

**OIL AND GAS DOCKET NO. 06-0263035**

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**THE APPLICATION OF EXCO PRODUCTION COMPANY LP FOR AN AMENDED COMMERCIAL PERMIT TO DISPOSE OF OIL AND GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS, BETHANY SWD LEASE WELL NO. 1, CARTHAGE (RODESSA) FIELD, PANOLA COUNTY, TEXAS**

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**HEARD BY:** Andres J. Trevino P.E., Technical Examiner  
James M. Doherty, Hearings Examiner

**APPEARANCES:**

**APPLICANT:**

Richard P. Marshall, Jr.  
R. Mark Henkaus, P.E.

**REPRESENTING:**

Exco Production Company LP

**PROTESTANTS:**

David D. Hudson  
Earnestine Robertson  
Ronald Smith  
Jeanatta Smith  
Bearl Harris  
Willie Harris  
Frank Roberson  
Geneva Brown  
Travis Mosley

Panola County Citizens  
Community, Self  
Self  
Panola Water Co.  
Community, Self  
Community, Self  
Self  
Self

**PROCEDURAL HISTORY**

Application Filed:	September 9, 2009
Request for Hearing:	September 9, 2009
Notice of Hearing:	September 24, 2009
Date of Hearing:	December 8, 2009
Proposal For Decision Issued:	July 7, 2010

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### **EXAMINERS' REPORT AND PROPOSAL FOR DECISION**

#### **STATEMENT OF THE CASE**

Exco Production Company LP (Exco) requests authority pursuant to Statewide Rule 9 to amend their existing disposal permit to operate their Bethany SWD Well No. 1 in Panola County as a commercial disposal well. In addition to the commercial authority request, Exco is requesting a packer depth exception and a minor injection interval change. Exco is not requesting an increase in volume, pressure or change in fluids. This application is protested by numerous individuals representing the community members in the area and individual adjacent landowners. Mr David Hudson, representing adjacent property owners is concerned that the nearby public water supply well will be contaminated by the proposed commercial disposal well and about truck traffic safety.

#### **DISCUSSION OF THE EVIDENCE**

##### **Applicant's Evidence**

The subject well is a permitted disposal well. Winchester Production Company was initially issued an injection permit for the Bethany SWD No.1 on November 9, 2004. Permit No. 11982 allows a maximum of 6,000 barrels per day of produced saltwater to be injected at a subsurface depth from 4,920 feet to 5,060 feet into the Rodessa formation. The maximum operating surface injection pressure authorized is 2,450 psig. Exco purchased Winchester Production and took over operations of Winchester's producing wells and the Bethany SWD No. 1 in 2008. Exco wishes to amend the permit to allow commercial disposal authority and a slight injection interval decrease. Exco is not seeking to increase volumes, pressures or change fluid types. Additionally, Exco noticed the well was completed with the packer higher than 100 feet from the permitted interval as SWR 9 requires.

The Bethany SWD No. 1 was drilled and completed on January 31, 2005. The well was drilled to a maximum depth of 5,300 feet. The well is perforated in the Rodessa formation at a depth between 4,940 feet and 5,050 feet. The well has 430 feet of 13 3/8" surface casing cemented to surface, and 2,625 feet of 8 5/8" intermediate casing cemented to surface. The subject well has approximately 5,300 feet of 5 1/2" casing, cemented with 980 sacks of cement with a top of cement at approximately 1,770 feet. The Texas Commission on Environmental Quality recommends that usable-quality ground water be protected to a depth of 350 feet.

The current injection is through a 2 7/8" tubing set on a packer at 4,818 feet which is set 122 feet above the top of the proposed injection interval. The proposed injection interval is the same as the current perforations in the well, between 4,940 and 5,050 feet, which is slightly less than the permitted interval for the well. The remaining permit conditions will

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remain unchanged. The proposed maximum injection volume will remain at 6,000 BWPD of produced salt water. The proposed maximum injection pressure will remain 2,450 psig.

Exco seeks an exception to the packer setting depth requirements of SWR 9 for their well. The packer is 22 feet higher than the rules allow. Exco will not need to do any additional well work if the permit amendment is approved. Without an exception, Exco would need to reenter the well and move the packer down the hole 22 feet. Exco believes this work is risky and unnecessary as the current location of the packer does not pose a threat to useable quality ground water or any mineral resources. The additional 22 feet is not productive of oil or gas, and is not a useable quality water zone requiring protection. The casing along the 22 foot section is protected with cement. A cement bond log shows cement across the 22 foot section. The longstring was cemented from the casing shoe at 5,300 feet to the top of cement at 1,750 feet. Open hole logs of the area around the 22 foot section shows the geologic formation is a shaley, low porosity interval. Additionally, the permit amendment only seeks to add commercial authority with no changes to volumes or injection pressures.

There are numerous oil or gas wellbores within a 1/2 mile radius of the disposal well. The majority of the wells produce oil from the Panola Field at a depth of 2,400 feet. Therefore, the majority of producing wells do not penetrate any zones below 2,600 feet. An area of review is not required as the Bethany SWD No. 1 is currently permitted for disposal and Exco is not seeking to change the injection interval significantly or change injection pressures or volumes. The Panola Bethany water supply well is located approximately 1,000 feet to the north of Exco's disposal well. Additionally, numerous residents in the area have private water wells used for individual use.

Exco has upgraded the Bethany SWD facilities to handle commercial operations. It has expanded the retention basin capacity to hold 100% of the total volume of saltwater tanks within the retention basin. The retention basin berms are constructed of concrete with a plastic liner on the floor of the basin. The liner is attached to the concrete berms. The unloading area will have the capacity to handle three trucks at once. The unloading area will have a concrete pad to catch any fluids that may be spilled during the unloading operations. Exco designed and constructed the surface facilities to meet and exceed all Commission requirements for commercial facilities.

Disposal demand is increasing as Exco and other operators are increasing horizontal drilling in the Bossier Shale and the Haynesville Shale in Texas and Louisiana. Exco plans to drill 120 horizontal wells in 2010. Exco and other operators are funding the construction of a 14" pipeline that will carry disposal water generated from Exco's Louisiana Haynesville area to Joaquin, Texas area where the water will be disposed of into various commercial disposal wells located there. The pipeline will be a more economical means of saltwater disposal as it will minimize or eliminate truck traffic. The trucking costs associated with the overall disposal costs will be nearly eliminated. The pipeline will also greatly reduce truck traffic as the disposal water will travel by pipeline verses trucks at 120 barrels per load. As the pipeline is completed, Exco expects a drop in disposal water from its Louisiana

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Haynesville operations to its Bethany SWD well as it diverts water going to the Bethany SWD to the new pipeline. In order to maintain existing disposal capacity, Exco wants to allow disposal of water from other operators, thus their request for commercial authority. Exco expects the volume of disposal water to remain at the current level of 2,500 BWPD after commercial authority is granted, only the sources of the water will be different. Truck traffic is not expected to increase as the disposal volume is not expected to increase above its current level at the Bethany SWD Well No.1. All operators in the area consider disposal capacity as a resource that must be maintained and expanded. Without efficient and economical means of disposal capacity, horizontal drilling in the Haynesville Shale will be negatively affected.

Exco Production Company LP has an active P-5 on file with the Commission, with \$250,000 financial assurance. There are no past or pending enforcement actions against Exco.

Notice of the subject application was published in *The Panola Watchman*, a newspaper of general circulation in Panola County, on May 17, 2009. A copy of the application was mailed on June 8, 2009 to the Panola County Clerk's Office and the offsetting surface owners and operators within ½ mile of the proposed well. Exco owns the surface of the approximately 2 acre tract on which the well is located.

### **Protestants' Evidence**

David Hudson was present to represent numerous residents that live near the Bethany SWD No.1. Mr Hudson gave numerous reasons why the permit amendment should not be approved. He claimed notice was not properly given, the operation of the facility poses a threat to public safety and health, the facility is not compliant with Commission rules, the facility is a public nuisance, air emissions from tanks pose a health hazard to employees and the community at large and believes water is already contaminated. Additionally, Mr. Hudson made numerous requests of the Commission if the permit amendment is to be approved. He requested that complete groundwater and soil testing be done, cement in the well should be re-evaluated and the mechanical integrity of the well be determined. Mr Hudson fears the Bethany SWD No.1 will contaminate the groundwater such as he suspects a Basic Energy Services well did in a different location.

