

Steve Ball  
Planning and Transportation  
The Vale of Glamorgan Council  
Dock Office  
Barry Docks  
Barry  
CF63 4RT

26 September 2008

Our Ref: FSE97027B/D3  
Your Ref: P/DC/2008/00483/SC2

Dear Mr Ball

## CONSTRUCTION OF A GASIFICATION FACILITY AT BARRY DOCKS

Our Client, BioGen Power Limited, propose to construct a Gasification Facility on land off Atlantic Way, Barry Docks (see enclosed Figure 2). The Facility will generate 7Megawatts of electricity from municipal solid waste, construction and demolition wastes and commercial and industrial wastes. As part of the Planning Application the Client proposed to submit an Environmental Statement (ES). As part of the ES we are currently identifying cumulative impacts associated with other developments in the vicinity of the proposed site.

To date we have identified the following developments which we propose to consider as part of the cumulative impacts assessment:

**The 'Quay' developments, Barry Water Front:** this proposal is for approximately 2000 homes to be constructed around Barry Water Front. The project is currently at the Master Planning stage with an application likely to be submitted in the middle of 2009. It is not currently known when construction will commence.

**Application for a Wood Burning Gasification Plant:** an application has recently been submitted for a wood burning gasification facility on Woodham Road, Barry Docks. The application has not been accompanied by an ES as it is not included within the scheduled developments.

In addition we have identified the following developments which we do not proposed to consider as part of the cumulative impact assessment:

**Barry Island Funfair Site:** a proposal to demolish the existing funfair site and replace it with an indoor entertainments centre is currently being prepared and a screening opinion has recently been requested by the developer. The funfair site lies approximately 1.5km from the proposed Gasification Facility.

We do not propose to consider cumulative impacts associated with this scheme. It is considered unlikely that the construction periods will overlap as the Funfair site is currently at an early stage in the planning and development process. During the operational phases of both projects it is considered that topics such as air quality and contaminated land associated with the proposed Gasification Facility are unlikely to be impacted by the construction or operation of the proposed entertainments centre. A traffic assessment has been undertaken for the proposed Gasification Facility which indicates that the increase in traffic associated with the Gasification Facility is not significant. Calculations show that an additional 27 two way HGV trips will occur along Wimbourne Road and Ffordd y Mileniwm during a 12 hour weekday. Whilst additional vehicle trips are likely to be associated with the Barry Island Funfair Site it is considered that as leisure facilities already exist both at the Funfair site and in the surrounding area the rise in trips associated with the funfair development are unlikely to be significant. Further more it is considered likely that only a small percentage of

traffic accessing the Barry Island Funfair site will utilise Ffordd y Mileniwm, with other vehicles accessing the site via the A4050.

**Rhose Housing Development:** A proposal for the construction of 600 homes and associated infrastructure and community facilities at Rhose. It is considered that this development is sufficiently far from the proposed gasification site that cumulative impacts will not occur.

We would be grateful if you could confirm that our decision to omit the Barry Island Funfair Development and Rhose Housing Development is considered acceptable to the Local Planning Authority. We would also be grateful for any additional information you may be able to provide upon the environmental impacts associated with the 'Quay' Developments and the Wood Burning Gasification Plant application. In order for any information to be included in our assessment we need to be in receipt of it by 15 October.

Should you have any queries please contact me on 02920 827084 or by email to cumminsh@pbworld.com.

Yours sincerely  
**Parsons Brinckerhoff**

**HELEN CUMMINS**  
Senior Environmental Consultant

Enc: Figure 2: Site Location Plan

Mr Rob Thomas - Head of Planning and  
Transportation  
Vale of Glamorgan Council  
Docks Office Subway Road  
Barry  
South Glamorgan  
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**Ein cyf/Our ref:** SE/2008/106237/01-L01  
**Eich cyf/Your ref:**  
P/DC/SJB/2008/00483/SC2

**Dyddiad/Date:** 14 May 2008

Annwyl Mr Thomas / Dear Mr Thomas

**EIA SCOPING OPINION REQUEST FOR CONSTRUCTION OF A GASIFICATION FACILITY FOR BIOGEN POWER LTD AT BARRY DOCKS, BARRY, VALE OF GLAMORGAN.**

Thank you for your letter of 22 April 2008 with regard to a request for a scoping opinion from Parsons Brinckerhoff. The Environment Agency would request the following matters are addressed in an Environmental Statement (ES):-

- Flood Risk Matters
- Groundwater and Contaminated Land Matters
- Waste / Pollution Prevention Measures
- Biodiversity Aspects

Flood Risk Matters

The site lies entirely within zone C2, as defined by the development advice map (dam) referred to under TAN 15 Development and Flood Risk (July 2004). We would therefore request the risk of flooding be considered as part of the Environmental Impact Assessment (EIA) and request that a flood consequence assessment be submitted to demonstrate in accordance with Technical Advice Note (TAN15) that the consequences of flooding can be acceptably managed. For further information please contact Mr Gary Purnell, Technical Specialist, Development Control on 02920 245022.

We acknowledge within the letter from Parsons Brinckerhoff dated 16th April 2008, Reference FSE97027A within Section 3.9 that a flood consequence assessment (FCA) is recommended for this site.

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[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

Cont/d..

## Biodiversity Aspects

The Scoping report states that there are no nearby SSSI's however within 2km are Hayes Point to Bendrick Rock SSSI (300m) and Barry Island SSSI (950m). Impacts on these sites should be determined along with relevant impacts to the Severn Estuary cSAC and SPA.

In addition, the scoping report does not state what ecological information will be submitted with the Environmental Impact Assessment (EIA) other than to say that enhancement opportunities and mitigation strategies will be recommended. Appropriate surveys should be undertaken to determine impacts on protected species and habitats. Details of these surveys and an assessment of likely impacts within a local and wider context should be included in the EIA along with proposed mitigation and enhancement.

