Treaddow Pressure Reduction Installation (Site D)

Brecon to Tirley Pipeline

Environmental Statement

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Prepared by
Mouchel Parkman Services Ltd
West Hall
Parvis Road
West Byfleet
Surrey
KT14 6EZ
UK

T +44 (0)1932 337000

MURPHY
MURPHY PIPELINES LIMITED

nationalgrid

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Introduction

National Grid has a statutory obligation to develop and maintain a safe, efficient, co-ordinated and economical pipeline system for conveying natural gas. The Brecon to Tirley pipeline and associated works are part of the Milford Haven Gas Connection Projects. These involve the construction of new gas transmission pipelines from two new Liquid Natural Gas terminals at Milford Haven in South Wales to Tirley near Tewkesbury at which point they connect with the National Transmission System (NTS) at Treaddow near Peterstow in Herefordshire and at Corse near Tirley in the Forest of Dean.

Murphy Pipelines Ltd has been appointed by National Grid to design and build a section of the proposed pipeline from Brecon to Treaddow to Tirley and its associated works. These include the design and construction of Pressure Reduction Installations (PRI) that form connections from the new Brecon to Tirley pipeline to the existing NTS. The function of the PRI at Treaddow is to filter, meter and regulate the pressure of in-coming gas before relaying it into the existing NTS.

In May 2006, National Grid applied to Herefordshire Council for planning permission for the PRI at Treaddow for a proposed development at 'Site A', immediately adjacent to the existing Compressor Station at Peterstow (Drawing No.H132/BE/02/0000/052 Site Selection Drawing, Appendix 1). Following the planning application, the Southern Area Planning Committee considered that National Grid should be asked to consider locating the proposed PRI to an alternative 'Site D' (Drawing No.H132/BE/02/0000/052 Site Selection Drawing, Appendix 1), on the south west side of the Compressor Station, due to the adverse landscape impact, in particular the outlook from Little Peterstow Barn, a residential property approximately 518m from Site D.

This Environmental Statement is focussed upon the potential environmental impacts of the PRI at Site D which would form one of the connections from the new Brecon to Tirley pipeline to the existing NTS.

The proposed Treaddow PRI site is located in an agricultural field in the County of Herefordshire, approximately 500m south east of the settlement of Treaddow and approximately 4km to the west of Ross-on-Wye. The existing Peterstow Compressor Station and access road lie directly to the north east of the proposed site. The site would be approximately 1.86 hectares in size and would be ringed by a security fence. It is anticipated that the site preparation for the development would begin in April 2007 subject to planning permission.

Site Selection

A connection to the existing NTS pipeline is required at Peterstow as this is the nearest practical point to the existing NTS pipeline network east of the Brecon Beacons National Park. A connection at this point is also required to provide greater security of supply in the event that the section of new or existing pipeline between Peterstow and Tirley needs to be closed for maintenance purposes. The proposed Treaddow PRI is therefore required to be in the general vicinity of the existing Peterstow Compressor Station.

Site D is not National Grid's preferred option due to the engineering difficulties of crossing existing buried gas pipelines.

Following rejection of the planning application at 'Site A', an alternative 'Site D', on the south west side of the Compressor Station was considered to be the most suitable alternative site. This proximity to the existing Compressor Station enables the PRI to be viewed as a single landscape feature with the Compressor Station, therefore reducing the visual impact on surrounding landscape character. The topography and existing vegetation means that the proposed PRI can be well screened using extensive landscaping planting techniques.

Archaeology and Cultural Heritage

An archaeological desk based assessment and geophysical survey has been undertaken to identify heritage features and the potential for archaeological finds within the locality of the proposed PRI.

Significant archaeological finds include a post-medieval fishpond and the Harewood/Peterstow parish boundary. Both features lies within the landtake of the proposed PRI and will be directly affected by construction.

The assessment also identified the need to ensure that the setting of the two listed buildings, Great Treaddow Farmhouse and Great Treaddow Farm, is not impacted by the proposed development.

Mitigation strategies to avoid impacts to these archaeological features include the following main elements:

- an archaeology watching brief agreed with Herefordshire Council and English Heritage would be undertaken during construction to protect the fishpond and parish boundary and any other un-anticipated archaeological remains;

- the impact on the fishpond and parish boundary would be minimised where possible through preservation *in situ*. Archaeological remains that cannot be preserved *in situ* will be archaeologically excavated and recorded;

- the design of the PRIs is being undertaken in conjunction with Landscape and Visual assessment work to ensure the design is in keeping with setting to avoid detrimental impact to the listed buildings; and

- the scale and colour of the installation would be carefully considered to avoid detrimental impacts.

Ecology

An ecological assessment was undertaken during January, February and April 2006. The report assessed the ecological value of the study area, with consideration for the possible presence of any rare or protected species or sensitive habitats.

No statutory protected sites are located within the study area although a Special Wildlife Site (designated by Herefordshire Wildlife Trust), Wilson Farm Ponds, is located approximately 1300m east of the site. This is unlikely to be impacted by the works however.

The development would principally impact arable farmland and habitats of minimal ecological value. Construction of the access track would necessitate loss of a small section of vegetation boundary.

Surveys have been carried out to confirm the presence / likely absence of Great Crested Newts in ponds within 500m of the development site. Newts have been found in a pond to the north west of the PRI site, and a standard capture and exclusion programme would be implemented to minimise impacts to this species. These works would be completed under a licence issued by Natural England. Mitigation would include the provision of suitable terrestrial habitat and new pond suitable for breeding for this species.

No habitats suitable for roosting bats are likely to be impacted by the scheme. Although several small sections of boundary will be removed for the access route, this is not considered to be of particular significance in terms of disturbance to bat flight lines given that the boundary is not currently intact. However, a bat survey would be carried out prior to construction works to make an assessment of activity on site. The landscaping and planting proposals include provision for reinforcing existing hedgerows which should serve to improve their potential value as commuting and foraging routes.

No birds have been recorded within the proposed PRI site itself. Additional surveys will be undertaken to check for possible presence of ground nesting birds ahead of construction. Deterrent measures (e.g. use of bird scaring tape) will be implemented prior to the breeding bird season to deter ground nesting birds, notably sky lark.

Water discharges would be subject to Environment Agency (EA) control to ensure no detrimental impact to water quality in Luke Brook and other watercourses, including the Wilson Farm Ponds Special Wildlife Site.

The landscaping planting would include native species which would offer increased food and shelter for local species. It is considered likely that biodiversity would increase and overall the project is anticipated to result in a net slightly beneficial impact to ecology and biodiversity.

Water Resources

The proposed Treaddow PRI is located within the catchment of the River Wye, which runs approximately 3km to the southeast. Luke Brook, a tributary of the River Wye runs past the north east of the site in a south easterly direction. The site is underlain by a minor aquifer, as classified by the EA.

A series of best practice construction measures would be implemented by Murphy Pipelines Ltd to protect surface water runoff and prevent secondary impacts on adjacent water bodies and groundwater. These would include provisions to control storage and handling of fuel oils and chemicals, and measures to control erosion and wash out of silty waters and any effluents, for example. These are standard Murphy Pipeline Ltd environmental management procedures and will be implemented under the supervision of the Murphy Pipeline Ltd management team which includes a dedicated project Environmental Advisor.

Discharge consents would be agreed by the EA to control discharge of condensate from the proposed low pollution boiler as well as storm drainage. The whole site would be drained via an interceptor to prevent release of substances into surrounding water courses in the unlikely event of a leakage or spill.

This combination of effective mitigation measures would ensure that any impact of the development on surrounding water quality would be of minor significance.

The interception of the drainage system would have no more than a very minor impact on groundwater recharge and basal river flow.

