



# RAILROAD COMMISSION OF TEXAS

## HEARINGS DIVISION

OIL AND GAS DOCKET NO. 02-0275007

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THE APPLICATION OF POLK OPERATING, LLC FOR A COMMERCIAL PERMIT TO DISPOSE OF OIL AND GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS, POLK R3 SWD LEASE WELL NO. 1, EAGLEVILLE (EAGLE FORD-2) FIELD, KARNES COUNTY, TEXAS

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HEARD BY: Andres J. Trevino P.E., Technical Examiner  
Michael Crnich, Hearings Examiner

### APPEARANCES:

#### APPLICANT:

Stephen Fenoglio  
Mickey Polk  
Kerry Pollard  
Randy W. Pawelek

#### REPRESENTING:

Polk Operating, LLC

#### PROTESTANTS:

Kenneth Fleming	Self
Lucille Fleming	Self

### PROCEDURAL HISTORY

Application Filed:	January 13, 2012
Request for Hearing:	February 28, 2012
Notice of Hearing:	March 14, 2012
Date of Hearing:	July 12, 2012
Proposal For Decision Issued:	December 19, 2012

### EXAMINERS' REPORT AND PROPOSAL FOR DECISION

### STATEMENT OF THE CASE

Polk Operating, LLC (Polk Operating) requests authority pursuant to Statewide Rule 9 to operate Well No. 1 on its Polk R3 SWD Lease in Karnes County as a commercial disposal well. This application is protested by Kenneth and Lucille Fleming, adjacent

landowners to the tract on which the proposed disposal well will be located.

### DISCUSSION OF THE EVIDENCE

#### Applicant's Evidence

The subject well has not yet been drilled, and a permit to drill the well has not been issued by the Commission to date. It is proposed that the well be drilled through the Lower Wilcox to a maximum depth of 7,000 feet. It is proposed that the well have 4,600 feet of 9<sup>5</sup>/<sub>8</sub>" surface casing with cement circulated from the casing shoe to the ground surface, and 7" casing set through the Lower Wilcox, estimated to occur no deeper than 7,000 feet. The 7" casing will be cemented with 1,075 sacks of cement with cement circulated to the surface. (See Wellbore Diagram attachment). The Commission's Groundwater Advisory Unit recommends that usable-quality ground water be protected to a depth of 4,500 feet. The GAU further identifies that fresh water contained in the interval from the land surface to a depth of 300 feet and the Carrizo from a depth of 3,800 feet to 4,500 feet must be protected. In order to appease an adjacent operator, EOG Resources, Polk Operating moved the original location of the proposed disposal well 575 feet to the northwest. The Groundwater Advisory Unit's Robert Traylor advised Polk Operating a new groundwater protection determination letter was not needed as the usable quality water protection depths would be the same. The new location is further away from the Fleming's property.

The proposed injection will be through 4<sup>1</sup>/<sub>2</sub>" tubing set on a packer at approximately 5,500 feet, but no higher than 100 feet above the top of the injection interval. The proposed injection interval is the Lower Wilcox formation, the top of which is expected to occur at about 5,540 feet. The proposed injection interval is between 5,540 and 6,750 feet. The estimated depth of the Lower Wilcox is based on the log of the Gruy Management - Lewis Dziuk No. 1. This well is approximately 1/4 mile to the southwest of the proposed well and is the closest well which penetrated the Lower Wilcox and for which an electric log is available. The log shows there is approximately 300 feet of shale separating the top of the injection interval and the base of the usable quality water. Additionally, there is 2,000 feet of shale separating the base of the injection interval from the top of the Edwards and Eagleford shale, found at a depth of approximately 10,000 feet, which is the shallowest production in the area. The proposed maximum injection volume is 20,000 BWPD. The proposed maximum injection pressure is 2,770 psig.

