



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 01-0277585

THE APPLICATION OF MJA RESOURCES, LLC FOR A COMMERCIAL PERMIT TO DISPOSE OF OIL AND GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS, BAGGS LEASE WELL NO. 1SW, STOCKDALE NE (EDWARDS) FIELD, WILSON COUNTY, TEXAS

HEARD BY: Andres J. Trevino P.E., Technical Examiner
Terry Johnson, Hearings Examiner

APPEARANCES:

APPLICANT:

John K. Hicks
Gary Moy

REPRESENTING:

MJA Resources, LLC

PROTESTANTS:

Ann Skloss
Diane Savage
Jimmy Stevens
Rochelle Rackham
Roland R. Baker

Self
Wilson County Water Action Project
Self
Self
Rochelle Rackham

PROCEDURAL HISTORY

Application Filed:	May 8, 2012
Request for Hearing:	July 12, 2012
Notice of Hearing:	August 17, 2012
Date of Hearing:	September 24, 2012
Proposal For Decision Issued:	February 26, 2013

EXAMINERS' REPORT AND PROPOSAL FOR DECISION

STATEMENT OF THE CASE

MJA Resources, LLC (MJA Resources) requests authority pursuant to Statewide

Rule 9 to operate Well No. 1SW on its Baggs Lease in Wilson County as a commercial disposal well. This application is protested by numerous adjacent landowners to the tract on which the proposed disposal well will be located.

DISCUSSION OF THE EVIDENCE

Applicant's Evidence

The subject well is currently a plugged dry hole drilled and plugged in April 1982. The well was drilled to a depth of 9,000 feet to test the Edwards formation. MJA Resources proposes to reenter and complete the well into a saltwater disposal well. MJA Resources has been issued a permit to re-enter the dry hole by the Commission on April 28, 2012. The well has 3,450 feet of 8⁵/₈" surface casing with 1,450 sacks of cement circulated from the casing shoe to the ground surface. MJA Resources will reenter the plugged dry hole and set 9,000 feet of new 5¹/₂" casing. The 5¹/₂" casing will be cemented with 600 sacks of cement with the top of cement calculated to reach a depth of 5,000 feet. (See Wellbore Diagram attachment). A cement bond log will be run to determine the actual top and quality of cement prior to putting the well into service. The Commission's Groundwater Advisory Unit recommends that usable-quality ground water be protected to a depth of 3,400 feet. The GAU further requires that fresh water contained in the interval from the land surface to a depth of 200 feet and the Carrizo from a depth of 850 feet to 1,700 feet must be isolated from water in underlying and overlying beds.

The proposed injection will be through 2⁷/₈" tubing set on a packer at approximately 5,960 feet, but no higher than 100 feet above the top of the injection interval. The proposed injection interval is the Edwards formation, the top of which is expected to occur at about 6,000 feet. The proposed injection interval is between 6,000 and 9,000 feet. The estimated depth of the Edwards is based on the log of the proposed well, the Clayton Williams, Jr. - Irene Robbins No. 1. The log was run to a depth of 7,750 feet. The log shows there is approximately 2,050 feet of Midway Shale separating the top of the injection interval and the base of the usable quality water. Additionally, there is 80 feet of Eagle Ford Shale, above the Edwards. The proposed maximum injection volume is 20,000 BWPD. The proposed maximum injection pressure is 2,500 psig.

There are no wells within a 1 mile radius of the proposed disposal well.

Due to area landowners' concerns of possible water-well contamination, MJA Resources conducted a water-well study in the area. They used public records (Texas Department of Licensing & Regulation) to identify seven water wells within one mile of the proposed disposal well. The wells are used for livestock and domestic purposes. The water well depths range from 240 feet to 420 feet, indicating all area water wells are exploiting only the shallowest groundwater resources. Because there is a rural water supply system in the area, most water well water is used for livestock and not for domestic consumption. The proposed Baggs Well No. 1SW has 3,450 feet of 8⁵/₈" surface casing with cement

circulated from the casing shoe to the ground surface. The proposed top of the injection interval is at 6,000 feet or 5,500 feet below the deepest water well in the area.