## Groundwater and Contaminated Land Matters

The applicant has proposed undertaking a preliminary desk study risk assessment, with conceptual site model, that will identify if intrusive investigation of ground conditions is necessary, we not only concur with this phased approach in line with the CLR11 guidance, but would confirm our expectation that this would lead to a detailed site investigation. This should include assessment of the risk that piled foundations might create additional migration pathways for contaminants.

The site is located on a former BP Chemicals landfill known to have taken industrial and hazardous waste. Any hazardous waste excavated during the course of the development would need to be disposed of satisfactorily and in accordance with section 34 of the Environmental Protection Act 1990.

Prior to works commencing a Method Statement should be agreed with us. This should include all measures taken to prevent detriment to the environment and any contingency plans, with reference in particular to the minimisation of risk of pollution of hazardous materials stored on site. The method statement should also take into account the protection of groundwater. This statement will be expected to include the outcomes of any investigations into any risks from landfills or prior contamination of the site.

The proposed development is within 250 metres of a known landfill site. Before commencement of the development, all reasonable steps should be taken to investigate the possibility of gas migration affecting the development site. The survey methods for this investigation should first be agreed in writing with the Local Planning Authority and a copy of the results of the survey should be submitted to the Local Planning Authority as soon as they are available. Where gas migration is confirmed, or there is evidence that migration is likely to occur, the development shall not commence until satisfactory remedial measures have been taken to control and manage the gas, to monitor the effectiveness of these measures and, where necessary, to incorporate adequate precautionary measures in the design and construction stages. Such measures shall be submitted to and agreed in writing by the Local Planning Authority before commencement of the development, and shall thereafter be implemented and retained in accordance with approved details.

Under the terms of the Water Resources Act 1991, the prior written consent of the Environment Agency is currently required for any discharge of sewage or trade effluent onto or into ground or surface water. Such consent may be withheld. If

there is an existing discharge consent the applicant should ensure that any increase in volume is permitted under the present conditions. Please contact Lisa Kirby on 02920 245221 for further details or visit the Environment Agency website on [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

There are 5 licensed abstraction within 5 km of the National Grid Reference. It is the responsibility of the applicant to ensure that the development will not affect any water features (ie. wells, boreholes, springs, streams or ponds) in the area, including licensed and unlicensed abstractions.

There is no mention that water will be required for the works or for the process at the plant. If water is required for any of these purposes then we recommend that you refer to the CAMS document for the Thaw and Cadoxton and contact us as soon as possible with the details.

If during construction of the plant dewatering will be required a licence may now be required. An abstraction licence can take up to 4 months to issue once a valid application has been received. Under the terms of the Water Resources Act 1991, an Abstraction Licence may be required from the Environment Agency for the abstraction of water from any inland water or underground strata. This is dependent on water resource availability and may not be granted.

#### Waste / Pollution Prevention Issues

The site must be drained by a separate system of foul and surface water drainage, with all clean roof and surface water being kept separate from foul water. The local sewerage undertaken should be consulted by the Local Planning Authority and be requested to demonstrate that the sewerage and sewage disposal systems serving the development have sufficient capacity to accommodate the additional flows generated as a result of the development, without causing pollution.

Carriers transporting waste from the site must be registered waste carriers. If controlled wastes are to be utilised for construction purposes the developer must register the activity with the Environment Agency Wales. The Duty of Care Regulations apply to all movements of controlled waste.

The developers should adopt all appropriate pollution control measures, both underground and on the surface, to ensure that the integrity of the aquatic environment, both groundwater and surface water is assured. Site operators should ensure that there is no possibility of contaminated water entering and polluting surface or underground waters. The Environment Agency's Pollution Prevention Guidelines (PPGs) can be found on the internet at [www.environment-agency.gov.uk/ppg](http://www.environment-agency.gov.uk/ppg) and should be followed.

Prior to being discharged into any watercourse it is recommended that all surface water drainage from parking areas and hard standings be passed through an oil interceptor designed and constructed to have capacity and details compatible with the site drained. Roof water should not pass through the interceptor. The interceptor shall be retained thereafter. The applicant should ensure that any land proposed for soakaways has adequate permeability in accordance with BS 6297:2007.

The proposed development will require a permit under the Environmental Permitting (England & Wales) Regulations 2007, including demonstration of compliance with

the Waste Incineration Directive technical requirements, emission limit values and continuous emissions monitoring. Particular attention should be given to the consideration and demonstration of credible and viable combined heat and power opportunities at the site.

Early discussion with local residents, businesses and conservation organisations is recommended to ensure that views and concerns are addressed early in the design process of the proposed facility.

I hope you find this response both clear and helpful. Should you wish to discuss any of the above matters further, please do not hesitate to contact me.

Yn ddiffuant / Yours sincerely

**Mrs SARA WILKES**  
**Planning Liaison Officer**

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Mr Marcus Goldsworthy  
Civic Offices  
Holton Road  
Barry  
Vale of Glamorgan  
CF63 4RU

16 April 2008

Our Ref: FSE97027A

Dear Mr Goldsworthy

**Re: Request for EIA Scoping Agreement – Gasification Facility, Barry Docks**

BioGen Power Ltd is seeking to construct and operate a gasification facility in Barry Docks (National Grid Reference 312810, 167260) (see Figure 1). The site is currently owned by Associated British Ports (ABP) and covers an area of approximately 1.6 hectares (4 acres).

It is understood that the proposed development is subject to the requirements of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (Statutory Instrument 1999/293) and requires an Environmental Impact Assessment (EIA) to be undertaken in support of the planning application.

This letter has been prepared by Parsons Brinckerhoff Ltd for and on behalf of BioGen Power Ltd to describe the proposed development and outline the proposed scope and methodology of the EIA. The letter has been issued to Vale of Glamorgan Council, the Local Planning Authority (LPA), for consultation and to agree the scope of the required works.

**1. Introduction**

*1.1. Scheme Background*

1.1.1. Description and aims of the Scheme

BioGen Power Ltd was established in 2005 to develop small- to medium-scale gasification projects in the UK. The focus of the organisation is to provide local waste management solutions that process locally generated wastes, in accordance with the Government's proximity principle.

