

DATE IN 1.6.12	SUSPENSE	ENGINEER WKT	LOGGED IN 1.6.12	TYPE 8WD 1326	APP NO. 1700650694
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



OXY 16696

2012 JAN -6 P 12:44 Harvoun/5 #3

ADMINISTRATIVE APPLICATION CHECKLIST

30-015-29733

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

- [D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
 [B] ☒ Offset Operators, Leaseholders or Surface Owner
 [C] ☒ Application is One Which Requires Published Legal Notice
 [D] ☒ Notification and/or Concurrent Approval by BLM ~~or SLO~~
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
 [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
 [F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

David Stewart
 Print or Type Name

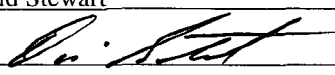
David Stewart
 Signature

Reg. Advisor
 Title

1/4/12
 Date

david_stewart@oxy.com
 e-mail Address

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage
Application qualifies for administrative approval? X Yes No
- II. OPERATOR: OXY USA Inc. Harroun 15 #3 - 30-015-29233
ADDRESS: P.O. Box 50250 Midland, TX 79710
CONTACT PARTY: David Stewart PHONE: 432-685-5717
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? Yes X No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review. Attached
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail. Attached
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected; Avg-2500BWPD - Max-4000BWPD
 2. Whether the system is open or closed; Closed
 3. Proposed average and maximum injection pressure; Avg-590psi - Max-608psi
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, Attached
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.). Attached
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval. Attached
- IX. Describe the proposed stimulation program, if any. Attached
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
Logs already on file with the NMOCD.
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken. None within one mile per the NMSEO
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water. Attached
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. Attached
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: David Stewart TITLE: Regulatory Advisor
SIGNATURE:  DATE: 1/4/12
E-MAIL ADDRESS: david_stewart@oxy.com
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

OPERATOR: OXY USA Inc.WELL NAME & NUMBER: Harroun 15 #3WELL LOCATION: 1657 FNL 330 FEL SENE(H) 15 24S 29E
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGEWELLBORE SCHEMATICWELL CONSTRUCTION DATASurface CasingHole Size: 14-3/4" Casing Size: 10-3/4" @ 504'Cemented with: 575 sx. or 759 ft³Top of Cement: Surface Method Determined: CirculatedIntermediate CasingHole Size: 9-7/8" Casing Size: 7-5/8" @ 2900'Cemented with: 800 sx. or 1056 ft³Top of Cement: Surface Method Determined: CirculatedProduction CasingHole Size: 6-3/4" Casing Size: 4-1/2" @ 8056'Cemented with: 1331 sx. or 1757 ft³Top of Cement: 1280' Method Determined: CBLTotal Depth: 8056'Injection Interval3041 feet to 3765 feet
4560

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEETTubing Size: 2-7/8" 6.5# J55 Lining Material: polylinedType of Packer: Guiberson GVI PCPacker Setting Depth: 2990'Other Type of Tubing/Casing Seal (if applicable): N/A**Additional Data**

1. Is this a new well drilled for injection? Yes X No

If no, for what purpose was the well originally drilled? Producing Oil Well

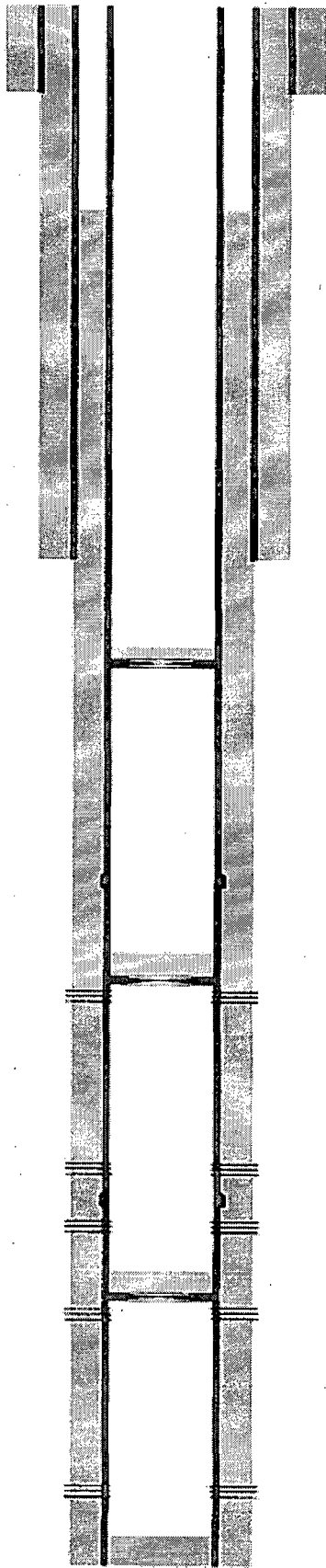
2. Name of the Injection Formation: Delaware – Bell-Cherry Canyon

3. Name of Field or Pool (if applicable): Cedar Canyon Delaware

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. Yes
Bone Springs @ 6822-6840', 7830-7856' – CIBP @ 6755' w/ 25sx cmt
Brushy Canyon @ 5136-5154', 6044-6086', 6482-6505' w/ CIBP @ 5086' w/ 3sx cmt

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: Delaware/Bone Springs

OXY USA Inc. - Current
Harroun 15 #3
API No. 30-015-29233



14-3/4" hole @ 504'
10-3/4" csg @ 504'
w/ 575sx-TOC-Surf-Circ

9-7/8" hole @ 2900'
7-5/8" csg @ 2900'
w/ 800sx-TOC-Surf-Circ

2/10-CIBP @ 3407' w/ 35' cmt-3372'

2/10-CIBP @ 5086' w/ 35' cmt-5051'

5/04-Perfs @ 5136-5154'

5/04-Perfs @ 6044-6086'

5/04-Perfs @ 6482-6505'

4/04-CIBP @ 6755' w/ 35' cmt

10/03-Perfs @
6822-6840'

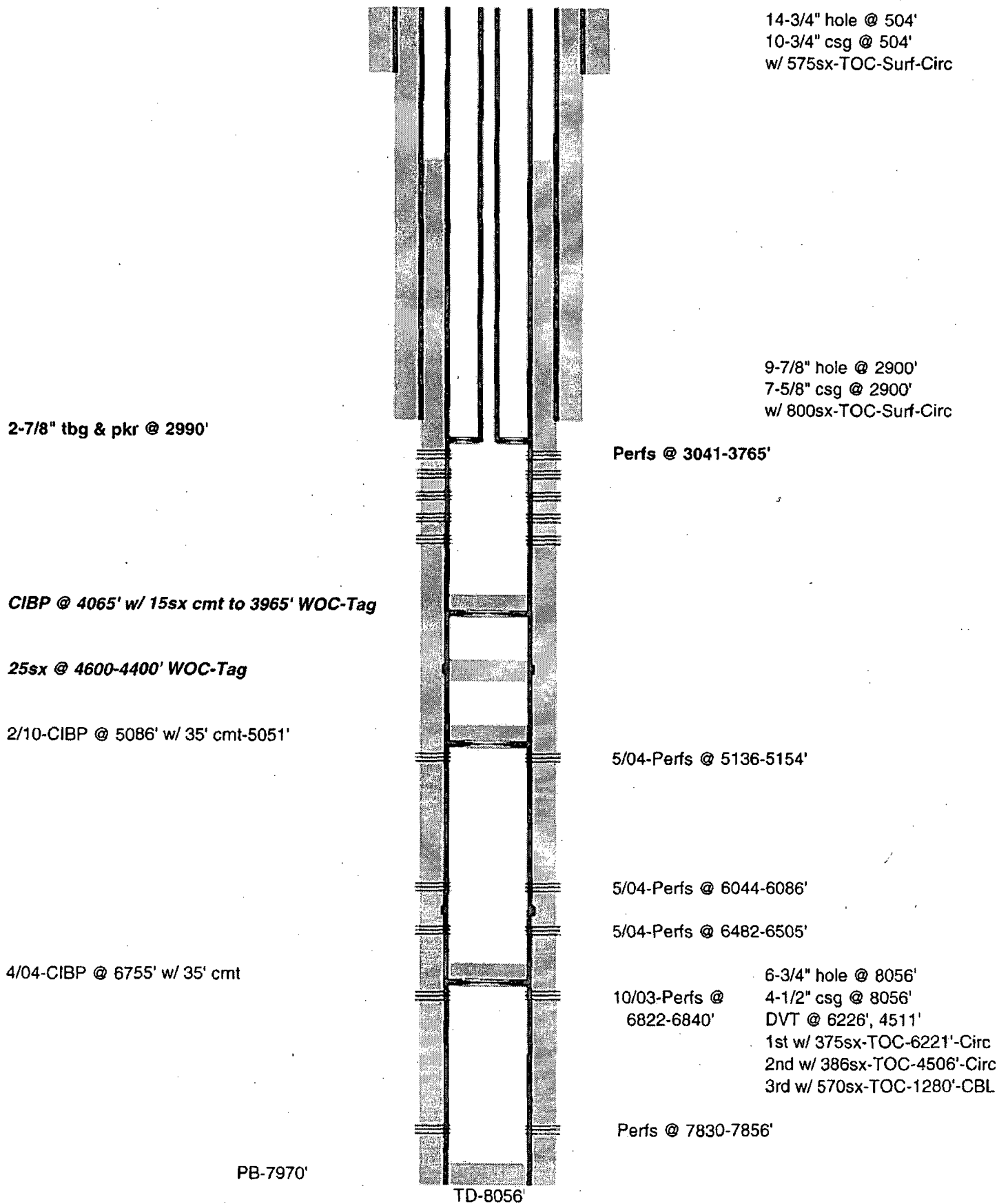
6-3/4" hole @ 8056'
4-1/2" csg @ 8056'
DVT @ 6226', 4511'
1st w/ 375sx-TOC-6221'-Circ
2nd w/ 386sx-TOC-4506'-Circ
3rd w/ 570sx-TOC-1280'-CBL

Perfs @ 7830-7856'

PB-7970'

TD-8056'

OXY USA Inc. - Proposed
Harroun 15 #3
API No. 30-015-29233



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 August 1, 2011

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

WELL API NO. 30-015-29233
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Harrow 15
8. Well Number 3
9. OGRID Number 16696
10. Pool name or Wildcat Cedar Canyon Delaware

SUNDRY NOTICES AND REPORTS ON WELLS
(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.)

