



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO: 02-0299028

THE APPLICATION OF HIGH ROLLER WELLS, L.L.C. PURSUANT TO STATEWIDE RULE 9 FOR A COMMERCIAL PERMIT TO DISPOSE OF OIL OR GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS FOR THE MOULTON SWD LEASE, WELL NO. 2, EAGLEVILLE (EAGLE FORD-2) FIELD, LAVACA COUNTY, TEXAS

HEARD BY: Karl Caldwell – Technical Examiner
Marshall Enquist – Administrative Law Judge

PROCEDURAL HISTORY

Application Filed:	October 2, 2015
Protest Received:	October 9, 2015
Request for Hearing:	November 23, 2015
Notice of Hearing:	January 14, 2016
Hearing Held:	March 1, 2016
Transcript Received:	June 27, 2016
Proposal for Decision Issued:	August 30, 2016

APPEARANCES:

APPLICANT:

George Neale
Rick Johnston
Tim Jurco

PROTESTANT:

Tim George

REPRESENTING:

High Roller Wells, L.L.C.

SN Operating, LLC

CASE SUMMARY

High Roller Wells, L.L.C. (“Applicant”) is requesting to drill a new well for commercial disposal, the Moulton SWD Lease, Well No. 2, on a 16.256 acre tract located approximately 3 miles northeast of Moulton, Lavaca County, Texas. The Applicant proposes to inject a maximum volume of 25,000 barrels per day (bpd) of salt water and RCRA-exempt waste¹ into the Wilcox Formation in the depth interval from 4,750 feet to 7,200 feet. The Moulton SWD Lease, Well No. 1 has already been granted a disposal well permit and completed on the Moulton SWD Lease. The subject application is protested by SN Operating, LLC (“Protestant”), an offset operator. The Protestant is concerned that two disposal wells would be permitted for a combined maximum injection volume of 45,000 bpd on the 16.256 acre tract. SN Operating, LLC has started to develop on the adjoining property to the east and northeast. If SN Operating, LLC has trouble drilling through the disposal interval in developing the adjoining acreage in the future they may lose reserves which would result in waste. Based on the evidence, the Administrative Law Judge and Technical Examiner (collectively, Examiners) recommend approval of the application.

APPLICABLE LAW

Any person who disposes of saltwater or other oil and gas waste by injection into a porous formation not productive of oil, gas, or geothermal resources shall be responsible for complying with 16 Tex. Admin. Code §3.9, Texas Water Code, Chapter 27, and Title 3 of the Natural Resources Code. Pursuant to Texas Water Code § 27.051(b), the Commission has authority to permit disposal and injection wells if it finds:

- 1) that the use or installation of the injection well is in the public interest;
- 2) that the use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation;
- 3) that, with proper safeguards, both ground and surface fresh water can be adequately protected from pollution; and
- 4) that the applicant has made a satisfactory showing of financial responsibility if required by Section 27.073 of this code.

¹ Resource Conservation and Recovery Act: Examples of RCRA exempt oil and gas waste includes produced water, drilling fluids, hydraulic fracturing flow back fluids, rig wash and workover wastes

DISCUSSION OF THE EVIDENCE

Applicant's Evidence (High Roller Wells, L.L.C.)

Application

High Roller Wells, L.L.C. ("High Roller") requests commercial disposal authority pursuant to Statewide Rule 9² for the Moulton SWD Lease, Well No. 2 ("Moulton SWD No. 2"), API No. 42-285-33970, Eagleville (Eagle Ford-2) Field, Lavaca County, Texas. Notice of the application was published in the Hallettsville Tribune-Herald, a newspaper having general circulation in Lavaca County Texas, on Wednesday, September 30, 2015. Notice of the application (Form W-14) was mailed to the surface owner of the well tract, to the Lavaca County Clerk, to offset surface owners of the well tract, and to operators with active wells within one-half mile (High Roller Wells, L.L.C., NGL Watersolutions Eagleford, LLC, SN Operating, LLC, and Penn Virginia Oil & Gas, L.P.). The application is protested by SN Operating, LLC ("SN Operating").

