

6.0 CONSTRUCTION, DECOMMISSIONING AND RESTORATION

6.1 This chapter describes the expected works programme and the key activities that will be undertaken as part of the Proposed Development during construction, decommissioning and restoration. Consideration of potential effects during the construction, decommissioning and restoration processes and any necessary mitigation measures are provided in each relevant chapter of the ES.

6.2 Drilling activities are scheduled to be carried out on Eberston Moor 'A' Well Site prior to construction commencing for this Proposed Development, following the grant of planning permission for drilling a sidetrack of the existing Eberston Moor - 1 well and two gas appraisal boreholes, (planning application ref NYM/2013/0068/FL). The construction activities described below will commence after drilling of the sidetrack has been completed.

Programme of Works

6.3 The current project schedule for the Proposed Development presumes that planning permission and Field Development Plan (FDP) approval will occur during 2013, construction commences January 2014 and gas production commences after July 2014.

6.4 Construction of the Proposed Development will include the following activities:

- Site preparation (including excavation and grading);
- Provision of infrastructure;
- Construction; and
- Landscaping.

Construction Activities

Site Preparation

6.5 Site preparation will involve:

- Construction of a temporary construction compound including site cabins to the southwest of the Eberston Moor 'A' Well Site which will contain offices and welfare facilities for management and construction workers;
- Construction of a laydown area;
- Ground modelling works including topsoil stripping and stockpiling for later use;

- Workshop facilities for maintaining the construction equipment; and
- Installation of temporary surface water management measures for construction.

Provision of Infrastructure

- 6.6 Electricity supply will be established by providing a 1,000kw natural gas fuelled electric generator.

Construction

- 6.7 The construction phase will involve: foundation excavation and construction; installation of below and above ground services and pipelines; construction of structures including separator and storage tanks, flare; the gas conditioning facility; and construction of the main building envelopes.

Landscaping

- 6.8 Landscaping works will involve some ground modelling works and creation of new bunds. The works will include soil preparation, tree and vegetation planting and seeding. The ground modelling works will be undertaken concurrently with the site preparation and below ground works outlined above. The sequence of works will be:

- Careful felling of woodland and clearance of other vegetation;
- Stripping and stockpiling of existing topsoil;
- Placement of materials recovered from excavations for foundations, roadways and pipeline and services trenches and creation of the new bunds;
- Placement of topsoil; and
- Tree and vegetation planting and seeding.

Material and Resource Use

- 6.9 The primary construction materials to be used will include concrete, brick, steel post and beams and timber. Where possible materials and resources used during the construction of the Proposed Development will be sourced from the local area.
- 6.10 All structures and pipework within the Assessment Site will be in Signal Grey (RAL 7004) with non-reflective finishes. The hard standing areas within the Ebberston Moor 'A' Well Site including the car park, the section of the Lockton Compound within the red line boundary

and the proposed extension to the Lockton Compound will be surfaced with a combination of gravel and asphalt.

- 6.11 The ground modelling will require spoil to be moved around the Assessment Site. It is not anticipated that any of the spoil will need to be imported into or removed from the Assessment Site as part of this Proposed Development.

Plant and Equipment

- 6.12 Consideration has been given to the types of plant likely to be used during the construction works. The plant and equipment associated with each key element of the construction process is set out below in **Table 6.1**.

Table 6.1: Plant Expected to be used during Construction

Plant	Stage		
	Enabling Works and Site Preparation	Infrastructure and substructures	Construction
Tracked/wheeled 360 degree Excavators	✓	✓	✓
Excavator mounted hydraulic breakers	✓	X	X
Excavator mounted hydraulic crushers	✓	X	X
Dumpers	✓	✓	✓
Concrete Crushing Plant	✓	X	X
Mobile Craneage/Tower Cranes	✓	✓	✓
Eight-wheeler trucks	✓	✓	✓
Air Compressors	✓	✓	✓
Diamond cutting tools / saws	✓	✓	✓
Hand Held Tools including breakers (pneumatic and hydraulic)	✓	✓	✓
Power Tools including percussion drills, cutting disks, pipe-threaders	✓	✓	✓
Hand /power tools	✓	✓	✓
Wheel Washing Plant	✓	✓	✓
Scaffold	X	X	✓
Mobile access platforms	✓	✓	✓
Delivery trucks	✓	✓	✓
Skips & Skip trucks	✓	✓	✓
Forklift trucks	✓	✓	✓

Hours of Work

- 6.13 NYMNPA may wish to stipulate the hours of construction activities occurring on the Assessment Site. It is anticipated that these will be 07:00 to 18:00 Monday to Friday and 07:00 to 13.00 on Saturdays. All work outside these hours will be subject to prior agreement, and/or reasonable notice, by NYMNPA who may impose certain restrictions. Night time working for construction activities will be restricted to exceptional circumstance.

