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February 13, 2009

**VIA ELECTRONIC FILING**

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Re:    Henry Gas Storage, LLC  
      Docket No. PF08-28-000

Dear Ms. Bose:

Attached hereto for filing are Comments by North American Salt Company (“NASC”), filed in response to the Commission’s January 14, 2009 Notice of Intent to Prepare an Environmental Assessment for the Proposed Henry Gas Storage Project and Request for Comments on Environmental Issues and Notice of Public Meeting.

A copy of this letter and NASC’s Comments are being provided to counsel for Henry Gas Storage, LLC, J. Gordon Pennington.

Sincerely,

*/s/ Karol Lyn Newman*

Karol Lyn Newman

c: Eric Tomasi  
   Environmental Project Manager  
   FERC Office of Energy Projects



## **I. DESCRIPTION OF NASC AND ITS INTEREST IN THIS PROCEEDING**

NASC, through its subsidiary Carey Salt, Inc., owns and operates a salt mine on Cote Blanche Island, Louisiana, within the same salt formation, the Cote Blanche Salt Dome, that Henry Gas Storage proposes to develop its Project. NASC's mine is one of only a few salt mines located in the United States. The NASC Cote Blanche Island salt mine, which began construction in 1961 and has been operating since 1965, employs as many as 150 workers, many of whom are working underground at depths of about 1,500 feet<sup>1</sup> at any given time.<sup>2</sup> Because the mine operates on a shift basis, there are mine workers underground 24 hours of every day. Given that mine development plans within its existing lease will make the proposed gas storage caverns ever closer to the existing salt mine as development progresses, NASC is deeply concerned with the effect that the Project will have on the surrounding environment.

In particular, NASC is concerned about the hazards that the construction and operation of a high pressure underground natural gas storage facility of the proposed size (four 11.5 Bcf caverns for a total storage capacity of up to 46 Bcf) will present for NASC's ongoing mining operations and employees. These concerns, as explained in greater detail below, are particularly acute given the daily underground and crushing activities engaged in by NASC in its mining operations. At the present time, NASC employs five tons of explosives every day in the mine. Given NASC's development plan to enjoy its rights to mine salt in the entire area of its existing lease, NASC's blasting, drilling, and crushing operations will, over time, move continually closer to Henry Gas Storage's proposed salt cavern storage project, heightening safety concerns.

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<sup>1</sup> The lease gives NASC the right to mine salt to a depth of 3,000 feet.

<sup>2</sup> The only time the mine is vacated is when NASC is blasting due to the possibility of encountering large volumes of methane gas and the potential for a large outburst or explosion, such as the deadly outburst that occurred at the Belle Isle Mine near Franklin, Louisiana in 1979 that killed five miners.

NASC is also concerned that an incident involving the gas storage caverns that shuts down the NASC salt mining operation at Cote Blanche Island could have far-reaching implications. NASC currently provides a significant portion of the rock salt requirements for roadway de-icing in the Midwest and Ohio Valley snowbelt regions. In addition to the fact that the presence of natural gas storage caverns in the Cote Blanche Salt Dome will likely shorten the useful life of the salt mine, an incident that halts production at the mine could have severe effects on highway safety in these significant U.S. regions.

NASC believes that given the extent and significance of the environmental and safety risks posed by the Project, the National Environmental Policy Act (“NEPA”) and the Commission’s regulations implementing its responsibilities under NEPA require a more thorough environmental analysis through the preparation of an Environmental Impact Statement rather than an Environmental Assessment.

## **II. BACKGROUND – DESCRIPTION OF THE PROPOSED PROJECT**

As described in the materials submitted by Henry Gas Storage, the Project involves a proposal to construct and operate a natural gas salt dome storage facility on Cote Blanche Island in Southern Louisiana. The Project, as proposed, will consist of four salt caverns in the Cote Blanche Salt Dome, each with a capacity of approximately 11.5 Bcf. Henry Gas Storage projects that the withdrawal capacity will be 2.6 Bcf per day, while the injection capacity may be as much as 1 Bcf per day. The Project will also include 12 miles of new natural gas pipeline connecting the proposed salt caverns with six interstate and two intrastate pipelines. Other proposed Project facilities include approximately 65,000 horsepower of gas-fired compression, a natural gas treatment plant for dehydrating the gas before it is routed to the pipelines, a solution mining plant for supplying fresh water for leaching that is capable of pumping 10,000 gallons of water per minute from the Intracoastal Waterway, and a brine disposal pipeline approximately 25 miles

long, stretching from Cote Blanche Island into the Gulf of Mexico. The Project also proposes to have a ferry landing, barge dock, and helipad site.

The materials provided by Henry Gas Storage to the Commission, to date, do not specify the distance between the proposed storage caverns and associated facilities and the NASC salt mining operation; however, based upon discussions held between NASC and Henry Gas Storage, NASC understands that the facilities and the caverns will be directly adjacent to the NASC lease.

### **III. NEPA FRAMEWORK**

Prior to granting a certificate of public convenience and necessity for a natural gas project such as the storage project proposed by Henry Gas Storage, FERC must undertake an analysis of the environmental impact of the Project under NEPA.<sup>3</sup> NEPA's twin aims are: (1) to obligate federal agencies to consider every significant aspect of the environmental impact of a proposed action;<sup>4</sup> and (2) to ensure that the agency will inform the public that it has considered environmental concerns in its decisionmaking process.<sup>5</sup> Thus, in conducting a NEPA evaluation, FERC has an obligation to consider the adverse consequences to the environment that a project may pose, and to "take environmental factors into account in the way that NEPA mandates."<sup>6</sup>

The Council of Environmental Quality ("CEQ"), created by NEPA with the authority to issue interpretive regulations, has promulgated rules to guide federal agencies in researching and resolving environmental issues.<sup>7</sup> The CEQ requires that *high quality* environmental information

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<sup>3</sup> See 42 U.S.C. 4321, *et seq.*; *Dep't of Transportation v. Public Citizen, et al.*, 541 U.S. 752, 756–57 (2004) (citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349–50 (1989)).

<sup>4</sup> *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983); *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553 (1978); *Committee to Preserve Boomer Lake Park v. Dep't of Transportation*, 4 F.3d 1543, 1554 (10th Cir. 1993).

<sup>5</sup> *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. at 97; *Weinberger v. Catholic Action of Hawaii*, 454 U.S. 139, 143 (1981).

<sup>6</sup> See *Jones v. District of Columbia Redev. Land Agency*, 499 F.2d 502, 512 (D.C. Cir. 1974).

<sup>7</sup> See 40 C.F.R. § 1500.1, *et seq.*

be available to public officials and citizens *before* decisions are made and *before* actions are taken.<sup>8</sup> In addition, the CEQ requires agencies, such as FERC, to implement procedures to make the NEPA process more useful to the decisionmakers and the public.<sup>9</sup> As such, agencies are to encourage and facilitate public involvement in decisions which affect the quality of the environment.<sup>10</sup>

In response to the CEQ's regulations, FERC promulgated *Regulations Implementing National Environmental Policy Act of 1969*, Order No. 486,<sup>11</sup> in which the Commission developed procedures for evaluating project applications. Under those regulations, Applicants must conduct studies providing the Commission with the necessary high quality environmental information in order to assist the Commission staff in assessing the impact of the proposed project on the human environment and natural resources.<sup>12</sup> The Commission's regulations at 18 C.F.R. Part 380 enumerate the requirements for the environmental reports that must be submitted by applicants such as Henry Gas Storage which seek certificates of public convenience and necessity.<sup>13</sup> The regulations require that each resource report:

- Address conditions or resources that might be directly or indirectly affected by the project;
- Identify significant environmental effects expected to occur as a result of the project;

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<sup>8</sup> 40 C.F.R. § 1500.1(b) (2008).

<sup>9</sup> *Id.* § 1500.2(b).

<sup>10</sup> *Id.* § 1500.2(d).

<sup>11</sup> *Regulations Implementing National Environmental Policy Act of 1969*, Order No. 486, 52 Fed. Reg. 47,897 (Dec. 17, 1987).

<sup>12</sup> *Id.* at 47,906.

<sup>13</sup> 18 C.F.R. § 380.12 (2008); see *Revisions of Existing Regulations Governing the Filing of Applications for the Construction and Operation of Facilities to Provide Service or to Abandon Facilities or Service under Section 7 of the Natural Gas Act.*, Order No. 603, 64 Fed. Reg. 26,572 (May 14, 1999).