Proposed Disposal Well Location

The proposed disposal well will be completed on a 16.256 acre tract, located approximately 3 miles northeast of Moulton, Texas in Lavaca County. A commercial disposal well, the Moulton SWD Lease, Well No. 1 ("Moulton SWD No. 1"), API No. 42-285-33809, has already been granted a disposal well permit and completed on the Moulton SWD Lease. The Moulton SWD No. 1 was drilled and completed by High Roller and then sold to NGL Water Solutions, who is the current operator of the well. The surface location for the proposed Moulton SWD No. 2 will be near the facility for the Moulton SWD No. 1 well. The Moulton SWD No. 2 will be directionally drilled to the west to separate the bottomhole locations of the Moulton SWD Nos. 1 and 2. A plat shows that the bottomhole location of the Moulton SWD No. 2 will be 1,145 feet west-northwest of the surface location (Attachment A).

Injection Interval

High Roller is requesting to inject a maximum volume of 25,000 bpd of salt water and RCRA-exempt waste into the Wilcox Formation at the depth interval from 4,750 feet to 7,200 feet. High Roller is also requesting a maximum surface injection pressure of 2,375 psi.

Fresh Water and Confining Intervals to Protect Fresh Water

At this location, the Commission's Groundwater Advisory Unit (GAU) estimates that the base of usable-quality water (BUQW) occurs from the land surface to a depth of 2,800 feet, and base of the Underground Source of Drinking Water (USDW) is estimated at 4,500 feet. The GAU also estimates geologic isolation at 4,750 feet. High Roller provided a letter from the GAU of the Oil and Gas Division that stated if otherwise compliant with Railroad Commission rules and guidance, drilling and using this disposal well and injecting oil and gas waste into the

² 16 Tex. Admin. Code § 3.9 (Disposal Wells)

subsurface stratum in the depth interval from 4,750 feet to 7,200 feet will not endanger the freshwater strata in that area.³

An open hole log for the Moulton SWD No. 1 which has already been drilled on the Moulton SWD Lease shows that from a depth of approximately 3,000 feet to 3,600 feet there is a large shale interval that will act as an impediment between the disposal interval and the BUQW to protect fresh water. In addition, at a depth interval from approximately 4,680 feet to 5,400 feet there are a series of shale sequences that will also act as an impediment to the vertical movement of fluids from the disposal interval.

Productive Formations and Confining Intervals to Protect Productive Formations

The predominant production within two miles of the proposed Moulton SWD No. 2 is from the Eagle Ford and Austin Chalk Formations. These formations are 3,000 feet deeper than the proposed disposal interval within the Wilcox Formation. Below the base of the Wilcox formation is a thick shale section that will prevent fluid migration from the disposal interval to deeper formations.

Well Construction

The well construction plan is to set 9 5/8-inch surface casing at a depth a 2,850 feet and cement the casing to surface. High Roller intends to run 7-inch long string casing to a depth of 7,200 feet and to cement the casing such that the top of cement behind the long string casing is at 2,600 feet. This cement top should be approximately 200 feet above the setting depth of the surface casing. 4.5-inch tubing will be run inside the 7-inch long string casing and the tubing and packer will be set no higher than 100 feet from the top of the disposal interval.

Nearby Wellbores

With the exception of the existing Moulton SWD No. 1, no wells penetrate the proposed disposal interval within a quarter-mile or a half-mile. The Moulton SWD No. 1 was cased and cemented with 9-5/8 inch surface casing set at a depth of 2,914 feet and cemented with cement circulated to surface to protect the BUQW. 7-inch long string casing was set at a depth of 7,214 feet and cemented with a DV tool set at a depth of 5,194 feet and the top of cement is calculated to be 1,800 feet.

Rick Johnston, P.E., High Roller's engineering witness, estimates the nearest SN Operating well to the proposed Moulton SWD No. 2 disposal interval to be approximately 3,500 feet since the well will be directional drilled to the west. Drilling permits have been issued for two horizontal wells in the Eagle Ford-2 Field within a quarter-mile, the Jake Berger, Jr. Cattle Company No. 1H and the Chickenhawk Unit No. 1H. The operator of these wells is Penn Virginia Oil & Gas, L.P., however, no completion papers have been filed for either well.