The design of the facility is based on MJA Resources's experience operating past disposal facilities. The proposed facility will consist of a 467 foot by 467 foot location pad of 5 acres in size, with eight 500 bbl saltwater tanks, one 100 bbl gun barrel separator, two 400 bbl oil tanks, one 500 bbl pump tank and an injection pump. All tanks will sit inside a secondary containment basin. A secondary containment berm approximately two feet high and two feet wide and will surround all tanks to contain any spills. All surface areas which are expected to handle fluids will be constructed in accordance with the Commission's requirements for commercial disposal facilities designed to prevent pollution. The disposal fluids will be unloaded into the water tanks. The fluids will be pumped to the gun barrel to settle and separate any solids or oil from the injection water. Any oil recovered will be pumped into the oil tanks. The remaining water will be transferred into the pump tank where it will then be pumped down the disposal well. The entire location pad will have a built-up caliche or limestone rock base. The pad is large enough to accommodate numerous 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 538 onto the southwest corner of the property. MJA Resources will comply with all the standard provisions found in a commercial disposal permit designed to prevent pollution from activities associated with the surface facilities.

MJA Resources 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. MJA Resources believes that additional disposal facilities are necessary to accommodate the active drilling which generates large quantities of mineralized fluids. MJA Resources presented four letters of support from potential customers stating they had a need and interest in using the proposed disposal facility. MJA Resources received the letters from four water hauling companies, J.R. Cotter, Inc., Radack Services Inc. dba RSI, Viking Vacuum Resources, LLC and Supreme Vacuum Services, that haul and dispose of salt water in Wilson and surrounding counties. The trucking companies indicated they would welcome and support the additional disposal capacity the proposed facility would provide. All trucking companies stated in their letters they experience long wait times and congestion at existing commercial disposal facilities and that additional disposal capacity will reduce truck travel, reduce truck breakdowns, reduce vehicular accidents, reduce fuel expenses and reduce roadway damages.

The Eagle Ford Shale trend is a large trend extending from the Texas/Mexico border to Burleson County near College Station, TX. MJA Resources presented a Commission map of the Eagle Ford Shale play that shows that as of July 2012, there were 4,397 permitted wells, 1,690 completed oil wells and 710 completed gas wells on the Commission's proration schedule. The Commission's map shows Wilson County is just north of Karnes County, which is one of the most active counties for Eagle Ford horizontal drilling. The Eagle Ford Shale is 80 feet thick in the vicinity of the proposed disposal well.

There are Eagle Ford Shale wells being drilled in the southeastern portions of Wilson County and a few have been drilled north of the disposal well. Drilling permit data shows that in fiscal year 2010, from September 2010 till September 2011, 77 wells were permitted in Wilson County, the majority for Eagle Ford Shale wells. In fiscal year 2011, from September 2011 till September 2012, 100 wells were permitted in Wilson County, again, the majority are Eagle Ford Shale wells. MJA Resources stated they would not engage in permitting and building the facility if they were not confident the facilities' services would be in demand.

MJA Resources, LLC has an active P-5 on file with the Commission, with \$25,000 financial assurance letter of credit. There are no active enforcement actions against MJA Resources.

Notice of the subject application was published in *Wilson County News*, a newspaper of general circulation in Wilson County, on April 11, 2012. A copy of the application was mailed on May 5, 2012, to the Wilson County Clerk's Office and the offsetting surface owners. There are no operators within ½ mile of the proposed well. David Baggs and Catherine Hilton own the surface of the 75-acre tract on which the well is proposed.

Protestant's Evidence

The Protestants were present to voice their concerns over the proposed disposal well. The Protestants are adjacent landowners, farmers, ranchers and mineral owners to the tract on which the proposed disposal well is located. The Protestants gave four main reasons they believe the Commission should deny the permit application. First, the Protestants believe Notice was not properly given as the information on the permit application is incorrect. The W-14 application states, that disposal will occur in the Edwards formation from 6,000 feet to 9,000 feet. Their geologic expert identified the Edwards formation from 6,000 feet to 6,635 feet. Second, the proposed disposal well will be near seasonal creeks and ponds. Any spills from the site could run off and enter the creeks and ponds. Third, the permit will be trespassing on the mineral rights of the mineral owners in the area. By disposing of fluids in the well, the Protestants fear their mineral estates will be damaged as they may become less attractive to develop. The Protestants are concerned over protecting the Eagle Ford Shale and the Pearsall Shale. And fourth, the well is not designed with the best technology and to the degree other wells are designed. The Protestants believe the cement behind the surface casing is too old as it was placed in the well 30 years ago in 1982. The Protestants further believe no disposal wells should be approved in the State of Texas as technology exists that can cost effectively treat and reuse produced water. The Protestants believe the State of Texas should require the frac and produced water to be treated and reused, especially during the existing drought. The Protestants did not present any evidence of the nature of the recycling technology.

