

# Taggarts

20001

Nine Mile Point Waste Processing Facility

PPC Variation

Fire Prevention Plan

V00

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# Report

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| <b>TITLE</b>   | <b>Nine Mile Point Waste Processing Facility- PPC Variation – Fire Prevention Plan</b> |
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## 6 Fire Prevention Plan

### Introduction

- 6.1 This Fire Prevention Plan has been prepared as part of onsite Operational Documentation for the waste processing facility ('The Facility') at Nine Mile Point Industrial Estate, Cwmfelinfach, Caerphilly.
- 6.2 The Operator of the Facility will be Drumcastle Ltd, hereby referred to as 'the Operator'.
- 6.3 Environment Agency Guidance Note: Fire Prevention Plans, Version 2, March 2015, describes the waste activities for which fire risk is a key issue and for which a Fire Prevention Plan is required, and applies to facilities which store combustible materials. Nine Mile Point Waste Processing Facility stores such materials.
- 6.4 The plan will be updated and reviewed in accordance with the requirements of the site management systems.
- 6.5 This Fire Prevention Plan is intended to be used as a stand-alone working document for operational staff on a day to day basis. It outlines the main potential fire sources at the site, the mitigation measures to be used to reduce the risk of fire and the monitoring and reporting methods to be used when the site becomes operational. It will be reviewed regularly and revised as required.

### Aim and Objective of the Fire Prevention Plan

- 6.6 This Fire Prevention Plan has been developed based on the requirements of Environment Agency Horizontal Guidance Note 'Fire Prevention Plans' Version 2, March 2015. This guidance document outlines the standards which must be followed when storing combustible materials at permitted sites.
- 6.7 The aims of this Fire Prevention Plan are to identify sources of combustible materials, possible causes of fires, minimise the risk of fire occurring at the Facility and in the event of a fire occurring ensuring that it is identified as early as possible.

### Relevant Guidance and Documentation

- 6.8 This Fire Prevention Plan has been prepared with reference to the following key guidance:
- Fire Prevention Plans' Version 2, March 2015;
  - Environment Agency Environmental Management Guidance 'Control and monitor emissions for your environmental permit'

- Environment Agency Environmental management guidance 'Develop a management system: environmental permits'; and
- CIRIA 736: 'Containment Systems for the Prevention of Pollution'

### Site Location

6.9 The Facility's full address will be:

Nine Mile Point Waste Processing Facility  
Nine Mile Point Industrial Estate  
Ynysddu,  
Cwmfelinfach,  
Caerphilly,  
NP11 7HZ

6.10 The National Grid Reference for the site is: ST 19235 91305. The site covers an area of approximately 1.09 hectares. The site is bordered by an industrial unit to the east, a road to the west beyond which are more industrial units, a road to the south beyond which is woodland and the Sirhowy River and to the north by woodland.

6.11 The nearest residential properties are on New Road, approximately 470m North East of the eastern edge of the site boundary and William Street, approximately 478m West of the western edge of the site boundary. The nearest place of work is immediately adjacent to the eastern boundary of the facility. Table 6.1 details the sensitive receptors

**Table 6.1 Sensitive Receptors**

| Receptor   | Type        | Distance (m) | Direction |
|--|-------------|--------------|-----------|
| The site is located close to other Industrial and Commercial units on the Nine Mile Point Industrial Estate. These lie to the east and west of the site. The closest of these is immediately adjacent to the facility. | Commercial  | 0            | E         |
| Residential properties at New Road, Wattsville   | Residential | 470          | NE        |
| Residential Properties at William Street, Cwmfelinfach   | Residential | 478          | W         |

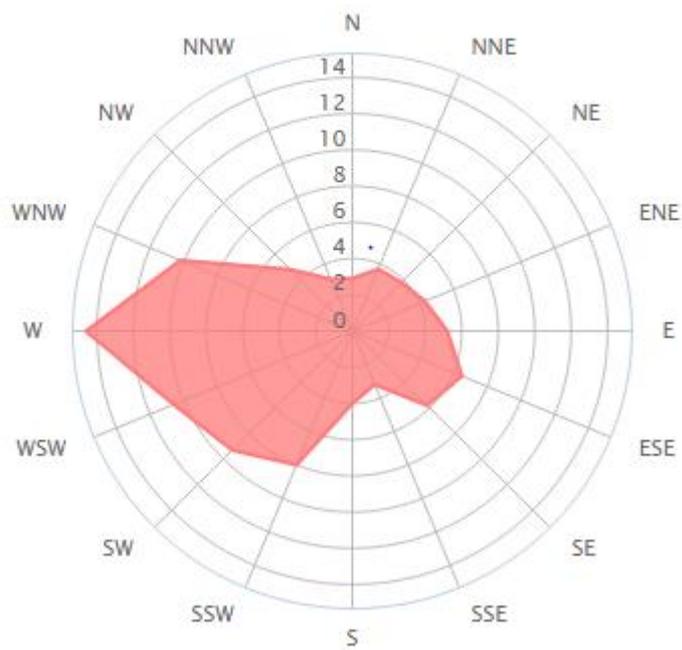
6.12 The prevailing winds at this site are from the west, west north west and west south west (based on regular observations recorded at the ‘Caerphilly’ monitoring station between April 2013 and May 2015 (<https://www.windfinder.com>)).