1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <u>Injection</u>
2. Name of Operator OXY USA Inc.
3. Address of Operator P.O. Box 50250 Midland, TX 79710
4. Well Location Unit Letter <u>H</u> : <u>1657</u> feet from the <u>north</u> line and <u>330</u> feet from the <u>east</u> line Section <u>15</u> Township <u>24S</u> Range <u>29E</u> NMPM County <u>Eddy</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) <u>2937' GR</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 ☐

OTHER: Consent to SWD ☒

SUBSEQUENT REPORT OF:

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

OTHER: ☐

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 19.15.7.14 NMS. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

See Attached

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 Regulatory Advisor DATE 4/20/12

Type or print name _____ E-mail address: david_stewart@oxy.com PHONE: 432-685-5717
For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____
Conditions of Approval (if any): _____

RECOMMENDED PROCEDURE:

1. Check for overhead power lines. Check wellhead pressure. RUPU.
2. RIH with 3-1/2" bit. Drill out cement and CIBP at 3407'. Continue cleaning to 5050' estimated top of cement plug.
3. Circulate hole with 10# MLF, M&P 25sx CL C cmt @ 4600-4400', WOC & Tag.
4. RIH & set CIBP @ 4065', spot 15sx CL C cmt on top to 3965', WOC-Tag

Perforation and stimulation This operation should be done in 3 stages as follows:

5. Stage 1 - R/U E-log and perforate the following intervals, using 3-3/8" guns, loaded with Ultrajet 3406, HMX charges at 6 SPF, Penetration 31.4 inches and EHD ~ 0.44 inches, perf Bell Canyon @ 3765-3717, 3705-3690, 3647-3625, 358/8-3561, 3535-3497' Total 900 holes.
6. RIH with packer and 2-3/8" work string, set packer at +/- 3440 ft and prepare for acid job.
7. RU Acid services company and stimulate the perforation with 2000 gls of acid. Over displace the acid with minimum 200 bbls of clean water. While over displace the acid record injection pressure at different injection rates including two points above the estimated Frac pressure.
8. POOH with Packer. RIH retrieving tool, unset RBP and move it up to +/- 3400 ft. Test RBP with 2000 psi
9. Stage 2 - R/U E-log and perforate the following intervals, using 3-3/8" guns, loaded with Ultrajet 3406, HMX charges at 6 SPF, Penetration 31.4 inches and EHD ~ 0.44 inches, perf @ 3368-3330, 3227-3210, 3187-3108, 3058-3041' Total 906 holes. holes
10. RIH with packer and 2-3/8" work string, set packer at +/- 3000 ft and prepare for acid job.
11. RU Acid services company and stimulate the perforation with 2000 gls of acid. Over displace the acid with minimum 200 bbls of clean water. While over displace the acid record injection pressure at different injection rates including two points above the estimated Frac pressure.
12. POOH and L/D packer.
13. RIH with retrieving tool and recover the RBPs at 3400'
14. P/U and RIH 2-7/8" special coupling injection string
15. Perform injection test at minimum 6 different injection rates, two of them exceeding the fracture pressure shallowest perforation.
16. R/D BOPs, R/U X-tree. R/D pulling unit.

C-108 - Item VI
Harroun 15 #3
AREA OF REVIEW

OPERATOR	LEASE	WELL NO.	API NO.	PLAT	LOCATION	DATE DRILLED	TD	PERFS	CASING-CEMENT	STATUS
Devon Energy Prod Co.	H B 10-A Federal	8	3001529915	1	660 FSL 400 FEL	12/3/97	8214'	6871-6891'	13-3/8" @ 350' w/ 400sx - TOC-Surf-Circ	Act Oil
					P-10-24S-29E			7829-7929'	8-5/8" @ 2933' w/ 1000sx - TOC-Surf-Circ	Cedar Canyon
									5-1/2" @ 8214' w/ 1045sx - TOC-3210'-Calc	Bone Spring
OXY USA Inc.	Harroun 15	5	3001529310	2	330 FNL 1650 FEL	3/5/97	8050'	6448-6524'	10-3/4" @ 565' w/ 550sx - TOC-Surf-Circ	Act Oil
					B-15-24S-29E			7861-7879'	7-5/8" @ 2873' w/ 900sx - TOC-Surf-Circ	Cedar Canyon
									4-1/2" @ 8050' w/ 1364sx - TOC-1500'-Calc	Delaware
Devon Energy Prod Co.	H B 15 Federal	1	30-015-29490	3	660 FNL 860 FEL	4/24/97	8305'	5288-6530'	13-3/8" @ 358' w/ 400sx - TOC-Surf-Circ	Act Oil
					A-15-24S-29E			7740-8195'	8-5/8" @ 2969' w/ 1290sx - TOC-Surf-Circ	Cedar Canyon
									5-1/2" @ 8305' w/ 1000sx - TOC-1550'-Calc	Delaware
Devon Energy Prod Co.	Ore Ida 14 Federal	1	30-015-28956	4	660 FNL 480 FWL	5/7/96	8122'	7764-7946'	13-3/8" @ 375' w/ 600sx - TOC-Surf-Circ	Act Oil
					D-14-24S-29E				8-5/8" @ 3000' w/ 1200sx - TOC-Surf-Circ	Pierce Crossing
									5-1/2" @ 8122' w/ 770sx - TOC-Surf-Circ	Bone Spring, E.
Ammex Petroleum Inc.	Cedar Canyon	1	3001524493	5	660 FNL 660 FWL	6/28/83	6804'	5312-6048'	13-3/8" @ 409' w/ 450sx - TOC-Surf-Circ	P&A
					D-14-24S-29E				8-5/8" @ 2970' w/ 1600sx - TOC-Surf-Circ	
									5-1/2" @ 6573' w/ 950sx - TOC-3670'-CBL(BHS w/ 47bbl to 3750')	
Devon Energy Prod Co.	Ore Ida 14 Federal	4	3001528963	6	660 FNL1650 FWL	10/30/96	8350'	7798-8064'	13-3/8" @ 364' w/ 415sx - TOC-Surf-Circ	Act Oil
					C-14-24S-29E				8-5/8" @ 3080' w/ 1495sx - TOC-Surf-Circ	Pierce Crossing
									5-1/2" @ 8350' w/ 970sx - TOC-Surf-Calc	Bone Spring, E.
Pogo Producing Co.	Harroun 15	6	3001529373	7	1650 FNL 1650 FEL	---	---	---	---	Abd Loc
					G-15-24S-29E					
OXY USA Inc.	Harroun 15	15	3001533317	8	S-1980 FNL 990 FWL E	8/12/04	10192'M	8049-10100'	13-3/8" @ 545' w/ 800sx - TOC-Surf-Circ	Act Oil
					BH-1979 FNL 1658 FEL		7817'V		9-5/8" @ 2865' w/ 800sx - TOC-Surf-Circ	Pierce Crossing
					G-15-24S-29E				5-1/2" @ 10192' w/ 890sx - TOC-Surf-Calc	Bone Spring, E.
Devon Energy Prod Co.	Ore Ida 14 Federal	2	3001528930	9	1980 FNL 330 FWL	2/20/97	8350'	4410-4418'	13-3/8" @ 375' w/ 705sx - TOC-Surf-Circ	Act Oil
					E-14-24S-29E			7750-7792'	8-5/8" @ 3069' w/ 1220sx - TOC-Surf-Circ	Cedar Canyon
									5-1/2" @ 8350' w/ 500sx - TOC-2895'-Calc	Delaware
OXY USA Inc.	Harroun 15	9	3001530713	10	2260 FSL 1650 FEL	8/28/99	6890'	5064-6652'	10-3/4" @ 548' w/ 540sx - TOC-Surf-Circ	Act Oil
					J-15-24S-29E				7-5/8" @ 2892' w/ 900sx - TOC-Surf-Circ	Cedar Canyon
									4-1/2" @ 6890' w/ 1070sx - TOC-Surf-Circ	Delaware

Handwritten notes:
 10/1/97
 NO FMT
 (Signature)