Agriculture

The proposed Treaddow PRI is located within an arable field classified as Grade 2 under the national Agricultural Land Classification system. Soil of either Grade 1 or 2 extends all around the proposed site and consequently the loss of this good quality Grade 2 field is unavoidable. Topsoil removed during the construction process would be utilised for landscaping purposes.

Structural damage and soil compaction from construction activities would be minimised by best practice construction methods in accordance with standard Murphy Pipelines Ltd environmental management procedures. Temporary access routes would be covered with suitable material to protect the soil.

An overall adverse impact of minor significance to the local soils and agriculture is anticipated.

Landscape and Visual

The proposed development is in a rural location, characterised by a rolling landform comprising a series of low ridges and fields. Small hamlets and isolated farmsteads scatter the landscape with the existing Peterstow Compressor Station present to the east of the proposed site. The presence of electricity pylons traversing the study area detracts slightly from the overall character.

The interruption to stretches of existing established hedgerow adjacent to the proposed development site and the loss of an agricultural field would result in a minor loss of landscape features characteristic of the immediate area.

The landscape and visual assessment has regard for various sensitive receptors including surrounding residential properties, public rights of ways and highways. These receptors would be provided with a degree of visual screening by the existing landform and vegetation; this would be reinforced by proposed mitigation planting which would improve as it matures over time. Nevertheless elevated structures associated with the PRI (e.g. boiler stacks) would remain evident as new features in the landscape.

Mitigation would be provided in the form a robust planting framework, utilising species appropriate to the locality. During construction and in the first years of opening, the impacts are considered to be slight to moderately adverse. By year 10 the impacts are likely to be reduced to neutral to slightly adverse. The boiler house stack, which would rise above the vegetation screen, and associated water vapour plume would remain visible.

Noise and Vibration

Construction noise will be managed through standard best practice construction controls in accordance with the standard Murphy Pipeline Ltd environmental management procedures. These will include the specification of low noise generators, for example.

Controls over construction working hours would be agreed with the Herefordshire Council Environmental Health Officer (EHO). Any necessary out of hours work would be agreed in advance with the EHO.

The EHO would be advised in advance of any unusual noise generating events, for example during commissioning. Residents would also be advised of such events by letter drop and provided with telephone contact details for responsible Murphy Pipelines Ltd staff. Murphy Pipelines Ltd are committed to a transparent working relationship with the EHO and local residents to minimise any potential nuisance.

Noise in the operational phase would be mitigated through design and the specification of noise limits for plant to ensure that noise would not cause nuisance to residents of adjacent dwellings. The assessment is based on night time conditions as these are the most sensitive.

Overall a slight adverse impact can be expected as a result of disturbance from traffic and plant during the construction period and from running of plant during operations.

Traffic and Transportation

The generation of heavy vehicular traffic and movement of staff would have a slight adverse impact upon the local road system during the construction phase of the project. This would be managed through implementation of a Project Traffic Management Plan agreed with local highways authorities and police to control the routing and timing of traffic movements and provide for reinstatement of any road damage.

The operational activities associated with the PRI would generate minimal traffic given the low volumes of personnel attending the normally unmanned facility. The overall impact to traffic and transportation is considered to be neutral.

Socio-Economic

The scheme provides strategic national benefits in terms of improved security of gas supply.

The development of the Treaddow PRI is not predicted to result in any significant change to the local economy in the long term. There would be some benefits to local trade during the construction period.

Tourists visiting the surrounding Peterstow area would not be significantly affected by the proposed development. The existing and proposed sites are well screened in the surrounding landscape.

Overall the residual socio-economic impact to the local area is considered to be neutral.

Air Quality

Best practice construction measures would be implemented to minimise generation of dust and prevent nuisance. These would include measures such as sheeting of bulk transport lorries and stockpile dampening, for example.

Traffic movements would be controlled in accordance with the Project Traffic Management Plan. Residual impacts of traffic on air quality would be localised and of slight adverse significance.

There is unlikely to be any significant impact on local air quality associated with traffic movements during the operation phase of the proposed development.

A low emissions boiler is proposed to ensure no significant effects on air quality during operation.

Natural gas conveyed through the PRI facility is pre-treated upstream and presents no odour concern. Natural gas is lighter than air and any emissions would be quickly dispersed and present no significant public health threat.

It is considered that the overall impact on local air quality is likely to be of neutral significance during operations.

Waste Management

The construction and operation of the Treaddow PRI would generate small quantities of waste. Waste materials would be recycled where possible or disposed of off site using appropriate licensed waste management contractors. Options for eliminating, reducing, recycling and responsibly disposing of the wastes would be subject to regular review by both Murphy Pipelines Ltd and National Grid subject to the requirements of their respective ISO 14001 certified Environmental Management Systems.

The identification, segregation, storage, transfer and disposal of all waste will be tightly controlled and monitored in compliance with standard Murphy Pipelines Ltd waste management procedures. Using practical mitigation measures, waste produced during construction and operation of Treaddow PRI is likely to be minimal resulting in a low adverse impact on the surrounding environment.

PART 1: INTRODUCTION AND BACKGROUND

1 Introduction

1.1 The Project Proponent – National Grid

National Grid is one of the world's leading gas transportation companies and operates the onshore gas transmission pipeline system and storage infrastructure in Great Britain. National Grid has a statutory obligation to develop and maintain a safe, efficient, co-ordinated and economical pipeline system for conveying natural gas to meet both domestic and industrial consumers' needs.

National Grid is certified under the International Environmental Management Standard ISO14001 in order to ensure that its environmental performance is of the highest standard. National Grid ensures that its operations comply with environmental law and that environmental risks and liabilities are properly identified, minimised and managed.

1.2 The Project Contractor – Murphy Pipelines Ltd

National Grid has commissioned Murphy Pipelines Ltd to design and construct the proposed Treaddow PRI. The Murphy Group undertakes a wide range of construction and civil engineering activities and is one of the largest UK contractors laying gas, oil and water pipelines and associated works.

The Murphy Group is committed to minimising the environmental impact of its activities by planning and managing effective implementation of prevention measures on all of its project work. To this end the Murphy Group has established an Environmental Management System that complies with the International Standard ISO14001. Internal procedures are affected to control activities and training provided to ensure that employees and sub-contractors understand their environmental responsibilities.

1.3 The Gas Transportation System

Natural gas is delivered by gas producers from offshore gas fields to six main coastal terminals in the United Kingdom. After treatment, gas is transported by means of a network of high pressure pipelines comprising the National Transmission System (NTS). These are owned and operated by National Grid. Gas is then subsequently distributed to industrial areas, power stations and twelve Local Distribution Zones (LDZs) for distribution of lower pressure to businesses and homes.

An integral part of the NTS are the necessary Above Ground Installations (AGIs) along the pipelines such as Compressor Stations to boost the pressure of gas, Pipeline Inspection Gauge traps for pipeline inspection and Pressure Reduction Installations (PRIs) to allow supplies to be connected to lower pressure pipelines.

1.4 Selection of site

On 4th May 2006, National Grid applied to Herefordshire Council for planning permission for the PRI at the original 'Site A', immediately adjacent to the existing Compressor Station at Peterstow (see Site Selection Drawing, H132/BE/02/0000/052, Appendix 1). Following the planning application, the Southern Area Planning Committee deemed that the application should be refused due to the adverse impact to the wider landscape

area. The Southern Area Planning Committee requested that National Grid relocate the proposed PRI to an alternative 'Site D' (see Site Selection Drawing, H132/BE/02/0000/052, Appendix 1), on the south west side of the Compressor Station. This Environmental Statement (ES) considers the potential environmental impacts of the PRI at Site D. Further description of the site selection and justification for the alternative Site D is described in Section 2.4.2.

