Good afternoon Robert
Would you kindly pass the attached document to the Inspectors for their deliberation
Many thanks
Ian

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Response to Panel’s 2nd Round of Questions

FROM

THE PROTECT WYRE GROUP

REFERENCE NUMBER: 10015247

APPLICATION FOR AN UNDERGROUND NATURAL GAS STORAGE FACILITY

UNDER THE WYRE ESTUARY BY HALITE ENERGY GROUP

PLANNING INSPECTORATE REFERENCE NUMBER: EN030001
The Protect Wyre Group (PWG) response to Halite answers to the Examining Authority’s second round of questions and the PWG response to those questions.

1 Question 4

1.1 The details of E1 as given in the BGS Memoir (Wilson and Evans 1990) identify a layer of marl, grey and rock salt 0.15m in thickness in the Thornton Mudstone, 26.52m beneath the bottom of the halite bed.

Halite (5.9 p4) refers to “a series of red and grey marls (with or without gypsum)” and not rock salt.

1.2 Paragraph 5.10 (p5) shows that the present 3-D model dismisses the evidence from the E1 Bore Hole in favour of an “interpretation of salt thickness and the location of the Burn Naze Fault”.

1.3 Halite refers to descriptions “core worn away” or “core lost” recorded within the overburden mudstones and halite beds of the first drilling phase (5.8). It does not explain the recording of 5.49m of no core at the top of the Preesall Salt.

1.4 Halite does not answer the point made by PWG that the BGS Memoir identifies 5 marl bands in the halite indicating that this is the full sequence of the halite bed. At the base of the halite the bore penetrates the Thornton Mudstones which would disprove any theory that E1 is intersected by the Burn Naze Fault.

1.5 Halite makes the assumption that E1 is intersected by the Burn Naze Fault and therefore the thickness of the halite bed can be interpreted as c200m. Halite adds that if this is not the case, the Burn Naze Fault must lie further to the west under the estuary which would not pose any safety risk to the caverns 1 and 3.

1.6 However, given the limited thickness of the halite bed (perhaps as little as 81m), the height of caverns 1 to 6 would need to be reduced to between 30 and 50m depending on the cavern radius. Such a cavern becomes not only non-viable but potentially unsafe.

1.7 Drawing ending 0001 (GSR) shows that E1 lies 160m north of the section line 6 and close to the supposed position of the Burn Naze Fault. Looking at Drawing 0004 (GSR) it can be seen that if this is the Burn Naze Fault then the bottom of the E1 Bore Hole would encounter
either the Sherwood sandstone of the bottom beds of the Lower Mudstone, which it does not.
2 Question 5

2.1 The answers to Q5 from Halite are confusing. In 5.12 it states “the line (GC81-336) had not previously been interpreted and any information from it is not therefore, incorporated in the geological model”. (PWG italics)

2.2 In 5.14 (2) it states that the objective of drilling the Burrows Marsh Bore Hole (BMBH) under Barnaby’s Sands was to tie in the seismic line in that area and immediately to the east of the large omission zone related to the estuary. It should be noted that BW 123 is closer to GC81-336 than the BMBH (PWG italics).

2.3 PWG’s assumption from these statements is that the data from GC81-336 is of such poor quality that it was not used to establish the depth and thickness of the halite west of BMBH, which remains an area of considerable uncertainty.

2.4 However, Halite in its answers to PWG (28th May 2012) states “The primary evidence for the faulting shown on the model, assisted by data from boreholes and brinewells, is seismic lines GC81-336 to the south and IELP 99-25 to the north”. Thus Halite is relying on evidence for the geology on a seismic line which Halite (and the BGS) admits to be of poor quality and unusable.

2.5 When asked about confidence intervals and degrees of confidence for the depth and thickness of salt in cavern 17, Halite stated “the location is intersected by seismic line GC81-336 which helps inform Section 2-2’ appended to the GSR, so the overall geological structure is fairly well defined at this cavern”. And yet seismic line GC81-336 is of poor quality and unusable.

2.6 It should be noted that the Cote Walls Farm Bore Hole (CWFBH) lies 400m north east of the sea wall at Barnaby’s Sands. The East Barnaby’s Sands Fault runs north-south just west of the sea wall. To suggest (5.16) that the “dips of the surfaces are also proved by the dips of strata obtained in the boreholes notably the BGS drilled and fully logged CWFBH” is not justified.