Handwritten notes:
 2
 OK

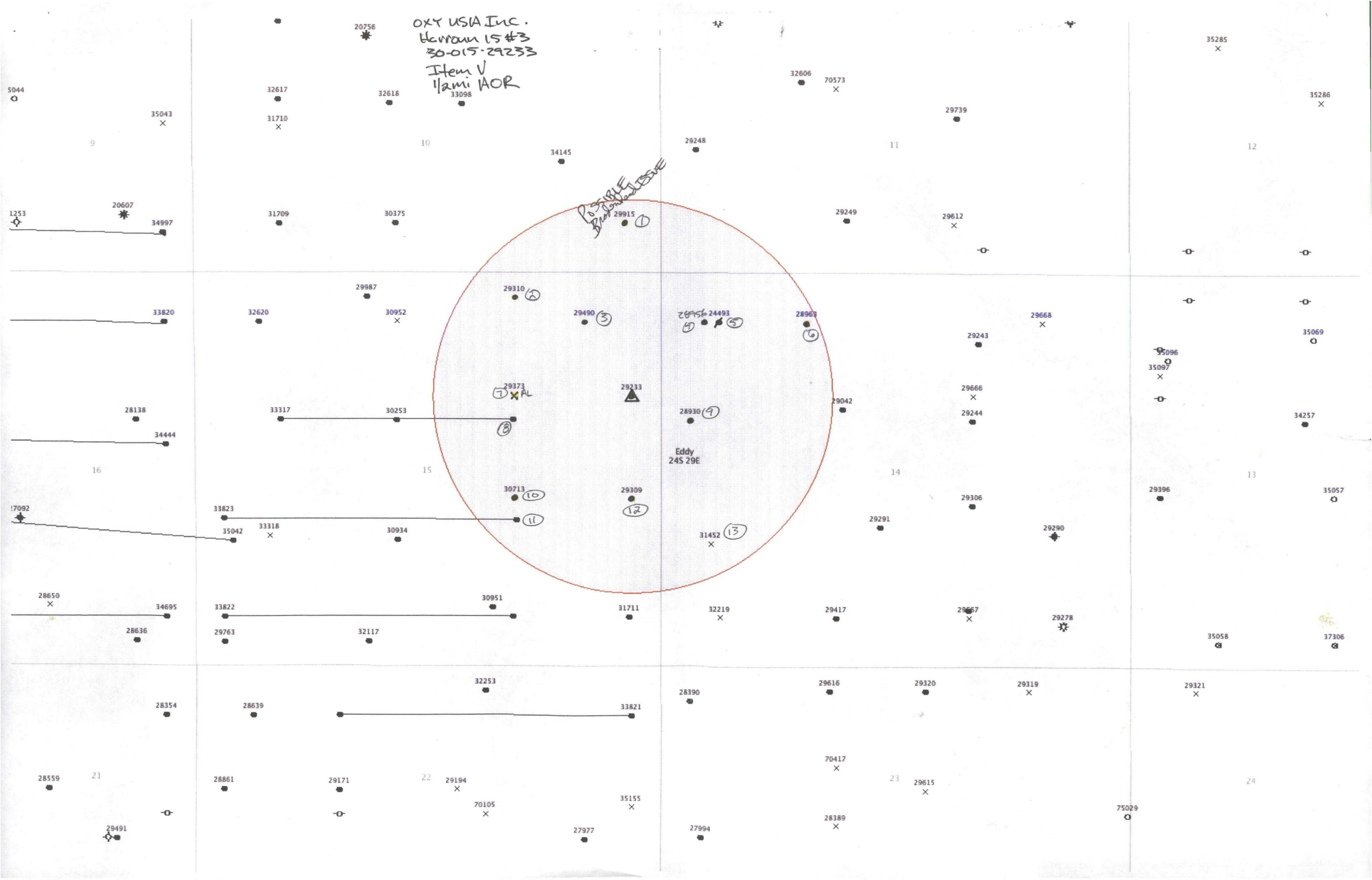
C-108 - Item VI
Harroun 15 #3
AREA OF REVIEW

OPERATOR	LEASE	WELL NO.	API NO.	PLAT	LOCATION	DATE DRILLED	TD	PERFS	CASING-CEMENT	STATUS
OXY USA Inc.	Harroun 15	16A	3001533823	11	S-1980 FSL 330 FWL L	2/25/05	10800'M	8053-10750'	13-3/8" @ 514' w/ 900sx - TOC-Surf-Circ	Act Oil
					BH-1965 FSL 1627 FEL		7789'V		9-5/8" @ 2870' w/ 1100sx - TOC-Surf-Circ	Pierce Crossing
					J-15-24S-29E				5-1/2" @ 10800' w/ 2340sx - TOC-1091'-Calc ✓	Bone Spring, E.
OXY USA Inc.	Harroun 15	4	3001529309	12	2260 FSL 330 FEL	1/29/97	8022'	4858-5126'	10-3/4" @ 560' w/ 600sx - TOC-Surf-Circ	Act Oil
					I-15-24S-29E			7838-7862'	7-5/8" @ 2900' w/ 900sx - TOC-Surf-Circ ✓	Cedar Canyon
									4-1/2" @ 8022' w/ 1524sx - TOC-2160'-Calc	Delaware
Pogo Producing Co.	Ore Ida 14 Federal	14	3001531452	13	1650 FSL 560 FWL	---	---	---	---	Abd Loc
					L-14-24S-29E					

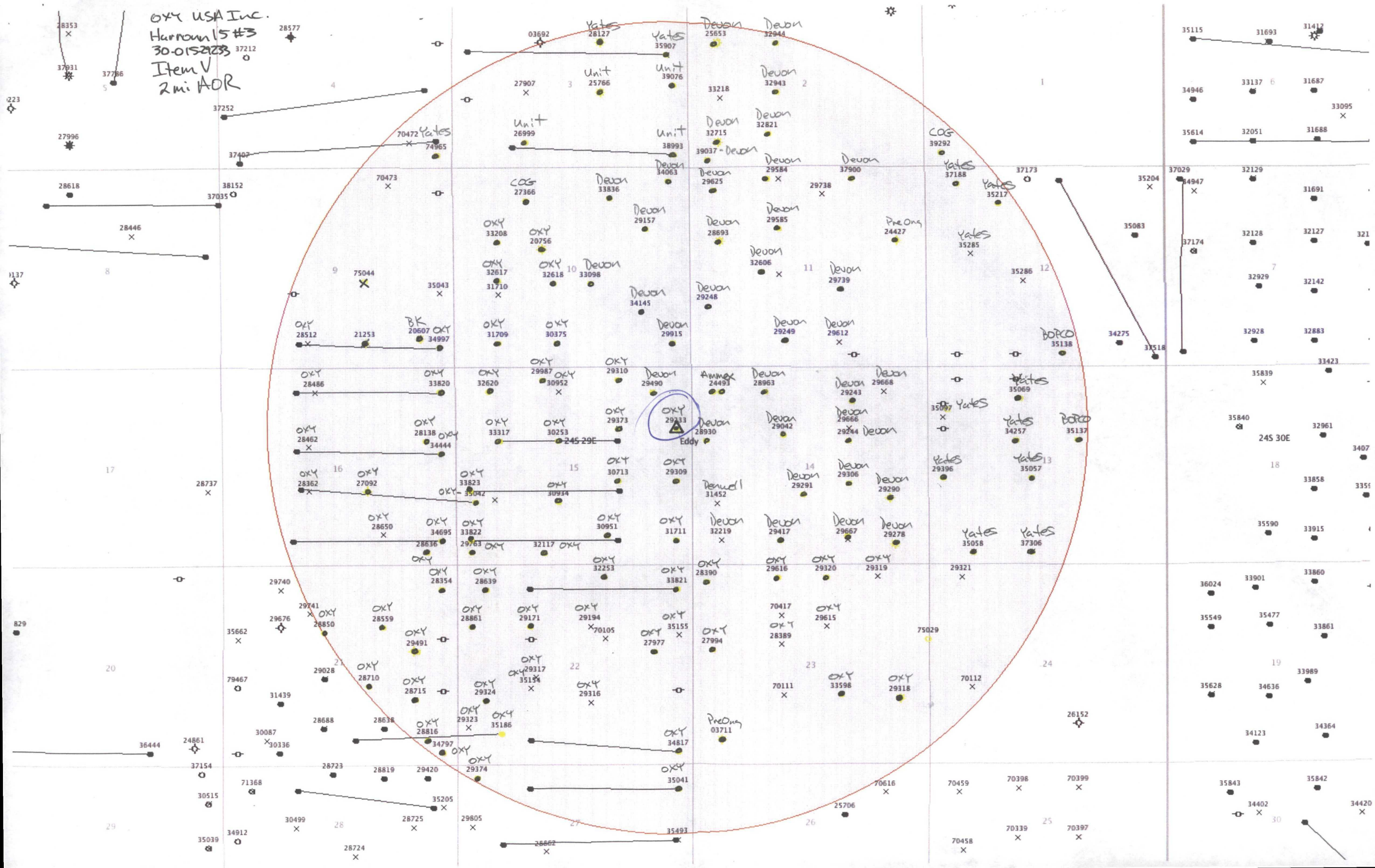
OXY USA Inc.
Harran 15 #3
30-015-29233
Item V
Miami AOR

