

Finger Lakes LPG Storage L.L.C.



July 20, 2011

Mr. Peter Briggs
Director
Bureau of Oil & Gas Permitting and Management
Division of Mineral Resources
New York State Department of
Environmental Conservation
625 Broadway, 3rd Floor
Albany NY 12233-6500

Re: *Finger Lakes LPG Storage, LLC Proposed LPG Facility; Town of Reading, Schuyler County*

Dear Peter:

This is in response to your e-mails of July 12 and 13, 2011 with regard to the additional requests for information relating to Finger Lakes' Storage Application. Enclosed please find a Work Plan related to International Gallery 10 and the work that Finger Lakes would propose to do on the wells within that Gallery, and with regard to the Gallery itself.

In addition, with regard to your question regarding the minimum thickness of LPG blanket to remain in well 33, new well FL1 and well 58, this is to confirm the following in that regard. With regard to well 58, the minimum thickness of the LPG/Nitrogen blanket that will be maintained during storage operations will be 7 feet. This is consistent with Finger Lakes' most recent response to DEC's last Notice of Incomplete Application. In addition, Finger Lakes will agree to maintain 10 feet of an LPG blanket in well 33 or if well 33 ultimately is determined not to be adequate, the same LPG blanket in the replacement well for well 33. In addition, Finger Lakes will agree to maintain a minimum LPG blanket of 10 feet in new well FL1.

Please let us know as soon as you can whether or not this information is adequate to get to a Notice of Complete Application. Thank you.

Very truly yours,

FINGER LAKES LPG STORAGE, LLC


Barry L. Moon

Enclosure

Finger Lakes LPG Storage L.L.C.



Finger Lakes LPG Storage, LLC Proposed LPG Facility; Proposed thickness of LPG Blanket for Gallery 1 and Gallery 2

Gallery 1

Well 33 minimum LPG Blanket thickness proposed is 10 feet.
Well FL1 minimum LPG Blanket thickness proposed is 10 feet.

Gallery 2

Well 58 minimum LPG/ Nitrogen Blanket thickness proposed is 7 feet.

FINGER LAKES LPG STORAGE, LLC

A handwritten signature in cursive script, appearing to read "Barry L. Moon".

Barry L. Moon

Finger Lakes LPG Storage, LLC

Work Plan to Evaluate International Gallery 10

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Exhibit A:

Well 18 Drilling Procedure

Well 57 Drilling Procedure

I. Introduction and Overview

International Gallery 10 consists of the cavern formed by wells 18, 52 and 57.

Well 18 was drilled in 1936 and a deep well pump was utilized to extract brine from this well until it was abandoned in 1942. The well was later replugged and abandoned in 1977.

Well 52 was drilled in 1972 and, along with well 57 (which was drilled in 1977), were operated as active brine injection and withdrawal wells until 1996 when both were plugged in June 1996.

The original mapped shape and outline of International Gallery 10 was determined based on a review of production records from wells 52 and 57.

On November 14, 2009, well 52 was reentered and drilled out (per DEC permit issued on November 6, 2009) and a bridge plug¹ was discovered at 2,220 ft. When the plug was completely removed, no pressure was encountered. A chart recorder had been placed on well 44 to monitor pressure in that well. The recorder showed there was 25 psig on well 44; this demonstrated no communication to well 52 since there was no pressure encountered on well 52, thus showing the isolation of the caverns.

At the same time, Baker Atlas also ran a segmented cement bond log and a microvertilog on the well after it was drilled out to a depth of 2,680 feet. A well valve was then installed and closed. A directional survey for well 52 (also provided to the DEC) was completed on November 17, 2009. The sonar for well 52 was inconclusive because the entire length of pipe to the bottom of the cavern was completely surrounded by cement. Only the bottom 34 feet of the sonar indicated a solution mined cavern was open. The logs (including the sonar survey and directional survey) for this activity at well 52 were provided to the DEC with Finger Lakes' May 14, 2010 Reservoir Suitability Report.

The initial Finite Element Analysis ("FEA") included with Finger Lakes' May 14, 2010 Reservoir Suitability Report discussed the effect of the pillar distance between the galleries (proposed Finger Lakes Gallery 1 and International Gallery 10), and stated that some micro-cracks and fissures might have been induced in the pillars during the brine storage. The FEA concluded that this was due to the relatively large 34/44 LPG gallery compared to small cavern spacing of 166 ft. Because of the lack of precise data regarding International Gallery 10, certain conservative assumptions were made in the FEA relating to pressure, location and the size of the cavern associated with International Gallery 10. The revised FEA (submitted with Finger Lakes' September 28, 2010 submission) provided an explanation of the conservative assumptions incorporated into the FEA.

¹ Well 52 had been previously plugged and abandoned on April 11, 1996.

Based on all available information, the largest area of the International Gallery 10 cavern is around wells 57 and 18; most of the dissolution was near those wells and not well 52 since the latter was primarily the production well and the casing and cement bond are intact.