1.5 The Proposed Project

The proposed PRI at Treaddow is required to filter, meter and regulate the flow of gas at the connection of a new 1220mm (48 inch) diameter gas transmission pipeline to the existing 600mm (24 inch) NTS pipelines at Peterstow. These works are necessary to transport natural gas that will come into the UK via the Liquified Natural Gas (LNG) terminals currently under construction at Milford Haven in South Wales by other parties (see Section 2.2).

The proposed PRI is located in the County of Herefordshire, approximately 550m south east of the settlement of Treaddow and approximately 4km to the west of Ross-On-Wye (3545). (See Figure 2, Appendix 1). It would be approximately 1.86 hectares in size including all landscaping bunding and would be ringed by a security fence. It is anticipated that construction of the development would begin in April 2007.

1.6 Legislation and the Authorisation Process

National Grid has a statutory obligation under the *Gas Act, 1986* (as amended by the *Gas Act, 1995*) to develop and maintain a safe, efficient, co-ordinated and economical pipeline system for conveying natural gas.

The Treaddow PRI will require planning permission from Herefordshire Council under the *Town and Country Planning Act 1990.* The planning application will be supported with this Environmental Statement, prepared in accordance with the requirements of the *Environmental Impact Assessment Regulations 1999 (Statutory Instrument 1999 no. 293)* (EIA regulations).

A separate Environmental Statement will accompany a separate application for consent to the Secretary of State for Trade and Industry for the new 1220mm Felindre to Tirley pipeline under the Public Gas Transporter Pipe-Line Works (Environmental Impact Assessment) Regulations 1999.

1.7 Environmental Statement Structure

This Environment Statement is structured as follows:

Chapter 1:	Introduction and background to the project including a brief description of the proposed development and ES structure.
Chapter 2:	Discussion of the project rationale and strategic need for the pipeline and associated PRI. The chapter outlines the alternatives studied and explains the basis for the selection of the site.

Chapter 3:	Description of construction methodology and operational activities.
Chapter 4:	Description of the general approach to EIA and how its scope was determined.
Chapter 5:	Relevant legislation and guidance is identified to place the project within the context of the national, regional and local planning policy framework.
Chapter 6:	Physical Environment (including climate, geology, soils and topography).

Chapters 7 to 15 provide the main body of the impact assessment and cover the following disciplines:

Chapter 7:	Cultural Heritage and Archaeology
Chapter 8:	Ecology
Chapter 9:	Water Resources
Chapter 10:	Agriculture
Chapter 11:	Landscape and Visual
Chapter 12:	Noise and Vibration
Chapter 13:	Traffic and Transportation
Chapter 14:	Socio-Economic
Chapter 15:	Air Quality
Chapter 16:	Waste Management

1.8 Environmental Statement Availability

This Environmental Statement and Non-Technical Summary will be available for public inspection when the planning application for the proposed PRI is submitted to Herefordshire Council from the following address:

Mike Wilmont

Team Leader (South) Development Control

Herefordshire Council

Blue School House

Blue School Street

Hereford

HR1 2ZB

CD ROM versions can be obtained from the following address:

Brian Smethurst,

Project Manager, National Grid,

c/o Murphy Pipeline Ltd.,

Madley Airfield

Stone Street

Madley

Herefordshire

HR2 9NH

2 Project Justification, Alternatives and Site Selection

2.1 Introduction

This chapter explains the need for the project, the rationale behind the site selection process and the conclusions on which site provides the optimum location for the proposed PRI.

As is common with many infrastructure developments the process of site selection for this PRI is a question of balancing a number of factors. Environmental and technical considerations have been taken into account, as have the potential impacts on the local community.

2.2 Need for the Project

National Grid has a statutory obligation under the Gas Act, 1986 (as amended by the Gas Act, 1995) to develop and maintain a safe, efficient, co-ordinated and economical pipeline system for conveying natural gas.

The Energy Review published in July 2006 by the Department of Trade and Industry notes that the UK has become a net importer of gas sooner than expected; that we will become more reliant on gas to meet our heating and electricity generating needs; and that by 2020 we are likely to be importing around three quarters of our primary energy requirements. The Review recognises that there are implications arising from increased dependency on gas imports including significant new build in gas and electricity generating infrastructure.

The new LNG terminals being built at Milford Haven by South Hook LNG and Dragon LNG will provide around 20 percent of future UK gas supplies.

Some 22 to 32 billion cubic metres of gas per year are due to come into the NTS via the Milford Haven terminals. A proportion of that will be used in South Wales where present market demand for gas is 3.25 billion cubic metres per year. Historically South Wales and the West of England have been at the extremities of the NTS where existing pipelines are 600mm (24 inch) diameter. This infrastructure is inadequate to accommodate the gas supplies that will come from Milford Haven LNG terminals and was designed primarily to transport gas coming into the UK from the North Sea in a south westerly direction into Wales and the border counties. Accordingly, significant reinforcements and a reconfiguration of the NTS are required to transport gas from the Milford Haven terminals into and through the NTS.

At the 2004 regulated gas capacity auctions, South Hook LNG and Dragon LNG indicated the volume of gas they were prepared to import and as a result set out their gas transmission capacity requirements. Under the terms of its Gas Transporters Licence, National Grid has an obligation to provide the necessary transmission capacity to transport natural gas from the two LNG terminals at Milford Haven.

The proposed PRI at Treaddow, along with the connecting and reinforcing pipelines will provide the necessary link from the Milford Haven terminals into the existing NTS.

The most feasible point of connection is via an existing AGI at Peterstow, as a direct result a new PRI at Treaddow is required.

2.3 Alternatives Considered

2.3.1 Do Nothing

National Grid are obligated under the Gas Act 1986 (as amended) to develop and maintain a safe, efficient, co-ordinated and economical gas transportation system. The gas transporter's licence also requires National Grid to maintain the gas security standard and supply the peak demand for gas. To 'do nothing' and fail to reinforce the connection between the terminals in Milford Haven and the existing NTS would restrict output from the Milford Haven terminals and compromise the performance of the NTS, with a potential impact on gas consumers. It may also place National Grid in breach of its licence.

2.3.2 Alternative Strategies

The Milford Haven LNG terminals are currently located at a significant distance from the existing NTS. Alternative methods for transporting the gas, by road or rail, are unrealistic due to the security of supply, storage, environmental and safety implications.

2.4 Site Selection

2.4.1 Site Selection – Strategic Considerations

A connection to the existing NTS pipeline is required at the nearest practical point eastwards of the AGI at Gilwern where the 75 bar g pipeline system begins (see Pipeline Flow Diagram, H132/BE/03/07/0000/001 Appendix 1). Peterstow is the first Compressor Station eastwards of the Brecon Beacons National Park and provides the most practical solution. A connection at this point is also required to provide greater security of supply in the event that the section of new or existing pipeline between Peterstow and Tirley needs to be closed for maintenance purposes.

Having regarded for these strategic considerations it was decided a site in close proximity to the existing Peterstow Compressor Station would be the most suitable alternative location. The rationale for site selection at the detailed local level is discussed in the following sections.

2.4.2 Site Selection – Local Considerations

Site selection at a local level had consideration for a number of criteria against which each site was evaluated.

2.4.2.1 Primary criteria

- The site must be large enough to accommodate the Treaddow PRI and have screening potential to reduce visual impact and suppress noise levels. This necessarily implies sufficient land to accommodate screen planting and/or bunding.

- Consideration should be given to the natural topography and landform to accommodate the PRI with minimal visual intrusion.

- The site should be located as far as is practical from residential property or sensitive receptors, on the grounds of general amenity.

- The location should avoid and/or minimise potential environmental impacts.

- The site must be accessible for construction and operational vehicles. In addition it should be in a location suitable for connection to electricity and water supplies and telecoms.

- Consideration should be given to current land use and any statutory or non-statutory designations of the site.