Environmental Management of Construction Works

- 6.14 The Applicant will operate an Environmental Policy which will cover a number of key areas during the construction process. The Environmental Policy will ensure that the Applicant and its contractors operate in a responsible manner during the construction process. Broad measures to eliminate, reduce or offset adverse environmental effects, which will be set out in a Construction Environmental Management Plan (CEMP), are identified below:

- The broad plan of the phasing of the works and its context within the whole project;
- Baseline levels for noise, vibration and dust and details of any monitoring protocols that may be necessary during the works;
- Housekeeping procedures and environmental control measures;
- Any requirement for monitoring and record keeping;
- Contact details during normal working hours and emergency details outside working hours;
- Provision for reporting, public liaison, prior notification etc.;
- The mechanism for the public to register complaints and the procedures for responding to complaints;
- Prohibited or restricted operations (location, hours etc.);
- Details of construction operations highlighting any operations likely to result in disturbance and/or working hours outside the core working period, with an indication of the expected duration of key phases and dates;
- The details of proposed routes for heavy goods vehicles travelling to and from the Assessment Site; and
- Details of all works involving interference with a public highway, including temporary carriageway/footpath closures, realignment and diversions where applicable.

Traffic Management

- 6.15 Whilst no long-term road closures are envisaged, short-term closures may be required in order to establish and remove large items of building plant.

- 6.16 It will be the responsibility of the Applicant and Contractor or Construction Liaison Officer to finalise consultations with NYMNPA. Notice regarding planned closures and diversions of roads and footpaths shall be given by the Contractor/Construction Liaison Officer to NYMNPA, the Police, the Fire Brigade and other emergency services sufficiently in advance of the required closure or diversion dates.
- 6.17 In order to minimise the amount of construction vehicles using the public highway, the following factors will be considered:
- Re-use and recycling of construction materials;
 - Control of wastage;
 - Description of permitted routes for transit of materials, avoiding sensitive areas;
 - Shared materials delivery opportunities;
 - On demand ordering;
 - Phased delivery times throughout the working day; and
 - Car sharing for operatives.
- 6.18 All construction traffic entering and leaving the Assessment Site will be closely controlled and will access the Assessment Site from Eberston Common Lane. Vehicles travelling to and from the Assessment Site will travel via designated routes, which will have been previously agreed with NYMNPA and other relevant authorities and bodies prior to construction commencing.
- 6.19 Site operatives will be encouraged to car share if transport is not provided by the employer. Car parking arrangements for site operatives adjacent to the southern boundary of the well site and laydown areas will be enforced in order to avoid uncontrolled parking on public highways.

Waste Management

- 6.20 Some waste will be generated during the clearance of on-site structures and construction activities. All relevant contractors will be required to investigate opportunities to minimise waste arising at source and, where such waste generation is unavoidable, to maximise the recycling and re-use potential of construction materials. Wherever feasible, such waste will be dealt with in a manner that reduces environmental impact and maximises potential re-use of materials. Recycling of materials will largely take place off-site where noise and dust are less likely to result in effects to the occupants of surrounding properties.

Drainage

- 6.21 The assessment of potential effects resulting from the Proposed Development on water resources is presented in Chapter 12 (Flood Risk, Hydrology and Drainage).
- 6.22 Surface water drainage will be controlled by appropriate SuDS and discharge arrangements will be agreed with the Environment Agency and Internal Drainage Board or, in the case of discharges to sewer, Yorkshire Water.
- 6.23 The Construction Liaison Officer will ensure that any water which may have come into contact with any contaminated materials during construction will be disposed of in accordance with the Water Resources Act (1991) (Ref. 6.1) and other legislation, and to the satisfaction of the Environment Agency and/or Yorkshire Water. In addition, any risk will be reduced by adopting good management practices and relevant measures described in the Environment Agency's Pollution Prevention Guidelines, including: PPG01 – General guide to the prevention of water pollution (Ref. 6.2); and PPG06 – Working at construction and demolition sites (Ref. 6.3).
- 6.24 All liquids and solids of a potentially hazardous nature (for example diesel fuel, oils, solvents) will be stored on surfaced areas, with bunding to the satisfaction of the Environment Agency.