- Identify the effects of construction, operation, and termination of the project, *as well as cumulative effects* resulting from existing or reasonably foreseeable projects;
- Identify measures proposed to enhance the environment or to avoid, mitigate, or compensate for adverse effects of the project; and
- Provide a list of supporting documentation, including publications and other literature that was cited or relied upon in supporting the resource reports.<sup>14</sup>

Through these regulations, FERC requires a project applicant to submit resource reports that address: (i) the general project description; (ii) water use and quality; (iii) fish, wildlife, and vegetation; (iv) cultural resources; (v) socioeconomics; (vi) geological resources; (vii) soils; (viii) land use, recreation, and aesthetics; (ix) air and noise quality; (x) alternatives; (xi) reliability and safety; (xii) PCB contamination; and (xiii) engineering and design material.<sup>15</sup> The “detail of each resource report must be commensurate with the complexity of the proposal and its potential for environmental impact.”<sup>16</sup> Only after reviewing each of these reports and concluding that the public benefit outweighs the environmental impact of the project can FERC issue a certificate of public convenience and necessity.

#### **IV. THE PRE-FILING PROCESS**

##### **A. FERC’s Pre-Filing Procedures**

Henry Gas Storage has chosen to use FERC’s pre-filing process for natural gas projects and, on August 27, 2008, filed a request to initiate a review of the Project using the Commission’s pre-filing process. The Commission’s pre-filing process is optional for projects

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<sup>14</sup> 18 C.F.R. § 380.12(b).

<sup>15</sup> *See id.* § 380.12(c)–(o).

<sup>16</sup> *Id.* § 380.12(a)(2).

such as the Henry Gas Storage salt dome natural gas storage project.<sup>17</sup> It is designed to be a cooperative and open way for applicants, Commission staff, and the interested public to evaluate various project issues, especially those related to effects on the environment, through a “positive and open dialogue.”<sup>18</sup> As the Commission explained when it first created the pre-filing process for natural gas facilities, these procedures establish “a collaborative process to identify and resolve significant issues,” “designed to be flexible and adaptable to the facts and circumstances of the particular case.”<sup>19</sup> In particular, the pre-filing process is designed to provide an early opportunity for the participation of interests other than those represented by the applicant and the Commission. One of the chief goals of the process is to make the regulatory process “more flexible and responsive to citizens’ concerns, including those expressed by business, consumer, and environmental interests.”<sup>20</sup>

As part of the collaboration and openness goals of the pre-filing process, the process uses, in addition to regular informative filings from the applicant, (a) open houses;<sup>21</sup> (b) meetings with stakeholders, agencies, and FERC Staff;<sup>22</sup> (c) communications with stakeholders;<sup>23</sup> (d) scoping meetings where the public can ask questions;<sup>24</sup> and (e) site visits.<sup>25</sup> All of these efforts serve the

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<sup>17</sup> 18 C.F.R. § 157.21(b) (2008). The pre-filing procedures are mandatory for certain LNG terminal projects and related jurisdictional facilities. *Id.* § 157.21(a).

<sup>18</sup> *Collaborative Procedures for Energy Facility Applications*, Order No. 608, 64 Fed. Reg. 51,209 (Sept. 22, 1999).

<sup>19</sup> Order No. 608, 64 Fed. Reg. at 51,211; *see also Regulations Implementing Energy Policy Act of 2005; Pre-Filing Procedures for Review of LNG Terminals and Other Natural Gas Facilities*, Order No. 665, 70 Fed. Reg. 60,426 at P 55 (Oct. 18, 2005) (“[T]he Commission recognizes the need for flexibility in the application of the substantive and procedural requirements of the pre-filing procedures . . .”).

<sup>20</sup> Order No. 608, 64 Fed. Reg. at 51,211.

<sup>21</sup> 18 C.F.R. § 157.21(f)(1) (2008).

<sup>22</sup> *Id.*

<sup>23</sup> *Id.* § 157.21(f)(3)-(4).

<sup>24</sup> *Id.* § 157.21(f)(7).

<sup>25</sup> *Id.* § 157.12(f)(8).

goals of the pre-filing process by encouraging transparency and cooperation among the interested parties so that all relevant interests have an opportunity to provide input regarding the project.

**B. Henry Gas Storage's Pre-Filing in PF08-28-000**

On September 9, 2008, the Commission's Office of Energy Projects set this pre-filing process in motion by granting Henry Gas Storage's request to use the pre-filing process, noting that these procedures will "greatly improve the chances of identifying specific project issues and addressing them in a timely manner."<sup>26</sup> In approving the request to use the pre-filing process, the Office of Energy Projects noted its particular concerns regarding the completion of an environmental assessment for the Project, explaining that the Office of Energy Projects would need to coordinate closely with Henry Gas Storage to assure that the draft Environmental Assessment benefits from the pre-filing process.<sup>27</sup>

On October 24, 2008, Henry Gas Storage submitted draft Resource Report Nos. 1 and 10 and, on December 30, 2008, Henry Gas Storage submitted draft Resource Report Nos. 2 through 9. On January 14, 2009, the Commission issued the Notice of Intent, requesting comments on environmental issues by February 13, 2009. For some reason, these reports were not publicly available through the Commission's eLibrary docket system until after the Notice of Intent was issued; however, NASC was able to obtain copies from Commission Staff and Henry Gas Storage on January 15, 2009.<sup>28</sup>

An initial scoping meeting was held in Franklin, Louisiana on January 27, 2009, but as stated in NASC's February 2, 2009 Request for Second Public Scoping Meeting and Extension of Scoping Period, no court reporter was present to record the comments. Many of NASC's

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<sup>26</sup> Letter Approving Request to Initiate Pre-Filing Process in Docket No. PF08-28-000 (Sept. 9, 2008).

<sup>27</sup> *Id.*

<sup>28</sup> NASC believes that, for some reason, draft Resource Report Nos. 1 and 10 remain inaccessible to the public through the Commission's eLibrary.

employees who attended the meeting have since filed written comments with the Commission, focusing primarily on their fears for their safety. The overriding concern expressed by the more than 40 employees who have filed comments to date is the risk to their health and safety were the proposed natural gas storage project to be constructed and operated in close proximity to the mine.

On February 11, 2009, the Commission's Office of Energy Projects issued a letter regarding "Staff's Comments on Draft Resource Reports 1, 5, 7-10." In this letter, the Office of Energy Projects noted that a great deal of information was missing from the draft Resource Reports submitted by Henry Gas Storage, and directed Henry Gas Storage to provide a wide range of additional information, noting that the Commission must receive the requested information before it can begin preparing the substantive parts of the environmental assessment. NASC supports the need for such information and requests that it receive copies of all the responses to the Staff's requests submitted by Henry Gas Storage.

As described above, NASC has had very little time to review the potential impact of the Project, the size and location of which present real risks to NASC and its employees. Therefore, while NASC is submitting these comments within the designated scoping period, NASC reserves the right to submit additional comments after it has received complete information and has had a reasonable time to assess the Project's impact.

### **C. Inadequate Resource Reports Filed by Henry Gas Storage**

In addition to the problems noted in the Commission's February 11, 2009 Comments on Draft Resource Reports 1, 5, 7-10, the draft Resource Reports filed by Henry Gas Storage are also inadequate in several categorical respects: (1) the lack of public availability hinders or prevents interested parties from evaluating and commenting on the Project; (2) the draft Resource Reports fail to acknowledge adequately the existence of a NASC's 3.2 million tons of

salt per annum operating salt mine, one of the largest salt mines in the United States, in the same salt dome as the proposed Project or to address the cumulative impacts and interaction of the Project on the existing mine; (3) the Resource Reports fail to acknowledge the safety concerns applicable to constructing and operating a salt cavern storage facility adjacent to an active mine; and (4) the Resource Reports fail to address conditions or resources that might be directly or indirectly affected by the Project. Each of these categories is described briefly below, with further explication to come after Henry Gas Storage files more complete Resource Reports.

**1. Lack of Public Availability**

As noted above, despite the importance of these Resource Reports to public evaluation and comment during the scoping process, two of the draft Resource Reports filed by Henry Gas Storage on October 24, 2008, are not publicly available through the Commission's eLibrary docket system: Resource Report No. 1 and Resource Report No. 10.<sup>29</sup> As a result, interested parties have not had the opportunity to thoroughly evaluate and comment on the Project and its environmental impact, even though the input from the public is considered to be a critical part of the pre-filing and scoping process. In addition, as noted in Part V of these comments, there are many important questions regarding the Project that neither the draft Resource Reports nor the other Henry Gas Storage filings adequately answer.