2.4.2.2 Secondary criteria

- The amount of cut and fill and civil engineering works required to level the site should be acceptable.

- Consideration should be given additional or supplementary site preparation requirements e.g. land drainage.

- Potential conflict with buried infrastructure services should, wherever possible, be avoided.

2.4.3 Evaluation

Five original potential site options (A - E) were identified and investigated in February 2006. With regards to the strategic considerations required, all five sites were in the general vicinity of the existing Peterstow Compressor Station (see Site Selection Drawing, H132/BE/02/0000/052, Appendix 1).

Site A was considered to be the preferred option on the grounds that as it was closest to the Compressor Station and therefore likely to be viewed as a single integrated site, thus minimising landscape impact. The topography of the site would also enable the PRI to be set into the natural gradient, lowering its profile when viewed from the west. A planning application and accompanying ES for Site A were submitted in May 2006.

Following the recommendations of the Southern Area Sub-Committee, National Grid was asked to consider locating the proposed PRI on an alternative site, referred to as 'Site D' (see Site Selection Drawing, H132/BE/02/0000/052, Appendix 1), on the south-west side of Peterstow Compressor Station. This site had previously been discounted in the Environmental Statement, together with other alternative sites in the vicinity of the Compressor Station.

Despite the engineering difficulties of crossing existing pipe networks, the topography and existing vegetation surrounding Site D would enable the proposed PRI to be screened. With carefully considered and substantial screen planting and landscaping, the overall landscape impact of the development would be capable of being reduced,

especially once vegetation had established and matured. The planting design would need to be in keeping with the receiving character of the landscape and its existing features.

In addition to this, the close proximity of the existing compressor station to Site D would enable the proposed PRI to be in keeping with the compressor station which is already situated within the receiving landscape character zone. The compressor station would provide a backdrop so that the PRI would not be a visually prominent feature in its own right.

2.5 Overall Conclusion

Site D is not National Grid's preferred option due to the engineering difficulties of crossing existing buried gas pipelines. Notwithstanding that, taking account of the need for a pressure reduction station to connect into the existing National Transmission System at Peterstow compressor station, if Site A were not achievable due to the refusal of planning permission, landscaping impacts associated with Site D could be very acceptably mitigated for by virtue of topography and proposed landscaping screening features.

3 Construction and Operation Activities

3.1 Introduction

The main activities involved in the site set up, construction, testing and commissioning, operation and decommissioning of the Treaddow PRI are described in this chapter.

See Drawing No. H132/BH/01/01/4622/011A Planning Arrangement, Appendix 1 for an illustration of the proposed layout of the Treaddow PRI. The secure compound of the PRI would be primarily surfaced with chipping with some areas of hardstanding and a concrete roadway running through the site. The buildings within the security fence would comprise:

- an instrument building;
- 2 Pipeline Inspection Gauge (PIG[1]) trap facility buildings;
- a boiler house with vent stack; and
- a standby generator building.

In addition, a number of above ground gas pipeworks would be located within the PRI, including:

- a meter area;
- 2 boiler pressure reduction skids;
- a heater area;
- a filter area; and
- a regulator area.

3.2 Construction Strategy

Murphy Pipelines Ltd has been awarded the detailed design and build contract for this project.

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[1] PIG – A 'pig' is a device which is propelled along inside the pipeline to carry out a series of maintenance/ inspection duties depending on its type. The simplest varieties clean and/or check the pipe for normality (normally during commission), while "intelligent" types provide inspection data (periodically during the lifetime of the pipeline). A pig launcher and receiver are located at the start and end of the pipeline to facilitate insertion and retrieval of the "pig" from the pipeline.

During the detailed design, Murphy Pipelines Ltd. is producing method statements covering detailed construction methodology based on the results of feasibility studies, the findings of the EIA, ground investigation works, and consultations, and mitigation measures laid down in this environmental statement.

Murphy Pipelines Ltd has a series of standard best practice construction methodologies. These have been developed in consultation with National Grid, and will also be informed by further consultation, and this ES, and updated on completion of the EIA.

These standard environmental management procedures:

- provide a mechanism for ensuring that measures to mitigate potentially adverse environmental impacts identified in the Environment Statements (ES) are implemented;
- ensure that good construction practices are adopted throughout construction;
- provide a framework for mitigating impacts that may be unforeseen or not identified until construction is underway;
- provide a mechanism for ensuring compliance with environmental legislation;
- provide a framework for compliance auditing and inspection to enable National Grid; and Murphy Pipelines Ltd to be assured that their aims with respect to environment performance are being met.

The scope of these environmental management procedures is outlined in Chapter 17. The construction and operation methodologies described in this chapter are intended to illustrate some of the general techniques used in the construction and operation of Above Ground Installations. This information should be regarded as indicative rather than absolute.

3.3 Construction Stages

3.3.1 Mobilisation and Establishment of the Site Compounds

A temporary site compound would be set up in an allocated area outside the boundary of the proposed main security fence. The compound would be given a temporary hardcore base and would include offices, welfare facilities, car parking and a stores area. In addition, a generator would be used to provide a temporary electricity supply.

In addition, the following activities would be undertaken:

- water would be sourced locally;
- foul drainage would be contained within a cess tank and emptied on a regular basis by an approved waste removal company;
- fuel storage would comply with all storage regulations;

- waste (including hazardous substances) would be stored and managed according to the Murphy Group best practice waste management procedures, and be compliant with all Waste Regulations.

Key areas of the compound would be fenced and clearly marked, including an emergency assembly area. Upkeep and tidiness of the compound would be maintained by a store/yard man. The compound would be removed once the temporary works are complete and the site would be returned to its former use.

3.3.2 Pre-Construction Surveying and Setting out the Site

Murphy Pipelines Ltd. has undertaken topographic and geotechnical surveys of the area to inform the design of the PRI and location of associated utilities. See Chapter 6: Physical Environment and Land Use, for more detail of the topography and ground conditions.

3.3.3 Site Preparation and Clearance

Prior to construction works the proposed site would be cleared of vegetation as required. Appropriate breeding bird surveys would precede the timely removal of any trees or hedgerows impacted by the proposed works, to ensure that breeding birds are not disturbed as a result of the works. Hedgerows within the works area may be classified as 'important' under the Hedgerow Regulations, and as such, may be afforded protection against removal. Intrusive ground works would maintain a sufficient distance from retained hedgerows and trees, in line with *NJUG10, Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees, April 1995*. Prior to work in the proposed development area, removal of a section of hedgerow would be undertaken to enable temporary access. The hedgerow would be reinstated once works are complete.

The ground would be stabilised where necessary and where excess materials are found to be suitable these would be utilised in the construction and landscaping. Although the site is a green field site and unlikely to contain contaminated material, any potentially unsuitable material identified would be tested and safely disposed to landfill following appropriate methods used by the Murphy Group waste management procedures.

3.3.4 Temporary and Permanent Access Roads

Murphy Pipelines Ltd. would construct all access roads and pre-cast concrete flagged access walkways complete with all gullies, kerbs and edgings to and around buildings, plant and equipment. This would provide access to all plant and equipment for operation, maintenance and emergencies. Temporary access routes may be required during the construction phase but these would be reinstated to their original condition on completion of construction.

3.3.5 Drainage and Utilities

MPL would design and construct drainage systems for the access roads; boiler pressure reduction skids; buildings; manholes; and the connections to the existing drainage systems serving the adjacent existing Peterstow Compressor Station. Interceptors with

stop gates would be provided as a precaution against the possibility of pollution from spillage.

Permanent basic welfare facilities would be provided on site. These would comprise a toilet and hand basin. It is anticipated that these would be connected to a cess tank. Waste water would be removed periodically for treatment and disposal by an approved contractor.

All existing utilities would be protected during the construction works to reduce the risk of any disruption to services.