Geneva Brown a resident living on Private Road 7336, the road that Exco uses to access their facility from Highway 79, testified regarding two accidents related to tank trucks, truck noise, dust and declining water quality. Ronald Smith lives off of Highway 79. He testified regarding truck traffic, noise and concerns about truck safety. Enerstene Roberson, a board of Director of the Panola County Groundwater Conservation District, testified on her own behalf and fears groundwater contamination. Travis Mosley and Willie Harris both testified about declining water quality over the years and their belief that it is related to the Bethany SWD No.1. Jeanette Smith asked Exco's representative, Mark Henkhaus, on the timing of the opening of the Charis Pipeline and when Exco would begin commercial operations.

**EXAMINERS' OPINION**

The examiners believe that this application to amend the existing permit to allow commercial operations should be approved. Additionally, the examiners believe the packer exception should be granted. The Bethany SWD No. 1 will be completed in a manner which will confine disposal fluids to the existing disposal interval in the Rodessa. Surface casing is set and cemented through the base of usable quality water. The intermediate casing set at a depth of 2,625 feet is cemented to the surface and will isolate existing oil production found at a depth of 2,400 feet. The intermediate string will provide a third layer of protection from releases into the groundwater. The longstring production casing will also be cemented up to a depth of 1,750 feet to prevent migration from the injection interval. Commercial authority should be approved as it will preserve disposal capacity in the area and may minimize the drilling of additional disposal wells in the future. The facility will meet and exceed all Commission requirements for commercial facilities. The packer exception should be approved as there is sufficient cement of adequate quality behind the 22 foot exception interval and the formation adjacent to the interval is shaley and of low porosity. The packer exception will not endanger useable quality water or any oil and gas resources.

Approval of the requested permit is in the public interest given it is in the public interest to promote the development of the Cotton Valley, Bossier Shale and Haynesville Shale in Panola County, Texas and Louisiana. Approving commercial authority for the Bethany SWD No. 1 will extend its usefulness and will preserve its capacity by offering the use of the well to other operators in the area. Extending the life of the Bethany SWD No. 1 may prevent the need to drill future disposal wells in the area. Truck traffic is not expected to increase as Exco expects the well will dispose of 2,500 BWPD after commercial authority is granted similar to the volume being disposed of currently. Horizontal drilling is increasing in the Cotton Valley, Bossier Shale and Haynesville Shale. Having a disposal facility available to other operators close to the horizontal wells will reduce disposal costs. Cementing records for the well show it has more than adequate cement to comply with Commission requirements. A mechanical integrity test performed on the well four days prior to the hearing and witnessed by Kilgore District staff verify the well has no known mechanical issues.

The Commission does not have direct jurisdiction over issues regarding truck traffic safety or air emissions. The examiners have considered the public's interest in regards to the disposal well application's effect on traffic patterns and public safety and believe that any adverse effect will be negligible. The well is located off of Highway 79, a four lane highway, that currently supports disposal well operations, other oil and gas activity and other commercial truck traffic. The evidence indicates that the operation of the subject disposal well and facility will not adversely impact any surface or subsurface useable quality water. During the hearing no evidence of water samples indicating groundwater contamination has occurred was presented to the examiners.