The proposed scheme will process approximately 80,000 tpa of waste including municipal solid waste (MSW), commercial, industrial, and construction and demolition wastes. The proposed development will utilise proven gasification technology that has been operational in Europe for 10 years. Gasification technology is more efficient than conventional combustion technology enabling a higher proportion of the energy contained within a waste mass to be recovered. This process results in cleaner combustion and lower atmospheric emissions than conventional mass burn waste incinerators. The process will generate approximately 7MW<sub>e</sub> (gross) electricity for distribution to the local grid network.

The process will also generate steam and heat available for export to local users and opportunities are being sought for its use within existing or new facilities locally.

The gasification process will operate two process lines, each of which will be operational for approximately 90% of the year (allowing for routine maintenance). Since maintenance will be staggered for the process lines, the plant will operate near continuously throughout the year. The proposed development will have a

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design life of 25 years, although with routine preventative maintenance it is possible that this would be extended.

The development will comprise a number of buildings with a maximum height of ~20m. These buildings will be designed to be in keeping with the existing industrial landscape and have a neutral finish. The process will require an emissions stack, the height of which will be determined through detailed atmospheric dispersion modelling, although it is likely that the stack may be ~40m in height.

The facility, including waste reception and fuel storage bunkers, will be raised above ground. However, it is most likely that there will be a requirement to install pile foundations which will result in some ground disturbance.

Construction of the site will take approximately 18 months. Particular activities will be scheduled to minimise the potential environmental impact (such as clearing the site outside of breeding bird season).

#### 1.1.2. Summary of the Local Environment

The site is situated on a level plot, approximately 1.6 ha in size, at National Grid Reference 312810, 167260 on Atlantic Way, within Barry Docks. The site is approximately 100m south east of eastern dock wharf, approximately 450m east of the main dock gates and approximately 370m to the north of the Severn Estuary.

The site is currently disused and appears to comprise made ground. There is evidence of tipping of materials including inerts. There are currently no buildings on site and there is no evidence of any previous buildings. The site is vegetated with a mixture of grasses, scrub, ruderal and immature trees. There is evidence on-site of fly tipping. The site is considered to be of low ecological value.

Surrounding land use comprises mixed industrial activities, including waste management activities (scrap yards, waste segregation, and landfill) and bulk materials storage and handling (including stockpiles of sand and other aggregates) and other small industrial units.

The existing nearby industrial buildings range in size from single story industrial units through to large warehouses some of which may exceed 10m high. Tall structures near to the site are limited to lighting towers for other sites, although approximately 1.1km north east of the site is a chemical works facility with a number of tall structures estimated to be approximately 70m high.

A site location plan is attached to this letter.

#### 1.1.3. Objectives of this Letter

The objectives of this letter are:

- To set out the scope of the Environmental Impact Assessment;
- To define the proposed assessment methodology; and,
- To confirm acceptance of the approach to be taken with the EIA.

This Scoping letter has been issued to the LPA for consultation to obtain their views on the environmental design strategy for the scheme, the scope of the assessment, proposed methodology and associated significance criteria.



## 2. Environmental Impact Assessment

### 2.1. Legislative Framework

EIA is a process for identifying the environmental effects (both positive and negative) associated with a new development before development consent is granted. The results of an EIA are normally collated and presented in an Environmental Statement (ES).

The EIA process is principally a decision making tool but, it also facilitates the inclusion of environmental constraints and opportunities in the design development process. In this respect it is also a tool for optimising a development's environmental performance.

If a development is likely to have significant effects on the environment then an Environmental Impact Assessment (EIA) is normally required under the terms of European Community Directive 97/11/EC, amending Directive 85/337/EEC on 'the assessment of the effects of certain public and private projects on the environment'.

The European legislation makes provision for certain categories of project that require an EIA in every case and for other categories that require an EIA only if the project in question is likely to give rise to significant environmental effects. For projects falling within the scope of the Directive and requiring planning permission within England and Wales, the Directive is given legal effect through The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (as amended) (the EIA Regulations).

The EIA Regulations allow applicants, under the provisions of Regulation 5(1), to request a 'Screening Opinion' from the Local Planning Authority. This is an opinion determining whether or not a formal EIA is required. BioGen Power Ltd has not requested a screening opinion as it is considered that the process will require an EIA to be undertaken under Schedule 1 Part 10 of the EIA Regulations:

*Waste disposal installations for the incineration or chemical treatment (as defined in Annex IIA to Council Directive 75/442/EEC under heading D9) of non-hazardous waste with a capacity exceeding 100 tonnes per day.*

### 2.2. The Scoping Process

Having established that an EIA is required, the next stage is to identify the topics and issues that will be subject to detailed assessment and to eliminate any topics and issues that require no further consideration. There is no statutory requirement to undertake a "scoping" exercise however it is considered best practice and a critical early activity that sets the context for a detailed assessment. Scoping aims to:

- Identify the topics and issues that are proposed to be the focus of the EIA;
- Eliminate any topics and issues not requiring further consideration and which would therefore not be taken further in the EIA;
- Define the technical, spatial and temporal scope of the study for each of the topics and issues to be considered;
- Define the approach to and methodologies for conducting baseline' studies;
- Define the approach to and methodologies for predicting environmental effects and for evaluating the severity and significance of environmental effects;
- Identify the methods to be adopted for incorporating mitigation and other environmentally driven modifications into the design, as it develops; and
- Define the consultation strategy to be applied to the EIA process.

### 2.3. Defining the Baseline

In determining whether or not there is a likely change in the environment as a result of a proposed project, it is essential to define the baseline environmental conditions. This is undertaken through a combination of desk study and survey work. Each environmental discipline will identify resources and receptors that will need to be taken into account during the assessment process, where, "resources" are defined as a biophysical feature or item of "environmental capital" (such as elements of ecological, landscape or heritage value, watercourses, dwellings, places of employment and community facilities) and "receptors" are human beings, either individually or collectively, and the socio-economic systems on which they depend.