**Figure 6.1 Caerphilly Weather Station Data**

| Month of year                         | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Year |
|---------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|                                       | 01  | 02  | 03  | 04  | 05  | 06  | 07  | 08  | 09  | 10  | 11  | 12  | 1-12 |
| Dominant Wind dir.                    | >   | >   | >   | >   | >   | >   | >   | >   | >   | >   | >   | >   | >    |
| Wind probability<br>>= 4 Beaufort (%) | 19  | 23  | 18  | 21  | 21  | 11  | 8   | 11  | 5   | 14  | 6   | 24  | 15   |
| Average<br>Wind speed<br>(kts)        | 6   | 7   | 7   | 8   | 7   | 6   | 6   | 6   | 5   | 6   | 4   | 7   | 6    |
| Average air temp. (°C)                | 8   | 8   | 10  | 13  | 15  | 19  | 23  | 19  | 17  | 15  | 11  | 9   | 13   |

**Figure 6.2 Caerphilly Weather Station Data**

Wind direction distribution in (%)  
Year



## Facility Operations

### Overview

- 6.13 Nine Mile Point Waste Processing Facility has a capacity to process a maximum of 100,000 tonnes of non-hazardous household, commercial and industrial waste per annum, to produce Refuse Derived Fuel (RDF) or Solid Recovered Fuel (SRF).
- 6.14 In summary, waste will be brought to site and unloaded in the Waste Reception area. The waste will then be loaded into a pre-shredder and screened and sorted to remove fines, metals, and plastics. The waste will then be shredded to the appropriate particle size and the resulting SRF/RDF is then transferred to the end storage bay prior to transfer offsite. Prior to treatment all waste materials will be stored within the building which is on hardstanding.
- 6.15 For the majority of the time the facility will accept more than 75 tonnes of waste per day. This waste will include an element of combustible wastes such as wood, paper, cardboard, plastics, and metals.
- 6.16 The proposed Waste Processing Facility comprises of the following elements:
- Weighbridge
  - Waste Reception Building
  - Storage areas for recycled wastes, metals, plastics, fines
  - Shredder
  - Screen
  - Separating equipment, magnets, heavy light separators, and a near infra-red optical unit
  - Dust filters
  - Carbon filters
  - Baler and Wrapper
  - SRF/RDF Storage
  - Electrical Infrastructure
  - Weighbridge Office
  - Sprinkler tank & pumphouse; and
  - Cabin associated with staff and visitors.
- 6.17 Waste materials are delivered to the site during the following operational hours:
- Monday – Friday 07:30 – 18:30
  - Saturday 07:30 – 13:00
  - No waste will be delivered to the facility on Sundays or Public/Bank Holidays.
  - The treatment of waste through the process will in general operate continuously 24 hours a day.
  - The facility will be staffed 24 hours a day.

6.18 Potentially combustible wastes are present in the quantities detailed in Table 6.2 below

**Table 6.2 Combustible Waste Types and Storage Capacities**

| Waste Types   | Containment  | Approximate Storage Capacity |
|---|--|------------------------------|
| Input material for processing (waste codes as listed in permit)                 | In the waste reception building in the waste reception bay   | 610 tonnes                   |
| Ferrous Metals  | In bay within main building which has an impermeable floor   | 75 tonnes                    |
| Non-Ferrous Metals  | In bay within main building which has an impermeable floor   | 75 tonnes                    |
| Plastics  | In bay within main building which has an impermeable floor   | 50 tonnes                    |
| Heavy wastes (only a small proportion will be flammable e.g., wood, food waste) | In bay within main building which has an impermeable floor   | 100 tonnes                   |
| 3D Heavies / bulky material   | In bay within main building which has an impermeable floor   | 100 tonnes                   |
| Paper/Cardboard   | In bay within main building which has an impermeable floor   | 50 tonnes                    |
| Fines   | In bay within main building which has an impermeable floor   | 100 tonnes                   |
| SRF (loose)   | Bay at the end of the waste processing equipment   | 350 tonnes                   |
| Bales   | Stored outside the building on impermeable surface. Bales containing SRF will be wrapped five times. | 600 bales                    |

6.19 The scope of the proposed Facility will be limited to the activities specified in Table 6.3 below.

**Table 6.3 Regulated Activities**

| Schedule 1 Activity | Description of Activity                    | Annex IIA or IIB  | Treatment Capacity        |
|---------------------|--|---|---------------------------|
| Part A (1)          | Recovery or a mix of recovery and disposal | R3: Recycling/reclamation of organic substances which are not | Total capacity of 100,000 |

| Schedule 1 Activity      | Description of Activity   | Annex IIA or IIB  | Treatment Capacity   |
|--------------------------|---|---|--|
| Section 5.4 Part A(1)(b) | of non-hazardous waste with a capacity exceeding 75 tonnes per day involving (ii) pre-treatment of waste for incineration or co-incineration. Bulking of recyclable wastes recovered as an incidental part of production of SRF/RDF | used as solvents (including composting and other biological transformation processes)<br>R4: Recycling/reclamation of metals and metal compounds<br>R5: Recycling/reclamation of other inorganic materials<br>R13: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on site where it is produced) | tonnes per annum.<br>Daily treatment capacity of >75 tonnes per day. |

### Recyclate Storage

- 6.20 Recyclates removed during the RDF/SRF preparation process will be stored in dedicated bays within the main building. Baled recyclable materials will be stored externally.
- 6.21 A strict rotation system will be employed to ensure that no recyclates will be stored for longer than 3 months on site.