There is one dry hole and one permitted location within a 1/4 mile radius of the proposed disposal well. The dry hole has adequate cement plugs across the usable quality water and the Lower Wilcox formation to isolate fluids from the proposed injection interval. The A. H. Dziuk No. 1 was plugged as a dry hole on August 18, 1964. The well was drilled to a depth of 11,270 feet to possibly test the Edwards formation; however, no productive zones were encountered. A Form W-3 shows the dry hole was filled with 11.2 lb/gal drilling mud and 100 foot cement plugs were set at 4,700 feet and 3,500 feet to isolate any oil, gas or water from groundwater zones (the Carrizo at 4,000 foot depth). A third plug was set

at a depth of 1,850 feet across the surface casing shoe to further isolate any fluids from entering the cemented surface casing set at a depth of 1,810 feet. The well was plugged in accordance to Commission rules and is protective of ground water. The second possible wellbore that is located within the ¼ mile radius of review is EOG Resources' Moczygemba Unit No. 2H. Currently the well is a permitted location. The surface location is approximately 1½ miles to the northwest. The Moczygemba Unit No. 2H will be a horizontal well to be completed in the Eagleford shale found at a depth of 10,000 feet. Only a small portion of the lateral (the toe of the lateral) will be located within the ¼ mile of the proposed disposal well.

Polk Operating, out of caution, performed a more extensive, ½ mile radius area of review. The ½ mile review identified four additional wells within the ½ mile of the proposed well. They identified two plugged dry holes, one permitted EOG Eagleford shale horizontal well, and one active EOG Eagleford shale horizontal well. Additionally, the Flemings stated they had an old oil well on their property that could be a conduit for disposal fluids. Based on the Flemings help locating the well on the map, the well is believed to be a dry hole drilled and plugged in 1956 that had a total depth of 3,757 feet, above the proposed injection interval. The well is known as the Vincent Moczygemba No. 1 drilled by Harris Stahl. Well records of the wells within the ½ mile radius demonstrate the wells will not pose a potential threat to usable quality water or oil and gas production in the area. The four wells were drilled, completed or plugged in a manner that protects the fresh water zones.

Due to area landowners' concerns of possible water-well contamination, Polk Operating conducted a water-well study in the area. They used public records (Texas Commission on Environmental Quality) to identify eight water wells within one mile of the proposed disposal well. The wells are used for livestock, industrial use and domestic use. The water well depths range from 100 feet to 348 feet, indicating all area water wells are exploiting only the shallowest ground water resources. The proposed Polk R3 SWD Well No. 1 will have 4,600 feet of 9<sup>5</sup>/<sub>8</sub>" surface casing with cement circulated from the casing shoe to the ground surface.

Polk Operating operates a commercial disposal facility in Montague County north of Fort Worth. Additionally, Polk Operating has a permit to operate a waste recycling facility in Oklahoma. In addition to this proposed saltwater disposal facility, Polk Operating will operate a new recycling facility to be known as the R3 Recycling Facility. The R3 Recycling Facility will receive, process and recycle fluids, drill cuttings and drilling muds and resell them to the County and oil and gas operators. Polk Operating offered to provide road base material, free of cost to the County to resurface the caliche road near the facility to minimize dust. The County has not yet accepted the offer or resurfaced the caliche road. The R3 Recycling Facility is the subject of a separate permit application, which is not part of this hearing.

The design of the facility is based on Polk Operating's experience operating the Montague disposal facility. The proposed facility will consist of a location pad with two 400

bbl saltwater tanks, six 300 bbl saltwater tanks, several gun barrels, one 300 bbl oil tank and injection pumps. All tanks will sit inside a concrete secondary containment basin. All surface areas which are expected to handle fluids will be constructed of concrete. Fluids will be unloaded into a concrete disposal unloading area. The facility will have five unloading bays which will allow up to five trucks to simultaneously unload their fluids. The fluids will travel to a concrete clarifying and settling pit. The fluids will be pumped to a series of gun barrels to settle and separate any solids or oil from the injection water. The entire location pad will have a built-up rock base. The perimeter of the entire location pad will have an interceptor swale, or ditch, and a 3 foot berm, of such size that it will prevent any fluids contained within the facility plus the rainfall from a 25-year, 24-hour rainfall event of 8.3 inches from leaving the property. The interceptor swale and 3 foot berm will also prevent any rainfall from entering the property. The pad is large enough to accommodate 50 trucks on the property without the need to have trucks parked and waiting along the county road to off-load disposal fluids. At other area disposal facilities trucks often wait along county roads to enter the disposal facility to unload their fluids. Trucks will enter the facility off CR 228 on the westside of the property and travel to one of five unloading bays. Polk Operating estimates it can unload a fully loaded truck in nine minutes. Unloaded trucks will then exit the facility through the north exit on to a private road and reenter CR 228. Polk Operating will use electric pumps instead of diesel pumps to minimize noise and exhaust emissions. Light at the facility will be directed inwards towards the facility to minimize light pollution. The facility will be staffed 24/7 to monitor operations and incoming waste streams.