Possible
Baton Rouge

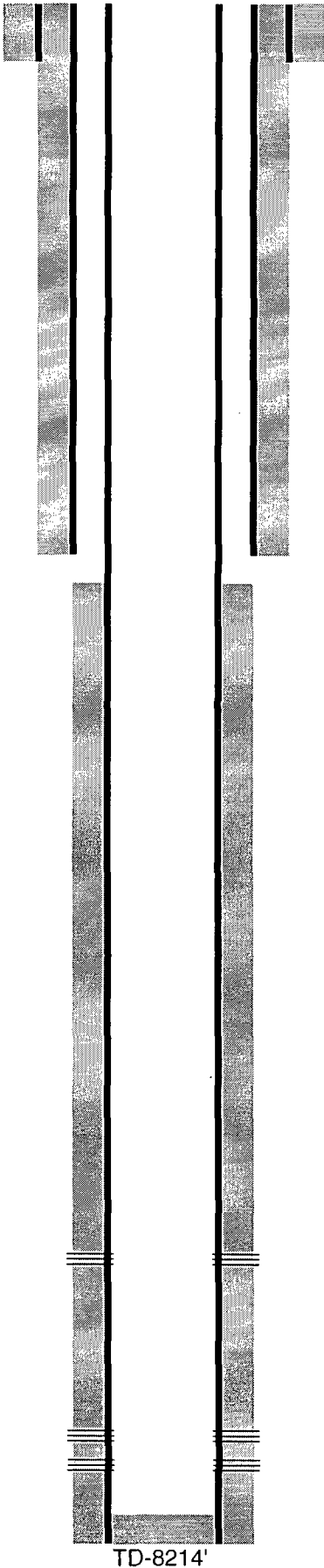
Eddy
24S 29E



OXY USA Inc.
Hamm 15 #3
30-015223
Item V
2mi AOR



Devon Energy Production Co.
H.B. 10-A Federal #8
API No. 30-015-29915



17-1/2" hole @ 350'
13-3/8" csg @ 350'
w/ 400sx-TOC-Surf-Circ

11" hole @ 2933'
8-5/8" csg @ 2933'
w/ 1000sx-TOC-Surf-Circ

Perfs @ 6871-6891'

7-7/8" hole @ 8214'
5-1/2" csg @ 8214'
w/ 1045sx-TOC-3210'

Perfs @ 7829-7929'

PBTD-8174'

TD-8214'

Ammex Petroleum Inc. - P&A 9/87
Cedar Canyon #1
API No. 30-015-24493

9/87-70sx @ 110'-Surface

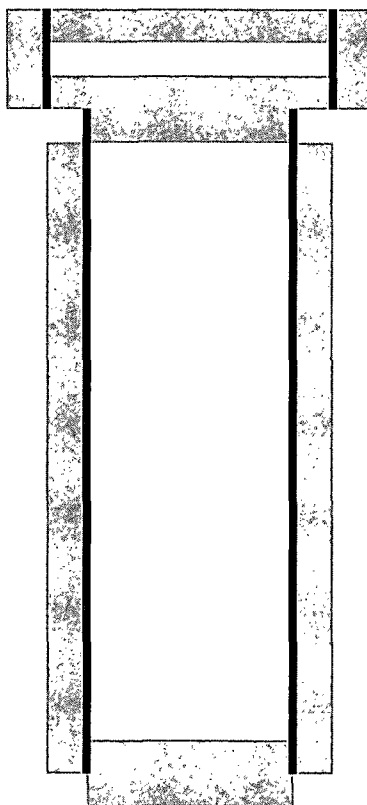
9/87-350sx @ 510-235' Tagged

9/87-45sx @ 3030-2849' Tagged

9/87-120sx @ 3545-3206' Tagged

9/87-CIBP @ 5250' w/ 3sx

1983-CIBP @ 5550'



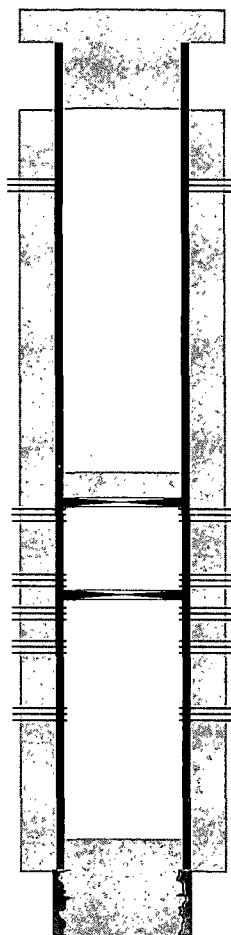
17-1/2" hole @ 409'
13-3/8" csg @ 409'
w/ 450sx-TOC-Surf-Circ

9/87-C&P 8-5/8" csg @ 406'

12-1/4" hole @ 2970'
8-5/8" csg @ 2970'
w/ 1600sx-TOC-Surf-Circ

9/87-C&P 5-1/2" csg @ 3270'

Perfs @ 3860-3880' sqz w/ 47bbls cmt



Perfs @ 5312-5318'

Perfs @ 5472-5490'

Perfs @ 5578-5585'

Perfs @ 5795-5802'

Perfs @ 6042-6048'

7-7/8" hole @ 6804'
5-1/2" csg @ 6573'
w/ 950sx-TOC-3670'-CBL

OH @ 6574-6804'

TD-6804'

OXY USA Inc.
Harroun 15 #3
30-015-29233

Item VIII

Geologic Data:

Lithological description: Sandstone, very-fine grained, light gray, poorly consolidated-friable, subangular-subrounded, intercalated with thin (4-10 ft) shaley-lime.

Geological name: Delaware Mtn. Group (Bell Canyon and Upper & Middle Cherry Canyon)

Zone thickness: 1063 ft; Depth: 4560 ft

Item XII

I have examined the available geologic and engineering data for Harroun 15-3 (API#: 30-015-29233) and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

Jennifer Schulz, Geologist

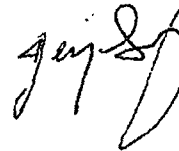


EXHIBIT II

Endura Products Co

P.O. Box 3394 Midland, Texas 797
Phone (915) 684-4233 * Fax (915) 684-

FORM C-108
ITEM VII(4)

ANALYSIS Lower Delaware
Produced Water

POGO PRODUCING COMPANY
Cedar Canyon "28" Federal No. 4
Section 28, T-24S, R-29E
Eddy County, New Mexico

WATER ANALYSIS

Date 4-17-97 Endura Rep TERRY SOLANSKY
Sampling Point/Date WELL HEAD / 4-14-97
Company POGO PRODUCING CO.
Field Lease RIVERBEND FEDERAL Well #1

State NEW MEXICO
County EDDY

DISSOLVED SOLIDS

<u>CATIONS</u>	mg/l	me/l
Sodium, Na ⁺ (Calc.)	77,395	3,365
Total Hardness as Ca ⁺⁺	43,600	0
Calcium, Ca ⁺⁺	36,000	1,800
Magnesium, Mg ⁺⁺	4,634	386
Barium, Ba ⁺⁺	0	0
Iron (Total) Fe ⁺⁺⁺	11	1

ANIONS

Chlorides, Cl ⁻	197,000	5,549
Sulfate, SO ₄ ⁻	63	1
Carbonate, CO ₃ ⁻	0	0
Bicarbonate, HCO ₃ ⁻	146	2
Sulfide, S ⁻	0	0
Total Dissolved Solids (Calc.)	315,249	

OTHER PROPERTIES

pH ⁻	5.700
Specific Gravity, 60°/60 F	1.2
TURBIDITY	320

SCALING INDICIES

<u>TEMP, F</u>	<u>CA CO₃</u>	<u>CASO₄*2H₂O</u>	<u>CA SO₄</u>	<u>BA SO₄</u>
80	2.0099	-0.3647	-0.8065	-29.5893
120	2.7105	-0.3742	-0.6355	-29.6881
160	3.7638	-0.3656	-0.4543	-29.8776
PERF'S	5,248' - 5,264'			

EXHIBIT I

Endura Products C

P.O. Box 3394 Midland, Texas 79701
Phone (915) 684-4233 * Fax (915) 684-4233

WATER ANALYSIS

Date 12/11/95 Endura Rep TERRY SOLANSKY

Sampling Point/Date WELL HEAD - 12/9/95

Company POGO PRODUCING

Field

Lease RIVERBEND FEDERAL Well #7

FORM C-108
ITEM VII(4)

ANALYSIS - Bone Spring
Produced Water

POGO PRODUCING COMPANY
Cedar Canyon "28" Federal No. 4
Section 28, T-24S, R-29E
Eddy County, New Mexico

State NEW MEXICO
County EDDY

DISSOLVED SOLIDS

<u>CATIONS</u>	mg/l	me/l
Sodium, Na- (Calc.)	81,949	3,563
Total Hardness as Ca--	5,120	0
Calcium, Ca--	4,600	230
Magnesium, Mg--	317	26
Barium, Ba--	0	0
Iron (Total) Fe---	16	1

ANIONS

Chlorides, Cl-	135,000	3,803
Sulfate, SO4-	280	6
Carbonate, CO3-	0	0
Bicarbonate, HCO3-	659	11
Sulfide, S--	0	0
Total Dissolved Solids (Calc.)	222,821	

OTHER PROPERTIES

pH-	6.360
Specific Gravity, 60-/60 F	1.123
TURBIDITY	300

SCALING INDICIES

<u>TEMP, F</u>	<u>CA CO3</u>	<u>CASO4*2H2O</u>	<u>CA SO4</u>	<u>BA SO4</u>
80	0.8303	-0.8962	-1.1875	-29.3893
120	1.2618	-0.9091	-1.0200	-29.5634
160	1.9214	-0.9331	-0.8713	-29.7858

Item IX - Harroun 15#3
RECOMMENDED PROCEDURE:

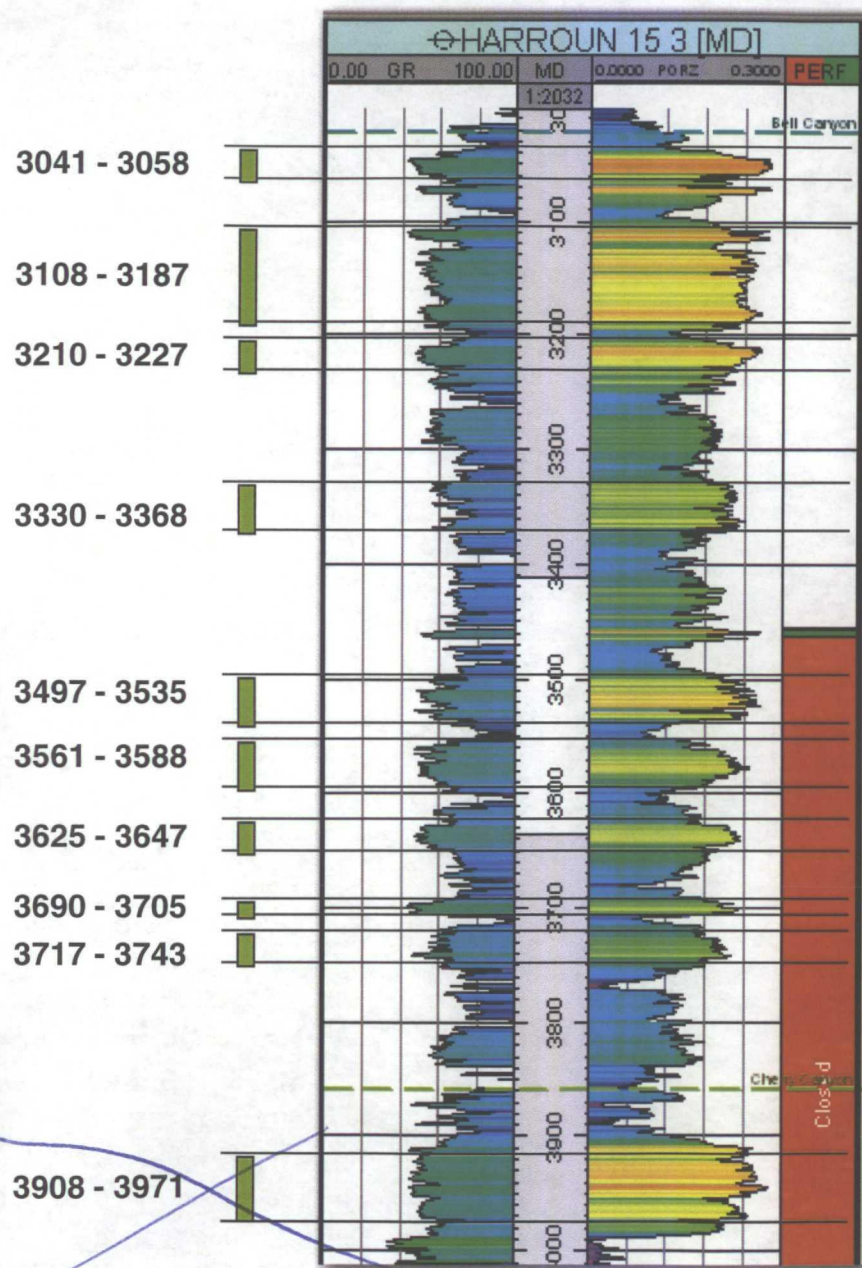
1. Check for overhead power lines. Check wellhead pressure. RUPU.
2. RIH with 3-1/2" bit. Drill out cement and CIBP at 3407'. Continue cleaning to 5050' estimated top of cement plug.

Perforation and stimulation This operation should be done in 4 stages as follows:

3. **Stage 1** - R/U E-log and perforate the following intervals, using 3-3/8" guns, loaded with Ultrajet 3406, HMX charges at 6 SPF, Penetration 31.4 inches and EHD ~ 0.44 inches, perf Cherry Canyon @ ~~4560-4518, 4440-4378, 4361-4289, 4226-4207~~ Total 1170 holes
4. RIH with packer and 2-3/8" work string, set packer at +/- 4100 ft and prepare for acid job.
5. RU Acid services company and stimulate the perforation with 2000 gls of acid. Over displace the acid with minimum 200 bbls of clean water. While over displace the acid record injection pressure at different injection rates including two points above the estimated Frac pressure.
6. POOH with Packer. RIH with RBP and set it at +/- 4050 ft. Run packer and test it with 2000 psi
7. **Stage 2** - R/U E-log and perforate the following intervals, using 3-3/8" guns, loaded with Ultrajet 3406, HMX charges at 6 SPF, Penetration 31.4 inches and EHD ~ 0.44 inches, perf @ ~~3971-3908~~ Total 378 holes.
8. RIH with packer and 2-3/8" work string, set packer at +/- 3800 ft and prepare for acid job.
9. RU Acid services company and stimulate the perforation with 2000 gls of acid. Over displace the acid with minimum 200 bbls of clean water. While over displace the acid record injection pressure at different injection rates including two points above the estimated Frac pressure.
10. POOH with Packer. RIH retrieving tool, unset RBP and move it up to +/- 3880 ft. Test RBP with 2000 psi
11. **Stage 3** - R/U E-log and perforate the following intervals, using 3-3/8" guns, loaded with Ultrajet 3406, HMX charges at 6 SPF, Penetration 31.4 inches and EHD ~ 0.44 inches, perf Bell Canyon @ 3743-3717, 3705-3690, 3647-3625, 3588-3561, 3535-3497', Total 768 holes. ✓
12. RIH with packer and 2-3/8" work string, set packer at +/- 3440 ft and prepare for acid job.
13. RU Acid services company and stimulate the perforation with 2000 gls of acid. Over displace the acid with minimum 200 bbls of clean water. While over displace the acid record injection pressure at different injection rates including two points above the estimated Frac pressure.
14. POOH with Packer. RIH retrieving tool, unset RBP and move it up to +/- 3400 ft. Test RBP with 2000 psi
15. **Stage 4** - R/U E-log and perforate the following intervals, using 3-3/8" guns, loaded with Ultrajet 3406, HMX charges at 6 SPF, Penetration 31.4 inches and EHD ~ 0.44 inches, perf @ 3368-3330, 3227-3210, 3187-3108, 3058-3041' Total 906 holes. ✓
16. RIH with packer and 2-3/8" work string, set packer at +/- 3000 ft and prepare for acid job.
17. RU Acid services company and stimulate the perforation with 2000 gls of acid. Over displace the acid with minimum 200 bbls of clean water. While over displace the acid record injection pressure at different injection rates including two points above the estimated Frac pressure.
18. POOH and L/D packer, RIH with retrieving tool and recover the RBPs at 3400'
19. P/U and RIH 2-7/8" special coupling injection string, Perform injection test at minimum 6 different injection rates, two of them exceeding the fracture pressure shallowest perforation. ✓
20. R/D BOPs, R/U X-tree. R/D pulling unit.

Stop Rate
TEST

Item X - Harroun 15 #3 - 30-015-29233

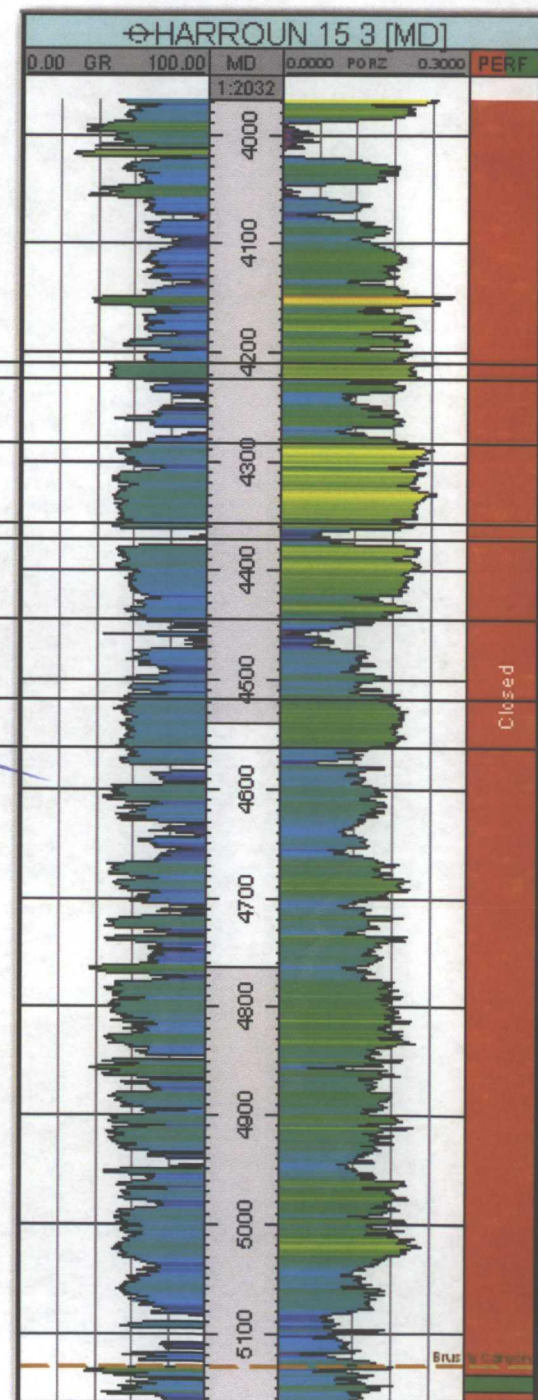


~~4207 - 4226~~

~~4289 - 4361~~

~~4378 - 4440~~

~~4518 - 4560~~





New Mexico Office of the State Engineer Water Column/Average Depth to Water

No records found.

PLSS Search:

Section(s): 10, 11, 14, 15, Township: 24S Range: 29E
22, 23

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

Kathy McCarroll, being first duly sworn,
on oath says:

That she is the Classified Supervisor of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

December 17 2011

That the cost of publication is **\$44.75** and that payment thereof has been made and will be assessed as court costs.