### Stored SRF/RDF

- 6.22 The SRF will be turned and blended at least daily. This will ensure that the temperature does not build up within the stack. The SRF will generally only be stored for 5 working days and will be dispatched on a regular basis with loads leaving daily. Baled SRF will be wrapped and stored externally.
- 6.23 A strict rotation system will be employed to ensure that no SRF/RDF will be stored for longer than 3 months. Records of stock rotation will be kept on site.

### Input Material

- 6.24 Waste will be delivered to a reception hall inside the building and onto an impermeable surface.
- 6.25 Waste is then fed into the process to be segregated into recyclable materials and those materials suitable for the production of RDF/SRF.

### Maximum Pile Sizes

- 6.26 The maximum pile sizes given in table 6.4 below. The pile sizes for the input material in the reception bay and SRF bays will have a maximum dimensions of 20m by 20m by 4m height. Access may be limited from both sides of the piles in the reception and SRF bays due to fire walls, therefore additional mitigation measures will be implemented as outlined in table 6.4 below.

**Table 6.4 Maximum Pile Sizes and Additional Mitigation**

| Material                             | Max Height (m) | Length/width (m) | Max vol (m <sup>3</sup> ) | Additional Mitigation  |
|--------------------------------------|----------------|------------------|---------------------------|--|
| Input material for processing        | 4              | 20/20            | 1,600                     | <ul style="list-style-type: none"> <li>▪ Dedicated bays will be provided for each material to ensure segregation.</li> <li>▪ The bay walls will be designed to take account of the potential flame height and the potential radiation of a fire to mitigate fire spread between piles. The walls utilised for separation will be designed for the purpose of containing a potential fire and will offer the required thermal barrier.</li> <li>▪ The stored materials will be managed to ensure that sufficient free board is provided above the materials and to prevent bridging across or around walls.</li> <li>▪ In addition to a standard fire detection and alarm system, there will be flame detectors (dual IR/UV) aimed at the tipping hall and SRF storage areas and seven small bays used for ferrous metals etc. Upon activation of these flame detectors, the fire alarm will be activated, and all processing equipment will automatically stop. The location of the activated flame detector will be shown on the control panel and will allow the operator to investigate immediately.</li> </ul> |
| Paper, cardboard, and rags           | 4              | 10/10            | 400                       |  |
| Plastic, rubber, and other materials | 4              | 10/10            | 400                       |  |
| SRF                                  | 4              | 20/20            | 1,600                     |  |

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  | <ul style="list-style-type: none"> <li>▪ Fire suppression will include a dry sprinkler system at roof level and intermediate levels with an additional deluge sprinkler system installed to the zones around the pre-shredder and secondary shredders.</li> <li>▪ 4 No. fire hydrants installed around the perimeter of the SRF building.</li> <li>▪ Potable fire extinguishers will be installed to the full facility to BS 5306 Part 8.</li> </ul> |
|--|--|--|--|--|

## Management of Risk From Fire

### Overview

- 6.27 Provisions for storage of combustible materials take into account the guidance provided in Environment Agency Guidance Document 'Fire Prevention Plans' Version 2, March 2015.
- 6.28 In the event of a fire, the site personnel, the Sirhowey River, and other businesses on Nine Mile Point Industrial Estate (the closest being immediately adjacent to the facility) are most at risk. Combustion products may have a local and temporary impact depending on meteorological conditions at the time of any incident. The nearest residents located approximately 470m to the North East and 478m to the West of the facility could also be impacted.

### Incident Management

- 6.29 Drumcastle Limited have in place an Integrated Management System which covers how potential emergency situations are documented and an Accident Management Plan.
- 6.30 A 'Fire Response Procedure' is incorporated into the above procedure and details specific actions which must be carried out in the event of a fire.
- 6.31 Emergency contacts and other useful contact information will be included in Appendix A when the site is operational.

**Fire Prevention Techniques**

6.32 Fire Risk Management techniques are detailed below which describe how the requirements of Environment Agency Guidance Document ‘Fire Prevention Plans’ Version 2, March 2015 are applied on-site.

**General Measures to Minimise Fire Risk**

6.33 Table 6.5 below details the measures required by the EA Guidance Document ‘Fire Prevention Plans’ Version 2, March 2015 and how the Operator proposes to prevent risk of fire.

**Table 6.5 Prevention of Fire**

| Factor  | Mitigation Measures Employed   | Meets FPP Guidance? |
|---|--|---------------------|
| Control sources of ignition such as heating pipes, naked flames, light bulbs, space heaters, furnaces, and incinerators | <ul style="list-style-type: none"> <li>▪ Industrial heaters will not be used at the Facility.</li> <li>▪ No waste or other materials will be burnt on site.</li> <li>▪ Electrically operated equipment, which may present an ignition source, will be at least 6m from combustible waste sources. Ignition sources during non-routine activities e.g., during maintenance activities, will be at least 6m from combustible materials.</li> <li>▪ The facility has a strict no smoking policy.</li> </ul> | Yes                 |
| Keep sources of ignition at least 6m away from piles of combustible and flammable materials                             | <ul style="list-style-type: none"> <li>▪ Ignition sources will be kept greater than 6m from combustible materials.</li> </ul>  | Yes                 |
| Reinforce fire prevention messages using signs  | <ul style="list-style-type: none"> <li>▪ Visitors will be informed of the correct safety and fire prevention procedures; information will be provided at the gatehouse at the signing in point and by appropriate signage on-site.</li> <li>▪ Signage will be maintained in areas where combustible materials are stored</li> </ul>  | Yes                 |
| Ensure staff and contractors follow safe working practices when undertaking hot working, such as welding and cutting    | <ul style="list-style-type: none"> <li>▪ No hot work will be carried out on-site routinely.</li> <li>▪ Should maintenance require hot works to be carried out, procedures including relevant work permits will be in place to minimise fire risk. All contractors undertaking hot works or welding are required to have a permit to work issued by site staff before commencing works</li> </ul>   | Yes                 |

