



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL & GAS DOCKET NO. 03-0281185

THE APPLICATION OF CENTANA INTRASTATE PIPELINE, LLC FOR AUTHORITY PURSUANT TO STATEWIDE RULE 95 FOR A PERMIT TO CREATE, OPERATE AND MAINTAIN AN UNDERGROUND LIQUID OR LIQUEFIED HYDROCARBON STORAGE FACILITY, CENTANA LEASE, SPINDLETOP FIELD, JEFFERSON COUNTY, TEXAS

HEARD BY: Richard D. Atkins, P.E. - Technical Examiner
Terry Johnson - Legal Examiner

HEARING DATE: May 10, 2013

APPEARANCES:

REPRESENTING:

APPLICANT:

Phil Gamble
Joe L. Ratigan
Greg Swidensky
Kip Price

Centana Intrastate Pipeline, LLC

OBSERVER:

Jamie Nielson

Golden Triangle Storage, Inc.

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Centana Intrastate Pipeline, LLC ("Centana") seeks a permit to create, operate and maintain an underground liquid or liquefied hydrocarbon storage facility in the Spindletop Salt Dome on the Centana Lease, Spindletop Field, Jefferson County, Texas. The application is filed pursuant to Statewide Rule 95.

Notice of the application and hearing were provided to each person and entity entitled to notice. Notice of the hearing was published in the *Beaumont Enterprise*, a newspaper of general circulation in Jefferson County, for four consecutive weeks beginning on March 29, 2013. On December 6, 2012, Centana mailed a copy of the Notice of Hearing to those persons entitled to receive notice of the application and on April 16, 2013,

Centana mailed a copy of the Notice of Hearing to those persons that were determined to have had ownership or address changes from the date of the last title examination on August 1, 2012.

The application is unopposed and the examiners recommend approval of the underground liquid or liquefied hydrocarbon storage facility, as requested by Centana.

DISCUSSION OF THE EVIDENCE

The proposed underground liquid or liquefied hydrocarbon storage facility is located atop the Spindletop Salt Dome in northeast Jefferson County. The Centana Lease consists of approximately 364 acres located four miles south of the town of Beaumont, Texas. Centana is currently permitted to operate gas storage cavern Well Nos. 1, 2, 3, 4, 5 and 6 for the underground storage of natural gas. Caverns 1, 2 and 3 are in operation for gas storage. Cavern 4 is under construction and Caverns 5 and 6 have not yet been created. Cavern 1A is an alternative monitoring well. Centana requests authority to convert all six caverns to the storage of liquid or liquefied hydrocarbons.

The Spindletop Salt Dome is typical of other strong and competent Gulf Coast domal salts, and has been utilized successfully for underground hydrocarbon storage for decades. Geological maps and cross sections depict the Spindletop Salt Dome as a large salt dome approximately one mile in diameter with a broad flat top and steeply dipping flanks. The caprock overlying the salt is composed of anhydrite, gypsum, and limestone. The shallowest occurrence of the caprock is at a depth of approximately 700 to 800 feet. Under the Centana lease, the top of the caprock is expected to occur at a depth of 1,400 feet and the top of the salt is expected to occur at a depth of 1,800 feet.

The Spindletop Salt Dome is the site of other existing and permitted hydrocarbon storage facilities operated by PB Energy Storage Services, Air Liquide Large Industries US LP, Golden Triangle Storage, Inc. and Coastal Caverns, Inc. The Centana facility is located on the northwestern portion of the dome and nearby the other storage facilities. The location of the proposed wells and caverns within the facility were selected to afford ample distance between the existing and/or permitted caverns and sufficient distances from adjacent properties to insure that the caverns stay on the Centana lease.

The Commission Groundwater Advisory Unit recommends that usable-quality groundwater be protected to a depth of between 300 feet and 600 feet at this site. Through a search of public records, Centana has identified all oil and gas related wells which have penetrated the caprock within 1,370 feet (1/4 mile + a 50 foot buffer) of each of the proposed storage wells. The majority of these wells have been plugged and abandoned and available plugging reports were submitted.

Centana plans to create six storage caverns on its lease in the Spindletop Salt Dome. To create the caverns, the wells will be drilled to a total depth of approximately 4,000 feet and will be completed with several casing strings: 48" conductor pipe driven to

150 feet; 42" surface casing set at 600 feet and cemented to surface; 36" intermediate casing set at 1,450 feet and cemented to surface; 30" intermediate casing set at 2,000 feet and cemented to surface; 24" production casing set at 4,000 feet and cemented to surface; 16" hanging string No. 1 and 9 5/8" hanging string No. 2.

Each of the caverns will be created by brine mining. During this process, fresh water is injected under controlled conditions to dissolve the salt and create the cavern space, and brine fluid is removed for disposal. A nitrogen blanket will be used to prevent washing of the cavern above the desired depths. The nitrogen blanket to brine interface depth will be continuously calculated and interface logs will be run to verify the nitrogen blanket depth. The boundaries of the cavern will be determined by periodical sonar caliper surveys during the development. When fully leached, each cavern will have a capacity of approximately 8 million barrels.

