NYSDEC OHMS Document No. 201166576-00052

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of Application of Finger Lakes LPG Storage, LLC

Application No. 8-4432-00085

FINGER LAKES LPG STORAGE, LLC'S
POST-ISSUES CONFERENCE REPLY BRIEF

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I. Introduction

Pursuant to the schedule established in Chief Administrative Law Judge McClymond's memorandum of March 12, 2015, Finger Lakes LPG Storage, LLC ("Finger Lakes LPG Storage" or the "Applicant") submits this Post-Issues Conference Reply Brief in connection with the issues conference held on February 12 and 13, 2015. Finger Lakes LPG Storage has applied for a permit to construct and operate a new liquefied petroleum gas ("LPG") storage facility for the storage and distribution of propane and butane on a portion of a 576-acre parcel in the Town of Reading, Schuyler County (the "Project"). Petitions for Full Party Status were submitted by Gas Free Seneca, Seneca Lake Pure Waters Association ("SLPWA"), and Seneca Lake Communities ("SLC"). Petitions for Amicus Party status were submitted by Schuyler County Legislators Harp and Lausell ("Harp and Lausell"),[1] the Finger Lakes Wine Business Coalition ("FLXWBC" or "Wine Business Coalition"), New York Propane Gas Association ("NYPGA"), National Propane Gas Association ("NPGA"), Propane Gas Association of New England ("PGANE"), and the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union ("USW"). Based on the contents of the petitions for party status, the application and related documents, the draft permit, the written submittals presented by the Applicant, the issues conference proceedings, and this Post-Issues Conference Reply Brief, petitioners have failed to raise any issues for adjudication. As conditioned in the draft permit, the Applicant has shown that it will meet the statutory and regulatory criteria applicable to the Project and that therefore there are no adjudicable issues and the permit for the Project should be issued.

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[1] In their Post-Issues Conference Brief, Harp and Lausell attempt to convert their Petition for Amicus Status to one for full Party Status. As discussed in the body of this Post-Issues Conference Reply Brief, this "late filed petition" should be rejected.

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II. There is No Basis to Adjudicate the Project's Impact on Community Character

Petitioners offer as an issue for adjudication the DSEIS's alleged insufficient analysis of the Project's impacts on regional "community character." Specifically, petitioners argue that the Project's alleged "industrialization" of the Finger Lakes conflicts with a purported region-wide "desire to preserve local rural character and cement the region's trajectory toward becoming a recognized center for agri-business, viticulture, and tourism" or "a shared desire to break decisively with the region's late 20th century industrial stigma, toward a future that is more bucolic, clean, and environmentally and economically sustainable."[2] Like their assertions on the issue articulated earlier in this proceeding, the community character arguments included in petitioners' Post-Issues Conference Briefs are legally and factually devoid of merit in multiple respects.

A. Community Character Cannot Be Adjudicated as a Separate Issue

As discussed at length in Finger Lakes LPG Storage's Initial Brief (at 6-15), it is well established by multiple Commissioner's decisions starting 11 years ago with St. Lawrence Cement that the Project's consistency with community character is not adjudicable as a separate issue. See Red Wing Properties, Inc., Interim Decision of the Commissioner, 2010 N.Y ENV LEXIS 31, at *15-18 (NYSDEC 2010); Crossroads Ventures, LLC, Interim Decision of the Deputy Commissioner, 2006 N.Y. ENV LEXIS 88, at *77-78 (NYSDEC 2006); St. Lawrence Cement Co., LLC, Second Interim Decision of the Commissioner, 2004 N.Y. ENV LEXIS 60, at *136-139 (NYSDEC 2004).

St. Lawrence Cement, Crossroads Ventures, and Red Wing Properties each articulate the same and now well-established rule that community character impacts cannot be separately adjudicated under the Department's Part 624 permit hearing procedures. 2010 N.Y ENV LEXIS

[2] Seneca Lake Communities Post-Issues Conference Brief ("SLC Brief") at 4, 14.

31, at *15-18; 2006 N.Y. ENV LEXIS 88; 2004 N.Y. ENV LEXIS 60, at *136-139. For purposes of analyzing a project's impacts on community character under SEQRA, the Department will primarily rely on and defer to truly local land use plans as the standard. Id. While additional information on community character can be incorporated into the SEQRA record and considered in making findings at the conclusion of the SEQRA process, the Department will not adjudicate or attempt to resolve different perspectives on community character in the context of an adjudicatory hearing. St. Lawrence Cement, 2004 N.Y. ENV LEXIS 60, at *141 (holding that resolution of "differing perspectives" on a project's consistency with purported community development trends was so inherently subjective as to defy adjudication: "The parties' positions amount to differences of opinion about which particular community values and trends deserve protection."). Rather, after the record is developed on particular environmental issues, the impacts of those issues on community character will be determined at the conclusion of the SEQRA process. Red Wing Properties, 2010 N.Y ENV LEXIS 31, at *15-18; Crossroads Ventures, 2006 N.Y. ENV LEXIS 88, at *78-79; St. Lawrence Cement, 2004 N.Y. ENV LEXIS 60, at *136-39.

While petitioners assert in conclusory fashion (and incorrectly) that the decisions in St. Lawrence Cement, Crossroads Ventures, and Red Wing Properties do not prohibit the separate adjudication of community character, none of the petitioners have cited to a single Commissioner's decision issued since St. Lawrence Cement where community character was held to be adjudicable.

Although Finger Lakes LPG Storage's Response to Party Status Petitions (filed February 9, 2015) cited St. Lawrence Cement, Crossroads Ventures, and Red Wing Properties in

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demonstrating that community character cannot be adjudicated as a separate issue,[3] neither during the Issues Conference nor in their Post-Issues Conference Briefs have petitioners addressed the Commissioners' clear holdings in those decisions. Instead, petitioners cite various superseded or off-point decisions that do not disturb the now well-established rule that community character cannot be separately adjudicated. For example, with only one irrelevant exception,[4] all of the Commissioners' decisions cited by petitioners were decided before St. Lawrence Cement established the rule that community character cannot be separately adjudicated, and those decisions are thus superseded by St. Lawrence Cement and its progeny.[5]

Petitioners curiously argue that Village of Chestnut Ridge v. Town of Ramapo, 45 A.D.3d 74 (2d Dep't 2007), somehow supports the proposition that community character can be separately adjudicated.[6] But, as discussed in Finger Lakes LPG Storage's Initial Brief (at 24-25), Village of Chestnut Ridge is a SEQRA standing decision that has nothing to do with whether community character is a separately adjudicable issue under the Department's Part 624 permit hearing procedures (the Department was not even a party in Village of Chestnut Ridge). 45 A.D.3d at 94-95, 97. While Village of Chestnut Ridge (like Chinese Staff & Workers Assn.

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[3] Finger Lakes LPG Storage's Response to Party Status Petitions § III.A.

[4] In Besicorp-Empire Dev. Co., LLC – which was decided only two weeks after St. Lawrence Cement – the Commissioner adopted an ALJ decision (issued well before St. Lawrence Cement) which held that a party's community character arguments "were without merit." 2004 N.Y. ENV LEXIS 64, at *7 (cited in Gas Free Seneca's Post-Issues Conference Brief "GFS Brief" at 76). Because the underlying community character arguments were held meritless by the ALJ, the Commissioner in Besicorp-Empire had no reason to address whether community character was separately adjudicable. Accordingly, the Commissioner's decision in Besicorp-Empire does not contradict the holdings in St. Lawrence Cement, Crossroads Ventures, and Red Wing Properties that community character cannot be separately adjudicated.

[5] SLC Brief at 9; GFS Brief at 76. Gas Free Seneca cites an unreported ALJ's Ruling on Issues and Party Status in Cobleskill Stone Products, Inc., DEC Project No. 4-4342-00001/000019 (July 23, 2008), which decided that community character could be separately adjudicated. GFS Brief at 76. It appears that Cobleskill Stone is the only ALJ issues ruling in the 11 years since St. Lawrence Cement to find that community character can be separately adjudicated – and it also appears that Cobleskill Stone has never been cited for this proposition. Inasmuch as Cobleskill Stone contradicts the holdings in St. Lawrence Cement, Crossroads Ventures, and Red Wing Properties that community character cannot be separately adjudicated, it appears to be an incorrectly decided outlier.

[6] SLC Brief at 9.

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v. City of New York, 68 N.Y.2d 359, 366-367 (1986)) recognized that community character is included within the definition of "environment" under SEQRA, that is an entirely different question from whether community character can be separately adjudicated. 45 A.D.3d at 94. Indeed St. Lawrence Cement, Crossroads Ventures, and Red Wing Properties each recognized community character as a SEQRA issue while simultaneously holding that it could not be separately adjudicated. 2010 N.Y. ENV LEXIS 31, at *15-18; 2006 N.Y. ENV LEXIS 88, at *77-78; 2004 N.Y. ENV LEXIS 60, at *136-139. So long as the Department takes a "hard look" at community character impacts and makes a "reasoned elaboration" of the basis for its determination prior to the conclusion of the SEQRA process, the Department's substantive SEQRA obligations are properly discharged (regardless of whether the issue is adjudicated).[7] See Chinese Staff, 68 N.Y.2d at 363-364.

Based on the well-established Commissioner precedent articulated in St. Lawrence Cement, Crossroads Ventures, and Red Wing Properties, the Project's consistency with community character cannot be separately adjudicated under the Department's Part 624 permit hearing procedures.

B. The Project is Consistent with Community Character, and the Evaluation of the Project's Community Character Impacts Complies With SEQRA

While it is clear that the Project's consistency with community character cannot be separately adjudicated under the Department's Part 624 permit hearing procedures, a review of the record and the law demonstrates that petitioners' community character arguments are substantively devoid of merit as well. The controlling local land use plans of the host communities – the Town of Reading and Schuyler County – establish that the Project is consistent with community character. And there is no merit to petitioners' contention that

[7] One petitioner spends several pages of its brief arguing that "SEQRA Requires Consideration of Impacts to Community Character" – a point which is not in dispute in this matter. SLC Brief at 5-8.

SEQRA required analysis of the Project's consistency with local land use plans in remote non-host communities where the Project will have no environmental impacts. Petitioners' contention that the Project is inconsistent with an amorphous and ad hoc regional community character (or "sense of place") cobbled together from their interpretations of various cherry-picked land use plans has no legal basis and violates established SEQRA precedent. Petitioners' community arguments are ultimately a thinly-veiled attempt to misuse SEQRA as a mechanism to veto the local land use policies of the Town of Reading and Schuyler County with which petitioners disagree – in clear violation of home rule, Department policy, and Commissioner precedent.

And even if the DSEIS for the Project could have theoretically included a greater amount of explicit analysis on community character, the SEQRA record now includes a vast amount of information on the subject. Whatever objections petitioners may have had to the extent of the community character analysis in the DSEIS have now been addressed as the record contains more than sufficient information for the Department to take the requisite "hard look" at the Project's community character impacts before issuing its findings.

1. The Controlling Local Land Use Plans of the Host Communities Demonstrate that the Project is Consistent with Community Character

As discussed in detail in Finger Lakes LPG Storage's Initial Brief (at 16-23), the Project is consistent with the land use plans adopted by the communities where the Project will be located – the Town of Reading and Schuyler County – which the Department primarily relies upon in defining community character. These land use plans conclusively establish that the local community character includes ongoing industrial development like the Project.

As noted above, the "Department, to a large extent, relies on local land use plans as the standard for community character." Crossroads Ventures, 2006 N.Y. ENV LEXIS 88, at *77; St. Lawrence Cement, 2004 N.Y. ENV LEXIS 60, at *137 (identical language); Red Wing

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Properties, 2010 N.Y. ENV LEXIS 31, at *15 ("The character of a community can be determined mainly by local land use plans and local zoning ordinances."). "Adopted *local plans* are afforded deference in ascertaining whether a project is consistent with community character." St. Lawrence Cement, 2004 N.Y. ENV LEXIS 60, at *137 (emphasis added).

Here, the Project is consistent with the adopted land use plan of the host municipality – the Town of Reading – which the Department must primarily rely upon and defer to in defining community character. Red Wing Properties, 2010 N.Y. ENV LEXIS 31, at *15; Crossroads Ventures, 2006 N.Y. ENV LEXIS 88, at *77; St. Lawrence Cement, 2004 N.Y. ENV LEXIS 60, at *137. The Town of Reading Comprehensive Plan ("TRCP") recognizes that the town "has a well-balanced tax base because of such non-residential properties as the Nobel-Akzo salt plant, the Texas Eastern gas pipeline facilities, the two railroad lines, and several tourist businesses."[8] "New large-scale business uses" such as the Project are allowed in the Town of Reading by special permit (TRCP at 3), and Finger Lakes LPG Storage submitted an Application for Special Permit Approval to the Town of Reading Planning Board on September 1, 2009; this application remains pending subject to resolution of the SEQRA process but the Town of Reading Planning Board has held two public hearings on the Project.[9] As also noted in the DSEIS, multiple underground liquefied petroleum gas or natural gas storage facilities are already present in the Town of Reading.[10]

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[8] TRCP at 1. The TRCP is available at www.schuylercounty.us/DocumentCenter/View/1380. The Chief ALJ may take official notice of the TRCP and the Schuyler County Countywide Comprehensive Plan under CPLR 4511(b) and 6 NYCRR § 624.9(a)(6).

[9] DSEIS, Appendix A; see, e.g., Juda Const., Ltd. v. Spencer, 21 A.D.3d 898, 900 (2d Dep't 2005) ("A use permitted by special exception use permit is a use that has been found by the local legislative body to be appropriate for the zoning district and 'in harmony with the general zoning plan and will not adversely affect the neighborhood.'") (quoting leading case, North Shore Steak House v. Bd. of Appeals of Inc. Vil. of Thomaston, 30 N.Y.2d 238, 243 (1972)).

[10] DSEIS § 4.1.3.1.

Those existing underground storage facilities in the Town of Reading also demonstrate the error in SLC's argument that the Project would violate Section 4.10-2 of the Town of Reading's land use law ("Reading Law").[11] While Section 4.10-2(c) of the Reading Law generally prohibits storage of hazardous material east of Route 14 "at a scale larger than that of an ordinary household," the law exempts from that prohibition materials "in sealed or unopened containers for resale." Town of Reading officials have informed Finger Lakes LPG Storage that salt caverns like those to be used in the Project are treated as "sealed containers" under the Reading Law, which interpretation is confirmed by the existing underground hydrocarbon storage facilities in the immediate vicinity of the Project's proposed location. Moreover, the Town of Reading Planning Board has held two public hearings on the Project and never once suggested that the Project would violate Section 4.10-2 of the Reading Law.

Numerous provisions of the Schuyler County Countywide Comprehensive Plan – the other relevant land use plan from a local host community entitled to deference under Department precedent – also demonstrate that the Project is consistent with community character.[12] See Red Wing Properties, 2010 N.Y ENV LEXIS 31, at *15-16; Crossroads Ventures, 2006 N.Y. ENV LEXIS 88, at *77; St. Lawrence Cement, 2004 N.Y. ENV LEXIS 60, at *137. It is also notable that neither the Town of Reading nor Schuyler County oppose the Project and are not part of petitioner "Seneca Lake Communities." In fact, upon referral from the Town of Reading Planning Board (pursuant to General Municipal Law § 239-m), on October 1, 2009, the members of the Schuyler County Planning Commission passed a resolution recommending approval of the Project (designed at that time with a larger brine pond), which is further evidence that the Project is consistent with community character. In addition, the Schuyler County Legislature passed a

[11] SLC Brief at 18.

[12] Finger Lakes LPG Storage's Initial Brief (at 18-20).

resolution in support of the Project in 2014, which demonstrates that the legislature views the Project as consistent with community character.[13]

The local land use plans of the Town of Reading and Schuyler County demonstrate that the Project is consistent with community character, and petitioners' assertions to the contrary are baseless.

2. Community Character Analysis Under SEQRA Does Not Require Evaluation of the Project's Consistency With Land Use Plans From Remote Non-Host Communities Where the Project Will Have No Environmental Impacts

Petitioners assert that the Project will violate community character because, in their view, the Project (or any other kind of industrial development) is inconsistent with a purported region-wide "trajectory toward [the entire Finger Lakes] becoming a recognized center for agri-business, viticulture, and tourism."[14] Instead of basing their community character analysis primarily on the land use plans from the Town of Reading and Schuyler County, as required by Commissioner precedent, petitioners' community character arguments are instead overwhelmingly predicated on land use plans from municipalities where the Project will not be located – some more than 30 miles from the proposed Project site – and where the Project will have no environmental impacts.[15] For example, one petitioner's brief includes 17 references to land use plans from remote non-host communities, while the Town of Reading Comprehensive Plan is cited only once (for the general proposition that development that changes the town's character is discouraged) and the Schuyler County Countywide Comprehensive Plan is totally ignored. There is no legal basis to petitioners' contention that SEQRA requires an evaluation of

[13] Schuyler County Legislature Resolution No. 213 of 2014 (available at: www.schuylercounty.us/DocumentCenter/View/2149).

[14] SLC Brief at 4.

[15] SLC Brief at 12-13 (citing land use plans from the Town of Fayette, the Town of Geneva, and the City of Geneva, all of which are more than 30 miles from the proposed Project site).

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the Project's consistency with the land use plans of remote non-host communities from throughout the greater Finger Lakes region where the Project will have no detectable environmental impacts.[16] Simply put, and as recognized in St. Lawrence Cement and its progeny, SEQRA requires evaluation of the Project's consistency with the character of the communities where the Project will potentially result in actual environmental impacts – primarily the host communities – and not every municipality in the amorphous Finger Lakes "region" as petitioners' erroneously contend. Ultimately, petitioners' arguments are tantamount to an improper effort by outside municipalities to use SEQRA to override home rule and the ability of the Town of Reading and Schuyler County to define the character of their own community.

None of the cases cited by petitioners support the proposition that the community character analysis mandated under SEQRA required evaluation of the Project's consistency with land use plans from remote non-host communities throughout the entire Finger Lakes region. Petitioner's attempted reliance on St. Lawrence Cement is especially odd because the Commissioner in that case specifically rejected a regional community character argument nearly identical to that petitioners advance here.[17] St. Lawrence Cement recognized that because certain environmental effects (air and visual impacts in that case) can cross municipal boundaries, the effects of those issues on the community character of the adjacent municipalities should be evaluated under SEQRA. 2004 N.Y. ENV LEXIS 60, at *139-144. However, the Commissioner found that the "the geographic scope of the inquiry depends on the nature of the impact," and the Commissioner "rejected" the "contention that impacts on the entire Hudson Valley must be considered" in evaluating the project's consistency with community character. Id. at *144. In other words, the "geographic scope" of a community character analysis required

[16] See also, Finger Lakes LPG Storage Initial Brief (at 23-26).

[17] SLC Brief at 7.

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under SEQRA is limited to those communities where the project will cause an actual environmental impact. Id.

St. Lawrence Cement demonstrates one of the fatal flaws in petitioners' arguments: the failure to articulate any environmental impact nexus between the Project and the various land use plans from remote municipalities that petitioners claim the Project is inconsistent with. Id. Contrary to petitioners' assertions, SEQRA does not require analysis of the Project's consistency with the community character or land use plans of distant municipalities like Town of Fayette, the Town of Geneva, and the City of Geneva – all cited in petitioner's brief and each more than 30 miles from the proposed Project site – where the Project will have no environmental impacts.[18] Id. As petitioners' community character arguments are overwhelmingly based on land use plans from municipalities where the Project will have no empirical environmental effects, those arguments are fundamentally devoid of merit under St. Lawrence Cement. Id.

The judicial decisions cited by petitioners also do not support their contention that SEQRA required the analysis of community character to include an evaluation of the Project's consistency with land use plans from remote municipalities throughout the Finger Lakes region. In Village of Chestnut Ridge v. Town of Ramapo, 45 A.D.3d 74 (2d Dep't 2007), and its follow-up case, Village of Pomona v. Town of Ramapo, 94 A.D.3d 1103 (2d Dep't 2012), the village petitioners located within the Town of Ramapo claimed that the town failed to comply with SEQRA in enacting local zoning laws impacting real property directly adjacent to the village borders.[19] In both Village of Chestnut Ridge and Village of Pomona, the court held that "power to define the community character is a unique prerogative of a municipality acting in its governmental capacity." 94 A.D.3d at 1106; 45 A.D.3d at 94-95. The court ultimately held in

[18] SLC Brief at 12-13.

[19] SLC Brief at 7; GFS Brief at 84 n.90.

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both cases that because a "substantial development in an adjoining municipality can have a significant detrimental impact on the character of a community," the villages had "established a 'demonstrated interest in the potential environmental impacts'" of the challenged zoning actions. Id.

At most, Village of Chestnut Ridge and Village of Pomona stand for the proposition that a municipality may have standing under SEQRA in a New York Court to challenge whether a land use decision in an immediately adjacent municipality sufficiently analyzed potential impacts on the community character of a bordering municipality. Id. Given the focus in those cases on the direct physical proximity of zoning changes to the borders of the villages in evaluating potential community character impacts, the decisions undercut petitioners' argument that SEQRA requires analysis of the Project's alleged impacts on the community character of the entire Finger Lakes region or land use plans from municipalities located nowhere near the Project site where the Project will have no environmental impacts.

Nor does anything in Wal-Mart Stores Inc. v. Planning Bd. of Town of North Elba, 238 A.D.2d 93 (3d Dep't 1998), support petitioners' arguments. The court in Wal-Mart Stores sustained the decision of a town planning board to deny the application for a proposed Wal-Mart store because "it did not satisfy the relevant criteria set forth in the Town Land Use Code." 238 A.D.2d at 97. While the court upheld the planning board's conclusion that the proposed Wal-Mart would be inconsistent with community character, the board's determination was based on the land use plan of the host town itself, and the decision does not indicate any consideration of the land use plans of remote municipalities from elsewhere in the region. Id. at 99. The phrase "Lake Placid region" in Wal-Mart Stores (quoted by multiple petitioners) was used merely in the context of the court explaining why little weight was given to a commercial property values

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study proffered by Wal-Mart ("most of the areas studied are not truly comparable to the Lake Placid region"); the text does not provide any support for the community character arguments advanced by petitioners here.[20] Id.

Not only do petitioners' peculiar community character arguments lack any legal foundation, they would also lead to absurd and unworkable results under SEQRA. If, as petitioners erroneously contend, SEQRA required evaluation of the Project's consistency with land use plans from remote municipalities throughout the Finger Lakes region where the Project will have no empirical environmental impacts, it would be impossible for an applicant to limit the "geographic scope" of the community character analysis. See St. Lawrence Cement, 2004 N.Y. ENV LEXIS 60, at *144. There are literally hundreds of municipalities in the Finger Lakes region, and petitioners suggest that the DSEIS was required to evaluate the Project's consistency with the land use plans from some undefined and unknowable fraction of those communities. No judicial or administrative decision has ever interpreted the requirements of SEQRA in the untenable manner suggested by petitioners.

As previously noted by Finger Lakes LPG Storage, neither the Town of Reading, Schuyler County, nor any of the other six towns in Schuyler County oppose the Project. Most of the municipalities comprising petitioner "Seneca Lake Communities" are located nowhere near the Town of Reading or the proposed Project site; for example, the Town of Ithaca, the Town of Ulysses, the Town of Fayette, and the City of Geneva are each located at least 35 miles from the Town of Reading. Petitioners' arguments that these remote municipalities can define the community character in the Town of Reading and effectively override the comprehensive plans of the Town of Reading and Schuyler County cannot be reconciled with either the holding in Village of Chestnut Ridge that the "power to define the community character is a unique

[20] SLC Brief at 7-8, GFS Brief at 84 n.90.

prerogative of a municipality acting in its governmental capacity" (45 A.D.3d at 94) or the law that "SEQRA does not alter the jurisdiction between or among" agencies. Ames v. Johnston, 169 A.D.2d 84, 86 (3d Dep't 1991) (citing ECL § 8-0103(6)). Because SEQRA does not require evaluation of the Project's consistency with land use plans from remote communities where the Project will have no empirical environmental impacts, petitioners' arguments regarding the alleged insufficiency of the community character analysis in the DSEIS fail to raise a substantive and significant issue for adjudication.

3. Petitioners' Community Character Arguments Based on the Flad Memo Must Be Rejected

In addition to improperly attempting to rely on land use plans from distant municipalities, petitioners also rely on the "Community Character Analysis" prepared by Harvey K. Flad ("Flad Memo," submitted as Exhibit 5 to the Gas Free Seneca petition) in asserting that the Project is inconsistent with community character. Petitioners' community character arguments based on the Flad Memo must be rejected because the methodology underlying the Flad Memo is inherently flawed under SEQRA.

As previously noted, community character is "determined mainly by local land use plans and local zoning ordinances." Red Wing Properties, 2010 N.Y. ENV LEXIS 31, at *15. To the extent a party also attempts to define community character based on "differing perspectives" on local development trends, it is well established that subjective "differences of opinion about which particular community values and trends deserve protection" cannot be effectively adjudicated under the Department's Part 624 permit hearing procedures – which is one of the principal reasons a project's consistency with community character cannot be separately adjudicated in the first place. See St. Lawrence Cement, 2004 N.Y. ENV LEXIS 60, at *141.

Here, as noted above, the Project is consistent with the adopted land use plan of the host municipalities – the Town of Reading and Schuyler County – which the Department must primarily rely upon and defer to in defining community character. Although purporting to be a "Community Character Analysis," the Flad Memo does not even mention the Town of Reading Comprehensive Plan. Instead, the Flad Memo employs a much more inherently subjective methodology based on a "multi-disciplinary examination of 'natural physical features, history, demographics and socioeconomics, and culture.'"[21] Relying also on "personal interviews with leading community members," the Flad Memo concludes that "the role of natural beauty and an agricultural landscape, including viticultural landscape, are central to the Finger Lakes region's sense of place over time and to the banding of the emerging tourism economy" – and "that the industrialization represented by the Project," which (according to Dr. Flad) "is at odds with the cultural landscape of the Finger Lakes wine country… represents a significant adverse effect on community character."[22] Clearly, the leaders of the Town of Reading and Schuyler County responsible for drafting the town local zoning law (under which the Project is a permitted use by special permit) and the town and county comprehensive plans, and those town and county leaders that have decided not to oppose the Project, do not share Dr. Flad's perspective that the Project is inconsistent with community character. While the Flad Memo's analysis of community character is fundamentally flawed (as discussed below), it is clear that the Department's Part 624 permit hearing procedures cannot be utilized to resolve the merit of his subjective opinions in any event. St. Lawrence Cement, 2004 N.Y. ENV LEXIS 60, at *141.

As previously detailed in Finger Lakes LPG Storage's Response to Party Status Petitions (at 7-9), less than three pages of the 39-page Flad Memo actually discuss the Project's purported

[21] GFS Brief at 81.

[22] GFS Brief at 83 (citing Flad Memo at 4, 34-40).

environmental impacts on community character; and the "analysis" of the Project's alleged visual, traffic, and noise impacts in those pages consists entirely of unsubstantiated, subjective, and conclusory opinions without any technical basis whatsoever. Instead, the conclusions in the Flad Memo are predicated on a purported and vague "understanding" of the Project's existence which will ostensibly disturb the regional "sense of place."[23] Hypothetical adverse emotional/psychological reactions to the mere knowledge that the Project exists, as opposed to a quantifiable assessment of the Project's actual environmental impacts, are not recognized under SEQRA. Oneida-Herkimer Solid Waste Mgmt. Auth., Rulings of the ALJ on Party Status and Issues, 2001 WL 112141, *47 (NYSDEC 2001) ("psychological impacts are not recognized as environmental impacts"); see also, e.g., Industrial Liaison Committee of the Niagara Falls Area Chamber of Commerce v. Williams, 72 N.Y. 2d 137, 143 (1988) (SEQRA agencies may "ignore speculative environmental consequences"); Buffalo Crushed Stone, Inc., Decision of the Commissioner, 2008 N.Y. ENV LEXIS 69, at *17 (NYSDEC 2008) ("mere expressions" of "opinions without substantiation are insufficient to establish that an issue is substantive and significant").