Polk Operating plans to use the proposed well to dispose of produced water and frac water generated as a result of the active and ongoing development of the Eagle Ford Shale in the area. Polk Operating believes that additional disposal facilities are necessary to accommodate the active drilling which generates large quantities of disposal fluids. Polk Operating presented two letters of support from potential customers stating they had a need and interest in using the proposed disposal facility. Polk Operating received the letters from two water hauling companies, JP Tank Trucks and Premier Vacuum Services, that haul and dispose of salt water in Karnes County. The trucking companies indicated they would welcome and support additional disposal capacity the proposed facility would provide. Both trucking companies stated in their letters they experience long wait times and congestion at existing commercial disposal facilities.

The Eagleford shale trend is a large trend extending from the Texas/Mexico border to Burleson County near College Station, TX. Polk Operating presented a Commission map of the Eagleford shale play that shows that as of May 2012, there are 4,030 permitted wells, 1,376 completed oil wells and 603 completed gas wells on the Commissions' proration schedule. Drilling permit data shows that in 2010 Eagleford shale wells were being permitted at a rate of 84 per month. In 2011, drilling permits were issued at a rate of 235 permits per month. In 2012, drilling permits were issued at a rate of 376 permits per month. Oil and gas production from the Eagleford shale has also increased dramatically. In 2010 oil and condensate production was approximately 10 million barrels per year. In 2012 it is estimated oil and condensate production will be 102 million barrels per year. Within a 10 mile radius of the proposed disposal well, there are over 100 completed and

permitted Eagleford shale wells. Polk Operating stated they would not engage in permitting and building the facility if they were not confident the facilities' services would be in demand.

Polk Operating, LLC has an active P-5 on file with the Commission, with \$25,000 financial assurance bond. There are no active enforcement actions against Polk Operating.

Notice of the subject application was published in *Karnes Countrywide*, a newspaper of general circulation in Karnes County, on January 4, 2012. A copy of the application was mailed on January 13, 2012, to the Karnes County Clerk's Office and the offsetting surface owners and operators within ½ mile of the proposed well. A supplemental mailing to James L. Dzuik, Susan Moczygemba-Mckinsey, and Allen Pruski, adjacent landowners, was made on March 21, 2012. Certified mail receipt for James L. Dzuik shows he received notice on March 23, 2012. Alvin Pawelek owns the surface of the 200-acre tract on which the well is proposed.

### **Protestant's Evidence**

Kenneth and Lucille Fleming were present to voice their concerns over the proposed disposal well. The Flemings are adjacent landowners to the tract on which the proposed disposal well is located. The Flemings main concerns relate to the amount of truck traffic traveling near their property, truck ingress and egress to the disposal property, the dust created by the trucks, truck spills, truck safety and earthquakes. The Flemings have concerns about the potential for surface and groundwater contamination as they have a water well on their property that they use for supplying their livestock with water. The Flemings are concerned the dust created by passing trucks will damage the hay they grow on their property. They fear the dust will also prevent area children from playing outside. The Flemings stated also there is an old oil well on their property that may serve as a conduit for disposal fluids. The Flemings further believe Notice of the application was not given to James Dzuik, an adjacent landowner.

### **EXAMINERS' OPINION**

The examiners believe that this application should be approved. The Polk R3 SWD No. 1 will be completed in a manner which will confine disposal fluids to the proposed disposal interval in the Lower Wilcox. Surface casing will be set and cemented through the base of usable quality water. The longstring casing will also be cemented to the surface to prevent migration from the injection interval. There are no oil or gas wells within the ¼ or ½ mile radius of review that pose a threat to groundwater contamination or confinement of injected fluids in the Lower Wilcox formation. It is unlikely the operation of the Polk R3 SWD No. 1 will result in the contamination of surface or subsurface water or will endanger or injure any oil, gas, or other mineral formation.

The well located on the Flemings property is believed, based on Mr. Fleming locating the well on the map, to be the Vincent Moczygemba No. 1 drilled by Harris Stahl. The well is a plugged dry hole drilled in 1956 to a depth of 3,757 feet. Because the well does not penetrate the disposal interval it is unlikely fluids would have a conduit to migrate

to the usable quality water.

