DATE IN 11/06/13	SUSPENSE	ENGINEER PRG	LOGGED IN Nov 8, 2013	TYPE SWD	APP NO. pPRG1331744095

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

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]

Devon

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

Hackenberry 16 SWD #1
30-015-41783
M/16/19S/31E
Devonian - Sil/ Old

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.

Stephanie A. Porter		Operations Technician	11/5/2013
Print or Type Name	Signature	Title	Date

Stephanie.Porter@dvn.com
e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery ___Pressure Maintenance ___X___Disposal _____Storage
Application qualifies for administrative approval? __X_____Yes _____No

II. OPERATOR: ____Devon Energy Production Company, LP_____

ADDRESS: _____333 West Sheridan Avenue, Oklahoma City, Oklahoma 73102-5010_____

CONTACT PARTY: __Stephanie A. Porter_____PHONE: _405-552-7802

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.

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.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
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.).

*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.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

*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.

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.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

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: ____Stephanie A. Porter_____TITLE: _____Operations Technician____
SIGNATURE: _____DATE: 11/5/2013

E-MAIL ADDRESS: _____Stephanie.Porter@dvn.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: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

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.

Proposed Injection Well: Hackberry 16 SWD #2 1
API: 30-015-
APPLICATION FOR INJECTION
Form C-108 Section VII to XIII

VII Attach data on the proposed operation, including:

(1) Proposed average injection rate: 5000 BWPD
Proposed maximum injection rate: 10000 BWPD

(2) The system will be a closed system.

(3) Proposed average injection pressure: 1339 psi
Proposed max injection pressure: 2679 psi

(4) The injection fluid will be produced water from area wells producing from the Bone Spring and/or Delaware formations that will be injected into the ~~Mississippian~~/Silurian/Ordovician formation.
Devonian

(5) A representative water analysis is submitted for the Bone Spring formation.

VIII Geologic Injection Zone Data

The injection zone is the ~~Mississippian~~/Silurian/Ordivician formation from 13395' to 15000'. The gross injection interval is 1605' thick. The average depth to fresh water is 130' in this area.

IX Proposed Stimulation

Based on injectivity results this interval could be acid stimulated.

X Log Data

Logs will be submitted to the OCD.

XI Fresh Water Analysis

No fresh water wells were identified in the vicinity of the Hackberry 16 SWD 1 well.

XII Geologic / Engineering Statement

An examination of this area has determined there are no open faults or other hydrologic connection between the disposal zone and any underground drinking water.

Hackberry 16 SWD #2 (NWNW 16-19S-31E; PTD 15,000)
The proposed interval for disposal per the Hackberry 16 SWD #2 APD is the Mississippian-Silurian-Ordovician succession. A review of the drillsite section and the surrounding 8 sections offsetting the drillsite section for th proposed SWD new drill indicates there are no penetrations of the proposed interval. The only nearby existing penetrated this interval is the COG (Gulf) South Shugart Deep Fed Unit #1 (API 30-015-23938) in the NENW o 19S-31E, which, at over 2 miles to the north, is considered too distant to be effected by a disposal well in Secti 16. There are no indications from surrounding Morrow gas wells of a structural closure at greater depth that m trapped hydrocarbons in the Mississippian-Silurian-Ordovician succession.

Raleigh Blumstein, Geologist
Direct #: (405)-552-3359
Cell #: (405)-635-7903

11/4/15
Date:

XIII Proof of Notice

Proof of notice to surface owner, and public legal notification are attached.

Proposed Injection Well: Hackberry 16 SWD #2
API: 30-015-
APPLICATION FOR INJECTION
Form C-108 Section III

III. Well Data--On Injection Well

A. Injection Well Information

(1) **Lease** Hackberry 16 SWD
Well No #1
Location 330' FSL & 280' FWL
Sec,Twn,Rnge Sec 16-T19S-R31E
Cnty, State Eddy County, NM

(2) **Casing**

20", 94#, J55, BTC, @ 450'
Cmt'd w/1090 sx, circ cmt to surf

13-3/8", 61#, J-55, BTC, @ 2535'
Cmt'd w/1850 sx, circ cmt to surf

9-5/8", 40#, HCK-55, LTC, @ 4,900'
Cmt'd w/1300, circ cmt to surf

7", 26#, HCP-110, LTC @ 13395'
Cmt w/1110 sx, TOC @ 3000'

(3) **Injection Tubing** 4 -1/2" IPC injection tubing

(4) **Packer** 7" Nickel Coated Arrowset Packer @ +/- 13345'

B. Other Well Information

(1) **Injection Formation:** Devonian/Silurian/Ordovician
Field Name: (to be assigned)

(2) **Injection Interval:** 13395 ~~-15000'~~ reduced to <100' of Ellenburger
14765

(3) **Original Purpose of Wellbore:**

Drill and convert to SWD

(4) **Other perforated intervals:**

n/a

(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.**

Quaternary Alluvium Surface (Water @ ~130); Rustler 410 (Barren); Salado 485 (Barren); Base Salado 1950 (Barren); Tansil Dolomite 2040 (Barren); Yates 2175 (Barren); Seven Rivers 2430 (Barren); Capitan 2550 (Barren); B/Capitan 3370 (Barren); Delaware 4440 (Oil); Bone Spring Lime 6630 (Oil); 1st Bone Spring Sand 7975 (Oil); 2nd Bone Spring Lime 8250 (Oil); 2nd Bone Spring Sand 8770 (Oil); 3rd Bone Spring Lime 9135 (Oil); 3rd Bone Spring Sd 9550 (Oil); Wolfcamp 9880 (Oil); Penn 10340 (Oil), Upper Penn Shale 10435 (Oil); Strawn 10940 (Gas); Atoka Shale 11315 (Gas); Morrow Lime 11520 (Gas); Middle Morrow 11910 (Gas); Lower Morrow 12240 (Gas); Upper Barnett 12335 (Barren); Chester (Austin Cycle) 12380 (Barren); Lower Barnett 12465 (Barren); Mississippian Lime 12700 (Brine Water); Woodford 13280 (Brine Water); Siluro-Devonian ~~13395~~ 14665 (Brine Water); Montoya 14420 (Brine Water); Simpson 14480 (Brine Water); Ellenburger 14665 (Brine Water)

14665
+100'