### 2.4. Identifying Effects

The EIA process will consider the following types of effect:

- Direct Effects - effects that arise from activities that form an integral part of the project (e.g. land take and new infrastructure);
- Indirect Effects - effects that arise from activities not explicitly forming part of the project (e.g. air quality changes due to potential traffic increases in the strategic traffic network resulting from the new highways layout of the square);
- Secondary Effects - effects that arise as a consequence of a direct or indirect effect of construction or operation (e.g. reduced amenity of a community facility/visitor attraction as a result of construction noise);
- Cumulative Effects - these arise from the accumulation of a number of different effects at a particular location, at different locations but affecting the same resource, of the same nature at different locations or through recurrence over a period of time;
- Combined Effects - effects that arise from the interaction of the proposed development in conjunction with other development projects;
- Permanent Effects - effects that result from an irreversible change to the baseline environment or which persist for the foreseeable future;
- Temporary Effects - effects that persist for a limited period only. Where possible, these will be classified as short term (less than 1 year), medium term (1 to 3 years) and long term (more than 3 years);
- Positive Effects - effects that have a beneficial influence on receptors and resources; and
- Negative Effects - effects that have an adverse influence on receptors and resources.

### 2.5. Mitigation and Environmental Design

The identification of mitigation measures is an iterative process, as an effective EIA will ensure that certain measures have been incorporated into the design during ongoing project development. Effective input by the EIA team throughout scheme design, and early adoption of appropriate mitigation ensures that significant adverse effects are reduced to a practicable minimum and the most is made of opportunities for environmental improvement.

In determining whether mitigation could be incorporated into the proposal, the project will need to take into consideration the practicability and cost effectiveness of the mitigation measures and their efficiency in reducing adverse effects.

### 2.6. Assessing Significance

Determining the severity of an effect and establishing whether or not it is significant are important steps in the formal EIA process, needed to satisfy statutory reporting requirements. In general, the severity of an impact reflects the

importance or value of the affected resource or receptor, its sensitivity to change, and the magnitude of the predicted impact. Table 1 presents the assessment matrix that will be used to determine impact severity.

**Table 1: Assessing Impact Severity**

| Magnitude of Potential Impact | Importance of Resource or Receptor |            |            |          |            |
|-------------------------------|------------------------------------|------------|------------|----------|------------|
|                               | Negligible                         | Low        | Medium     | High     | Very High  |
| Negligible                    | Neutral                            | Neutral    | Neutral    | Neutral  | Neutral    |
| Low                           | Neutral                            | Negligible | Negligible | Slight   | Moderate   |
| Medium                        | Neutral                            | Negligible | Slight     | Moderate | Large      |
| High                          | Neutral                            | Slight     | Moderate   | Large    | Large      |
| Very High                     | Neutral                            | Moderate   | Large      | Large    | Very Large |

Note: Scoring can be either Beneficial (positive) or Adverse (negative)

From the effects identified, an assessment will be made as to which of these are significant in terms of the application and subsequent decision making process for the project. The criteria for determining significance will vary from topic to topic but the general principle will be that higher magnitude impacts on important resources will be regarded as significant. Lower magnitude impacts on less important resources will not generally be regarded as significant.

### 2.7. Temporal Scope

In considering the environmental effects of the project, it is necessary to identify impacts that may occur during construction or operation. Construction extends from the commencement of site works to the date immediately prior to opening of the scheme. Operation extends from immediately after opening for the remainder of the scheme's life. In addition, it is recognised that some environmental design measures would take time to become established and effective (e.g. tree planting). The assessment therefore considers impacts in Year 1 (Opening Year), and in Year 15 (Design Year), where appropriate.

### 2.8. Reporting the Assessment

The results of an EIA will be drawn together and presented in an Environmental Statement (ES). The ES will be published as a single volume (see proposed contents list in Appendix 1), with technical appendices where appropriate.

The ES will also include a Non-Technical Summary (NTS), which will be available as a separate document. The NTS will present a summary of the information contained in the ES using non-technical language. This will provide an accurate and balanced statement of key information contained within the ES, easily understandable by the non-technical reader.

### 2.9. Consultation

During the EIA process statutory and key non-statutory consultees will be engaged both as a part of the scoping process and during ES preparation. Consultees will include: the Local Planning Authority, Environment Agency, Countryside Council for Wales, and the Health Protection Agency.

## 3. Specialist Studies

### 3.1. Introduction

The following section outlines what issues are considered to be potentially significant and what issues will be evaluated further. A brief outline of the proposed assessment methodology is also provided. These main issues will be presented as separate chapters within the ES.

### 3.2. Planning and Land Use

The project will be assessed in the context of local, regional and national planning policies which are applicable to both the project type and the site itself.

Planning and land use will be assessed by identifying existing and future conditions, within the spatial and temporal scope defined below. The methodology will include a combination of site visits and desk-based review of planning policy documents, committed developments and consultation with the relevant planning authority (e.g. Vale of Glamorgan Council).

#### *Spatial Scope*

In order to identify the baseline planning and land use information for the site, the assessment will include a review of the environmental and national, regional and local planning policy and identify any specific designations in the relevant local plan.

In addition to the review of policy an assessment of extant planning permissions and committed developments in the surrounding areas will be gathered and reviewed. The main focus for committed developments will be an approximately 200m radius around the site boundary, however where deemed necessary the spatial scope may be extended where it is deemed relevant to the assessment of the potential effects on land use.

#### *Temporal Scope*

The temporal scope for the policy review will be limited to policy that is applicable at the time of the assessment. We will also identify emerging policy, however the weight in the assessment apportioned to the emerging policy will depend on the likelihood of the policy being adopted during the period when the BioGen Power Ltd facilities will be operating, and also during the construction.

The temporal scope for gathering baseline information pertaining to existing and committed developments in the area will be limited to those that have been approved in the last 5 years, or where deemed particularly relevant to the scheme those developments approved more than 5 years ago.