³ High Roller Wells, L.L.C. Exhibit No. 1.

Nine wells penetrate the proposed disposal interval between a half-mile and a three-quarter-mile radius. Mr. Johnston testified that he has reviewed the completion reports for these wells, and the wells are cased and cemented across the proposed disposal interval.⁴

Plume Calculation and Pressure Front Calculation

Mr. Johnston performed both a plume extent calculation and a pressure front calculation in which the existing Moulton SWD No. 1 and proposed Moulton SWD No. 2 are considered as a single point of injection at a combined injection rate. For the plume calculation, Mr. Johnston assumed both wells are able to inject at their maximum permitted rate. The Moulton SWD No. 1 is currently permitted to inject a maximum of 20,000 bpd and the proposed maximum injection rate for the Moulton SWD No. 2 is 25,000 bpd. This results in a total combined injection rate of 45,000 bpd.

Mr. Johnston reviewed the well log for the Moulton SWD No. 1 and estimated there to be 610 cumulative feet that displayed good porosity and appeared to be good disposal sections within the disposal interval. Using a porosity of 28%, and injecting at a combined rate of 45,000 bpd for 20 years resulted in an estimated plume radius of 1,854 feet. The surface location of the nearest SN Operating (Protestant) well, is approximately 3,500 to 3,600 feet to the northeast where there is a cluster of three surface locations. Based on the plume calculation, Mr. Johnston concluded that the plume will not reach those SN Operating well locations.

Mr. Johnston performed a pressure front calculation using a combined maximum injection rate of 45,000 bpd for a period of 10 years to a radius of 3,500 feet. The estimated pressure increase at the end of the 10 year period of injection is 111 psi. Assuming an average injection rate of 30,000 bpd over a period of 10 years results in a pressure increase of 74 psi at a distance of 3,500 feet. As a result, Mr. Johnston concluded that the proposed Moulton SWD No. 2 disposal well will not have any impact on the SN Operating wells 3,500 feet away.

Seismic Survey

A review of USGS seismic data shows no earthquakes have been reported within 100 square miles (a 9.08 km radius circle) of the proposed disposal well location.

Oil and Gas Activity and Existing Commercial Disposal Wells in the Area

The proposed disposal well is intended to service the northeast corner of the Eagle Ford play in South Texas. There have been a number of horizontal wells completed in the area and Mr. Johnston considers this area to be the northeast leading edge, or point, of the Eagle Ford play in South Texas. Based on a review of Commission data there are three active commercial disposal wells within a 10-mile radius of the proposed Moulton SWD No. 2 disposal well:

- 1) the Moulton SWD No. 1 which is considered a twin well to the proposed Moulton SWD No. 2;

⁴ High Roller Exhibit No. 15.

- 2) the Overflow Energy, LLC Michalec SWD, Well No. 1 (API No. 42-285-33949); and
- 3) the DRD Resources, Inc. Flatonia SWD No. 1 (API No. 42-149-33242).

Moulton SWD Lease Operations

High Roller is seeking a permit for the Moulton SWD No. 2 to injection salt water and RCRA-exempt waste. RCRA-exempt waste includes produced water and drilling fluids. Tim Jurco, vice president of NGL Water Solutions (“NGL”), manages the Eagle Ford region for NGL. NGL has a relationship with High Roller in that High Roller completes NGL’s facilities and then NGL purchases the facilities from High Roller. As a result, when the Moulton SWD No. 2 facility goes into operation it will be operated by NGL and not High Roller. Although the Moulton SWD No. 1 is permitted to inject salt water and RCRA-exempt waste and High Roller is requesting to inject salt water and RCRA-exempt waste into the Moulton SWD No. 2, Mr. Jurco stated that the intent of High Roller and NGL is to operate the Moulton SWD No. 2 differently than the Moulton SWD No. 1. Mr. Jurco stated that the goal is to inject drilling fluids into a separate well than the injection of saltwater flowback.

On cross-examination Mr. Jurco stated that NGL operates a number of facilities permitted for a combined maximum disposal capacity of 45,000 bpd in a similar lease-sized area to the subject application. These operations also include wells with injection into the same disposal formation.