| Factor   | Mitigation Measures Employed  | Meets FPP Guidance? |
|--|---|---------------------|
|  | <ul style="list-style-type: none"> <li>▪ No hot work will be carried out within 6m from combustible waste sources.</li> </ul>   |                     |
| Ensure all visitors follow the correct safety and fire prevention procedures   | <ul style="list-style-type: none"> <li>▪ Visitors will be informed of the correct safety and fire prevention procedures; information will be provided at the gatehouse at the signing in point and by appropriate signage on-site.</li> </ul>   | Yes                 |
| Apply a no smoking policy or ensure designated smoking areas are situated away from combustible materials  | <ul style="list-style-type: none"> <li>▪ Smoking is not permitted on site. 'No Smoking' signs will be visible on site and staff will be made aware of this requirement through training.</li> </ul>   | Yes                 |
| Introduce a regular maintenance and inspection programme for all site areas (including site machinery) and minimise fibre and paper in buildings and around the site | <ul style="list-style-type: none"> <li>▪ A maintenance and inspection programme will be in place following commencement of operations.</li> <li>▪ All stored waste shall be inspected daily.</li> <li>▪ Infrared / UV flame detectors will be used to aid these inspections.</li> <li>▪ The operator conducting the inspection will be looking to ensure there is no sign of the waste heating up, such as steam, arising.</li> <li>▪ Plant and equipment on-site will be maintained in accordance with the manufacturer's requirements.</li> <li>▪ A program of planned maintenance procedures will be included in the EMS for the facility from day 1 of operation. This will include the completion of a machine service record sheet and machine daily inspection checklist.</li> </ul> | Yes                 |
| Put site security measures in place (e.g., security fencing, intruder alarms and CCTV) to  | <ul style="list-style-type: none"> <li>▪ Site security measures are in place to prevent unauthorised access and include total fencing of the site, CCTV, and security gates.</li> <li>▪ Security gates are kept locked and secured outside normal working hours.</li> </ul>   | Yes                 |

| Factor   | Mitigation Measures Employed   | Meets FPP Guidance? |
|--|--|---------------------|
| prevent arson (your arrangements should include outside normal working hours)  | <ul style="list-style-type: none"> <li>▪ Site intruder alarms will alert of break ins in the event that the site was unmanned.</li> </ul>  |                     |
| Have all site vehicles been fitted with fire extinguishers and dust filters.   | <ul style="list-style-type: none"> <li>▪ All site vehicles will be fitted with fire extinguishers and dust filters.</li> <li>▪ All mobile plant will be parked outside the reception building when not in use and at least 6 metres from any flammable materials.</li> </ul>   | Yes                 |
| Have all bucket loaders fitted with rubber strips to prevent sparks when the bucket comes into contact with hard-standing etc.       | <ul style="list-style-type: none"> <li>▪ Bucket loaders are fitted with rubber strips to prevent sparks when the bucket comes into contact with the surfacing.</li> </ul>  | Yes                 |
| Implement a fire-watch at the end of each shift (when dust from processing operations can settle onto hot exhausts and engine parts) | <ul style="list-style-type: none"> <li>▪ A fire-watch will be achieved through inspection of waste processing areas following the start of daily operations prior to the Facility being vacated.</li> <li>▪ No plant or machinery will operate when the site is not staffed.</li> </ul>  | Yes                 |
| Make sure separation distances are observed between plant and material when the site is not staffed                                  | <ul style="list-style-type: none"> <li>▪ The unprocessed waste and SRF materials will be stored within bays surrounded by concrete block / reinforced concrete cast insitu wall, and therefore will provide a fire rating of two hours.</li> <li>▪ Separation distances will be inspected before the start of each shift and no operations are carried out when the site is not staffed.</li> <li>▪ Dedicated bays will be provided for each material to ensure segregation.</li> <li>▪ The bay walls will be designed to take account of the potential flame height and the potential radiation of a fire to mitigate fire spread between piles. The walls utilised for separation will be</li> </ul> | Yes                 |