#### *Prediction and Evaluation of Impact and Effects*

The main policy issues will be summarised in the ES and an assessment will be made on the potential for the proposed BioGen Power Ltd scheme to support the policy aim. The table below provides criteria against which compliance with the policy objectives will be assessed. Judgements will be based on the conclusions of other assessments in the relevant topics in the ES.

| <b>Impact Significance</b> | <b>Definition</b>                           |
|----------------------------|---|
| <b>Beneficial/Adverse</b>  | <b>Supports/fails to support policy aim</b> |
| <b>Neutral</b>             | <b>Neither supports nor fail to support</b> |

The extant planning permissions will also be reviewed in order to determine where there is likely to be any effect on committed development in the surrounding area. This will be included in the Environmental Statement.

The Prediction and Evaluation of Effects on planning and land use will in general focus on direct physical impacts through land take, however, construction impacts and effects will also be taken into account. The assessment of the effect on planning and land use will essentially be descriptive and deal with number of properties, where this can be established and the areas of land.

### *3.3. Transportation and Access*

The proposed development will be located on an existing industrial development which currently has access to the main road network via Wimbourne Road and Cardiff Road onto the A4055 towards Penarth and Cardiff, or the A4231 and A4232 towards west Cardiff and the M4 and the A48.

The number of construction related vehicles is not currently known. However, once operational, the development will receive deliveries from approximately 20 heavy goods vehicles per day (40 vehicle movements per day). In addition there will be an average of approximately 2 heavy goods vehicles per day (four vehicle movements per day) associated with the disposal of solid residues from the process plus a number of vehicles associated with operational staff.

The number of traffic movements associated with the proposed development is relatively small and would have relatively small traffic implications.

Therefore, it is proposed that a qualitative transport statement will be undertaken based on information regarding typical vehicle types, the quantity of waste transported and the number of staff and contractors accessing the site. The transport statement will also consider the potential impact associated with the construction phase of the development. The objective of the assessment will be to consider whether the number of vehicles associated with the construction and operational phases of the development will significantly affect peak hour traffic, and if so recommend potential mitigation measures. The suitability of the existing highways and access arrangements would also need to be considered.

The transport chapter of the ES would be prepared following the principles set out in the Planning Policy Wales, Welsh Transport Planning and Appraisal Guidance (WelTAG), Department for Transport (DfT) / Department of Communities and Local Government (DCLG) Guidance on Transport Assessment, and the Guidelines for the Environmental Assessment of Road Traffic published by IEMA. Baseline information would be collected from the local Highway Authority. The transport statement will be supplied as an appendix to the ES.

The following traffic and transportation matters would be addressed as part of the EIA process: a summary of relevant transport policy (national, regional and local); a qualitative assessment of local traffic conditions including a description of the local highway network and the rights of way within and around the site; a qualitative assessment of the likely effect of the development on the local highway network based upon the type, number and schedule of vehicle movements associated with the proposed project; and, the impact of construction traffic during the construction phase of the development.

### *3.4. Air Quality & Odour*

Emissions to atmosphere from waste management processes are important and sensitive issues. It will be necessary that the plant can demonstrate that it complies with all applicable emission standards. Furthermore, it will be necessary to undertake a detailed assessment of potential impacts on air quality due to the operation of the proposed plant. Potential temporary effects during construction will also be considered. The potential receptors for air quality impacts include the nearby residential properties and commercial properties which the general public might reasonably be expected to visit. Potentially affected resources include the nearby sites designated for the protection of vegetation and ecosystems.

Baseline conditions will be established through a walk over site survey and desk study of air quality conditions in the vicinity of the proposed site, which would include a review of data held by: Vale of Glamorgan Council, Welsh Air Quality Forum, National Air Quality Information Archive, Air Pollution Information Service, and the Environment Agency

The air quality baseline data will be reviewed in the context of the objectives for air quality outlined in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland (as updated in 2007), and associated UK and Wales Air Quality Regulations and EU Air Quality Directives.

The emissions of dust during the construction period will be assessed qualitatively with discussion of dust suppression measures that might be employed. A qualitative assessment will of the potential effects associated with construction related traffic will also be undertaken.

During operation, emissions to air from the plant via stack emissions will be quantified and their effects on ambient air quality and pollutant deposition assessed quantitatively using dispersion modelling. Modelling will be undertaken using an appropriate new generation model such as ADMS or AERMOD. The following sensitivity testing will be undertaken: inter-annual variability (5 years of meteorological data shall be used); stack height; building effects; terrain; operating scenario i.e. full capacity operation and normal (most likely) operation.

The output of the dispersion modelling will be assessed by direct comparison with the relevant air quality standards or objectives for human and ecological receptors. For deposition effects, there are no legislated standards. Therefore, the model output will, if appropriate, be compared against appropriate critical loads.

There are relatively low numbers of vehicle movements associated with the operation of the facility (<50 HGV movements per day) and as a result impacts of traffic shall be assessed qualitatively.

A number of control processes will be designed into the proposed development to minimise the potential impact of odour issues. This includes the operation of automated fast closing doors, maintaining the waste reception building under negative pressure and utilising air drawing from the fuel storage area within the combustion process. Passive roof vents, for use when the process is offline will incorporate odour filters. The potential impact of odour will be considered in a qualitative assessment based on the proposed mitigation techniques and effective site management.

### *3.5. Noise and Vibration*

The proposed gasification process will comprise a number of noise sources that can potentially cause a noise nuisance. These include: the stack, turbine hall, boiler house, fans, external coolers and condensers; on-site vehicle movements, etc. The potential for actual noise impacts is however be dependent on the existence of noise sensitive receptors in close proximity to the site. As detailed previously, the site is located in an industrial area with the nearest residential properties located approximately 600m to the east of the site. There are two further residential areas located approximately 700m north of the development location in Barry, and approximately 700 west of the site in Barry Island, both of which command an elevated position with respect to the site.