Side 1

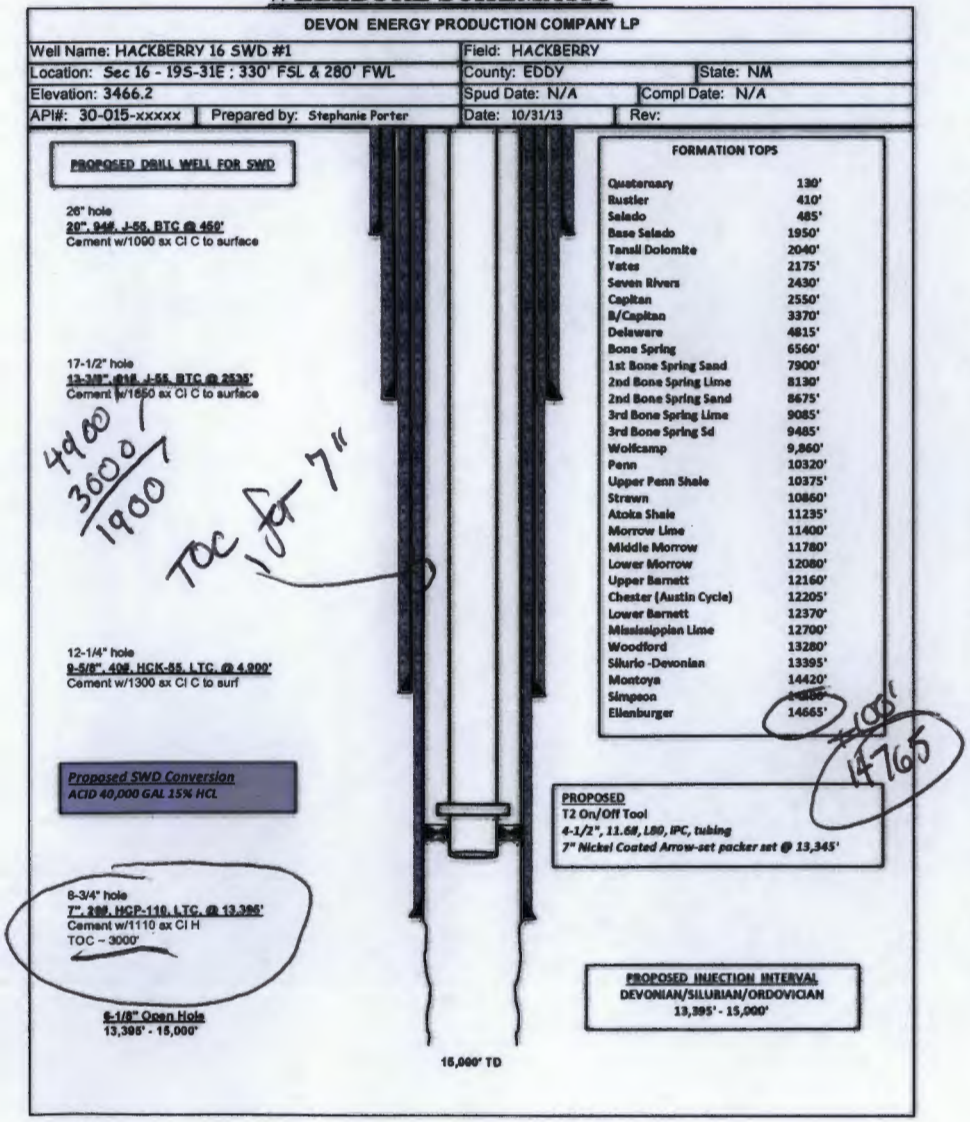
INJECTION WELL DATA SHEET

OPERATOR: Devon Energy Production Company, LP

WELL NAME & NUMBER: HACKBERRY 16 SWD #1

WELL LOCATION: 330' FSL & 280' FWL (FOOTAGE LOCATION) M (UNIT LETTER) Sec 16 (SECTION) T19S (TOWNSHIP) R31E (RANGE)

WELLBORE SCHEMATIC



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 26" Casing Size: 20",94# @ 450'

Cemented with: 1090 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circ. cement

Intermediate Casing

Hole Size: 17-1/2" Casing Size: 13-3/8", 61#, @ 2535'

Cemented with: 1850 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circ. cement

2nd Intermediate Casing

Hole Size: 12-1/4" Casing Size: 9-5/8", 40#, @ 4900'

Cemented with: 1300 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circ. Cmt

3rd Intermediate Casing

Hole Size: 8-3/4" Casing Size: 7", 26#, @ 13395'

Cemented with: 1110 sx. *or* _____ ft³

Top of Cement: ~~TOC @ 3000'~~ Method Determined: Calc TOC

Total Depth: 15000'

Injection Interval (Open Hole)

13395' to ~~15000'~~

(Perforated or Open Hole; indicate which)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 4-1/2" Lining Material: ___IPC_____

Type of Packer: ___7" Nickel Coated Arrowset Packer_____

Packer Setting Depth: +/- 13345'_____

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? Yes

   If no, for what purpose was the well originally drilled? _____

   _____

2. Name of the Injection Formation: ____Devonian/Silurian/Ordovician___

3. Name of Field or Pool (if applicable): ____(to be assigned)___

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. n/a

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

   Quaternary Alluvium Surface (Water @ ~130); Rustler 410 (Barren); Salado 485 (Barren); Base Salado 1950 (Barren); Tansil Dolomite 2040 (Barren); Yates 2175 (Barren); Seven Rivers 2430 (Barren); Capitan 2550 (Barren); B/Capitan 3370 (Barren); Delaware 4440 (Oil); Bone Spring Lime 6630 (Oil); 1st Bone Spring Sand 7975 (Oil); 2nd Bone Spring Lime 8250 (Oil); 2nd Bone Spring Sand 8770 (Oil); 3rd Bone Spring Lime 9135 (Oil); 3rd Bone Spring Sd 9550 (Oil); Wolfcamp 9880 (Oil); Penn 10340 (Oil), Upper Penn Shale 10435 (Oil); Strawn 10940 (Gas); Atoka Shale 11315 (Gas); Morrow Lime 11520 (Gas); Middle Morrow 11910 (Gas); Lower Morrow 12240 (Gas); Upper Barnett 12335 (Barren); Chester (Austin Cycle) 12380 (Barren); Lower Barnett 12465 (Barren); Mississippian Lime 12700 (Brine Water); Woodford 13280 (Brine Water); Siluro-Devonian 13395 (Brine Water); Montoya 14420 (Brine Water); Simpson 14480 (Brine Water); Ellenburger 14665 (Brine Water)