| Factor  | Mitigation Measures Employed   | Meets FPP Guidance? |
|---|--|---------------------|
|   | <p>designed for the purpose of containing a potential fire and will offer the required thermal barrier.</p> <ul style="list-style-type: none"> <li>▪ The stored materials will be managed to ensure that sufficient free board is provided above the materials and to prevent bridging across or around walls.</li> </ul>  |                     |
| <p>Provide a dedicated emergency or quarantine area big enough to cope with a major incident, with a clear area of at least 10m around the perimeter (this must be available at all times and identified on your site plan)</p> | <ul style="list-style-type: none"> <li>▪ If a hot load is received or if waste is found to be burning on site this will be removed, by mechanical loading shovel if safe to do so, to the quarantine area for burning material located in the centre of the yard. This area is identified on Drawing 20001-402.</li> </ul>   | <p>Yes</p>          |
| <p>Documented waste acceptance procedure to identify incompatible wastes/ hot loads</p>   | <ul style="list-style-type: none"> <li>▪ Waste acceptance and pre-acceptance procedures will be maintained to ensure that only the permitted waste codes, which do not include any hazardous wastes, including those with oxidising or flammable risk phrases, are accepted.</li> </ul>  | <p>Yes</p>          |
| <p>Mitigate and reduce risk from hot exhausts</p>   | <ul style="list-style-type: none"> <li>▪ Vehicles will not have exhausts at ground level.</li> <li>▪ Staff are trained to watch out for signs of smouldering or smoke at all times.</li> </ul>   | <p>Yes</p>          |
| <p>Building electrics fully certified by a qualified electrician and documented maintenance schedule in place</p>   | <ul style="list-style-type: none"> <li>▪ Testing will be carried out on electrical equipment by fully and appropriately qualified electricians when required and inspection of electrical cabling at the Facility will be included in the maintenance and inspection programme.</li> <li>▪ All control panels etc. within the facility will be suitability IP rated to ensure the ingress of water and dust is minimised.</li> </ul> | <p>Yes</p>          |

| Factor   | Mitigation Measures Employed  | Meets FPP Guidance? |
|--|---|---------------------|
|  | <ul style="list-style-type: none"> <li>▪ The Planned Preventative Maintenance Planner will be included once the equipment has been purchased and details of maintenance requirements have been supplied by the plant and equipment supplier.</li> </ul>   |                     |
| Gas containers/flammable items in an isolated location | <ul style="list-style-type: none"> <li>▪ A self-bunded 10,000 litre diesel tank will be located on the Northern boundary of the site. The bunded capacity will be to 110% of the tank capacity.</li> </ul>  | Yes                 |
| Routinely turn waste piles                             | <ul style="list-style-type: none"> <li>▪ The materials stored in the bays will be rotated daily to ensure stock rotation.</li> <li>▪ The temperature of stack piles will be checked regularly using a thermal lance.</li> <li>▪ If the temperature of the waste pile rises to 10°C above ambient temperature, then the pile will be turned.</li> <li>▪ A record of this rotation will be made in the site diary.</li> </ul> | Yes                 |

6.34 Table 6.6 below details the measures required by the EA Guidance Document ‘Fire Prevention Plans’ Version 2, March 2015 and how the Operator proposes to detect fire.

**Table 6.6 Detection of Fire**

| Factor  | Mitigation Measures Employed   | Meets FPP Guidance? |
|---|--|---------------------|
| You must carry out regular inspections, including at the start and end of every working day | <ul style="list-style-type: none"> <li>▪ The site, including all combustible waste storage piles, will be inspected at the start of each shift. The site will be operational 24 hours a day 7 days a week. These inspections will be logged, see <a href="#">Appendix D</a>.</li> <li>▪ The operator conducting the inspection will be looking to ensure there is no sign of the stockpiles heating up such as steam arising.</li> <li>▪ If there are any indications that cause concern, the stockpile will be turned mechanically to check and to allow any heat build up to dissipate.</li> </ul> | Yes                 |

| Factor   | Mitigation Measures Employed   | Meets FPP Guidance? |
|--|--|---------------------|
| <p>Consider fitting automatic detection systems such as smoke and heat detectors including temperature probes</p>  | <ul style="list-style-type: none"> <li>▪ The fire detection system will be designed and installed in accordance with BS5839-1.</li> <li>▪ In addition to a standard fire detection and alarm system, there will be flame detectors (dual IR/UV) aimed at the tipping hall and SRF storage areas and seven small bays used for ferrous metals etc. The location of these flame detectors is shown on Drawing 20001-404.</li> <li>▪ Upon activation of these flame detectors, the fire alarm will be activated, and all processing equipment will automatically stop. The location of the activated flame detector will be shown on the control panel and will allow the operator to investigate immediately.</li> <li>▪ Localised flame detection and suppression will be installed in the high-risk areas of the processing plant. These areas include the input/outputs of the pre-shredder and secondary shredder. The flame detection is a combination between triple IR and double IR with UV detectors. There will be a total of 16 flame detectors installed, 8 in Zone 1 (pre-shredder) and 8 in Zone 2 (secondary shredder). The detectors will be installed to automatically activate the suppression system consisting of “open sprinkler” heads which results in a deluge suppression in each zone separately.</li> </ul> | <p>Yes</p>          |
| <p>Monitor and control sub-surface temperature and moisture content with a thermal probe or other device and ensure that this is capable of reaching all parts of a pile (if</p> | <ul style="list-style-type: none"> <li>▪ The temperature of stack piles will be checked regularly using a thermal lance. This monitoring will be carried out at the beginning of each shift. Bale stockpiles will be checked in a similar manner.</li> <li>▪ A record will be kept showing which areas of storage are monitored at each check and operatives will ensure that monitoring is rotated.</li> </ul>  | <p>Yes</p>          |

| Factor   | Mitigation Measures Employed  | Meets FPP Guidance? |
|--|---|---------------------|
| materials are stored in plastic wrapping you must demonstrate a sampling and testing protocol to ensure a representative number of bales (minimum 10%) are assessed during monitoring) |   |                     |
| Detect and control hotspots within piles   | <ul style="list-style-type: none"> <li>Daily heat monitoring will be carried out during hot weather using an infrared heat sensor for all combustible waste storage piles.</li> </ul> | Yes                 |