There was no evidence presented at the hearing that identified any faults in the area which may contribute to earthquakes. Scientists believe that injection by disposal wells across faults may "lubricate" the faults into releasing stored energy and creating minor earthquakes below a magnitude 3.0 on the Richter scale. Several factors in this area may reduce the likelihood of an earthquake occurring. The injection interval is relatively shallow at 5,500 feet, the geologic deposits are relatively young and are loosely consolidated, meaning less stored energy is present in the shallow, loosely consolidated deposits. Without the stored energy, an earthquake is less likely to occur in this area than an area that is highly faulted with older, more consolidated deposits.

Approval of the requested permit is in the public interest because it will promote the development of the Eagleford Shale in Karnes County and adjacent counties. The majority, if not all, of Karnes County is believed to be productive due to the widespread presence of the Eagleford Shale. This disposal well and others will be needed to accommodate current and future disposal needs. Drilling permits issued for Eagleford Shale wells have increased from 84 drilling permits per month in 2010 to over 376 drilling permits per month in 2012. Oil and gas production from the Eagleford shale has also increased dramatically. In 2010 oil and condensate production was approximately 10 million barrels per year; in 2012 it is estimated oil and condensate production will be 102 million barrels per year. Letters from operators in the area support and welcome additional disposal capacity. Having an additional facility to dispose of produced water will reduce wait times observed at other disposal facilities in the area. Having a disposal facility close to the horizontal wells will reduce disposal cost and increase hydrocarbon recovery.

The Commission has historically interpreted the "public interest" finding required by Texas Water Code 27.051(b) as limited to matters related to oil and gas production and as not including issues such as traffic safety and road conditions. The Commission's interpretation has been upheld by the Texas Supreme Court as reasonable and in alignment with the statute's meaning. See, *Railroad Commission v. Texas Citizens for a Safe Future and Clean Drinking Water*, 336 S.W.2d 619, 630 (Tex. 2011). Further, the Commission does not have authority over issues regarding dust or noise abatement. Although Polk has offered to provide road resurfacing materials to the County free of charge, neither Polk nor the Commission have control over how the County maintains a county road. The evidence indicates that the operation of the subject disposal well and facility will not adversely impact any surface or subsurface useable quality water and will enhance hydrocarbon recovery.

#### **FINDINGS OF FACT**

1. Notice of this hearing was given to all persons entitled to notice at least ten (10) days prior to the hearing. Notice of the application was published in the *Karnes Countrywide*, a newspaper of general circulation in Karnes County, on January 4, 2012. A supplemental mailing to James L. Dzuik, Susan Moczygemba-Mckinsey, and Allen Pruski, adjacent landowners was made on March 21, 2012. Certified mail receipt for James L. Dzuik shows he

received notice on March 23, 2012.

2. The Polk R3 SWD No. 1 has not been drilled. Polk Operating plans to drill the well to a maximum depth of approximately 7,000 feet. The top of the Lower Wilcox is expected to occur at approximately 5,540 feet.
3. The maximum requested injection volume is 20,000 barrels of water per day and the maximum requested surface injection pressure is 2,770 psi. The requested disposal interval is the Lower Wilcox formation between approximately 5,540 and 6,750 feet.
4. The Polk R3 SWD No. 1 will be cased and cemented in a manner to protect usable quality water, and injection will be confined to the injection interval.
  - a. The subject well will have 4,600 feet of 9<sup>5</sup>/<sub>8</sub>" surface casing cemented to surface.
  - b. The subject well will have approximately 7,000 feet of 7" casing, cemented with 1,075 sacks of cement with a top of cement at the surface.
  - c. Injection will be through tubing set on a packer no higher than 100 feet above the top of the injection interval.
  - d. The Groundwater Advisory Unit recommends that usable-quality water be protected to 4,500 feet in the area of the proposed well.
5. There is one dry hole and one permitted location within a ¼ mile radius of the proposed disposal well. The dry hole was plugged in accordance with Commission rules and in a manner protective of ground water.
6. A more extensive review of wells with ½ mile radius area of the proposed disposal well identified four additional wells. Well records of wells within the ½ mile radius demonstrate the wells will not pose a potential threat to usable quality water or oil and gas production in the area.
7. Polk Operating conducted a water-well study in the area and found eight water wells within one mile of the proposed disposal well. The wells are used to supply livestock, industrial use and domestic use. The water-well depths range from 100 feet to 348 feet, indicating all area water wells are exploiting only the shallowest ground water sources.
8. The well located on the Flemings' property is believed to be the Vincent Moczygemba No. 1 drilled by Harris Stahl. The well is a plugged dry hole drilled in 1956 to a depth of 3,757 feet. The well does not penetrate the disposal interval; therefore, it is unlikely fluids would have a conduit to migrate to the usable quality water.