DEVON ENERGY PRODUCTION COMPANY LP

Well Name: HACKBERRY 16 SWD #1	Field: HACKBERRY		
Location: Sec 16 - 19S-31E ; 330' FSL & 280' FWL	County: EDDY	State: NM	
Elevation: 3466.2	Spud Date: N/A	Compl Date: N/A	
API#: 30-015-xxxxx	Prepared by: Stephanie Porter	Date: 10/31/13	Rev:

PROPOSED DRILL WELL FOR SWD

26" hole
20", 94#, J-55, BTC @ 450'
Cement w/1090 sx Cl C to surface

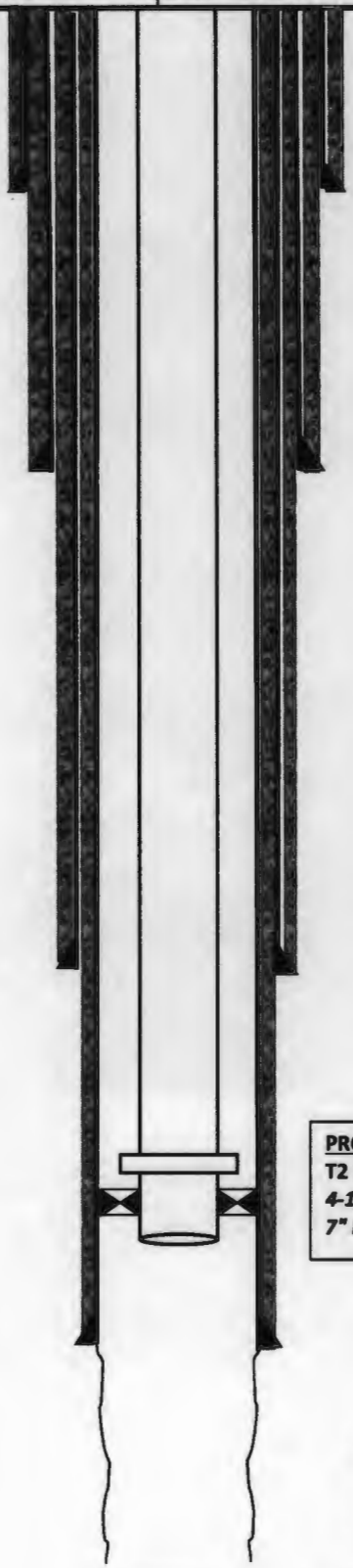
17-1/2" hole
13-3/8", 61#, J-55, BTC @ 2535'
Cement w/1850 sx Cl C to surface

12-1/4" hole
9-5/8", 40#, HCK-55, LTC, @ 4,900'
Cement w/1300 sx Cl C to surf

Proposed SWD Conversion
ACID 40,000 GAL 15% HCL

8-3/4" hole
7", 26#, HCP-110, LTC, @ 13,395'
Cement w/1110 sx Cl H
TOC ~ 3000'

6-1/8" Open Hole
13,395' - ~~15,000'~~



FORMATION TOPS

Quaternary	130'
Rustler	410'
Salado	485'
Base Salado	1950'
Tansil Dolomite	2040'
Yates	2175'
Seven Rivers	2430'
Capitan	2550'
B/Capitan	3370'
Delaware	4815'
Bone Spring	6560'
1st Bone Spring Sand	7900'
2nd Bone Spring Lime	8130'
2nd Bone Spring Sand	8675'
3rd Bone Spring Lime	9085'
3rd Bone Spring Sd	9485'
Wolfcamp	9,860'
Penn	10320'
Upper Penn Shale	10375'
Strawn	10860'
Atoka Shale	11235'
Morrow Lime	11400'
Middle Morrow	11780'
Lower Morrow	12080'
Upper Barnett	12160'
Chester (Austin Cycle)	12205'
Lower Barnett	12370'
Mississippian Lime	12700'
Woodford	13280'
Silurio -Devonian	13395'
Montoya	14420'
Simpson	~~14480'~~
Ellenburger	14665'

Limit TD top 100' of ellenburger

PROPOSED
T2 On/Off Tool
4-1/2", 11.6#, L80, IPC, tubing
7" Nickel Coated Arrow-set packer set @ 13,345'

PROPOSED INJECTION INTERVAL
DEVONIAN/SILURIAN/ORDOVICIAN
13,395' - ~~15,000'~~

14765'

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised December 16, 2011

Permit

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

[1] Operator Name and Address	[2] OGRID Number
DEVON ENERGY PRODUCTION CO., L. P. 333 W. SHERIDAN OKLAHOMA CITY, OK 73102	6137
	[3] API Number

[4] Property Code	[5] Property Name	[6] Well No.
	HACKBERRY 16 SWD	1

[7] Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
M	16	19 S	R 31E		330	SOUTH	280	WEST	EDDY

[8] Pool Information

DEVONIAN;SILURIAN/ORDOVICIAN	

Additional Well Information

[9] Work Type	[10] Well Type	[11] Cable/Rotary	[12] Lease Type	[13] Ground Level Elevation
NW	SWD		STATE	3466.2
[14] Multiple	[15] Proposed Depth	[16] Formation	[17] Contractor	[18] Spud Date
	15,000'	Devonian		2/15/14

Depth to Ground water	Distance from nearest fresh water well	Distance to nearest surface water

[19] Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	26"	20"	94#	450'	1090 sx	0
Int 1	17 1/2"	13 3/8"	61#	2535'	1850 sx	0
Int 2	12 ¼"	9 5/8"	40#	4900'	1300 sx	0
8 ¾"	13395'	7"	26#	13395'	1110 sx	3000'
6 1/8"	15000'	N/A	N/A	Open Hole	N/A	N/A

Casing/Cement Program: Additional Comments

26: HOLE; 20", 94# J-55 BTC @ 450' CEMENT w/ 1090 sx Cl C to surf; 17 ½" HOLE 13 3/8", 61#, J-55 BTC @ 2535'; CEMENT w/ 1850 sx Cl C to surf. 12 ¼" hole 9 5/8" 40#, HCK-55 LTC @ 4900', CEMENT w/ 1300 sx Cl C to surf. 8 ¾" HOLE, 7" 26#, HCP-110, LTC @ 13,395'. CEMENT w/ 1110 sx H.. 6 1/8" OPEN HOLE 13395-15000'

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	5000	
Double Ram	5000	5000	

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify that the drilling pit will be constructed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Signature:

Printed name: Judy A. Barnett

Title: Sr. Regulatory Specialist 11/5/13

E-mail Address: Judith.Barnett@dvn.com

OIL CONSERVATION DIVISION

Approved By:

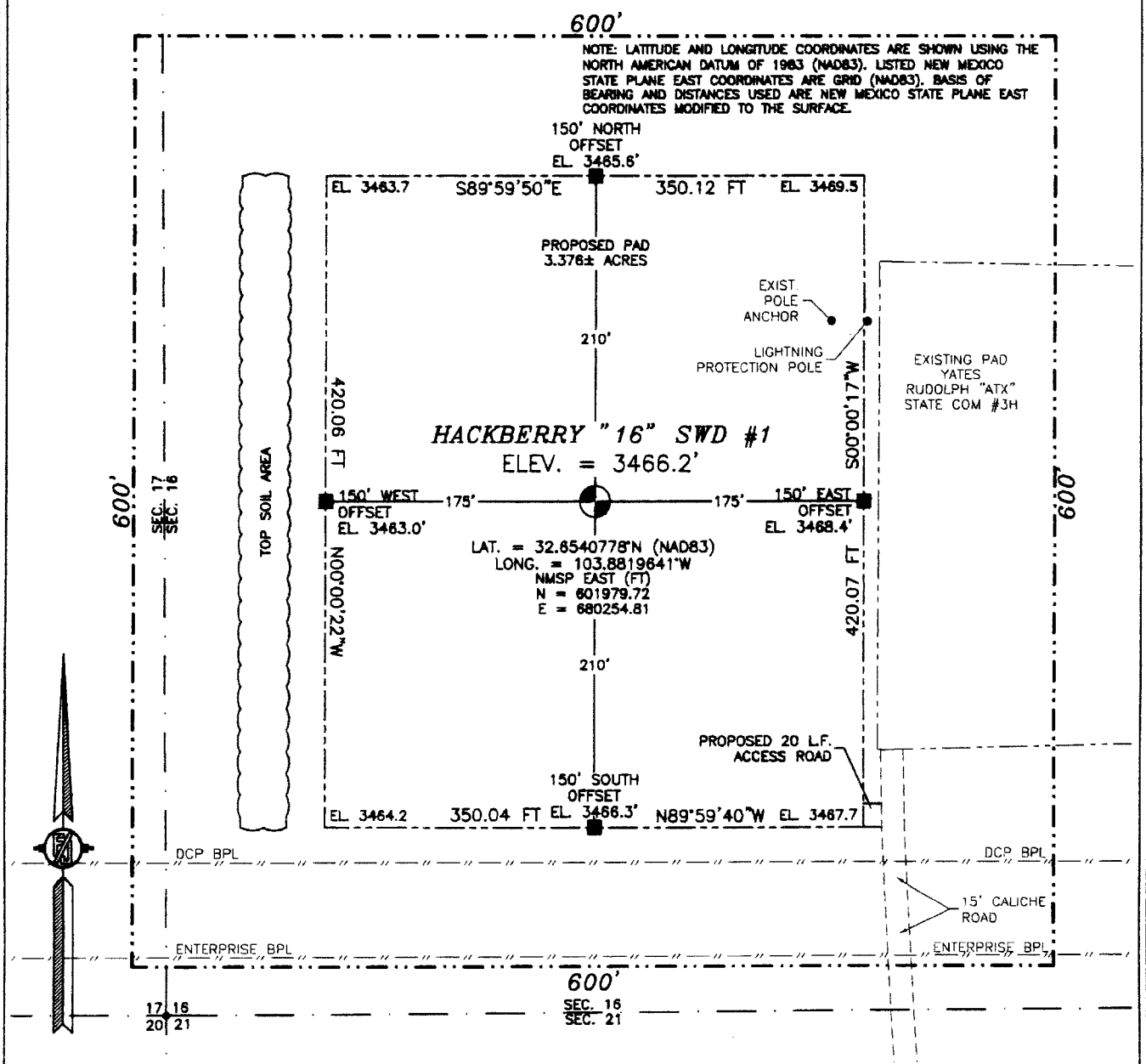
Title:

Approved Date: FILE COPY

Expiration Date:

Date: 11/5/13	Phone: 405-228-8699	Conditions of Approval Attached

SECTION 16, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM PAVED CR. #222 (SHUGART) AND PAVED CR. #248 (LUSK PLANT RD.) GO SOUTHWEST ON CR. #222 1.6 MILES, TURN RIGHT ON CALICHE LEASE ROAD AND GO WEST-NORTHWEST 0.83 MILES, TURN RIGHT AND GO NORTH 0.2 MILES, TURN LEFT AND GO WEST 255' TURN RIGHT AND GO NORTH 0.22 MILES AND THE SOUTHEAST CORNER OF PROPOSED PAD IS 20' LEFT FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

