

**PLANNING ACT 2008**

**Underground Gas Storage Facility at Preesall, Lancashire.  
In respect of an application for a Development Consent Order by Halite Limited  
Application reference: EN030001**

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**STATEMENT OF COMMON GROUND BETWEEN HALITE ENERGY GROUP  
LIMITED AND LANCASHIRE COUNTY COUNCIL ON THE TOPIC OF SAFETY OF  
THE ABOVE GROUND FACILITIES**

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## **1 INTRODUCTION**

### **1.1 Overview of the Topic**

1.1.1 The aim of this Statement of Common Ground (SOCG) is to establish the basis for which the safety of the above ground facilities will be demonstrated should the project receive a Development Consent Order. This SOCG does not cover the geology of the site; which is subject to a separate Statement of Common Ground (SOCG), and the safety justification of the storage caverns and risers.

1.1.2 The above ground facilities for the proposed Preesall Salt Cavern gas storage facility consist of the pipework and compression and drying facilities that are necessary to transfer the natural gas between the salt cavern wellheads and the Gas National Transmission System (NTS) at Nateby. As these facilities process large quantities of natural gas at high pressure there is the possibility that a gas leak could lead to a fire or explosion, with prima facie potential risks to the public. Previous planning applications have been unsuccessful partially because it was not demonstrated to the satisfaction of the Planning Authority that a sufficiently rigorous quantified risk assessment of these facilities had been carried out.

1.1.3 To address these perceived deficiencies a Risk Assessment (RA) has been produced to provide an assessment of the risks to the public from Major Accident Hazards from both the above ground and underground facilities of the gas storage scheme. The RA has been issued as follows:

- Revision 1 of the RA (dated 25 March 2011) was submitted for public consultation and to Lancashire County Council (LCC) and Atkins, LCC's technical advisors.
- Revision 2 of the RA was issued on 7 October 2011. This revision was made to account for minor changes to the design of the facilities and address comments received during the public consultation. This included further explanation of the dispersion of above ground natural gas leaks.
- Revision 3 of RA was issued on 20/10/2011. This revision takes account of minor changes to the pipework at the Gas Compressor Compound. This document has been submitted to the IPC (IPC Reference 9.3.1 version 1).

## **1.2 Summary of the Application.**

**1.2.1** The above ground facilities of the gas storage scheme will consist of the wellhead compounds, a series of buried pipes and headers to connect to the wellheads the Gas Compressor Compound (GCC), the solution mining infrastructure to create the caverns and the interconnecting pipeline to the NTS at Nateby. These are outlined below; further details are provided in section 2 of the IPC application.

**1.2.2** The wellhead compounds will be secure areas surrounding the individual cavern wellheads. Each wellhead will be housed in an individual concrete enclosure.

**1.2.3** Three 36" nominal bore headers will distribute the gas between the GCC and the wellhead compounds. Smaller bore pipes will connect the headers to the individual wellheads.

**1.2.4** The construction of the GCC is shown on Drawing No A-2000-001 to 006. The first stage would be the creation of the construction compound and the provision of temporary offices, utilities and parking. The Compound would contain the following buildings, structures and equipment:

- \* Pig Launchers and Receivers;
- \* Slug Catchers;
- \* Large diameter above ground high pressure pipelines;
- \* Glycol Contactors to dry the gas;
- \* Glycol Regeneration system;
- \* Gas Compressors;
- \* Compressor Knock-Out Separators;
- \* Compressor Aftercoolers;
- \* Gas filters;
- \* Gas Heaters;
- \* Various utility systems, plant drainage and power supply;
- \* Emergency/maintenance vent stack;
- \* Electrical/instrument and Utilities buildings; and
- \* Vent Stack provided within the centre of a new

**1.2.6** The solution mining infrastructure will consist of a sea water intake at the Fish Dock at Fleetwood with a Seawater Pumping Station. The sea water will be piped under the Wyre estuary to the Booster Pumping Station where the pressure will be increased and the seawater pumped to the various wellhead locations. After the brine has been used in the washing process, it will be returned to the de-brining facility adjacent to the booster pump station to ensure the brine contains no dissolved gas or sediment from the washing stage. The saturated brine will be piped under the Wyre estuary for discharge at a point about 2.3km off-shore in Morecambe Bay.