The quantification and assessment of the potential noise and vibration impacts of the gasification facility will be assessed by a combination of site surveys, desktop studies, consultations and predictions. The assessment will be based on current best practice and the latest guidance for undertaking noise and vibration impact assessment:

The noise assessment would commence with a desktop study, which would include a review of any existing information on noise measurements and constraints, a review of the operation of the proposed plant concerned and the identification of potential noise receptors.

It is proposed that there will be no requirement for undertaking noise monitoring on site since the nearest residential receptors are in excess of 600m from the proposed development and there are a number of features, such as the existing nearby industrial buildings that will provide acoustic screening. Furthermore,

there are numerous noise producing processes or activities located closer to receptors than the proposed plant.

The noise assessment will undertaken for both operational and construction activities. The operational noise assessment will be undertaken in line with the procedures detailed in BS4142 and will use an assumed lowest night time background level of 30 dB LA<sub>90</sub>. Noise and vibration from construction activities at nearby noise receptors would be calculated using the procedures contained within BS5228, and where necessary, suitable construction noise mitigation measures recommended. An impact assessment for the site would then be made, using the IOA/IEMA draft document "Guidelines for noise impact assessment". Other standards would be used as applicable. Should it be required, suitable mitigation measures will also be identified.

There currently exist good road transport links to the site, with easy access to the site via the A48. Vehicles directly associated with the construction of the site will be routed along main trunk routes only, and routes used by vehicles associated with other processes within the dock area. It is therefore considered that there is no need to undertake an assessment of the noise impact associated with construction related traffic.

### *3.6. Landscape / Townscape & Visual*

The site is located within an existing industrial environment. Nearby existing buildings comprise metal clad structures of low architectural value, typical of such industrial areas. There also exist to the west of the site a number of low-rise brick built industrial buildings.

It is considered that the most visible feature of the development will be the emission stack, which will be approximately 40m high. Both the stack and the proposed buildings will be finished in a neutral colour to minimise the visual impact of the structures.

The existing industrial buildings will provide a partial visual barrier to some receptors.

There are views into the site from the higher elevation areas of Barry to the north and Barry Island to the west of the site. There are also potential views of the site from the recently developed area along Ffordd Y Mileniwm, adjacent to the northern wall of the western dock; whilst the site cannot be seen at present, the proposed structures are likely to be visible.

The assessment methodology will be based on the approach recommended by the Landscape Institute (LI) and the Institute of Environmental Management and Assessment (IEMA) document 'Guidelines for Landscape and Visual Impact Assessment, 2<sup>nd</sup> edition, 2002'. LANDMAP methodology developed by the Countryside Council for Wales will be used to characterise and evaluate the landscape character of the site and surrounding areas. The assessment will consider landscape and visual matters as separate issues. Visual impacts relate to changes in views, whereas landscape impacts relate to physical changes to the landscape. These two assessments will be brought together by reference to changes to the landscape character

A baseline assessment would be undertaken and would include a desktop study to review relevant data, landscape planning policy, and published landscape character assessments. Consultations would be undertaken with all relevant statutory organisations and other non-statutory bodies. Published landscape character assessments would be reviewed and refined further through field survey to categorise local landscape/coastal character in terms of quality, value and the sensitivity to change. A computer generated Zone of Visual Influence (ZVI) drawing would be produced and verified on site to establish the extent of the area over which the proposed development would be visible and what receptors would be affected.

Potential landscape and visual impacts that could arise as a result of the proposed development (with mitigation) would be assessed against the baseline. The scale or magnitude of impact will be assessed against four categories of change ranging from high, moderate, low or neutral where no change is

anticipated, and whether it would be positive (beneficial) or negative (adverse). Landscape/coastal and visual impacts would be assessed separately for the construction and operational stages. Residual impacts, i.e. those that can not be fully mitigated would also be identified and categorised according to their significance of magnitude.

### *3.7. Ecology*

An ecologist has undertaken an initial site walk over of the site to determine the ecological value of the proposed development site. It was determined that the site is of low ecological value.

The site was covered with a mixture of grasses, scrub, ruderals and immature trees. A number of common bird species were present on site. Therefore any site clearance will be required to be undertaken outside of the bird nesting season (i.e. between Mid September and March only). There were incidental sightings of rabbits on the site.

The potential for the presence of reptiles was considered during the site walkover. Approximately 20 potentially suitable refugia were inspected and, despite favourable weather conditions during the site visit, there was no evidence of reptiles being present,

A brief assessment indicated that there were no Sites of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), Ramsar or Special Protection Area (SPA) within 2km of the site. A desk study will be undertaken to determine the proximity, sensitivity and relevance of any other nearby designated sites.

Where applicable, potential opportunities to improve the site's ecological value will be identified and possible mitigation strategies will be recommended.

### *3.8. Land Quality*

The Barry Docks were once a thriving industrial and commercial area, serving the coal and steel industries of the Welsh valleys. Materials were brought down the valleys by train and by boat and amassed at Barry Docks prior to export from the region. The dock was also an important location for the import of goods. Consequently it is possible that there exists some historic contamination on the site from coal residues or contamination from rail activities.

As detailed previously, a site walk over was undertaken to determine the potential for ground contamination on the site. Although there was little vegetation on the site, what vegetation there was did not indicate stress indicative of potential ground contamination.

There was clear evidence of fly-tipping at the site.

A preliminary desk study risk assessment will be undertaken in line with Contaminated Land Report (CLR) 11 and British Standard (BS) 10175: 2001 'Investigation of Potentially Contaminated Sites – Code of Practice'. Production of a desk study will form part of the preliminary risk assessment stage and involving identification of potential pollutant linkages at a site by development of a Conceptual Site Model (CSM). Potential pollutant linkages will be assessed in terms of a Source-Pathway-Receptor approach.