The Protestants other concerns relate to property value losses, the amount of truck traffic that will be traveling near their properties, truck safety, trucks exceeding weight limits on less than ideal county roads, truck spills at low water crossings, and a fault line they

believe run across the Glen Rose formation. The Protestants state that the county roads are narrow with no shoulders, have many sharp turns and low water crossings near the proposed facility. The area roads have frequent travel by farm tractors with implements, tractors pulling large rolls of hay and school buses. The Protestants understand the Railroad Commission does not consider loss of property values, economic impact, or traffic impacts when evaluating disposal well applications, but they believe they should. The Protestants have concerns about the potential for surface and groundwater contamination as many area landowners have water wells on their properties that they use for supplying their livestock with water and use the water for domestic purposes. Although there is a rural water supply system, many landowners use their private water wells for domestic purposes.

EXAMINERS' OPINION

The examiners believe that this application should be approved. The Baggs No. 1SW will be completed in a manner which will confine disposal fluids to the proposed disposal interval in the Edwards. Surface casing has been set and is cemented through the base of usable quality water. There was no evidence that the age of the cement (30 years) could cause groundwater contamination. There are hundreds of thousands wells throughout the State that are older than 1982 with no evidence presented at the hearing that the age of the cement has caused groundwater contamination. MJA Resources will pressure test the surface casing before drilling out of the bottom plug to verify the integrity of the surface casing and cement. The longstring casing will be new and will be cemented to a depth of 5,000 feet to prevent migration from the injection interval. A cement bond log will be run to verify the top of the cement behind the longstring. There are no oil or gas wells within the 1 mile radius of review, therefore there are no wellbores that could pose a threat to groundwater or confinement of injected fluids in the Edwards formation.

There was no evidence presented at the hearing that identified any faults in the area which could contribute to loss of fluid confinement. There was no evidence submitted by the Protestants, about the location or the depth of the Glen Rose fault that the examiners could evaluate or form an opinion on. A fault could be an issue if the fault crossed the disposal interval and the displacement would allow the fluids to leave the disposal formation and enter into a second permeable formation. Further, there is approximately 2,000 feet of Midway Shale, that is impervious to fluid flow, that separates the disposal interval (the Edwards) and the base of the usable quality water at a depth of 3,400 feet.

There is adequate separation between the Edwards and the potentially productive formations the Protestants are concerned may be damaged. There will be 170 feet separating the base of the Eagle Ford to the top of the Edwards. There will be 1,080 feet between the base of the Edwards and the top of the Pearsall Shale. There are many examples in the Eagle Ford Shale area and throughout the State, where producing oil wells are drilled adjacent to existing disposal wells. With the proper safeguards in place, there should be no damage to the mineral estate. MJA Resources had agreed in the hearing to limit injection to the Edwards formation only. The proposed permit will limit injection to a depth from 6,000 feet to 6,635 feet instead of the applied for interval of 6,000 feet to 9,000 feet. MJA Resources did not consider the restriction adverse. MJA Resources will build the

surface facilities in accordance with the Commission's requirements for commercial disposal facilities designed to prevent pollution. The tanks will have alarms and automatic shut off devices to prevent the tanks from over topping. Berms around the tanks will contain any spills from the tanks and prevent any spill from entering the surrounding creeks and ponds. It is highly unlikely the operation of the Baggs No. 1SW will result in the contamination of surface or subsurface water or will endanger or injure any oil, gas, or other mineral formation.