Accordingly, petitioners' community character arguments based on the Flad Memo must be rejected.

4. Preparation of a Revised DSEIS is Not Necessary

Petitioners argue that a revised DSEIS must be prepared and resubmitted for public comment because the DSEIS does not include sufficient analysis of the Project's community character impacts.[24] Petitioners' argument must be rejected because their assertions regarding

[23] Flad Memo at 34.

[24] GFS Brief at 12-16, 78-79; SLC Brief at 16 n.7.

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the content of the DSEIS are incorrect and the SEQRA record includes more than sufficient information on community character to satisfy the applicable "hard look" standard.

One petitioner asserts that evaluation of the Project's community character impacts is insufficient because the DSEIS "leaves out issues that are crucial to understanding Seneca Lake community values and trends – including historic sites and districts, recreational uses, official local and regional plans, and socio-economic development over time."[25] These assertions are incorrect, as detailed below:

- Archeological and historic resources in the Project area are discussed in Sections 4.1.1.1 and 4.5.2 of the DSEIS. Section 4.1.1.1. notes that the New York State Office of Parks, Recreation and Historic Preservation concluded in October 2009 that the Project will have no impacts (including visual impacts) upon cultural resources or properties either included in or eligible for inclusion in the New York State or National Register of Historic Places.

- Recreational uses are analyzed in Section 4.5.2 of the DSEIS, which concluded, among other things, that the Project would not be visible from any: State Wildlife Management Areas; National Wildlife Refuges or State Game Refuges; National Natural Landmarks; State Wild, Scenic and Recreational Rivers; State or Natural Preserve Areas; or National Parks, Recreation Areas, Seashores or Forests.

- The economic benefits of the Project were analyzed in Section 3.3.5 of the DSEIS. Moreover, the SEQRA record also includes the report entitled "Economic and Fiscal Impact of the Finger Lakes LPG Storage Project" prepared by the economists at Camoin Associates, which was submitted with and discussed in Finger Lakes LPG Storage's Response to Party Status Petitions (at 11-12).

And as demonstrated in Finger Lakes LPG Storage's Initial Brief (at 12-14), ultimate findings regarding the Project's potential community character impacts will be made at the conclusion of the SEQRA process and will be based on the now further enhanced SEQRA record. Even assuming, arguendo, that the DSEIS could have included a greater amount of explicit analysis on community character, it is now difficult to imagine any SEQRA record having a more comprehensive treatment of a project's potential impacts on community character

[25] GFS Brief at 78.

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than the record now established as a result of the issues conference. Thus, whatever objections petitioners may have had to the extent of the community character analysis included in the DSEIS have now been addressed, and the record contains more than sufficient information for the Department to take the requisite "hard look" at the Project's community character impacts before issuing its findings.[26]

Accordingly, preparation of a revised DSEIS is not necessary.

III. The Analysis of Alternatives in the DSEIS Complies with the Requirements of SEQRA

Petitioners argue that the analysis of alternatives to the Project in the DSEIS does not satisfy SEQRA because (1) the DSEIS does not adequately evaluate the "no action" alternative and (2) certain specified alternatives to the Project are not evaluated. As detailed in Finger Lakes LPG Storage's Initial Brief (at 26-41), the analysis of Project alternatives in the DSEIS fully complies with the requirements of SEQRA.

A. The DSEIS Satisfies the Requirements of a No Action Discussion

Petitioners argue that the failure to include an express discussion of the no action alternative to the Project in the DSEIS violates SEQRA.[27] As established in Finger Lakes LPG Storage's Initial Brief (at 27-30), while the precise words "no action" are not used in the DSEIS, the DSEIS satisfies the substantive requirements for a no action discussion under SEQRA.

Under 6 NYCRR § 617.9(b)(5)(v), all draft environmental impact statements must include a discussion of the "no action alternative." The "substance of the 'no action' discussion should be a description of the likely circumstances at the project site if the project does not proceed." SEQRA Handbook at 124 (3d ed. 2010); see Wilmorite, Inc., Decision of the

[26] Finger Lakes LPG Storage Initial Brief (at 13-14).

[27] GFS Brief at 7-9; SLC Brief at 23-26.

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Commissioner, 1982 N.Y. ENV LEXIS 31, at *53 (NYSDEC 1982) (defining "the 'no action' alternative" as "the continuation of the present land use utilization of the proposed Project Site"). Furthermore, "for many private actions, the no action alternative may be simply and adequately addressed by identifying the direct financial effects of not undertaking the action." SEQRA Handbook at 124; see Gernatt Asphalt Products, Inc., Rulings of the ALJ on Party Status and Issues, 1994 WL 1735233, *17 (NYSDEC 1994). Finger Lakes LPG Storage's Initial Brief demonstrated that the DSEIS for the Project and other components of the SEQRA record satisfy these requirements.

One petitioner claims that Finger Lakes LPG Storage's reliance on Wilmorite and Gernatt Asphalt is misplaced because those decisions were issued prior to the 1995 revisions to the SEQRA regulations that amended the requirements for a no action discussion in environmental impacts statements.[28] Petitioner's argument is flawed in multiple respects. As demonstrated in the preceding paragraph, the relevant language in both Wilmorite and Gernatt Asphalt cited by Finger Lake LPG Storage is consistent with the language in the current edition of the Department's SEQRA Handbook, which was published in 2010, or 15 years after the additional text referenced by petitioner was added to Section 617.9(b)(5)(v). The rules in the SEQRA Handbook regarding the required substance of a no action discussion are thus still controlling. Moreover, the three-page "'No Action' Alternative" discussion included in the February 16, 2012 letter ("February 2012 Letter") sent by Finger Lakes LPG Storage to the Department as a supplement to the DSEIS, further satisfies the provisions of Section 617.9(b)(5)(v) referenced by petitioner.

[28] SLC Brief at 24-25.

Section 617.9(b)(5)(v) states that a discussion of the no action alternative "should evaluate the adverse or beneficial site changes that are likely to occur in the reasonably foreseeable future, in the absence of the proposed project." The no action discussion in the February 2012 Letter satisfies that requirement:

> In this case, the no action alternative would see the continuation of activities on the US Salt property, such as underground gas storage and solution mining activities. At the surface facility site, owned by Finger Lakes, there would be no activity at the site, although the surrounding properties would continue to be used for rail transportation, trucking, and perhaps solid waste storage.

Petitioners argue that the February 2012 Letter (which is in the hearing record) should not be considered in evaluating the sufficiency of the no action discussion because:

> This letter does not appear to be publicly available – it is not listed on the Department's website for this project. See *Finger Lakes LPG Storage, LLC, Underground Storage Facility - October 2014*, DEC, http://www.dec.ny.gov/permits/71619.html [hereinafter "DEC Permit Website"] (last visited Apr. 17, 2015).[29]

Petitioner is mistaken. The February 2012 Letter supplementing the DSEIS *is* listed on the DEC Permit Website for the Project (under the heading "Application Document – Other than Gas Storage," the eighth bullet: "2012-02-16, BSK to DEC Supplemental Information, with 5 Exhibits (Exhibit 5 in two files) (PDF available on disc)").[30]

Finally, petitioners erroneously argue that the no action discussion in the February 2012 Letter cannot satisfy SEQRA because it was not included in the text of the DSEIS itself and was not sent until after the close of the public comment period. It has been repeatedly held, however, that the substantive requirements for a DEIS may be satisfied by supplements to the SEQRA record like the February 2012 Letter. See Webster Assoc. v. Town of Webster, 59 N.Y.2d 220, 228-229 (1983) (failure to consider a particular alternative in a DEIS was not fatal where it was

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[29] SLC Brief at 25-26.

[30] See also Department of Environmental Conservation's Post-Issues Conference Brief ("DEC Brief") at 92.

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"clear from the record that both the general public and the relevant public officials were thoroughly familiar with this alternative"); Save the Pine Bush, Inc. v. Common Council of City of Albany, 13 N.Y.3d 297, 307 (2009) (SEQRA satisfied where supplemental report responding to comments on the DEIS evaluated threats to particular species); Horn v. IBM Corp., 110 A.D.2d 87, 97 (2d Dep't 1985) (absence of information from a DEIS is not considered to be a fatal defect where the issue in question "was subject to extensive public scrutiny and discussion during the SEQRA proceedings").

B. The Analysis of Alternatives in the DSEIS Complies with the Requirements of the Final Scoping Outline and SEQRA

As discussed in Finger Lakes LPG Storage's Initial Brief (at 30-41), the alternatives to the Project to be evaluated in the DSEIS were defined in the Final Scoping Outline, and the DSEIS properly addresses each of those alternatives. However, some petitioners argue that the evaluation of alternatives in the DSEIS is inadequate – primarily because the DSEIS allegedly did not evaluate sufficient alternative sites for the Project.[31] Petitioners' arguments are inconsistent with SEQRA and must be rejected.

SEQRA requires that a DEIS include "a description and evaluation of the range of reasonable alternatives to the action that are feasible, considering the objectives and capabilities of the project sponsor." 6 NYCRR § 617.9(b)(5)(v). As the regulatory language indicates, the "objectives of a private project sponsor are important in determining what alternatives should be considered in an environmental impact statement." Crossroads Ventures, 2006 N.Y. ENV LEXIS 88, at *96. "A description and evaluation of alternatives that manifestly would not achieve the objectives of the proposed project are not required by SEQRA." Id. (citing Shellabarger v. Onondaga County Water Auth., 105 A.D.2d 1134, 1135 (4th Dep't 1984)). Nor

[31] SLC Brief at 26-33; GFS Brief at 5-7.

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does SEQRA require consideration of alternatives the lead agency considers infeasible. Coalition Against Lincoln West, Inc. v. Weinshall, 21 A.D.3d 215, 223 (1st Dep't 2005). The SEQRA regulations also specifically provide that where, as here, a project is proposed by a private party, "site alternatives may be limited to parcels owned by, or under option to" the "private project sponsor." 6 NYCRR § 617.9(b)(5)(v). In the context of the Department's Part 624 permit hearing, to meet its burden of proof, a petitioner for party status must present specific site alternatives. See TransGas Energy Systems, LLC, Interim Decision of the Commissioner, 2004 N.Y. ENV LEXIS 17, at *23 (NYSDEC 2004) (no requirement to consider 73 alternative sites where "Joint Petitioners' offer of proof… failed to specify the locations they proposed").

Here, the objective of the Project is using existing caverns to store LPG to benefit New York consumers. SDEIS §§ 3.3.3, 3.3.4, 3.3.5. This objective, which SEQRA empowers Finger Lakes LPG Storage to define, was critical to determining the range of alternatives evaluated in the DSEIS for the Project. See 6 NYCRR § 617.9(b)(5)(v); Crossroads Ventures, 2006 N.Y. ENV LEXIS 88, at *96. Based on the identified Project objective, and in consideration of the "capabilities of" and the "parcels owned by, or under option to," Finger Lakes LPG Storage (see 6 NYCRR § 617.9(b)(5)(v)), on February 15, 2011, the Department issued a Final Scoping Outline for the DSEIS that, among other things, defined "the reasonable alternatives [to the Project] to be considered." See 6 NYCRR § 617.8(f)(5). As discussed in Finger Lakes LPG Storage's Initial Brief (at 34-35), the DSEIS addressed each of the Project alternatives required to be evaluated in the Final Scoping Outline.

Petitioners argue that the DSEIS should have evaluated a range of alternatives to the Project beyond those included in the Final Scoping Outline – primarily alternative sites. Specifically, one petitioner claims that the Final Scoping Outline should have required the

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DSEIS to evaluate a broader range of alternative sites because, in petitioner's ill-informed opinion, the true objective of the Project is focused on the Northeast U.S. because "the Applicant isn't proposing to building this facility for the Finger Lakes region, or even for New York as a whole."[32] The DSEIS demonstrates that petitioners is wrong. Sections 3.3.3, 3.3.4, and 3.3.5 confirm that the objective of the Project is using existing caverns to store LPG to benefit New York consumers:

> In New York, there is a great demand for propane….
>
> Current storage capacity of New York is not enough to offset imports….
>
> To meet the seasonal demand for propane, retailers import propane from sources in Canada, Midwestern US, and Texas at significantly higher transportation costs. New York state primary propane storage and distribution capacity currently is inadequate to meet existing and future demand….
>
> Propane consumers in the state of New York will directly benefit from the addition of 63 million gallons of new propane storage capacity at Finger Lake's LPG Storage Facility in Reading.

Proceeding from its false premise that the objective of the Project is unrelated to New York State, petitioner then asserts:

> There is nothing in the DSEIS that suggests the Applicant can only accomplish its goals by building *here*. At minimum, other sites in New York State might work. It also seems likely that other sites in the Northeast could address this regional supply issue and thereby still bring similar benefits to New York consumers.[33]

Petitioner's argument that the DSEIS was required to consider additional sites for the Project is flawed in numerous respects.

First, with the exception of the Savona site (discussed below), even utilizing for argument's sake petitioner's false premise that the objective of the Project is unconnected to New York State, petitioner fails to identify *any* specific proposed alternative sites for the Project

[32] SLC Brief at 29.

[33] SLC Brief at 30 (emphasis original).

– much less alternative sites that are feasible and consistent with Finger Lakes LPG Storage's objectives and capabilities. See 6 NYCRR § 617.9(b)(5)(v). Instead, petitioner merely asserts in a conclusory fashion that hypothetical alternative sites for the Project may exist somewhere. Asserting the possibility that theoretical alternatives sites for the Project may exist fails to satisfy petitioner's burden of presenting specific site alternatives that allegedly should have been evaluated in the DSEIS. See TransGas Energy Systems, LLC, 2004 N.Y. ENV LEXIS 17, at *22-23. The reason for this requirement is clear: it is impossible for Finger Lakes LPG Storage or the Department to evaluate the feasibility of a purely hypothetical alternative site or determine whether such a site can satisfy Finger Lakes LPG Storage's objectives and capabilities. See 6 NYCRR § 617.9(b)(5)(v). Without citing any authority, however, one petitioner argues that it does not have the burden of identifying particular alternative site locations because that would require it to "essentially do the alternatives analysis… before challenging the DSEIS's failure to do an alternatives analysis."[34] But petitioners' burden when challenging the scope of the alternative site analysis in the DSEIS to at least identify a particular alternative site is a far cry from requiring petitioner to "do an alternatives analysis." Contrary to petitioners' unfounded and vague speculations, the DSEIS and the record demonstrate that there are no alternative feasible sites for the Project that are owned by or under option to Finger Lakes LPG Storage and that are otherwise consistent with the objectives of the Project and the company's capabilities.

The same petitioner claiming that it "seems likely that other sites in the Northeast" could satisfy the objectives of the Project also argued in its petition that the DSEIS should have evaluated a litany of hypothetical alternative sites in New Jersey, Pennsylvania, and every state

[34] SLC Brief at 31.

in New England.[35] The objective of the Project to use existing caverns as storage to benefit New York consumers could not be achieved by moving the Project to other states. Petitioner's assertion that the DSEIS should have evaluated a series of theoretical alternative sites for the Project in other states thus ignores the rule that the DSEIS must only consider "reasonable alternatives" that are consistent with the "objectives and capabilities of the project sponsor." 6 NYCRR § 617.9(b)(5)(v). And, as noted by Department staff during the issues conference, creating an entirely new underground storage facility out of a greenfield from scratch – as opposed to utilizing the existing salt caverns – would not be an environmentally sound or "reasonable alternative," and thus was not required to be evaluated in the DSEIS Id.; (Tr. at 483-486).

The only specific alternative site for the Project raised by petitioners is the Savona, New York location also owned by Finger Lakes LPG Storage ("Savona Site").[36] Petitioners argue that the Savona Site is a feasible alternative location for the Project, and that the failure to include an evaluation of the Savona Site as an alternative in the in the DSEIS violates SEQRA. Petitioners are wrong on both fronts. As detailed in the Department's Post-Issues Conference Brief and during the issues conference, one of the critical environmental considerations associated with creating salt cavern storage facilities is brine disposal.[37] Unlike the proposed Project site, the Savona Site is not located adjacent to a salt plant that can accept excess brine. Instead, the majority of the excess brine from the caverns at the Savona Site is discharged into the Cohocton River pursuant to a Department-issued SPDES permit. Because any expansion of the caverns at the Savona Site would be constrained by the rate at which brine can be discharged into the

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[35] SLC Brief at 30; SLC Petition at 21-22.

[36] SLC Brief at 31-32; GFS Brief at 6-7.

[37] DEC Brief at 93-95; Tr. 483-484.

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Cohocton River, the Department concluded that the Savona Site was not a reasonable or feasible alternative location for the Project because it would involve much greater environmental impacts.[38]

Petitioners assert that the analysis of the environmental limitations that render the Savona Site an unreasonable and infeasible alternative to the Project should have been documented in the DSEIS.[39] However, an EIS is only required to evaluate alternatives that are "reasonable" and "feasible." 6 NYCRR § 617.9(b)(5)(v); see Coalition Against Lincoln West, 21 A.D.3d at 223 (SEQRA does not require consideration of alternatives the lead agency considers infeasible). And an EIS is also not required to analyze alternatives sites that would have more serious adverse environmental impacts. See St. Lawrence Cement, First Interim Decision of the Commissioner, 2002 N.Y. ENV LEXIS 61, at *73-74 (NYSDEC 2002) ("... adjudication of the Catskill site is not warranted" because of "the undisputed conclusion that the visual impacts of the Catskill site on Olana would be greater, as well as the lack of any demonstrable net environmental benefit associated with the Catskill site."). While petitioners complain that the Savona Site was not considered as an alternative in the DSEIS, they have not made any offer of proof contradicting the conclusion by the Department and Finger Lakes LPG Storage that the Savona Site is not a feasible or reasonable alternative location for the Project. See Buffalo Crushed Stone, Inc., Decision of the Commissioner, 2008 N.Y. ENV LEXIS 69, at *12

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[38] Id. In addition to lacking acceptable brine disposal options, locating the Project at the Savona Site would make it impossible to receive propane transported on the TEPPCO pipeline, which is one of the primary objectives of the Project. See DSEIS §§ 2.0, 2.1 (the Project will use the existing caverns to store LPG injected directly from the TEPPCO pipeline). The SXL pipeline located in the vicinity of the Savona Site moves refined product north-to-south (which is why LPG stored at the Savona facility is moved by rail or truck) and serves a different demand market than the TEPPCO pipeline (the two pipelines are not interconnected). See http://ny.pipeline-awareness.com/user/file/New%20York/Enterprise_Products_Operating_LLC.pdf ("The products transported through the Enterprise TE Products Pipeline System include Liquid Petroleum Gas, Propane and Butane."); http://www.sunocologistics.com/Customers/Business-Lines/Asset-Map/241 (showing that SXL Reading-Buffalo pipeline transports "refined products").

[39] SLC Brief at 32-33; GFS Brief at 6-7.

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(NYSDEC 2008) ("conclusory or speculative statements without a factual foundation are not sufficient to raise an adjudicable issue"). Absent such an offer of proof, there is no basis to adjudicate the sufficiency of the DSEIS on that basis.

Finally, as noted above, the alternatives to the Project to be evaluated in the DSEIS were defined in the Final Scoping Outline, and the DSEIS properly addresses each of those alternatives. As detailed in Finger Lakes LPG Storage's Initial Brief (at 31-38), since none of the petitioners commented during the scoping process (or after the scoping process pursuant to the procedures set forth in 6 NYCRR § 617.8(g)) on the alternatives analysis to be included in the DSEIS, to allow petitioners to argue now that the sufficiency of the DSEIS should be adjudicated on that basis would eviscerate and render meaningless the SEQRA scoping regulations which required all relevant issues to be raised before issuance of the Final Scoping Outline and provided Finger Lakes LPG Storage the discretion to exclude late-raised issues from the DSEIS. 6 NYCRR § 617.8(g, h).[40]

IV. <u>The DSEIS Was Not Required to Analyze the Project's Purported Cumulative Impacts</u>

One petitioner argues that the DSEIS does not comply with SEQRA because it does not evaluate the Project's "potential cumulative impacts" in conjunction with the impacts of the nearby Arlington Storage Company natural gas storage project ("Arlington Facility").[41] Finger Lakes LPG Storage's Initial Brief (at 41-48) demonstrated that this cumulative impact argument was devoid of merit in multiple respects. The fact that only one petitioner has raised the Project's purported cumulative impacts as an issue, and that petitioner spends less than three pages of their Post-Issues Conference Brief on the subject, further demonstrates the lack of

[40] One petitioner also argues that the DSEIS should have analyzed product transportation alternatives. GFS Brief at 6. This argument was addressed in Finger Lakes LPG Storage's Initial Brief (at 39-41).

[41] GFS Petition at 19-20.

foundation for this issue.[42] While Finger Lakes LPG Storage's Initial Brief provides a comprehensive response to petitioner's erroneous cumulative impact arguments, a few further points in response to petitioner's brief are articulated below.

Under SEQRA, a "draft EIS should identify and discuss" cumulative impacts "only where applicable and significant." 6 NYCRR § 617.9(b)(5)(iii)([a]). "Cumulative impacts occur when multiple actions affect the same resource(s)." SEQRA Handbook at 81. A cumulative impacts assessment is only necessary when multiple actions will "take place simultaneously or sequentially in a way that the combined impacts may be significant." Id. "[A]ssessment of cumulative impacts should be limited to consideration of probable impacts, not speculative ones." Id. As with any proposed issue, the burden is on the petitioner to present a "factual foundation" for its cumulative impact assertions. See Buffalo Crushed Stone, 2008 N.Y. ENV LEXIS 69, at *12.

Here, petitioner has failed to meet its burden of establishing any factual foundation for its assertion that the Project and the Arlington Facility will result in significant cumulative impacts. Indeed, petitioner essentially conceded during the issues conference that it was not submitting any offer of proof on the Project's alleged cumulative impacts but was instead "simply making a legal argument that cumulative impacts was not analyzed." (Tr. at 570-571.) Petitioner is thus not even attempting to satisfy its burden of providing a "factual foundation" establishing that the environmental impacts of the Project and the potential Arlington Facility will affect any identified common resource, or that the combined impacts on any common resource will rise to the level of significance. See SEQRA Handbook at 81; Buffalo Crushed Stone, 2008 N.Y. ENV LEXIS 69, at *12. Absent petitioner proffering a factual foundation for its assertion that the

[42] GFS Brief at 9-11.

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Project will result in significant cumulative impacts, there is no basis to adjudicate the sufficiency of the DSEIS on those grounds.

Although not substantiated with any offer of proof or factual foundation, petitioner's brief names public safety associated with storing natural gas at the Project and the Arlington Facility, together with noise and traffic impacts associated with construction of the two projects, as the alleged cumulative impacts that allegedly should have been evaluated in the DSEIS.[43] As detailed in the Department's Post-Issues Conference Brief (at 97-98), Department staff took numerous proactive steps to determine whether there would be cumulative subsurface impacts from the Project and the Arlington Facility. Based on the Finger Lakes LPG Storage's responses to multiple communications from the Department, staff ultimately concluded that no cumulative impacts would result – a conclusion that FERC also reached based on its review of the potential cumulative impacts of the Arlington Facility and the Project. Arlington Storage Company, LLC,, 147 FERC ¶ 61,120, at ¶¶ 60-76 (2014) ("FERC Order").

Petitioner's speculative assertions of cumulative impacts arising from "the possibility of overlapping construction schedules and cumulative noise, traffic, and other potential impacts" are likewise unfounded.[44] The FERC Order (at ¶ 6) described the minimal construction work necessary to expand the Arlington Facility (four to six weeks), and given that the Arlington Facility has already been approved by FERC, there is no reason to presume that construction on the two projects will occur simultaneously. SEQRA Handbook at 81 ("assessment of cumulative impacts should be limited to consideration of probable impacts, not speculative ones"). The two

[43] GFS Brief at 10.

[44] GFS Brief at 10.

projects would also not have cumulative traffic impacts since the Project will likely primarily utilize rail and pipeline to transport product.[45]

Accordingly, the DEIS was not required to analyze the Project's purported cumulative impacts.

V. Petitioners' Objections to the Indemnification Provisions of Draft Permit Condition 9 Cannot be Adjudicated

Petitioner argues that the alleged failure of Draft Permit Condition 9 "to provide adequate assurance to protect the Seneca Lake area municipalities against the risk of catastrophic harm presents an adjudicable issue."[46] More specifically, petitioner claims that Draft Permit Condition 9 is inadequate because if a catastrophic event resulted in an explosion or the "salinization" of Seneca Lake, "the region's municipalities will not have the available resources to mitigate immediate environmental harms – such as those presented by the loss of potable water for many thousands of the region's residents without an adequate temporary solution."[47] Finger Lakes LPG Storage's Initial Brief (at 48-54) demonstrated that petitioner's objections to Draft Permit Condition 9 cannot be adjudicated for multiple reasons.

First, petitioners cannot cite to any specific regulatory or statutory provision that Condition 9 violates, and their proposal to replace Condition 9 with "an ex ante solution" of a bond requirement for the subject underground storage permit has no statutory or legal basis and is thus ultra vires.

Second, petitioners' arguments that Condition 9 fails to offer adequate economic protection are predicated on a hypothetical catastrophic event resulting in speculative economic impacts, which are beyond the scope of SEQRA and not adjudicable.

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[45] Finger Lakes LPG Storage Initial Brief (at 39-41).

[46] SLC Brief at 52.

[47] SLC Brief at 56-57.

Finally, petitioner's claim that Condition 9 could result in unmitigated environmental impacts to local water supplies from "salinization" is belied by the affidavit of their own witness, Geneva City Manager Mathew Horn, which demonstrates that even the speculative water quality impacts supposedly unmitigated by Draft Permit Condition 9 are ultimately economic in nature, and thus beyond the scope of SEQRA.[48]

VI. The Record Demonstrates that the Proposed Caverns Have Integrity and There is No Adjudicable Issue

A. Introduction

As discussed in greater detail in Finger Lakes LPG Storage's Initial Brief (at 54-78), it is clear based on the application documents, the expert reports submitted by the Applicant, the issues conference record, the DEC draft permit, State Geologist approval, and FERC's analysis of the geological formation and cavern integrity (in the context of nearby Arlington Gallery 2) that the Applicant has provided sufficient data to show that its proposed galleries are "adaptable for storage purposes" and that the caverns have integrity. While petitioners' assertions to the contrary are required to have a factual or scientific foundation (and speculation, expressions of concerns, general criticisms, or conclusory statements are insufficient to raise an adjudicable issue), petitioners' cavern integrity arguments are unsubstantiated by any credible scientific or factual evidence that rebuts the testing and scientific data collection and evaluation the Applicant has performed to demonstrate cavern integrity.[49] Department staff, FERC and the New York State Geologist agree. Even if petitioners provided a scientific/factual basis for their cavern

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[48] Although petitioner also raises the specter of an "explosion," the only scenario actually described in petitioner's papers involves the water quality impacts resulting from salinization.

[49] See, e.g., Southwest Brooklyn Marine Transfer Station, Decision of the Commissioner, 2012 N.Y. ENV LEXIS 22, at *11-12 (NYSDEC 2012); Crossroads Ventures, LLC, 2006 N.Y. ENV LEXIS at *8-9, 14; Mirant Bowline, LLC, Interim Decision of the Commissioner, 2001 N.Y. ENV LEXIS 29, at *2-5 (NYSDEC 2001); Bonded Concrete, Inc., Interim Decision of the Commissioner, 1990 N.Y. ENV LEXIS 44, at *3 (NYSDEC 1990); Seneca Meadows, Inc., Interim Decision of the Commissioner, 2012 N.Y. ENV LEXIS 76, at *7.

