



# RAILROAD COMMISSION OF TEXAS

## HEARINGS DIVISION

**OIL & GAS DOCKET NO. 03-0299308**

---

**THE APPLICATION OF GOLDEN TRIANGLE STORAGE, INC. FOR AUTHORITY PURSUANT TO STATEWIDE RULE 95 FOR A PERMIT TO CREATE, OPERATE AND MAINTAIN AN UNDERGROUND LIQUID OR LIQUEFIED HYDROCARBON STORAGE FACILITY, WELL NOS. 5, 6, 7, 8, AND 9, GOLDEN TRIANGLE STORAGE LEASE, SPINDLETOP FIELD, JEFFERSON COUNTY, TEXAS**

---

**HEARD BY:** Karl Caldwell - Technical Examiner  
Ryan Lammert – Administrative Law Judge

**HEARING DATE:** April 13, 2016

**CONFERENCE DATE:** September 12, 2016

**APPEARANCES:** **REPRESENTING:**

**APPLICANT:**

Jamie Nielson  
Joe Ratigan  
Kip Price  
Robert Cornell  
Kimberly Watson  
Joe Cornelius  
Kevin Conneighton

Golden Triangle Storage, Inc.

**OBSERVER:**

Phil Gamble Centana Intrastate Pipeline, LLC

**EXAMINERS' REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

Golden Triangle Storage, Inc. ("Golden Triangle") filed an application for a permit amendment to expand the currently permitted Underground Hydrocarbon Storage facility. Well Nos. 1 through 5 are currently permitted for natural gas storage under

Statewide Rule 97. Golden Triangle requests to add liquid hydrocarbon storage authority pursuant to Statewide Rule 95 for Well No. 5, and requests new permits for Well Nos. 6, 7, 8, and 9 for liquid hydrocarbon storage authority pursuant to Statewide Rule 95. Golden Triangle is requesting Statewide Rule 95 authority for Well No. 5 so the well can be developed as either a well in accordance with Statewide Rule 95 (Underground Storage of Liquid or Liquefied Hydrocarbons in Salt Formations) or Statewide Rule 97 (Underground Storage of Gas in Salt Formations). The decision will be made at the time the well is being constructed. The Applicant also requests to correct the locations of Well Nos. 1 through 5. The application has been filed in accordance with the provisions of 16 TAC §3.95. Technical Permitting staff has reviewed the application and determined the application to be administratively and technically complete. Technical Permitting has prepared a draft permit. The application is unopposed and we recommend the approval of the application. The Examiners have incorporated the draft permit into the Final Order to ensure language consistent with standard permitting conditions applicable to hydrocarbon storage in salt formations.

### DISCUSSION OF THE EVIDENCE

Golden Triangle was granted a permit for the Golden Triangle Storage Lease, Well Nos. 1, 2, 3, 4, and 5 pursuant to Statewide Rule 97 in Final Order No. 03-0253659. In this application, Golden Triangle is requesting Statewide Rule 95 authority for the Underground Storage of Liquid or Liquefied Hydrocarbons in Salt Formations for Well Nos. 5, 6, 7, 8, and 9.

A copy of Form H-4 Application to Create, Operate and Maintain an Underground Hydrocarbon Storage Facility was mailed to:

- a) the surface owner of the tract where the storage facility is located or proposed to be located;
- b) the surface owner of each tract adjoining the tract where the storage facility is located or proposed to be located;
- c) each oil, gas, or salt leaseholder, other than Golden Triangle, of the tract on which the storage facility is located or is proposed to be located;
- d) each oil, gas, salt leaseholder of any tract adjoining the tract on which the storage facility is located or is proposed to be located;
- e) the Jefferson County Clerk; and
- f) the storage facility is not located within the limits of any city.

Notice of the application was published in the *Beaumont Enterprise*, a newspaper having general circulation in Jefferson County, Texas on October 29<sup>th</sup>, November 5<sup>th</sup>, and November 12<sup>th</sup>. Notice of the hearing was published in the *Beaumont Enterprise*, a

newspaper having general circulation in Jefferson County, Texas on January 21<sup>st</sup>, January 28<sup>th</sup>, February 4<sup>th</sup>, and February 11, 2016.

The Golden Triangle Storage Facility is located atop the northern half of the Spindletop salt dome in northeast Jefferson County. The Spindletop salt structure is categorized as a shallow piercement type salt dome. It is considered to have originated from the Louann salt formation. The caprock at Spindletop is a disk-like mass of anhydrite, gypsum, and limestone, which occurs on top of the salt but does not completely cover it, as the cap appears to be missing on the southern and southwestern portion of the dome. The shallowest occurrence of the caprock is approximately 700 feet below ground surface.