9. Polk Operating operates a commercial disposal facility in Montague County north of Fort Worth. Additionally, Polk Operating has a permit to operate a waste recycling facility in Oklahoma.
10. Polk Operating will operate a new recycling facility to be known as the R3 Recycling Facility at the proposed disposal well site. The R3 Recycling Facility is the subject of a separate permit application, which is not considered with the current application.
11. The Polk R3 SWD Facility will incorporate all required standard containment design features for commercial disposal facilities. Additionally, areas which are expected to hold fluids will have concrete containment systems underneath. The entire facility will be surrounded by an interceptor swale, or ditch, which will prevent the run on of a 25-year, 24-hour rain fall event of 8.3 inches. The interceptor swale will also prevent the run off of any spilled fluids and contain the entire volume of fluids on the facility and 8.3 inches of rain.
12. The pad will have five unloading bays and is large enough to accommodate 50 trucks on the property without the need to have trucks parked and waiting along the county road to off-load disposal fluids. Polk Operating estimates it can unload a fully loaded truck in nine minutes.
13. Polk Operating will use electric pumps instead of diesel pumps to minimize noise and exhaust emissions. Light at the facility will be directed inwards towards the facility to minimize light pollution.
14. Polk Operating offered to provide road base material, free of cost, to the County to resurface the caliche road near the facility and to minimize dust.
15. The Eagleford shale trend is a large trend extending from the Texas/Mexico border to Burleson County near College Station, TX.
  - a. As of May 2012, there were 4,030 permitted wells, 1,376 completed oil wells and 603 completed gas wells on the Commissions proration schedule.
  - b. Drilling permit data shows that in 2010 Eagleford shale wells were being permitted at a rate of 84 per month. In 2011, drilling permits were issued at a rate of 235 permits per month. In 2012, drilling permits were issued at a rate of 376 permits per month.
  - c. Oil and gas production from the Eagleford shale has also increased dramatically. In 2010 oil and condensate production was approximately 10 million barrels per year. In 2012 it is estimated oil and condensate production will be 102 million barrels per year.
  - d. Within a 10 mile radius of the proposed disposal well, there are over

100 completed and permitted Eagleford shale wells.

16. Polk Operating received letters of support from JP Tank Trucks and Premier Vacuum Services, which haul and dispose of salt water in Karnes County. Both trucking companies have experienced long wait times and congestion at existing commercial disposal facilities.
17. Due to increasing development of the Eagleford Shale with horizontal drilling in this area, large quantities of produced water must be disposed of. Use of the Polk R3 SWD No. 1 as a commercial disposal well is in the public interest of promoting this development by providing a safe and economic means of disposal of the fluids associated with drilling and production.
18. Having a disposal facility close to the horizontal wells will reduce disposal cost, and increase hydrocarbon recovery.
19. Polk Operating, LLC has an active P-5 on file with the Commission, and \$25,000 financial assurance.

#### **CONCLUSIONS OF LAW**

1. Proper notice was issued in accordance with the applicable statutory and regulatory requirements.
2. All things have occurred to give the Railroad Commission jurisdiction to consider this matter.
3. The use or installation of the proposed injection well is in the public interest.
4. The use or installation of the proposed injection well will not endanger or injure any oil, gas, or other mineral formation.
5. With proper safeguards, as provided by terms and conditions in the attached final order, which are incorporated herein by reference, both ground and surface fresh water can be adequately protected from pollution.
6. Polk Operating, LLC has made a satisfactory showing of financial responsibility to the extent required by Section 27.073 of the Texas Water Code.
7. Polk Operating, LLC has met its burden of proof and satisfied 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 and conclusions, the examiners recommend that the application be approved as set out in the attached Final Order.