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integrity arguments (which they have not), those assertions have been rebutted by the submissions of the Applicant and Department staff, which submissions are "important considerations" in the determination of whether a substantive and significant issue has been established. Buffalo Crushed Stone, Inc., Decision of the Commissioner, 2008 N.Y. ENV LEXIS 69, at *17 (NYSDEC 2008); Halfmoon Water Improvement Area No. 1, Decision of the Commissioner, 1982 N.Y. ENV LEXIS 34, at *4 (NYSDEC 1982).

ECL Article 23, Title 13, provides the framework for an Applicant to obtain an underground storage permit in New York. An Applicant must: a) submit "a map showing the location and boundaries of the proposed underground storage reservoir" (ECL § 23-1301 (1) (a)); b) submit to the Department, "a report containing sufficient data to show that the reservoir is adaptable for storage purposes," (ECL § 23-1301 (1) (b)); c) provide an affidavit showing the operator has sufficient control over the mineral rights affected by the storage project (ECL § 23-1301 (1) (c)); and d) provide any other information requested by the Department (ECL § 23-1301 (1) (d)). Additionally, the Department must receive approval on the adaptability of the reservoir from the State Geologist prior to underground storage permit issuance. The record demonstrates that the Applicant has satisfied all of these criteria.

As noted by Department staff, the Applicant was required to submit a Reservoir Suitability Report ("RSR") that documents the adaptability of the reservoir for storage purposes. The RSR included a discussion of the underlying geology at the site,[50] geologic cross-sections of the Project showing the depth of existing and planned wells, a cavern development plan and geo-mechanical study including computer modeling (the Finite Element Analysis ["FEA"]), a

[50] As discussed further below, from the very outset, with Finger Lakes LPG Storage's initial submission, the RSR addressed the presence of a fault identified by Jacoby.

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description of the proposed operating parameters, a discussion of any core test results, and an evaluation of previous sonar reports and surveys.[51]

Based on its independent review of the aforementioned documents, Department staff concluded as follows:

> The record includes a thorough evaluation of: existing geological conditions including known faults; proof of the competency of the overlying caprock; well status and condition; cavern geometry and integrity including analysis of nearby caverns and storage operations; results of pressure testing; planned operating conditions; subsidence monitoring and future cavern development. The DSEIS, the underground storage permit application and the subsequent technical submittals included with the responses made by the applicant to the three NOIAs, as fully explained below, together provide a complete record of the hard look taken by Department staff of cavern and well integrity, and their adaptability for storage purposes. Moreover, the draft permit conditions prepared by Department staff address every aspect of the construction and operation of the proposed project including future monitoring and underscore the close examination that Department staff have taken to ensure the applicant would mitigate any significant adverse potential environmental and public safety impacts.

Based on these technical data and Department staff's thorough review, Finger Lakes LPG Storage has demonstrated cavern integrity.[52]

B. <u>The Applicant's Cavern Integrity Analysis was Complete, Satisfied Department Staff Requirements, and Shows that the Proposed Caverns are Adaptable for Storage Purposes</u>

The preliminary statement in Gas Free Seneca's Post-Issues Conference Brief[53] that "Gallery 1 is very old" has no relevance (at least the way Gas Free Seneca might suggest)[54] due to the fact that the caverns are under static (stable) conditions and not subject to dissolution or

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51 DEC Brief at 27-28.

52 <u>See</u> Finger Lakes LPG Storage Initial Brief at pp. 56-57 (and citations to the Record therein) and Report of Dr. Samuel Gowan, Assessment of the Technical Suitability of Finger Lakes Galleries 1 and 2 for the Storage of Liquid Petroleum Gas (LPG), February 9, 2015 (attachment 2 of Pre-Issues Conference submission of Finger Lakes LPG Storage)("Gowan Report"), pp. 1-2.

53 GFS Brief at 20.

54 In other words, the history of the successful use of the neighboring galleries for LPG and natural gas within the same geological formation is very relevant and confirms that the "impending failure" that Gas Free Seneca's consultants suggest will occur is nothing more than a speculative and melodramatic attempt to create an issue where clearly none exists.

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weathering processes. The term "vast" with regard to area or span has no probative significance. The relevant consideration for spans is with regard to the individual caverns. And, the FEA shows that there is sufficient pillar distance between the caverns proposed to be used for storage and adjacent caverns. The largest span in Gallery 1 is in the Well 34 cavern. This span is dome-shaped with a salt caprock; consequently, it is in optimal condition.[55] As described below, no valid scientific or factual evidence has been provided by Gas Free Seneca to support the reckless statement that there is an "impending failure."[56] To the contrary, as Department staff notes, Finger Lakes LPG Storage has "satisfied all of the prerequisites specified in Article 23, Title 13, to receive an underground gas storage permit."[57]

Each of the six potential adjudicable issues regarding the long-term integrity of Galleries 1 and 2 raised in Gas Free Seneca's Post-Issues Conference Brief (pp. 20-36) elevate form over substance; are fully rebutted by the Application documents, Department staff and/or the draft permit; or are just plain wrong. SLPWA's Post-Issues Conference Brief focuses on the presence of faults (either a strike slip or thrust fault), the impact of valley stresses, the validity of the FEA, the importance of pressure testing and the impact of using undersaturated brine. As demonstrated below, SLPWA continues to misinterpret the data and its consultants simply are not familiar enough with underground storage operations or the site to make a scientifically/factually valid offer of proof. Consequently, SLPWA cannot satisfy its burden of persuasion that an issues exists for adjudication.

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55 Gowan Report, Vertical Section B-B' (in pocket).

56 GFS Brief at 20.

57 DEC Brief at 34.

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1. The Maps and Cross Sections and Other Application Documents Submitted by the Applicant Accurately and Completely Portray the Status of the Caverns Proposed for Storage and Demonstrate Cavern Integrity

Gas Free Seneca continues to complain that the maps submitted by Finger Lakes LPG Storage do not contain all of the information they would like those maps to contain, including a portrayal of faulting.[58] However, Finger Lakes LPG Storage provided all of the information required by the Department and the State Geologist necessary to conclude that the proposed caverns are adaptable for storage purposes.[59] Based on its review of the information provided by the Applicant, "Department staff's review found that the application materials demonstrated the adaptability of the solution-mined caverns to contain liquefied petroleum gas ("LPG") for the projected life of the facility."[60]

The cavern configuration shown on the cross sections and maps does represent the current, or most recent, configuration of the open section of the caverns. This is based on sonar surveys as identified on the cross sections.[61] The open space in the cavern is the only part relevant for LPG storage, salt dissolution and the movement of brine and LPG in and out of the cavern during storage operations.[62]

SLPWA attempts to show disagreement amongst the Applicant's experts regarding the existence of the Jacoby-Dellwig Fault where none exists. SLPWA attempts to discredit Mr. Istvan's assertion that even Stone and Webster were unsure the existence of the Jacoby-Dellwig Fault.[63] SLPWA attempts to provide evidence of their opinion that Stone and Webster

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58 GFS Brief at 20-23.

59 DEC Brief at 27-29.

60 DEC Brief at 28.

61 Gowan Report, Vertical Sections A-A' and B-B'.

62 Gowan Report, Figure 6 and page 14.

63 SLPWA Brief at 7.

considered the fault without doubting its existence. A review of the Appendix included in SLPWA's brief shows that the exhibit is a copy of Figure 2.3.1 from the Stone and Webster report. That figure has been attached hereto as **Exhibit A** without modifying the fault line, as Professor Richard Young has done to cover up the question marks that indicate that the fault's existence is in doubt. Unfortunately for SLPWA, the northern-most question mark is not obscured. Again, despite this incredible effort to alter an existing document, the statements made by Applicant's counsel at the issues conference were correct.

Finger Lakes LPG Storage's experts, Mr. Istvan and Dr. Gowan, both acknowledged the presence of faults within the salt horizon that contains the caverns.[64] The fact that these faults have not been observed in the salt horizon along the cross sections and at the location of the caverns proposed for LPG storage does not render the maps and cross sections inaccurate. Dr. Gowan acknowledges the potential impacts of faulting[65] and conducted further review that led to the conclusion that the presence of faults within the bedded salt interval does not pose a hazard for LPG storage, and it is not necessary to revise the graphics for this or any other reason provided by Gas Free Seneca.

Similarly, Department staff's own evaluation confirmed that "the north-south strike-slip fault referenced in the 1979 Stone & Webster report is the same fault referenced in the 1974 Jacoby & Dellwig paper, and the Applicant satisfactorily demonstrated that the fault, to the extent it runs along Seneca Lake, would not intersect the proposed galleries, compromise the

[64] Istvan Report at 2; Gowan Report at 11-12.

[65] Gowan Report at 11-12.

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caprock or otherwise pose a risk to cavern integrity."[66] However, as discussed below, this fault has been healed and does not leave the salt.[67]

SLPWA cites statements or observations made by Jacoby to support Vaughan's theory that the fracture identified by Jacoby is not contained fully within the salt.[68] Unfortunately, the problem with this purported "evidence" is that it is presented by Jacoby in a contradictory and apparently anecdotal or offhand fashion without giving any empirical information such as when it was observed, who observed it, how much was it flowing, how was it tested, and whether the observation was even recorded.[69] The information was first presented by Jacoby in 1965, where Jacoby stated that "similarly, Well #29 fractured to Well #32 or in an approximate north-south direction rather than the anticipated preferred direction of east-west.[70] The original target for Well #29 was Well #34 located some 490 feet to the west. Well #32 is located 810 feet to the south of Well #29."[71] Jacoby continued that all four wells, which apparently included Wells 29, 32, 33 and 34, were abandoned as fractured galleries. It would appear that no further attempts at hydrofracturing were made at Well 29.[72] Finally, the analysis of Jacoby and Dellwig themselves undercuts Dr. Vaughn's supposition since "[t]he structure contour map on top of the salt gives no indication of the faults breaking up into the overlying sediments."[73]

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66 DEC Brief at 37. See also Affidavit of Peter Briggs dated April 15, 2015 ("Briggs Affidavit"). See also Hearing Document I.B.5.

67 See e.g. Finger Lakes LPG Storage Initial Brief at 56, 68.

68 SLPWA Brief at 20-23; Vaughan Report, ¶¶ 29-30.

69 DEC agrees. See DEC Brief at 45.

70 Jacoby, Effect of Geology on the Hydraulic Fracturing of Salt, 1965.

71 Id. at 318.

72 Id.

73 Jacoby and Dellwig, Appalachian Foreland Thrusting in Salina Salt, Watkins Glen, New York, 1974, p. 231.

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SLPWA continues to suggest that the fault extends above the salt layer.[74] And Dr. Vaughan, who has no experience in salt, salt behavior, salt mining or gas storage, attempts to cast doubt on the healing properties of salt. Both contentions fail. First, contrary to SLPWA's assertion, the pressure testing and core logs demonstrate that the plastic properties of the salt has healed any fractures within the salt. Second, Dr. Vaughan does not and cannot provide any valid scientific foundation for his assertions[75] because healing qualities of the salt were well documented by Dr. Jacoby in relation to cavern development.[76] Dr. Gowan concludes that there are likely pre-existing, healed faults and fractures in the salt and associated rock interbeds throughout the area associated with the two proposed galleries and the two Arlington galleries. The cavern pressure tests and the successful storage of natural gas and LPG at the Arlington galleries are ample proof of the integrity of these layers and associated healed faults for the proposed use of the Finger Lakes LPG Storage caverns.

In fact, SLPWA admits that its experts "do not dispute that the Project's cavern walls are relatively well sealed. The disputed issue is whether at least 99.999% to 99.99999% of the surface area of the Gallery 1 cavern walls is demonstrably fracture-free (i.e., reliably healed and sealed) and thus incapable of transmitting fluid, both now and during the intended life of the LPG storage project."[77] This admission by SLPWA is very important because it naturally leads to the conclusion reached by Dr. Gowan that any small, hard-to-detect feature is best evaluated

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[74] SLPWA Brief at 19.

[75] Indeed, in addition to the fact that Jacoby disagrees with Vaughan, so too does Department staff (DEC Brief at 31) and FERC (147 FERC ¶ 61,120 at P 26).

[76] Jacoby, Storage of Hydrocarbons in Cavities in Bedded Salt Deposits Formed by Hydraulic Fracturing, 1969. Several of the papers authored or co-authored by Dr. Jacoby are cited as references in the Reservoir Suitability Report (see Document I.A.5, p. 19) and in the Gowan Report (p. 45).

[77] SLPWA Brief at 24.

by long-term cavern pressure testing, which was successfully completed at Gallery 1 and 2.[78] The lack of leaks from these features has also been confirmed by the successful use of Arlington Gallery 1 for natural gas storage.[79]

Consequently, SLPWA's discussion of Dr. Vaughan's hypothetical about how much brine could leak out of a cavern should a hole occur in the cavern wall is irrelevant.[80] Dr. Vaughan's hypothetical belies the data that reveal no leakage from the brine field since 1893, short of direct attempts to connect wells by hydrofracturing using high pressure. The flows from those hydrofracturing projects created closed-circuit galleries, at most, or the fractures closed and sealed at the least. Similarly, SLPWA dismisses and labels conclusory Dr. Gowan's claims that salt beds are self-healing. However, this opinion by Dr. Gowan is based on actual observations at the wellfield by Charles Jacoby[81] and by Dr. Gowan's direct observations and experience on other salt-related projects.[82]

"The geology of the region is well studied and FLLPG thoroughly investigated and evaluated site conditions by reviewing available literature, conducting rock core analysis, and reviewing geophysical logs to map geologic units."[83] Nevertheless, Dr. Nieto has created a thrust fault[84] (where none exists) extending through the brine field up into the bottom of Seneca Lake. The fault, as drawn on Figure 1 of Dr. Nieto's report, is a technical impossibility. The technical

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78 Gowan Report at 22.

79 Gowan Report at 10 and 23.

80 SLPWA Brief at 23-24.

81 Gowan Report at 9.

82 Gowan Report at 37.

83 DEC Brief at 37.

84 The SLPWA Brief (at 22) provides extensive discussion trying to separate the thrust fault discussion from that of the tear fault. It is important to understand that the tear fault occurs between two thrust sheets as approximately shown on Exhibit 2b of Dr. Vaughan's report. The important point being suppressed by SLPWA and Dr. Vaughan is that the thrust sheets only occur in the salt sections; consequently, the tear fault is restricted to the salt section.

impossibility is noted as a "Technical Error" on a copy of Dr. Nieto's Figure 1. The technical impossibility stems from the fact that the rock layers between the salt interval and the Onondaga Formation must also show an offset based on basic geologic principles. The offset is also not apparent in the data for Well 27, which is included on Dr. Nieto's cross section. This lack of offset is confirmed by an investigation by Jacoby himself.[85]

According to SLPWA, Dr. Nieto wrote a disclaimer on Figure 1; however, that disclaimer pertains to the lack of completion of the fault and geologic formations to the east beneath the lake.[86] Regardless, it appears that Dr. Nieto had to avoid showing displacement within the brine field because the geologic data from the numerous drill holes within the brine field do not show displacement. This postulation by Dr. Nieto is not supported by the science. Department staff agrees, noting that "Dr. Nieto's hypothesis, however, does not agree with available literature and site-specific data."[87] Jacoby, Jacoby & Dellwig, and Stone & Webster all show that the fault at the Project site is a north-south strike slip fault, with associated thrusting towards the north that is confined to the Syracuse formation. See Jacoby, Storage of Hydrocarbons in Cavities in Bedded Salt Deposits Formed by Hydraulic Fracturing, 1969; Jacoby and Dellwig, Appalachian Foreland Thrusting in Salina Salt, Watkins Glen, New York, 1974. In fact, as Department staff observes, Figure 1 in Jacoby's 1969 paper shows that the beds in the upper half of the Syracuse Formation are relatively consistent in their thickness and elevation, showing the absence of any type of thrust faulting described by Dr. Nieto.[88]

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[85] See Jacoby, C.H., 1963, International Salt Brine Field at Watkins Glen, New York, in Bersticker, A.G., (ed), *Symposium on Salt*, Northern Ohio Geologic Soc., Inc., Cleveland, Ohio, p 506-520)

[86] SLPWA Brief at 10.

[87] DEC Brief at 47.

[88] DEC Brief at 47.

As Department staff has noted,[89] "the level of specificity in the geological cross-sections was dictated by Department staff[90] and the final version of the cross-sections and gallery map satisfied the Department's requirements."[91] Whether or not this satisfies Gas Free Seneca or SLPWA is not relevant. The bottom line is that the maps, cross-sections, and the underlying data referenced above and enumerated in the Gowan Report[92] and as summarized in Finger Lakes LPG Storage's Initial Brief (at pp. 56-57) must all be read together. This is exactly what Department staff did and on that basis they concluded that the caverns are adaptable for storage and that cavern integrity will be maintained during the operation of the Project.

2. Petitioners Misunderstand Rubble Piles in Caverns, the Existence of Which Does Not Affect Cavern Integrity or the Applicant's Ability to Monitor Operational Storage Activities.

Gas Free Seneca's assertion that "DEC does not have reliable information about cavern dimensions and integrity risks" is untrue.[93] The active portions of the caverns for both LPG storage and the working brine (inflow and outflow) necessary to move the LPG in and out of the cavern during active operations all are located above the insolubles represented on Figure 6 of

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89 DEC Brief at 37.

90 Gas Free Seneca suggests that there is some industry standard for maps and cross-sections for this type of application. To the extent there is such a thing, at least in New York State, that industry standard must be defined by what the regulatory agency responsible for evaluating such permit applications requires. Department staff's comments about the adequacy of the Applicant's maps and cross-sections should therefore completely rebut any complaint by Gas Free Seneca in this regard.

91 The complaint of both Gas Free Seneca and SLPWA that the maps and cross-sections do not contain enough information is tantamount to the suggestion that the completeness of the Application should be an adjudicable issue. However, it is well established that the completeness of an Application "will not be an issue for adjudication." 6 NYCRR § 624.4(c)(7). Thus, even if it were true that the maps were not complete, this amounts to nothing more than an attack on application completeness, something that cannot be adjudicated. See also Bath Petroleum Storage Facility, 2000 NY ENV LEXIS 86, at *12-16, Interim Decision of the Deputy Comm'r (NYSDEC 2000); Paul Palmieri, 2002 NY ENV LEXIS 10, at *17-19, Ruling of the Comm'r (NYSDEC 2002); City of N.Y. Dept. of Sanitation for SW Management Permit, 2004 NY ENV LEXIS 59, *85-99, ALJ Ruling on Issues and Party Status (NYSDEC 2004); Sullivan County Div. of SW, 2008 NY ENV LEXIS 20, at *14-20, Interim Decision of the Comm'r (NYSDEC 2008).

92 Gowan Report at 1-2.

93 GFS Brief at 23.

Gowan's Report. The "insolubles" identified on Figure 6 are also known as the rubble pile, which consists of variously sized pieces of rock that fall to the bottom of a cavern. Brine that does not circulate is contained in the open spaces (pores) between the insoluble fragments of the rubble pile. However, despite what Gas Free Seneca and Dr. Clark suggest, there is no need to show the rubble pile on the cross sections.[94] Gas Free Seneca justifies the need for mapping and illustrating the rubble pile so that "analysts over the projected 50-year life of the Project will have a correct baseline from which to work in the event of a problem."[95] This is an open-ended statement that lacks any specificity on what types of "problems" could realistically be anticipated in the stagnant, stable area within the rubble pile. No potential problem is identified by Gas Free Seneca, because there is no realistic "problem" to be anticipated.[96]

Moreover, Department staff recognize that "it is well understood that in solution-mined interbedded salt caverns, the majority of insoluble material will fall to the floor of the cavern as development of the cavern moves upward."[97]

Gas Free Seneca nonetheless attempts to argue the relevance of the rubble pile and why it must be shown on the cross-sections.[98] Gas Free Seneca then argues, without any supporting foundation that something described as "an incomplete characterization" increases the risk of

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[94] To the extent changes to maps were appropriate, this certainly does not give rise to an adjudicable issue so long as the information supporting a finding of cavern integrity is in the Record, as is the case here. If Department staff believes a minor revision should be made to the drawings that are incorporated by reference into the draft permit, then the minor revision can be done prior to final permit issuance.

[95] GFS Brief at 25.

[96] Dr. Gowan included in his Report a corrected Gallery 2 profile with a rubble pile; however, there is no agreement with Dr. Clark with regard to the Gas Free Seneca's stated need to show the rubble pile on the cross sections. In his report, Dr. Gowan stated that, "[r]egardless of this proposed change in the representation of the material conditions in the base of Finger Lakes Gallery 2, the cross sections provided by Finger Lakes are sufficient for use in the assessment of the integrity of the cavern for LPG storage." Gowan Report at 27.

[97] DEC Brief at 58-59 (citing Final Generic Environmental Impact Statement for the Oil, Gas and Solution Mining Regulatory Program, 1992, Figure 14.4 at http://www.dec.ny.gov/energy/45912.html).

[98] The Gas Free Seneca summation on the bottom of page 27 of its Post-Issues Conference Brief incorrectly states that the DEC asked for depiction of the rubble piles on the cross sections.

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"delayed leakage detection."[99] However, the process of leakage detection, which is contemplated by the draft DEC permit, has no relevance to the rubble pile and will not be conducted any differently with or without definition of the rubble pile. In this regard, Gas Free Seneca argues that open spaces in the rubble pile offer storage areas for brine and this means that the maximum storage capacity is unknown. In connection with this speculative and conclusory remark, Gas Free Seneca cites to DEC Permit condition 1(d). However, it is apparent that Gas Free Seneca does not understand this permit condition. In simple terms, the permit condition states that the bottom of each cavern is to be determined from the most recent sonar survey as of the date the permit is issued. Because sonar surveys do not penetrate rubble piles, the top of the rubble pile will be taken as the bottom of the cavern from the initial sonar survey. Any additional growth (volume) of the rubble pile, as determined by subsequent sonar surveys, must be accounted for in the calculation of the cavern storage volume. It is clear that the pre-existing rubble pile is not relevant to DEC's requirement.[100] The DEC requires any subsequent accumulation of rubble to be included when determining the maximum storage capacity in the future. Department staff certainly agrees and noted that it "understood that the bottom of the most recent sonar is a reflection off of the top of the rubble pile. This is not an operational concern and Gas Free Seneca's petition doesn't point to any statutory or regulatory provision that requires [Finger Lakes LPG Storage] to depict the sonars differently on the cross-section."[101]

Gas Free Seneca argues that the rubble pile relates to the need to know how much brine is required "to float" the LPG in Cavern 34 and that "[w]ithout this information Finger Lakes LPG

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[99] GFS Brief at 26.

[100] For the reasons explained herein, the statement in Gas Free Seneca's Brief (at 26) "that rubble-filled space is part of the existing Gallery, so the maximum fluid capacity of Gallery 1 has been underestimated substantially," is not true. The DEC does not require the maximum capacity calculation to include the volume of existing rubble. See DEC draft permit condition 1(d).

[101] DEC Brief at 59.

Storage cannot guarantee that its ponds will supply enough brine to prevent LPG from dropping below the maximum fill line."[102] Gas Free Seneca has it backwards. The volume of LPG stored is controlled by the injection of LPG, not brine. The brine is simply pushed out when the specified volume of LPG is injected into storage as metered; the LPG is removed from storage by injection of brine. This basic misunderstanding of how an underground LPG storage operation works[103] demonstrates unfamiliarity of Gas Free Seneca's consultants with the subject matter of the application.

3. Cavern Enlargement Will be Minimal and Expected

Similar to petitioners' confusion about the rubble pile is the misperception that undersaturated brine will somehow dissolve the salt that Gas Free Seneca acknowledges has healed fractures within the salt and "expand the volume of Gallery 1."[104] Undersaturated brine will not be circulated through the rubble pile. The injection process, which is described in Finger Lakes LPG Storage's Response to Department Staff's first Notice of Incomplete Application ("NOIA")[105] and described and illustrated by Dr. Gowan,[106] shows that the brine enters the cavern above the insolubles (rubble pile). Because injected brine is undersaturated, it is less dense than the saturated brine retained in the pores of the rubble pile. The net result is that the dense brine existing within the rubble pile will remain in the rubble pile, and the less dense, unsaturated brine pumped in from the storage ponds to push out the LPG will remain above the rubble pile and rise in the cavern. This is common practice for LPG storage activities utilizing

[102] GFS Brief at 26.

[103] DSEIS Section 2.1, p. 7.

[104] GFS Brief at 27.

[105] Hearing Document I.A.5, p.11

[106] Gowan Report at 14, Figure 6.

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bedded-salt formations, and Department staff concurs that Gas Free Seneca's unsupported theory is incorrect:

> Gas Free Seneca is incorrect in all respects. Aside from the fact that they don't offer any record citations, literature references or an offer of proof to support this claim, the rubble piles are not going to be "flushed." During the LPG storage process, the placement of the end of the brine string above the rubble pile means that brine is introduced and circulated above the rubble pile, not through it. The location of the brine string, which will always contain a column of brine, is depicted on Vertical Section B-B' and is noted as "BTS."[107]

As Department staff correctly concludes, "Gas Free Seneca's theory that the rubble pile will be "flushed" is an over-simplistic take on product cycling which bears no relationship to the rate of product movement or the densities of the fluids involved."[108]

Similarly, the use of undersaturated brine will not enlarge the caverns in a way that is unexpected. Contrary to SLPWA's assertion, there are permit conditions which address this. As noted by Department staff: "The fact that the caverns will be different years from now, if operated as a storage field, is a statement of the obvious. Enlargement of the caverns is not only expected, as described in the RSR, it is planned and accounted for in the draft permit conditions prepared by Department staff. It seems SLPWA's expert does not understand that use of undersaturated brine for product displacement, which causes operational solutioning of the caverns, is a necessity and if not used, could cause operational problems."[109]

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[107] DEC Brief at 60. See also Draft Permit condition 1(b), which requires brine to be drawn from the bottom of the brine pond.

[108] Id.

[109] DEC Brief at 55.

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4. The Shape of Cavern 58 has been Adequately Characterized and the Record Demonstrates the Overall Stability of Cavern 58 and its Suitability for Underground Storage

Both SLPWA[110] and Gas Free Seneca[111] suggest that Gallery 2 (consisting of Well 58) could collapse. Nothing could be further from the truth. Dr. Gowan has explained in his report why the series of sonar profiles, as depicted on the cross-sections, do not line up exactly at the roof and floor of the cavern associated with Well 58.[112] Dr. Gowan explained that the depth of the wellhead differs by five feet in the sonars taken in 2011 and 2013, which explains the five-foot change in elevation of the Well 58 cavern roof and floor.[113] As noted by Department staff, the FEA also evaluated Well 58 and shows the cavern to be structurally sound during future LPG operations.[114] In addition, the Applicant will again be required to demonstrate the roof containment and integrity of Well 58 before injecting LPG into Gallery 2, as Draft Permit Condition 3 requires the Applicant to conduct a mechanical integrity test to a pressure equivalent to at least 0.75 psi/ft. Moreover, Draft Permit Condition 1(f) requires the Permittee to maintain a hydrocarbon and/or nitrogen blanket (i.e., roof pad) in Well 58 at all times during storage operations and/or shut-in periods. As noted by Department staff, "[t]his protective blanket will help ensure that cavern stability and well integrity are maintained by preventing further solutioning of the Well 58 cavern roof and protection of the casing seat (i.e., cement seal between the formation and casing)."[115] Consequently, whether or not a roof sag existed, these redundant mitigative measures ensure that testing prior to the commencement of storage

[110] SLPWA Brief at 10.

[111] GFS Brief at 29.