Kathy McCarroll

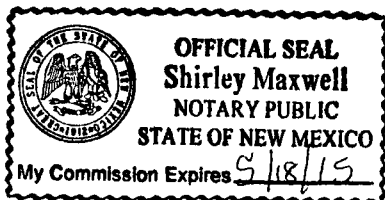
Subscribed and sworn to before me this

27th day of December, 2011

Shirley Maxwell

My commission Expires on May 18, 2015

Notary Public



December 17, 2011

Notice Of Application
For Fluid Disposal

Applicant:
OKY USA Inc.
P.O. Box 50250
Midland, TX 79710
ATTN: David Stewart
432-685-5717

Purpose - Well:
Disposal of Produced
Water into A Zone
Productive of Oil &
Gas
Harroun 15 #3
1657 FNL 330 FEL
SENE(H) Sec 15
T245 R29E
Eddy County, NM

Formation:
Delaware Bell-
Cherry Canyon
3041-4600
Maximum Injection
Rate - 4000 BWPD
Maximum Injection
Pressure - 608 psi

Interested parties
must file objections
or requests for hear-
ing with the Oil Con-
servation Division,
1220 South St. Fran-
cisco Dr., Santa Fe,
New Mexico 87505
within 15 days of this
application.

3785

C-108 Service List
OXY USA Inc
Harroun 15 #3

New Mexico Oil Conservation Division
811 S. First St.
Artesia, NM 88210

New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Surface Owner

United States Dept of Interior
Bureau of Land Management
620 E. Greene Street
Carlsbad, NM 88220

Offset Operators within 1/2 mile

Devon Energy Production Co.
20 N. Broadway
Oklahoma City, OK 73102

OXY USA Inc.
P.O. Box 50250
Midland, TX 79710

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>X</p> <p>B. Received by (<i>Printed Name</i>) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>1. Article Addressed to:</p> <p style="font-size: 1.2em;">NMOC</p> <p style="font-size: 1.2em;">811 S. First St.</p> <p style="font-size: 1.2em;">Antesia, NM 88210</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (<i>Extra Fee</i>) <input type="checkbox"/> Yes</p>
<p>2. Article Number 7011 0110 0002 1214 5965</p> <p><small>(Transfer from service label)</small></p>	
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>	

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>X</p> <p>B. Received by (<i>Printed Name</i>) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>1. Article Addressed to:</p> <p style="font-size: 1.2em;">NMOC</p> <p style="font-size: 1.2em;">1220 South St. Francis Dr.</p> <p style="font-size: 1.2em;">Santa Fe, NM 87505</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (<i>Extra Fee</i>) <input type="checkbox"/> Yes</p>
<p>2. Article Number 7011 0110 0002 1214 5972</p> <p><small>(Transfer from service label)</small></p>	
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>	

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>X</p> <p>B. Received by (<i>Printed Name</i>) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>1. Article Addressed to:</p> <p style="font-size: 1.2em;">BLM</p> <p style="font-size: 1.2em;">620 E. Greene St.</p> <p style="font-size: 1.2em;">Carlsbad, NM 88220</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (<i>Extra Fee</i>) <input type="checkbox"/> Yes</p>
<p>2. Article Number 7011 0110 0002 1214 5989</p> <p><small>(Transfer from service label)</small></p>	
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>	

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>X</p> <p>B. Received by (<i>Printed Name</i>) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>1. Article Addressed to:</p> <p style="font-size: 1.2em;">Devon Energy Prod. Co.</p> <p style="font-size: 1.2em;">20 N. Broadway</p> <p style="font-size: 1.2em;">Oklahoma City, OK</p> <p style="font-size: 1.2em;">73102</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (<i>Extra Fee</i>) <input type="checkbox"/> Yes</p>
<p>2. Article Number 7011 0110 0002 1214 5996</p> <p><small>(Transfer from service label)</small></p>	
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>	

Jones, William V., EMNRD

From: Jones, William V., EMNRD
Sent: Wednesday, April 18, 2012 5:15 PM
To: 'David_Stewart@oxy.com'
Cc: Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; 'Wesley_Ingram@blm.gov'; 'Slack, Ronnie'
Subject: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

Hello David,

Now that Devon has withdrawn its protest and your interval was shortened to 3041 to 3765 feet.

Would you please:

- a. Sent another Post Conversion wellbore diagram showing the revised proposed perforations and also showing an installed CIBP/cement within 200 feet below the disposal interval.
- b. Please send a wellbore diagram for Devon's 30-015-29915 showing the "calced" cement top and open annulus issues. Tell us what assumptions were used to calc the cement top and whether you anticipate any bradenhead issues.

Other requests I won't delay the permit for:

- a. I was able to get formation tops from the well file otherwise I would ask.
- b. I know the State Engineer shows no wells near here, but please ask your field people to see if any windmills exist within 1 mile of this well and if so, get a water sample for analysis?
- c. Send another (revised) re-entry engineering procedure showing the restricted disposal interval.

Thank You,

Will Jones
New Mexico
Oil Conservation Division
[Images](#) [Contacts](#)

Jones, William V., EMNRD

From: Cromer, James [James.Cromer@dvn.com]
Sent: Wednesday, April 18, 2012 12:37 PM
To: Slack, Ronnie; Jones, William V., EMNRD; David_Stewart@oxy.com
Cc: Nishanth_Kalyanaraman@oxy.com; Burdick, Carl; Harran, Craig
Subject: RE: Oxy C108, Harroun 15 #3, api 30-015-29233, Objection

Mr. Jones,
Devon hereby withdraws our protest to the subject C108 application, subject to revision of the permitted injection interval as stated below; i.e. 3041' - 3765'.

Please advise if you need anything further.

Regards,

Jim Cromer, P.E.

Devon Energy Production Company, LP
Midcontinent Division Operations
Permian Business Unit, Southeast New Mexico
405-228-4464
405-694-7718 (mobile)
james.cromer@dvn.com

From: Jones, William V., EMNRD [<mailto:William.V.Jones@state.nm.us>]
Sent: Wednesday, April 18, 2012 10:45 AM
To: David_Stewart@oxy.com; Slack, Ronnie
Cc: Shapard, Craig, EMNRD
Subject: RE: Oxy C108, Harroun 15 #3, api 30-015-29233, Objection

Hello David and Ronnie,

I will need a note from Devon saying they agreed with this modification and are withdrawing their objection.

Assuming Devon was the only objecting party and they are now happy, I can now review this permit for any other issues and if all is well, I can issue the permit for the agreed upon reduced disposal interval.

I will wait for a note from Ronnie or Jim Cromer and review the OXY application and let you know.

Will Jones

Will Jones
New Mexico
Oil Conservation Division
[Images](#) [Contacts](#)

From: David_Stewart@oxy.com [mailto:David_Stewart@oxy.com]
Sent: Wednesday, April 18, 2012 6:53 AM
To: Jones, William V., EMNRD
Cc: james.cromer@dvn.com; Ronnie.Slack@dvn.com; Nishanth_Kalyanaraman@oxy.com
Subject: RE: Oxy C108, Harroun 15 #3, api 30-015-29233, Objection

Will, we are going to amend the proposed injection interval to 3041-3765', we had originally permitted from 3041-4560'. We have contacted Devon with this change and they are OK with the new proposed interval. Do we need to start the process over or just amend what was filed. When you get a chance would you let me know how to proceed, I appreciate your help.

Thanks,
David Stewart
Regulatory Advisor
OXY Permian
W-432-685-5717
C-432-634-5688
F-432-685-5742

From: Jones, William V., EMNRD [<mailto:William.V.Jones@state.nm.us>]
Sent: Thursday, April 05, 2012 3:24 PM
To: Stewart, David
Subject: RE: Oxy C108, Haroun 15 #3, api 30-015-29233, Objection

From: Jones, William V., EMNRD
Sent: Thursday, January 26, 2012 3:15 PM
To: 'david.stewart@oxy.com'
Subject: FW: Oxy C108, Haroun 15 #3, api 30-015-29233, Objection

David,
Forwarding this objection in case you have not received it personally.
I have not reviewed this application and will review it if the protest is dropped which does not look likely from reading this from Ronnie.

Regards,

Will Jones
New Mexico
Oil Conservation Division
[Images](#) [Contacts](#)

From: Slack, Ronnie [<mailto:Ronnie.Slack@dvsn.com>]
Sent: Thursday, January 12, 2012 9:20 AM
To: Jones, William V., EMNRD
Cc: Cromer, James; Slack, Ronnie
Subject: Oxy C108, Haroun 15 #3, api 30-015-29233, Objection

Will,

Devon received Oxy's C108 to convert their Haroun 15 #3 (30-015-29233) to SWD in the Delaware. Their proposed injection interval is from 3041 to 4560.

Devon's Ore Ida 14 Fed 2 (api 30-015-28930) is in the AOR. It is currently productive from the Delaware interval from 4410 to 4418.

Based on the proposed injection interval as stated in the application, Devon hereby objects to this proposal.

Thank you,

Ronnie Slack
Operations Technician
Devon Energy Corporation
CT 3.033
(405) 552-4615 (office)
(405) 552-1415 (fax)
Email: Ronnie.Slack@dvsn.com

Jones, William V., EMNRD

From: Jones, William V., EMNRD
Sent: Thursday, April 19, 2012 8:51 AM
To: 'David_Stewart@oxy.com'
Subject: RE: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

I have this drafted if you will email the new diagram and a statement about that well's annulus...