HACKBERRY "16" SWD #1

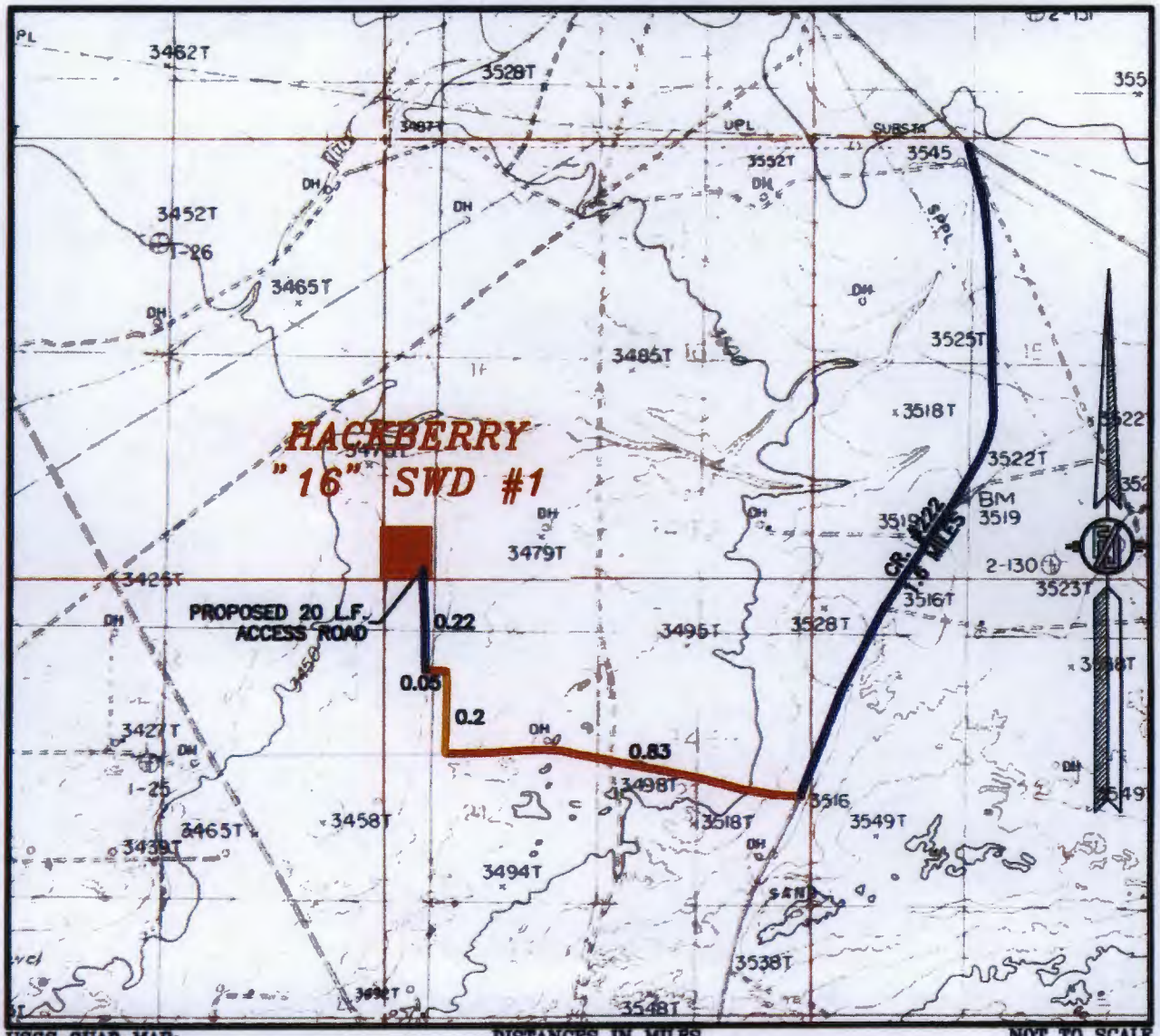
LOCATED 330 FT. FROM THE SOUTH LINE AND 280 FT. FROM THE WEST LINE OF SECTION 16, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

SEPTEMBER 16, 2013

SURVEY NO. 2261A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 16, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
HACKBERRY LAKE
GREENWOOD LAKE

DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION
FROM PAVED CR. #222 (SHUGART) AND PAVED CR. #248 (LUSK PLANT RD.) GO SOUTHWEST ON CR. #222 1.6 MILES, TURN RIGHT ON CALICHE LEASE ROAD AND GO WEST–NORTHWEST 0.83 MILES, TURN RIGHT AND GO NORTH 0.2 MILES, TURN LEFT AND GO WEST 255' TURN RIGHT AND GO NORTH 0.22 MILES AND THE SOUTHEAST CORNER OF PROPOSED PAD IS 20' LEFT FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.
HACKBERRY "16" SWD #1
LOCATED 330 FT. FROM THE SOUTH LINE AND 280 FT. FROM THE WEST LINE OF SECTION 16, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

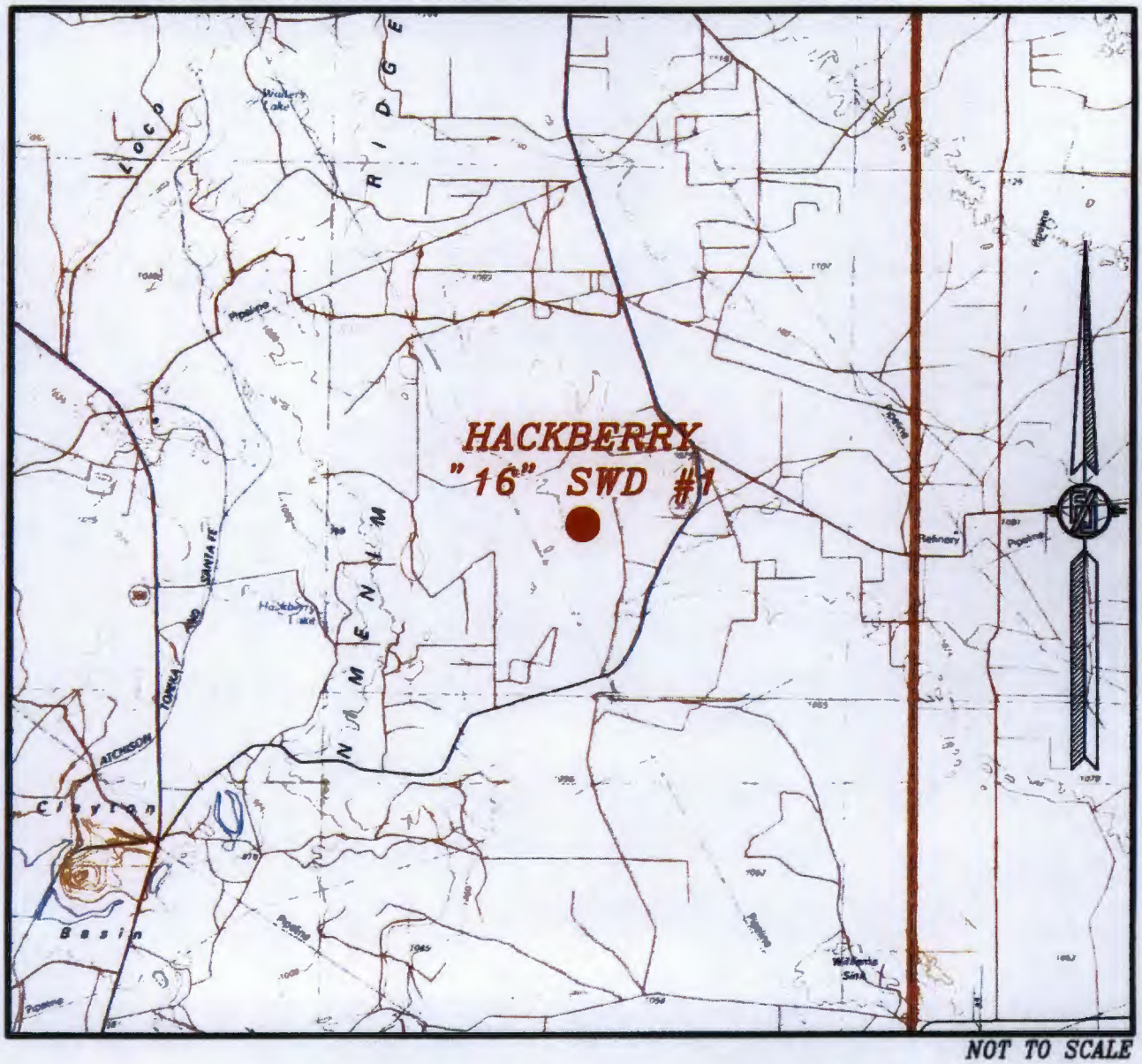
SEPTEMBER 16, 2013

SURVEY NO. 2261A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 16, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