[112] Gowan Report at 28.

[113] Id.

[114] DEC Brief at 54.

[115] Id.

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operations and operational measures during storage operations prove cavern integrity. Seneca Meadows, Inc., Interim Decision, 2012 N.Y. ENV LEXIS 76, at *7 (NYSDEC 2012).

Gas Free Seneca's representation about the limited knowledge of the Camillus at Well 58 is not accurate and has been taken out of context.[116] Fractures are described within the Camillus Formation in the core logs for both Well 58 and Well 59, but the fractures are healed by salt and, to a lesser extent, calcite. The rock quality, inclusive of the healed fractures, was found to be in good condition at Well 59 based on the 1996 report by Vogt.[117] The description of Well 58 core by Brayton Foster (1992) is similar to the Well 59 core description by Vogt, but Mr. Foster does not provide a description of the rock quality.[118] The apparent lack of a fault within the Camillus Formation at the brine field leads to the conclusion that the rock quality at Well 59 is a fair representation of the rock quality at Well 58. The "suspected porosity zone" discussed by Roach (2011) and referenced in the Gowan Report is not even in the Camillus Formation.[119] The suspected porosity zone discussed by Roach is at a depth of 2,060 ft, which is 95 ft above the top of the cavern that is at a depth of 2,155 ft. The geophysical log for Well 58 shows the top of the Camillus at 2,075 ft. These depths indicate that the suspected porosity zone is within the Akron Dolostone.[120] Gas Free Seneca has not offered any plausible basis for why the mechanical properties for Well 59 cannot be applied to Well 58.

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[116] GFS Brief at 31.

[117] Hearing Document I.A.6, Exhibit 18.

[118] Hearing Document I.A.6, Exhibit 5.

[119] Gowan Report at 7.

[120] Gowan Report, Figure 3.

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5. Salt Formations Like Those Found at the Project Site Provide Ideal Conditions for Underground LPG Storage and Concerns Based on Investigations for Other Purposes Have No Bearing on the Integrity of the Proposed Caverns

Gas Free Seneca argues that a report prepared by the National Energy Technology Laboratory ("NETL") in 2012 provides support for its argument that the proposed caverns lack integrity.[121] This is an inappropriate comparison. The compressed air energy storage concept involves rapid cycling of air in and out of the caverns at a wider range of pressures and temperatures than will occur during LPG storage. The NETL report concludes that the air storage operating conditions would result in spalling of the salt in the ceiling and walls and would lead to early failure of the caverns.[122] These findings led to the recommendation to maintain 50 feet of salt in the ceiling[123] and the selection of a greenfield site as indicated on the NETL map.[124] Importantly, though, the NETL report does not purport to reject the caverns based on concerns for pre-existing fractures or faults; consequently, the suggestion that further investigation is necessary to identify fractures or faults[125] has no basis in the context of the NETL report. In other words, NETL's analysis may have been accurate in the context of compressed air energy storage and its operational requirements, but it would be misleading to suggest NETL raised any cavern integrity concerns about the caverns in the context of LPG storage activities.

To address what it irresponsibly calls "potentially catastrophic consequences" if there is a problem with LPG storage, Gas Free Seneca once again suggests that seismic surveys should be performed (to address those questions that in reality have already been answered [e.g., the extent

[121] GFS Brief at 32.

[122] NETL, page 27.

[123] NETL, page 27.

[124] NETL, page 12.

[125] GFS Brief at 32.

of the Jacoby-Dellwig fault]) or must be addressed prior to the commencement of storage operations [e.g., performance of a pressure test to ensure Gallery 10 is tight—Draft Permit condition 1(h)]. However, as Department staff correctly notes, geophysical well logs obtained from drilled wells are definitive.[126] In support of this statement, Department staff cites a 2012 Solution Mining Research Institute (SMRI) research report on common practices for the underground storage industry, which states that well control, not seismic surveys, is the most common and precise method of mapping the salt structures and that it "is accomplished by accumulating the well drilling records and geophysical logs within the area of interest, and then mapping the depth to the top of the caprock and to the top of the salt, and creating isopach and other maps that show the structure including the caprock."[127]

Dr. Gowan agrees with Department staff that no additional site characterization is needed. As Dr. Gowan has noted, "the current data provided by the applicant has verified the integrity of the galleries and reservoir suitability for LPG storage. Seismic surveys (including 3-D seismic surveys) would be ambiguous and no more informative than the current knowledge."[128]

6. Pressure Testing Conducted of the Caverns and the Operational Pressures Mandated Under the Draft Permit Demonstrate That There Will be No Integrity Concerns

SLPWA continues to criticize the validity and value of pressure testing.[129] However, it is well established that pressure testing is a means to determine whether the caverns have integrity.

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[126] DEC Brief at 43.

[127] DEC Brief at 43, fn, 18.

[128] Gowan Report at 39-40. Indeed, Dr. Gowan has noted that "the presence of existing caverns within the zone of interest will cause significant disruptions in the seismic data. It is also unlikely that a tear fault would be detected in a unit such as the Camillus due to a lack of contrast through the offset." Id. See also Istvan Report at 13.

[129] SLPWA Brief at 38-42.

Indeed, FERC viewed the pressure tests Arlington conducted in a similar way when it noted that "the brine pressure test conducted in Gallery 2 showed no loss, indicating the Gallery has integrity." 147 FERC ¶ 61,120 at P 30.[130] Pressure tests run in all five existing wells (58, 33, 34, 43, and 44) show that none of these wells leak.[131] Department staff agrees with this conclusion, as it noted that "[t]hose tests indicate that both Gallery 1, which includes Cavern 43, and Gallery 2 are pressure tight, and have pressure integrity beyond that proposed for LPG storage."[132]

With regard to SLPWA's questions about the pressure test for Gallery 1, this once again stems from Dr. Vaughan's lack of understanding of how a pressure test is conducted. A description of the pressure testing conducted in 2009 and an explanation of the phases of each part of the test is described in the Affidavit of Barry Moon, attached hereto as **Exhibit B**.[133] According to Mr. Moon, the pressure testing of the caverns forming Gallery 1 has shown that the caverns have pressure integrity.[134]

The suitability of LPG storage at the Finger Lakes galleries is supported – and the contentions petitioners in this regard are refuted – by a comparison of proposed cavern pressures with that at the nearby Arlington Galleries.[135] The authorized maximum and minimum, stabilized pressures at Arlington Gallery 1 and 2 are 0.9 psi/ft and 0.2 psi/ft, respectively, at the

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130 See also American Petroleum Institute ("API") Recommended Practice 1114, January 2013, Recommended Practice for the Design of Solution-mined Underground Storage Facilities, available at http://www.api.org/publications-standards-and-statistics/standards/whatsnew/publication-updates/new-pipeline-publications/api_rp_1114, at 43-44.

131 Hearing Document I.A.2 and Document I.A.5.

132 DEC Brief at 58.

133 Affidavit of Barry Moon dated May 27, 2015 ("Moon Affidavit").

134 Id. at 3.

135 Gas Free Seneca's lack of understanding of underground gas storage is further underscored by its attempt to trivialize the importance of the successful storage, at greater pressures than will occur at the Finger Lakes LPG Storage facility, at the Arlington Galleries. GFS Brief at 56-57.

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casing shoes. See FERC Order, Appendix A. This maximum pressure is much higher than the maximum proposed operating gradient for Finger Lakes LPG Storage (of 0.62 psi/ft at Well 58 and 0.75 psi/ft for Well FL-1). See Draft Permit, Attachment 2. The minimum operating gradient at the proposed Finger Lakes LPG Storage Galleries will be 0.52 psi/ft as required by the DEC; consequently, there will be less stress on the caverns at Finger Lakes LPG Storage Galleries 1 and 2 from the storage of LPG than on Arlington Gallery 1, which has been storing natural gas without incident since 1996.[136] Thus, considering that higher pressures at the nearby Arlington Gallery have been deemed acceptable and operated without issue, it follows that the lower pressures at the Project present no issues. This unassailable demonstration and logic of cavern integrity satisfies the dictates of the ECL; moreover, it rebuts and indeed precludes any argument that there is an adjudicable issue with regard to cavern integrity.

Finally, a last ditch effort on the part of SLPWA and Dr. Vaughan to create doubt on the importance of pressure testing can be seen from the citation in SLPWA's brief in support of the suggestion that there could be a "sudden pulse of unintentional hydrofracturing."[137] However, what SLPWA failed to disclose was that the same authors (Berest and Brourard) and others more recently completed a 12-year pressure monitoring experiment, and the results discount the notion that there could be a pressure build-up in abandoned caverns. In this more recent research, a 12-year long shut-in pressure test was performed on a 3,000-foot deep salt cavern. The conclusion reached was that "[t]he notion of a steady-state 'equilibrium pressure' in a closed cavern,

[136] Gowan Report, p. 10; see also Issues Conference Exhibit 32.

[137] SLPWA Brief at 42.

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resulting from the opposing effects of brine permeation and cavern creep closure, has been clearly confirmed."[138]

7. Potential Horizontal and Valley Stresses Were Evaluated and Do Not Impact Cavern Integrity.

With regard to SLPWA's arguments[139] that horizontal stresses in the context of a valley fill cause a thrust fault, Department staff noted at the issues conference that the history of underground storage at this location showed this was not an issue.[140] Moreover, the caverns are not directly under the valley under Seneca Lake. As the Applicant has noted, since the cavern facility is under the slope of the valley (and not the valley itself), the lateral stresses on the cavern field will be greater than what was used in the FEA model.[141] However, this has no adverse effect. In fact, the additional lateral stress should increase the cavern roof stability during the withdrawal period. Cavern roof lateral stresses are not adversely affected during hydrocarbon injection since pressure change is gradual. The maximum storage pressures determined at the casing shoe by the FEA model become even more conservative, as well.

In its Post-Issues Conference Brief, SLPWA provides numerous references with regard to valley stress and regional tectonic stress and their effects on mine excavations.[142] Dr. Gowan spent a considerable effort attempting to look for similar features beneath the Genesee River Valley and adjacent uplands when investigating the cause of the Retsof Salt Mine collapse.[143] No valley stress relief features were ever found. The cause of the collapse had no apparent

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[138] Hevin, G., Pellizarro, C., Berest, P., and Brouard, B., *12-year Pressure Monitoring in an Idle Salt Cavern- The 1997-1998 ETREZ Abandonment Test Revisited,* SMRI Spring 2010 Technical Conference, Grand Junction, CO, 2010, p. 11 (attached as **Exhibit C**).

[139] SLPWA Brief at 11-18.

[140] Tr. at 264

[141] Hearing Document I.A. 30, p. 1.

[142] SLPWA Brief at 11-12.

[143] Gowan Report at 34, 38.

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relationship to Dr. Nieto's stress relief theory. Any assumption that thrust faulting has occurred within the brine field at Reading, as the result of stress relief based on Dr. Nieto's theory, has no merit or basis in fact.[144] Moreover, as Department staff notes, "Dr. Vaughn cites to three articles[145] about horizontal stresses but all three relate to horizontal stresses in traditional underground mine workings such as coal mines and except for standing for the general proposition that it's a good idea to understand in-situ stress, their relevancy is questionable."[146]

SLPWA further argues that "[t]he bottom of the bedrock valley is only 700 feet above the top of the salt layer."[147] Dr. Nieto now calculates that the concentrated horizontal compressive tectonic stresses at that point is sufficient to fracture the bedrock at the bottom of the valley. SLPWA presents a stress factor calculated by Dr. Nieto.[148] However, even if these new calculations were properly introduced at this late date,[149] they fail to account for the added weight of the sediment and water on top of the rock. These lake bottom confining pressures over the top of the rock have a significant impact on Dr. Nieto's model. This added downward force would have persisted continuously during and after the glaciers scraped the top of the rock down the center of the valley as is evident from the analysis conducted by Mullins and Hinchey

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144 Gowan Report at 34.

145 See also SLPWA Brief at 11 (where Dr. Vaughn still cites to these same references).

146 DEC Brief at 48.

147 SLPWA Brief at 13

148 SLPWA Brief, Exhibit C.

149 The introduction of new calculations by SLPWA must be rejected and not considered. Where a modeling method was available to petitioners and their expert before the deadline for filing petitions for party status, it cannot be considered "new information" and will not be considered. See Seneca Meadows, 2012 N.Y. ENV LEXIS 15, at *57-58. This would apply equally to Mr. Young's letter which SLPWA attempts to introduce as Exhibit G to their Post-Issues Conference Brief and other "updated" exhibits to reports submitted with SLPWA's petition for party status (e.g., Exhibit H).

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(1989).[150] This is also a reason why the valley stress model does not apply to the Retsof Salt Mine collapse.

SLPWA's Post-Issues Conference Brief claims that the relief between the Seneca Lake bottom and the site is 1,187 ft, which they claim is "more than enough to trigger the 1,000 foot threshold set by Professor Fuenkajorn."[151] SLPWA chooses to ignore the height of the sediment (500 ft based on Nieto) and the apparent height of the water column at 450 ft (based on Nieto, Figure 1). Although the weight of water and sediment are not the same as rock, their combined weight brings the differential down. The rock units that have been removed consist mostly of shale (167 pounds per cubic foot or 1.16 pounds per square inch/vertical ft (psi/ft)).[152] The glacial sediments consist of various layers of sand, gravel and clay (silt) (Mullins and Hinchey, 1989).[153] Sand and gravel has a unit weight of 120 lb/ft^3 (0.83 psi/ft) and clay has a unit weight of 109 lb/ft^3 (0.76 psi/ft) (Glover, 1990).[154] The ratio of sediment to rock is 0.8 psi per ft/1.16 psi per ft. The 500 ft of sediment is equivalent to 345 ft of rock, and the 450 ft overlying water is equivalent to 168 ft of rock. These values added together (345 ft and 168 ft) represent 513 ft of rock equivalent that brings the differential up to 742 ft, not Nieto's 1,255 ft and well below Professor Fuenkajorn's 1,000 ft threshold.

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150 Mullins, H.T., and Hinchey, E.J., 1989, Erosion and infill of New York Finger Lakes: Implications for Laurentide Ice Sheet deglaciation: Geology, v. 17.

151 SLPWA Brief at 15.

152 Glover, T.J., 1990; Pocket Ref; Sequoia Publishing, Inc.; Morrison, Colorado, p. 480.

153 Mullins, H.T., and Hinchey, E.J., 1989, Erosion and infill of New York Finger Lakes: Implications for Laurentide Ice Sheet deglaciation: Geology, v. 17.

154 Glover, T.J., 1990; Pocket Ref; Sequoia Publishing, Inc.; Morrison, Colorado, 480 p.

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8. Cavern 43 is not an Abandoned Cavern and Petitioners Failure to Understand This Underscores Their Lack of Familiarity with Underground Storage and Testing

SLPWA continues to insist that there is an "abandoned cavern" and that this impacts the FEA submitted to DEC.[155] The key in depicting caverns is to show where storage operations will occur. No abandoned caverns (including those consisting mostly of rubble) in the vicinity of proposed Gallery 1 or Gallery 2 will affect the safe and secure hydrocarbon storage operation. The only reason that a small cavern, very low in the salt section, is even shown on the cross section is that it was the only cavern sonared at one point in time (i.e., 1976).[156] As Wells 33, 34, 43, and 44 are all fracture connected low in the salt section, all of the area below the wells are filled with the rubble that was undercut by the dissolution of salt below the insoluble layers, causing those layers to break up and fall into the open chamber formed by the salt dissolution. No sonars had been obtained to depict those other caverns in the area of the fracture connections, and thus there is nothing to be seen on the cross-section in those areas. As Department staff suggests, the Applicant addressed Cavern 43 (and in particular the originally sonared Cavern 43 from 1976) in its response to the Department's Second NOIA. In that response, the Applicant stated:

> At the time the sonar on well 43 was performed in 1976, there was an open space cavern and that is what is depicted on the cross-section. Subsequent sonars performed on well 43 occurred in 1979, 1997, 1999, 2001, 2002, 2004 and most recently in 2009. Our records indicate that well 43 was drilled in 1966 and plugged and abandoned in 2004. From 1966 until 1987, well 43 was used as a tubing injection well. From 1987 until 2004, well 43 was used as an observation well. Sonars performed after 1976 did not pick up the open space observed at that time, most likely because the original cavern became filled with rubble. The cavern observed in 1976 is not included in the total estimated 5 million barrels of water-filled capacity for Gallery 1.[157]

[155] SLPWA Brief at 35, 40.

[156] DEC Brief at 57.

[157] Hearing Document I.A.8, at 8.

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The FEA did not consider the caverns buried in the rubble piles below the planned storage caverns because they will not be a part of the storage operation, and the wells and caverns to be utilized will have been evaluated by mechanical integrity pressure testing. The primary safety controlling factors in storage caverns are the well and the mechanical pressure integrity within and above the caverns, not the shape or volume of the rubble.[158]

9. Miscellaneous Questions Raised by Gas Free Seneca Regarding Cavern Integrity Once Again Reflect a Lack of Understanding by Gas Free Seneca and its Consultants of Salt Geology and Underground Storage

In its Post-Issues Conference Brief, Gas Free Seneca raises miscellaneous concerns regarding cavern integrity relating to the so-called "hanging ledge" in Cavern 44, and the characterization of Gallery 10. In each case, Gas Free Seneca's concerns are either misplaced, irrelevant, or addressed in the draft permit.

With regard to the so-called "hanging ledge," it was identified in an April 5, 2010 sonar report that was included in Finger Lakes LPG Storage's Response to the Department's first NOIA. Gas Free Seneca raises alarms about, "potential cavern breakdown," "taking the roof closer to rock," "the cavern will grow vertically", and "unintended and unknown cavern dimensions."[159] None of these issues are a concern because the hanging ledge is located in the salt formation; more than 224 ft of salt exists above the hanging ledge, and Well 44 is not part of the LPG storage area, which is in Cavern 34 (proposed FL-1). The significance of these observations is that the hanging ledge is stable, but even if it fell, it would drop harmlessly to the floor without impacting the production casing (FL-1), which is in Cavern 34. Any new Cavern 44 dimension and associated brine storage volume would then be recalculated based on a

[158] Istvan Report, at 9-10.

[159] GFS Brief at 28.

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subsequent sonar survey. Any additional vertical extent, in the event of a fall, would end in salt. Notwithstanding the innocuous nature of this circumstance, as Department staff correctly notes, "there is no evidence in the record or anywhere else to substantiate the claim that a ledge is about to fall and Gas Free Seneca is wrong to include such speculation."[160]

Finally, Gas Free Seneca suggests that additional evaluations of unknown conditions in Gallery 10 will need to be completed prior to granting a permit for LPG storage at Gallery 1.[161] This recommendation by Gas Free Seneca is already included as condition 1(h) in the draft permit. The relevant conditions include pressure testing to prove that the Wells (52, 57 and 18) do not leak and conducting a long-term pressure test to prove the integrity of Gallery 10. The requirement also includes continuous pressure monitoring in Well 52 with a 50-psig pressure change in 24 hours as a reportable incident. These requirements must be met prior to initial injection of LPG. It is clear that Gas Free Seneca's concern had already been addressed by the DEC draft permit.

10. No Additional Permit Conditions are Required

Gas Free Seneca suggests that five additional conditions be added to the draft permit if the permit is issued.[162] However, these recommended permit conditions are unnecessary and unwarranted. Moreover, Finger Lakes LPG Storage agrees with Department staff that Gas Free Seneca has failed to support its proposed permit conditions with an offer of proof that the conditions are reasonably related to impacts.[163] Therefore, these recommended additional conditions must be rejected.

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[160] DEC Brief at 66.

[161] GFS Brief at 29.

[162] GFS Brief at 33 and 34.

[163] DEC Brief at 63.

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Two of the proposed conditions, which suggest seismic sensors in boreholes and gas sensors in the aquifer, are designed to detect issues that would most likely appear long after a failure would have occurred. The existing monitoring program provided in the draft permit will identify a leak long before chimney failures or gas migration might be detectable by the suggested Gas Free Seneca seismic and aquifer gas monitoring. Regardless, in the context of "fluid movement in the subsurface," the Applicant must prepare an Environmental Monitoring Plan ("EMP") within 30 days after a permit is granted.[164] This EMP will cover the most relevant and timely concern for impacts to the shallow ground water system that would arise from failures of the brine ponds.

The proposed condition requiring subsidence monitoring that covers the entire brine field is not appropriate. US Salt already conducts a subsidence monitoring program at the project location and Department staff, through imposition of Draft Permit Condition 4, would require that Finger Lakes LPG Storage conduct subsidence monitoring of all wells accessing Galleries 1 and 2, including future and plugged wells, every two years. Changes to the existing program because of concerns about the potential impacts of weather on subsidence monitoring monuments is not necessary as explained by Department staff.[165]

Pressure monitoring and salinity monitoring are already included as part of the draft permit, and these are real time measurements similar to the suggestion by Gas Free Seneca. The addition of nearly continuous sonar surveys and tiltmeters measurements is not necessary and a demonstration of why this would be necessary has not been made by Gas Free Seneca. Sonar surveys are the accepted and reliable method for measuring cavern capacity changes.[166] The

[164] Draft Permit, Attachment 3.

[165] DEC Brief at 63-64.

[166] Gowan Report at 27.

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basis for the Gas Free Seneca position is the inability to measure the rubble pile.[167] However, as explained above, this is not relevant, since the baseline sonar survey considers the top of the rubble pile to be the bottom of the cavern. Any subsequent growth of the rubble pile will be included in the cavern capacity evaluation as measured by subsequent surveys that are specified by permit condition 1(d).

Moreover, any concern about the ineffectiveness of measuring cavern changes if a sonar survey has a margin of error of 5 to 7 percent is minimized by the additional monitoring and the evaluation of the brine dissolution rate that can be determined by analyzing the daily volume and saturation of the injected brine. See Draft Permit Condition 1(b). This brine data can be used to cross check the sonar surveys.

In addition, SLPWA argues that a brine budget would be a "safeguard against brine loss," but then goes on to say that maintaining such a budget would be procedurally difficult.[168] In fact, the draft permit does contain a condition which ensures that a proper brine saturation level is maintained (ensuring that there does not occur greater than the permitted 2% cavern growth on an annual basis) and appropriately monitored. [169] This is one of many conditions cited in Department staff's brief which were drafted to ensure a successful operation of the caverns.[170]

In summary, Gas Free Seneca and SLPWA have identified a number of additional permit conditions they believe should be incorporated into the draft permit. However, Gas Free Seneca's attempts to justify such conditions (e.g., FERC has imposed such conditions on Arlington; no acceptable method has been specified to measure capacity changes) fall flat and

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[167] GFS Brief at 35.

[168] SLPWA Brief at 48-49.

[169] Draft Permit Condition 1(b).

[170] DEC Brief at 31-33.

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certainly do not warrant their acceptance. Gas Free Seneca's failure to identify an adjudicable issue in and of itself is a reason to reject such conditions. Finally, as Department staff has noted, "the draft permit conditions prepared by Department staff address every aspect of the construction and operation of the proposed project including future monitoring and underscore the close examination that Department staff have taken to ensure the applicant would mitigate any significant adverse potential environmental and public safety impacts."[171]

C. FERC Evaluated the Same Geology and Cavern Integrity Issues and Has Now Twice Concluded that the Arlington Galleries Can Operate Safely and Will Not Impact Seneca Lake. The Same Conclusions Apply Equally to the Finger Lakes LPG Storage Galleries

The conclusions reached by the Applicant and Department staff regarding cavern integrity of the proposed Finger Lakes LPG Storage Galleries were confirmed by FERC when it reviewed the nearby Arlington project. On May 15, 2014, FERC issued an Order ("May 15 Certificate Order") authorizing Arlington to expand the Arlington Facility. The proposed expansion to the Arlington Facility involves the conversion of two interconnected bedded salt caverns (known as "Arlington Gallery 2"), previously used for LPG storage, to natural gas storage. See generally 147 FERC ¶ 61,120 at P 1.[172] FERC more recently rejected Gas Free Seneca's request for rehearing in an Order issued on May 20, 2015. See generally 151 FERC ¶ 61,160 (May 20, 2015) ("Rehearing Order").

In its Rehearing Order, FERC rejected Gas Free Seneca's further attempts to reargue many of the same issues it had raised to FERC previously, which are nearly identical to many of the arguments presented in Gas Free Seneca's Petition, at the issues conference, and in its Post-Issues Conference Brief in this proceeding. The FERC Rehearing Order noted that FERC's

[171] DEC Brief at 29 (citing Briggs Affidavit, Attachment 1).

[172] Finger Lakes LPG Storage Initial Brief at 40-44.

previous Order thoroughly addressed Gas Free Seneca's arguments that the location and geology of Arlington's caverns makes them unsuitable for gas storage operations. 151 FERC ¶ 61,160 at P 20 (citing May 15 Certificate Order, 147 FERC ¶ 61,120 at PP 23-32 (Engineering Issues) and PP 77-94 (Geologic Hazards), see also Environmental Assessment ("EA") at 10-11 (Geologic Hazards)). Specifically, according to FERC, the May 15 Certificate Order addressed Gas Free Seneca's arguments regarding potential seismic activity in the area, the proximity to Seneca Lake, the particular characteristics of salt and shale bedding planes of the formation in which Arlington's salt caverns lie, the caverns' irregular shapes and lack and stability in the size of the caverns." 151 FERC ¶ 61,160, at P 20. Moreover, the Rehearing Order dismissed any seismic concerns. Id. at P 21. FERC reaffirmed its conclusion that "[i]n consideration of [its] review of the geologic information provided by Gas Free Seneca's expert geologists, we restate the EA's conclusion that there will be no significant impact on environmental resources due to geologic hazards or from the geologic framework present in the Gallery 2 Project area. Id. at P 21, fn. 30 (citing FERC Order, at P 94).

In its request for rehearing, Gas Free Seneca asserted that FERC had not considered the risk that Arlington's pressurization of gas could cause brine water to seep into Seneca Lake. Id. at P 23. FERC disagreed and noted that, as discussed in its May 2014 Certification Order, "[while] U.S. Salt's previous mining operations had included activities that resulted in dramatic and sudden pressure changes that resulted in fractures in the salt and rock layers surrounding the caverns, those fractures have healed as the result of the crystallization of halite in the fractures and the recrystallized halite is more resistant than the original salt to fracturing."[173] FERC further noted that its May 2014 Order "explained that Arlington's gas storage operations will not

[173] Id.

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result in the dramatic and sudden pressure changes that would be likely to reopen the healed fractures or create new fractures." Id. (citing FERC Order at PP 90-92).

D. The Underlying Geology at the Project Site Has Been Well Characterized

The DSEIS and the Underground Storage Application (including all of Finger Lakes LPG Storage's responses to DEC NOIAs) more than adequately characterize the geologic setting and provide the understanding necessary to evaluate cavern integrity. As summarized by Department staff, Finger Lakes LPG Storage has provided the required geologic information in a series of submittals which include the geologic cross-sections and gallery map, sonar survey reports for the caverns for multiple years (the surveys were used to show the caverns on the cross sections, but the actual sonar survey reports provide 360 degree views of the caverns as opposed to the few transects displayed on the cross-sections), geophysical logs showing lithology, structural cross-sections developed using geophysical logs, and isopach and structure contour maps for the caprock.

As detailed in Finger Lakes LPG Storage's Initial Brief (at 54-85), the arguments presented by petitioners Gas Free Seneca and SLPWA (and purportedly supported by their consultants) are without basis in fact or science and are unsupported by the significant testing of the proposed storage caverns that has been conducted. Moreover, the petitioners' consultants have limited knowledge, at best, of how such storage caverns will actually operate, which becomes clear in the speculative and uninformed conclusions made in the reports included with the Petitions. For instance, SLPWA asserts that the Applicant did not recognize the presence of the "Jacoby-Dellwig" Fault, or the significance of Jacoby's observations and subsurface geology work as affecting the proposed storage scheme. [174] This is plainly rebutted by reviewing the

[174] SLPWA Petition, Attachment B ("Nieto Report"), p. 1

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Reservoir Suitability Report of Finger Lakes LPG Storage.[175] Yet, after incorrectly criticizing the Applicant for not discussing this fault, Dr. Nieto continues by suggesting that Jacoby's interpretation was wrong.