Trees and Vegetation

- 6.25 All trees to be retained (and new trees planted in the early stages of construction) will be protected from any unnecessary damage by fencing in accordance with BS5837:2012 Trees in Design, Demolition and Construction, Recommendations (Ref. 6.4).
- 6.26 All temporary material storage will be located wherever practical at adequate distances from vegetation and tree cover to avoid any physical damage. Where tree roots may be subject to potential vehicle compaction, additional temporary protection of the ground surface may be introduced.
- 6.27 Similarly, other areas of vegetation to be retained as part of the Proposed Development will be protected from adverse effects during construction through the installation of temporary fencing as appropriate. Construction traffic and storage of materials will not be permitted in these areas, ensuring that they are safeguarded throughout construction.

Protection of Ecological Habitats and Species

- 6.28 Construction effects on ecology within and around the Assessment Site will be controlled by the CEMP. Habitats to be retained within the Assessment Site will be fenced off to reduce disturbance effects, for example from increased noise and lighting. All temporary lighting will, wherever possible, be located away from these areas and positioned as close to the ground as possible.
- 6.29 To limit the potential for killing and injuring a wild bird or damaging or destroying its nest, all vegetation removal will be timed to avoid the bird-breeding season (March to July inclusive) where possible.

Decommissioning and Restoration

- 6.30 There are two potential scenarios for the decommissioning and restoration phase of the Proposed Development which depend on whether planning permission for future use of the well site is secured prior to the end of the operational life of this Proposed Development, which is anticipated to be up to five years.
- 6.31 The first scenario occurs if planning permission for the second phase of Eberston Moor 'A' Well Site is secured, that is, continued gas production from Eberston Moor – 1 well and piping the gas to the KGS. During this scenario, it is anticipated that the structures and equipment on the well site would be retained in-situ for reuse, as part of the future use of the well site. At the same time the equipment and structures on the Lockton Compound and its extension and the flare associated with this Proposed Development would be removed from site to enable restoration of these areas of the Assessment Site to their original condition. The implications and description of any future development on the well site would be discussed in a separate planning application and is not considered further in this ES.
- 6.32 The second scenario occurs if planning permission for the second phase of Eberston Moor 'A' Well Site is not secured before the end of the life of this Proposed Development. During this scenario a restoration scheme for the well site will be agreed in writing with the NYMNPA six months prior to the decommissioning and restoration commencing. The general aim of restoration would be to return the well site to forestry in a condition as close as practicable to its original state or to a combination of forestry and amenity uses.
- 6.33 It is anticipated that the restoration scheme would involve all the wells being plugged, hydrostatically tested, and abandoned with an agreed programme or method approved by the Health and Safety Executive (HSE). The wellheads will be removed and the well casing cut

off not less than 1.83m below the finished ground level, a metal plate welded on top, and a concrete slab placed on top of the plate. All plant, equipment, pipes, cables, buildings, security fencing, and surface installations, will be dismantled and removed from the Assessment Site. Concrete installations will be broken up and removed. At the same time the gas conditioning and metering equipment and connection to NGN's LTZ pipeline used for the EDS will be decommissioned and the Lockton Compound restored to its current condition.

- 6.34 Pest free sub-soil and topsoil will be replaced separately to the original depth before excavation to achieve a loose, uniform fill. The finished contours will be close to the original site contours. Any hedgerow or trees removed during construction or operation will be replanted with good nursery stock plants guarded with stock and rabbit proof fences during the first year.
- 6.35 If necessary, a scheme of drainage relevant to the Assessment Site will also be prepared and agreed with the prospective post-development landowners. The drainage scheme will then be carried out by a specialist land drainage contractor in year two or earlier if appropriate.