**Storage of Waste to Minimise Fire Risk**

6.35 Table 6.7 below lists the combustible wastes which are accepted by the Facility and how they are stored.

**Table 6.7 Storage of Combustible Materials**

| Combustible Material                 | Type of Containment (if any)                                  | Approximate Storage Capacity (Tonnes) | Separation Distances from Other Waste Piles (m) | Storage Times      |
|--------------------------------------|---|---------------------------------------|---|--------------------|
| Paper, cardboard, and rags           | Dedicated bay in main building which has an impermeable floor | 50                                    | 6   | less than 3 months |
| Plastic, rubber, and other materials | Dedicated bay in main building which has an impermeable floor | 50                                    | 6   | less than 3 months |
| SRF                                  | Dedicated bay in main building which has an impermeable floor | 350                                   | 6   | less than 3 months |

| Combustible Material          | Type of Containment (if any) | Approximate Storage Capacity (Tonnes) | Separation Distances from Other Waste Piles (m) | Storage Times      |
|-------------------------------|------------------------------|---------------------------------------|---|--------------------|
| Quarantine area for hot loads | Located in centre of yard.   |                                       | 10  | Less than 48 hours |

6.36 Table 6.8 below details the measures required by the EA Guidance Document 'Fire Prevention Plans' Version 2, March 2015 and how the Operator proposes to store materials to minimise risk of fire.

**Table 6.8 Storage of Materials to Minimise Fire Risk**

| Factor   | Mitigation Measures Employed  | Meets FPP Guidance? |
|--|---|---------------------|
| Documented and recorded stock rotation e.g., bay or pile plan with dates in and out and clear methodology for showing duration of storage for any wastes within a pile | <ul style="list-style-type: none"> <li>▪ A strict rotation system will be employed to ensure that RDF/SRF is not stored for longer than 3 months. Records of stock rotation and turning will be kept.</li> <li>▪ A Stock Rotation Control document (RDF/SRF) will be held in the site office and reviewed by the Site Manager on a weekly basis.</li> </ul>         | Yes                 |
| Storage duration - if the operator is proposing mixed durations during processing, then take the LONGEST duration  | <ul style="list-style-type: none"> <li>▪ Material turnover will be high, and, in any instance, combustible materials will be stored for less than 3 months.</li> </ul>  | Yes                 |
| Minimise pile sizes and maintain sizes and separation distances.   | <ul style="list-style-type: none"> <li>▪ RDF/SRF will be stored within a bay of reinforced concrete walls with 1m freeboard. Flame detection will be located within the bay, as well as a sprinkler system with high density and output head.</li> <li>▪ All other material will be stored in bays within the building with a separation distance of 6m.</li> </ul> | Yes                 |
| Control moisture levels  | <ul style="list-style-type: none"> <li>▪ The facility has been designed to accept and process mixed dry waste. Moisture in the</li> </ul>   | Yes                 |

| Factor   | Mitigation Measures Employed  | Meets FPP Guidance? |
|--|---|---------------------|
|  | <p>end products reduces their quality therefore moisture levels will be strictly controlled.</p> <ul style="list-style-type: none"> <li>▪ All material will be stored within a building, and therefore moisture levels will be more stable than external storage.</li> <li>▪</li> </ul>                             |                     |
| Store material in largest form prior to processing       | <ul style="list-style-type: none"> <li>▪ Input wastes may be received in a variety of forms therefore this is beyond the operator's control. However, material will be inputted into the process within 24 hours of receipt, so the risk of combustion is minimised.</li> </ul>                                     | Yes                 |
| Provide shading from direct sunlight                     | <ul style="list-style-type: none"> <li>▪ All material will be stored within the building with no transparent roof lights, and therefore will be shaded from direct sunlight. There will be no sources of heating within the building therefore preventing ignition sources from this process.</li> <li>▪</li> </ul> | Yes                 |
| Mark any hazardous or combustible materials on site plan | <ul style="list-style-type: none"> <li>▪ Pre-acceptance procedures will be maintained to ensure that only permitted waste codes, which do not include hazardous wastes, are accepted into the site.</li> </ul>  | Yes                 |

6.37 The SRF will be continually turned and blended to ensure that the moisture and calorific value of the material meets the specification of the end user. The material will only be stored for 5 working days and will be dispatched on a daily basis to ensure that there is sufficient capacity in the storage bay to ensure the processing of waste can continue. The other materials, such as paper, card, plastic, and metals will be also turned round quickly with bales only being stored on site for 1 month.

6.38 Any baled material will be stacked in piles created of rows and will have a maximum height of 4m or 4 bales (whichever is lower). This will allow the dispatch of bales from one side of the stack and storage on the opposite side. This will ensure the dispatch of the oldest materials first. The dispatch of materials will be monitored and recorded by the site manager in the site diary.

6.39 Stock capacity will be maintained in accordance with the permitted storage limits. The site manager will regularly review the quantities of materials on site and will ensure their dispatch prior to maximum limits being reached.

**Actions in the Event of a Fire**

6.40 Table 6.9 below details the measures required by the EA Guidance Document ‘Fire Prevention Plans’ Version 2, March 2015 and how the Operator proposes to store materials to minimize risk of fire.