**2. Failure to Address the Cumulative Impact of the Proposed Project and the Existing Mine Operation**

Of particular concern is the failure of Henry Gas Storage to address the cumulative impacts of the existing NASC mine and the proposed salt cavern storage facility. The reports filed by Henry Gas Storage barely acknowledge the existence of NASC's mining operations. As noted above, the Project will not be the only operation on Cote Blanche Island; NASC's salt

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<sup>29</sup> However, draft Resource Report Nos. 1 and 10 have been made available to NASC.

mine is a significant presence in the area. Henry Gas Storage’s environmental reports must be supplemented to include an analysis of how these two operations will interact and what the cumulative impact on the environment will be if the Project is built. Indeed, the Commission’s regulations explicitly require every resource report to “[i]dentify the effects of construction, operation (including maintenance and malfunctions), and termination of the project, as well as cumulative effects resulting from existing or reasonably foreseeable projects.”<sup>30</sup>

### **3. Failure to Address Safety Issues**

Henry Gas Storage also fails to address any of the safety issues associated with either the construction or operation of a salt cavern storage project adjacent to and in the same salt dome as an operating salt mine. It does not appear that the Commission has had the opportunity to consider the environmental or safety issues associated with locating a natural gas salt cavern storage project adjacent to an operating salt mine, making the Project a unique proposal with untested safety concerns. The increased risk to life and property, explained in greater detail below, requires Henry Gas Storage and the Commission to address the environmental and safety issues associated with the proposed Project in relation to the existing NASC salt mining operation.

### **4. Failure to Address Affected Conditions or Resources**

In addition, the regulations require that each resource report “address conditions or resources that might be directly or indirectly affected by the project.”<sup>31</sup> The draft Resource Reports filed by Henry Gas Storage do not comply with this requirement. Significantly, the draft Resource Reports, particularly draft Resource Report Nos. 1 and 6, fail to alert the Commission to the fact that the NASC salt mine is adjacent to the proposed location of the Henry Gas Storage

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<sup>30</sup> 18 C.F.R. § 380.12(b)(3).

<sup>31</sup> *Id.* § 380.12.

salt caverns or that Henry Gas Storage intends to leach four large (11.5 Bcf) salt caverns out of the same salt dome currently being mined by NASC. This fact raises the level of complexity of the Project and its potential for environmental impacts, requiring additional detail in the Resource Reports. For example, if a salt cavern storage accident forces the abandonment of NASC's mine, what socioeconomic effect would this have on the economy of the communities around Cote Blanche Island? What would the public safety ramifications be if the Project caused a reduction in the availability of rock salt to the states that rely heavily on Cote Blanche Island rock salt for road de-icing? These questions, like other questions addressed below, remain unanswered.

## **V. COMMENTS**

The Project presents numerous environmental concerns that must be addressed by the Commission before it can determine whether the Project can be authorized. These concerns relate to (1) the geological impact on the surrounding environment, including the safety of the mining facility in close proximity to the proposed underground Project, (2) the impact on fish and vegetation caused by brine disposal into the Gulf of Mexico proposed by Henry Gas Storage, (3) the impact on air quality caused by the sizable gas-powered compressors and other machinery proposed for the Project, and (4) the threat to water quality posed by the Project.

So that the Commission has sufficient information to evaluate Henry Gas Storage's proposal, including the concerns described below, NASC has provided a list of studies, reports, and plans that Henry Gas Storage should complete and submit for review by the Commission and NASC before any decision on this Project can be made. This list is provided as Attachment A to these Comments.

### **A. Environmental Concerns of NASC Regarding the Project**

NASC wishes to point out particular omissions in specific draft Resource Reports

submitted by Henry Gas Storage. This is not to suggest that the other draft Resource Reports are adequate, as all appear to be missing critical, required information. The discussion below is intended as an example of the deficiencies of Henry Gas Storage's Resource Reports currently on file. The Commission has also recognized this in Staff's February 11, 2009 Comments on Draft Reports 1, 5, 7-10, noting that Henry Gas Storage needs to provide a great deal of additional information, including all of the missing "tables, figures, and appendices" before the Commission can "begin substantive preparation of the environmental assessment."<sup>32</sup> NASC understands that this requirement applies to all of the draft Resource Reports submitted, not just the tables, figures, and appendices omitted from Resource Reports Nos. 1, 5, 7-10.

**1. Omissions in Resource Report No. 1—General Project Description**

Draft Resource Report No. 1 is lacking in critical, required information, making it difficult for any interested person to adequately comment on or address the environmental impacts of the proposed Project at this point. For example, draft Resource Report No. 1 is missing the following data, among other information, specifically required by the Commission's regulations:

- 1) A detailed description and location map of the Project's facilities as required by 18 C.F.R. § 380.12(c)(1).
- 2) A current US Geological Survey 7.5 minute series topographical map with mileposts showing the project facilities as required by 18 C.F.R. § 380.12(c)(3).
- 3) The plot/site plans of compressor sites showing the location of the nearest noise-sensitive area within 1 mile as required by 18 C.F.R. § 380.12(c)(4).
- 4) Any plans for the expansion of the Project, including whether additional land will be

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<sup>32</sup> See Staff Comments on Draft Resource Reports 1, 5, 7-10 in Docket No. PF08-28-000 (Feb. 11, 2009).

necessary and whether those plans are compatible with Henry Gas Storage’s proposal as required by 18 C.F.R. § 380.12(c)(8).

Henry Gas Storage’s explanation of the need for the Project, that it will “help meet the growing demand for high deliverability natural gas storage,” is also insufficient. Not only does the power of federal eminent domain accompany certificates for such projects, but this project in particular poses a number of unique environmental and safety hazards, as described below. For that reason, Henry Gas Storage must offer a much stronger showing of need for the Project.

In addition, draft Resource Report No. 1, like the other Resource Reports, specifically states that a significant amount of information is “In Progress.” For example, Appendices A through D and Exhibits X and Z to Resource Report No. 1 are listed only as “In Progress.” Omitting this information makes it difficult for NASC to identify issues during this pre-filing process.

**2. Omissions in Resource Report No. 6—Geological Environmental Effects**

Draft Resource Report No. 6 is equally deficient. Again, as with all of the Resource Reports, Henry Gas Storage is required to address the “cumulative effects resulting from existing or reasonably foreseeable projects.”<sup>33</sup> In this draft Resource Report covering geological resources,<sup>34</sup> Henry Gas Storage makes only a passing reference to the NASC salt mine, stating that “[a]n active salt mine is located on much of the onshore portion of the dome west of the HGS Project site. Conversations with mine management indicate that the mine has not encroached into the HGS project site boundary. However, HGS will verify this using survey.”<sup>35</sup> First, the fact that the “mine has not encroached into the HGS Project site boundary” does not

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<sup>33</sup> 18 C.F.R. § 380.12(b)(2).

<sup>34</sup> *See id.* § 380.12(h).

<sup>35</sup> Draft Resource Report No. 6 § 6.1.4.

address the environmental risks associated with the proposed construction and operation of the Project in the same salt formation and directly adjacent to NASC's operating salt mine, nor does it address the risks associated with future mine development within the lease boundaries. The draft Resource Report also fails to discuss the cumulative impacts of the storage project and salt mine on the geological environment. For example, nowhere does Henry Gas Storage address:

1) *The blow-out risks associated with the presence of methane gas in the Cote Blanche Salt Dome.* The Cote Blanche Salt Dome contains pockets of methane embedded in the salt.<sup>36</sup> This makes the salt "gassy," requiring strict controls to prevent accident or injury.<sup>37</sup> These gas pockets pose an explosion risk during daily routine blasting and drilling activities at the mine.<sup>38</sup> In addition, there are known sandstone inclusions within the salt that have been exposed in the mine; however, the orientation and location of the sandstone inclusions outside the mine are unknown at this time. These sandstone inclusions could penetrate to a deep natural gas storage cavern location and connect the cavern to the shallower salt mine. In addition, nonsalt anomalies have greater permeability than the salt existing within the salt dome and may provide gas-flow pathways from the gas storage caverns to the operating salt mine similar to the sandstone noted above. While NASC can address known anomalies on its own, it cannot yet account for additional concerns that would come about as a result of the Project. NASC has seen these anomalies, which are less specific and of unknown character compared to the sandstone inclusions in the salt, while conducting its mining operations.

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<sup>36</sup> These gassy zones have a methane content more than 150 times that of non-gassy zones in the salt. See Gregory M. Molina, *Investigation of Methane Occurrence and Outbursts in the Cote Blanche Domal Salt Mine, Louisiana*, U.S. Dept. of the Interior, Bureau of Mines Report of Investigations 9186, at 19 (1988).

