

CRYMLYN BURROWS MATERIALS RECOVERY AND ENERGY CENTRE

Environmental Permit Variation and Partial Surrender Application

Environmental Risk Assessment

Prepared for: Neath Port Talbot County Borough Council

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APPENDICES

Appendix 001: Envirocheck Report, Dated 13th August 2021.

1.0 Introduction

Neath Port Talbot County Borough Council (Council) has instructed SLR Consulting Limited (SLR) to prepare an Environmental Permit (Permit) variation and partial surrender application for the Materials Recovery and Energy Centre at Crymlyn Burrows under the Environmental Permitting (England and Wales) Regulations 2016 (as amended). Herein the facility will be referred to as 'the site'.

1.1 Methodology

This Environmental Risk Assessment (ERA) will assess the risk from the operation to the environment and human health.

The ERA will:

- Identify potential hazards (source of risk);
- Identify receptors and potential pathways; and
- Assess risk and design appropriate control measures if necessary.

2.0 Potential Hazards (source of risks)

2.1 Waste Transfer and Materials Recovery Operation

The site operates as a waste transfer station with some materials recovery taking place on site prior to onward transport for further treatment, recovery or disposal.

Treatment on site will consist of sorting of plastics and cans, and baling of plastics, cans, paper and card. All waste will be stored temporarily before being moved off site.

The site will continue to be limited to accepting a maximum of 260,000 tonnes of waste per annum.

Upon arrival separately collected waste types are tipped into separate bays in the reception areas.

In the waste reception area residual waste, green waste, bulky and AHP are deposited into designated bays.

In the recycling reception area, separately collected food waste, paper, glass, cardboard, and co-collected plastic and cans are deposited into their designated bays. Plastic and cans are then sorted further on the Materials Recovery Facility process line to recover metals and plastics. There are also designated areas for separately collected household batteries and small WEEE.

All waste types are then bulked up, with certain dry recyclables baled, prior to transfer off site. All waste storage and treatment will occur within the waste transfer and materials recovery building.

The operational layout is illustrated on Drawings 31, 32, and 33.

Ongoing waste treatment activities on site consist of the sorting, separation, screening, baling and bulking up of materials.

2.2 Potential Hazards

The following hazards are associated with the on-going Operation:

- Odour;
- Noise;
- Dust;
- Contaminated site run-off;
- Pests; and
- Litter.

The following hazards have the potential to increase the risk of the above operational hazards:

- Fire / arson;
- Vandalism / unauthorised access;
- Flooding;
- Unauthorised waste; and
- Accidents (including leaks and spillage).

3.0 Receptors and Potential Pathways

3.1 Site Setting

The site is situated in Crymlyn Burrows, Neath Port Talbot approximately 3.5km East of Swansea City Centre, and approximately 6km North West of Port Talbot at National Grid Reference (NGR) SS 69849 93362.

The site is predominantly surrounded by commercial/industrial premises, areas of open ground and woodland. Approximately 35m to the south of the site lies Swansea Gate Business Park which includes commercial/industrial premises. Swansea University Bay Campus is situated approximately 470m to the south. To the north, a railway line runs adjacent to the site's northern boundary, beyond which is an area of woodland and open ground, then the Tenant Canal.

Crymlyn Bog and Pant Y Sais National Nature Reserve (NNR) is situated approximately 270m north of the site. Crymlyn Bog is designated as a Ramsar site, Special Area of Conservation (SAC) and a Site of Special Scientific Interest (SSSI) and is located approximately 90m to the north.

Access to the site is provided by Ffordd Amazon which runs parallel to the site's southern boundary. Fabian Way (A483), one of the principal arterial roads in and out of Swansea, is located approximately 390m south.

The site's location is illustrated on Drawing 01 and the Permit boundary is illustrated on Drawing 03.

The surrounding land uses and local receptors within 500m are identified on Drawing 01.

Cultural and natural heritage receptors within 1km and SSSI's within 2km are identified on Drawing 02.

A summary of the site's immediate surrounding land uses is identified in Table 3-1 below.

Table 3-1
Surrounding Land Uses

Boundary	Description
North	To the north a railway line runs in an east west direction followed by an area of open ground. Beyond this lies Tennant Canal and an area of open/agricultural ground.
East	An area of open/agricultural ground is located immediately to the east of the site with commercial/industrial premises beyond.
South	Immediately to the south lies a drain, and beyond this runs Ffordd Amazon which provides access to the site. Beyond this lies Swansea Gate Business Park with a mix of industrial and commercial premises. Residential properties are situated along Elba Crescent and Baldwin's Crescent, followed by Fabian Way (A483) and Swansea University Bay Campus.
West	Commercial/industrial premises such as Gower Chemicals, and a Car Sales Vehicle Preparation area are situated to the west, followed by an area of open/agricultural ground.