Financial Assurance

At the time of the hearing High Roller Wells, L.L.C. (Operator No. 385669) had an active P-5 and \$25,000 cash posted with Commission as financial assurance. High Roller currently operates three wells.

SN Operating LLC’s Concerns

SN Operating appeared at the hearing in protest of the application. SN Operating is concerned about two disposal wells that would be permitted for a combined maximum injection volume of 45,000 bpd on an area of land that amounts to approximately 20 acres between the two wells. SN Operating has started to develop on the adjoining property to the east and northeast. SN Operating is concerned that they could have trouble drilling through the disposal interval in the future as a result of the proposed disposal activities. If SN Operating has trouble drilling through the disposal interval in developing the adjoining acreage in the future they may lose reserves which would result in waste.

SN Operating believes that it is reasonable to have a special permit condition that states, upon reasonable notice, the operator of the disposal well will shut in the well before the adjoining operator drills through the disposal zone and until the operator finishes getting through the zone.

EXAMINERS' ANALYSIS OF THE EVIDENCE**Public Interest**

The Examiners conclude that the proposed commercial disposal well is in the public interest, in terms of a need for additional disposal capacity. There are three active commercial disposal wells within 10 miles of the proposed disposal well location. The proposed disposal well will be located in the northeastern area of the Eagle Ford play in South Texas. A number of horizontal wells have been completed in the area. In addition, there is evidence of future completions in the area as drilling permits have been issued to Penn Virginia Oil & Gas, L.P. in which completion papers have not yet been filed.

Any Injury to Any Oil, Gas, or Other Mineral Formation

Based on the evidence, the Examiners conclude the proposed disposal well will not harm or injure the productive formations in the area. The productive formations within two miles of the proposed disposal well location are the Eagleford and Austin Chalk Formations. These formations are 3,000 feet deeper than the proposed disposal interval within the Wilcox Formation. Below the base of the Wilcox Formation is a thick shale section to prevent fluid migration from the disposal interval to deeper formations.

Protestant SN Operating's concern is that an increase in pressure within the disposal formation could cause problems in future wells that SN Operating may drill. The Examiners conclude that there is no evidence in the record that indicates the proposed injection operations will cause problems in drilling through the disposal interval. The nearest SN Operating wells at this time are approximately 3,500 feet away from the proposed disposal well bottomhole location. A plume calculation using a combined injection rate of 45,000 bpd for a period of 20 years estimates a plume radius of 1,854 feet from the Moulton SWD Lease and therefore will not reach the current SN Operating wells. Pressure front calculations using a combined maximum injection rate of 45,000 bpd for a period of 10 years at a distance of 3,500 feet results in a pressure increase of only 111 psi.

High Roller opposes SN Operating's request for a special permit condition requiring that it cease operations upon notice that SN Operating plans to drill through High Roller's disposal interval. SN Operating's request was through its attorney. SN Operating did not present an expert witness or offer expert testimony that such a permit condition was necessary or that High Roller's disposal operations would cause such an increase in pressure in the disposal interval that relief through a special permit condition was necessary. High Roller believes that a special permit condition is not necessary, and would be better handled by a private agreement between High Roller and SN Operating should the need arise. There is no evidence in the record to show that the proposed disposal well will cause problems in drilling through the Wilcox Formation in the future. The Examiners find no basis for including SN Operating's suggested special permit condition in the High Roller permit.

Protection of Ground and Surface Fresh Water

The Examiners conclude that the proposed well construction of the Moulton SWD No. 2 will adequately protect both ground and surface fresh water. The GAU estimates that the BUQW occurs from the land surface to a depth of 2,800 feet, and base of the USDW at a depth of 4,500 feet. High Roller provided a letter from the GAU of the Oil and Gas Division that stated if otherwise compliant with Railroad Commission rules and guidance, drilling and using this disposal well and injecting oil and gas waste into the subsurface stratum in the depth interval from 4,750 feet to 7,200 feet will not endanger the freshwater strata in that area. The well construction plan is to set 9 5/8-inch surface casing at a depth a 2,850 feet, 50 feet deeper than the BUQW, and cementing the casing to surface to protect the BUQW. High Roller intends to run 7-inch long string casing to a depth of 7,200 feet, and to cement the casing such that the cement top is at 2,600 feet. This would place the cement top of the long string casing approximately 200 feet above the setting depth of the surface casing.