The preliminary risk assessment stage will collate information in the following areas: current site use – including identification of local receptors (e.g. water courses, groundwater, residential areas etc); site history – including a review of historical plans provided within Landmark Envirocheck<sup>®</sup> Reports and aerial photographs, and any previous site investigation information that may be available; geology, hydrogeology and hydrology; regulatory information including utilities searches; pollution incidents; and, information relating to discharge consents, abstraction licences, etc.



Potential impacts would be assessed on a qualitative basis, using the available information, professional judgement and experience. A Conceptual Site Model (CSM) will be generated using the aforementioned information. The CSM will be used to guide the risk assessment and identify potential sources of contamination, pathways and receptors during construction and for the intended future site use. The Preliminary Risk Assessment will identify if further investigation of the site ground conditions are required.

### *3.9. Water Resources*

The proposed development is approximately 100m south east of eastern dock wharf, approximately 450m east of the main dock gates and approximately 370m to the north of the Severn Estuary. There is also a stream approximately 280m due east of the site that discharges into the Severn Estuary at Black Rocks.

Due to the proximity of these surface water features, it will be necessary to undertake further assessment of the potential impact that the site may have on water resources. The development may require a Flood Consequence Assessment in accordance to TAN 15. Consequently, the assessment will consider issues associated with surface water runoff and flooding. The ES will also consider issues associated with surface water quality; groundwater resources and utilisation; and groundwater vulnerability and quality.

Available information on the existing conditions of the above aspects would be collected by means of a desk-top study and consultations followed by a site visit.

The proposed development may result in both direct and indirect impacts on the water quality, flooding, drainage and the hydrogeology of the local area. All of these would be assessed to some degree as part of the EIA, for both the construction and operational phases. Potential impacts may also extend beyond the site through indirect effects upon the wider catchment, particularly with regard to flood risk. Temporary impacts during the construction phase may include the risk of pollution events resulting from accidental spillages and surface runoff due to works and increased traffic.

The assessment of potential impacts upon the water environment would be undertaken in general accordance with the provisions of DMRB (Volume 11 Part 10), and follow current best practice guidelines and standards.

### *3.10. Cultural Heritage*

As stated above, the Barry Docks were once a thriving industrial and commercial area, serving the coal and steel industries of the Welsh valleys. Now however, there is no above ground evidence of this history.

A desk study will be undertaken to determine whether the proposed development site constituted part of the historic working dock area. Since the proposed EfW facility will be located on an existing site on already disturbed ground within a recently developed industrial part of Barry Docks, and that there are no above ground buildings or other structures present on the site, it is considered that the site has a low value from an archaeological and cultural heritage point of view.

### *3.11. Socio-Economics*

It is proposed that socio-economic issues, where relevant relating to changes in land use and conformity with local, regional and national Planning Policies, would be addressed in the Planning Statement chapter;

The effects of the creation of new jobs (particularly long-term during operation) would be discussed in the Description of the Project;

Aspects associated with nuisance, disruption or potential health effects due to emissions to air would be addressed in the traffic, noise and air quality chapters respectively;

Finally, landscape/townscape and visual effects would be considered in the Landscape / Townscape & Visual chapter.

#### **4. Closure**

The information above has been provided to enable Vale of Glamorgan Council to provide comment and response to the developer regarding the issues that need to be evaluated as part of the EIA process. The information presented represents the current proposed design, however, it is important to note that EIA is an iterative process and therefore the process design remains subject to change as the projects develop and as relevant mitigation measures are considered, as appropriate.

I would be most grateful if you would consider the above information prior to our meeting on the **22 April 2008** so that we may have a positive informed discussion when we meet.

Yours sincerely  
**Parsons Brinckerhoff**

**ANDREW MCKENZIE**  
Environmental Consultant

## Appendix 1 Proposed Contents of Environmental Statement

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15. Cumulative Effects

16. Summary



REV | DATE | DESCRIPTION

BY | CHKD | APPD

\* NOTES  
KEY

— SITE BOUNDARY

**PB PARSONS BRINCKERHOFF**  
1981

Parsons Brinckerhoff  
Queen Victoria House, Redland Hill, Bristol, United Kingdom, BS6 6LS  
Tel: 44-(0)117 9339300 Fax: 44-(0)117 9339253

\* CLIENT/PROJECT  
**BROGEN POWER LTD  
SCOPING REPORT  
BARRY**

\* TITLE  
**SITE LOCATION PLAN  
BARRY**

\* DATE **09/04/2008**  
\* SCALE **Not to Scale**  
\* CAD REF **US31970127A1\1  
R327027A-7D16**

DRAWN BY **JS4S**  
PRODUCED BY **AMCK**  
CHECKED **AMCK**  
APPROVED

DRAWING NUMBER  
**FIGURE 1**

Date/Dyddiad: 29th May 2008  
Ask for/Gofynwch am: Jon Bailes  
Telephone/Rhif ffôn: 01446 709105  
Fax/Ffacs: 01446 709449  
Your Ref/Eich Cyf:  
My Ref/Cyf: JMB/222944  
e-mail/e-bost: JMBailes@valeofglamorgan.gov.uk

The Vale of Glamorgan Council  
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Swyddfeydd Dinesig, Heol Holton, Y Barri CF63 4RU

[www.valeofglamorgan.gov.uk](http://www.valeofglamorgan.gov.uk)



RECEIVED 02 JUN 2008

Parsons Brinckerhoff  
Queen Victoria House  
Redland Hill  
Bristol  
BS6 6US

**For the attention of: Lucy Ansell, Environmental Scientist**

Dear Lucy,

**Re: 1.48 Hectare Development Site, Barry Docks, Barry**

Thank you for your email dated 27 May 2008. In response, I can confirm that there are no areas of Contaminated Land (as defined by Part IIA of the Environmental Protection Act 1990) within the boundary of the above property or in the neighbouring vicinity.