The immediate surrounding land uses are described in further detail below.

3.2 Human Receptors

3.2.1 Commercial/Industrial Premises

Much of the surrounding area to the south and west of the site is dominated by commercial/industrial premises. Approximately 35m south of the site lies Swansea Gate Business Park. This includes businesses such as Trojan Electronics 2018 and Unit Superheater Engineering. Approximately 50m south east lies CWIC Scaffolding

Academy. Adjacent to the site's western boundary lies a Car Sales Vehicle Preparation area and approximately 50m south west lies A.T Morgan and Son.

3.2.2 Residential Properties

Few residential properties are located within the area surrounding the site.

The closest residential properties to the site are situated along Baldwins Crescent and Elba Crescent which are located approximately 190m south west and 350m south respectively.

3.2.3 Educational Premises

Swansea University Bay Campus lies approximately 470m south of the site.

3.2.4 Recreational

A small children's play area is situated approximately 210 south west. The canal towpath and nearby nature reserves are also used for recreation.

3.2.5 Local Transport Network

Ffordd Amazon runs approximately 15m from the site's southern boundary and provides access to the site. Fabian Way (A483) lies approximately 390m south of the site and small roads provide local access to the residential and industrial areas.

The railway line runs in an east west direction approximately 10m to the north.

The wider local road network is illustrated on Drawing 01.

3.3 Groundwater Receptors

3.3.1 Geology

A review of the British Geological Survey (BGS)¹ map reveals that the site is underlain by a bedrock of South Wales Middle Coal Measures Formation – Mudstone, Siltstone and Sandstone indicative of a local environment previously dominated by swamps estuaries and deltas.

The superficial deposits are comprised of Blown Sand – Sand which is indicative of a local environment previously dominated by wind blown deposits.

3.3.2 Aquifer Designations

The bedrock geology is classified as a Secondary (A) Aquifer.

The superficial geology beneath the site is classified as unproductive strata.

3.3.3 Source Protection Zones

A review of the Lle Map Browser² confirms that the site does not lie within a Source Protection Zone (SPZ).

¹ British Geological Survey – Available at: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>, accessed August 2021.

² Lle Map – available at: [Lle - Map \(gov.wales\)](http://lle-map.gov.wales), accessed August 2021.

3.4 Hydrology – Surface Water Receptors

3.4.1 Surface Water Features

A drain is situated adjacent to the site's southern boundary and the Tennant Canal lies approximately 100m from the site's northern boundary at its closest.

The Envirocheck Report, included as Appendix 001, reveals that the site lies within an area known for groundwater vulnerability classified as medium.

3.4.2 Flooding

The NRW's Flood Risk Assessment Wales Map indicates that the site is not at risk of flooding from rivers, the sea or reservoirs. A small area at risk of surface water flooding is indicated in the eastern part of the site. This area corresponds to a topographical 'low point' within the site, where rainwater would naturally collect; however drainage gullies are located here to prevent any flooding from occurring.

3.5 Ecological Receptors

The following information has been assessed in order to determine the ecological site setting:

- MAGIC website³;
- Lle Map Browser;
- Natural Resource Wales Designated Tool⁴; and
- Envirocheck Report, dated 13th August 2021 (Appendix 001).

3.5.1 Open/Agricultural Ground

Areas of open ground can be found immediately to the north of the site, on either side of the railway line. Open ground is also located adjacent to the site's eastern boundary and approximately 210m to the west of the site.

3.5.2 Ancient Woodland

Three areas of ancient woodland are located within 1km of the site's boundary and are described below:

- An area of ancient and semi-natural woodland lies approximately 780m north east;
- Ancient and semi-natural woodland is situated approximately 990m north east; and
- Approximately 1000m north west lies an area of ancient and semi-natural woodland.

3.5.3 National Nature Reserve

Crymlyn Bog and Pant Y Sais NNR is located approximately 270m north of the site. It was designated in 1991.

3.5.4 Ramsar Sites

Crymlyn Bog Ramsar Site is situated approximately 90m to the north of the site.

3.5.5 Special Areas of Conservation

Approximately 90m north of the site lies Crymlyn Bog/Cors Crymlyn SAC.

³ <https://magic.defra.gov.uk/MagicMap>, accessed August 2021.

⁴ NRW Designated Site Search, accessed August 2021.