**Table 6.9 Actions in the Event of a Fire**

| Factor  | Mitigation Measures Employed  | Meets FPP Guidance? |
|---|---|---------------------|
| A firefighting strategy must be included within the fire prevention plan  | <ul style="list-style-type: none"> <li>▪ A ‘Fire Response Procedure’ is included in Appendix B.</li> <li>▪ All site staff will be trained in the Fire Emergency Response Procedure</li> </ul>   | Yes                 |
| Provision of portable fire extinguishers  | <ul style="list-style-type: none"> <li>▪ Firefighting equipment will be maintained on site in accordance with fire regulations, including portable fire extinguishers.</li> <li>▪ All site staff will be fully trained in the Fire or Explosion Response Procedure and in the use of firefighting equipment.</li> </ul>   | Yes                 |
| Materials stored in a building will require a fire suppression system. Materials must be kept a minimum of 3m below the level of the spray or sprinklers. | <ul style="list-style-type: none"> <li>▪ Fire suppression will include a dry sprinkler system at roof level and intermediate levels with an additional deluge sprinkler system installed to the zones around the pre-shredder and secondary shredders.</li> <li>▪ There shall be 4 No. fire hydrants installed around the perimeter of the SRF building as shown on Drawing 20001-402.</li> <li>▪ Potable fire extinguishers will be installed to the full facility to BS 5306 Part 8.</li> <li>▪ There shall be eight wash down hose reels installed throughout the facility primarily for washing down purposes, however these may also be used to extinguish small fires and allow early suppression of larger fires.</li> </ul> | Yes                 |

| Factor   | Mitigation Measures Employed   | Meets FPP Guidance?                                |
|--|--|--|
| <p>Installation of secondary and tertiary containment to prevent fire-water run-off polluting the local receiving environment.</p> | <ul style="list-style-type: none"> <li>▪ Any runoff from external firefighting will be directed via interceptors to the surface water crates.</li> <li>▪ Under normal circumstances the water would then pass at a controlled rate to the off-site surface water drainage system.</li> <li>▪ In the event of a fire, the site operational procedure shall include closing the penstock valves located on the foul and storm drainage outlet pipes and ensuring that flood barriers are installed at the site access/egress locations.</li> <li>▪ The site design included reinforced concrete walls on the lower boundaries to capture fire water. This will allow the external surfaced area as well as the building footprint to act as the containment area for any fire water from firefighting.</li> <li>▪ Given that all of the processing equipment is generally elevated, the risk of flooding equipment is not likely.</li> <li>▪ In order to remove any contained fire water from the site, tankers will be brought to site to extract the fire water from the drainage system.</li> </ul> | <p>Yes</p>   |
| <p>Water supply Volume available, rate of supply and location to site</p>  | <ul style="list-style-type: none"> <li>▪ The fire suppression systems at the NMP facility will be served by a 1,450m<sup>3</sup> sprinkler tank. The sprinkler tank will provide water for 120 minutes system operation in a fire condition.</li> <li>▪ A year-round supply of water will be available to suppress fire; this will be stored in the sprinkler tank and will supply water to the sprinkler and deluge systems.</li> </ul>   | <p>Yes</p>   |
| <p>Containment of fire water volume</p>  | <ul style="list-style-type: none"> <li>▪ Firewater will be recycled and reused wherever possible.</li> </ul>   | <p>Yes, based on alternative measures proposed</p> |

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- 6.41 Firefighting equipment will be maintained on site in accordance with fire regulations.
- 6.42 All site staff will be trained in the Fire Emergency Response Procedure in Appendix B and in the use of firefighting equipment. Training records will be maintained in accordance with the Facilities' Management System. The Fire Emergency Response Procedure is incorporated within the site's Environmental Management System.
- 6.43 Any incidents of fire will be reported to the Natural Resource Wales and recorded in the site diary including the outcome of any root-cause investigations.
- 6.44 Unburnt/ burning material will be separated using on-site machinery where the level of risk permits this activity, and where possible moved to the designated quarantine area.
- 6.45 Water will be applied to fire and unburnt material for cooling if the level of risk permits these actions.
- 6.46 The Site Manager will oversee any decision to apply on-site fire-fighting equipment and has the authority to cease on-site measures should the risk to personnel prove too high.
- 6.47 In the event of a fire, waste will not be accepted onto site. Contingency arrangements are in place whereby waste is diverted directly to the Oakleaf Materials Recovery Facility.
- 6.48 A summary of the mitigation measures that will be continuously implemented at the facility include:
- Prevention of fires through:
    - The control of ignition through making the area a no smoking zone, the installation of fire detection and suppression equipment, including sprinklers. No space heaters or lighting in close proximity to the SRF stockpile; and
    - Dedicated flame detectors focused on the SRF stockpile 24 hours per day;
  - Prevention of self-combustion through;
    - Short storage times;
    - Low moisture levels in the SRF; and
    - Daily turning and mixing of the SRF;
  - The removal of the SRF from the site is not subject to seasonality and is removed from the site on a constant basis;
  - Reinforcement of fire prevention messages using appropriate signage;
  - Ensuring staff and contractors follow safe working practices when undertaking hot works/maintenance;
  - Regular maintenance and inspection of all areas of the site;
  - Site vehicles fitted with fire extinguishers and dust filters, and rubber strips fitted to buckets where applicable;

- Gas containers, fuels, or other flammable items to be kept in an isolate location;
- Building electrics fully certified by a qualified electrician, with a documented maintenance schedule in place; and
- The provision of firefighting equipment at strategic points around the facility.