VICINITY MAP



NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

HACKBERRY "16" SWD #1

LOCATED 330 FT. FROM THE SOUTH LINE
AND 280 FT. FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 19 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

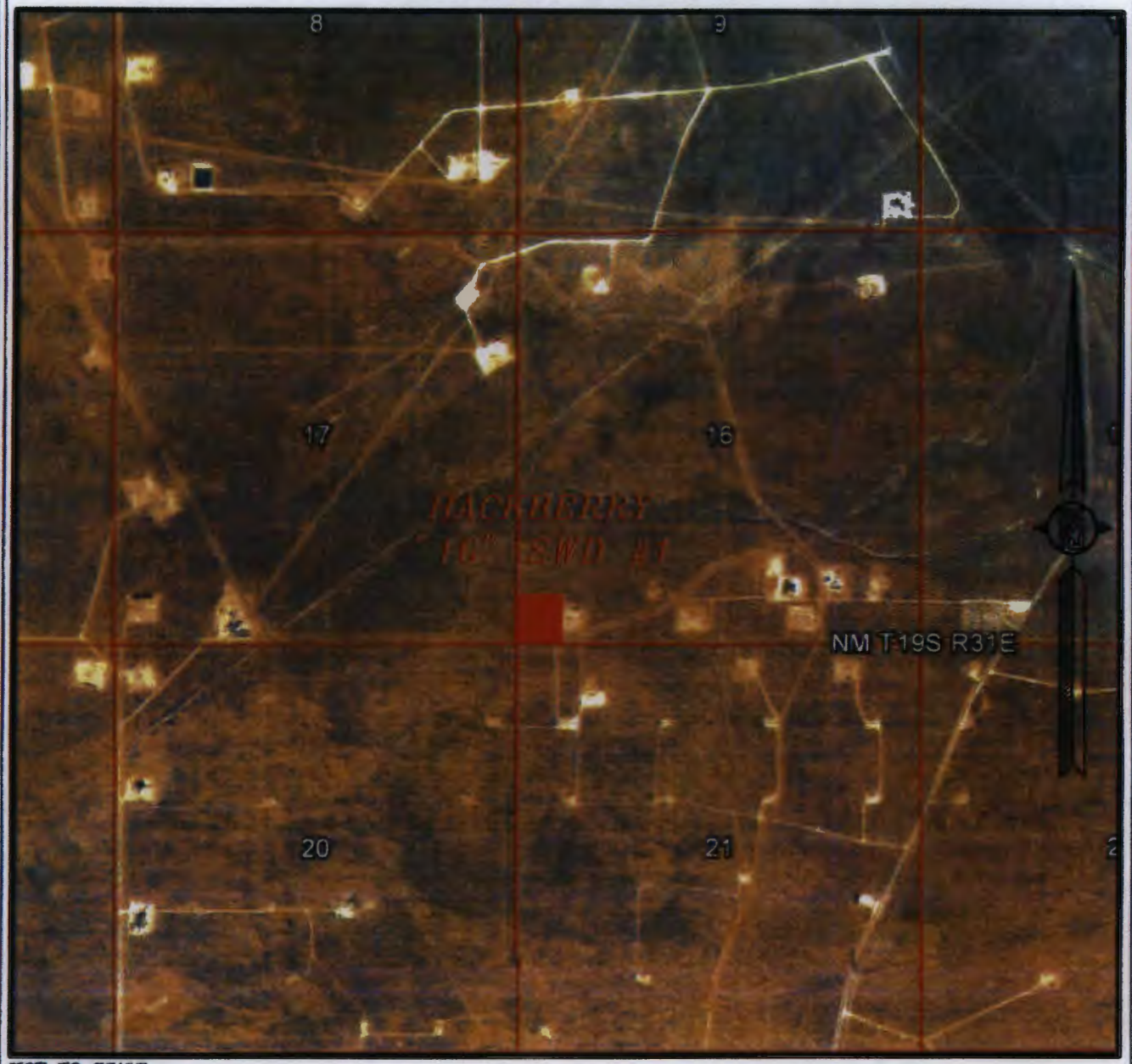
SEPTEMBER 16, 2013

SURVEY NO. 2261A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 16, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MARCH 2012

DEVON ENERGY PRODUCTION COMPANY, L.P.