3.3.6 Building Construction

All buildings shall be of prefabricated construction and assembled on bases. If required, hydropiling works would be accomplished using in-situ concrete cast piles.

3.3.7 Equipment and Piping Foundations, Supports and Bases

Bases would be formed for the following buildings and equipment: inlet PIG trap; outlet PIG trap; filters; heat exchangers; regulators; boiler house and instrument building. Murphy Pipelines Ltd. would construct all skid equipment, and pipe support foundations.

3.3.8 Cable Ducts

Murphy Pipelines Ltd shall construct surface ducts, cable ducts and draw pits (jointing chambers) for power, instrument and communication cables. All manhole covers would be heavy duty.

3.3.9 Construction Workforce Working Hours

The number of people working on the site would gradually increase during the course of the project. There would be a peak at testing and commissioning time, which is towards the end of the construction, and the numbers would quickly decrease until the site works and reinstatements are complete. No living quarters would be provided on site.

In general, working hours are likely to be 07.00h – 19.00h Monday to Friday and 08.00h – 16.00h Saturday. These hours may vary under special conditions such as during hydrostatic testing, tie-ins and operations involved in servicing the pipelines. Any out of hours working would be agreed with the Environmental Health Officer in advance.

3.3.10 Environmental Management

All works would be carried out in accordance with standard Murphy Pipelines Ltd environmental management procedures. All standing plant would have a drip tray and spill kits would be provided at the fuel storage area. Murphy Pipelines Ltd would have in place emergency response procedures to control any potential spills to protect underlying groundwater or any watercourses in the vicinity. Best practice environmental management procedures would include measures to ensure all temporary work areas are restored to former agricultural use on completion of construction.

3.3.11 Provisional Construction Programme

The detailed design and construction is planned to start in April 2007 and is expected to be completed by April 2008.

3.4 Safety during Construction

Murphy Pipelines Ltd would construct this pipeline and its associated facilities in accordance with health and safety legislation, applicable standards and design codes. The requirements of the *Management of Health and Safety at Work Regulations* 1992, the *Construction (Design and Management) Regulations* 1994, and the *Construction (Health, Safety and Welfare) Regulations* 1996, would be adhered to. In doing so, regard would be made to the following issues to ensure no compromises are made which might jeopardise the safety of employees, contractors, or the public: health and safety induction programmes; construction work on site; hazardous materials and chemicals; operating procedures; work permits; and emergency responses. The health and safety performance of the contractors on site would be subjected to regular reviews by National Grid.

3.5 PRI Operation

3.5.1 Operational Control

The Treaddow PRI would normally be unmanned but may be staffed infrequently by up to five people during certain operational / maintenance conditions. During exceptional specific operational activities, staff may be present over night. The control room contains equipment to monitor the safe operation of the plant. The design would incorporate full electrical backup facilities should the supply fail, including a backup generator.

The following text summarises 'normal' operational procedures:

3.5.1.1 Station Isolation

Gas would enter the site via the new No.28 Feeder and flow through the Station Isolation Valve. In the event of an emergency this valve can be remotely shut, in conjunction with another isolation valve located in the vicinity of the exit point for the gas from the PRI site.

3.5.1.2 Filtration

Gas would pass through two of the filter streams in order to remove any extraneous matter.

3.5.1.3 Metering

Gas is then passed through an Ultrasonic Meter in order to quantify its flow. The amount of flow through the site determines the amount of gas pre-heat required.

3.5.1.4 Gas Pre-Heat

In order to maintain a suitable temperature after pressure reduction, the gas is heated prior to pressure reduction as it passes through the heat exchanger(s).

The heat exchangers are supplied with water (a mixture of water and glycol) heated by the Boiler Houses which is used to raise the temperature of the gas.

A small proportion of the gas flowing through the site is drawn off to run the Boiler Houses. The gas is taken after it has passed through the heat exchangers. Pressure reduction modules are required to reduce the pressure of the gas before it is supplied to the Boiler House.

3.5.1.5 Pressure Regulation

The primary purpose of the PRI is to regulate the pressure of the gas that the new Feeder supplies to the existing gas infrastructure (National Transmission System). Pressure regulation occurs in the Pressure Regulating Streams where the careful adjustment of specific valves is used to achieve the desired station outlet pressure.

3.5.1.6 Reverse Flow, (Site Bypass)

In the event of low pressure in the new Feeder, gas can be drawn from the existing infrastructure and fed into the new Feeder, bypassing the PRI site.

In reverse flow conditions gas would be directed through the station bypass. The only equipment in the bypass is a series of valves that ensure the existing infrastructure is protected from being over-pressurised by the new Feeder in the event that the pressure in the new Feeder should rise above the operating pressure of the existing infrastructure.

In reverse flow the gas would pass through the station isolation valves which would ensure that the site can be isolated in the event of an emergency.

3.6 Protection, Monitoring and Maintenance

3.6.1 Site Protection

The security fence would comprise a 2.4 m high palisade system with an attached pulsed electric fence deterrent. Whilst the site is occupied, the latter would simply act as a perimeter intrusion detection system linked to a central control room for monitoring purposes.

3.6.2 Monitoring

A boiler condition monitoring system would be provided to monitor the performance of the boilers to ensure that they are operated to optimum efficiency.

3.6.3 Maintenance

Approximately once a year for a period of 2-3 weeks the machinery would be taken off line to allow for maintenance and statutory inspections, to maintain efficiency and integrity of the systems.

The boiler units would be alternated to allow maintenance and cleaning of the plant. These changeover periods would vary as required but are expected to occur every few months.

3.7 Consumption of Resources

The *Environmental Impact Assessment Regulations 1999,* require a description of the use of natural resources by the proposed pipeline. This section details the principle materials used and their sources.

Construction materials would be sourced as local to the site as is commercially possible.

3.7.1 Stone, Hardcore and Concrete

Stone and hardcore would be used for temporary surfacing. Any stone and hardcore not used would be offered to landowners/construction sites for re-use subject to planning and waste legislation.

Temporary access roads would be made of hardcore; the permanent roadway throughout the site would be concrete.

3.7.2 Soil

Topsoil and subsoil would be excavated during construction, and would be replaced in the same location during reinstatement at all temporary and pipeline works sites. All appropriate soil materials on site would be replaced or re-used in bunding and landscaping. Disposal of any excess or contaminated soil materials is dealt with under waste in accordance with Murphy Pipelines Ltd waste management procedures.

3.7.3 Energy and Water Use

Energy use can be split into the following categories:

- Manufacture of buildings and equipment;
- Fuel for vehicles/machinery; and
- Electricity for lighting, site offices, security fencing, and heating.

The construction of the PRI would require a variety of plant and machinery. The exact requirements would not be known until detailed design is complete. Energy use in terms of fuel for plant and machinery would be minimised through the use of local suppliers where possible and ensuring that the equipment is well maintained and turned off when not in use. Gas to fuel the high efficiency condensing boilers will be taken from the main gas supply.

Electricity would be used at the PRI site office for valves, lighting, heating and equipment. Energy for lighting would be minimised because most of the work would be undertaken in daylight hours and the office would not be manned constantly.

The general construction activities would not require large amounts of water and welfare facilities at the PRI would require limited amounts.

National Grid ensure that venting gas during commissioning and maintenance would be kept to an absolute minimum. Transport is limited to maintenance visits and pipeline inspections as the PRI is largely remotely operated.

3.8 Decommissioning

The PRI has a design life of 40 years. With regular monitoring and maintenance however, it is predicted that the asset life of the PRI would outlive the design life. When the facility is finally decommissioned, all demolition and waste disposal would be carried out in accordance with regulations and guidance prevailing at that time.