### **Abnormal Operating Conditions**

- 6.49 Operators must also consider what incidents or emergencies might increase the risk of fire in order that they can plan and take appropriate steps to reduce the likelihood of the incident occurring; minimise any impacts if the incident were to occur; and re-establish normal operations as quickly as possible.
- 6.50 Periods of very warm weather can increase the risk of fire. During these periods, additional site inspections and monitoring will take place.
- 6.51 Maintenance operations, routine or otherwise, may increase the risk of fire by introducing potential ignition and heat sources. Separation distances between any ignition sources and combustible wastes will be adhered to as detailed in table 6.7 above. During maintenance operations, additional inspections shall take place.

### **Records and Recording**

#### **Records Keeping**

- 6.52 Records will be maintained of the following activities on-site:
- Incidents including post-incident investigation;
  - Stock management, including rotation;
  - Training of operatives;
  - Site inspections;
  - Maintenance;
  - Monitoring;
  - Testing of firefighting equipment; and
  - Complaints.
- 6.53 All records of events and actions taken will be retained as required by the Environmental Permit.

#### **Notifying Natural Resources Wales**

- 6.54 In the event of a fire, the Operator will notify the Fire Rescue Service in the event of an emergency and Natural Resources Wales as soon as practically possible, using the emergency 24hr phone line (0800 80 70 60). Following the incident, the Site Manager will advise what remedial measures or actions have been taken to prevent further incidents.

**Fire Prevention Plan Review**

- 6.55 This Fire Prevention Plan will be reviewed and updated by senior management following construction and every 4 years afterwards or immediately following any major fire incident / event.
  
- 6.56 Any technical and managerial changes on site will also initiate a review of the Fire Prevention Plan to ensure that the control techniques remain appropriate for the site.
  
- 6.57 The first review and update of the Plan will occur during site commissioning prior to full operations commencing to include further detailed information on the proposed mitigation measures installed at the facility.

## Appendices

### Appendix A- Key Site and Emergency Contacts

This table will be completed when the site has been constructed.

| <b>SITE DETAILS</b>  |                        |               |
|--|------------------------|---------------|
| Location: Nine Mile Point Waste Processing Facility, Nine Mile Point Industrial Estate, Cwmfelinfach, Caerphilly |                        |               |
| Postcode: NP11 7HZ   |                        |               |
| Site Access Grid Reference: ST 19235 91305   |                        |               |
| <b>SITE CONTACTS</b>   | Office Hours (Specify) | Out of Hours  |
| General Manager:   |                        |               |
| Site Manager:  |                        |               |
| Site Supervisor:   |                        |               |
| Security Contact:  |                        |               |
| <b>EMERGENCY SERVICES</b>  | Office Hours           | Out of Hours  |
| Emergency  | 999                    | 999           |
| Medical:   | 111/999                | 111/999       |
| Police:  | 999                    | 999           |
| Fire:  | 999                    | 999           |
| <b>REGULATORS</b>  | Office Hours           | Out of Hours  |
| Health and Safety Executive (HSE)  | 0845 300 9923          | 0151 922 9235 |
| Local Authority:   |                        |               |
| Natural Resources Wales (Local)  |                        |               |
| Natural Resources Wales (24hr Emergency Hotline)   | 0800 80 70 60          |               |
| <b>UTILITY AND KEY SERVICES</b>  | Office Hours           | Out of Hours  |
| Water Provider:  |                        |               |
| Sewerage Provider:   |                        |               |
| Gas Supplier:  |                        |               |
| Electricity Supplier:  |                        |               |
| Oil Supplier:  |                        |               |
| Fuel Supplier:   |                        |               |
| Chemical Supplier:   |                        |               |
| Oil Spill Contractor:  |                        |               |
| Electrician:   |                        |               |
| Plumber:   |                        |               |
| Locksmith:   |                        |               |
| Joiner:  |                        |               |
| <b>OTHER KEY CONTACTS</b>  | Office Hours           | Out of Hours  |
| Head Office:   |                        |               |
| Adjacent Landowners:   |                        |               |
| Neighbours:  |                        |               |
| Specialist Advisors  |                        |               |

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## Appendix B- Fire Response Procedure

The below outlines the fire event procedure that will be undertaken:

- Activation of the fire alarm sounders and beacons via flame detection, heat/smoke detectors or manual call point;
- All processing equipment will stop immediately;
- Staff begin evacuation procedure to the fire assembly point;
- If a staff member has witnessed the fire, and when safe to do so, the staff member will report location of fire to senior management. For example, this could be the operator of the 360 grab who has identified a fire in the pre-shredder – contact could be made via site radio system;
- Trained Fire Wardens investigate if there is a fire and scale of fire. The location of the fire will be confirmed by checking the fire control panel;
- Trained Fire Wardens will extinguish the fire if safe to do so. Fire Wardens will contact the Fire & Rescue Service immediately if scale of fire is deemed too excessive;
- Fire Wardens will manually activate the deluge sprinkler system if the fire is located within a deluge zone, and it has not been activated automatically;
- Fire Wardens will ensure that evacuation of staff is complete; and
- Penstock valves on outlet drainage pipes are closed and flood barriers are installed at site access/egress points.

The site will be occupied 24 hours a day, 7 days a week with the exception of short Christmas holidays. This will reduce the risk of false alarms being sent to the Fire and Rescue Service.

When the site is closed, The Site Manager will notify the insurance companies. If a fire occurred during the site closure, an automatic signal will be sent to the Fire and Rescue Service and all keyholders for the site.





# Taggarts

23 Bedford Street,  
Belfast, BT2 7EJ



[taggarts.uk](http://taggarts.uk)