The top of each cavern will be at a depth of approximately 4,000 feet and the bottom of each cavern will be at a depth of approximately 5,000 feet. Each cavern will be approximately 250 feet in diameter and will be more than 500 feet from the edge of the salt dome. The facility is in the public interest, as its use will increase the stability of a supply of hydrocarbon liquids to local refineries. The facility will be capable of rapid withdrawal of hydrocarbon liquids to the refineries as needed.

Centana has complied with all of the requirements set forth in Statewide Rule 95 for approval of the requested permit and the Centana facility, wells and caverns will be subject to the rules and safety standards adopted by the Commission pursuant to Statewide Rule 95. Technical Permitting is directed to issue the appropriate permit with the usual conditions, restrictions and limitations, as required by the Commission.

FINDINGS OF FACT

1. Notice of application and hearing were provided to each person and entity entitled to notice.
 - a. Notice of the hearing was published in the *Beaumont Enterprise*, a newspaper of general circulation in Jefferson County, for four consecutive weeks beginning on March 29, 2013.
 - b. On December 6, 2012, Centana mailed a copy of the Notice of Hearing to those persons entitled to receive notice of the application.
 - c. On April 16, 2013, Centana mailed a copy of the Notice of Hearing to those persons that were determined to have had ownership or address changes from the date of the last title examination on August 1, 2012.

2. The proposed gas storage facility is located atop the Spindletop Salt Dome in northeast Jefferson County.
 - a. The Centana Lease consists of approximately 364 acres located four miles south of the town of Beaumont, Texas.
 - b. Centana Intrastate Pipeline, LLC ("Centana") is currently permitted to operate gas storage cavern Well Nos. 1, 2, 3, 4, 5 and 6 for the underground storage of natural gas.
 - c. Caverns 1, 2 and 3 are in operation for gas storage. Cavern 4 is under construction and Caverns 5 and 6 have not yet been created. Cavern 1A is an alternative monitoring well.
 - d. Centana requests authority to convert all six caverns to the storage of liquid or liquefied hydrocarbons.
3. The Spindletop Salt Dome is typical of other strong and competent Gulf Coast domal salts and has been utilized successfully for underground hydrocarbon storage for decades. Geological maps and cross sections depict the Spindletop Salt Dome as a large salt dome approximately one mile in diameter with a broad flat top and steeply dipping flanks.
4. The Spindletop Salt Dome is already the site of existing and permitted hydrocarbon storage facilities. The Centana facility is located on the northwestern portion of the dome and nearby the other storage facilities.
5. The location of the proposed wells and caverns within the facility were selected to afford ample distance between the existing and/or permitted caverns and sufficient distances from adjacent properties to insure that the caverns stay on the Centana lease.
6. The facility will consist of six caverns, that when fully leached, will each have a capacity of approximately 8 million barrels.
7. The top of the salt is estimated to occur at approximately 1,800 feet in the area of the proposed caverns. The top of each cavern will be at a depth of approximately 4,000 feet and the bottom of each cavern will be at a depth of approximately 5,000 feet. Each cavern will be approximately 250 feet in diameter and will be more than 500 feet from the edge of the salt dome.
8. A nitrogen blanket will be used to prevent washing of the cavern above the desired depths. The boundaries of the cavern will be determined by periodical sonar caliper surveys during the development.

9. Usable-quality groundwater occurs between 300 feet and 600 feet at this site and will be protected in each well.
10. Through a search of public records, all oil and gas related wells have been identified which have penetrated the caprock within 1,370 feet (1/4 mile + a 50 foot buffer) of each of the proposed storage wells. The majority of these wells have been plugged and abandoned and available plugging reports were submitted.
11. The facility is in the public interest, as its use will increase the stability of a supply of hydrocarbon liquids to local refineries. The facility will be capable of rapid withdrawal of hydrocarbon liquids to the refineries as needed.
12. Centana has complied with all of the requirements set forth in Statewide Rule 95 for approval of the requested permit.

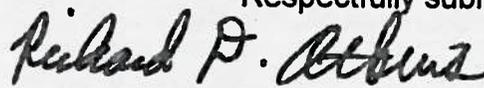
CONCLUSIONS OF LAW

1. Proper notice was timely given to all parties entitled to notice pursuant to applicable statutes and rules.
2. All things have occurred and have been accomplished to give the Commission jurisdiction in this case.
3. The use of the proposed caverns to store liquid or liquefied hydrocarbons will not endanger oil, gas, or geothermal resources or cause the pollution of surface water or fresh water strata.
4. The facility is in the public interest, as its use will increase the stability of the supply of hydrocarbon liquids to local refineries.
5. The applicant has complied with the requirements for approval, as set forth in Statewide Rule 95.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission approve the underground liquid or liquefied hydrocarbon storage facility, as requested by Centana Intrastate Pipeline, LLC. Technical Permitting is directed to issue the appropriate permit with the usual conditions, restrictions and limitations, as required by the Commission.

Respectfully submitted,


Richard D. Atkins, P.E.
Technical Examiner


Terry Johnson
Legal Examiner