The disposal interval in the Wilcox Formation between 4,750 feet and 7,200 feet will be separated from freshwater formations by impervious beds which will give adequate protection to freshwater formations. An open hole log for the Moulton SWD No. 1 which has already been drilled on the Moulton SWD Lease shows a large shale interval occurs from a depth of approximately 3,000 feet to 3,600 feet that will act as an impervious boundary between the disposal interval and the BUQW to protect fresh water. In addition, at a depth interval from approximately 4,680 feet to 5,400 feet there are a series of shale sequences that will also act as an impediment to the upward movement of fluids from the disposal interval.

The only wellbore that penetrates the disposal interval within a quarter-mile or a half-mile is the Moulton SWD No. 1. The Moulton SWD No. 1 was cased and cemented with 9-5/8 inch surface casing set at a depth of 2,914 feet and cemented with cement circulated to surface to protect the BUQW. 7-inch long string casing was set at a depth of 7,214 feet and cemented with a DV tool set at a depth of 5,194 feet and the top of cement is calculated to be 1,800 feet. This wellbore will not act as a conduit for injected fluids to escape the disposal interval.

Financial Assurance

High Roller is an active operator, currently operating three wells. High Roller has \$25,000 cash posted with Commission as financial assurance.

Seismic Survey

A review of USGS seismic data shows no earthquakes have been reported within 100 square miles (9.08 km radius circle) of the proposed disposal well location.

FINDINGS OF FACT

1. High Roller Wells, L.L.C. seeks a permit authorizing commercial disposal operations pursuant to 16 Tex. Admin. Code § 3.9 for the Moulton SWD Lease, Well No. 2, Eagleville, (Eagle Ford-2) Field, Lavaca County, Texas.
2. Notice of the application (Form W-14) was mailed to the surface owner of the well tract, to the Lavaca County Clerk, to offset surface owners of the well tract, and to operators with active wells within one-half mile (High Roller Wells, L.L.C., NGL Watersolutions Eagleford, LLC, SN Operating, LLC, and Penn Virginia Oil & Gas, L.P.).
3. Notice of the application was published in the Hallettsville Tribune-Herald, a newspaper having general circulation in Lavaca County Texas, on Wednesday, September 30, 2015.
4. The application is protested by SN Operating, LLC (“SN Operating”).
5. At least 10 days’ notice of the hearing was provided to the owner of the surface tract, to adjacent surface owners, to the Lavaca County Clerk, and to operators with active wells within a half-mile of the proposed disposal well location. 16 Tex. Admin. Code § 3.9(5)(E)(i).
6. The use or installation of the Moulton SWD Lease, Well No. 2 is in the public interest in terms of a need for additional disposal capacity in this area.
 - a. The proposed disposal well will be located in the northeastern area of the Eagle Ford play in South Texas;
 - b. There are three active commercial disposal wells within a 10 mile radius of the proposed disposal well location;
 - c. A number of horizontal wells have been completed in the area; and
 - d. Drilling permits have been issued in the area for which completion papers have not yet been filed.
7. The use or installation of the Moulton SWD Lease, Well No. 2 will not endanger or injure oil, gas, or other mineral formations.
 - a. The injection interval is in the Wilcox Formation;
 - b. The productive formations within two miles are the Eagleford and Austin Chalk Formations. These formations are 3,000 feet deeper than the disposal interval;
 - c. Below the base of the Wilcox Formation is a thick shale section to prevent fluid migration from the disposal interval to deeper formations;