1.2.7 There will be a 42" nominal bore pipeline linking the GCC to the NTS at Nateby. There will be gas metering facilities at the Nateby end of this pipeline.

## **2 ACCEPTED DATA**

### **2.1 Status of Design**

2.2.1 Though the overall concept of the project has been developed, including the outline design of major equipment and pipelines, the design is not yet fully detailed. The fully detailed design will not be developed until after permission to construct the facility and the Hazardous Substance Consent have been obtained. The current design has enough information to allow the major accident hazards to be identified and the risks to the public assessed. The current design information is provided in section 2 (Plans and Drawings) and section 5 (Environment Statement) of the IPC application.

### **2.2 Safety Assessment Methodology**

2.3.1 The risk assessment has concentrated on identifying and assessing worse case accidents that might affect the public outside the site boundaries. A HAZOP study was carried out to assist with the hazard identification. The following potential accidents were given detailed consideration in the risk assessment.

- Gas Release at a Wellhead
- Gas Release from On-site Pipeline
- Gas Release at GCC
- Gas Release from Vent Stack
- Gas release into brine system
- External hazards such as aircraft crash

2.3.2 The consequences of the potential fires and explosions have been modelled using the standard modelling package DNV Phast. The modelling of accidents takes account of range of wind speeds and all wind directions. Details on the assumptions used in the consequence modelling are provided in the RA.

2.3.3 The frequency of potential major accident hazards has been estimated using the HSE's failure rate data. These frequency estimations have been

combined with the consequence modelling to derive the risks to the public from accidents at the gas storage facility.

2.3.4 The pipe lines and manifolds have been assessed against the gas pipe line code IGEM/TD/1, Steel pipelines and associated installations for high pressure gas transmission.

### **2.3 Estimated Risks to the Public**

2.4.1 The risks to occupiers of Cote Wall Farm and the Hackensall Sewage works have been estimated together with the risks to users of the Wyre Way footpath, Knott End golf course and anglers at a local fishing pond. In all cases the risk assessment shows that risks are much lower than those that the HSE would normally consider acceptable in accordance with their PADHI land use planning risk assessment method.

2.4.2 The proposed pipeline between the facility and the NTS at Nateby will meet the IGEM/TD/1 (Steel pipelines and associated installations for high pressure gas transmission) requirements for minimum distances between the pipeline and occupied buildings.

### **2.4 Relationship to COMAH Safety Reports**

2.5.1 The project will become a top tier site under the Control of Major Accident Hazards Regulations (1999). As such it will be required to have a Safety Report accepted by the Competent Authority (CA) (i.e. the Health and Safety Executive and Environment Agency) before construction of the gas handling and storage facilities (Pre-Construction Safety Report) and again before gas is introduced into the facility (Pre-Operational Safety Report).

2.5.2 As part of the acceptance process the CA will perform a thorough technical review of the design, and intended construction, operation and management of the facility using a team of subject matter experts. The CA has the power to prevent operation of the facility if in the opinion of the CA the developer has not taken all measures necessary to ensure the safety of the facility.

## **3 CONCLUSIONS**

3.1 The Risk Assessment (RA) provides an adequate assessment of the risks to the public from the above ground facilities and pipelines of the proposed gas storage facility. The RA shows that the risks to the public from

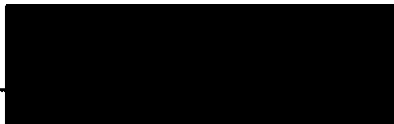
the above ground facilities are very much lower than those normally considered tolerable by the HSE's land use planning assessment methodology.

3.2 This Risk Assessment is based on the outline design of the facility and will be superseded by more detailed assessments to be included in the safety report required under the COMAH regulations.



**This Statement of Common Ground on the topic of Safety of the Above Ground Facilities has been prepared by MottMacDonald on behalf of Halite Energy Group Limited, and agreed by Lancashire County Council and Wyre Borough Council.**

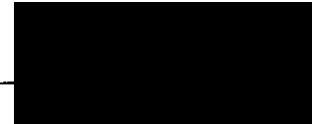
Signed \_\_\_\_\_



**Nigel Harrison**

**on behalf of Mott MacDonald**

Signed \_\_\_\_\_



**Michael Green**

**Cabinet Member for Economic  
Development, Environment and  
Planning**

**on behalf of Lancashire County Council**

*1st June 2012 .*