<sup>37</sup> Indeed, research has indicated that the methane content found in the Cote Blanche Salt Dome is among the highest found in the Gulf Coast basin. See *id.* at 12. The outbursts caused by this gas in the Cote Blanche Salt Dome can be more than 50 feet in diameter. *Id.* at 19.

<sup>38</sup> The methane contained in domal salt, unlike in coal mines, is emitted in instantaneous bursts from the salt usually as a result of blasting. *Id.* at 2.

Section 380.12(h)(2) of the Commission’s regulations requires Henry Gas Storage to describe “existing and potential geological hazards and areas of nonroutine geotechnical concern” including nearby mines. Draft Resource Report No. 6 fails to address the existence of methane in the salt formation and, therefore, the risk of blow-outs or explosions.<sup>39</sup> It also fails to address the anomalies in the salt that could result in gas migration from the high pressure salt cavern to lower pressure areas outside the cavern.<sup>40</sup> As such, draft Resource Report No. 6 is clearly deficient in identifying the risks associated with the presence of methane gas pockets in the salt, anomalies in the salt, and the activities at the adjacent NASC mine.<sup>41</sup>

2) *The risk of natural gas migrating through the enhanced permeability zone that exists above and beside the salt mine.* As a result of the existing and ongoing mining operations, an enhanced permeability zone exists, consisting of damaged rock extending upward and outward from the mine. This zone can result in a potential pathway for gas to migrate from a gas storage cavern to the mine. Gas migration could be the result of an induced fracture, a fault plane, or a seam of porous and permeable salt intersecting two caverns at an unknown angle.<sup>42</sup>

Section 380.12(h)(2) of the Commission’s regulations requires Henry Gas Storage to address these concerns, and Section 380.12(h)(4) requires Henry Gas Storage to discuss the interaction between the mine and the proposed Project. Draft Resource Report No. 6 includes no such discussion. Henry Gas Storage only notes that there is a subsurface salt mine on Cote

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<sup>39</sup> See *Final Report of Mine Explosion Disaster, Belle Isle Mine Cargill Inc., Franklin, St. Mary Parish, Louisiana*, at 5 (June 8, 1979) (noting that “[o]utbursts of high-pressure gases with salt out of pressure pockets in Louisiana salt mines have been documented for many years.”).

<sup>40</sup> See Douglas Johnson, *Regulatory Response to Unanticipated Geo-Mechanical Events Effecting Gas Storage Cavern Operation in Texas*, Solution Mining Research Institute, at 11 (2003) (noting that gas stored in a salt cavern migrated through approximately 400 feet of salt to enter a brine supply cavern, where wellhead pressures were significantly different).

<sup>41</sup> See P. Berest & B. Brouard, *Safety of Salt Caverns Used for Underground Storage* 58 *Oil & Gas Sci. and Tech.* 361, 367 (2003) (stating that in the event of wellhead failure or blow-out in a natural gas storage facility, “the eruption would be most spectacular”).

<sup>42</sup> See Johnson at 13.

Blanche Island, but does not offer a definitive description of the separation between the proposed salt dome storage caverns and mine itself. Additional information is required.

3) *The risks associated with cavern leaching.* Draft Resource Report No. 6 fails to address any of the unique concerns associated with leaching out caverns in this particular salt dome. For instance, there are known potassium-rich (potash) zones of unknown orientation and depth that exist in the Cote Blanche Salt Dome. These zones could allow unintended and uncontrolled dissolution during cavern creation through leaching. As a result, the salt caverns may not develop in the planned uniform manner and may instead develop in anomalous shapes, which, if undetected, could create hazards in the salt dome. For example, the caverns could be closer together than expected, or could be closer to the mine or edge of the salt dome than planned. The potential for the release of trapped methane gas during the leaching operations also creates an immense fire hazard at and around the proposed site.

Henry Gas Storage must address “potential geological hazards” associated with its proposed activities. Under Section 380.12(h)(2), these potash zones constitute a significant hazard, but they are not discussed in any of Henry Gas Storage’s filings. Furthermore, Section 380.12(h)(3) requires Henry Gas Storage to explain how it will avoid or minimize risks to itself and the surrounding resources, but it has failed to address this risk. Section 6.3.5 of draft Resource Report No. 6 describes the leaching process, but none of these risks.

4) *The geological impact of subsidence.* The Commission has identified subsidence as a material issue that must be addressed where the proposed facility is a new facility and the facility is in close proximity to an existing underground project that can raise subsidence concerns.<sup>43</sup>

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<sup>43</sup> See, e.g., *Rockies Express Pipeline LLC*, 123 FERC ¶ 61,234 at P 81-97 (2008) (subsequent history omitted). In this case, the Commission considered subsidence an issue because the facilities were new facilities that might affect the existing pipeline facilities in the area. For that reason, FERC ordered the applicant to file a mining subsidence plan.

However, draft Resource Report No. 6 fails to address the geological impact of, and the subsequent dangers presented by, subsidence. This is a real issue presented by the existence of the NASC salt mine and Henry Gas Storage's decision to locate its salt cavern storage project directly adjacent to NASC's mine. The Commission's regulations require that this issue be addressed.<sup>44</sup>

Subsidence presents a number of concerns for the proposed Project.<sup>45</sup> Subsidence can result in deformations that could cause damage to the well casing, both the steel pipe and protective cement sheath. Damage to the casing could be caused by excess compression, extension, and/or bending. Subsidence could also affect the gas pipelines that will connect to the proposed storage project. Given the serious nature of the risks associated with these occurrences, the environmental review must address these concerns. Henry Gas Storage does note that there are significant subsidence concerns in this area because of the shallow salt and nearby mine, but declines to address them, stating only that a deep cavern roof and subsidence monitoring should be enough to allay concerns.<sup>46</sup> Without any studies or analyses to support this statement, these concerns cannot be allayed.

5) *The possibility that blast-induced vibrations from the salt mine could impact the integrity of the cement bond on the well casings.* The NASC mine is a rock salt mine that conducts routine blasting in its mining operations, using approximately five tons of explosives each day. This factor is not discussed in Henry Gas Storage's draft Resource Report No. 6. The regulations require that it be addressed.<sup>47</sup> Henry Gas Storage simply states that "[n]o blasting is

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<sup>44</sup> See 18 C.F.R. § 380.12(h)(2) (2008).

<sup>45</sup> NASC's salt mine has experienced subsidence over time, requiring regular repairs to the mine's concrete shaft liners.

<sup>46</sup> Draft Resource Report No. 6 § 6.2.7.

<sup>47</sup> See 18 C.F.R. § 380.12(h)(3).

anticipated for the HGS project” and therefore dismisses these concerns, but it fails to consider the blasting that occurs routinely at NASC’s salt mine.

6) *The hazards posed by the pressure difference between the proposed storage caverns and the salt mine.* NASC’s salt mine operates at atmospheric pressure. The proposed gas-storage salt caverns will operate at much higher pressure. The potential impact of this large pressure difference is not discussed by Henry Gas Storage, even though Section 380.12(h)(3) requires Henry Gas Storage to explain how it will minimize and prevent geological threats to the storage project. Given the unprecedented nature of the Project, particularly its close proximity to a working salt mine, Henry Gas Storage must explain how it will investigate and mitigate all of the hazards posed by the pressure differences in this arrangement. Section 6.5.2 of draft Resource Report No. 6 does state that Henry Gas Storage will monitor the pressure of the gas cavern, but does not explain how the concerns regarding unequal pressures or the effects of cycling of the storage pressure will be mitigated. Henry Gas Storage should explain any proposed mitigation or demonstrate why this is not a concern.

7) *The existence of numerous abandoned gas wells on Cote Blanche Island.* Section 380.12(h)(6)(iii) of the Commission’s regulations directs applicants, such as Henry Gas Storage to “describe measures taken to locate and determine the condition of old wells” and to explain how Henry Gas Storage will “reduce risk from failure of known and undiscovered wells.” Unplugged wells pose a hazard due to the likelihood of gas leakage and explosion. Despite this requirement to locate and assess wells and plan for risk reduction from well failure, Henry Gas Storage has failed to conduct an adequate review of the surrounding area and has failed to identify all the abandoned wells.<sup>48</sup> NASC is aware of at least one abandoned well near the

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<sup>48</sup> Draft Resource Report No. 6 § 6.5.1.

proposed Project site that is not identified in the table of abandoned wells in draft Resource Report No. 6.<sup>49</sup> This well is extremely close to the location that Henry Gas Storage described to NASC as the site of its proposed Project. NASC is also aware of other abandoned wells in the vicinity that are not identified by Henry Gas Storage. These omissions raise serious questions about the adequacy of Henry Gas Storage's efforts to identify and locate the old wells in the vicinity of the Project. Henry Gas Storage must undertake a more thorough evaluation of abandoned and undiscovered wells on Cote Blanche Island so that it can certify that it has located every well near the proposed Project site and that each identified well has been suitably plugged so as not to present an environmental or safety hazard.