HACKBERRY "16" SWD #1

LOCATED 330 FT. FROM THE SOUTH LINE
AND 280 FT. FROM THE WEST LINE OF
SECTION 16, TOWNSHIP 19 SOUTH,
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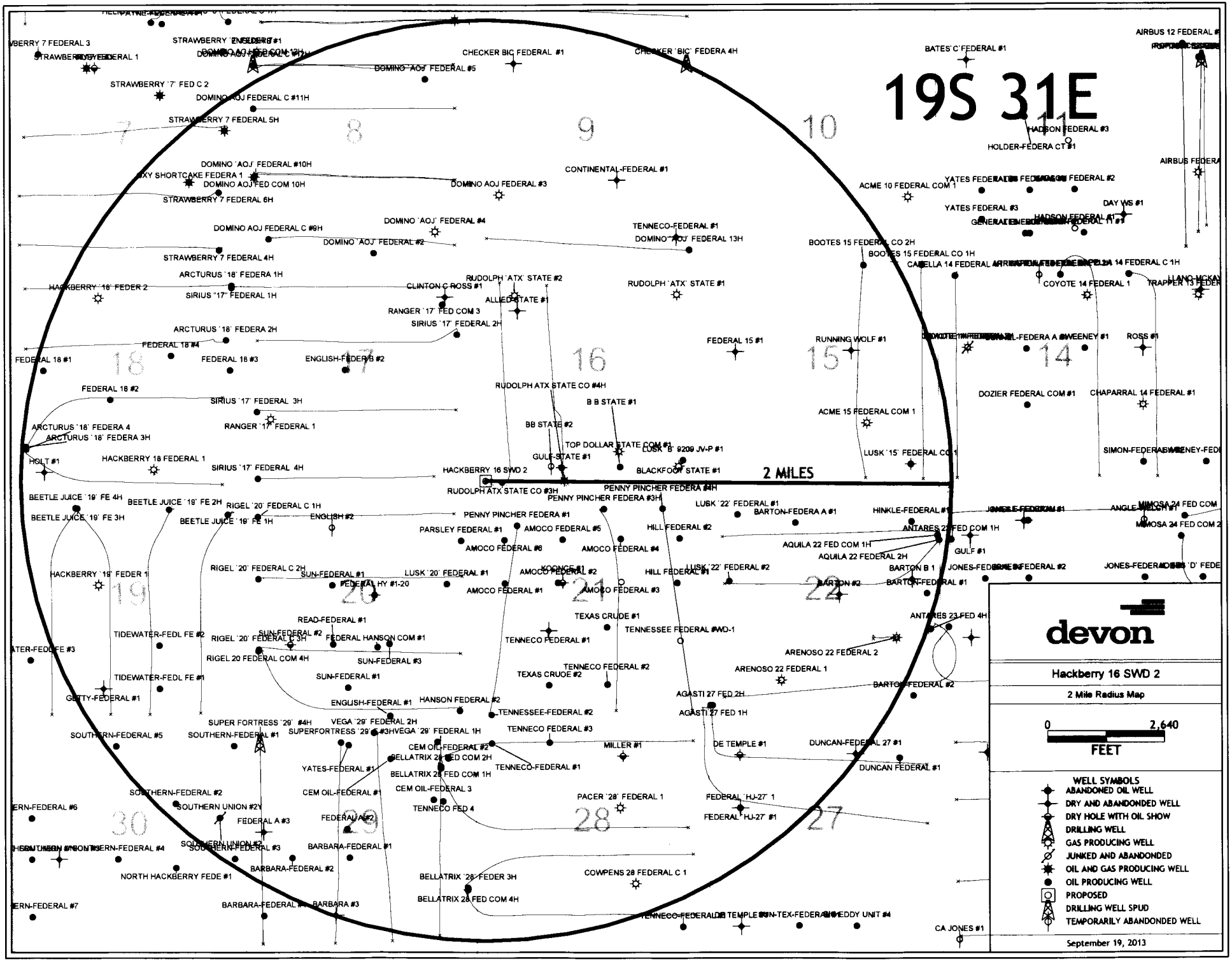
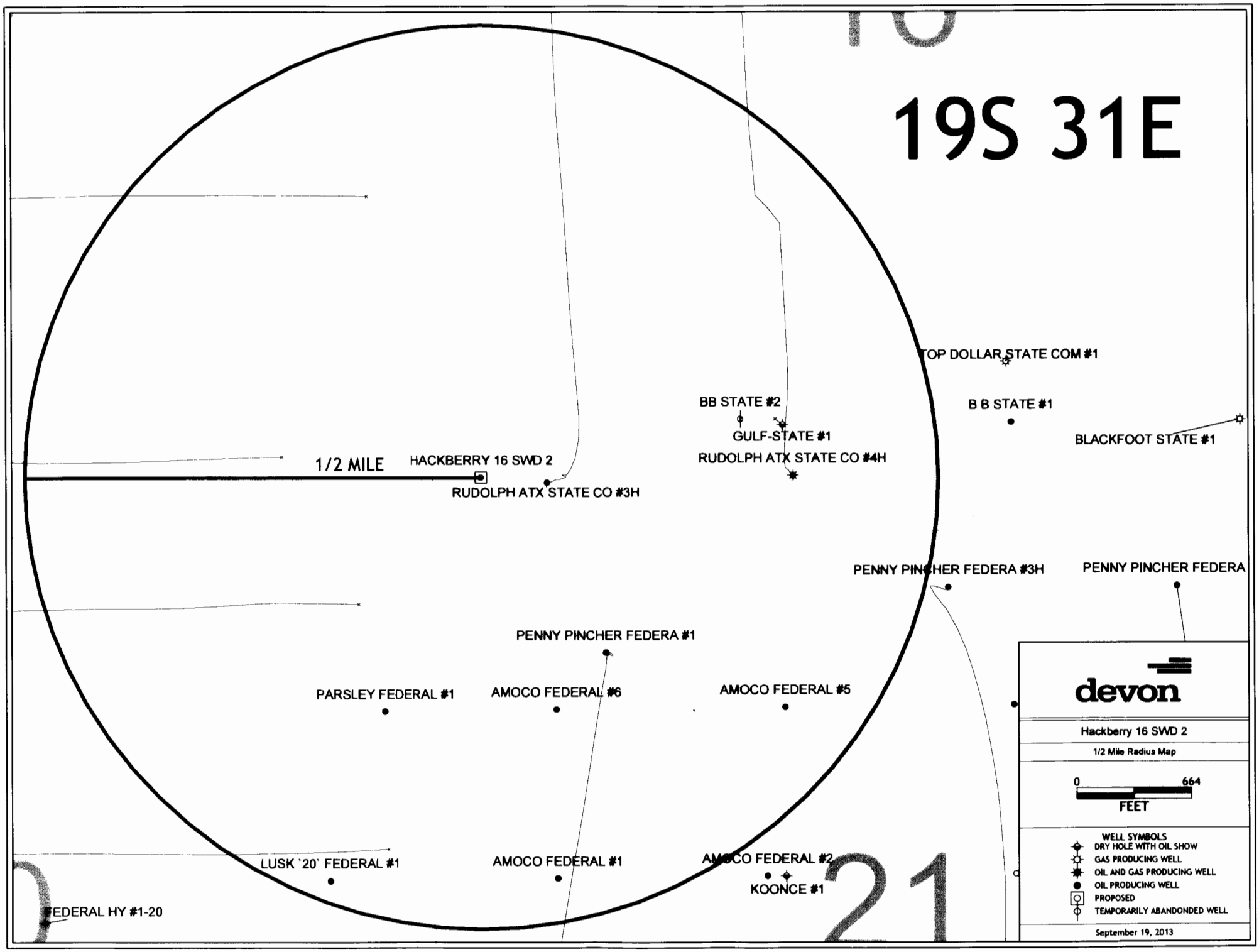