SLPWA continues to insist on a second type of fault in the Project area.[176] With the SLPWA petition, Dr. Nieto submitted a figure that showed a "reformulated fault" that essentially connects the Arlington galleries to Seneca Lake.[177] However, by SLPWA's own admission, this is a fault Dr. Nieto has "postulate[d]" and no evidence is presented to support his theory.[178] In fact, this "reformulated" fault is not consistent with horizontal stresses and strain (deformation) and is not consistent with the decollement associated with the salt throughout the region. Furthermore, Dr. Gowan has observed that it is not possible for this fault to have no offset in some of the rock intervals (such as the Camillus Formation) above the bedded salt cavern sequence while having offsets in other units such as the Onondaga Formation.[179]

Simply put, the assertions made by petitioners in support of their arguments regarding cavern integrity generally rely on supposition and conveniently fail to recognize the complete record (e.g., with regard to the Gallery 2 cavern [i.e., Well 58]), well established physical properties of salt and its ability to strongly "heal" any fractures, and other relevant facts (e.g., any daylighting of brine in connection with the development of Well 29 relates to hydraulic fracture pressures). As a result, their conclusions are contrary to generally accepted scientific principles, lack a scientific foundation, and are unreliable. As such, these theories should not be viewed as reliable in the administrative context.

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[175] Document I.A.5, Updated RSR, Section 7.

[176] SLPWA Brief at 8.

[177] Nieto Report, Figure 1.

[178] SLPWA Brief at 8.

[179] Gowan Report, p. 34.

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"Judgments about the strength of the offer of proof must be made in the context of the application materials, the analysis by staff, draft permits are the issues conference record. Offers of proof submitted by a prospective intervenor may be completely rebutted by reference to any of the above, alone or in combination. In such a case, it would be a disservice to the applicant and the public at large to proceed any further with time-consuming and costly litigation." New York State Thruway Authority, Interim Decision of The Commissioner, 2002 N.Y. ENV LEXIS 25, at *6-7 (NYSDEC 2002); Bonded Concrete, Interim Decision of the Commissioner, 1990 N.Y. ENV LEXIS 44, at *4-5 (cited by Metro Recycling & Crushing, Inc., Decision of the Acting Commissioner, at 2005 N.Y. ENV LEXIS 27, at *6 (NYSDEC 2005)). Moreover, it "is not sufficient to merely raise information counter to the position of an applicant. The offer of proof must be competent, not merely contrary." New York State Thruway Authority 2002 N.Y. ENV LEXIS 25, at *15. The Applicant's experts, the analysis by Department staff, the conclusions of the New York State Geologist, and FERC have all concluded that the geologic formation supports underground gas storage and the tests performed by the Applicant demonstrate cavern integrity. The offers of proof made by the petitioners are not scientifically/factually valid and/or are clearly rebutted by the evidence submitted by the Applicant and Department staff. Therefore, there should be no issue for adjudication.

VII. There is No Adjudicable Issue Regarding Impacts to Seneca Lake Water Quality

SLC, Gas Free Seneca, and SLPWA raise again in their Post-Issues Conference briefs the speculative and unsupported claim that operation of the proposed caverns will have an impact on the water quality of Seneca Lake.[180] This baseless claim appears to be based on the assertion that (1) a spike in the chloride levels in the lake in the 1960s must have been caused by US Salt's

[180] SLC Brief at 33-45; GFS Brief at 47-57; and SLPWA Brief at 46-51.

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historical LPG storage operations; and (2) applying the theory of "advective" flow leads to the conclusion that somehow there is a connection between the underground caverns and the lake chloride levels, particularly on the northern end of the lake (some 10-14 miles from the Project's closest point to the lake). As discussed below, this unsubstantiated conjecture cannot serve as the basis to identify an issue for adjudication.[181]

A. There is No Proof that Connects the Historic Operation of the LPG Caverns from 1964-1984 to a Spike of Chlorides in Seneca Lake in the 1960s

In order for petitioners to carry their burden on their water quality arguments, they must submit an offer of proof establishing a scientific/factual nexus between the proposed activity and the water quality of Seneca Lake. The petitioners have failed to do so.

SLC claims that correlation of prior activity (presumably past gas storage) and the failure of Dr. Halfman and other researchers to scientifically identify the cause of Seneca Lake's high chloride levels is "evidence" (which SLC even goes so far as to characterize as "compelling").[182] Further, SLC claims that "correlating potentially relevant activities to impacts and eliminating unlikely possibilities is not guessing- it is science."[183] But, when SLC asserts that permitting decisions should be based on the kinds of speculative theories espoused by Dr. Myers (who SLC acknowledges concludes that "the phenomenon in question is difficult to detect or monitor"), it is clear that the alleged correlation SLC is attempting to make lacks a proper scientific foundation.

The supposition that previous LPG storage adjacent to the Proposed Project site caused the salinity spike is not supported by any evidence or plausible theory espoused by Dr. Myers, Dr. Clark, Dr. Nieto, or Dr. Vaughan. As Dr. Gowan observes, a mere temporal coincidence is not substantial evidence of causation. It is more likely that the chloride spike was caused by

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[181] See also Finger Lakes LPG Storage's Initial Brief at 78-84.

[182] SLC Brief at 43.

[183] Id.

industry discharges and then the multi-decade decline in concentration is the result of a change in regulatory oversight that occurred following the implementation of the Clean Water Act in 1972, the Safe Drinking Water Act in 1974, and the State Pollutant Discharge Elimination System ("SPDES") enactment in 1975.[184]

Department staff agrees that an increase in chloride levels in Seneca Lake cannot be attributed to past LPG storage operations.[185] Department staff observes that Dr. Halfman's ultimate conclusion about the connection between historical LPG storage activities and Seneca Lake chloride levels is that "there is not enough publicly available information to properly answer this question."[186] Dr. Halfman's uncertainty about the connection is more intellectually credible than the conclusion Dr. Myers jumps to, where relying on Dr. Halfman's research, Dr. Myers unequivocally states that "discharges in the mid-1960s were caused by the LPG storage activities taking place at the time."[187]

B. Dr. Myers' Theory on Advective Flow from the Caverns to Where the Salt Formation Intersects the Lake, at Least 10 miles North of the Site, is Physically Implausible and Not Supported by Existing Data

Gas Free Seneca makes the claim that "[b]ecause neither the DSEIS nor any supporting materials in the record evaluates the issue identified by Dr. Myers, a reasonable person would require further inquiry into whether the Project could contaminate the drinking water supply for more than 100,000 people."[188] This statement is simply not true. Dr. Gowan explains how the Applicant's FEA provides the supporting information to refute the Myers hypothesis that pressure changes in the galleries resulting in viscoelastic strain will drive saline ground water out

[184] Gowan Report at p. 41.

[185] DEC Brief at 70-73.

[186] Id. (citing Halfman Affidavit, ¶¶ 9, 11).

[187] Id.

[188] GFS Brief at 48-52.

of the lake sediments.[189] The following results from the FEA completely refute any potential for "elastic strain to propagate along the plane of the formations"[190] a distance of 10 to 14 miles:

(1) The inter-cavern pillars between caverns 33 and 43, 34/44 LPG gallery and gallery 10 will be mechanically stable under the minimum LPG storage pressure of 1,197 psi at the casing shoe for the next 50 years.

(2) The inter-cavern pillars will be mechanically stable under the MIT hydrostatic pressure of 1,680 psi at the casing shoe for the next 50 years. The MIT pressure is lower than the predicted pillar stresses.

* * *

(4) The impact of the pressure cycle is very small due to the small difference between the magnitudes of the maximum and minimum storage pressures of the LPG.

(5) The salt pillars have been subjected to large shear strains during brine storage/production. These strains are however significantly reduced by the increase of the confining pressures in the salt pillars when the caverns/galleries are under MIT pressure and LPG storage.

* * *

(7) Both Well 58 (far away and not on FEA map, and NYSEG Galleries 1 natural gas storage service), and 2 are also too far away to have any effect on the Finger Lakes (FL) LPG storage caverns.

(8) Based on the results of the analyses on these large galleries with small inter-cavern pillars, Well 58 (in the same salt formation/properties/depth) is likely to be mechanically stable. This is because it is relatively small and isolated from the rest of the caverns and galleries (the inter-cavern pillar is over 1000 ft).[191]

These conclusions make it very clear that no mechanical effects (strain) will be experienced even in the small distance between Galleries 1 and 10, which is much smaller than the 1,000-foot separation between Gallery 2 and the neighboring galleries or, for that matter, 10

[189] Gowan Report at 43.

[190] Myers Report at 12.

[191] FEA at 1.

to 14 miles away in Seneca Lake.[192] The fact that Gas Free Seneca has apparently conflated the terms pressure (stress) and strain[193] is an indication of the confusion being created by Dr. Myers.[194] Pressure (also known as stress) is not strain (which is also known as deformation). Strain is typically the result of pressure. It is important to understand these two technical terms separately. It is the cavern pressure that Dr. Myers hypothesizes has caused the strain within the salt.[195] But, despite Gas Free Seneca's earlier recommendation that a permit condition is needed to increase the measurement of pressures during operation,[196] Gas Free Seneca attempts to minimize the importance of the pressure testing that was conducted (which shows that the caverns will maintain integrity when operated) by stating that "the walls of the adjacent caverns easily could distort the pressure signal, however, and prevent it from reaching the monitoring equipment located on the inside of the adjacent cavern."[197] However, as discussed above in the Cavern Integrity section of this Brief (Point VI), it is beyond peradventure that pressure testing and finite element modeling are well accepted methods to demonstrate cavern integrity in the underground LPG storage industry.

As noted above, one of the purposes of an FEA is to understand the impact of pressure cycling and the impact that could have on salt pillars. As the FEA notes, "[t]he impact of the pressure cycle is very small due to the small difference between the magnitudes of the maximum

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192 Gowan Report at 43.

193 GFS Brief, top of p. 51.

194 These are not the only instances Gas Free Seneca and Dr. Myers have misunderstood the basics of how underground LPG storage works. For example, Gas Free Seneca footnote 58 shows a complete misunderstanding of how brine is introduced to the caverns. Footnote 56 seems to imply that there are periods of time during LPG storage that the caverns are not full of fluids. See DEC Brief at 55-56.

195 Gowan Report at 43.

196 GFS Brief at 33.

197 Id.

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and minimum storage pressures of the LPG."[198] Moreover, "[t]he salt pillars have been subjected to large shear strains during brine storage/production. These strains are however significantly reduced by the increase of the confining pressures in the salt pillars when the caverns/galleries are under MIT pressure and LPG storage."[199] Despite this, Gas Free Seneca once again displays its own consultant's lack of experience and background when it attempts to create doubt about these techniques.[200]

Gas Free Seneca claims that, "[t]he Myers Report provides the only explanation offered in the record to date for the volume and timing of the spike in salinity in Seneca Lake between 1965 and 1970."[201] This is a specious argument since no supporting data on aquifer conditions have been provided by Gas Free Seneca.[202] All the pertinent parameters are speculative. Other theories of the timing have been posited, which further highlight the speculative nature of the assertions made by Gas Free Seneca and Dr. Myers.[203]

A potential party's burden of persuasion at an issues conference to demonstrate that a proposed issue is substantive and significant and thus adjudicable must be met by an appropriate offer of proof. Buffalo Crushed Stone, 2008 N.Y ENV LEXIS 69, at *10. "Although a potential party is not required to present proof of its allegations sufficient to prevail on the merits" during

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198 FEA at 15.

199 FEA at 1.

200 GFS Brief at 56.

201 GFS Brief at 52.

202 Nevertheless, GFS attempts to rehabilitate Dr. Myers by challenging Dr. Siegel's expert opinion that the lake bottom is too impermeable to allow the groundwater flow hypothesized by Dr. Myers. GFS Brief at 54. However, this effort fails as well since it relies on statements such as "Dr. Wing does not provide detailed sediment data" and "Dr. Myers uses this range [of hydraulic conductivity] because of the statements of Dr. Halfman and Dr. Wing that the Seneca Lake sediment is heterogeneous, meaning that it likely contains a mixture of till and other materials, including some clay." GFS Brief at 55. So, here again, Gas Free Seneca and its experts are speculating and trying to interpret vague statements made by other experts. This is just heaping speculation on top of speculation and cannot form the basis of identifying an issue for adjudication.

203 Gowan Report at 41; DEC Brief at 71-73.

the issues conference, "conclusory or speculative statements without a factual foundation are not sufficient to raise an adjudicable issue." Id. at *12. "Conducting an adjudicatory hearing 'where "offers of proof, at best, raise potential uncertainties" or where a hearing "would dissolve into an academic debate" is not the intent of the Department's hearing process.'" Id. Accordingly, a potential party will not satisfy its prima facie burden to raise a substantive and significant/adjudicable issue if the assertions in its petition lack a factual or scientific foundation. Id. at *14. Notably, "it is not the purpose of post-issues conference briefing to allow a party to supplement, expand upon or otherwise remedy a deficient petition for party status" that fails to meet this prima facie burden. Crossroads Ventures, LLC, 2006 N.Y. ENV LEXIS 88, at *10; Buffalo Crushed Stone, 2008 N.Y. ENV LEXIS 69, at *14 (a "potential parties' offer of proof should be based upon the opinions of experts or other qualified witnesses already identified" prior to the issues conference). The arguments based on speculation being made by Gas Free Seneca are exactly what adjudication should NOT resolve. Gas Free Seneca has failed to satisfy its burden. There is no issue for adjudication.

C. The DSEIS Adequately Describes the Environmental Setting with Regard to Water Resources, Including Seneca Lake

SLC asserts incorrectly that the DSEIS does not adequately describe the environmental setting.[204] In fact, the DSEIS describes various aspects of the water quality and other similar resources (including for example wetlands, streams, and the overall drainage basin).[205] SLC also ignores the extraordinary groundwater water quality monitoring that must be conducted under the draft permit. Moreover, there is specific information about Seneca Lake in the DSEIS,

[204] SLC Brief at 33.

[205] DSEIS, Section 4.1.1.1, pp, 23-25, 27-28 (wetlands); 4.1.2.1, pp. 34-35 (wetlands, water bodies and drainage patterns), 37- 38 (groundwater) and 4.2 (impact on water resources).

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citing such sources as a DEC water quality study, Wing and Halfman.[206] The fact that a historical salinity spike in the lake remains unexplained does not render the DSEIS deficient or create an adjudicable issue. Department staff demonstrates in its Post-Issues Conference Brief that any spike in salinity levels is not related to the former LPG storage operation from 1964-84.[207]

SLC posits that the failure to explain the salinity levels in Seneca Lake is a SEQRA issue that must be adjudicated.[208] SLC correctly quotes the SEQRA regulations, but then fails to properly acknowledge that the purpose of SEQRA is not to conduct research and studies just for the sake of answering a science question. The purpose of SEQRA is to evaluate potential environmental impacts of a project based on the existing setting. If as shown in the Cavern Integrity section of Applicant's and Department staff's post issues conference briefs, there is no possible connection between the proposed caverns and Seneca Lake, then answering the question of the high levels of chloride and sodium in Seneca Lake is just an academic debate (as Dr. Halfman acknowledges) – this is not the purpose of adjudication. Certainly, conducting a year long "experiment" is neither warranted (given the demonstration the Applicant has made of cavern integrity, thereby negating any possible nexus between the caverns and the lake) nor is appropriate for adjudication.[209]

The Applicant certainly agrees with the statement cited by SLC from the SEQRA Handbook that prior activities have a bearing on what is proposed.[210] But then SLC fails to acknowledge the prior activities that actually are relevant: use of the caverns for salt solution

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[206] DSEIS Section 8.

[207] DEC Brief, pp. 69-79.

[208] SLC Brief at 39.

[209] SLC Brief at 43-44.

[210] SLC Brief at 40.

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mining since the 1800s and for hydrocarbon storage since 1964.[211] Further, the example used of what impact a brine spill could have on the lake is addressed in the DSEIS.[212]

Finally, SLC argues that "[e]nsuring compliance with [sodium] standards is one of the primary objectives of SEQRA itself." [213] SLC goes on to cite from SEQRA (ECL §8-0103(5)) for the proposition that health and safety are relevant considerations. The problem with SLC's discussion of this point of course is that SEQRA does not establish substantive standards but is an evaluative process that looks at an "action" and its reasonably anticipated impacts. 6 NYCRR § 617.9(b)(1)-(2). A connection between the caverns and Seneca Lake is not reasonably anticipated and (as Dr. Siegel has opined) "implausible."[214] SLC disagrees and argues that "Dr. Halfman's research provides evidence of a connection between activity in these caverns and impacts to the lake."[215] Even Dr. Halfman would not agree with this unsupported conclusion.

By his own assertions,[216] Dr. Myers fails the fundamental tests set forth in the Wesley and Frye cases. See People v. Wesley, 83 N.Y.2d 417 (1994); Frye v. U.S., 293 F. 1013 (D.C. Cir. 1923); Application of Seven Springs, LLC, Ruling on Issues and Party Status, 2002 N.Y. ENV LEXIS 42, at *41 (NYSDEC 2002). His theory not only fails to meet any notion of being generally accepted, but is also scientifically unsubstantiated. As Dr. Gowan concludes, Dr. Myers' theory is "one of the must unfounded, unsupported and implausible theories of advective flow" he has ever seen in his professional career.[217]

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[211] See e.g., DSEIS Section 4.1.3.1, pp. 67, 69.

[212] Section 4.2.2.3

[213] SLC Brief at 44.

[214] Siegel Report at 9.

[215] SLC Brief at 45

[216] Myers Report at 2.

[217] Gowan Report at 42.

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As previously noted, conducting an adjudicatory hearing "where 'offers of proof, at best, raise uncertainties' or where such a hearing 'would dissolve into an academic debate' is not the intent of the Department's hearing process." Adirondack Fish Culture Station, Interim Decision of the Commissioner, 1999 N.Y. ENV LEXIS 29, at *14-15 (NYSDEC 1999), at 8 (quoting AKZO Nobel Salt Inc., Interim Decision of the Commissioner, 1996 N.Y. ENV LEXIS 4, at *26 (NYSDEC 1996)); Seneca Meadows, Inc., Interim Decision, 2012 N.Y. ENV LEXIS 76, at *7. Petitioners ask the Department to adjudicate an academic debate of what has possibly caused temporary increased salinity levels in Seneca Lake (data shows the levels that have been decreasing).[218] However, that cannot be the purpose of an adjudicatory hearing for a specific permit application. Moreover, there is no scientific foundation demonstrating a nexus between the integrity of the caverns to be used for gas storage and these high salinity levels. As such, any claim that the water quality of Seneca Lake should be an adjudicable issue is specious and should be dismissed.

VIII. There Are No Adjudicable Issues Relating to Public Safety

A. Introduction

In their post-issues conference briefs, petitioners Harp and Lausell, SLC, and Gas Free Seneca argue that there is a substantive and significant issue related to public safety.[219] The DSEIS and the expert opinions and reports submitted by the Applicant and local emergency response personnel demonstrate that proper safeguards are in place to ensure that the facility will be operated safely, but if there is an event that requires emergency response, local officials and

[218] Id.

[219] SLC Brief at 45-52; GFS Brief at 36-47; Harp and Lausell Brief at 7-12. Harp & Lausell also attempt to convert their Amicus petition to one for Full Party Status. This attempt should be rejected for the reasons set forth in Point X below.

emergency personnel are well prepared to address any situation, including one relating to an unlikely release of LPG.

Petitioners appear to be most interested in one thing – to alarm the general public and/or decision-makers by making the unlikeliest catastrophes sound like certainties that could allegedly occur as a result of the operation of the facility. In fact, the proposed facility has been designed and will be constructed pursuant to well established industry practices and standards[220] and will be regulated by numerous federal and state regulatory agencies. The assertions made by petitioners are not supported by the facts, by the expert risk assessments performed for Finger Lakes LPG Gas Storage, by local response personnel, and the plans that are in place to ensure that trained personnel are ready to respond to any emergency. Gas Free Seneca's attempt to turn Dr. Mackenzie into an appropriate expert must fail. Gas Free Seneca's attempted reliance on Dr. Mackenzie's flawed and biased assessment demonstrates that there is not a substantive and significant safety issue.

From the perspective of SEQRA compliance, the Record demonstrates that any potential impacts have been minimized and/or mitigated to the maximum extent practicable. Department staff agrees that the analysis of Finger Lakes LPG Storage "and the various plans that have been or will be prepared satisfies all SEQR requirements applicable to the proposed project and provides an adequate basis on which to make SEQR findings."[221]

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[220] National Fire Protection Association ("NFPA") 58 [Hearing Document I.B.6, Attachment 15] and American Petroleum Institute ("API") Recommended Practice 1114, January 2013, Recommended Practice for the Design of Solution-mined Underground Storage Facilities, available at http://www.api.org/publications-standards-and-statistics/standards/whatsnew/publication-updates/new-pipeline-publications/api_rp_1114.

[221] DEC Brief at 80.

B. Petitioners Have Not Made an Expert Offer of Proof That Rebuts the Application Documents and the Position of Department Staff and Therefore They Have Not Satisfied Their Burden of Persuasion That an Issue Exists for Adjudication

Gas Free Seneca's attempt to transform a medical doctor into an expert on the safety of underground hydrocarbon storage must be rejected. In its brief, Gas Free Seneca properly recognized that at the issues conference stage, the qualifications of an expert witness may be the subject of consideration.[222] For an expert's testimony to be admissible, it is required "that the testifying expert possess the requisite skill, training, education, knowledge and experience from which it can be assumed that the opinion rendered is reliable." Bath Petroleum Storage, Inc. and EIL Petroleum, Inc., Ruling 9, Ruling on Discovery Disputes and Respondents' Motion to Dismiss, 2005 N.Y. ENV LEXIS 33, at *13 (NYSDEC 2005) (quoting Enu v. Sobol, 208 A.D.2d 1123, 1124 (3rd Dept. 1994); Mattot v. Ward, 48 N.Y.2d 455, 459 (1979)); Hellert v. Town of Hamburg, 50 A.D.3d 1481, 1482 (4th Dept. 2008). The issue of the weight to be accorded expert testimony "is properly resolved in the administrative process," Lampidis v. Mills, 305 A.D.2d 876, 877 (3rd Dept. 2003), and the extent of the witness's qualifications goes to the weight to be afforded the testimony. Felt v. Olson, 51 N.Y.2d 977, 979 (1980). Id. Moreover, the qualifications of a proposed expert witness can certainly be considered at the issues conference stage. See Seneca Meadows, Interim Decision, 2012 N.Y. ENV LEXIS 76; Gernatt Asphalt Products, Issues Ruling, 1994 WL 1735233 (NYSDEC Mar. 3, 1994); Onondaga County Resource Recovery Agency, ALJ Ruling on Party Status, Dec. 11, 1991. As discussed at the issues conference and in the Finger Lakes LPG Storage's Initial Brief (88-91), Dr. Mackenzie fails to satisfy the basic test to qualify as an expert in the field. There is nothing more to add.

[222] GFS Brief at 37.

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Dr. Mackenzie is simply not an expert, was not qualified to prepare his risk assessment, and his offer of proof should be disregarded in its entirety.

In its Post-Issues Conference Brief, Department staff agrees with the assessment related to the absence of credentials of Dr. Mackenzie to provide an opinion on risk for the proposed facility. As noted by staff, "[n]ot only is the preparer of the report not qualified to render an expert opinion on the risks associated with LPG storage projects, but the analysis itself, under the best light, is an analysis of accidents that occurred at other facilities and does not specifically address the risks of the actual facility proposed by FLLPG."[223]

Moreover, Dr. Mackenzie's report did not follow appropriate and relevant guidance, despite the insistence in Gas Free Seneca's Brief.[224] Gas Free Seneca's reliance on ISO 17776[225] is inappropriate on its face because it relates to offshore exploration/production activities, not underground storage. While the entire document is not available, the introduction to the ISO states that "[t]his International Standard identifies some of the tools and techniques that may be used for this purpose in the offshore exploration and production industry and gives guidance on how they may be applied to particular activities." Indeed, Gas Free Seneca admits that "no specific recommendations have been adopted for underground hydrocarbon storage."[226]

While ISO 17776 is intended for offshore platforms, it does provide an introductory definition for the tasks followed in a QRA. However, Dr. Mackenzie's work did not follow these guidelines as claimed. Those guidelines include (taken directly from ISO 17776:200):

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[223] DEC Brief at 80, 86-88. Nevertheless, if for some reason Dr. Mackenzie's report is considered, Department staff noted that given Dr. Mackenzie's lack of qualifications to serve as an expert in the fields of gas storage, pipeline or rail safety, the substance of GFS's "High-Level Quantitative Risk Assessment" deserves very little weight. Id. at 86.

[224] GFS Brief at 41-43.

[225] The complete name of the ISO is as stated in GFS' Brief at 41, fn. 34.

[226] Id.

- **Identification of hazards**, which is usually undertaken using some form of Hazard Identification ("HAZID").

- **Determination of a set of representative hazardous events**, which includes events arising from the realization of all the hazards identified as being significant in the HAZID.

- **Estimation of the frequency of occurrence of the representative hazardous events**. This is normally done by reference to appropriate historical data.

- **Evaluation of the direct effects of the hazardous event**, which normally involves an event-tree approach in which all the possible outcomes of the hazardous event are considered and the likelihood of each type of end event determined. This step in the process involves the use of mathematical models to predict both physical phenomena such as dispersion of gas or released fluids, overpressures due to explosions, size and duration of fires, etc., … The end result of this phase of the assessment is a series of "end events", together with their estimated frequency of occurrence which is usually expressed in terms of frequency per year.

- **Evaluation of the consequences of the identified end events**, which involves assessing the consequences of the end events in terms of what effect they have on the various risk dimensions. This step may again use some mathematical modelling. The outcome of this phase of the assessment is thus a series of consequences or consequence categories arising from a particular hazardous event, together with their estimated frequency of occurrence.

- **Risk summation.** The overall frequency of each of the consequence or consequence categories is determined by summing up the relevant frequencies for all the possible end events.

Dr. Mackenzie's work did not include:

- Hazard identification, or
- Consideration of a set of representative events (only worst-case events were considered), or
- The use of mathematical models to calculate the extent of event impacts, or
- The definition of event frequencies per year, or
- Evaluation of potential outcomes following an event, or
- Evaluation of all possible end events.

Therefore, Dr. Mackenzie does not even follow the prescribed methodology from the guidelines he cites.

Gas Free Seneca provides further reasons for disregarding Dr. Mackenzie's opinion. Gas Free Seneca provides the definition of a QRA from a separate ISO standard (ISO 31000:2009).[227] Under this definition, Dr. Mackenzie's work did not constitute a QRA—it is plain to see that Dr. Mackenzie's views were qualitative and pre-ordained. The risk to the public from the Finger Lakes LPG Storage facility, if expressed quantitatively, is necessarily defined by large, medium, and small events, from various potential sources, not just a set of higher-level top events.[228] Moreover, Gas Free Seneca and Mackenzie's reliance on "peer-reviewed and published works"[229] identifies a book prepared by a sedimentologist[230] and a report written regarding incidents occurring worldwide.[231] Neither of these sources provides the guidance necessary to do a proper QRA, such as the two assessments performed by Quest.