Will Jones
New Mexico
Oil Conservation Division
Images Contacts

From: David_Stewart@oxy.com [mailto:David_Stewart@oxy.com]
Sent: Wednesday, April 18, 2012 5:35 PM
To: Jones, William V., EMNRD
Cc: Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; Wesley_Ingram@blm.gov; Ronnie.Slack@dvn.com
Subject: Re: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

Will, I'll get you the requested information first thing in the morning. I appreciate your help on this.

Thanks, David S.

From: Jones, William V., EMNRD [<mailto:William.V.Jones@state.nm.us>]
Sent: Wednesday, April 18, 2012 06:14 PM
To: Stewart, David
Cc: Ezeanyim, Richard, EMNRD <richard.ezeanyim@state.nm.us>; Shapard, Craig, EMNRD <craig.shapard@state.nm.us>; Wesley_Ingram@blm.gov <Wesley_Ingram@blm.gov>; Slack, Ronnie <Ronnie.Slack@dvn.com>
Subject: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

Hello David,

Now that Devon has withdrawn its protest and your interval was shortened to 3041 to 3765 feet.

Would you please:

- a. Sent another Post Conversion wellbore diagram showing the revised proposed perforations and also showing an installed CIBP/cement within 200 feet below the disposal interval.
- b. Please send a wellbore diagram for Devon's 30-015-29915 showing the "calced" cement top and open annulus issues. Tell us what assumptions were used to calc the cement top and whether you anticipate any bradenhead issues.

Jones, William V., EMNRD

From: Jones, William V., EMNRD
Sent: Thursday, April 19, 2012 10:26 AM
To: 'David_Stewart@oxy.com'
Cc: Hawkins, Phil, EMNRD; Dade, Randy, EMNRD
Subject: RE: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

Tracking:	Recipient	Read
	'David_Stewart@oxy.com'	
	Hawkins, Phil, EMNRD	Read: 4/19/2012 2:47 PM
	Dade, Randy, EMNRD	Read: 4/19/2012 10:31 AM

Good assumption on the "calculated" – maybe one of us should recheck that.

As far as the plug back – we like the internal portion of a wellbore to be plugged back to within 200 feet below any permitted disposal interval. This helps reduce corrosion on your well and helps assure us that disposal is confined to the permitted interval. Of course we are flexible on this – if for example an existing plug is 300 feet below....

From: David_Stewart@oxy.com [mailto:David_Stewart@oxy.com]
Sent: Thursday, April 19, 2012 10:20 AM
To: Jones, William V., EMNRD
Subject: RE: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

Will, I have sent the request to Operations team on how they want to plugback the Harroun 15-3, provide an answer to the bradenhead issues on the Devon well, 30-015-29915 and request that the field check one mile around the Harroun for windmills. I had gotten the TOC on the Devon well from the completion reports that were on-line at the NMOCD and since it didn't say how they came up with it, I put it as calculated. I appreciate all the help and will send the information as soon as they get back to me.

Thanks, David S.

From: Jones, William V., EMNRD [<mailto:William.V.Jones@state.nm.us>]
Sent: Thursday, April 19, 2012 9:51 AM
To: Stewart, David
Subject: RE: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

I have this drafted if you will email the new diagram and a statement about that well's annulus...

From: David Stewart@oxy.com [mailto:David.Stewart@oxy.com]
Sent: Wednesday, April 18, 2012 5:35 PM
To: Jones, William V., EMNRD
Cc: Ezeanyim, Richard, EMNRD; Shapard, Craig, EMNRD; [Wesley Ingram@blm.gov](mailto:Wesley.Ingram@blm.gov); Ronnie.Slack@dvn.com
Subject: Re: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

Will, I'll get you the requested information first thing in the morning. I appreciate your help on this.

Thanks, David S.

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Sent: Wednesday, April 18, 2012 06:14 PM
To: Stewart, David
Cc: Ezeanyim, Richard, EMNRD <richard.ezeanyim@state.nm.us>; Shapard, Craig, EMNRD <craig.shapard@state.nm.us>; [Wesley Ingram@blm.gov](mailto:Wesley.Ingram@blm.gov) <[Wesley Ingram@blm.gov](mailto:Wesley.Ingram@blm.gov)>; Slack, Ronnie <Ronnie.Slack@dvn.com>
Subject: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

Hello David,

Now that Devon has withdrawn its protest and your interval was shortened to 3041 to 3765 feet.

Would you please:

- a. Sent another Post Conversion wellbore diagram showing the revised proposed perforations and also showing an installed CIBP/cement within 200 feet below the disposal interval.
- b. Please send a wellbore diagram for Devon's 30-015-29915 showing the "calced" cement top and open annulus issues. Tell us what assumptions were used to calc the cement top and whether you anticipate any bradenhead issues.

Other requests I won't delay the permit for:

- a. I was able to get formation tops from the well file otherwise I would ask.
- b. I know the State Engineer shows no wells near here, but please ask your field people to see if any windmills exist within 1 mile of this well and if so, get a water sample for analysis?
- c. Send another (revised) re-entry engineering procedure showing the restricted disposal interval.

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- c. Send another (revised) re-entry engineering procedure showing the restricted disposal interval.

Thank You,

Will Jones
New Mexico
Oil Conservation Division
[Images](#) [Contacts](#)

Jones, William V., EMNRD

From: David_Stewart@oxy.com
Sent: Friday, April 20, 2012 9:44 AM
To: Jones, William V., EMNRD
Cc: Hawkins, Phil, EMNRD; Dade, Randy, EMNRD
Subject: RE: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.
Attachments: img-420091734-0001.pdf; Harroun 15 #3 SWD Well Conversion

Will please see attached for the amended sundry to convert to SWD being filed today. Also operations has contacted Devon as to cement top and possible monitoring on their H.B. 10-A Federal #8, API No. 30-015-29915, copy of e-mail attached. I will forward additional information when we receive it. I appreciate the help.

Thanks, David S.
W-432-685-5717
C-432-634-5688
F-432-685-5742

From: Jones, William V., EMNRD [mailto:William.V.Jones@state.nm.us]
Sent: Thursday, April 19, 2012 11:26 AM
To: Stewart, David
Cc: Hawkins, Phil, EMNRD; Dade, Randy, EMNRD
Subject: RE: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

Good assumption on the "calculated" – maybe one of us should recheck that.

As far as the plug back – we like the internal portion of a wellbore to be plugged back to within 200 feet below any permitted disposal interval. This helps reduce corrosion on your well and helps assure us that disposal is confined to the permitted interval. Of course we are flexible on this – if for example an existing plug is 300 feet below....

From: David_Stewart@oxy.com [mailto:David_Stewart@oxy.com]
Sent: Thursday, April 19, 2012 10:20 AM
To: Jones, William V., EMNRD
Subject: RE: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

Jones, William V., EMNRD

From: Kenneth_Hood@oxy.com
Sent: Thursday, April 19, 2012 2:30 PM
To: Ronnie.Slack@dvn.com; James.cromer@dvn.com
Cc: Joseph_Day@oxy.com; Peter_Lawrence@oxy.com; David_Stewart@oxy.com
Subject: Harroun 15 #3 SWD Well Conversion
Attachments: DEVON HB10AFd8 (3).xls

Ronnie/Jim,

Per our conversation this afternoon can you please confirm if the H.B. 10-A Federal #8 well has cement to surface.

As you are aware Oxy is in the process of converting the Harroun 15 #3 well to SWD. The new approved disposal interval is from 3041-3765'. Records for Devon's well (H.B. 10-A Federal #8) indicate that TOC is roughly 3210'. The OCD is requesting that the 8 5/8" x 5 1/2" annulus be monitored if the cement is not to surface so that Oxy could be alerted to shut in the Harroun 15 #3 well should Devon see pressure on the H.B. 10-A Federal #8.

Please confirm where the top of cement is located and if Devon agrees to monitor the pressure going forward.

Thanks for your cooperation and assistance. Let me know if you have any questions.

Best Regards,

Ken Hood

OXY USA Inc. / Occidental Permian Ltd. OXY USA WTP LP
Production Engineer - SENM RMT
5 Greenway Plaza Suite 110
Houston TX 77210-4294
713-366-5883 Office
713-670-4597 Mobile

Jones, William V., EMNRD

From: David_Stewart@oxy.com
Sent: Friday, May 11, 2012 8:15 AM
To: Jones, William V., EMNRD
Cc: Hawkins, Phil, EMNRD; Dade, Randy, EMNRD
Subject: FW: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.
Attachments: FW: H B 10A Fed #8 remedial cement operation.; RE: Harroun 15 #3 SWD Well Conversion - Windmill Search; img-420091734-0001.pdf; Harroun 15 #3 SWD Well Conversion

Will, please see attached for the requested information for the SWD Application for the OXY USA Inc., Harroun 15 #3 , API No. 30-015-29233.

1. HB 10A Fed #8 – 30-015-29915 – E-mail correspondence from Jim Cromer-Devon on proposed cement remedial work and monitoring the annulus pressure until the work can be completed.
2. Check for possible windmills within one mile of the Harroun 15 #3. No windmills were found within one mile, see attached for e-mail.
3. Amended Sundry Notice Intent to convert the Harroun 15 #3 to injection with new proposed interval.

If you need any additional information, please let me know and I appreciate the help.

Thanks,
David Stewart
Regulatory Advisor
OXY Permian
W-432-685-5717
C-432-634-5688
F-432-685-5742

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Sent: Friday, April 20, 2012 10:44 AM
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To: Jones, William V., EMNRD
Subject: RE: Disposal application from OXY: Harroun 15 #3 API 30-015-29233 Bell Canyon from 3041 to 3765 feet.

