

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION**

**IN THE MATTER OF THE HEARING CALLED
BY THE OIL CONSERVATION COMMISSION FOR
THE PURPOSE OF CONSIDERING:**

**CASE NO. 14411 (*DE NOVO*)
ORDER NO. R-13265-D**

**APPLICATION OF AGUA SUCIA, LLC TO
REINSTATE ADMINISTRATIVE ORDER SWD-559
FOR A SALT WATER DISPOSAL WELL, LEA
COUNTY, NEW MEXICO.**

ORDER OF THE COMMISSION

BY THE COMMISSION:

This case came on for hearing at 9:00 a.m. on November 4, 2010 and December 9, 2010, at Santa Fe, New Mexico, before the Oil Conservation Commission.

NOW, on this 9th day of December, 2010, the Commission, having considered the testimony and the record,

FINDS THAT:

(1) Due public notice has been given, and the Commission has jurisdiction of this case and of the subject matter.

(2) Agua Sucia, LLC ("applicant") seeks authority to reinstate Division Administrative Order SWD-559, approved on May 19, 1994 for disposal of produced salt water into the Bone Spring formation at depths of 9716-10240 feet subsurface in the Government E Well No. 1 (API No. 30-025-23708) (the "Well"), located 610 feet from the South line and 1880 feet from the West line of Section 25, Township 19 South, Range 34 East, N.M.P.M., Lea County, New Mexico.

(3) The Well is owned and operated by applicant. Applicant's rights are limited to the right to use the Well for the purpose of disposing of salt water into the Well at depths from 5250 feet subsurface through the base of the Morrow formation (as found at 13,500 feet subsurface in the West Pearl State Well No. 1, located 660 feet from the North line and 560 feet from the East line of Section 2, Township 20 South, Range 34 East, N.M.P.M., Lea County, New Mexico).

(4) Applicant presented evidence that:

(a) The Well was drilled in 1971 by The Superior Oil Company, and produced from the Bone Spring formation for a number of years. Armstrong Energy Corporation ("Armstrong") subsequently bought the Well and the lease on which it is located.

(b) In 1994 Armstrong sold the Well to Subsurface Water Disposal, Inc., which obtained Division Administrative Order SWD-559. In the assignment to Subsurface Water Disposal, Inc., Armstrong reserved rights to oil, gas, and hydrocarbon substances and other minerals which might be produced from the Well.

(c) The Well was owned and operated as a salt water disposal well from 2001-2008 by Louray Oil Company, LLC. At some time there was a casing failure in the Well in the Queen formation. The Well was shut in during January 2008, and there has been no injection into the Well since then. Under Division regulations, injection authority lapsed because there was no injection into the Well for more than one year.

(d) The Well has an effective cement sheath extending 5873 feet above the injection interval, measured from the top perforation to the top of the 4" liner. This zone isolation was accomplished by two repair attempts:

(i) The first repair attempt, in January-February 2008, placed 760 sacks of cement, pumped from the surface, in the annular space between the 8-5/8" intermediate casing string and the 5-1/2" production string; and

(ii) The second repair, in March-April 2009, installed new 4" flush-joint liner from 9597 feet to 3843 feet and cemented the entire length. Subsequent to the successful repair of the well, new injection tubing and a packer were installed. The well had a successful mechanical integrity test on April 14, 2009 witnessed by the Division.

(e) The integrity of the Well is evidenced by the radial cement bond log run on the Well on July 5, 2010. The supervisor of the Hobbs District Office stated to applicant that "the Well is technically sound and ready for injection."

(5) In order to insure that the well is sound, applicant has proposed that it conduct a combination of radioactive tracer and temperature surveys. Applicant's expert testified that the combination survey has been well proved in identifying fluid exit from the wellbore and qualitative placement of that fluid in the surrounding formations for

more than 40 years. The tracer, conducted in real-time, is performed by injecting a small amount of radioactive isotope directly into the fluid flow while the well is injecting. The intensity of the radioactive "slug" is recorded and monitored as it diminishes while exiting the wellbore and also as it is pumped into the formation. If the fluid channels up or down behind the pipe from the point of exit, this is also detected and can be seen to also diminish as it gradually washes away. The value and necessity of the temperature is to "see" beyond the measurable scope of the radioactive tracer. The temperature of the injected fluid generally cools the wellbore and formation around it. Where a larger body of fluid is emplaced, the reduced temperature is maintained for longer durations. Where fluid volumes are less, the temperature recovers more quickly, such as in a channel behind pipe. Therefore, the method includes not only a temperature curve conducted while the well is injecting but also "decay" temperature curves, run at regular intervals after injection ceases. The decay curves are generally run at 30 minutes, 1 hour and 2 hours after the well is shut in. Longer times may be used but typical needs for determining fluid placement are usually satisfied in these time ranges. The rate of temperature recovery is compared between the resulting temperature curves and when read in combination with the tracer results, a very reliable qualitative analysis of fluid injection can be derived.

(6) Applicant had filed an administrative application to reinstate Division Administrative Order SWD-559, to which Armstrong objected. The matter was set for hearing, and the Division denied the application. Armstrong has now reviewed the radial cement bond log run on the Well on July 5, 2010 (conducted after the Division hearing in this case), and has determined that the Well has been properly repaired. It has withdrawn its objection.

(7) The evidence shows that the Well has been properly repaired and injection may be re-authorized without adverse effect on offsetting wells.

(8) Approval of the subject application will prevent waste, and will not violate correlative rights.

IT IS THEREFORE ORDERED THAT:

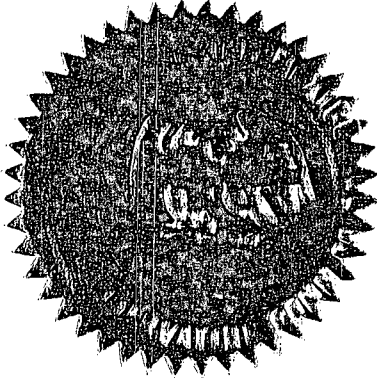
(1) The application of Agua Sucia, LLC to reinstate Division Administrative Order SWD-559 is hereby approved.

(2) Within ten (10) days of commencing injection applicant shall conduct a combination of radioactive tracer and temperature surveys. Within twelve (12) months of the completion of the initial survey, applicant shall conduct a second survey. The Division's Hobbs Office and Armstrong Energy Corporation shall be notified of the dates and times the surveys will be done, and shall be provided with all results of the surveys.

(3) Jurisdiction of this case is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



A handwritten signature in cursive script, appearing to read "Jami Bailey".

JAMI BAILEY, CPG, Member

A handwritten signature in cursive script, appearing to read "William Olson".

WILLIAM OLSON, Member.

A handwritten signature in cursive script, appearing to read "Mark E. Fesmire".

MARK E. FESMIRE, P.E., Chair

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