4 Approach to the Environmental Impact Assessment

4.1 Requirement for Environmental Assessment

This Environmental Statement has been prepared to fulfil the requirements under the *Town and Country Planning (Environmental Impact Assessment) Regulations 1999*. The regulations apply to projects which require planning permission under the *Town and Country Planning Act 1990.*

Under Schedule 2(3) of the Regulations, which sets out the applicable thresholds and criteria, an EIA may be required for industrial installations for carrying gas if the area of works exceeds 1 hectare. Whilst the PRI compound would be just less than 1 hectare, the full extent of the works, including earthworks, landscaping and access, would be 1.86 hectares. Rather than seek a screening opinion to determine whether EIA might be required, National Grid has volunteered to submit this Environmental Statement in support of its planning application for the Treaddow PRI.

4.2 Scope of the Environmental Assessment

The environmental issues of potential significance associated with Site A were reviewed in an Environmental Scoping Report provided to Herefordshire Council in February 2006. The Council then canvassed the views of consultees prior to a scoping review workshop held in March 2006 to agree the scope and content of the Environmental Statement. The proximity of Site A to Site D means that environmental issues for Site D are similar in scope to the original ES.

A number of topics (listed below) were identified for inclusion within the assessment, primarily for the purposes of identifying appropriate mitigation to ensure that any adverse impacts can be kept to a practicable minimum. All chapters were prepared and written by Mouchel Parkman with the exception of Ecology and Archaeology and Cultural Heritage.

- Archaeology and Cultural Heritage (Network Archaeology).
- Ecology (Amec).
- Water Resources.
- Agriculture.
- Landscape and Visual.
- Noise and Vibration.
- Traffic and Transportation.
- Socio Economics.

- Air Quality.

- Waste Management.

4.3 General Environment Impact Assessment Method

The environmental assessment described in this Environmental Statement follows a standard data collection and assessment process based on the Institute of Environmental Management and Assessment (IEMA) guidance. For each of the general issues identified above for assessment there is firstly a review of relevant legislation and policies. Baseline conditions are then characterised to set the scene for consideration of potential impacts that may arise during construction or operation. Mitigation measures are identified to keep any impacts to a practical minimum. Finally a conclusion is drawn on the anticipated significance of any residual impact.

4.4 Determination of Significance

To facilitate the assessment of significance the following factors have been considered:

- the relative importance of the environmental resource in question i.e. national, regional or local importance;

- whether environmental quality would be impaired or enhanced i.e. an adverse or beneficial impact;

- whether the environmental impact would be direct (such as landtake) or indirect (such as polluted run-off entering watercourses);

- the scale of the change e.g. the area of land, number of people affected and the degree of change from existing conditions;

- the scale of change resulting from cumulative impacts;

- whether the effect is permanent or temporary and, if the latter, its duration; and

- the degree of mitigation that may be achieved through design.

The method used in this Environmental Impact Assessment to rank significance is summarised in Table 4.1. It has regard for the sensitivity or perceived relative value of the area as well as the magnitude of the impact. This method results in a significance level being determined, ranging from slight to large.

Some specific elements of the assessment use a modified version of this general method in accordance with best professional practice for particular disciplines e.g. Landscape and Visual assessment. This is explained in the methodology sections of those particular chapters where appropriate e.g. section 11.3.

Table 4-1 - Determination of impact significance

Sensitivity or Value of Environmental Receptor			
Magnitude of Impact	**Low**	**Moderate**	**High**
High	Moderate	Large - moderate	Large
Moderate	Slight - moderate	Moderate	Large - moderate
Low	Slight	Slight - moderate	Moderate
Neutral	Neutral	Neutral	Neutral

(source: IEMA)

4.5 Consultations

In addition to scoping consultations with Herefordshire Council, English Nature, Environment Agency, the Countryside Agency and bodies consulted by Herefordshire Council, Council members were briefed in January 2006 and a public information event was held in March 2006.

During the design of the proposed PRI at Site D, opinions were sought from Herefordshire Council regarding specialist design details such as landscape planting and mitigation.

5 Planning Policy Framework

5.1 Introduction

This chapter assesses the impacts of the proposed development on polices and proposals at all levels of the planning process, from national through to local policy. It examines how the achievement of policy objectives would be hindered or facilitated as a result of the construction and operation of the proposed PRI. More detailed discussion of relevant policies is provided in individual chapters.

The methodology adopted to assess the impact of the scheme on policies consists of the following steps:

- Collation and review of relevant national, regional and local policies; and
- Brief assessment of the likely impact of the development on planning policy objectives.

Planning policy inevitably changes over time. This assessment of the PRI's impacts is based upon most recent adopted policy.

5.2 National Policy

This Environmental Impact Assessment has been undertaken with reference to relevant national Planning Policy Guidance (PPGs) and Planning Policy Statements (PPSs).

National Planning Policy Statements relevant to this scheme are contained in:

- Planning Policy Statements;
- Planning Policy Guidance Notes; and
- Regional Planning Guidance Notes (RPGs).

The overarching legislation governing most aspects of planning in England is set down in the *Town and Country Planning Act, 1990*. Section 54A of the Act requires that planning decisions made should be in accordance with statutory Local Development Plans unless material considerations indicate otherwise.

5.2.1 Planning Policy Statements and Guidance Notes

Planning Policy Guidance Notes (PPGs) and their replacements Planning Policy Statements (PPSs) aim to explain statutory provisions and provide guidance to local authorities on planning policy and the operation of the planning system. They also explain the relationship between planning policies and other policies which have an important bearing on issues of development and land use.

The contents of PPGs and PPSs are taken into account by the planning authorities during preparation of Local Development Plans and may also be relevant to decisions on planning applications.

The most relevant overarching statements and guidance notes to this assessment are identified below. These and other PPGs and PPSs are considered in more detail in subsequent chapters where relevant to specific environmental issues.

Planning Policy Statement 1: Delivering Sustainable Development
PPS1 sets out the Government's overarching planning policies on the delivery of sustainable development through the planning system. [This replaces PPG Note 1: General Policies and Principles (published February 1997)]. PPS 1 states that planning should directly facilitate and promote appropriate economic development whilst taking into account the need to protect and enhance the natural and built environment, ensuring high quality development and minimising consumption of natural resources.

Planning Policy Statement 7: Sustainable Development in Rural Areas
PPS7 sets out the Government's planning policies for rural areas. [This replaces PPG Note 7: The Countryside - Environmental Quality and Economic and Social Development (published February 1997)].

Planning Policy Statement 9: Biodiversity and Geological Conservation
PS 9 sets out the Government's national policies on the protection of biodiversity and geological conservation stating that policies and planning decisions should aim to maintain, enhance, restore or add to biodiversity and geological conservation interests.

Planning Policy Statement 12: Local Development Frameworks
PPS12 sets out the Government's policy on the preparation of local development documents which would comprise the local development framework.

Planning Policy Statement 15: Planning and the Historic Environment
PPS 15 provides guidance on policies for the identification and protection of historic buildings, conservation areas, and other historic assets such as Historic Parks and Gardens, Historic Battlefields, Historic Landscape Character and World Heritage Sites.

Planning Policy Guidance 25: Development and Flood Risk
PPG 25 explains how flood risk should be considered at all stages of the planning and development process in order to reduce future damage to property and loss of life. The guidance states that developments should seek where possible to reduce and certainly not increase flood risk.

5.3 Development Plan Policy

5.3.1 Regional Planning Policy

The Government Office for the South West acts on behalf of the Department for Communities and Local Government (DCLG) (formally the Office of the Deputy Prime Minister). Working with the South West Regional Assembly (SWRA), the office scrutinises draft Development Plans prepared by local authorities.

Development Plans currently comprise the following documents:

- Structure plans - prepared by the structure planning authorities (county councils, unitary authorities and the two national park authorities) setting out key strategic policies for the area(s) as a framework for local planning.