- d. The nearest SN Operating, LLC wells at this time are approximately 3,500 feet away from the proposed disposal well location; and
 - e. A pressure front calculation using a combined maximum injection rate of 45,000 bpd for a period of 10 years at a distance of 3,500 feet results in a pressure increase of 111 psi.
8. With proper safeguards, both ground and surface fresh water can be adequately protected from pollution.
- a. The BUQW occurs from the land surface to a depth of 2,800 feet;
 - b. The well construction plan is to set 9 5/8-inch surface casing at a depth a 2,850 feet, 50 feet deeper than the BUQW, and cement the casing to surface to protect the BUQW;
 - c. The injection interval is in the Wilcox Formation which is deeper than the BUQW and the USDW;
 - d. The disposal interval in the Wilcox Formation between 4,750 feet and 7,200 feet will be separated from freshwater formations by impervious beds which will give adequate protection to such freshwater formations;
 - i. An open hole log for the Moulton SWD No. 1 located on the Moulton SWD Lease shows a large shale interval occurs from a depth of approximately 3,000 feet to 3,600 feet that will act as an impervious boundary between the disposal interval and the BUQW to protect fresh water; and
 - ii. A series of shale sequences occur at the depth interval from approximately 4,680 feet to 5,400 feet that will also act as an impediment to the upward movement of fluids from the disposal interval.
 - e. The only wellbore that penetrates the disposal interval within a quarter-mile or a half-mile is the Moulton SWD No. 1.
 - i. The Moulton SWD No. 1 was cased and cemented with 9-5/8 inch surface casing set at a depth of 2,914 feet and cemented with cement circulated to surface to protect the BUQW.
 - ii. 7-inch long string casing was set at a depth of 7,214 feet and cemented with a DV tool set at a depth of 5,194 feet and the top of cement is calculated to be 1,800 feet.
 - iii. The Moulton SWD No. 1 will not act as a conduit for injected fluids to escape the disposal interval.

9. No seismic events have been reported within 100 square miles (a 9.08 km radius circle) of the proposed disposal well location.
10. High Roller Wells, L.L.C. is an active operator, currently operating three wells. High Roller Wells L.L.C. has \$25,000 cash posted with Commission as financial assurance.

CONCLUSIONS OF LAW

1. Resolution of the subject application is a matter committed to the jurisdiction of the Railroad Commission of Texas. TEX. NAT. RES. CODE § 81.051.
2. The installation and use of the proposed commercial disposal well is in the public interest. Texas Water Code § 27.051(b)(1).
3. The proposed fluid disposal operations will not endanger oil, gas or geothermal resources. Texas Water Code § 27.051(b)(2).
4. The proposed fluid disposal operations will not cause the pollution of freshwater strata. Texas Water Code § 27.051(b)(3).
5. High Roller Wells, L.L.C. has met its burden of proof and the application for the Moulton SWD Lease, Well No. 2 satisfies the requirements of Chapter 27 of the Texas Water Code and the Railroad Commission's Statewide Rule 9.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the Examiners recommend that the application of High Roller Wells, L.L.C. for commercial disposal authority pursuant to Statewide Rule 9 for the Moulton SWD Lease, Well No. 2, Eagleville (Eagle Ford-2) Field, Lavaca County, Texas, be approved, as set out in the attached Final Order.