8) *The risks created by the proposed pipeline.* NASC understands, from discussions with Henry Gas Storage, that Henry Gas Storage proposes to locate the natural gas pipeline near NASC's ferry, which is used to transport NASC's employees on and off the island. The proposed pipeline creates a significant hazard for the mine workers because the ferry is the only means of exit from the island. Should an incident occur at the pipeline, access to the ferry and the only evacuation route would be cut off—leaving workers stranded on the island and exposed to harm. The emergency planning discussion in Section 6.5.3 of draft Resource Report No. 6 does not address this safety concern.

9) *The verification of the distance between the edge of the salt and the salt caverns.* Henry Gas Storage proposes to construct the salt storage caverns such that the minimum distance between the edge of the salt and the gas storage caverns' walls is 500 feet.<sup>50</sup> However, Henry Gas Storage has not explained how it will verify that this 500-foot barrier is maintained after cavern construction. Given the proximity of the mine and the hazards posed by this Project, the

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<sup>49</sup> See Table 6.1-1 in draft Resource Report No. 6.

<sup>50</sup> Draft Resource Report No. 6 § 6.3.2.

use of extrapolated data to determine the distance between the edge of the salt and the caverns is insufficient. It is essential that Henry Gas Storage verify this distance through the use of appropriate testing and surveying procedures because the construction of these salt caverns without such verification accentuates the risks posed by the Project to the NASC mine and the surrounding environment.

10) *The low minimum operating pressure proposed for the storage caverns.* Henry Gas Storage states that a gas operating range of 0.15 psi/ft (minimum operating pressure gradient) will be used, stating that this pressure is supported by the “Sandia National Laboratories for caverns at similar depth to that of the HGS Project in other Louisiana salt domes.”<sup>51</sup> However, Henry Gas Storage supports this only by citing a study of the Jennings Salt Dome. Without this study being submitted for review and examination as to its relevance to the Cote Blanche Salt Dome, operating at what would otherwise be considered an abnormally low pressure is unwarranted and potentially very unsafe.

Furthermore, Henry Gas Storage’s assertion that “[a]t this preliminary stage of the HGS Project, no information can support [a] narrower operating pressure range”<sup>52</sup> is an unsupported assertion. The industry practice is to use a minimum operating pressure higher than the 0.15 psi/ft proposed by Henry Gas Storage, indicating that the abnormally low pressure proposed by Henry Gas Storage could pose a hazard for the facility that is not addressed in the draft resource Report.

11) *Hazards created by three-well caverns.* Henry Gas Storage states that three gas wells per cavern will be used in the proposed Project.<sup>53</sup> However, although Henry Gas Storage describes

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<sup>51</sup> Draft Resource Report No. 6 § 6.3.1.

<sup>52</sup> *Id.*

<sup>53</sup> Draft Resource Report No. 6 § 6.3.6.

the procedures that it will take to create these wells, the hazards posed by using a three-well construction are left unexamined. Perhaps this is because using three wells is, itself, unprecedented, certainly when accompanied by such large storage volume. Utilizing three wells per cavern will triple the risk of experiencing a leaky well, a risk that is magnified by the gassy nature of the Cote Blanche Salt Dome. Indeed, a similar two-well cavern project in the Sulfur Mines Dome, also with gassy salt, had to be abandoned as a result of an inability to form an adequate cement bond due to the gassy salt.

Using three wells also begs the question of how the emergency shutdown system for the Project will function. For instance, if a problem occurs in one well, the shutdown valve will shut that well, but how will the operation of the other two wells be suspended and the gas shut in?

12) *The risks created by the elevated brine production rate.* According to Henry Gas Storage, the maximum brine production rate when constructing the salt caverns will be 6,200 gpm (3,100 gpm per brine well) and the brine well tubing strings will be 9-5/8-inch (with an assumed 1/2-inch wall thickness).<sup>54</sup> As a result, at the maximum brine production rate of 6,200 gpm, Henry Gas Storage will exceed the American Petroleum Institute Recommended Practice of no more than 15 feet per second. However, Henry Gas Storage has not explained what risk this elevated brine production rate will pose to the surrounding environment, including the safety of the well tubing strings, or what steps Henry Gas Storage will take to mitigate this risk.

### **3. Omissions in Resource Report No. 3—Environmental Impact on Fish, Wildlife, and Vegetation**

The Commission's regulations require that applicants such as Henry Gas Storage address the environmental impact that their proposals will have on fish, wildlife, and vegetation in

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<sup>54</sup> *Id.*

Resource Report No. 3.<sup>55</sup> While Henry Gas Storage has submitted a draft Resource Report No. 3, it fails to adequately address all of the environmental concerns in this area. The Commission has already noted that the impacts of the brine disposal on fish, water quality, fisheries, and oyster beds are items of concern for the Commission’s environmental staff.<sup>56</sup> In addition to issues identified by the Commission, the following concerns should be closely analyzed when evaluating the environmental impact of this project:

1) *The threat to aquatic life posed by the proposed brine disposal.* Under Henry Gas Storage’s proposal, vast amounts of brine will be pumped through a pipe into the Gulf of Mexico. The Commission’s regulations require that Henry Gas Storage describe the “aquatic life” in the vicinity of the Project and the anticipated impact on this life, along with any proposed mitigating measures.<sup>57</sup> Henry Gas Storage has only briefly addressed this issue, assuring that “brine discharged through a multi-port diffuser would cause minimal or no environmental impacts and result in a less than 5 ppt increase to salinity in the immediate area.”<sup>58</sup> These assurances alone are insufficient. Pumping thousands of gallons of oxygen-depleted high-saline water into the environment is certain to be accompanied by “the possibility of a major alteration to ecosystems or biodiversity.”<sup>59</sup> Indeed, Henry Gas Storage admits that there is a likelihood of significant impact on the immediate area, but simply states that the fish species in that area around the brine disposal “could migrate to other waters.”<sup>60</sup> This forced migration will be a significant environmental harm.

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<sup>55</sup> 18 C.F.R. § 380.12(e) (2008).

<sup>56</sup> Notice of Intent at 3.

<sup>57</sup> See 18 C.F.R. § 380.12(e).

<sup>58</sup> Draft Resource Report No. 3 § 3.1.3.

<sup>59</sup> See 18 C.F.R. § 380.12(e)(4).

<sup>60</sup> Draft Resource Report No. 3 § 3.1.3.

2) *The impact of the brine on shoreline vegetation.* The Commission’s regulations require a detailed description of the possible impact on vegetation and the steps that the applicant is taking to avoid negative effects.<sup>61</sup> However, Section 3.2.3 of draft Resource Report No. 3, which describes the mitigation measures that Henry Gas Storage will apply to minimize harmful effects on vegetation, does not address the effect of the proposed brine disposal on shoreline vegetation.

**4. Omissions in Resource Report No. 9—Environmental Impact on Air Quality**

The impact of Henry Gas Storage’s proposed storage Project on the air quality of the area is also only minimally addressed in Henry Gas Storage’s filings to date, even though Resource Report No. 9 requires the applicant to include the predicted effects of its operation on air quality and describe any mitigating actions that it proposes to take.<sup>62</sup> The environmental analysis must take into consideration the *cumulative impact* on air quality caused by *all of the associated projects in the area*.<sup>63</sup> The Commission should require Henry Gas Storage to fully address the air quality effects of its proposal and in doing so consider the cumulative environmental effect on air quality caused by all of the proposed and existing Cote Blanche Island operations.

As the Commission noted in its Notice of Intent, the air quality effect of the proposed compressor station is a matter of concern, given its size. The proposed storage project will include a compressor station with 14 reciprocating gas-fired engine/compressor packages totaling 66,220 horsepower, two 3,785 horsepower solution mining pumps, two 4,735 horsepower brine disposal pumps, and three 4,292 horsepower generators. These machines will have a total installed capacity of about 96,136 horsepower, which would be a significant industrial operation. Given the size of this gas-fired machinery, effects on the air may well be

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<sup>61</sup> See 18 C.F.R. § 380.12(e).

<sup>62</sup> 18 C.F.R. § 380.12(k) (2008).

<sup>63</sup> 18 C.F.R. § 380.12(b)(3).

significant and should be clearly addressed by Henry Gas Storage. Furthermore, although Henry Gas Storage states that “[o]peration of the HGS project would not result in substantial air emissions under normal operating conditions,”<sup>64</sup> this statement is inadequate to allay concerns about the impact on air quality of the compressor station. In particular, NASC is concerned that the emissions from these compressors could pose a threat to the air intake system used by NASC to provide fresh air for the miners to breathe and to sweep the mine of gas. NASC’s air intake system draws about 600,000 cubic feet of air per minute down into the mine and it is essential that this air remain clean and fresh for the health and safety of the miners. If there were to be a leak from the Project, or from one of the associated pipelines, the mine’s air intake system could pull the natural gas into the mine, a circumstance that could harm the miners.

Moreover, Henry Gas Storage has not presented information describing the impact on air quality of a leak, fire, or explosion occurring at the Project, despite the possibility of such an occurrence, as discussed below. Furthermore, no information on the cumulative impact on air quality has been presented. Without such information, the Commission cannot reasonably evaluate the air impacts of this proposal.

##### **5. Omissions in Resource Report No. 2—Environmental Impact on Water Quality**

The Commission’s regulations also require that Henry Gas Storage analyze and explain the impact that the proposal will have on water quality in Resource Report No. 2.<sup>65</sup> However, Henry Gas Storage has not addressed the risk to water quality posed by its leaching operations, which could cause gas blow-outs from methane pockets and contaminate the aquifers in the area, or from gas leaks through anomalies in the salt which could contaminate the aquifers on the

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<sup>64</sup> Draft Resource Report No. 3 § 9.1.2.2.

<sup>65</sup> 18 C.F.R. § 380.12(d) (2008).

island. Henry Gas Storage’s draft Resource Report No. 2 explains that the Project will be located on the “southeastern boundary of the Chicot Aquifer System,” which Henry Gas Storage describes as the principal or sole source of drinking water for the area,<sup>66</sup> but fails to address any “known or suspected contamination problems” for aquifers in the area of the Project despite the contamination risk posed by the Project.<sup>67</sup> This omission is critical because, in actuality, the Chicot Aquifer System provides the drinking water for a large portion of Southern Louisiana. Henry Gas Storage should be directed to address potential contamination of the aquifer and explain the steps it will take to mitigate the risk.

**B. Concerns Regarding Completeness of the Information Supplied by Henry Gas Storage**

NASC has serious concerns regarding the completeness of the information supplied by Henry Gas Storage. Although NASC recognizes that the Resource Reports are in draft form, the omissions are significant, making it difficult to provide the necessary input regarding the drilling, casing, leaching, and operational phases of the proposed storage project.

As noted earlier, NASC will supplement its comments as additional information is filed. However, in the interest of expediting the process, NASC requests that Henry Gas Storage provide responses to the following questions as soon as practicable:

- How close will the caverns be to NASC’s lease (and salt reserve) limits?
- How close will the gas storage facilities be to the salt mine’s 16-foot shaft, 14-foot shaft, and surface facilities?

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<sup>66</sup> Draft Resource Report No. 2 § 2.1.

<sup>67</sup> 18 C.F.R. § 380.12(d)(5).

- What impact will the altered state of stress in the salt caused by creation of the caverns have on mine roof stability, mine maintenance, and advancement of the mine through the perturbed stress zone?
- How will the operator monitor roof and sidewall spalling that could change the shape of the cavern and reduce the pillar thickness?
- How will the operator monitor the stability of the caverns?
- How will Henry Gas Storage identify the anomalies in the salt dome that could be vehicles for high-pressure gas migration or communications into the mine?
- How will Henry Gas Storage determine and prove the adequate set-off distance between the mine and the proposed natural gas storage facility?
- How many cubic feet of methane gas will be released from the salt while leaching the caverns?
- What is the minimum detectable subsurface leak rate for the caverns?
- Will geochemical fingerprinting be used to differentiate gasses from different sources?
- How will the limits of the cavern boundaries be surveyed?
- What is the total volume of water needed to construct the caverns?
- What is the risk of the surface facilities exploding?
- What will happen to the cavern if the storage facility operator goes out of business?
- Who will have long-term liability for the storage caverns?
- How will cushion gas be maintained in the event the Project is abandoned?

**C. Increased Risks of Henry Gas Storage's Salt Cavern Storage Project**

Given the inherent risks in the development and operation of natural gas salt cavern storage facilities, the Commission should be hesitant to approve a facility that is as large as that

proposed by Henry Gas Storage—which will be located adjacent to an operating salt mine—without examining in detail each aspect of the Project and the increased risks to the environment, including the safety of the NASC miners. Indeed, as the tragedy at the Belle Isle salt mine resulting in the deaths of five miners demonstrates, flammable gas intrusion into the confined space of an active rock salt mine, such as leakage from the Project, is far more serious than a gas leak on the surface.

Recent history has shown that salt cavern storage projects have attendant risks, even when located in isolated locations away from populated areas or ongoing business operations. For ease of reference, NASC has listed below some of the more recent incidents involving salt cavern storage operations, any of which could have had even greater consequences had the storage project been located adjacent to an operating salt mine.

- In 2004, Duke Energy Corporation’s Moss Bluff salt cavern natural gas storage project caught fire after an explosion, resulting in the need to evacuate everyone within a one mile radius and the loss of approximately 6 Bcf of natural gas.
- In 2004, although not a natural gas storage project, a Dow Chemical Company salt dome near Clute, TX caught fire following the development of a gas mixture. The fire caused an explosion that shook nearby residents and took almost 36 hours to extinguish.
- In 2003, shortly after it commenced operations, the salt cavern storage facility in the Magnolia Salt Dome in Napoleonville, Louisiana, experienced a gas leak due to a crack that developed in a well casing near the top of the cavern, leading to a release of 0.35 Bcf of gas and the evacuation of nearby residents within a one mile radius of the storage facility.

- In 2001, a salt cavern storage facility west of Hutchinson, Kansas developed a leak due to a damaged well casing resulting in a flaming geyser in the town of Hutchinson, seven miles away, destroying two businesses and shutting down others for months. Additional gas geysers also erupted, setting off an explosion that killed two people.
- In 1995 an underground fire developed at a salt dome storage facility near Mineola, Texas caused by a blow-out that occurred when the walls separating two of the storage caverns became too thin and cracked due to salt removal. This resulted in the escape of liquid propane gas, which then ignited.
- In 1992, a six-year-old boy died and more than a dozen other people were injured when gas leaked from a pipeline connected to a salt dome storage cavern in the Seminole Pipeline System resulting in an explosion that rattled buildings 70 miles away and blew cars off nearby roads. The trailer home that the young boy lived in was crushed in the explosion. Four or five homes were destroyed and approximately 50 other buildings were damaged. The blast also destroyed the above-ground pipeline station.
- In the early 1990s, the Stratton Ridge salt dome storage project had to be abandoned when it failed a mechanical integrity test after it pressured up for storage and then began to leak gas.
- Although not a natural gas storage facility, the salt dome storage facility near Mont Belvieu, Texas experienced a number of catastrophic accidents throughout the 1980s. In 1980, 820 million cubic feet of gas leaked out of the storage facilities, leading to the evacuation of at least 70 families for up to six months. In 1984, a pipeline in the storage facility ruptured, causing an explosion that resulted in a fire that destroyed one house and

damaged four nearby buildings. In 1985, an explosion and fire from the gas storage facilities killed two workers and led to the evacuation of the entire town.

- In 1978, the West Hackberry salt dome released 72,000 bbl of oil during repairs to a leak in the outer wall casing. The oil release resulted in an oil geyser, which caught fire, killing a crew member and seriously burning another. The fire burned for days afterwards.
- In 1974, the Petal City salt cavern gas storage facility was overfilled, leading to the escape of the liquefied butane gas being pumped into the storage caverns. This resulted in a flammable cloud 1.25 miles wide and caused explosions and fires that damaged nearby homes and burned for hours. 24 people were harmed by the explosion and fire and approximately 3,000 people had to be evacuated while the incident was resolved.

Because of the risks associated with salt dome storage facilities and the vulnerability of the salt mine on Cote Blanche Island, the Commission must undertake a more detailed analysis of the risks and potential impacts of the proposed Project, taking into full consideration the risk of harm to the environment, including the Cote Blanche Salt Mine miners, that will result if an accident, equipment malfunction, or operator error at the storage site were to occur.