- Local plans - prepared by local planning authorities, including national park authorities, setting out more detailed policies to guide development in their areas, including proposals for specific sites.

- Minerals and Waste local plans - prepared by county, joint and national park authorities, setting out the land use policies for managing minerals and waste in their areas.

Regional guidance relevant to the proposed PRI includes the Regional Planning Guidance for the West Midlands (RPG 11 – 2004). RPG 11 is now referenced as the Regional Spatial Strategy for the West Midlands. This guidance promotes a need to move towards a more sustainable future to contribute both to global and national environment targets and initiatives.

5.3.2 Local Planning Policy

5.3.2.1 Herefordshire District Council Unitary Development Plan

The Herefordshire District Councils UDP 1996 – 2011 revised deposit plan, published in May 2004, sets out planning policies for an area including the proposed PRI site.

Numerous UDP relevant policies have been considered during the course of the EIA. These include the following policies:

5.3.2.2 Archaeology

Policy ARCH5 Sites of Regional or Local Importance

Development proposals which adversely affect a site of regional or local importance that is unlikely to merit full preservation *in situ* will be permitted where the impact on the archaeological interest of the site can be shown to have been adequately mitigated.

5.3.2.3 Ecology

Policy NC1 Biodiversity and Development

In determining all development proposals, the effects upon biodiversity and features of geological interest will be taken fully into consideration. Prior to determination of applications for development on sites where there is reason to believe that such features of importance exist, a field evaluation may be required. Proposals should:

- seek to retain existing semi-natural habitat, wildlife corridors, species or geological features within their layouts and design; and

- demonstrate that the proposal will have no adverse effects on any adjacent biodiversity and features of geological interest, or lead to the fragmentation, increase isolation, or damage to protected or priority habitats and / or priority or protected species.

5.3.2.4 Agriculture

Policy DR11 Soil Quality

Development which requires the excavation or disturbance of soils and sub–soils on a significant scale must provide for their separate stripping and storage, and wherever possible for their reuse and respreading within the site in an acceptable manner. The use of surplus soil mounds to form landscaping or noise barriers will only be permitted where such mounds are both necessary and appropriate to the townscape and landscape character of the locality.

5.3.2.5 Landscape

As the potential impact to the surrounding landscape is of specific importance to the proposed PRI site, a brief description of the County Structure Plan in addition to the Herefordshire UDP is also given as it is considered directly relevant.

Hereford and Worcester County Structure Plan (adopted 1993)

Policy CTC.9 This policy makes reference to new development being designed to respect the local character, minimise impacts of local communities and wildlife and designed with a landscaping scheme of suitable substance and scale.

Herefordshire Unitary Development Plan (UDP) – Revised Deposit Draft (May 2004)

Policy LA2 Landscape Character and Areas Least Resilient to Change

Proposals for new development that would adversely affect either the overall character of the landscape, as defined by the Landscape Character Assessment and the Historic Landscape Characterisation or its key attributes or features will generally be resisted.

Proposals should demonstrate that landscape character has influenced their design, scale, nature and site selection. Those proposals affecting landscapes that are least resilient to change will, in particular, be subject to rigorous examination. Where appropriate, developers will be encouraged to restore degraded or despoiled landscapes to their inherent character.

Policy LA3 Setting of Settlements

Development outside the built up areas of Hereford, the market towns and rural settlements, which is acceptable in terms of other Plan policies, will only be permitted where it would not have an adverse effect upon the landscape setting of the settlement concerned.

Important visual approaches into settlements, views of key buildings, open areas into development, green corridors, ridgelines and surrounding valued open countryside will be particularly protected and, where necessary, enhanced.

In appropriate new developments around existing settlements the creation of open space, urban parks, green wedges, and tree lines will be promoted where they complement and enhance landscape character and townscape.

Policy LA6 Landscaping Schemes
Landscaping schemes will be required to be submitted as an integral part of any development proposals that will affect the visual amenity or character of the location. Landscaping schemes will be required to:

- assess the existing character and features of the particular site and its wider landscape character in accordance with policy LA2, indicating how these have contributed to the overall design approach and which features, including trees, will be removed;

- indicate and make arrangements to protect and retain existing trees and hedgerows, in accordance with policy LA5 (Protection of trees, woodlands and hedgerows) and also other landscape features worthy of retention; and

- include new landscape works to ensure development integrates appropriately into its surroundings in terms of scale, enhances any existing character and features and especially takes the opportunity to remove eyesores and improve disfigured or despoiled land.

Landscaping works should be undertaken during development or as soon as practicable thereafter. In the case of major proposals, consideration should be given to advanced landscaping works being carried out before building or enabling works are commenced.

Policy objectives that may be impacted by the PRI construction are those within Policy LA1: 'Areas of Outstanding Natural Beauty' although the proposed site is outside the AONB. This issue is addressed in the Landscape and Visual Amenity chapter, Section 11.2.

5.3.2.6 Noise

Policy DR13 Noise
Development with the potential for generating significant levels of noise or for exposing a noise sensitive use to an existing noise source will be required to include appropriate measures within the proposal to mitigate the noise impact to an acceptable level. Development which, after taking account of mitigation measures proposed, would still have an unacceptable noise impact or result in unacceptable exposure to noise will not be permitted.

Development which would adversely affect the quiet enjoyment or the special interest of designated areas will not be permitted. The quiet enjoyment and tranquillity of the wider countryside, landscape and wildlife areas and historic features will also be considered.

5.4 *Impacts in Relation to Planning Policy Objectives*

The construction of the proposed PRI is considered to be compliant with all plans and policies, and there are unlikely to be any impacts on any local, regional or national plans or policies as a result of this development.

Landscaping provision of a high standard is incorporated within the design and layout of the site and brings about environmental improvements wherever possible. In particular, the scale of the proposed development, its layout and overall design have paid due respect to the surrounding landscape character. Appropriate mitigation measures have also been designed to screen potential visual detractors within the proposed site and reduce the site's overall impacts within the wider landscape settings.

6 Physical Environment and Land Use

6.1 Introduction

This chapter describes the general physical and landuse environment of the proposed Treaddow PRI and includes details on the climate, topography, geology, soils, landuse and potential contamination. This baseline environment description would be used in the impact assessment chapters which follow.

Information pertaining to the current condition of the site is based on a review of desk based information obtained during the study period. This comprised a review of published maps and information from regulatory bodies, including the Environment Agency (EA) and local council. In addition ground investigation exploratory logs, undertaken by STATS in October 2006, have also been reviewed.

The current condition of the site has been based upon information provided from a site walkover undertaken by Murphy Pipelines Ltd. The following references have been used in the assessment:

- Landranger Ordnance Survey Map of Gloucester and Forest of Dean, Sheet 162;
- 1:50,000 scale British Geological Survey Map of Ross-on-Wye (Solid and Drift Geology), Sheet 215;
- Environment Agency (EA) website (www.environment-agency.gov.uk);
- Environment Agency – Monmouth Office;
- Landmark Envirocheck Report (dated 04 January 2006) including historical Ordnance Survey Maps;
- Herefordshire Council – Building Control Department; and
- Herefordshire Council – Environmental Health Department.

6.2 Climate

Climate statistics for Ross-on-Wye for 1973-2000 have been produced by the Met Office (www.metoffice.com). These indicate that the area has a climate characterised by average maximum temperatures of 14°C which are 2°C above the national average for England and Wales. Annual average hours of sunshine in the area are also above average at 1504hr/year. Rainfall levels in the locality of the site are around 706.2mm/yr, around 200mm lower than the national average.

6.3 Topography

The proposed site of the PRI is located at National Grid Reference (SO545238). It is set within a valley associated with the River Wye to the east and north east of the site. Slight variations in elevation are indicated by the Ordnance Survey Plan on the site,

between 100m Above Ordnance Datum (AOD) climbing gently to the north east to 105m AOD. Locally the topography in the immediate vicinity of the site climbs to a maximum elevation of 109m AOD to the north east.