3.5.6 Sites of Special Scientific Interest

Cors Crymlyn/Crymlyn Bog SSSI lies approximately 90m north of the site whilst Crymlyn Burrows SSSI is situated approximately 460m to the south east. Pant Y Sais SSSI lies approximately 1170m to the east.

The searches confirmed that there are none of the following within 1km of the site's boundary:

- Areas of Outstanding Natural Beauty;
- Special Protection Areas (SPA);
- Biosphere Reserves;
- Local Nature Reserves (LNR); and
- National Parks.

3.6 Cultural and Heritage Receptors

3.6.1 Scheduled Monuments

St Margaret's Chapel Scheduled Monument is located approximately 630m north east of the site.

The search on MAGIC confirmed that the following features do not lie within 1km of the site:

- Listed Buildings;
- National Parks;
- World Heritage Sites;
- Registered Battlefields; and
- Registered Parks and Gardens.

3.7 Identified Receptors

Table 3-2, Drawing 01 and Drawing 02 identify the receptors which are considered to be potentially sensitive and could reasonably be affected by activities at the site.

Table 3-2
Identified Receptors

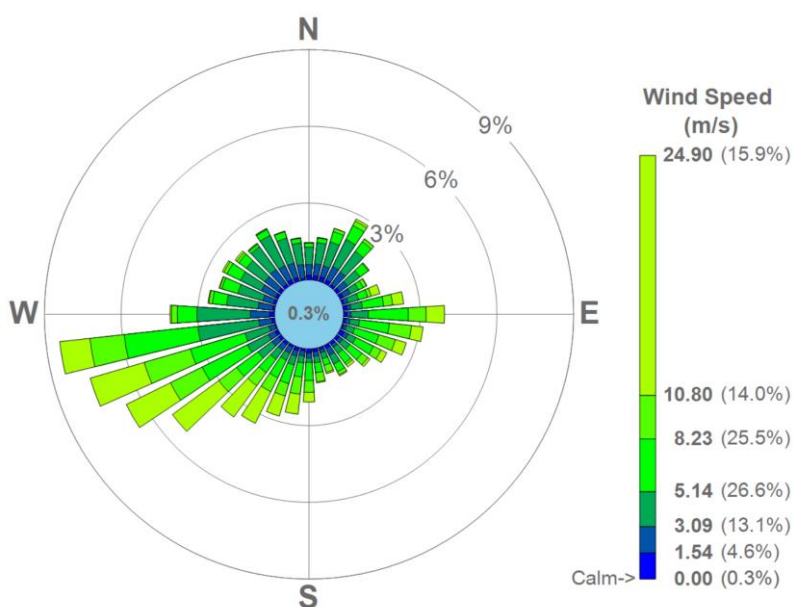
Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Local receptors within 500m of the Permit boundary as shown on Drawing 01.			
Secondary (A) Aquifer	Aquifer	Below Ground	N/A
Car Sales Vehicle Preparation	Commercial / Industrial premises	West	Adjacent
Drain	Surface Water Feature	South	Adjacent
Open Ground	Open/Agricultural Ground	North	Adjacent
Open Ground	Open/Agricultural Ground	East	Adjacent

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary (in metres)
Gower Chemicals	Commercial / Industrial premises	West	40m
Railway	Local Transport Network	North	10m
Ffordd Amazon	Local Transport Network	South	15m
Swansea Gate Business Park	Commercial / Industrial premises	South	35m
Tennant Canal	Surface Water Feature	North	100m
Baldwins Crescent	Residential Properties	South west	190m
Open Ground	Open/Agricultural Ground	West	210m
Recreational Area	Human - Recreational	South west	210m
Sewage Pumping Station	Sewage Pumping Station	South	250m
Elba Crescent	Residential Properties	South	350m
Fabian Way (A483)	Human - Local Transport Network	South	390m
Swansea University Bay Campus	Human - Educational Premises	South	470m
Ecological, cultural and natural heritage receptors located within 1km, and SSSI's within 2km of the Permit boundary as shown on Drawing 02.			
Cors Crymlyn/Crymlyn Bog	SSSI	North	90m
Crymlyn Bog/Cors Crymlyn	Special Area of Conservation	North	90m
Crymlyn Bog	Ramsar Site	North	90m
Crymlyn Bog and Pant Y Sais	National Nature Reserve	North	270m
Crymlyn Burrows	SSSI	South east	460m
St Margaret's Chapel	Scheduled Monument	North west	630m
Ancient and semi-natural woodland	Ancient Woodland	North east	780m
Ancient and semi-natural woodland	Ancient Woodland	North east	990m
Ancient and semi-natural woodland	Ancient Woodland	North west	1000m
Pant Y Sais	SSSI	East	1170m

3.8 Windrose

Figure 3-1 shows the wind patterns in 2019 as identified by the Mumbles Head meteorological station, which is approximately 9.5km south west of the site. The most prominent wind direction is from the west and south west to the east and north east, with primarily moderate-to-high wind speeds. Winds from the north and south are relatively infrequent.