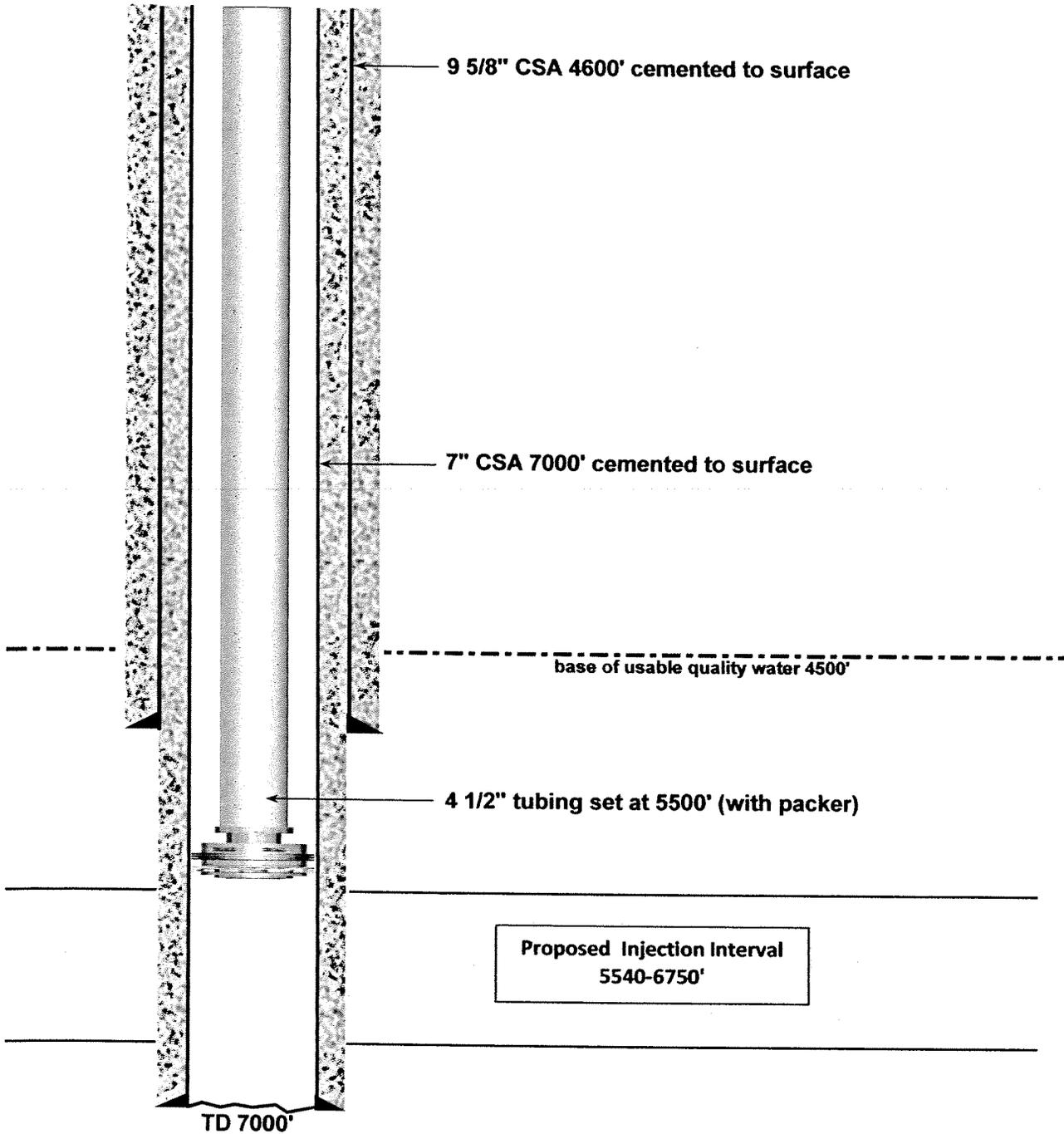
Andres J. Trevino P.E.  
Technical Examiner

Respectfully submitted,



Michael Crnich  
Hearings Examiner

**Wellbore Sketch**  
**Polk Operating, LLC**  
**Polk R3 SWD #1**  
**Proposed according to W14**  
**Karnes County, Texas**



**Polk Operating, LLC**  
Exhibit No. 11  
Docket No. 02-0275007  
April 23, 2012