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### 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 Panola Watchman*, a newspaper of general circulation in Panola County, on May 17, 2009.
2. Winchester Production Company was initially issued an injection permit for the Bethany SWD No.1 on November 9, 2004. The Permit No. 11982 allows a maximum of 6,000 barrels per day of produced saltwater to be injected at a subsurface depth from 4,920 feet to 5,060 feet into the Rodessa formation. The maximum operating surface injection pressure authorized is 2,450 psig.
3. Exco Production acquired Winchester Production in 2008, Exco assumed operations of the Bethany SWD No.1 in 2008.
4. The Bethany SWD No. 1 was drilled and completed on January 31, 2005. The well was drilled to a maximum depth of 5,300 feet. The well is perforated in the Rodessa formation at a depth between 4,940 feet and 5,050 feet.
5. Exco requests no change in the maximum volume or injection pressures but adds commercial authority. The requested disposal interval is the Rodessa formation between 4,940 and 5,050 feet, which is slightly less than the currently permitted interval.
6. The Bethany SWD No. 1 is cased and cemented in a manner to protect usable quality water and injection will be confined to the injection interval.
  - a. The Texas Commission on Environmental Quality recommends that usable-quality water be protected to 350 feet in the area of the proposed well.
  - b. The subject well has 430 feet of 13<sup>3</sup>/<sub>8</sub>" surface casing cemented to surface.
  - c. The subject well has 2,625 feet of 8<sup>5</sup>/<sub>8</sub>" intermediate casing cemented to surface.
  - d. The subject well has approximately 5,300 feet of 5<sup>1</sup>/<sub>2</sub>" casing, cemented with 980 sacks of cement with a top of cement at approximately 1,770 feet.
  - e. Injection will be through tubing set on a packer at a depth of 4,818 feet, 122 feet above the top of the injection interval. The well will require a packer depth exception.
  - f. A H-5 mechanical integrity test performed on the well four days prior to the hearing on December 4, 2009 and witnessed by Kilgore District personal verify the well has no known mechanical issues.

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7. Setting the packer at a depth of 4,818 feet will not endanger water quality or mineral resources.
  - a. The additional 22 feet is not productive of oil or gas, and is not a useable quality water zone requiring protection.
  - b. The casing along the 22 foot section is protected with cement. A cement bond log shows cement across the 22 foot section.
  - c. Open hole logs of the area around the 22 foot section shows the geologic formation is a shaley, low porosity interval.
  - d. The permit amendment only seeks to add commercial authority with no changes to volumes or injection pressures.
8. There are numerous oil or gas wellbores within a 1/2 mile radius of the disposal well. The majority of the wells produce oil from the Panola Field at a depth of 2,400 feet and do not penetrate any zones below 2,600 feet.
9. The Bethany SWD No. 1 currently receives produced saltwater from Exco's Cotton Valley operating area in Panola, Harrison Counties and Louisiana and frac water from Exco's Haynesville operating area in Louisiana.
10. Exco and other operators are funding the construction of the Charis pipeline which will transport produced and frac water from Haynesville wells in Desoto Parish, Louisiana to the Joaquin, Texas area for commercial disposal.
11. Exco will redirect most of the frac water from their Louisiana Haynesville wells from the Bethany SWD No. 1 to the Charis Pipeline, reducing disposal volumes to the Bethany SWD No. 1. Use of the Charis Pipeline will decrease truck traffic, vehicle emissions and increase public safety overall.
12. Due to increasing horizontal development of the Haynesville Shale, Exco and other operators in the area consider disposal capacity a resource that should be made available.
13. Allowing other operators to use the Bethany SWD No. 1 for disposal will extend the useful life of the well. Preserving the disposal capacity of existing disposal wells may prevent or delay the drilling of new disposal wells.
14. Use of the Bethany SWD No. 1 for commercial purposes should not increase truck traffic on Highway 79 or the private access road as the current volume (2,500 BWPD) and truck traffic should remain the same as only the source of disposal water will change.

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15. State Highway 79 is a moderately traveled four lane highway and the evidence does not show that approval of the proposed facility will increase truck traffic or adversely impact road safety in the area.
16. Use of the Bethany SWD, Well No. 1 as a commercial disposal well is in the public interest to promote this development by providing a safe and economic means of disposal of the fluids associated with production.
17. There is no evidence in the record indicating groundwater contamination has occurred as a result of operations at the Bethany SWD, Well No. 1.
18. Exco Production Company LP has an active P-5 on file with the Commission, with \$250,000 financial assurance. There are no past or pending enforcement actions against Exco.

### **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 of the proposed commercial injection well is in the public interest.
4. The use of the proposed commercial 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. Exco Production Company LP has made a satisfactory showing of financial responsibility to the extent required by Section 27.073 of the Texas Water Code.
7. Exco Production Company LP 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.

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**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.

Respectfully submitted,

Andres J. Trevino  
Technical Examiner

James M. Doherty  
Hearings Examiner