## **VI. NECESSITY OF PRODUCING AN ENVIRONMENTAL IMPACT STATEMENT**

Given the significant environmental concerns presented by the proposal to construct and operate a salt cavern storage project adjacent to and in the same salt dome as the Cote Blanche Salt Mine, and the fact that this is a matter of first impression, NASC respectfully submits that the Commission should prepare an Environmental Impact Statement (“EIS”), rather than an Environmental Assessment (“EA”).

### **A. Environmental Impact Statements Are Critical For NEPA Review**

The centerpiece of NEPA is the requirement that federal agencies prepare a detailed

Environmental Impact Statement that evaluates the environmental impact of proposals for major federal actions significantly affecting the quality of the human environment.<sup>68</sup> A unanimous Supreme Court has found that NEPA requires a federal agency to prepare an EIS unless the proposed agency action is “categorically excluded from the requirements to produce an EIS” or the action would *clearly* not require the production of an EIS.<sup>69</sup> The Council of Environmental Quality (“CEQ”) has promulgated regulations to guide federal agencies in complying with this statutory requirement. If an agency does not initially prepare an EIS and there is no categorical exclusion from environmental review, the agency must prepare an EA to determine whether it should prepare an EIS.<sup>70</sup>

In response to the CEQ regulations, FERC promulgated its own regulations in Order No. 486, *Regulations Implementing National Environmental Policy Act of 1969*.<sup>71</sup> With regard to the requirement to prepare an EIS, the Commission established three categories: (a) projects which normally require an EIS; (b) projects which normally do not have a significant environmental impact, and are categorically excluded; and (c) projects for which no generic determination can be made.<sup>72</sup> The Commission determined that the last category would require an environmental assessment to determine whether such projects have a significant impact and therefore, need an EIS. Order No. 486 determined that an EIS should generally be required for: (1) proposals for the construction and operation of liquefied natural gas import/export facilities; (2) proposals

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<sup>68</sup> See 42 U.S.C. § 4332(2)(C); *Public Citizen*, 541 U.S. at 757.

<sup>69</sup> *Public Citizen*, 541 U.S. at 757; 40 C.F.R. § 1501.4(a)–(b) (2008); cf. *NE Hub Partners, L.P.*, 90 FERC ¶ 61,142 at p. 61,444 (2000) (noting that “actions which an agency determines will normally require an EIS do not always require an EIS”) (citing *Committee to Preserve Boomer Lake Park v. Dept. of Transportation*, 4 F.3d 1543 (10th Cir. 1993)).

<sup>70</sup> 40 C.F.R. § 1508.9(a) (2008).

<sup>71</sup> *Regulations Implementing National Environmental Policy Act of 1969*, Order No. 486, 52 Fed. Reg. 47,897 (1987) (subsequent history omitted).

<sup>72</sup> See *id.* at 47,898; 18 C.F.R. §§ 380.4, 380.5, 380.6 (2008).

under Section 7 of the Natural Gas Act to develop an underground natural gas storage facility, such as the Henry Gas Storage Project; (3) major pipeline construction; and (4) license applications for construction of any unconstructed water power project.<sup>73</sup>

**B. The Commission Should Prepare an EIS to Evaluate Henry Gas Storage's Proposal**

The Commission's NEPA policies and regulations, promulgated in Order No. 486, direct the preparation of an EIS for a proposed underground natural gas storage project such as the facility proposed by Henry Gas Storage. However, the Notice of Intent in this proceeding does not mention an EIS or provide any explanation why the Commission has chosen to prepare an EA in lieu of the immediate preparation of an EIS. NASC submits that upon further review of the issues presented by the Project, the Commission will conclude that preparation of an EIS rather than an EA is both warranted and required in this instance.<sup>74</sup>

As discussed above, the inherent complexity of the Henry Gas Storage proposal demonstrates that an EIS is appropriate. Pursuant to NEPA, an EIS evaluates: (i) the environmental impact of the proposed action; (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented; (iii) alternatives to the proposed action; (iv) the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity; and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.<sup>75</sup> In consideration of the location and scope of the proposed project, each of these items should be addressed. In addition, the Commission must consider whether there are alternatives to the

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<sup>73</sup> 18 C.F.R. § 380.6. The Commission has since added a fifth category: major electric transmission facilities.

<sup>74</sup> See 5 U.S.C. § 706(2) (2000).

<sup>75</sup> 42 U.S.C. § 4332(2)(C) (2000).

Project as proposed. The CEQ recognized that this inquiry “is the heart of the [EIS].”<sup>76</sup>

The Project is intended to be located in the same salt dome as an active salt mine. Dozens of mine employees are present in the salt mine each day, and, as the comments filed in this docket and the comments at the scoping meeting demonstrate, these miners are worried about their safety. Because the Project proposes to create caverns that will hold a total of 46 Bcf of natural gas in such close proximity to (and in the same physical and geologic structure with) a salt mine and its employees, it is imperative that the Commission be apprised of the alternatives to the Project. The CEQ regulations require that, in the preparation of an EIS, the Commission must: (a) rigorously explore and objectively evaluate all reasonable alternatives; (b) devote *substantial* treatment to each alternative considered; (c) include reasonable alternatives not within FERC’s jurisdiction; (d) include the no-action alternative; (e) identify the preferred alternatives; and (f) include appropriate mitigation measures not already included.<sup>77</sup> An EA does not require such a thorough examination of alternatives. Therefore, in this case, where there are people who would regularly be in close proximity to a dangerous substance, their safety demands no less than an exhaustive evaluation of alternatives through an EIS.

In this situation, it would be expedient for the Commission to move past the EA stage, save time, and devote its efforts toward the production of an EIS, rather than “the production of a document seeking to prove that an EIS is not needed.”<sup>78</sup> Given the size of the Project – 11.5 Bcf per cavern – and its location, the Commission undoubtedly will endeavor to prepare a comprehensive environmental analysis. An EIS has greater practical import than an EA. An EIS

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<sup>76</sup> 40 C.F.R. § 1502.14 (2008)

<sup>77</sup> *Id.* at § 1502.14(a)–(f).

<sup>78</sup> *Sierra Club v. Marsh*, 769 F.2d 868, 875 (5th Cir. 1985) (citing *Maryland-National Capital Park and Planning Comm’n v. U.S. Postal Svc.*, 487 F.2d 1029, 1040 (D.C. Cir. 1973) (“[A]n agency that relies on an ‘assessment’ to dispense with an impact statement may well run risks not warranted by any countervailing benefit.”)).

will describe the likely effects of a project on the environment in a way that will assist the Commission when it must balance different kinds of environmental effects and weigh negative environmental impacts against a proposal's objectives.<sup>79</sup> Furthermore, since any EA prepared for the Project would attempt to offer a complex analysis, that is proof that an EIS should be prepared.<sup>80</sup> The CEQ has stated that agencies "should avoid preparing lengthy EAs except in unusual cases. . . . In most cases . . . a lengthy EA indicates that an EIS is needed."<sup>81</sup>

**C. The Completion of an EA Will Reveal the Need for an EIS**

If the Commission determines to proceed with the preparation of an EA, it must first ensure that the EA appropriately and thoroughly considers all relevant factors. That is, the Commission must take a "hard look" at the environmental consequences before making its final determination as to whether it should prepare an EIS or whether an EA is adequate.<sup>82</sup>

Once appropriate information about the Project is gathered or obtained, an EA will reveal that the Project will significantly affect the quality of the human environment, thus requiring the preparation of an EIS.<sup>83</sup> In deciding whether a federal action will "significantly" affect the quality of the human environment, the Commission must consider both (a) the context of the

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<sup>79</sup> *Id.*

<sup>80</sup> *See id.* at 874.

<sup>81</sup> *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, 46 Fed. Reg. 18,026, 18,037 (Mar. 23, 1981); *cf. Columbia Gas Transmission Corp.*, 51 FERC ¶ 61,103 at p. 61,225 (1990) (finding that "the information used in the preparation of the EA was as comprehensive as that which is typically used in the preparation of an EIS. Although preparing an EIS would add additional procedural steps, it would not improve the decisionmaking in this case.")

<sup>82</sup> *See Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983); *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976). The purpose of an EA is to identify potential impacts on the environment and determine whether to prepare an EIS. 40 C.F.R. § 1508.9(a) (2008).

<sup>83</sup> *See* 42 U.S.C. § 4332(2)(C) (2000) (stating that an environmental impact statement is required for major Federal actions significantly affecting the quality of the human environment).

project and (b) and the intensity of its impact.<sup>84</sup> With regard to context, the significance of the Project must take into consideration all relevant interests such as that of society as a whole, the affected region, affected interests, and the locality. As reiterated throughout these comments, the overriding context for the Project at issue here is the fact that it would coexist in a salt dome with an active salt mine, which raises the numerous environmental and safety concerns explained above.