C. The Quantitative Risk Assessments Prepared by Quest Appropriately Concludes that There is Minimal Risk Associated with the Proposed Storage Facility

Gas Free Seneca attempts to challenge certain aspects of the two QRAs prepared by Quest. However, it is clear that these criticisms are baseless. Contrary to the assertion of Gas Free Seneca, Quest's 2012 QRA did account for topography, but Quest's modeling was based on

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[227] GFS Brief at 42, fn. 35.

[228] Quest Transportation QRA at 16.

[229] GFS Brief at 42, fn. 37.

[230] John K. Warren, Evaporites: Sedimentology, Resources and Hydrocarbons (2006).

[231] D. J. Evans, *An appraisal of underground gas storage technologies and incidents, for the development of risk assessment methodology*, Health and Safety Executive of the United Kingdom (2008)("HSE Report"), *available at* http://www.hse.gov.uk/research/rrpdf/rr605.pdf. Of course, GFS's citation to the HSE Report is interesting in a different respect. This report states that "[u]nderground gas storage in salt caverns is covered by a British (and European) Standard, which also explains the concept and requirements of developing such a facility (BS EN1918-3:1998; BSI, 1998c). The standard states that salt caverns are generally seen as suitable and preferential sites for the storage of oil and gas, due to the almost zero permeability (to gas) and the viscoplastic nature of salt, which leads to the healing of any cracks and faults. Halite has very high ductility and when subjected to stress, an ability to plastically flow by crystal plastic deformation (creep) processes. This means that it has a low susceptibility to fracturing, but when it occurs, the halite 'anneals' ('flows'), thereby allowing fractures and cracks to seal." Id. at 20.

flat terrain.[232] This conservative approach generally overpredicts the distance that a flammable gas cloud would travel. For fires, there is very little effect of terrain on the distances a hazardous level of thermal radiation may extend. Terrain features can only provide shielding to the effects of radiation, not increase those effects. Because of these factors, and other conservative assumptions, the risk analysis is deemed to overpredict the risk to the public. Inclusion of any terrain features would only serve to reduce the overall risk to the public. As such, there is no deficiency to correct.[233]

Moreover, in this case, the reliance on the HSE Report was appropriate. There are no (zero) reliable databases derived from experience at underground LPG storage facilities in the U.S., or from other parts of the world. The database from the U.K. offshore systems is the most comprehensive, well-documented database available for hydrocarbon processing systems. Because of this, it has become the preferred failure rate database for process safety consultants worldwide, and is applied to projects in all sectors of the hydrocarbon industry.[234] As noted (but notably omitted by Gas Free Seneca) by Quest in its report, "the report also noted that the risk from underground storage is dominated by the surface and shallow subsurface equipment (valves, piping, etc.). The risk dominance is due to the much higher release rates possible from this equipment (as compared to diffusion from cavern structural issues)."[235]

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[232] GFS Brief at 44.

[233] Quest 2012 QRA, at p. 6-8.

[234] Id. at p. 4-5. Gas Free Seneca again exhibits its confusion with storage operations when it tries to argue that there is a substantive distinction between "surface and shallow sub-surface equipment" and the "well connecting the storage cavity to the surface." GFS Brief at 44, fn. 40. Apparently, Gas Free Seneca does not realize the wells connecting the storage cavity to the surface also are below the ground.

[235] Quest 2012 Report at p. 4-5.

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In terms of the conclusions reached in Quest's 2012 QRA, Gas Free Seneca misinterprets or omits context in reporting such risk in its Post-Issues Conference Brief.[236] For example, Gas Free Seneca suggests that there is a potential risk to the public from on-site operations ranging from 10^{-3} to 10^{-6}.[237] However, the areas where the risk is 10^{-3} are either on the property of Finger Lakes LPG Storage or on vacant land (e.g., next to the rail line).[238] There is only one residence within the 10^{-6} contour.[239] Given the conservative nature of the analysis,[240] Quest concluded this to be acceptable compared to well known risk acceptability criteria.[241]

Quest's reporting of the risk on an annual basis is the preferred and accepted method within the process safety community.[242] The risk analysis must be consistent with the failure frequency data that are used within it. Virtually all equipment failure rate data is presented as failures per year. If the data is derived from a database, the number of failures is determined, as is the number of equipment-years. One year is the common measure of time that is applied to frequencies, likelihoods, and probabilities.[243] Finally, the risk criteria to which the calculated risk is compared must also be consistent with the risk analysis. In the risk assessment phase of the project, the risk is compared to applicable criteria, which are all defined as fatalities per year.

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236 GFS Brief at 45.

237 Quest's risk level terminology and numerical values table is helpful to understanding these risk probabilities. See Quest Transportation QRA, at 37, Table 5-1.

238 Quest 2012 Report, Figures 6-2 and 6-3, pp. 6-4 and 6-5.

239 Id. at p. 6-6.

240 Id. at Section 6.4.

241 Id. at p. 6-9.

242 Ernst Meyer et al., *What Risk Should Public Accept from Chemical Process Facilities?*, Process Safety Progress, Vol. 6, No. 2, June 2007, at 90; CCPS, *Guidelines for Developing Quantitative Safety Risk Criteria*, Center for Chemical Process Safety of the American Institute of Chemical Engineers, New Jersey, 2009. Even the inapplicable ISO cited by GFS in its Brief would look at risk (where an off-shore production installation is involved) on a yearly basis. See ISO 17776:2000, at p. 27.

243 Quest 2012 Report, Section 4.

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Thus, to properly assess risk, a criterion must be applied, and it must be consistent with the basis of the risk analysis.[244]

Some criticisms Gas Free Seneca raises with Quest's report require a simple response. For example, contrary to Gas Free Seneca's suggestion, Quest did not ignore the risk of the existing pipeline.[245] It was discussed in Quest's report.[246] Because 21 miles of pipeline already exist in Schuyler County, the associated risk is not influenced by the Project. Any risk from that pipeline can be used as baseline risk, and the additional risk due to the half mile of pipe for the Project can be evaluated as incremental risk.[247]

Similarly, contrary to Gas Free Seneca's understanding, Quest's analysis was not based on a number of fatalities per cavern.[248] It was, however, based on the frequency of failures per cavern or cavern wellhead per year, as is the appropriate method of analysis.[249] Using incidents per facility in a quantitative risk analysis is incorrect. This would be like using data for the number of homicides per city, per year, in the State of New York. It would be unfair to apply such a statistic to Watkins Glen when the same value is applied to Buffalo or New York City.

The risk calculated for the proposed facility used a failure rate per cavern and included failures of, and incidents from, both LPG storage caverns. Thus, the risk analysis covered the entire facility, properly representing the number of caverns instead of simply characterizing it as one of the many salt cavern facilities.

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[244] Id at Section 5.1.

[245] GFS Brief at 45.

[246] Quest Transportation QRA at 44.

[247] Id.

[248] GFS Brief at 45.

[249] Quest 2012 Report, Section 1.3.

Finally, the risk in Quest's QRAs is never expressed per cavern.[250] For example, as stated in the Transportation QRA, the value of 1.19 x 10^{-4} per year was calculated (from industry data) as a representative probability of a major event at the proposed facility (based on two caverns and the historical frequencies of major events at similar caverns).[251] The point of the discussion in Quest's report was to show how skewed the Mackenzie qualitative assessment was. In the end, Quest concluded that "the risk imposed by the Finger Lakes LPG transportation activities is also found to be minimal."[252]

D. The Applicant has Demonstrated That the Facility Will Be Safely Designed, but, if There is an Incident, Local Emergency Response Officials Are/Will Be Trained to Respond

SLC asserts that the DSEIS does not sufficiently address potential significant adverse impacts that a spill, accident or catastrophic event would have on emergency resources.[253] However, the DSEIS includes an analysis of local emergency response resources in the relevant community and the Applicant's supplemental evaluation of transportation safety by Quest, along with the Affidavit of William Kennedy, further address transportation safety and the capability of the Town of Reading and Schuyler County to respond to accidents.[254] The DSEIS identifies numerous components of the safety program, procedures and mitigation that is a part of the Proposed Project:

- Proposed mitigation measures, safety and emergency shutdown procedures are discussed in Section 4.1.3.3, pp. 83-84;

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250 GFS Brief at 46.

251 Quest Transportation QRA at 53.

252 Id. at 49.

253 SLC Brief at 45-46.

254 Department staff agree that "the record in this proceeding adequately addresses all concerns related to public safety." DEC Brief at 80.

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- Safety training that Finger Lakes LPG Storage will undertake is discussed in Section 4.6.3, pp. 156, 160;
- Numerous safety related agencies are identified as having jurisdiction over the operation in Section 4.6.3, pp. 155-56; and
- Accidental release prevention and emergency response policies that will be in place are described in Section 4.6.3, p. 157.

In addition, Finger Lakes LPG Storage will also be required to comply with EPA and OSHA regulations.[255]

Despite their suggestion (as summarized above) at the outset of their Post-Issues Conference Brief, SLC later concedes that the DSEIS does address emergency resources but allegedly only in a limited and inadequate fashion.[256] In support of their claim that there is a lack of overall emergency response capability,[257] SLC offers the testimony of Richard Kuprewicz and claims that Mr. Kuprewicz's affidavit constitutes a competent offer of proof under 6 NYCRR § 624.5(b)(2)(ii). In purported support, SLC cites to the Halfmoon and Waste Management of NY decisions.[258] But, under these decisions, the Kuprewicz affidavit fails to provide the specificity, the foundation, or the detail as to the basis of the conclusions reached. As Department staff notes, "SLC also suggests that Mr. Kuprewicz will testify to the expected costs associated with emergency response, but the offer of proof did not identify the nature of the evidence they intend to submit at hearing, and did not specify the grounds for Mr. Kuprewicz's opinion."[259] On this

[255] DSEIS, Section 4.6.3, pp. 157-164. See also EPA 550-B-00-001, Risk Management Program Guidance for Propane Storage Facilities (40 CFR Part 68), Office of Solid Waste and Emergency Response, March 2009.

[256] SLC Brief at 45-56.

[257] SLC Brief at 46.

[258] SLC Brief at 47 (citing Halfmoon, 1982 N.Y. ENV LEXIS 34, at *4; Waste Mgmt. of N.Y., Decision of the Commissioner, 2006 N.Y. ENV LEXIS 64, at *5 (NYSDEC 2006).

[259] DEC Brief at 84 (citing 6 NYCRR §624.5(b)(2)(i)).

basis, Department staff concluded that what SLC offered was a conclusory statement unsupported by any case-specific analysis."[260]

SLC argues that Mr. Kuprewicz's testimony is a competent offer of proof and dismisses the Applicant's and the Department's assertions that his affidavit makes only conclusory statements without any supporting analysis.[261] SLC argues that an expert's proposed testimony is a sufficient offer of proof under 6 NYCRR § 624.5(b)(2)(ii), "provided the proposed testimony has a factual or scientific foundation and isn't speculation or mere conclusion."[262] Despite recognizing this requirement, SLC neglects to show how Mr. Kuprewicz's testimony amounts to anything more than a simple statement of his conclusions.

Instead, SLC cites Scott Paper Co. and Finch, Pruyn & Co., Inc., Rulings of the ALJ, 1994 WL 1735340 (NYSDEC 1994), in an attempt to show that ALJs have accepted an expert's proposed testimony summarizing his review of an application to rule that it raised an adjudicable issue. In that case, the applicant sought a permit to build and operate a landfill for disposal of paper mill sludge. The town proposed an issue for adjudication concerning the ability to monitor the landfill as required given the application already pending for the county to site another landfill on the same property, directly north of the proposed paper sludge landfill. As an offer of proof, the town proposed the testimony of two experts, one of whom opined that it would be impossible to properly monitor the area due to the close proximity of two landfills on the site. The applicant and the Department claimed the facility design and the different groundwater flow directions for each landfill, among other things, provided adequate capability to monitor the proposed landfill. It was the expert's finding that the groundwater flow directions would likely

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[260] Id.

[261] SLC Brief at 46-47.

[262] SLC Brief at 47 (emphasis added).

change after the landfill's construction—directly undercutting the argument of the applicant and Department—that raised a substantive question about the monitorability of the site. Thus, the offer of proof contained more than the expert's base conclusion that the project would not be monitorable. Rather, the offer of proof in Scott Paper provided the expert's reasoning for that conclusion: the landfill would cause the groundwater flow patterns to change and therefore the separate landfills, while potentially monitorable under the current conditions, could not be adequately monitored after they were built.[263]

The offer of proof in Scott Paper, which provided the expert's rationale leading to his conclusion, stands in stark contrast to SLC's offer of proof in Mr. Kuprewicz's affidavit which states only his conclusions. Indeed, the summary of his review begins by stating, "Based on my initial review, I conclude" that the Project "has not provided adequate or appropriate risk assessments" for LPG storage or transportation.[264] Mr. Kuprewicz does not state why or how he reached that conclusion, nor does he explain the "why" or "how" behind any of the conclusions in the paragraphs that follow. SLC argues that this offer of proof explains the basis for Mr. Kuprewicz's opinions because the affidavit says that the safety risks of storing LPG are "different and orders of magnitude greater than" other types of gas storage.[265] But again, this sentence merely states Mr. Kuprewicz's conclusion about the conditions of LPG storage, not why he (or others even) has concluded it is more dangerous. In fact, each statement Mr.

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[263] Note that, on appeal, the Commissioner ruled this monitorability problem is not a valid basis to prevent one of the proposed landfills from being approved, and found it appropriate for the issue to be addressed only in context of the later review of the county landfill, not the present proceeding. Scott Paper Co. and Finch, Pruyn & Co., Inc., Interim Decision of the Comm'r, 1994 N.Y. ENV LEXIS 56, at *5-6 (NYSDEC 1994). However, the Commissioner did not decide on the sufficiency of the offer of proof of expert testimony. In the subsequent proceeding for the county landfill, the experts' analyses that constructing the landfill would alter groundwater flows and thereby make it difficult to identify the source of any contamination was again a critical rationale behind the ruling that the issue was adjudicable. Saratoga County Landfill, ALJ Ruling on Issues and Party Status - Ruling 2 (NYSDEC 1995).

[264] Kuprewicz Aff. ¶ 9.

[265] SLC Brief at 49; Kuprewicz Aff. ¶ 10

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Kuprewicz makes in his affidavit begs a question from the reader: "Because why?" Mr. Kuprewicz provides no rationale at all for his conclusions that underground LPG storage is more dangerous than others, that the Department lacks the ability to review the Project, that the state and local emergency responders lack the capacity to respond to a release, or that Finger Lakes LPG Storage has not provided sufficient risk assessments. Accordingly, this offer of proof containing mere speculation and conclusion cannot satisfy the requirement of 6 NYCRR § 624.5(b)(2)(ii).

Similarly, the expert testimony accepted as an offer of proof on an adjudicable issue in Mirant Bowline, LLC, cited by SLC,[266] differs significantly from Mr. Kuprewicz's deficient affidavit and proposed testimony. Mirant Bowline, LLC, ALJ Ruling on Proposed Adjudicable Issues and Petitions for Party Status, 2001 N.Y. ENV LEXIS 22, at *27 (NYSDEC 2001). In Mirant Bowline, the applicant sought to site an electrical generation project and issues proposed for adjudication related to the best technology available (BTA) standard for cooling water intake structures addressed in the draft SPDES permit. Id. at *1, 27-28. The draft permit called for using a hybrid cooling/Gunderboom system. Id. at *5. The petitioners argued the adverse impacts of cooling water intake structures was proportionate to the volume of water used (an issue of capacity); therefore the project must use dry cooling technology to comply with the BTA standard. Id. at *28-29. The applicant and the Department asserted that wet cooling could be used too and the proposed intake structure would have no greater adverse impact than a dry cooling system, thus the draft permit satisfied the BTA standard. Id. at *29.

The petitioners' offer of proof, in the form of two proposed expert witnesses, would provide testimony that dry cooling uses significantly less water than that proposed under the

[266] SLC Brief at 48-49.

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permit, thereby reducing the impact to the waterbody. Id. at *30. Furthermore, the offered testimony would dispute Staff's assessment of dry cooling technology and show instead that it would have a lesser impact than Staff represented and less impacts than those of the hybrid/Gunderboom system proposed under the draft permit. Id. at *30. An expert would also testify that capacity was the critical element for the entrainment of an intake structure and compare the proposed project with others that had used Gunderboom technology. Id. at *31. The testimony would further show the proposed hybrid/Gunderboom technology was insufficient under the BTA standard because of the low flow of the waterbody, which would result in operational problems for the equipment. Id. at *35-36. The ALJ rejected the applicant's and the Department's argument that this was "an academic debate," ruling instead the offer of proof supported finding adjudicable issues. Id. at *37.

The expert testimony proffered in Mirant Bowline provided substantial detail about *how* the proposed technology would or would not provide adequate protection for the environment. The experts' proposed testimony contained their analyses of the project and the reasons *why* the draft SPDES permit conditions were deficient. In stark contrast, neither SLC nor Mr. Kuprewicz has provided his rationale behind his proffered testimony. Instead, Mr. Kuprewicz repeatedly makes only conclusions that the Project's insufficiently protects the public and the environment. He explains neither how nor why he reached those determinations. Consequently, his testimony constitutes an invalid offer of proof by SLC.

Further, Mr. Kuprewicz, whose experience is primarily in the pipeline field, is NOT an expert in underground storage and cavern integrity and admits as much.[267] Simply stated, the gap filled and incomplete affidavit of Mr. Kuprewicz cannot and should not form the basis for

[267] Kuprewicz Affidavit, ¶ 13.

adjudication and SLC's Post-Issues Conference Brief cannot serve as the basis to remedy that deficiency.[268] A potential party's burden of persuasion at an issues conference to demonstrate that a proposed issue is substantive and significant and thus adjudicable must be met by an appropriate offer of proof with the petition. Buffalo Crushed Stone, 2008 N.Y ENV LEXIS 69, at *10. "Although a potential party is not required to present proof of its allegations sufficient to prevail on the merits" during the issues conference, "conclusory or speculative statements without a factual foundation are not sufficient to raise an adjudicable issue." Id. at *12. "Conducting an adjudicatory hearing 'where "offers of proof, at best, raise potential uncertainties" or where a hearing "would dissolve into an academic debate" is not the intent of the Department's hearing process.'" Id. Accordingly, a potential party will not satisfy its prima facie burden to raise a substantive and significant/adjudicable issue if the assertions in its petition lack a factual or scientific foundation. Id. at *14. Notably, "it is not the purpose of post-issues conference briefing to allow a party to supplement, expand upon or otherwise remedy a deficient petition for party status" that fails to meet this prima facie burden. Crossroads Ventures, LLC, 2006 N.Y. ENV LEXIS 88, at *10; Buffalo Crushed Stone, 2008 N.Y. ENV LEXIS 69, at *14 (a "potential parties' offer of proof should be based upon the opinions of experts or other qualified witnesses already identified" prior to the issues conference).

But, even if it is assumed the Kuprewicz affidavit constitutes an offer a proof, identifying an adjudicable does not follow. Even if a potential party satisfies its initial prima facie burden by claiming a factual or scientific foundation for its assertions, those assertions can be rebutted by the applicant or Department staff: "With respect to the proof offered by a potential party, even where supported by a factual or scientific foundation, such offer of proof may be rebutted by the

[268] SLC's excuse for this conclusory and speculation-filled affidavit seems to be the result of "the late date of his- and counsel's-retention." SLC Brief at 50. However, such reasoning would surely not fulfill the requirements for a late-filed petition found in 6 NYCRR § 624.5(c) because, in essence, that is what SLC is trying to do.

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application, the draft permit and proposed conditions, Department staff's analysis, the SEQRA documents, the record of the issues conference, and authorized briefs, among other relevant materials and arguments." Entergy Nuclear Indian Point 2, LLC and Energy Nuclear Indian Point, LLC, Interim Decision of the Assistant Commissioner, 2008 N.Y. ENV LEXIS 52, at *14 (NYSDEC 2008) (emphasis added). "In areas of Department staff's expertise, its evaluation is an important consideration in determining whether an issue is adjudicable." Id. Importantly, "[t]hat a consultant or expert for a potential party takes a position opposite to that of the applicant or Department staff does not of itself raise an issue. Otherwise, every issue on which differing views are expressed would be adjudicable and the issues conference would not fulfill its function of limiting and defining, as appropriate, the subject matter of the adjudicatory hearing." Crossroads Ventures, LLC, 2006 N.Y. ENV LEXIS 88, at *10 (internal citations omitted).

As noted above, in making its argument regarding the supposed inadequacy of emergency response preparedness, SLC focuses initially on the DSEIS.[269] Much of this argument is either wrong or has been superseded by the County's most recently revised County Emergency Management Plan (adopted unanimously by the County Legislature on April 13, 2015) with a revised LPG focused Appendix.[270] Moreover, totally ignored by SLC is that the DSEIS[271] states that a written emergency response plan to deal with accidents and all aspects of emergency response including adequate first aid and medical treatment, evacuations, notification of local emergency response agencies and the public, as well as post-incident decontamination of

[269] SLC Brief at 51.

[270] Finger Lakes LPG Storage's Initial Brief at pp. 98-102 and Exhibits 5 and 6. Despite both voting in favor of the revised County Emergency Management Plan, Harp and Lausell still seem to attack the HAZNY ratings for specific dangers that affect the county. Harp and Lausell Brief at 9. Indeed, those ratings decreased the calculated hazard for a hazardous materials release. Id. at 9-19

[271] Section 4.6.5, pp. 166-169.

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affected areas, will be prepared. Finally, the draft permit requires the Applicant to prepare an Emergency Response Plan to the satisfaction of the Department.[272]

The DSEIS, the documents submitted by Finger Lakes LPG Storage on February 9, 2015 (including Quest's Transportation QRA), the draft permit, and the record of the issues conference demonstrate that petitioners cannot satisfy their burden of persuasion that an issue exists for adjudication. Moreover, the Record, including the DSEIS, the affidavit of the County's Emergency Management Coordinator, and correspondence from the local Fire Chief more than demonstrate the ability of local emergency personnel to respond to any emergency. Indeed, despite the attempted contention at the issues conference by Harp and Lausell about the supposed uncertainty regarding the County's Emergency Management Plan (including how it treats the transportation of LPG), the revised and updated Plan was recently adopted unanimously by the County Legislature (with Mr. Harp seconding the motion).

E. Finger Lakes LPG Storage has Demonstrated that the Minimal Additional Rail Traffic From the Project Will Not Have an Impact on Public Safety

1. Rail Safety and Potential Risk Has Been Evaluated

Harp and Lausell assert that the DSEIS does not adequately address or mitigate dangers of LPG transport over the Watkins Glen Gorge trestle bridge. They assert, without any basis, that a derailment, bridge failure or act of terrorism at the trestle would cause loaded rail cars to crash, releasing gases, which if ignited, could cause a massive explosion.[273] Finger Lakes LPG Storage has addressed the concerns expressed by the public.

[272] DEC Draft Permit, November 10, 2014, Condition 7.

[273] Harp and Lausell Brief at 7.

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Harp and Lausell continue with the canard that the proposed Project will greatly increase rail traffic.[274] However, the DSEIS[275] and subsequent transportation allocations submitted by Finger Lakes LPG Storage[276] make clear that Norfolk Southern's existing "local run" can handle the additional transportation of LPG rail cars. Moreover, under either potential transportation allocation,[277] the average number of rail cars in or out of the facility would average 4.5-6.8 cars per day over a 261 day work year (assuming rail car activity only on weekdays) or if the train has the maximum 32 rail cars, a total of only 37-56 days of rail activity per year. Harp and Lausell and other petitioners ignore numerous facts in the Record (and summarized in the Finger Lakes LPG Storage's Initial Brief [at 103-104]) which demonstrate that transporting LPG by rail is generally safe, and that the specific train movements that will occur with the Project are also safe.

As they did in their petition, at the issues conference, and in their Post-Issues Conference Brief, Harp and Lausell's accident scenarios (based on recent events highlighted in the media) do not translate into a safety issue for the rail line operated by Norfolk Southern, particularly given the safe and accident-free manner in which this rail line has been operated. The suggestion that Norfolk Southern's special attention to a bridge (i.e., the Watkins Glen Gorge bridge structure) in any way acknowledges a possible danger is baseless. Indeed, quite to the contrary, the proximity of the bridge to the Watkins Glen State Park has resulted in additional mitigation (i.e.,

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[274] Harp and Lausell Brief at 7.

[275] Section 4.4.2, pp. 125-128.

[276] Document I.B.6, Attachment 10 and Document I.B.36.

[277] While the Applicant updated its transportation allocation last Fall, even if truck transport does occur, as noted by Department staff, "[t]he additional truck traffic generated by the proposed storage facility truck loading facility will not be a significant addition to either State Route 14A or State Route 14." The basis for Staff's position is the New York State Department of Transportation's review in which it concluded that the "traffic impacts associated with the proposed action do not represent a substantial increase to the existing traffic volumes, nor do they present a need for mitigation to the highway". See Hearing Documents I.B.4 and I.B.6, Attachment 9. DEC Brief at 24.

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inspections) for the commercial rail traffic (including hazardous materials) that already traverses this bridge.

Moreover, the Quest Transportation QRA provides statistics compiled by federal agencies that demonstrate the safety of commercial rail transport (including when LPG is transported).[278] The DSEIS also describes how rail operations for the Proposed Project will be conducted[279] and the rail safety inspection program that is in place (in coordination with the Federal Railroad administration),[280] including the track inspections that are conducted on a weekly basis.

Given Quest's calculations for the unlikelihood of derailment and the actual record over the last 16 years (including the transportation over the Watkins Glen trestle bridge of LPG tank cars), the argument that the DSEIS did not adequately identify and mitigate the risks involved in railroad transport of LPG to and from the Project is simply without any factual basis and should not be designated as an issue for adjudication.

2. DEC Cannot Regulate Rail Activity

As noted in Finger Lakes LPG Storage's Initial Brief (at 108), rail safety, including operational restrictions and maintenance requirements associated with rail bridges used in interstate commerce, is exclusively a matter of federal jurisdiction. It appears that Gas Free Seneca does not dispute this.[281] An important point omitted from Gas Free Seneca's Brief is that, because rail safety is outside of the Department's jurisdiction, alleged rail safety issues cannot be adjudicated in this proceeding. Nevertheless, the DEC, or the relevant SEQRA

[278] DSEIS Section 4.6.2, p. 155; Quest Transportation QRA, section 4.1.2, p. 29.

[279] Section 4.4.1.2, pp. 121-123

[280] Section 4.4.3, pp. 128-129.

[281] GFS Brief at 40.

agency, in making the necessary findings under SEQRA, including weighing mitigation for any potential impacts, may rely on the expertise of other agencies and the regulatory program in effect to address such potential impacts, to an extent that does not amount to delegation or deferral of responsibility. Croton Watershed Clean Water Coalition Inc. v. Planning Bd. of the Town of Southeast, 5 Misc. 3d 1010(A), 2004 N.Y. Misc. LEXIS 2037, at *# (Sup. Ct. Westchester County Sept. 15, 2004 ("…merely relying on the expertise of other agencies which are involved in the SEQRA process, while fully retaining and exercising its role as lead agency in assessing environmental impacts, did not result in a delegation or deferral of responsibility"). Of course, the DEC is not avoiding a review of other aspects of public safety. It has done just the opposite, and based on its review has concluded that "the purported concerns raised by petitioners Gas Free Seneca, SLC and amicus petitioners Harp and Lausell are rebutted by evidence in the application."[282]

IX. There is No Adjudicable Issue Related to Noise Impacts

A. Introduction

The offer of proof made by Gas Free Seneca regarding alleged noise impacts fails to raise an adjudicable issue, particularly given its burden of persuasion, in light of the mitigation incorporated into the Project and the draft permit conditions proposed by Department staff (including the new draft permit condition Finger Lakes LPG Storage has proposed related to construction noise). As Department staff has concluded, "none of the potential sound level increases would exceed the guidelines of the DEC Noise Policy."[283] Consequently, there is ample information in the Record to demonstrate that a "hard look" has been taken at potential

[282] DEC Brief at 89.