Regionally the valley climbs to the south reaching a maximum elevation of 85m AOD.

The site currently comprises open agricultural land with the existing Peterstow Compressor Station located to east of Site D.

The topography of the site is not considered to present any significant constraints to the development of the PRI site.

6.4 Drift and Solid Geology

Geological information published by the British Geological Survey indicates the site is underlain by Brownstone Formation of Devonian. No drift deposits are indicated to overlie the solid geology. No construction issues relating to this have been recorded.

No geological designations (Sites of Special Scientific Interest) are indicated within the vicinity of the site.

Table 6-1 - General Succession of strata encountered

Soil Description	Depth to top of stratum (metres below ground level)	Thickness (m)
Topsoil	Ground Level	0.3 – 0.5
Clayey sand	0.3 – 0.5	0.8 – 3.7
Sandy clay	1.5	Absent – 0.9
Mudstone	5.58 – 10.0	Proven to 12mbgl
Sandstone	1.1 – 4.2	Proven to 12mbgl

Ground investigations were undertaken by STATS during October 2006. These involved sampling from six boreholes drilled to an approximate depth of 12m. In the majority of boreholes, a shallow depth of reworked topsoil was encountered, after which sands and sandy clays were encountered to a depth of up to 4.20 metres below ground level (mbgl). Occasional sort to firm, red brown and grey green, slightly find to medium sandy clay layers were observed. The sandstone was moderately weak to strong, red/brown and grey, thinly bedded and medium grained. Weathering ranged from slight to moderate, with occasional grey green discoloration to occasional patches of clayey sandstone gravel between laminations and fractures within the sandstone. The sandstones became stronger and less weathered with depth.

Thickly laminated mudstones were encountered in all of the boreholes at depths from 5.85mbgl to 12mbgl. The mudstones were initially weak, becoming stronger with depth, thickly laminated, friable and red/brown in colour. Where significant weathering has occurred, the thinly laminated mudstone was recovered as clayey mudstone gravel and was mottled grey green in areas.

Groundwater was not encountered in any of the boreholes before rotary coring commenced and a water flush was introduced.

The underlying geological conditions encountered are considered to represent a low risk to the environment and the proposed development. The PRI would not significantly impact upon the underlying geological conditions.

6.5 Soil Associations

Information regarding the soil associations at the proposed site has been obtained and is shown in Table 6.2 below. Information regarding the soil Agricultural Land Classification is detailed in Chapter 10.

Table 6-2 - Soil associations at the proposed Treaddow PRI site

Name	Main Surface Texture Class	Natural Drainage Type	Natural Fertility	Characteristic Semi-natural Habitats	Main Land Cover
Freely draining slightly acid loamy soils	Loamy	Freely draining	Low	Neutral and acid pastures and deciduous woodlands; acid communities such as bracken and gorse in the uplands	Arable and grassland

6.6 Land Use

The site currently comprises open agricultural land. No structures or development are present on the site. The existing Peterstow Compressor Station is located to the east of the proposed PRI site. Two 600mm gas 'feeder' pipelines (the No.2 and the Gilwern feeder) serving the existing compressor site partially cross the PRI site require several crossings by the proposed new pipeline.

Further open land is present within the locality bounding the site on most sides. The existing access track for the Compressor Station runs north east/ south west and is located immediately to the south east of the site and comprises a hedgerow between the proposed site and access track. No farms buildings or settlements are present within a 200m radius of the site.

A tributary of Luke Brook is located approximately 260m north east of the proposed PRI site.

Review of the historical ordnance survey plans (dated between 1888 and 2000) indicates the historical land use of the site has remained as open land, with no development indicated. A quarry was recorded approximately 750m north of the site from 1888 to 1905.

Reviews of the current and historical land use activities onsite and within the immediate vicinity are considered to represent a low risk to the proposed development.

6.7 Mineral Extraction

No records of mineral extraction within the site have been recorded.

6.8 *Quarries and Pits*

Reviews of historical plans within a 1km radius of the site indicate the historical presence of one quarry. Table 6.3 summarises the details of this.

Table 6-3 - Historic quarries within the vicinity of the site

National Grid Reference	Distance and direction from site	Dates indicated on available historical plans	
		First date shown	Last date shown
354850 224500	750m north	1888*	1905

*Indicated on 1888 (first available) historical plan indicating feature pre-dates available historical plans.

The nature of infill material within this former quarry is unconfirmed. The historical plans indicate that an open cast feature is present until 2000 (last available plan), and that no infilling has occurred. Owing to the distance of this feature from the site, the presence of the former quarry is considered to present a low risk to the proposed development. The nature of the development is not considered to impact upon these features.

6.9 Landfill Sites and Waste Management Facilities

No licensed waste management facilities, landfills, waste treatment or waste disposal sites are indicated on Envirocheck records either onsite or within 1km of the site.

6.10 Land and Surface Water Contamination

No current or historical potentially contaminating industrial uses of the site have been identified from the review of desk based information. No pollution incidents have been recorded within the vicinity of the site and the site has been in agricultural usage. There is the potential for the presence of contaminant residue from fertilisers/pesticides. However the risk of encountering such contamination is considered to be low. No made ground deposits were encountered in the exploratory holes undertaken during the ground investigation on the site.

Herefordshire Council have confirmed the presence of an area of unknown filled ground, approximately 1100m to the north of the site. No further details could be confirmed

relating to this feature. For the purpose of this assessment it is not considered to present a risk.

Two pollution incidents have been identified from Envirocheck records and correspondence with the Environment Agency. The details are summarised in Table 6.4 below. Given the distance of their occurrence from the PRI site and the date of the incidents, these are not considered to present any contamination risk to the development site.

Table 6-4 - Pollution incidents within 1500m of the site

National Grid Reference	Distance / direction from site	Location	Date of incident	Pollutant	Cause of incident	Receiving water	Severity of incident
354711 225070	1289m north	Not supplied	17/07/02	Agricultural material / waste	Drainage failure	Not supplied	Category 2 significant
354800 224500	758m north	Pond Minnett Farm	12/06/95	Organic wastes – vegetable washings	Deliberat e act	Not stated	Category 2 - significant

No water quality information is available for the water bodies in the vicinity of the site. Luke Brook and its tributary could be considered as receptors sensitive to pollution. However no significant land or surface water contamination has been identified on the site or within its immediate vicinity at this stage from the desk based reviews. The risk is therefore considered to be low.

Mitigation would be implemented to prevent contamination of underlying strata and identified surface water receptors as a result of accidental spillages or leakages from vehicles, products or activities during construction and operation.

Mitigation will be provided during construction using standard Murphy Pipelines Ltd *environmental management procedures. This informs plans and method statements for* the storage and use of products onsite where necessary. Emergency plans and procedures have been established to deal with accidental spillage of chemicals, substances and fuels in use on the site. Good site management and adherence to good practice would ensure a negligible residual impact.

As part of the Health and Safety requirements for the site during construction, standard personal protective equipment would mitigate against any impact to the site workers. If during construction contaminated strata, residues or suspect material is encountered, further investigation would be undertaken at that stage to confirm potential risk from contamination to identified receptors and whether remedial action would be required.

The entire site would be drained to an interceptor fitted with stop valves as a precaution against possible contamination entering surface water. Possible sources of such contamination would include leakages or spillages from on site plant and equipment, oils and chemical storage and vehicles visiting the site. Losses from these sources would be mitigated primarily through a regular maintenance and inspection programme in accordance with standard Murphy Pipelines Ltd environmental management procedures. No washing of plant would be required and vehicle wash down would not be allowed on site.