In summary, Finger Lakes has provided a very conservative FEA of a future operational Finger Lakes Gallery 1 vs. a potentially leaking International Gallery 10. That FEA determined that the lack of pressure in International Gallery 10 would not affect or be affected by LPG operation of the proposed Finger Lakes Gallery 1. In addition, based on the fact well 52 cement bond was intact all the way to the bottom of the production casing, Finger Lakes concluded the possible leakage in International Gallery 10 was through well 18, but with few records to support evaluation of its integrity.

The purpose of this overview has been to set the stage for additional evaluation Finger Lakes is proposing to conduct not only in Well 18, but also Wells 52 and 57, of which are part of International Gallery 10, to provide further assurance that there is no connection between Finger Lakes Gallery 1 and International Gallery 10 and that Gallery 10 is tight. The specific work identified in the Work Plan below will be done in coordination with DEC as noted in Section IV below.

II. Work Plan

Finger Lakes will initially install a wellhead and carefully drill out whatever plugs may be in place for Wells 18 and 57. Once the wells are drilled to their original total depth, cement bond and casing inspection logs will be obtained for each well. In addition, a sonar will be attempted on one of these wells to determine more precisely (instead of through historical production records) the shape of International Gallery 10 and the location and its southernmost wall or pillar. All logs and sonars and other documentation will be provided to DEC upon completion.

Once the wells have been drilled out and logged, Finger Lakes will evaluate the logs and sonar and prepare a recommended course of action with regard to whether each well can be completed to be used as a monitoring well or plugged and abandoned. Once an agreement has been reached with DEC as to how to treat each of these wells as noted, a separate procedure will be developed by Finger Lakes for submission and approval to DEC. Work may only begin on the completion of the well for monitoring purposes or for plugging and abandonment only upon the approval of DEC.

After the work over of wells 18 and 57 is completed, a hydrostatic pressure test will be performed on International Gallery 10 (wells 18, 52 and 57). Depending on the results of the well procedures set forth above, it may be necessary to run a liner or packer in one of these wells to accommodate the pressure test.

III. Schedule

Finger Lakes proposes to undertake the work referenced in the work plan above and the well procedures attached as Exhibit A immediately upon approval of the work plan and when an underground storage permit for Finger Lakes is issued.

However, even if this work cannot be completed before Finger Lakes Gallery 1 is ready for storage operations, as part of Finger Lakes' Cavern Development Plan, it has agreed to install a well nearby to replace Well 44 (which will be plugged and abandoned) and this new well will be used to monitor any unusual pressure changes in Gallery 1 in such a way to ensure that there is no connection made between Finger Lakes Gallery 1 and international Gallery 10.

IV. Coordination with DEC

As noted above, this work plan must be approved by the DEC and the well drilling/workover permits issued before work may commence. Once initial workovers are complete on wells 18 and 57, Finger Lakes will notify DEC and provide all documentation of the work that has been done on all wells (18, 52 and 57) along with a recommendation of whether either well can be used as a monitoring well or must be plugged and abandoned. This recommendation will be accompanied by the procedure to convert the well for monitoring purposes or for plugging and abandonment. Well conversion or plugging and abandonment will not commence until DEC has approved the procedure to do so.

In addition, Finger Lakes will coordinate its pressure test with DEC, particularly in light of the results from the well workovers and resulting logs. The pressure test will not commence until DEC has approved of the procedure to do so.

Exhibit A

Well Drilling Procedures

Well #18

Existing Casing

14" , 46#, J55

10 3/4" , 40.5#, J55

@ 10' Conductor

@ 588'

Proposed Procedure

1. Grade road and location if necessary.
2. Move in and rig up drilling service rig. Notify DEC Inspector
3. Nipple up on 10 3/4" Casing w/ 11" 3000 # BOP & Air Bowl & Test to 500 psig for 10 minutes.
4. Pick up 9 7/8" bit, Drill cement to original TD 2494" W/Brine
5. TOH standing back & Laydown bit
6. Secure well and rig down.
7. Perform Sonar, Directional Survey, HR Vertilog and Gamma Ray Segmented Bond Log on well and casing. To be used for evaluation.

Note: All zones that require cementing will be evaluated and the final completion plans/abandonment plans will be discussed with DEC Region 8 for agreement of the procedures for wells 18,52 and 57.

Well #57

Existing Casing

8 5/8", 32#, J55 2764'

@ 2760' cemented to surface

Proposed Procedure

1. Grade road and location if necessary.
2. Move in and rig up drilling service rig. Notify DEC Inspector
3. Nipple up on 8 5/8" Casing w/ 11" 3000 # BOP & Air Bowl & Test to 500 psig for 10 minutes.
4. Pick up 7 7/8" bit, Drill cement to TD 2770' W/Brine Fluid
5. TOH standing back & Lay down Bit.
6. Secure well and rig down.
7. Perform Sonar, Directional Survey, HR Vertilog and Gamma Ray Segmented Bond Log on well and casing. To be used for evaluation

Note: All zones that require cementing will be evaluated and the final completion plans/abandonment plans will be discussed with DEC Region 8 for agreement of the procedures for wells 18, 52 and 57.