[283] Affidavit of Scott Sheeley dated April 17, 2015 ("Sheeley Affidavit") at 4.

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noise impacts and appropriate measures incorporated into the design of the Project to further minimize and mitigate such impacts to the maximum extent practicable.

Many of the points raised in Gas Free Seneca's Post-Issues Conference Brief are those raised in its petition for party status, in the Sandstone report, and at the issues conference. For the reasons stated in Finger Lakes LPG Storage's Initial Brief (at 118-121) and the Sheeley Affidavit (¶¶ 26-35), the Sandstone report is flawed, lacks a scientific foundation, and is contrary to the DEC Noise Policy and DEC administrative precedent.

B. The Noise Evaluation Submitted by Finger Lakes LPG Storage Was Properly Performed, Consistent with DEC's Noise Policy, and Demonstrated That The Project Will Not Cause Any Significant Noise Impacts

Finger Lakes LPG Storage's noise expert, Hunt Engineers, Architects & Land Surveyors ("Hunt") prepared a noise analysis consistent with the DEC Noise Policy and found that there will be no adverse impacts as a result of the construction or operation of the proposed facility.[284] Hunt identified receptor locations near the project site as recommended by the Noise Policy, and ambient sound levels were measured at the property line, or if permission was granted on the property of the receptors. These locations were selected because they were nearby sensitive receptors, and if no adverse impacts were found at these locations it could be reasonably assumed that there would be no adverse impacts beyond these receptors. The ambient sound levels were established using the equivalent sound level Leq, which, according to the Noise Policy, "provides an indication of the effects of sound on people. It is also useful in establishing the ambient sound levels at a potential noise source." Noise Policy, p. 7. To establish the proposed sound levels, measurements were taken at a similar facility undergoing typical working activities. This included idling, backup alarms, engines running at high levels and train yard

[284] Assessing and Mitigating Noise Impacts, DEP-00-1 ("Noise Policy").

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activities. The measurements were taken at 50 feet. Measurements were taken for both the equivalent sound level over a period of time, as well as the maximum sound levels observed during the various time periods. Taking sound level measurements at an actual similar operation is an option permitted under the Noise Policy. Therefore, Gas Free Seneca's criticism of the sources included in the noise monitoring is without merit. In fact, as Department staff noted, one of the three primary sources of noise evaluated was the truck and rail loading facility.

To determine the potential for adverse impacts, a first order analysis was performed in accordance with the Noise Policy. See Noise Policy, at pp. 16-20. This analysis involved taking only the sound reduction over distance into account. As noted by Department staff, Hunt's study "adheres to the methods identified in the DEC Noise Policy. Nearby receptors were properly identified, representative ambient noise levels were obtained, noise levels from Project noise sources were properly estimated and expected changes in noise levels were properly estimated."[285]

Based on this evaluation and analysis, Department staff properly concluded that "the noise evaluation conducted for this project adequately established baseline ambient noise levels, properly identified the area of impact and potential noise receptors, properly characterized project noise sources, properly estimated changes in projected noise levels, and properly incorporated necessary measures to mitigate noise impacts."[286]

C. Gas Free Seneca's Post-Issues Conference Brief Raises Nothing New to Resuscitate the Sandstone Report, a Report that is Flawed and Inconsistent with Well Established DEC Policy

Gas Free Seneca's attempts to resuscitate the Sandstone report must fail. The Sandstone report ignored reality by suggesting, without any supporting precedent, a "region of influence"

[285] Sheeley Affidavit at 4.

[286] DEC Brief at 22.

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for purposes of evaluating noise impacts that goes well beyond what is required to be studied, made inappropriate leaps of faith about what can possibly be heard across the Lake, and failed to demonstrate that the noise that the Project will generate would not be out of character for its surrounding receptors. In essence, Sandstone and Gas Free Seneca is asking the Chief ALJ to rewrite a policy that has been a mainstay of Department environmental review of noise impacts for over a decade.

Despite the criticisms leveled by Gas Free Seneca, through the Sandstone report, of Hunt's noise analysis, Department staff concluded that "[p]otential receptors were properly identified," "the evaluation of offsite truck traffic and train noise is beyond the scope of the action under review," and Hunt's "ambient noise measurements were provided in accordance with the guidance of the DEC's the DEC Noise Policy."[287] Instead, Sandstone chose inappropriate receptors on the east side of the lake. Therefore, in response to the questions raised in Gas Free Seneca's Post-Issues Conference Brief:

- The appropriate "region of influence" is the immediate area around where the noise will be generated is most relevant. See, e.g., St. Lawrence Cement Company, 2002 N.Y. ENV LEXIS at 61; Dalrymple Gravel & Contracting Company, Inc., Commissioner's Decision, 2003 N.Y. ENV LEXIS 56, at *45 (NYSDEC 2003); Seneca Meadows, 2012 N.Y. ENV LEXIS 15, at *111. Even the examples given by Gas Free Seneca are farther than what Sandstone has suggested.

- Based on the area to be evaluated as noted in the first bullet, the measures to quantify ambient sound levels included establishing nearby receptor locations using the equivalent sound level Leq, which, according to the Noise Policy, "provides an indication of the effects of sound on people. It is also useful in establishing the ambient sound levels at a potential noise source." Noise Policy, p. 7.

- No corrections need to be made to Hunt's properly measured ambient sound levels.

- Hunt's evaluation included establishing day/night ambient noise levels at seven locations and describing the maximum estimated noise levels with all facilities

[287] Sheeley Affidavit at 12.

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operating. Ambient noise levels were measured on May 12, 2011 and ranged from 54.0 dBA to 63.1 dBA.

- Hunt properly concluded that construction noise impacts will be temporary, but nevertheless Finger Lakes LPG Storage has proposed (and Department staff agrees) a permit condition which limits the hours when construction can be conducted.

- Hunt determined (and Department staff agrees) that the magnitude of the sound levels as a result of Project operations would be unnoticeable to tolerable at the majority of the appropriately identified receptors, but where necessary it has proposed certain additional mitigation measures (e.g., an additional enclosure for the fire pump and an enclosure for the brine pond pumps).

- All appropriate mitigation has been incorporated into the design of the Project (e.g., enclosures or berms) or otherwise proposed (e.g., construction noise permit conditions and operational noise monitoring).

Train noise was evaluated in the DSEIS and is also regulated under federal law and guidelines. The U.S. Department of Transportation handbook "Handbook for the Measurement, Analysis, and Abatement of Railroad Noise," October 2009, provides an overview of Federal Railroad Administration ("FRA") noise regulations and compliance measurements. The noise emissions from railroad line haul and yard operations are governed by two complementary rules: (1) the Environmental Protection Agency's 40 CFR Part 201 – Noise Emission Standards for Transportation Equipment; Interstate Rail Carriers and (2) the FRA's 49 CFR Part 210 - Railroad Noise Emission Compliance Regulations. For stationary locomotives manufactured after December 31, 1979, the noise standard is 87 dB at any throttle setting except idle. The standard for an idle throttle setting is 70 dB. (See 40 CFR 201.11(b) and 49 CFR Part 210 Appendix A.) The standard for locomotive operation under moving conditions is 90 dB. (See 40 CFR 201.12(b) and 49 CFR Part 210 Appendix A). Train whistles are a required safety feature and also regulated under federal law.

In terms of truck noise, it should not be surprising that a major contributor of noise on either the west or east sides of the lake is due to traffic on New York State highways (Routes 14

and 14A on the west side and Route 414 on the east side). In New York, noise from motor vehicles is regulated. Such regulation applies equally to all such vehicles and not a result of a particular project. New York Vehicle and Traffic Law ("V&TL") and DEC regulations both contain decibel limits regarding motor vehicles. Under V&TL § 386, motor vehicles (including trucks) with a weight in excess of 10,000 pounds may not exceed 86 dBA at 50 feet if the speed of the vehicle is 35 mph or less or 90 dBA if the speed is greater. The DEC's regulations are similar, with a range of allowable decibel levels from 84 to 95, depending on the speed of the vehicle and the type of ground surface at the receptor location. See 6 NYCRR Part 450. In the case of the Finger Lakes LPG Storage Project, Hunt found that a significant contributor to the background noise was that from NYS Route 14. Ambient sound measured at the five receptors was still significantly less than the sound levels permitted under New York State law and DEC regulations.

Other complaints raised in Gas Free Seneca's Brief included its dissatisfaction with the drawings in Hunt's report, cicada noise and the possibility that the maximum noise levels from on-site rail operations of 51.9 dBA might be perceived as "very objectionable." One only has to look at the DEC Noise Policy to conclude that a decibel level of 51.9 should not be very objectionable unless of course "light auto traffic" at 50 feet is objectionable, which of course it is not. None of these complaints have any validity, much less rise to the level of identifying an issue for adjudication.

In sum, the evidence demonstrates that no significant noise impacts will occur based on appropriate noise modeling performed by Finger Lakes LPG Storage and its noise expert, and no adjudicatory hearing is necessary. Nothing in the petition or Post-Issues Conference Brief of Gas Free Seneca (the only petitioner to raise noise as a potential issue) casts any doubt on the

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"hard look" taken by the Department and the conclusion that there will not be any significant adverse noise impacts.

X. Petitioners Van A. Harp and Michael L. Lausell Cannot Convert Their Petition for Amicus Status into a Petition for Full Party Status.

Petitioners Harp and Lausell, members of the Schuyler County Legislature, submitted a petition for amicus status in which they proposed issues for adjudication relating to risk assessment, public safety, rail safety, and emergency preparedness. Harp and Lausell specifically argued that the DSEIS failed to sufficiently address or mitigate dangers arising from the transportation of LPG over the Watkins Glen Gorge trestle bridge. They raised concerns about derailment, bridge failure, or acts of terrorism at the trestle causing loaded rail cars to crash and cause deadly conditions. In attacking the County's ability to respond to those emergencies, they complained that the County's Comprehensive Emergency Management Plan ("CEMP"), with its Appendix relating to LPG transportation, had not yet been adopted. Harp and Lausell propounded these arguments at the issues conference.

Now they recount the very same proposed issues in a new petition (contained within their Post-Issues Conference Brief), but this time for full party status (the "New Petition"). To the extent this is indeed a New Petition, it was improperly submitted on April 17, 2015, long after the January 16, 2015 deadline for filing petitions for party status had passed and after the February 2015 issues conference had closed. Harp and Lausell argue that the April 13, 2015 adoption of the CEMP qualifies them to submit this late-filed petition, despite the fact that the CEMP—while in draft form and even after its approval—has been discussed throughout this proceeding.

There is no basis under either the Department's Part 624 permit hearing procedures or the Uniform Procedures of Part 621 for a party to convert its petition for amicus status to one for full

party status. Each classification carries different obligations and criteria that a petitioner must meet to qualify for the requested status and, if granted, they confer different rights to participate in the hearing process. See 6 NYCRR §§ 624.5(b)(2)-(3), (d), & (e). One of the enumerated purposes of the issues conference is "to hear argument on whether party status should be granted to any petitioner." 6 NYCRR § 624.4(b)(2)(i). Allowing a petitioner to switch its requested status after the issues conference concludes thereby undermines a primary function of an issues conference and prejudices the applicant.

Persons desiring party status must file a written petition which satisfies the requirements under 6 NYCRR § 624.5(b)(1) and (2), if seeking full party status, or under 6 NYCRR § 624.5(b)(1) and (3), if seeking amicus status. 6 NYCRR § 624.5(b). These petitions must be submitted by the date set in the notice of hearing. 6 NYCRR § 624.5(b). Petitions filed after that date will only be granted under very limited circumstances: (a) the substance of the petition must meet all the applicable requirements under 6 NYCRR § 624.5(b)(1)-(3); (b) the petition must demonstrate "good cause for the late filing"; (c) the petition must demonstrate the petitioner's participation "will not significantly delay the proceeding or unreasonably prejudice the other parties"; and (d) the petition must demonstrate that the petitioner's participation "will materially assist in the determination of issues raised in the proceeding." 6 NYCRR § 624.5(c).

Harp and Lausell contend in their New Petition that they meet these standards simply because the CEMP was just adopted in April 2015 and they are already petitioners in the proceeding. To the contrary though, these circumstances actually require the conclusion that Harp and Lausell do not satisfy the requirements for late-filed petitions.

Good cause for a late filing is a fact-specific determination. However, it typically cannot be found where the late petitioner knew and was involved in the proceeding before the filing

deadline arrived and nevertheless failed to comply. See Sullivan County Div. of Solid Waste, 2005 N.Y. ENV LEXIS 49 at *20 (ALJ Rulings July 29, 2005) (finding no good cause and noting the petitioners had more than two months to prepare and submit their filings); Suffolk County Water Auth., 2005 N.Y. ENV LEXIS 64, at *68-69 (ALJ Ruling on Issues and Party Status Nov. 9, 2005) (rejecting the county's late-filed petition and noting the county "was provided with ample notice of the proceedings, and is represented by counsel."); Dynegy Northeast Generation, Inc., 2006 N.Y. ENV LEXIS 23, at *24-25 (Decision of the Deputy Comm'r May 24, 2006); Application for Permits to Expand a Landfill by Seneca Meadows, Inc., Stage 2, 2007 N.Y. ENV LEXIS 38, at *28-29 (ALJ Issues Ruling, Summary Report, and Order of Disposition June 6, 2007) (ruling that the "appropriate time to have raised concerns" had passed and declining to grant the late-filed petition for party status, noting that the town failed to file in time despite the proposed issue "being a long-time concern" and that "this has been a very public process over 2½ years and the applicant has worked diligently to perform its responsibilities so that there would be timely public notice . . . ."); Seneca Meadows, 2012 N.Y. ENV LEXIS 15, at *166-169 (ALJ Rulings on Issues and Party Status Mar. 26, 2012).

Harp and Lausell have long been involved in this proceeding. They have kept well informed about the application, the proposed parties and issues, and the schedule for submissions. Harp and Lausell received notice of the deadline for submitting petitions for party status. Furthermore, Harp and Lausell were aware of and admittedly involved in orchestrating the ultimate adoption of the CEMP, which they could have and did discuss in their original petition for amicus status. The Applicant and its experts considered the CEMP too. The recent adoption of the CEMP did not change the nature of the facts involved in this matter or the issues petitioners proposed, and thus does not provide good cause for petitioners' late filing.

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In fact, the concerns raised in the New Petition precisely mirror the proposed issues relating to public safety and emergency readiness that petitioners raised in their amicus filing discussing the draft CEMP. Clearly then the petitioners had all the necessary resources to make these arguments before the filing deadline expired. Given their prior knowledge and involvement with the proceeding, there is no reason that petitioners could not have submitted a petition for full party status at the outset based on these proposed issues, and they have not demonstrated good cause for filing the New Petition three months after the deadline for doing so passed. Therefore, petitioners have not demonstrated that the first requirement for granting late-filed petitions is met.

Petitioners also assert that their participation as a full party will not delay the proceeding or unreasonably prejudice the other parties because they are already involved in the matter, have been served with the relevant pleadings and materials, and offer evidence about some proposed issues. However, by filing their New Petition after the deadline passed and the issues conference concluded, petitioners have deprived Finger Lakes LPG Storage of the right to argue why petitioners should not enjoy full party status in this hearing process. Even if the Applicant received that opportunity, the effect would be to further delay this proceeding while the parties submit replies and the ALJ reviews those arguments. Furthermore, additional delays will occur if the issues conference is reconvened based on this New Petition. Accordingly, petitioners have not demonstrated that the second requirement for granting late-filed petitions is met.

Finally, petitioners argue that their participation as a full party will materially assist in the determination of issues because they are "introducing evidence unavailable at the time of the initial amicus filing." Harp and Lausell reference the ALJ's power to reconvene an issues conference "to consider issues based on new information upon a showing that such information

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was not reasonably available at the time of the issues conference." 6 NYCRR § 624.4(b)(1). Harp and Lausell suggest that the CEMP qualifies as "new information" simply because it was finally adopted after the issues conference concluded and therefore was not available beforehand.[288] However, the information and even the CEMP itself was available to petitioners before the filing deadline and they based several arguments in their amicus petition on it. Petitioners have not identified any substantive provisions of the CEMP, as adopted, which differ from the provisions of the draft CEMP already discussed in this proceeding. Thus, the CEMP does not qualify as "new information." See Village of Freeport, 2003 N.Y. ENV LEXIS 90, at *12-13 (Decision of the Comm'r Nov. 26, 2003) (finding the SEQRA determination could not be considered new information because it was "more than 'reasonably available' to the petitioner from the outset of the process); New York City Dept. of Sanitation, 2009 N.Y. ENV LEXIS 49, at *187-190 (ALJ Ruling on Issues and Party Status July 22, 2009) (finding no good cause for introducing claims about soil vapor intrusion based on preexisting guidance which could have been part of the original petition).

Moreover, petitioners' participation as full parties would not assist in the determination of the proposed issues because the New Petition is "basically duplicative" of the amicus petition they already filed, as well as many of the proposed issues other petitioners have put forth. See Seneca Meadows, 2012 N.Y. ENV LEXIS 15, at *169-170. The CEMP has already been discussed and submitted to the ALJ by Finger Lakes LPG Storage, and the New Petition contains no additional offers of proof and lists no proposed witnesses. Id. Thus, there is nothing that Petitioners could add to the development of these proposed issues as full parties that they are not doing and have not already done as petitioners for amicus status. Id. Consequently, Petitioners

[288] Nevertheless, clearly, Finger Lakes LPG Storage has no issue with the ALJ taking judicial notice of the revised CEMP, particularly since it was included as an Exhibit to Finger Lakes LPG Gas Storage's Initial Brief.

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have not demonstrated that the third requirement for granting a late-filed petition has been met either.

The New Petition itself does not include the required contents of a petition for party status which is necessary for any petition to be accepted, whether timely filed or not. See 6 NYCRR §§ 624.5(b)(1)-(2) & (c)(2). Accordingly, even if petitioners' are permitted to convert their petition from one for amicus status to one for full party status, their New Petition must fail on its face.

Any petition for full party status must "present an offer of proof specifying the witness(es), the nature of the evidence the person expects to present and the grounds upon which the assertion is made with respect to that issue." 6 NYCRR § 624.5(b)(2)(ii). Here, petitioners only identify the approved CEMP as evidence to be presented. Petitioners provide the credentials of Harp and Lausell in an attempt to make the required offer of proof. However, Harp's experience in "risk mitigation and human behavior" and Lausell's practice of law do not qualify them as experts who may opine on emergency response issues. Neither does their status as county legislators,[289] their membership on the county's Public Safety Committee, or their involvement in updating the CEMP and the Hazard Mitigation Plan render them expert emergency response or risk assessment professionals. Because petitioners' failed to provide an expert to offer proof of any of these proposed issues, the New Petition is insufficient as a petition for party status, and thus also as a late-filed petition.

XI. Conclusion

To satisfy a petitioner's burden of proof, a petition for either full party or amicus status must identify an issue that satisfies the standards for adjudication under 6 NYCRR § 624.4(c).

[289] As noted in Finger Lakes LPG Storage's Initial Brief (at 1, Fn. 1), Harp and Lausell are not acting in their official capacities in this proceeding.

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6 NYCRR § 624.5(b)(2)(i), (b)(3)(i). Because the petitioners requesting full party status and the petitioners requesting amicus status have failed to identify any adjudicable issues with regards to the sufficiency of the DSEIS's analysis of the Project's community character impacts, alternatives, or cumulative impacts, the indemnification provisions of Draft Permit Condition 9, cavern integrity, water quality impacts, public safety and emergency preparedness, and noise, those petitions must be denied.

Respectfully Submitted,

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Co-Counsel, Finger Lakes LPG Storage, LLC

Dated: May 29, 2015

NYSDEC OHMS Document No. 201166576-00052

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of Application of Finger Lakes LPG Storage, LLC

Application No. 8-4432-00085

FINGER LAKES LPG STORAGE, LLC'S
POST-ISSUES CONFERENCE REPLY BRIEF

EXHIBIT A
Figure 2.3.1, Stone and Webster Report
(without fault line modification)

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EXHIBIT A

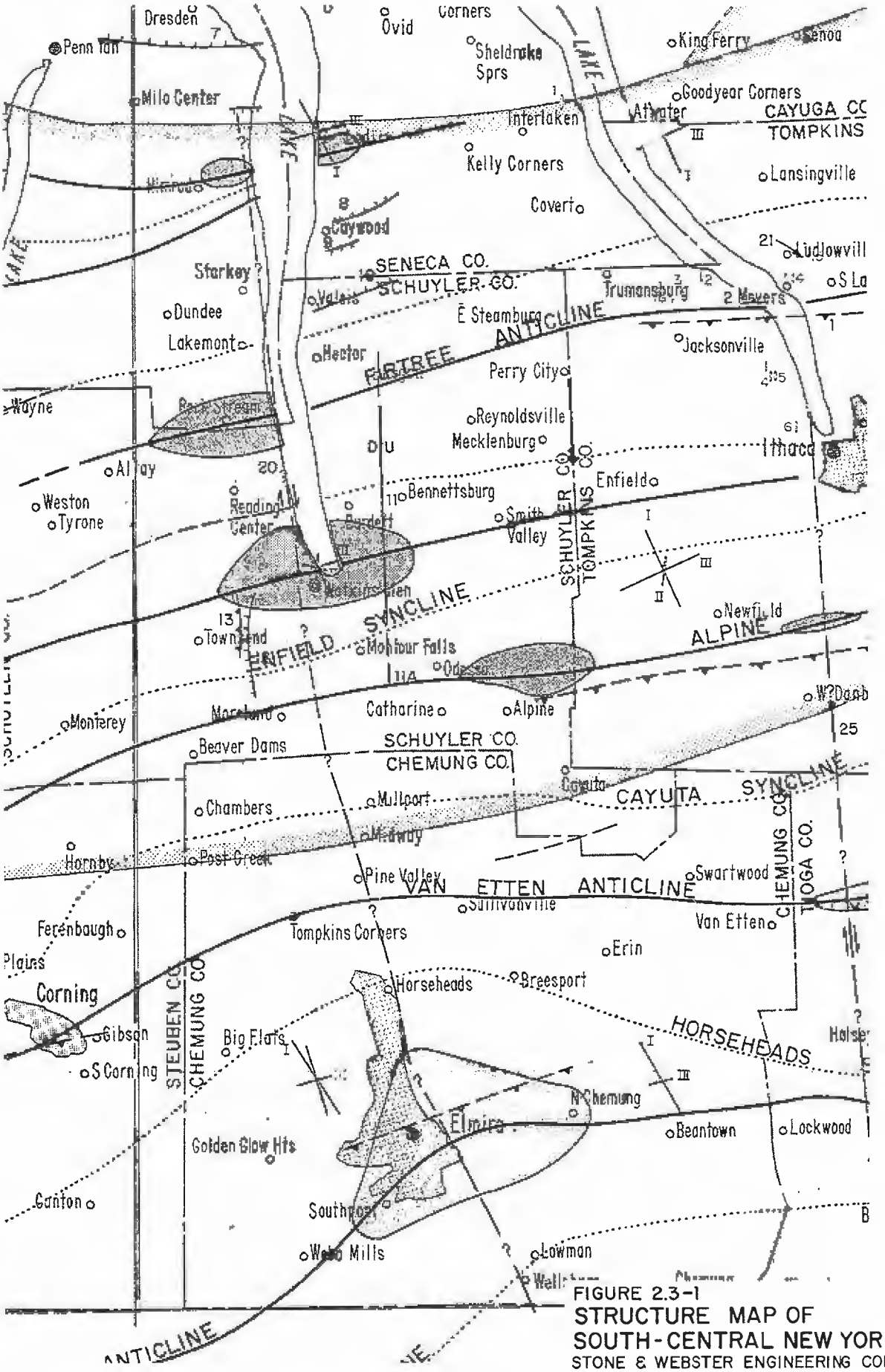

FIGURE 2.3-1
STRUCTURE MAP OF
SOUTH-CENTRAL NEW YORK
STONE & WEBSTER ENGINEERING CORPORATION
DECEMBER 1977

NYSDEC OHMS Document No. 201166576-00052

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of Application of Finger Lakes LPG Storage, LLC

Application No. 8-4432-00085

FINGER LAKES LPG STORAGE, LLC'S POST-ISSUES CONFERENCE REPLY BRIEF

EXHIBIT B
Affidavit of Barry Moon

NYSDEC OHMS Document No. 201166576-00052

CRESTWOOD MIDSTREAM PARTNERS LP

FINGER LAKES LPG STORAGE, LLC

---------- x

In the Matter of the Application for an Underground

Gas Storage Permit Pursuant to Environmental

Conservation Law (ECL) Article 23, Title 13, by

FINGER LAKES LPG STORAGE, LLC

AFFIDAVIT IN SUPPORT OF

FINGER LAKES LPG STORAGE

Appl. No. 8-4432-00085

---------- **X**

STATE OF NEW YORK)

COUNTY OF SCHUYLER) SS:

BARRY L. MOON, being duly sworn, deposes and says as follows:

1. I am the Director of Operations for Crestwood's East Coast NGL & Crude Division. I have served in this capacity for approximately 7 months. Prior to that time, I was manager of the Bath NY LPG Storage facility and have been involved in the Finger Lakes LPG Storage project since 2009. I have worked in the underground storage industry for 27 years. My experience in the storage business has involved operations, management, maintenance, well work overs, supervision of well construction, well logging, well drilling, well Mechanical Integrity Testing, handling of LPG and Federal, State and local compliance. I started my employment with Bath Petroleum Storage Inc. at the Bath facility and became an employee of Inergy Midstream LLC (today known as Crestwood Midstream Partners LP) when it purchased the storage facility.

2. As the Director of Crestwood's East Coast NGL & Crude Division I am responsible for the company's LPG storage facilities located in New York, New Jersey, Rhode Island, and Indiana. I am responsible for overseeing the management and day to day operations of these facilities. I have worked since 2009 with our engineers, geologists and outside contractors involved with the application, design and testing for the Finger Lakes LPG Storage project.

3. I am providing this affidavit in response to arguments made in the Post-Issues Conference Brief of Seneca Lake Pure Waters Association (SLPWA) and in support of the efforts of Finger Lakes LPG Storage to obtain a permit from the New York State Department of Environmental Conservation (DEC).

4. I am extremely familiar with the Finger Lakes LPG Storage, LLC project. I was responsible for the permit applications and oversaw the drill out of the wells involved with the Finger Lakes project. I was responsible for conducting the long-term pressure test with Gallery 1 and Gallery 2, and personally witnessed the pressures encountered when the plugs were drilled out for the Finger Lakes project.

5. In a response to one of the DEC's Notices of Incomplete Application, we provided information and data on the re-entry work on the plugged wells in Gallery 1 and Gallery 2. After a salt cavern is closed and abandoned by plugging the wells that access it, the cavern pressure will build up over time due to salt creep. The pressures encountered and measured by Finger Lakes demonstrates that the caverns successfully contained fluid and pressure ranging from a gradient of 0.66 psi/ft to 0.67 psi/ft in Gallery 1 and 0.81 psi/ft in Gallery 2, which is greater than the anticipated LPG operating pressures.