Will, I have sent the request to Operations team on how they want to plugback the Harroun 15-3, provide an answer to the bradenhead issues on the Devon well, 30-015-29915 and request that the field check one mile around the Harroun for windmills. I had gotten the TOC on the Devon well from the completion reports that were on-line at the NMOCD and since it didn't say how they came up with it, I put it as calculated. I appreciate all the help and will send the information as soon as they get back to me.

Thanks, David S.

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New Mexico
Oil Conservation Division
Images Contacts

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To: Jones, William V., EMNRD
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Cc: Ezeanyim, Richard, EMNRD <richard.ezeanyim@state.nm.us>; Shapard, Craig, EMNRD <craig.shapard@state.nm.us>; [Wesley Ingram@blm.gov](mailto:Wesley.Ingram@blm.gov) <[Wesley Ingram@blm.gov](mailto:Wesley.Ingram@blm.gov)>; Slack, Ronnie <Ronnie.Slack@dyn.com>
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Thank You,

Will Jones
New Mexico
Oil Conservation Division
[Images](#) [Contacts](#)

Jones, William V., EMNRD

From: Kenneth_Hood@oxy.com
Sent: Friday, May 11, 2012 5:11 AM
To: Peter_Lawrence@oxy.com; David_Stewart@oxy.com
Subject: FW: H B 10A Fed #8 remedial cement operation.

Fyi...

Best Regards,

Ken Hood

OXY USA Inc. / Occidental Permian Ltd. OXY USA WTP LP
Production Engineer - SENM RMT
5 Greenway Plaza Suite 110
Houston TX 77210-4294
713-366-5883 Office
713-670-4597 Mobile

From: Cromer, James [<mailto:James.Cromer@dvn.com>]
Sent: Thursday, May 10, 2012 5:07 PM
To: Kalyanaraman, Nishanth
Cc: Hood, Ken; Ibarra, Fernando; Gray, Ken; Pearson, Edward; Slack, Ronnie
Subject: H B 10A Fed #8 remedial cement operation.

Nishanth,
I have discussed this with my manager and Devon is willing to remediate top of cement on the subject well to facilitate approval of your Harroun 15 #3 SWD Well Conversion and protect integrity of our well, provided Oxy will reimburse us for the full cost of the remedial operation. We can provide a proposed procedure and cost estimate for your review and submittal to the regulatory authorities if you like. We anticipate we could perform the work in a timely fashion using one of our maintenance rigs. We would entertain monitoring pressure on the production casing annulus prior to the work being done, if that would be beneficial to obtaining quicker approval from the authorities for your conversion.

Regards,

Jim Cromer

Devon Energy Production Company, LP
Midcontinent Division Operations
Permian Business Unit, Southeast New Mexico
405-228-4464

Jones, William V., EMNRD

From: Joseph_Day@oxy.com
Sent: Tuesday, May 01, 2012 10:04 AM
To: Kenneth_Hood@oxy.com; David_Stewart@oxy.com; Nishanth_Kalyanaraman@oxy.com
Cc: Peter_Lawrence@oxy.com; John_Webster@oxy.com; Michael_Braddock@oxy.com
Subject: RE: Harroun 15 #3 SWD Well Conversion - Windmill Search

Mike Braddock, the pumper for the route, surveyed the area and did not find a water well or windmill within a mile radius of the well.

Joe Day

Office Phone 713.215.7477
Mobile Phone 832.607.9315

From: Hood, Ken
Sent: Tuesday, May 01, 2012 9:14 AM
To: Stewart, David; Kalyanaraman, Nishanth
Cc: Day, Joseph F; Lawrence, Peter; Webster, John C
Subject: RE: Harroun 15 #3 SWD Well Conversion

I did not hear back from Devon even after an email last week. Nishanth and I will call again today.

I did not hear back from John Webster on the windmill question and I'm not sure who the new pumper is yet...I'll follow up again.

Thanks.

Best Regards,

Ken Hood

OXY USA Inc. / Occidental Permian Ltd. OXY USA WTP LP
Production Engineer - SENM RMT
5 Greenway Plaza Suite 110
Houston TX 77210-4294
713-366-5883 Office
713-670-4597 Mobile

From: Stewart, David
Sent: Tuesday, May 01, 2012 7:19 AM
To: Hood, Ken; Kalyanaraman, Nishanth
Cc: Day, Joseph F; Lawrence, Peter
Subject: RE: Harroun 15 #3 SWD Well Conversion

Ken, did you ever hear back from Devon? Also did you have the field look for the windmills/possible water wells within in one mile.

Thanks, David S.
W-432-685-5717
C-432-634-5688
F-432-685-5742

From: Stewart, David
Sent: Thursday, April 19, 2012 3:45 PM
To: Hood, Ken; Kalyanaraman, Nishanth
Cc: Day, Joseph F; Lawrence, Peter
Subject: RE: Harroun 15 #3 SWD Well Conversion

Please review the attached procedure and let me know if it is OK. It is basically what was originally filed, I just added the plugs and removed the proposed lower perms, which eliminate 2 stages.

Thanks, David S.
W-432-685-5717
C-432-634-5688
F-432-685-5742

From: Hood, Ken
Sent: Thursday, April 19, 2012 3:30 PM
To: 'Slack, Ronnie'; 'James.cromer@dvn.com'
Cc: Day, Joseph F; Lawrence, Peter; Stewart, David
Subject: Harroun 15 #3 SWD Well Conversion

Ronnie/Jim,

Per our conversation this afternoon can you please confirm if the H.B. 10-A Federal #8 well has cement to surface.

As you are aware Oxy is in the process of converting the Harroun 15 #3 well to SWD. The new approved disposal interval is from 3041-3765'. Records for Devon's well (H.B. 10-A Federal #8) indicate that TOC is roughly 3210'. The OCD is requesting that the 8 5/8" x 5 1/2" annulus be monitored if the cement is not to surface so that Oxy could be alerted to shut in the Harroun 15 #3 well should Devon see pressure on the H.B. 10-A Federal #8.

Please confirm where the top of cement is located and if Devon agrees to monitor the pressure going forward.

Thanks for your cooperation and assistance. Let me know if you have any questions.

Best Regards,

Ken Hood

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Cc: Joseph_Day@oxy.com; Peter_Lawrence@oxy.com; David_Stewart@oxy.com
Subject: Harroun 15 #3 SWD Well Conversion
Attachments: DEVON HB10AFd8 (3).xls

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Production Engineer - SENM RMT
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713-366-5883 Office
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Injection Permit Checklist (11/15/2010)

WFX PMX SWD 1326 Permit Date 4/19/12 UIC Qtr A (MKT)# Wells 1 Well Name(s): HARROUN 15 #3API Num: 30-015-29233 Spud Date: 12/16/96 New/Old: N (UIC primacy March 7, 1982)Footages 1657 FNL/33 FEL Unit H Sec 15 Tsp 245 Rge 29E County EDDYGeneral Location: ~ 1.5 mi SW of POTASH, ~ 8 mi SW of WIPPOperator: OXY USA INC. Contact: DAVID STEWARTOGRID: 4668 RULE 5.9 Compliance (Wells) 91841 (Finan Assur) OK IS 5.9 OK? OKWell File Reviewed ✓ Current Status: TAED

Planned Work to Well:

Diagrams: Before Conversion ✓ After Conversion ✓ Elogs in Imaging File: ✓ CBL

Well Details:	Sizes Hole.....Pipe	Setting Depths	Stage Tool	Cement Sx or Cf	Determination Method
New ___ Existing ___ Surface	<u>1 3/4 13 1/4</u>	<u>504'</u>	<u>—</u>	<u>575 SX</u>	<u>CIRC</u>
New ___ Existing ___ Interm	<u>9 1/8 - 7 5/8</u>	<u>2900'</u>	<u>—</u>	<u>80 SX</u>	<u>CIRC</u>
New ___ Existing ___ LongSt	<u>6 3/4 4 1/2</u>	<u>8056 TD</u>	<u>6226</u>	<u>1331 SX</u>	<u>1280 CBL</u>
New ___ Existing ___ Liner			<u>4511'</u>		
New ___ Existing ___ OpenHole					

Depths/Formations:

	Depths, Ft.	Formation	Tops?
Formation(s) Above	<u>2786</u>	<u>Del</u>	<u>✓</u>
	<u>2990</u>	<u>Del</u>	<u>✓</u>
Injection TOP:	<u>3041</u>	<u>Bell C.</u>	<u>✓</u>
Injection BOTTOM:	<u>3765</u>	<u>Bell C.</u>	<u>✓</u>
Formation(s) Below	<u>3856</u>	<u>cherry C.</u>	<u>✓</u>

Cedar Canyon Delaware Pool area

Capitan Reef? (Potash? Noticed?) WIPP? Noticed? Salado Top/Bot Giff House?

Fresh Water: Depths: Formation Wells? Analysis? Affirmative Statement ✓Disposal Fluid Analysis? Sources: Lower Del/Bone Spring

Disposal Interval: Analysis? Production Potential/Testing:

Notice: Newspaper Date 12/12/11 Surface Owner BLM Mineral Owner(s)RULE 26.7(A) Affected Persons: DevonAOR: Maps? ✓ Well List? ✓ Producing in Interval? NO (at depths) Wellbore Diagrams? ✓.....Active Wells 10 Repairs? 0 Which Wells?.....P&A Wells 1 Repairs? 0 Which Wells?Issues: Look for WINDMILLS/Set new CIBP Request Sent Reply: