

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

**APPLICATION OF DEVON ENERGY PRODUCTION  
COMPANY L.P. TO REVOKE THE INJECTION  
AUTHORITY GRANTED BY ADMINISTRATIVE  
ORDER SWD-640, LEA COUNTY, NEW MEXICO.**

RECEIVED OGD  
2016 FEB 16 P 4:03 PM  
CASE NO. 15397

**OXY'S OPPOSITION TO MOTION TO SHUT IN OXY'S DISPOSAL WELL**

After the Division hearing on December 3, 2015, to address pending motions, the Examiner issued an oral ruling denying Devon's request to shut-in the Diamond State 34 State Well No. 1 (No. 30-025-33387), which has been disposing of produced water at a depth of 5335-5748 without incident since 1997 under Corrected Administrative Order SWD-640. The Division reached this conclusion in part because Division records reflect that the following events took place after Devon reported a pocket of pressured water on September 3rd while drilling at a depth of 1,800 feet:

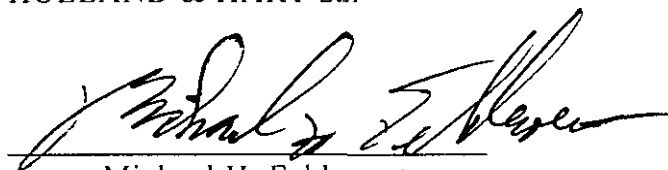
- On September 23rd the Division "researched this well and the area of review," found "all wells around the area appear to be plugged or cemented adequately" and determined Oxy was "OK" to move the packer and continue to use the well for disposal. *See* Attachment 1.
- On October 2, 2015, a mechanical integrity test, including a Bradenhead Test, was conducted on Oxy's well with oversight by Division Staff Manager Bill Sonnamaker. The records demonstrate no issues with the well and that it "tested good." *See* Attachments 2 and 3.

Devon is now back before the Division with the same request to shut-in Oxy's disposal well, re-armed only with the conclusory allegations from a completions engineer who contends "continued injection could have near term negative affects to both Devon and the State of New Mexico." *See* Verified Statement of Roy Hathcock at ¶ 7.

As reflected in the attached affidavit of Thomas Clifford, Devon's concerns about "near term negative affects" from Oxy's well are not supported by the evidence and nothing suggests water is migrating out of the approved disposal zone. See Attachment 4. Mr. Hathcock statements are merely theories unsupported by substantive evidence. These theories do not warrant reversing the decision by the Division in 1997, nor the conclusions reached by the Division in September and December of 2015, that it is "OK" for Oxy to continue utilizing this well for disposal purposes pending a hearing on Devon's migration theories.

Respectfully submitted,

HOLLAND & HART LLP

A handwritten signature in black ink, appearing to read "Michael H. Feldewert", written over a horizontal line.

Michael H. Feldewert  
Jordan L. Kessler  
Post Office Box 2208  
Santa Fe, NM 87504-2208  
505-988-5521  
505-983-6043 Facsimile

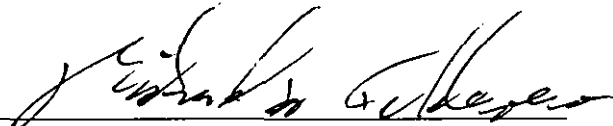
ATTORNEYS FOR OXY USA, INC.

RECEIVED OGD  
2016 FEB 16 P 4:04

**CERTIFICATE OF SERVICE**

I hereby certify that on February 16, 2016, I served a copy of the foregoing document to the following counsel of record via Electronic Mail to:

James Bruce  
Post Office Box 1056  
Santa Fe, New Mexico 87504  
(505) 982-2043  
jamesbruc@aol.com

  
\_\_\_\_\_  
Michael H. Feldewert

**Gonzales, Elidio L, EMNRD**

---

From: Hill, Larry, EMNRD  
Sent: Friday, September 24, 2010 12:52 PM  
To: Gonzales, Elidio L, EMNRD  
Subject: FW: OXY USA Inc. - Diamond 34 State #1 - SWD-640 - 30-025-33387

E.L.;

Sounds like OXY is OK! To us this well as is. Please respond and let me know.

LARRY W. 'BUDDY' HILL  
DISTRICT SUPERVISOR  
EMNRD - OCD DISTRICT 1  
1625 N. FRENCH DRIVE  
HOBBS, NM 88240  
OFFICE: 575-393-6161 X-102  
CELL: 575-370-3180  
FAX: 575-393-0720  
LARRY.HILL@STATE.NM.US

-----Original Message-----

From: David\_Stewart@oxy.com [mailto:David\_Stewart@oxy.com]  
Sent: Friday, September 24, 2010 9:49 AM  
To: Jones, William V., EMNRD; Gonzales, Elidio L, EMNRD; Hill, Larry, EMNRD  
Subject: RE: OXY USA Inc. - Diamond 34 State #1 - SWD-640 - 30-025-33387

Thank You I appreciate everyone's help on this. When you get a chance please let us know how we should proceed.

Thanks,  
David Stewart  
Sr. Regulatory Analyst  
OXY Permian  
432-685-5717  
Fax-432-685-5742

-----Original Message-----

From: Jones, William V., EMNRD [mailto:William.V.Jones@state.nm.us]  
Sent: Friday, September 24, 2010 10:33 AM  
To: Gonzales, Elidio L, EMNRD; Hill, Larry, EMNRD  
Cc: Stewart, David  
Subject: RE: OXY USA Inc. - Diamond 34 State #1 - SWD-640 - 30-025-33387

Hello E.L.

David Stewart forwarded this issue by us yesterday at your request or at the request of one of your inspectors.

Today, I researched this well and the area of review.  
The Lamar is at 5094 feet and the tight Castile is above this. The upper Bell Canyon was tested in an offset well and determined to be non-productive. This well was drilled to test the Bone Spring and the Brushy Canyon - which is below the interval being used for disposal. I don't think there is a chance this Bell Canyon is productive.

**ATTACHMENT**

The SWD-640 permitted intervals 5100 to 6516 for disposal and all notices were sent prior to this approval. Apparently POGO/OXY has only used the interval 5560 to 5748 for disposal and I see no evidence of any request for pressure increase. This area is not in the R-111-P potash and is south of the Reef. All wells around the area appear to be plugged or cemented adequately.

David Brooks is out today so I cannot run this by him for a legal review (of whether the permitted interval shrunk because it was never used), but the technical evidence seems overwhelming.

It looks fine to me for the packer to be set up to 5100 feet (or even up to 100 feet higher (5000 feet)) if needed.

Let me know if you call OXY and approve this packer setting depth and I will copy my documents into the permit file.

Thanks for letting me review this.

Will Jones  
New Mexico  
Oil Conservation Division  
Images Contacts

-----Original Message-----

From: David\_Stewart@oxy.com [mailto:David\_Stewart@oxy.com]  
Sent: Thursday, September 23, 2010 3:21 PM  
To: Jones, William V., EMNRD  
Subject: OXY USA Inc. - Diamond 34 State #1 - SWD-640 - 30-025-33387

Mr. Jones,

This is the well we discussed, the original permit was approved for the interval @ 5100-6516'. We have been currently injecting into the interval @ 5560-5748' w/ the pkr @ 5406' (which was set by Pogo back in 1999). When they perforated the tubing @ 5335' they also perforated the casing. This perf is part of the Bell Canyon where the well was already injecting. They had set the pkr @ 5317'.

I have attached a plat showing the 1/2 mile AOR, there is no Delaware production and besides the current injection well, the only wells were a old P&A well (3002520759) and a well that Pogo permitted and let the APD expire (3002533389). Do we need to pursue the AOR further? I have also attached a copy of the workover that was done.

I apologize if this is confusing, but we would appreciate your help on this.

Thanks,  
David Stewart  
Sr. Regulatory Analyst  
OXY Permian  
432-685-5717  
Fax-432-685-5742

Submit 1 Copy To Appropriate District Office  
District I - (575) 393-6161  
1625 N. French Dr., Hobbs, NM 88240  
District II - (575) 748-1283  
811 S. First St., Artesia, NM 88210  
District III - (505) 334-6178  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV - (505) 476-3460  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources

Form C-103  
Revised July 18, 2013

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025-33357
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <u>SWD</u>		5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
2. Name of Operator OXY USA Inc. /		6. State Oil & Gas Lease No.
3. Address of Operator P.O. Box 50250 Midland, TX 79710		7. Lease Name or Unit Agreement Name <u>Diamond 34 State</u>
4. Well Location Unit Letter <u>N</u> : <u>990</u> feet from the <u>South</u> line and <u>1650</u> feet from the <u>West</u> line Section <u>34</u> Township <u>22S</u> Range <u>33E</u> NMPM County <u>Lea</u>		8. Well Number <u>1</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) <u>3576</u>		9. OGRID Number <u>16696</u>
		10. Pool name or Wildcat <u>SWD Bell Canyon Cherry Canyon</u>

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐  
DOWNHOLE COMMINGLE ☐  
CLOSED-LOOP SYSTEM ☐  
OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐

OTHER: Test Tbg, Repl PKR, M/T ☒

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15. MAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

9/9/15, MIRU, NDWH, NU BOP. RIH w/ WL & tag up @ 4312', shoot drain holes @ 5292', Release pkr & POOH, scan & test tbg. RIH w/ 2-3/8" IPC tbg & Arrowset 1X pkr & set @ 5316'. Circ hole w/ pkr fluid, RIH w/ blk plug, pressure test to 700#, tested good, latch back on to pkr, test tbg to 1500#, tested good, bled down, pressure test csg to 500# for 30 min, tested good. ND BOP, NUWH, RDPU 9/16/15. 10/1/15 RU pump truck, pressure test to 580# for 30 min, tested good. Bill Sonnamaker-NMOCD witnessed test.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE David Stewart TITLE Sr. Regulatory Advisor DATE 11/19/15

Type or print name David Stewart E-mail address: david\_stewart@oxy.com PHONE: 432-685-5717

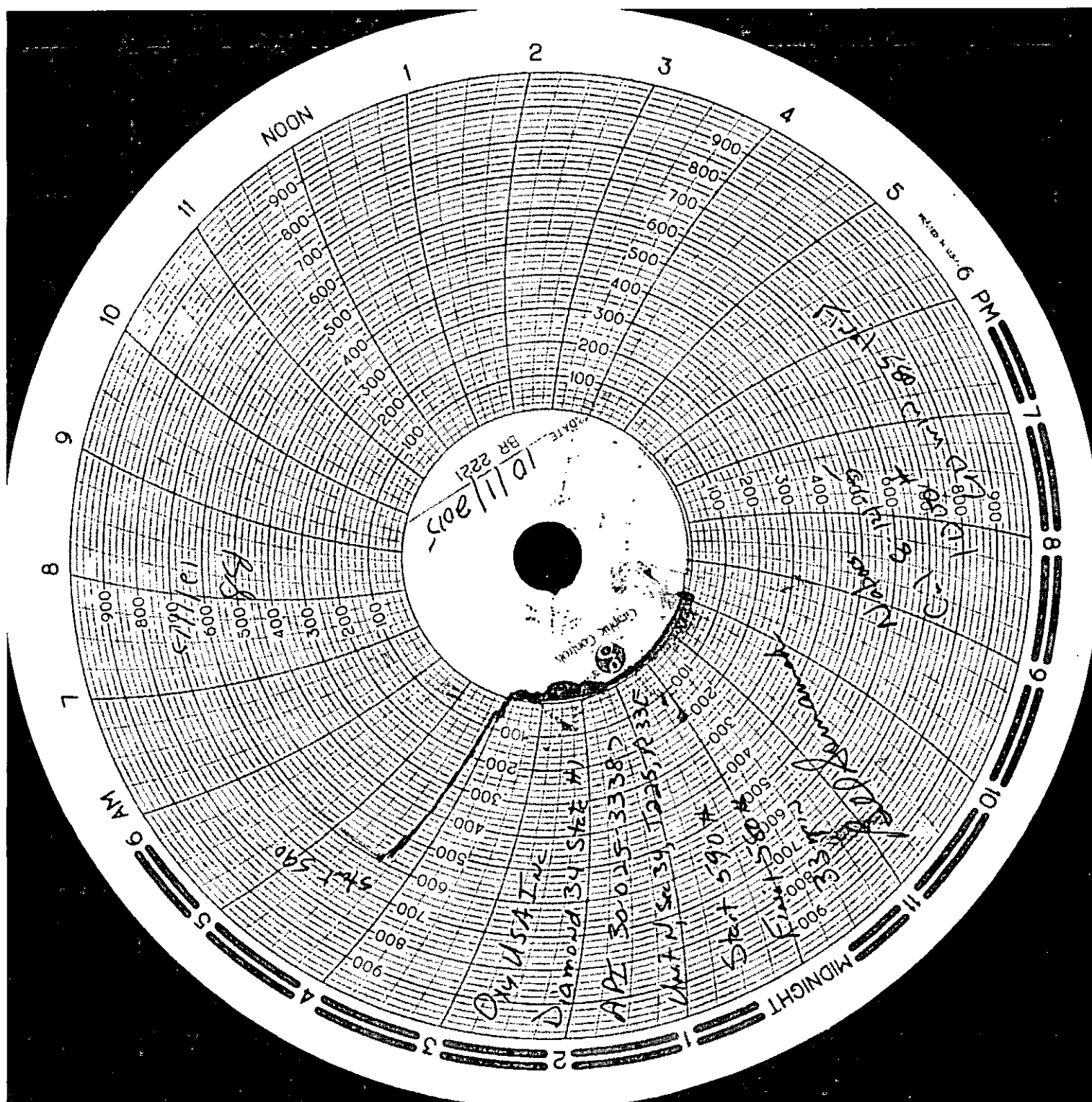
For State Use Only

APPROVED BY: Bill Sonnamaker TITLE Staff Manager DATE 12/1/15

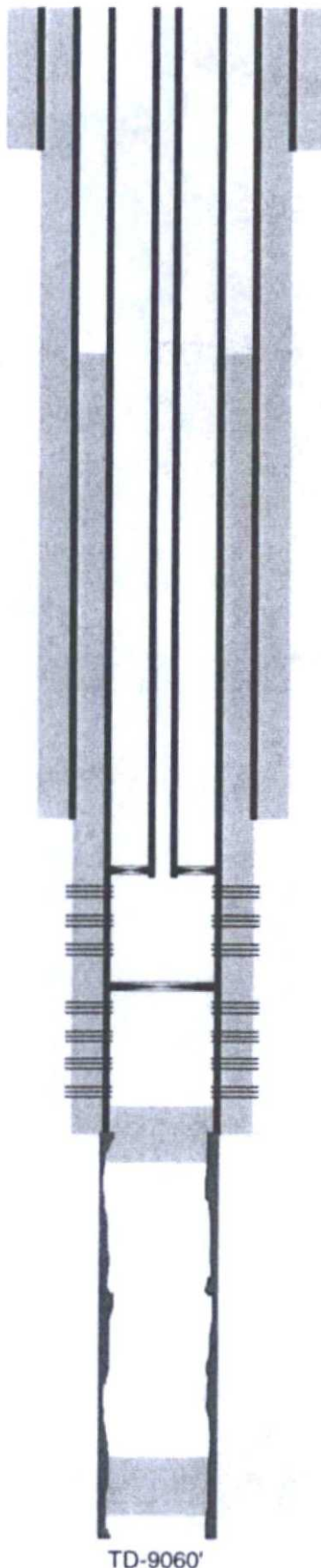
Conditions of Approval (if any):

ATTACHMENT

DEC 02 2015



OXY USA Inc.  
Diamond 34 State #1  
API No. 30-025-33387



17-3/4" hole @ 823'  
10-3/4" csg @ 823'  
w/ 785sx-TOC-Surf-Circ

9-7/8" hole @ 4830'  
7-5/8" csg @ 4830'  
w/ 1254sx-TOC-Surf-Circ

2-3/8" tbg & pkr @ 5316'

\*2010-Perfs @ 5335-5364'  
1999-Perfs @ 5435-5748'

1999-CIBP @ 5930'  
1999-Perfs @ 5980-6126'  
1997-Perf @ 6180-6516'

PB-6555'

6-3/4" hole @ 9060'  
4-1/2" csg @ 6613'  
w/ 610sx-TOC-2195'-Calc

\*2010-Perf tbg to pull & test, accidentally  
perforated thru to csg, rec NMOCD  
approval to continue.

50sx @ 8990-8750'

TD-9060'

B8 12/11/15



State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division Hobbs District Office

BRADENHEAD TEST REPORT

Operator Name <b>Oxy USA Inc</b>		API Number <b>30-025-33387</b>	
Property Name <b>Diamond 34 state #</b>		Well No. <b>1</b>	

Surface Location									
UL - Lot <b>N</b>	Section <b>34</b>	Township <b>22S</b>	Range <b>33E</b>		Feet from <b>990</b>	N/S Line <b>S</b>	Feet From <b>1650</b>	E/W Line <b>W</b>	County <b>Lea</b>

Well Status								
TA'D WELL YES	NO	SHUT-IN YES	NO	INJECTOR INJ	<b>SWB</b>	PRODUCER OIL	GAS	DATE <b>10-1-15</b>

*Active not injecting*  
**OBSERVED DATA**

	(A)Surface	(B)Interm(1)	(C)Interm(2)	(D)Prod Csgg	(E)Tubing
Pressure	<b>0</b>			<b>0</b>	<b>700</b>
Flow Characteristics					
Puff	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	CO2 <input type="checkbox"/>
Steady Flow	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	WTR <input checked="" type="checkbox"/>
Surges	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	GAS <input type="checkbox"/>
Down to nothing	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	Type of Fluid Injected for Wellbore if applies
Gas or Oil	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	
Water	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	

Remarks - Please state for each string (A,B,C,D,E) pertinent information regarding bleed down or continuous build up if applies.

Signature:		OIL CONSERVATION DIVISION
Printed name:		Entered into RBDMS
Title:		Re-test
E-mail Address:		
Date:	Phone:	
Witness: <b>Bill Semanah</b>		

INSTRUCTIONS ON BACK OF THIS FORM  
ATTACHMENT

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

**APPLICATION OF DEVON ENERGY PRODUCTION  
COMPANY L.P. TO REVOKE THE INJECTION  
AUTHORITY GRANTED BY ADMINISTRATIVE  
ORDER SWD-640, LEA COUNTY, NEW MEXICO.**

**CASE NO. 15397**

**AFFIDAVIT OF THOMAS CLIFFORD**

COUNTY OF HARRIS        )  
                                  ) ss.  
STATE OF TEXAS         )

**THOMAS CLIFFORD**, of lawful age and being duly sworn, states as follows:

1. My name is Thomas Clifford and I am authorized to make this affidavit on behalf of OXY USA Inc. (Oxy). This affidavit is based upon my personal knowledge and the analysis conducted by Oxy's technical team.

2. I received a degree in petroleum engineering from University of Texas at Austin in 2010. Since that time I have been employed by Oxy as a production, completions, and reservoir engineer in New Mexico, Texas, and Colorado. My experience includes the Delaware Basin and I have previously testified before the Division as an expert in petroleum engineering.

3. I am familiar with the history of Oxy's Diamond 34 State No. 1 disposal well located in Section 34, Township 22 South, Range 33 East, N.M.P.M., Lea County, New Mexico. I, along with Oxy's technical team, have reviewed information on Devon's recently drilled North Thistle 34 State Com No. 1 well and the Verified Statement of Roy Hathcock filed with the Division.

4. Mr. Hathcock's theory that the water disposed by Oxy through the Diamond 34 State No. 1 is migrating upward out of the approved disposal zone is not supported by the evidence. For example:

a. The Division approved injection through the Diamond State well in 1996 under an application that calculated the top of cement at 5,000 feet, which is below the 7-5/8" casing shoe located at approximately 4,830 feet. The subsequent CBL run in August of 1997 indicates the top of cement is slightly lower at approximately 5,165 feet. The drilling reports for the Diamond State well demonstrate an anhydrite formation exists at the interval from 4,790 – 5,020 feet, thereby preventing any potential "karsting" around the intermediate casing seat.

**ATTACHMENT**

Furthermore, Oxy has monitored the production-intermediate casing Bradenhead and has witnessed 0 psi in each instance.

b. Mr. Hathcock's conclusory statement that "the only source" for the water pressure Devon experienced at 1,820 feet is Oxy's disposal operations at 5,335 feet ignores the naturally occurring abnormal pressures that other wells in this general area have experienced in these shallower salt/anhydrite intervals. Oxy's experience and research reveals numerous instances of naturally occurring, isolated pressurized water pockets within the salt/anhydrite section in this general area.

c. Devon's theory that its recently drilled well and Oxy's disposal well are "hydrostatically connected" because pressure readings "closely match" fails to account for the 1,300 foot horizontal distance between the two wellbores and the 3,300 foot vertical distance between the approved injection zone and the shallower zone where Devon experience its "drilling kick." Further, the pore pressures Devon experienced when it drilled through the approved disposal zone was roughly 380 psi less than Oxy's pore pressure within the approved disposal zone. If the wells were indeed "hydrostatically connected" at a depth of 1,820 feet, Oxy's shut-in tubing pressure would have to be significantly higher than what Devon observed.

d. There is no evidence to support Mr. Hathcock's "reasonable" assumption that waters from the approved disposal zone "migrate upward" or that any "karsting" is taking place. The temperature and radioactive tracer surveys Oxy ran on the Diamond State well demonstrate zonal containment and no upward migration from the permitted interval. Multiple channel checks were conducted at various depths above the active perforations and there was no evidence of any upward migration within the disposal zone.

e. Devon's seismic cross section demonstrates "an effective and geologically sound seal" above the approved injection zone and shows no evidence of any fractures, karsting, or other features "compromising zonal containment." Oxy's temperature and radioactive tracer surveys, the absence of pressure at the production-intermediate casing Bradenhead, and the October 2015 MIT demonstrate the Diamond State is not acting as a "conduit" for fluid migration through the impermeable barriers above the permitted interval.

5. The data demonstrates the water pressure Devon encountered at 1,820 feet is not the result of the approved disposal operations at the Diamond State well and there is no evidence that any water is migrating out of the approved disposal zone.

FURTHER AFFIANT SAYETH NAUGHT.

  
\_\_\_\_\_  
THOMAS CLIFFORD

SUBSCRIBED AND SWORN TO before me this 16 day of February, 2016.

  
\_\_\_\_\_  
Notary Public

My Commission Expires:

06.27.2019