3 Question 7
3.1 It is noted that when Halite was asked to produce a diagram of the East Barnaby’s Sands Fault and to explain the effect the fault has on the halite bed, Halite produced a section that was clearly inaccurate. “It was intended to assist PWG with the interpretation of the plan position of the Burrows Marsh BH with respect to the East Barnaby’s Sands Fault and the deviated borehole trajectory”. So Halite “assisted” PWG by providing a section that was incorrect.

3.2 In answer to the Inspector’s questions, instead of producing an accurate version of what is required, Halite reproduces the section from the BMBH Report of the BGS.
4 Question 13

4.1 Halite states that the Technical Assessor’s comments at the 2005/6 Public Inquiry were in relation to a larger and less well defined scheme. PWG has already pointed out that the Canatxx application refused by the Inquiry, was initially for 24 caverns. This was reduced to 20 during the course of the Inquiry. This compares with a maximum of 19 caverns operational caverns for the present proposal.

4.2 The total volume of gas which it was proposed to store was 1700 mcm, but this figure was calculated by using the height and radius of each cavern to determine volume (i.e. using the volume of a complete cylinder). It did not take into account as the present proposal does, the doming of the roof, the spacing between the cavern and the top and bottom of the salt bed and the amount of insolubles left in the cavern. Taking this into account the total amount of gas which would have been stored was shown to be 577 mcm, i.e. only two thirds of the present proposal.

4.3 Figure 1.2 in the GSR purports to show a comparison of the current application against the previous application. But this was not the application which was examined by the Public Inquiry and to which the Technical Assessor’s comments apply. It is entirely misleading for Halite to claim that its scheme has been substantially reduced when compared to the number of caverns and amount of gas storage proposed at the Inquiry.

4.4 PWG believes it has clearly demonstrated in the documents and responses it has produced that the geological data are not sufficient. Halite is now (evidence given to EA 17th September 2012) admitting that further seismic surveys will be needed following consent before the designing of the caverns can proceed. Information was given that these surveys would take about two months to complete although permission to go across an SSSI might take longer. Why, therefore, were these surveys not carried out before the application was submitted? It would appear that Halite is at long last admitting the inadequacy of its geological information.

5 Brine Well 130
5.1 The GRS includes two statements regarding Brinewell 130 which were submitted to the Public Inquiry into the second Canatxx application. BW 130 was bored by British Drilling and Freezing for ICI in 1990.

5.2 The first from Greg Robinson (16.10.2005) asserts that on one occasion when he was involved in drilling BW 130, the corer suddenly dropped 5 metres into a large void in the ground. He believed that this occurred in the rock just above the salt bed. He was instructed to fit another corer pipe and continue drilling.

5.3 A statement from Howard Mew (BDF) dated 8th December 2005, says that according to John Wood the driller, the jolt which occurred happened during another part of the drilling operation. Daily Drilling Report 14 (10th January 1990) shows no void above the salt.

5.4 PWG obtained sight of the Daily Drilling Report 13 (9th January 1990) and e-mailed Howard Mew in May 2012 seeking clarification of the entries on that report. Mr Mew replied that it was not appropriate for BDF to answer any questions from PWG.

PWG therefore contacted Halite seeking to resolve the issue (18th May 2012).

Halite replied (28th May 2012) that the application is in examination and PWG should raise the issue as part of its representation to the Examining Authority.

5.5 It was only after PWG had included a copy of DDR 13 following the EA second round of questions that Halite made any comment on the issue raised. This is in a document dated 08.08.2012 but PWG was not made aware of this until the end of August 2012.

5.6 Halite includes as appendices both DDR 13 and 14, which show that Greg Robinson was on duty from 00.00 to 12.00 hours on both these days. Neither of these records indicates that any void was encountered.

5.7 Mr Robinson has since informed PWG that the driller at the time he claims that the corer dropped was not J Wood but P Bodkin. We now have DDR No 9 (5th January 1990) for BW 130 which shows P Bodkin as the driller and G Robinson as FLR man. The Record shows that the rig was shut down from 00.00 to 07.00 (“lack of men”). The depth of the drill at this time was 118.62 m. J Wood in the absence of P Bodkin signed the report although he is not listed as one of the crew on duty on that shift.
5.8 This is the incident to which we believe Mr Robinson was referring, i.e. the jolt and the shaking of the drilling rig, for which an explanation remains to be given, although there is no void recorded on DDR No 9.

5.9 The history of salt mining and brine extraction from the Preesall Salt Bed reveals serious problems when assessing its suitability for Underground Gas Storage. The possibility of a void encountered during the drilling of BW130 is one example of a number of incidents set out in the PWG evidence on wet rockhead involving boreholes at E1, E2, Arm Hill, BW 43 and BW 117.