The development site is situated on a large area of partially reclaimed land, located north of the cross breakwater at the entrance to Barry Dock. This pond area was once tidal but gradual tipping has now filled it. The site was a licenced landfill operated by BP Chemicals Limited. The licence was granted in 1979 to accept general industrial waste, solid non-toxic controlled wastes from the docks and difficult wastes (asbestos insulation, PVC powder, PVC compound, nitrile rubber, latex PVC, latex nitrile and sludge). The licence has now lapsed. The landfill does not have any engineered containment or monitoring infrastructure. The exact boundary of the landfill is unknown due to the historic nature of the tipping. I have enclosed a plan showing the boundary as we have mapped it on it on our GIS (shaded yellow).

In recent times the area has been subject to further tipping of construction and demolition waste in order to raise the height of the land. This has been carried out under an exemption from the Waste Management Licensing (WML) Regulations. A revised planning application for the area has recently been submitted to the council as the current height of the land is in breach of the existing permission. The Environment Agency are also currently carrying out further investigation in order to assess exactly what materials have been deposited in the area under the WML exemption.

It must be stressed that under Part IIA of the Environmental Protection Act 1990, this authority has a statutory obligation to carry out inspections of potentially contaminated sites that have been identified under the primary investigation phase (desktop study) of our Contaminated Land Inspection Strategy. The above site has been identified and therefore we can give no firm assurance as to the future interest in the condition of this land or the

Correspondence is welcomed in Welsh or English/Croesawir Gohebiaeth yn y Gymraeg neu yn Saesneg

surrounding area. Further investigation could be undertaken at a future date, which might provide additional information.

A copy of the Contaminated Land Inspection Strategy can be reviewed on The Vale of Glamorgan's website ([www.valeofglamorgan.gov.uk](http://www.valeofglamorgan.gov.uk)).

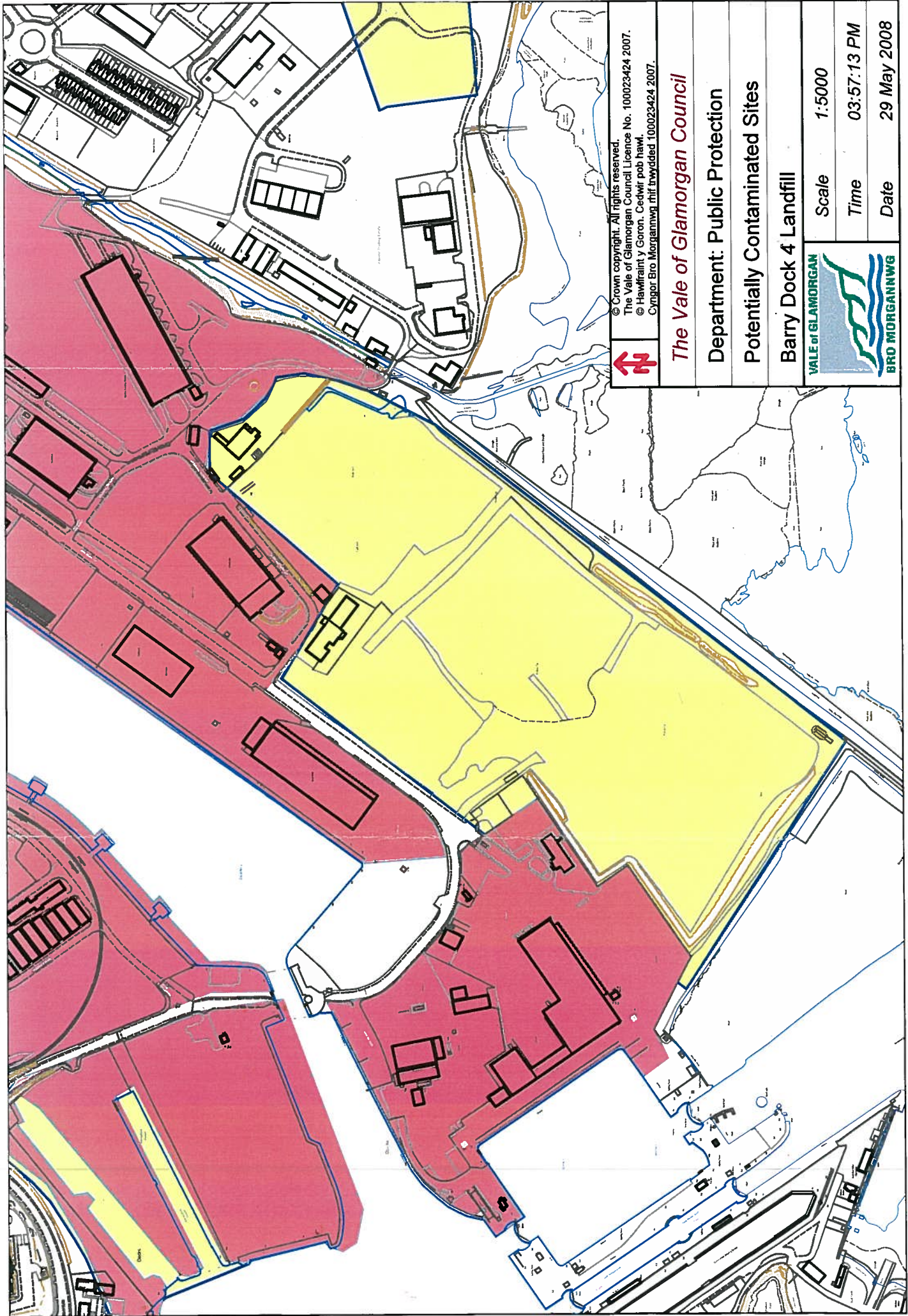
This reply has been formulated using information collected from numerous sources and is constantly being updated. Whilst every effort has been made to ensure that this information provided is correct, the Vale of Glamorgan cannot accept liability for any actions taken in response to the receipt of this information.


If you require any further information, please do not hesitate to contact me.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Jon Bailes', written over a horizontal line.

**Jon Bailes**  
**Pollution Control Officer**




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**The Vale of Glamorgan Council**

**Department: Public Protection**

**Potentially Contaminated Sites**

**Barry Dock 4 Landfill**



Scale 1:5000

Time 03:57:13 PM

Date 29 May 2008