6. SLPWA's brief raises questions regarding the pressure test for Gallery 1. The procedure for the pressure test was approved by DEC prior to performing the test. The test was conducted by injecting brine sourced from US Salt into well 43 to reach the maximum test gradient of 0.80 psi/ft for Gallery 1. The use of a small mechanical pump was used to reach this approved gradient. We completed this long-term pressure test in three phases, including:

   A. Phase 1: Pressure up the gallery to the maximum gradient and let stabilize. This took a few times to get the stabilization rate of loss to a minimum. Once it was determined that the pressure drop was minimal, we moved into Phase 2.
   B. Phase 2: This phase begins by performing a preliminary test to determine if the actual pressure drop was stabilizing to within the allowable rate. This test started on June 9, 2009 at 11:00 am, and ended on June 12, 2009. Data was reviewed before determining to proceed with Phase 3.
   C. Phase 3: The gallery was pressured up to reach the maximum gradient to start the Phase three test. At 11:20 am on June 12, 2009, brine was pumped into Gallery 1 to reach this gradient. Pressure was reached at 2:50 PM on June 12, 2009 and

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pumping stopped. Phase 3 of the test started on June 15, 2009 and continued until June 25, 2009.

Pressure testing of the caverns formed by Wells 33, 34, 43, and 44 has shown that the caverns and existing wells have pressure integrity up to a 0.8 psi/ft. Hydrostatic pressure testing at a gradient of 0.8 psi/ft was performed by injection of nearly saturated brine into Well 43 to determine integrity of the casings, casing seats and caverns to fluid movement in or out of Gallery 1. The hydrostatic test (i.e., long-term Test) proves the pressure connection and tightness of the Finger Lakes Gallery 1. No pressure connection was observed during the testing between Gallery 1 or the natural gas caverns in service for the Arlington Seneca Lake storage, or any of the existing salt supply wells for US Salt. Pressure drop was attributed to slightly under saturated brine being injected into well 43 to reach maximum pressure gradient. Results of the tests prove that the caverns are suitable for LPG storage.

7. The results were reviewed and submitted to DEC.

Dated : May 26, 2015

Barry L. Moon
Director of Operations for Crestwood
East Coast NGL & Crude Division.
Finger Lakes LPG Storage, LLC
7535 Eagle Valley Road
Savona, NY 14879

Sworn to before me this ____ day

of May 26, 2015

SHARON L. GREGORY
Notary Public, State of New York
Registration #01GR5088129
Qualified In Steuben County
Commission Expires November 10, 2017

Notary Public

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STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of Application of Finger Lakes LPG Storage, LLC

Application No. 8-4432-00085

FINGER LAKES LPG STORAGE, LLC'S
POST-ISSUES CONFERENCE REPLY BRIEF

EXHIBIT C

12-Year Pressure Monitoring in an Idle Salt Cavern the 1997-1998 Etrez Abandonment Test Revisited

NYSDEC OHMS Document No. 201166576-00052

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12-YEAR PRESSURE MONITORING IN AN IDLE SALT CAVERN THE 1997-1998 ETREZ ABANDONMENT TEST REVISITED

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Cyrille Pellizarro, Storengy,Saint Ouen, France
Pierre Bérest, Ecole Polytechnique, Palaiseau, France
Benoît Brouard, Ecole Polytechnique, Palaiseau, France

SMRI Spring 2010 Technical Conference
26-27 April 2010
Grand Junction, Colorado

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12-YEAR PRESSURE MONITORING IN AN IDLE SALT CAVERN — THE 1997-1998 ETREZ ABANDONMENT TEST REVISITED

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P. Bérest [b], B. Brouard [c]

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ABSTRACT

Twelve years ago, the solution Mining Research Institute awarded a research contract to Gaz de France and Ecole Polytechnique to perform an abandonment test in a salt cavern of the Etrez gas-storage facility. This test was performed during the 1997-1998 period. In the conclusions of the Research Report, it was predicted that cavern pressure would reach a steady-state equilibrium value such that the effects of cavern creep closure and of brine permeation through the cavern wall were balanced exactly. Between 2002 and 2009, wellhead pressures in that cavern were monitored again. During this period, it was observed that, after any sufficiently long period during which the cavern is kept idle (no injection or withdrawal), the cavern pressure reached a constant value exactly equal (within pressure gauge accuracy) to the figure predicted after the 1997-1998 test.

1. INTRODUCTION

The results of a 500-day long abandonment test in a salt cavern supported by the SMRI were published in 2001 [Bérest et al., 2001]. This test was motivated by concerns raised by the long-term behaviour of salt caverns. These caverns eventually will be abandoned: the cavern will be filled with brine, a special plug will be set at the casing seat [Crotogino and Kepplinger, 2006] and cement will be poured in the well. A large "bubble" of saturated brine will be isolated. The long-term evolution of this brine is a serious concern. After cavern plugging, cavern brine pressure will increase, as has been proved by numerous "shut-in pressure tests" performed worldwide. The final value of cavern brine pressure is of utmost importance from the perspective of environmental protection. In some circumstances, brine pressure may reach a figure larger than the geostatic pressure, leading to hydro-fracturing: brine will

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flow upward through fractures to shallow water-bearing strata, leading to water pollution, ground subsidence and possible cavern collapse.

In fact, pressure evolution in a closed cavern results from five main factors, as described below.

1.1 Cavern compressibility

Cavern compressibility is the ratio between any rapid change in cavern brine volume (V) and cavern brine pressure (P). It results from the (adiabatic) elastic compressibility of brine and cavern itself, and is proportional to cavern volume, or $\dot{V} = \beta V \dot{P}$, where $\beta = 4-5\times10^{-4}$/MPa is typical [Bérest et al., 1999].

1.2 Cavern creep closure

In the long term, salt behaves as a (highly) non-linear viscous fluid. The Norton-Hoff law often is assumed, $\dot{\varepsilon} = A(T)\sigma^n$. Salt mass creep leads to cavern shrinkage. The driving force for cavern closure is the gap between geostatic pressure, P_∞, and cavern pressure, or P. When cavern shrinks, cavern brine has less room and its pressure builds up.

At the beginning of the process, after cavern plugging, cavern pressure is halmostatic — i.e., it results from the weight of the column of saturated brine that fills the well, or $P = P_h(\text{MPa}) \approx 0.012\ H(\text{meters})$ or P (psi)= 0.52 H (ft), where H is the cavern depth. Geostatic pressure is $P = P_\infty(\text{MPa}) \approx 0.022\ H(\text{meters})$ or P_x (psi) = 1.1 H (ft). In these conditions, cavern creep closure rate typically is $Q_{creep}/V = -10^{-5}$/yr when $H = 250$ m (750 ft); $Q_{reep}/V = -3\times10^{-4}$/yr when $H = 1000$ m (3000 ft); and $Q_{creep}/V = -10^{-2}$/yr when $H = 2000$ m (6000ft). These figures are indicative and may vary from one site to the other.

The convergence rate is slower when the cavern pressure is higher, and ultimately stops when the cavern pressure becomes geostatic (Figure 1).

1.3 Brine permeation through the cavern walls

This process is still open to controversy. Brine permeation vanishes to zero (Figure 1) when cavern pressure, P, equals natural pore pressure, P_0. (Pore pressure, or P_0, often is close to halmostatic pressure, or P_h) . Iis generally assumed that brine permeation can be described by Darcy's law. Brine permeation rate or Q_{perm} then is a linear function of the difference $P - P_0$ (Figure 1). Salt permeability

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is exceedingly small (typically, $K = 10^{-22} - 10^{-19}\,\mathrm{m}^2$). However, even these low figures can lead to a significant brine pressure release.

1.4 Brine thermal expansion

The temperature history of cavern fluids during cavern operation generally is complex [Karimi-Jafari et al., 2007]; in most cases, when a cavern is abandoned, brine temperature is smaller than geothermal temperature at cavern depth. Heat transfer from the rock mass to the cavern leads to brine warming. However, brine thermal expansion is hampered in a closed cavern, and brine pressure builds up. The thermal expansion coefficient of brine is $\alpha \approx 4.4 \times 10^{-4}/°\mathrm{C}$, and a 1°C increase in brine temperature generates a pressure build-up of $\alpha/\beta \approx 1\,\mathrm{MPa}$. After some time, however, thermal equilibrium is reached, and expansion no longer takes place. The characteristic time for conductive heat transfer is $t_c = V^{2/3}/4k$, where k = 100 m^2/yr is salt thermal diffusivity. For instance, in a cavern with V = 8000 m^3, the characteristic time is $t_c \approx 1\,\mathrm{yr}$, and it can be considered that thermal equilibrium is reached in a cavern after it has been kept idle (no liquid injection/withdrawal) during a period, say, of 5-6 years.

1.5 Brine leaks

Leaks through the casing or the casing shoe are known to have occurred in some underground storage environments. The existence of such leaks — which are likely to vanish after the well of an abandoned cavern has been properly plugged — would lead to severe misinterpretation of a cavern abandonment test (Salt permeability would be overestimated.) if casing leakage and brine permeation were not distinguished.

1.6 Brine pressure evolution

How these factors combine depends on the specific conditions at each site. When thermal expansion can be disregarded (which often is correct in a small cavern kept idle during a long period of time) cavern pressure slowly converges to an equilibrium pressure such that creep closure rate exactly equals brine permeation rate through cavern walls (Figure 1). From a mathematical point of view, brine pressure rate or $\dot{P}$ is proportional to the difference between cavern closure rate (Q_{creep}) and brine permeation rate (Q_{perm}):

$$\beta V \dot{P} = Q_{creep}\left[P_\infty - P\right] - Q_{perm}\left[P - P_0\right]$$

The two functions Q_{creep} and Q_{perm} can be computed when, for instance, Norton-Hoff law and Darcy's law are assumed.

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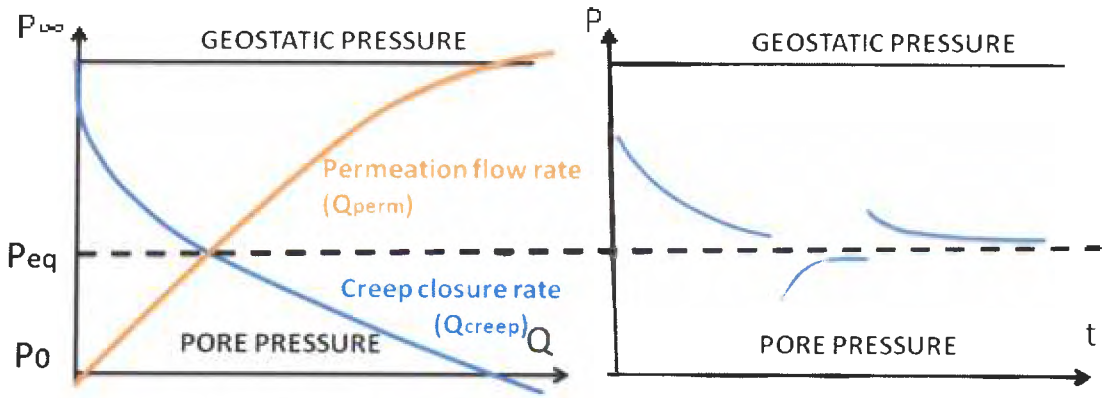

Fig. 1. Equilibrium pressure (left) and abandonment test (right)

It is found that equilibrium is reached ($P = P_{eq}$) when $Q_{creep} = Q_{perm}$ — i.e., when cavern creep-closure rate exactly equals brine permeation rate (Figure 1, left). The objective of an abandonment test is to assess equilibrium pressure and to verify that it is significantly smaller than geostatic pressure. An abandonment test (Figure 1, right) is performed following a trial-and-error method: when cavern pressure is higher (resp., lower) than equilibrium pressure, cavern pressure as a function of time consistently decreases (resp., increases). One significant advantage of this method is that, when transient effects are neglected, it provides both lower and upper bounds for the equilibrium pressure.

2 THE 1997-1998 ABANDONMENT TEST

An abandonment test was performed in the EZ53 salt cavern of the gas storage site operated by GDF SUEZ at Etrez in southeastern France. This cavern had been leached out in July 1982. It is 950-m (3000 ft) deep, and its volume is $V = 8000$ m^3 or 50,000 bbls. Access to the cavern is through a 842-m-long 9-⅝" casing cemented to the rock formation; a 929-m-long 7" string is set in the well [Bérest et al., 2001].

2.1 Brine thermal expansion and Brine leaks

When the test began in 1997, the cavern had been idle for 15 years, and it was assumed that, after such a long period, thermal equilibrium in this relatively small cavern had been reached (see Section 1.4). A temperature gauge lowered in the cavern in February 1986 proved that the cavern brine temperature equalled the geothermal temperature of the rock formation (45°C at a 950-m depth). Thus, brine thermal expansion could be disregarded.

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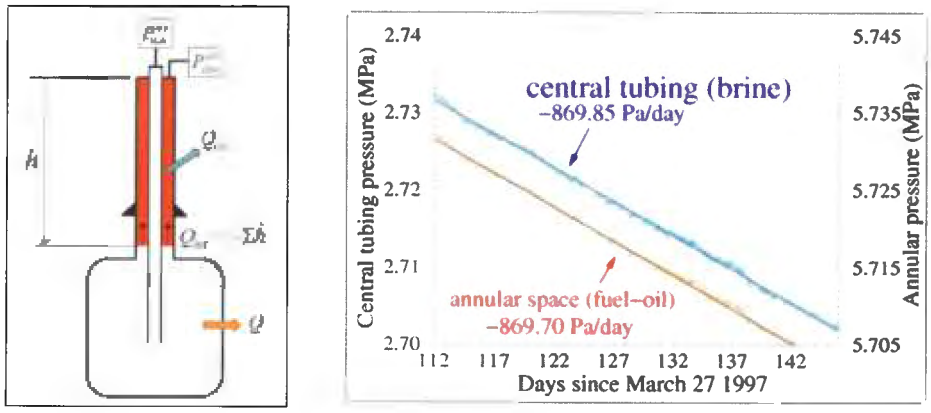

Fig. 2. Wellhead pressure evolution day 112 to day 142.

Possible leaks also were a concern. On March 20, before the test began, a light, liquid hydrocarbon column was lowered in the 7"×9-⅝" annular space to develop a brine-hydrocarbon interface at a depth of h = 864.5-m. Brine density was $\rho_b = 1200$ kg/m^3, and hydrocarbon density was $\rho_o = 850$ kg/m^3. Any hydrocarbon leak, Q_{act}, through the cemented casing or through the casing shoe, resulted in an interface rise by $\dot{h} = Q_{act}/\Sigma$, where Σ is the cross-sectional area of the annular space and, consequently, in a change by $\dot{P}^{wh}_{ann} - \dot{P}^{wh}_{tub} = (\rho_b - \rho_o)g\dot{h}$ in the difference between the string pressure P^{wh}_{tub} and the annular space pressure P^{wh}_{ann} as measured at the wellhead. This change can easily be measured and even tiny leaks can be detected.

Figure 2 presents both pressure variations, as measured from day 112 (after test began) to day 150. They are measured through pressure gauges whose accuracy is 1 kPa (7 psi). The rate of pressure difference change is almost nil, precluding any significant leakage. (Small fluctuations can be observed; these are due to the effects of daily ground-level temperature and pressure fluctuations and to the effects of Earth tides). Later, on day 293, a rapid increase in pressure difference took place — clear evidence of a hydrocarbon leak. The cumulated differential pressure increased to 21 kPa after 23 days: the interface rose by 6 m in this period, and 124 litres of hydrocarbon were lost. On day 315, the leak was fixed. (The leak was through the wellhead; it was detected on pressures evolution curves before being observed in the field.) Except for this period, there was no leak from the well, and only two phenomena played significant roles in pressure evolution: cavern creep closure and brine permeation.

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2.2 Test results

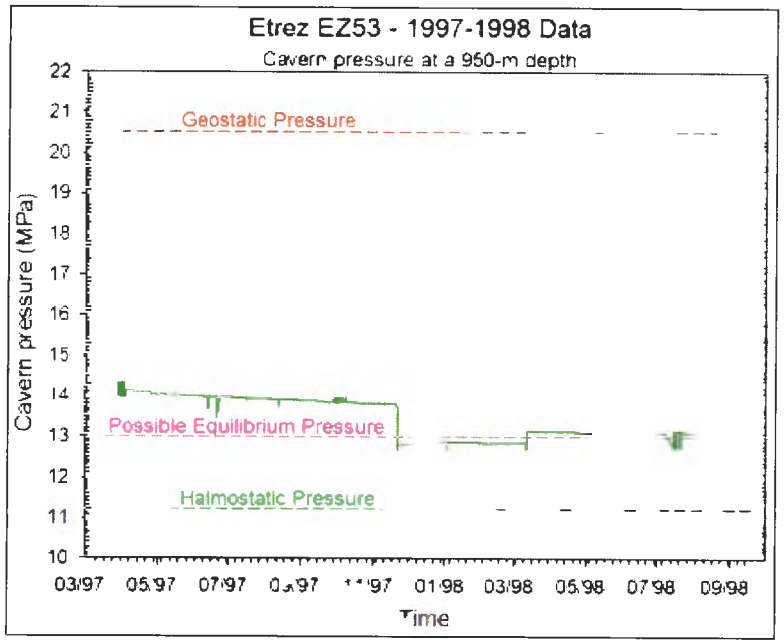

Fig. 3. The 1997-1998 Abandonment test.

The test began on March 27, 1997 (day 1) and lasted for 540 days. The test (Figure 3) included four phases ("trial-and-error" method). At the beginning of each phase, a different pressure was applied in the cavern. The test ran smoothly except for the period from day 293 to day 315, described above. At the end of the test, the cavern pressure was P = 13.1 MPa and slowly decreasing. It was inferred that the equilibrium pressure at a depth of $H = 950\,\text{m}$ was $P_{950}^{eq} = 13 \pm 0.1\,\text{MPa}$ — i.e., smaller than the geostatic pressure $(P_x = 20.5\,\text{MPa})$ and larger than the halmostatic pressure $(P_h = 11.2\,\text{MPa})$ at cavern depth. It also was inferred that salt-formation permeability was $K \approx 2\times10^{-20}\,\text{m}^2$ and that cavern-creep closure rate was $\dot{V}/V \approx 2\times10^{-4}\,\text{yr}^{-1}$ [Bérest et al., 2001].

3 WAS THE 1997-1998 TEST LONG ENOUGH?

In principle, the results of this test can be considered to be convincing. The physical phenomena that play a role are identified clearly, and the test results provide an upper and lower bound for the "equilibrium pressure". The Solution Mining Research Institute (SMRI) has set the cavern abandonment issue at the centre of its research program [Ratigan, 2003], and SMRI supported the 1997-1998 test. It also supported similar later tests performed at Carresse (France) [Brouard et al., 2006] and Stassfurt (Germany) [Banach and Klafki, 2009] and a test currently performed in deep caverns at Mont Belvieu, Texas. Many papers contributed to the discussion [Wallner and Paar, 1997;

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Rokhar et al., 2000; Rokhar et al., 2003; Cosenza and Ghoreychi, 1993] over the years, and many companies performed abandonment tests following the same methodology [Brückner et al., 2006; Hévin et al., 2007; Brückner and Wekenborg, 2006; Van Heekeren et al., 2009]. These efforts provide some confidence in the selected approach. However, the Etrez test lasted 540 days, and one could question whether the evolution observed during that period of time can be extrapolated to much longer periods. A pragmatic approach was considered suitable: recording pressure evolution several years after the initial test was over should provide additional insight and help build confidence in the test results.

4 THE 2002-2009 TEST

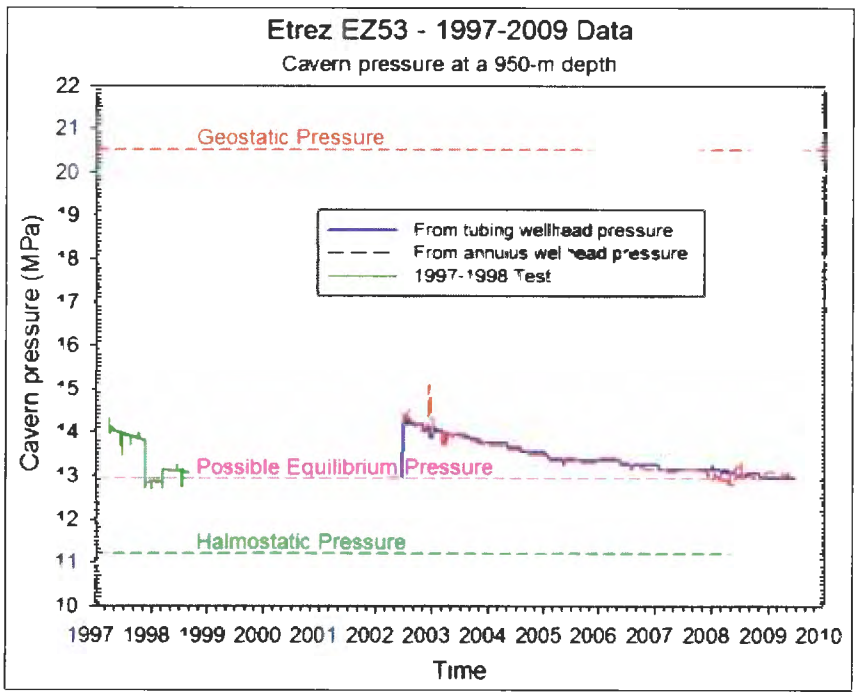

Fig. 4. Cavern pressure evolution in the 1997-2009 period.

4.1 From November 1998 to May 2002

The EZ53 well completion was discussed briefly in Section 2. The well has a 7" central string that is 929-m (H_{tub}) long, and a 842-m long 9-⅝" cemented casing shoe. The internal volume of the string is 19.5 m^3. At the end of the 1997-1998 test, the cavern and the central string are filled with saturated brine except for a 3.5-m liquid hydrocarbon column at the top of the string. The annular space is filled with liquid hydrocarbon to a depth h = 858.5 m. From depth 0 to 32 m, the cross-sectional area of the annular space is 52.4 litres/m; from 30 m to 842 m, it is 14.7 litres/m; and, from 842 m to 890 m

(location of the cavern chimney), it is Σ = 5.7 litres/m. The liquid hydrocarbon volume injected in the annular space in 1997 was approximately 14.5 m^3.

No information is available for the period November 1998 to April 2002. On May 24, 2002, recording of the string pressure at the wellhead began again, and weekly recordings were performed. The pressure gauge, with a resolution of 0.1 MPa, is much less accurate than that used during the 1997-1998 test, although 0.05-MPa pressure changes can be detected. Wellhead string pressure from May 24 to June 6 was $P_{tub}^{wh} = 1.75$ MPa, a figure observed consistently during one month. Because the string is filled with saturated brine, cavern pressure can be deemed to be

$$P_{950} = P_{tub}^{wh} + \rho_b g H = 1.75 + 11.2 = 12.95 \text{ MPa}$$

This is a figure that ranges between the upper and lower bounds of the predicted equilibrium pressure.

On June 13, 2002, a pressure gauge was set at the wellhead on the annular space (partly filled with oil). At that point, the wellhead annular pressure was $P_{ann}^{wh} = 4.4$ MPa, from which the value of

$$P_{950}^{'} = P_{ann}^{wh} + \rho_o g h + \rho_b g (H - h) = 12.6 \text{ MPa}$$

can be inferred. This figure is smaller than that inferred from the wellhead string pressure. (Obviously, they should be equal.) Thus, the following two hypotheses must be considered.

1. A liquid hydrocarbon leak occurred during the 1998-2002 period. Such a leak would result in a heavier annular space column, because the brine/hydrocarbon interface rises and hydrocarbon is replaced by saturated brine. This hypothesis is not fully convincing, as the leak was almost zero during the 1997-1998 period.

2. There were uncertainties in pressure measurements and liquid densities. Accuracy of pressure gauges is poor: liquid densities are not constant, but depend on liquid pressure and temperature (which, from the wellhead to the cavern bottom, vary from a couple of MPa to 11 MPa, and from 10 °C to 45 °C, respectively). These result in variations of liquid density by 1% for brine (and more for liquid hydrocarbon).

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4.2 From June 2002 to December 2002

On June 25, 2002, liquid hydrocarbon was withdrawn from the annular space, and brine was injected in the tubing to increase cavern pressure. The injected brine was slightly undersaturated, with a density of $\rho_b^{uns} = 1177$ kg/m^3. The annular space was filled with the fully saturated brine from the cavern that displaced the fuel-oil column. The tubing pressure fluctuated from $P_{tub}^{wh} =$ 3.2 to 3.4 MPa, an increase of $\Delta P = 1.45$ to 1.65 MPa when compared to the May 2002 period (see Figure 4). Because the cavern compressibility is $\beta V =$ 3 m^3/MPa, it can be inferred that the injected brine volume was $\beta V \Delta P \approx 4.5$ m^3 (to increase cavern pressure) plus 14.5 m^3 (to withdraw liquid hydrocarbon from the annular space), or 19 m^3. It also can be inferred that the string, whose volume is 19.5 m^3, is filled with unsaturated brine and that the cavern pressure is:

$$P_{950} = P_{tub}^{ann} + \rho_b^{uns} g H_{tub} + \rho_b g (H - H_{tub}) = 14.2 \text{ to } 14.4 \text{ MPa}$$

The annular space pressure during this period is $P_{ann}^{wh} = 3.1$ to 3.2 MPa, from which a cavern pressure ranging from

$$P_{950}^{'} = P_{ann}^{wh} + \rho_b g H = 14.3 \text{ to } 14.4 \text{ MPa}$$

can be inferred; the two figures are consistent (suggesting that the discrepancy observed in June 2002 resulted from poor estimation of liquid hydrocarbon density, the second hypothesis mentioned in Paragraph 4.1).

4.3 From December 2002 to July 2009

On December 13, 2002, a small amount (110 litres) of hydrocarbon was injected in both the string and the annular space to prevent brine freezing. Both wellhead pressures increased by 0.1 MPa, a figure consistent with what is known of cavern compressibility and hydrocarbon density. By mid-December, the annular pressure suddenly increased by 1.1 MPa (see Figure 4). This increase cannot be explained; gauge misreading is suspected, as, by the end of December, the pressure drops to the figure observed before this "pressure crisis". A similar "pressure crisis" can be observed in March 2003, when both pressures unexpectedly dropped by 0.2 to 0.3 MPa. This pressure drop remains puzzling; both surface temperature and atmospheric pressure fluctuations generate small changes in wellhead pressure (These phenomena clearly were observed during the 1997-1998 test, when pressure gauge resolution was much better.), but these changes typically are 0.01 MPa in magnitude (see Figure 3) and cannot explain the much larger pressure drop observed in March 2003.

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From March 2003 to 2007, pressure evolutions were smooth; both pressures slowly decreased (see Figure 4), as they did during the 1997-1998 test when pressure conditions were similar, and the gap between these two pressures remained roughly constant. At the end of 2007, string pressure readings became difficult, as the gauge clearly no longer worked properly. A new string gauge was set on June 4, 2008. From then until July 2009, the string pressure is $P_{tub}^{wh} = 2.0$ MPa, and the annular space pressure is $P_{ann}^{wh} = 1.8 - 1.9$ MPa. It can be concluded from these figures that the cavern pressure is $P_{950} = 13 \pm 0.1$ MPa, which is consistent both with the figure predicted at the end of the 1997-1998 test (see Section 2.2) and with that observed in 2002, after the well was kept idle for four years. It must be kept in mind, however, that a couple of short "pressure crises", a couple of weeks long, were observed during the 2002-2009 observation period. They remain unexplained. Misreading and/or gauge faults are the most likely explanations.

CONCLUSION

A 12-year-long shut-in test was performed on the 950-m (3,000 ft) deep, 8000-m^3 (50,000 bbls) Ez53 cavern of the Etrez cavern field operated by GDF Suez. Pressures were monitored precisely during the 1997-1998 period; less accurate gauges were used during the 2002-2009 period. It is observed that at the end of any period during which the cavern was kept idle (e.g., October 1998, May 2002, July 2009), cavern pressure remained constant at 13.0 ± 0.1 MPa at a depth of 950 m. The notion of a steady-state "equilibrium pressure" in a closed cavern, resulting from the opposing effects of brine permeation and cavern creep closure, has been clearly confirmed.

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