Respectfully submitted,



Karl Caldwell
Technical Examiner

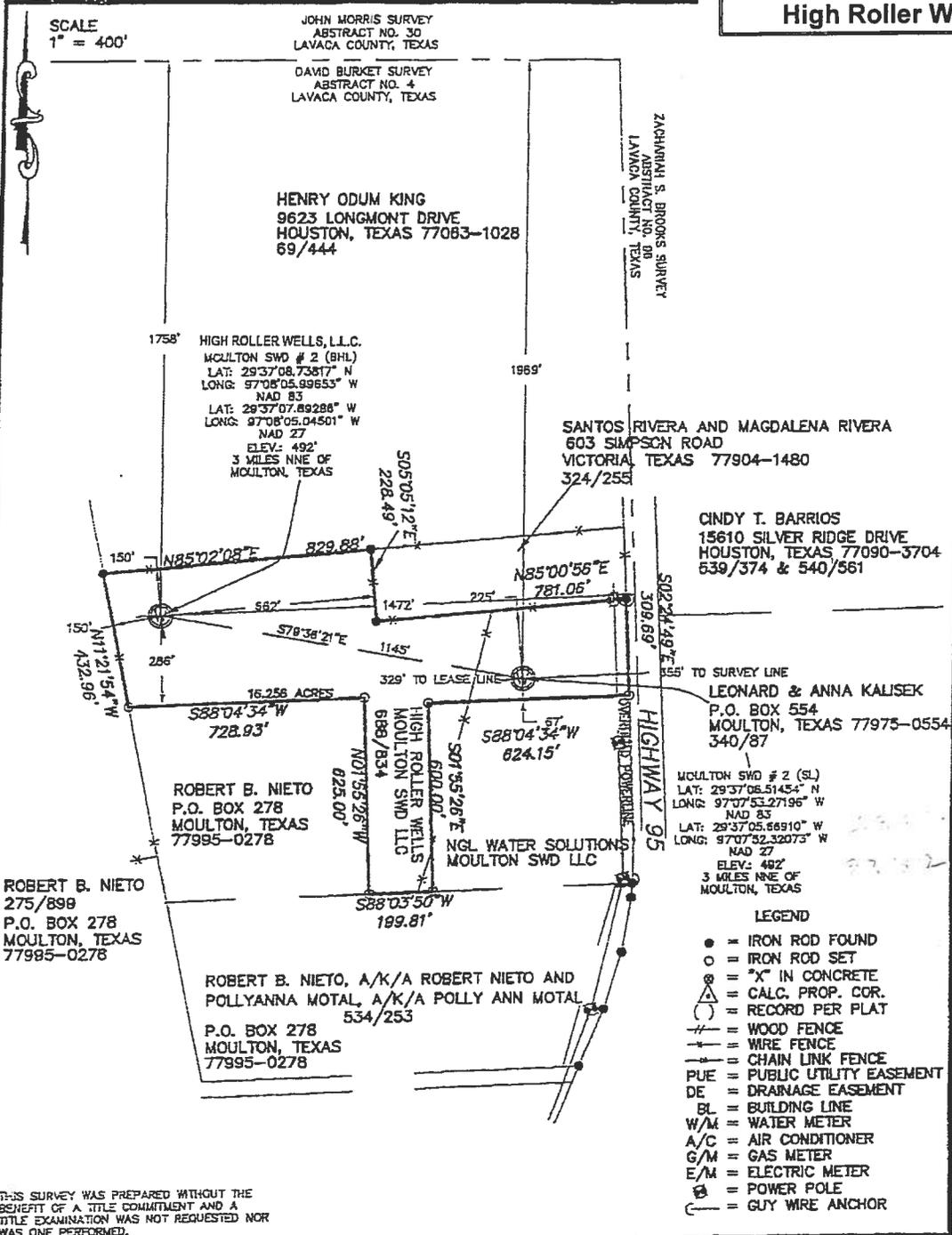


Marshall Enquist
Administrative Law Judge

Exhibit No. 3
 Docket # 02-0299028
 Date: March 1, 2016
 High Roller Wells LLC

CELCO SURVEYING
 RES. # 10183973
 TEL: 830-214-5109
 FAX: 866-571-8323

SURVEY PLAT



THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE COMMITMENT AND A TITLE EXAMINATION WAS NOT REQUESTED NOR WAS ONE PERFORMED.

ADDRESS: HIGHWAY 95, MOULTON, TEXAS

LEGAL DESCRIPTION: SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF.

CERTIFICATION

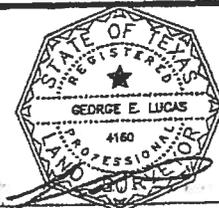
THE UNDERSIGNED DOES HEREBY CERTIFY TO THE PARTIES LISTED BELOW THAT THIS PLAT CORRECTLY REPRESENTS A SURVEY MADE UPON THE GROUND OF THE PROPERTY SHOWN HEREON, AND THAT THERE ARE NO ENCROACHMENTS OF VISIBLE IMPROVEMENTS, EXCEPT AS SHOWN HEREON, AND THAT THIS PROPERTY HAS ACCESS TO A PUBLIC ROADWAY, EXCEPT AS SHOWN HEREON.

BUYER: N/A
 TITLE CO.: N/A
 G.F.#: N/A

LENDER: N/A

PLAN No.: 2015-0528

SURVEY DATE: JUNE 10, 2015



GEORGE E. LUCAS R.P.L.S. 4160