 72 hours to prevent pests becoming established, whilst wood and plastics will be separated from the main waste pile and cleared as soon as a load is available to leave the site.

6.7.4 A pest control contractor will be retained and will make routine inspections, taking appropriate action to control vermin and pests.

6.7.5 The daily inspection will include assessing the presence of rats, flies or other pests. Where there is an indication that there is an infestation the pest contractor will be contacted to attend site as soon as possible to manage the problem.

6.8 **Noise**

6.8.1 The MRF is not expected to cause any noise issues as the nearest sensitive human receptors are over 800m away. The new activities will take place inside a building, giving a degree of attenuation to noise, and is located adjacent to an existing rail and motorway network.

6.8.2 Plant and equipment will be properly maintained so that it operates without excessive noise.

6.8.3 A Noise Risk Assessment is therefore not considered to be required, as the MRF is considered unlikely to generate noise beyond the baseline of the surrounding sources.

7 RECORD KEEPING

7.1.1 The records described below will be maintained at the site office and will be made available to warranted officers of the Environment Agency on request.

- The pre-acceptance record for each waste stream and copies of related transfer notes.
- Details of all waste taken off site with a copy of the appropriate transfer note.

7.1.2 A site log will be maintained with the results of daily amenity inspections and any actions taken as a consequence and a record of attendance by the technically competent manager.

7.1.3 A copy of the preventative maintenance programme will be kept on site, showing plant has been properly inspected and maintained and when.

7.1.4 A log will be maintained detailing any complaints received and the actions taken to resolve them.

7.1.5 A log will be maintained of any pollution incidents and the action taken to remediate them.

7.1.6 Records will also be kept regarding staff training.

7.1.7 Records will be kept for a minimum of two years and in line with any statutory requirements. Records of pollution incidents will be maintained indefinitely in order to inform any eventual surrender application.

APPENDIX 1

Plant Specification and Process Flow Diagram

DRAWINGS

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