With regard to intensity, the Commission must look to the severity of the impact, including:

- The degree to which the proposed action affects public health or safety;<sup>85</sup>
- Any unique characteristics of the geographic area;<sup>86</sup>
- The degree to which the effects on the human environment are likely to be highly controversial<sup>87</sup> (where “controversial” refers to a substantial dispute about the size, nature, or effect of the action, rather than on the opposition to a use);<sup>88</sup>
- The degree to which the effects are highly uncertain or involve *unique or unknown risks*;<sup>89</sup> and
- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.<sup>90</sup>

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<sup>84</sup> 40 C.F.R. § 1508.27 (2008). The Commission should look to the extent to which the action will cause adverse environmental effects in excess of those created by existing uses in the area, and explore the cumulative harm that results from its construction to existing conditions. *Hanly v. Kleindienst*, 471 F.2d 823, 830 (2d Cir. 1972).

<sup>85</sup> 40 C.F.R. § 1508.27(b)(2) (2008).

<sup>86</sup> *Id.* § 1508.27(b)(3).

<sup>87</sup> *Id.* § 1508.27(b)(4).

<sup>88</sup> *See Blue Mountains*, 161 F.3d at 1212 (citing *Greenpeace Action v. Franklin*, 14 F.3d 1324, 1335 (9th Cir. 1993)); *Hanly*, 471 F.2d at 830.

<sup>89</sup> 40 C.F.R. § 1508.27(b)(5) (2008).

Here, the placement of 46 Bcf of natural gas into a high pressure salt dome that has anomalies and pockets of methane gas, directly adjacent to an operating rock salt mine that employs 150 workers, is likely to affect public health and safety. Emissions of methane or gas leakage from the storage cavern could have a significant impact on the safety of miners. In addition, the Project is proposed to be built on Cote Blanche Island, situated between the Gulf of Mexico and the Intracoastal Waterway. The area is surrounded by wetlands. The Project would involve the addition of above-ground structures in the area. The Project carries with it a marked potential for environmental impact on Cote Blanche Island and the surrounding areas. In addition, the large size of the Project, its location adjacent to the NASC salt mine, and its proposal to share the salt formation with an active mine make it unique. These factors also make the effects of this project uncertain and subject to unusual risks that the Commission has never, to the best of the knowledge of NASC, had a chance to consider or evaluate. Finally, the presence of the Louisiana Black Bear, *Ursus americanus luteolus*, and the bald eagle, *Haliaeetus leucocephalus*, in the surrounding environment requires an examination of the effects on these threatened species and their habitat.<sup>91</sup>

An EA does not need to find that there is an absolute certainty of significant impacts in order to lead the agency to prepare an EIS. An EIS is required where the proposed Project would have a “potentially significant adverse effect”<sup>92</sup> or where “substantial questions” are raised about whether a project may cause “significant degradation of some human environmental factor.”<sup>93</sup> Because agencies must consider all relevant facts, they should in doubtful cases (*i.e.*, cases in

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<sup>90</sup> *Id.* § 1508.27(b)(9).

<sup>91</sup> See United States Fish & Wildlife Service Listing of Threatened and Endangered Species: <http://www.fws.gov/Endangered/wildlife.html#Species>.

<sup>92</sup> *Hanly v. Kleindienst*, 471 F.2d at 832; *Sierra Club v. Bosworth*, 352 F.Supp.2d 909, 922 (D. Minn. 2005).

<sup>93</sup> *Blue Mountains*, 161 F.3d at 1212.

“gray” areas) prepare an EIS.<sup>94</sup> An EA alone is sufficient only in situations where it is obvious that *no* effect on the environment is possible,<sup>95</sup> and the evidence supports that conclusion. For example, an EA was considered sufficient to show no significant environmental effects only after the U.S. Army Corps of Engineers engaged in five preceding years of “extensive administrative review” to gather supporting evidence.<sup>96</sup> No such review has taken place here – undoubtedly because Henry Gas Storage failed to apprise the Commission of the risks inherent in the proposed location of its Project.

If the Commission’s EA for the Henry Gas Storage Project concludes that it will not proceed with the preparation of an EIS, it must supply an explanation as to why the Project’s impacts are insignificant.<sup>97</sup> As the courts have indicated, in an EA, “mere perfunctory or conclusory language will not be deemed to constitute an adequate record and cannot serve to support the [Commission’s] decision not to prepare an EIS.”<sup>98</sup> Moreover, the “procedural injury implicit in agency failure to prepare an EIS . . . is sufficient ‘injury in fact’ to support standing” in the federal courts.<sup>99</sup> To show that the Commission’s failure to prepare an EIS was contrary to law, there only needs to be a “substantial possibility that the action *may* have a significant impact on the environment, not that it clearly will have such an impact.”<sup>100</sup> At this time, the dearth of

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<sup>94</sup> *Hanly*, 471 F.2d at 832.

<sup>95</sup> *Sierra Club v. Bosworth*, 352 F.Supp.2d at 922.

<sup>96</sup> *Fund for Animals*, 85 F.3d 535, 546-47 (11th Cir. 1996) (holding that the Corps did not act arbitrarily or capriciously by concluding that it had sufficient information to determine that the project would not significantly affect the quality of the human environment).

<sup>97</sup> *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212-13 (9th Cir. 1998) (citations omitted) (finding that general statements about “possible” effects or that there may be “some” risk are not adequate).

<sup>98</sup> *O’Reilly v. U.S. Army Corps of Engineers*, 477 F.3d 225, 231 (5th Cir. 2007); *cf. Virgin Island Tree Boa v. Witt*, 918 F.Supp. 879, 898 (D. V.I. 1996), *aff’d*, 82 F.3d 408 (3d Cir. 1996) (finding a FEMA EA adequate where the statements in its EA were not “bald assertions”) (citation omitted)).

<sup>99</sup> *Sabine River Authority v. U.S. Dep’t of Interior*, 951 F.2d 669, 674 (5th Cir. 1992) (quoting *City of Davis v. Coleman*, 521 F.2d 661, 671 (9th Cir. 1975) (other citations omitted)).

<sup>100</sup> *Sierra Club v. Bosworth*, 352 F.Supp.2d at 922.

information available about the Project, as noted above, makes it impossible for the Commission to take a “hard look” and provide a convincing statement of reasons as to why the Project’s environmental impacts are insignificant. Accordingly, the Commission should prepare a full EIS to explore the environmental issues in detail.

**VII. CONCLUSION**

NASC requests that the Commission take the above comments into consideration when undertaking its environmental review of the Henry Gas Storage Project and requests that the Commission prepare an Environmental Impact Statement on the significant environmental hazards presented by the Project. NASC reserves the right to submit additional comments in the future.

Respectfully submitted,

*/s/ Gord Bull*

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# Attachment A

The Commission should direct Henry Gas Storage to submit the following reports, studies, and plans before the Commission completes its review:

1. Geological Characterization Report for the Cote Blanche Dome, including 3D seismic survey results and interpretations; dome edge contours from the top of the salt to at least a 6,000 feet depth; identification of salt overhangs; and geological anomalies identification, mapping, and interpretation.
2. Exploration Borehole Plan including a coring schedule and identified geomechanics testing.
3. Detailed Cavern Design Report including detailed dimensions, locations, volumes, etc.
4. Geomechanics Study – Cavern Operation including minimum and maximum allowable operating pressure calculations for single and multiple cavern layouts, surface subsidence calculations, and casing deformation calculations.
5. Geomechanics Study – Cavern & Mine Interaction including minimum separation distances to avoid overlapping salt dilation zones.
6. Surveyed Site Map showing NASC and Henry Gas Storage lease areas, surface features and facilities; underground mine workings (current and future); roads, canals, and waterways; pipeline locations; and salt dome edges.
7. Well Compilation Report listing all active and abandoned oil and gas wells, shallow salt exploration wells, and water wells within a prescribed radius of the storage field.
8. Well Completion Plan including casing schedule, cement types, and special precautions taken for cementing in potentially gassy salt.
9. Cavern Leaching Plan addressing cavern shape and size constraints, preferred and/or permeable leaching paths, and gassy salt conditions. This should include plans for sudden releases of methane from the salt into the brine pipeline.
10. Instrumentation Plan including inventory monitoring, over- and under-pressurization warning devices, emergency shut-down devices, and provisions so that the mine will be notified of various emergencies and underground and surface evacuation needs.