Approval of the requested permit is in the public interest because it will promote the development of the Eagle Ford Shale in Wilson County and adjacent counties. The southeastern portion of Wilson County and the majority, if not all, of Karnes County is believed to be productive due to the widespread presence of the Eagle Ford Shale. Placing a disposal well at the edge of the expanding Eagle Ford development will relieve disposal injection demands in Karnes County and will help distribute the disposal fluids through out the area of development. This disposal well and others will be needed to accommodate current and future disposal needs. Drilling permits issued in Wilson County for Eagle Ford Shale wells have increased from 77 drilling permits in 2010 to 100 drilling permits in 2012. 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.3d 619, 630 (Tex. 2011). 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 *Wilson Country News*, a newspaper of general circulation in Wilson County, on April 11, 2012.
2. The Baggs No. 1SW is currently a plugged dry hole. MJA Resources plans to reenter the well to a maximum depth of approximately 9,000 feet and set 9,000 feet of new 5½" longstring casing. The top of the Edwards occurs at approximately 6,000 feet.
3. The maximum requested injection volume is 20,000 barrels of water per day and the maximum requested surface injection pressure is 2,500 psi. The requested disposal interval is the Edwards formation between approximately 6,000 and 9,000 feet.

4. The Baggs No. 1SW 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 has 3,450 feet of 8⁵/₈" surface casing cemented to surface.
 - b. The subject well will have approximately 9,000 feet of new 5¹/₂" casing, cemented with 600 sacks of cement with a top of cement calculated to be at 5,000 feet. A cement bond log will be run to verify the top of cement behind the longstring.
 - 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 3400 feet in the area of the proposed well.
5. There are no wells within one mile radius of the proposed disposal well.
6. MJA Resources conducted a water-well study in the area and found seven water wells within one mile of the proposed disposal well. The wells are used to supply livestock, and for domestic purposes. The water-well depths range from 240 feet to 420 feet, indicating all area water wells are exploiting only the shallowest ground water sources.
7. The MJA Resources Baggs facility will incorporate all required standard containment design features for commercial disposal facilities designed to prevent pollution.
8. There was no evidence presented at the hearing of any defect in the cement in the surface casing that could allow groundwater contamination. MJA Resources will pressure test the surface casing before drilling out of the bottom plug to verify the integrity of the surface casing and cement.
9. There was no evidence presented at the hearing that identified the location or depth of the Glen Rose fault in the area which could contribute to loss of fluid confinement.
10. There is adequate separation between the Edwards and the potentially productive formations the Protestants are concerned may be damaged.
 - a. There will be 170 feet separating the base of the Eagle Ford to the top of the Edwards.
 - b. There will be 1,080 feet between the base of the Edwards and the top of the Pearsall Shale.

11. There are many examples in the Eagle Ford Shale area and throughout the State of Texas, where producing oil wells are drilled adjacent to existing disposal wells.
12. The Eagle Ford Shale trend is a large trend extending from the Texas/Mexico border to Burleson County, TX.
 - a. As of July 2012, there are 4,397 permitted wells, 1,690 completed oil wells and 710 completed gas wells on the Commissions' proration schedule for the Eagle Ford Shale.
 - b. Drilling permits issued in Wilson County for Eagle Ford Shale wells have increased from 77 drilling permits in 2010 to 100 drilling permits in 2012.
 - c. The Commission's map shows Wilson County is just north of Karnes County, which is one of the most active counties for Eagle Ford horizontal drilling.
13. MJA Resources received letters of support from J.R. Cotter, Inc., Radack Services Inc. dba RSI, Viking Vacuum Resources, LLC and Supreme Vacuum Services, which haul and dispose of salt water in Wilson County and surrounding counties. All trucking companies have experienced long wait times and congestion at existing commercial disposal facilities in the area.
14. Due to increasing development of the Eagle Ford Shale with horizontal drilling in this area, large quantities of produced water must be disposed of. Use of the Baggs No. 1SW 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.
15. Having a disposal facility close to the horizontal wells will reduce disposal cost, and increase hydrocarbon recovery.
16. MJA Resources, LLC has an active P-5 on file with the Commission, and \$25,000 letter of credit as 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. MJA Resources, LLC has made a satisfactory showing of financial responsibility to the extent required by Section 27.073 of the Texas Water Code.
7. MJA Resources, 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.

Respectfully submitted,



Andres J. Trevino P.E.
Technical Examiner



Terry Johnson
Hearings Examiner

Wellbore Schematic PROPOSED

LEASE NAME : ' **BAGGS** # 1SW
 LOCATION : Conception Losoya, Survey A-195
 2023' FNEL & 2395' FSEL of Survey
 COUNTY/ST : Wilson Co., Texas