In its application, Golden Triangle submitted Groundwater protection determination letters for Well Nos. 6, 7, 8, and 9 issued by the Groundwater Advisory Unit (GAU) of the Oil and Gas Division.<sup>1</sup> The GAU letters stated that to protect usable-quality groundwater at the locations of Well Nos. 6, 7, 8, and 9, the interval from the land surface to a depth of 350 feet must be protected. For each of the wells in this application (Well Nos. 5-9), surface casing will be set at a depth of 500 feet and cemented with cement circulated to surface to protect usable quality groundwater. The top of caprock is estimated to occur at a depth of approximately 1,000 feet. For each well in this application, Golden Triangle intends to set a string of intermediate casing deeper than the depth to the top of the caprock and cement the casing to surface. All hydrocarbon storage wells drilled in salt domes shall have at least two casing strings cemented into the salt formation with sufficient cement to fill the annular space outside the casing from the casing shoe to the ground surface, or from the casing shoe to a point at least 200 feet above the shoe of the previous casing string pursuant to Statewide Rule 95. The top of the salt formation is estimated to occur at a depth of approximately 1,600 feet from ground level at each well location in this application. Golden Triangle intends to set two strings of casing into the salt formation and cement each string of casing to surface.

### **FINDINGS OF FACT**

1. Notice of application and hearing were provided to each person and entity entitled to notice.
  - a. A copy of Form H-4 Application to Create, Operate and Maintain an Underground Hydrocarbon Storage Facility was mailed to:
    - i. the surface owner of the tract where the storage facility is located or proposed to be located;

---

<sup>1</sup> The base of usable quality groundwater was found to occur at a depth of 350 feet for Well No. 5 (Oil and Gas Docket No. 03-0253659).

- ii. the surface owner of each tract adjoining the tract where the storage facility is located or proposed to be located;
    - iii. each oil, gas, or salt leaseholder, other than Golden Triangle, of the tract on which the storage facility is located or is proposed to be located;
    - iv. each oil, gas, salt leaseholder of any tract adjoining the tract on which the storage facility is located or is proposed to be located;
    - v. the Jefferson County Clerk; and
    - vi. the storage facility is not located within the limits of any city.
  - b. Notice of the application was published in the *Beaumont Enterprise*, a newspaper having general circulation in Jefferson County, Texas on October 29<sup>th</sup>, November 5<sup>th</sup>, and November 12<sup>th</sup>.
  - c. Notice of the hearing was published in the *Beaumont Enterprise*, a newspaper having general circulation in Jefferson County, Texas on January 21<sup>st</sup>, January 28<sup>th</sup>, February 4<sup>th</sup>, and February 11, 2016.
2. The Golden Triangle Storage Facility is located atop the northern half of the Spindletop salt dome in northeast Jefferson County.
  - a. The Spindletop salt structure is categorized as a shallow piercement type salt dome.
  - b. The caprock at Spindletop is a disk-like mass of anhydrite, gypsum, and limestone.
3. The Groundwater Advisory Unit of the Oil and Gas Division issued groundwater determination letters stating that the interval from the land surface to a depth of 350 feet must be protected to protect usable-quality groundwater at the locations of Well Nos. 6, 7, 8, and 9. The base of usable quality water was found to occur at a depth of 350 feet at the location of Well No. 5 in Oil and Gas Docket No. 03-0253659.
  - a. For Well Nos. 5, 6, 7, 8, and 9 surface casing will be set at a depth of 500 feet.
  - b. For Well Nos. 5, 6, 7, 8, and 9 the surface casing will be cemented with cement circulated to surface to protect usable quality groundwater.

4. The top of caprock is estimated to occur at a depth of approximately 1,000 feet. For each well in this application, Golden Triangle intends to set a string of intermediate casing deeper than the depth to the top of the caprock and cement the casing to surface.
5. The top of the salt formation is estimated to occur at a depth of approximately 1,600 feet from ground level at each well location in this application. Golden Triangle intends to set two strings of casing into the salt formation and cement each string of casing to surface.
6. Technical Permitting staff has reviewed the application and determined the application to be administratively and technically complete.

#### 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.
5. The applicant has complied with the requirements 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 Golden Triangle Storage, Inc. Technical Permitting is directed to issue the appropriate permit with the appropriate conditions, restrictions and limitations, as required by the Commission.

Respectfully submitted,



Karl D. Caldwell  
Technical Examiner



Ryan Lammert  
Administrative Law Judge