Figure 3-1
Mumbles Head Meteorological Station, 2019



4.0 Environmental Risk Assessment

The following tables in this section assess the site in terms of potential hazards posed, receptors and pathways, along with management and assessment of the identified risks.

The probability of exposure is the likelihood of the receptors being exposed to the hazard, and is defined as low, medium or high. These terms are qualified as follows;

- Low: exposure is unlikely, barriers in place to mitigate against exposure.
- Medium: exposure is fairly probable, barriers to exposure less controllable.
- High: exposure is probable, direct exposure likely with few barriers.

This report determines whether the ongoing operations on site will lead to significant impacts on the surrounding environment. Where a conclusion of 'not significant' has been reached, it is considered that the mitigation and management measures that will be in place at the site will be sufficient to ensure that there will be no impact at the surrounding environment.

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Table 4-1 Environmental Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of exposure	Consequence	Overall Residual Risk
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How might the hazard get to the receptor?	Measures to reduce the risk	How likely is this contact?	What is the harm that can be caused?	What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).
Odour	Local human receptors including at local residential properties, commercial and industrial premises, and educational and recreational sites	Air	Operation in accordance with: Working Plan Odour Management Plan (OMP)	Medium	Nuisance loss of amenity	Not Significant - due to measures to reduce risk
Noise	Local human receptors as above	Air	Operation in accordance with: Working Plan	Medium (intermittent)	Nuisance loss of amenity	Not Significant - due to measures to reduce risk
Dust	Local human receptors as above	Air	Operation in accordance with: Working Plan	Low	Harm to health - respiratory irritation and illness	Not Significant - due to measures to reduce risk
Contaminated site run-off	Surface water and groundwater	Run-off and percolation	Operation in accordance with: Working Plan	Medium	Nuisance loss of amenity	Not Significant - due to measures to reduce risk

Hazard	Receptor	Pathway	Risk Management	Probability of exposure	Consequence	Overall Residual Risk
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How might the hazard get to the receptor?	Measures to reduce the risk	How likely is this contact?	What is the harm that can be caused?	What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).
Pests	Local human receptors as above	Air Over ground	Operation in accordance with: Working Plan Pest Management Plan (OMP)	Medium	Harm to health Nuisance loss of amenity	Not Significant - due to measures to reduce risk
Litter	Local human receptors as above Local wildlife	Air	Operation in accordance with: Working Plan	Medium	Nuisance loss of amenity Harm to health	Not Significant - due to measures to reduce risk

Table 4-2 Accidents Risk Assessment and Management Plan

Accidents and External Hazards - Impact on the operation and increased risk		Accident Management - Measures to reduce risk	Overall Residual Risk
Fire / arson	Increased risk associated with the following hazards: Odour / Dust / Contaminated run-off	Installation design and Operation in accordance with: Fire Prevention and Mitigation Plan	Not Significant - due to measures to reduce risk
Vandalism / unauthorised access	Increased risk associated with the following hazards: Odour / Litter	Installation design and Operation in accordance with: Working Plan (site security)	Not Significant - due to measures to reduce risk
Flooding	Increased risk associated with the following hazards: Contaminated run-off	Installation design and site maintenance - drainage	Not Significant - due to measures to reduce risk

Accidents and External Hazards - Impact on the operation and increased risk		Accident Management - Measures to reduce risk	Overall Residual Risk
Unauthorised waste	Increased risk associated with the following hazards: Odour / Dust / Contaminated run-off	Operation in accordance with: Working Plan (waste acceptance protocol)	Not Significant - due to measures to reduce risk
Accidents (inc, breakdowns, spillages and leaks)	Increased risk associated with the following hazards: Odour / Contaminated run-off	Operation in accordance with: Working Plan together with RAMS and accident prevention and protocols	Not Significant - due to measures to reduce risk

5.0 Conclusion

This ERA has been undertaken in accordance with EA guidance which is also adopted by NRW. The assessment is provided as part of the application for a Permit variation and partial surrender application for the Crymlyn Burrows Materials Recovery and Energy Centre.

This qualitative risk assessment, has considered risks arising from the operation, external factors, and the referenced specific management plans. All risk assessments undertaken conclude that with the implementation of the risk management measures, residual risks from the ongoing activities are not likely to be significant and no further assessment is required.

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