

Date: 29 May 2014
Our ref: PGRC/29691.00053
Your ref: 12.04.09.04/279C
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Giles Scott
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Dear Mr Scott

Proposed underground gas storage facility at Preesall, Lancashire

Further to your letter dated 23 May 2014, we have liaised with Halite, British Geological Survey ("BGS"), Geostock and Mott McDonald and our response is set out below (adopting the same numbering as your letter). We have sent with this letter a link to an FTP site which contains the various items of data.

Points 1 & 3: The model was built by BGS based on the final seismic survey (2013) results from Tesla. The survey results are provided, as received from Tesla in SEG Y format, which we understand can be imported into most software packages. BGS undertook their interpretations in TWT (two way time) and the detailed line by line interpretation together with the background seismic data was presented in BGS report CR/13/122 (submitted with our letter to you of 9th May 2014). We also now attach the BGS line by line interpretation as presented within their report referenced above as exported Charisma 2D interpretation lines (ASCII) format (horizons) and Charisma fault sticks (ASCII) format (faults). Section 4 of the BGS report (CR/13/122) describes how the TWT line by line interpretation was converted to depth. In particular Section 4.2 described that the interpretation of the seismic lines provided horizons and faults in TWT. These elements were exported from Petrel and imported into GoCAD for contouring and then depth converted. The general process of depth conversion to produce the structure-contour maps was detailed in Section 4.2 page 18 and is summarised here as follows (using the BGS numbering from p18):

- 1 Grid the TWT data for top and base halite;
- 2 Build the fault model within the top and base halite surfaces;
- 3 Apply a velocity to the halite TWT grid;
- 4 Obtain a time thickness for the halite (isochron);
- 5 Convert the halite isochron interval to thickness in metres using a constant velocity derived from downhole geophysical log and checkshot data, as described in the above BGS report;
- 6 Add the halite thickness to the top halite surface to obtain base halite depth.

The depth-converted modelled surfaces were exported and transferred to Geostock in xyz ASCII file format. Geostock uploaded this information into Petrel for the cavern layout design and subsequent working gas volume calculations. Geostock also prepared the fault surfaces in Petrel, based upon the

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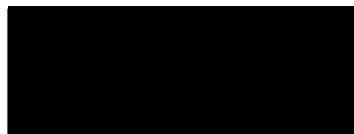
fault omission zones and Petrel interpretations for the depth converted top and base halite surfaces. The model used by Geostock was previously submitted in response to your request for the model used in the cavern design, preferably in Petrel. With this additional data we consider that we have submitted all the information requested in digital format. A spreadsheet listing all the files previously submitted on 9th and 15th May 2014 and those submitted with this letter has been uploaded to the FTP site for ease of reference.

Point 2: We confirm BGS Interpretation 2014 Version 4 is the model used. All previous versions are superseded.

Point 4: The Mott Mac GSR volume calculation spreadsheets with formulae can be made available and have been uploaded to the FTP site. However, it should be understood that the Geostock spreadsheet is part of a comprehensive software package in which Geostock have invested heavily and regard as their Intellectual Property. For commercial reasons, Geostock is understandably not prepared to make this software package publically available. To assist the assessor on this aspect, Halite/Geostock are willing to meet with Senergy to provide background on the pressures calculation procedures and would make themselves available to undertake analyses of revised cavern dimensions if Senergy do not have their own software to do this.

Our client and its team of geological and cavern design experts have endeavoured to provide the data requested as quickly as possible; however, if any further clarification or additional data is required, we will seek to assist further. If it would assist Senergy/DECC, the Halite consultant team would be willing to meet to address any specific technical queries.

Yours sincerely

A solid black rectangular box used to redact the signature of Paul Grace.

Paul Grace

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