PETRA 9/19/2013 10:04:26 AM



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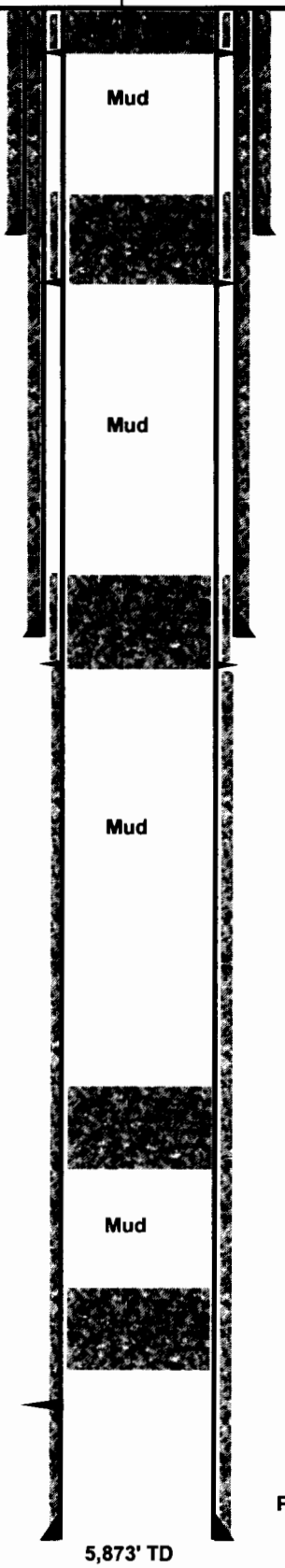
C108 ITEM VI--Well Tabulation in 1/2 Mile Review Area
Devon Energy Production Company, LP
Proposed Inj Well: HACKBERRY 16 SWD 1
Proposed Formation: Devonian/Silurian/Ordovician
Proposed Interval: 13395' - 15000'

Operator	Well Name	API NO	County	Surf Location	Sec	Twn	Rnge	Type	Status	Spud Date	Comp Date	TVD	PBTD	Comp Zone	Comp Interval-Ft	Casing Program (MD)	Cement / TOC
Yates Petroleum Corporation	Rudolph ATXS State Com 3H	30-015-37997	Eddy	330' FSL 660' FWL	16	19S	31E	Oil	Active	7/30/2010	1/26/2011	8891	13282	Bone Spring	9158-13272	20", @ 40' 13-3/8", 48#, @ 544' 9-5/8", 36/40#, @ 4182' 5-1/2", 17#, @ 13330'	80 sx / surface 650 sx / surface 2650 sx / surface 1830 sx / surface
Yates Petroleum Corporation	Rudolph ATXS State Com 4H	30-015-38565	Eddy	330' FSL 2280' FWL	16	19S	31E	Oil	Active	4/16/2011	7/21/2011	8879	13193	Bone Spring	9239-13183	20", @ 40' 13-3/8", 48#, @ 455' 9-5/8", 36/40#, @ 3950' 5-1/2", 17#, @ 13286'	24 sx / surface 400 sx / surface 1780 sx / surface 2030 sx / 2550 cbl
Devon Energy Prod Co LP	Sirius 17 Federal 4H	30-015-38478	Eddy	450 FSL 340' FWL	17	19S	31E	Oil	Active	12/24/2011	3/1/2012	8866	13167	Bone Spring	9100-13143	20", 106.5#, @ 80' 13-3/8", 48#, @ 509' 9-5/8", 40#, @ 3801' 5-1/2", 17#, @ 13215'	560 sx / surface 1350 sx / surface 2200 sx / 1898 cbl
Devon Energy Prod Co LP	Sirius 17 Federal 3H	30-015-38481	Eddy	1980' FSL 340' FWL	17	19S	31E	Oil	Active	9/4/2011	11/4/2011	8834	13126	Bone Spring	9080-13103	20", 94#, @ 90' 13-3/8", 48#, @ 500' 9-5/8", 40#, @ 3638' 5-1/2", 17#, @ 13170'	600 sx / surface 7175 sx / surface 2250 sx / 780 cbl
Devon Energy Prod Co LP	Rigel 20 Federal 1H	30-015-39393	Eddy	425' FNL 330' FWL	17	19S	31E	Oil	Active	11/24/2011	2/2/2012	8892	12912	Bone Spring	9100-12882	20", 106.5#, @ 100' 13-3/8", 48#, @ 514' 9-5/8", 40#, @ 3985' 5-1/2", 17#, @ 12959'	460 sx / surface 2045 sx / surface 2425 sx / 1962 cbl
Ray Westall	Parsley Federal 1	30-015-25219	Eddy	990' FNL 330' FEL	20	19S	31E	Oil	Active	3/29/1985	4/17/1985	2425	2349	Yates/Seven Rivers	2164-2285	8-5/8", 24#, @ 351' 5-1/2", 15.5#, @ 2425'	230 sx / surface 300 sx / surface
Ray Westall	Amoco Federal 1	30-015-24864	Eddy	1980' FNL 660' FWL	21	19S	31E	Oil	Active	11/17/1984	12/7/1984	2330	2324	Yates/Seven Rivers	2195-2248	8-5/8", 23# @ 350' 5-1/2", 17#, @ 2330'	200 sx / surface 600 sx / surface
Ray Westall	Amoco Federal 5	30-015-25079	Eddy	990' FNL 1980' FWL	21	19S	31E	Oil	Active	11/17/1984	12/7/1984	2425	2395	Yates/Seven Rivers	2220-2347	8-5/8", 24# @ 350' 5-1/2", 17#, @ 2415'	200 sx / surface 600 sx / surface
Ray Westall	Amoco Federal 6	30-015-25081	Eddy	990' FNL 660' FWL	21	19S	31E	Oil	Active	12/31/1984	1/17/1985	2425	2410	Yates/Seven Rivers	2182-2297	8-5/8", 23# @ 357' 5-1/2", 15.5#, @ 2415'	200 sx / surface 600 sx / surface
Cimarex Energy Co. of Colorado	Penny Pincher Federal 1	30-015-37699	Eddy	660' FNL 990' FWL	21	19S	31E	Oil	Active	3/20/2010	8/5/2010	8975	13175	Delaware	6638-13175 (peak completion liner)	18-5/8", 87.5# @ 575' 13-3/8", 61#, @ 2580' 9-5/8", 40# @ 4195' 7", 26./2.18# @ 9237' 4-1/2", 11.6#, @ 12950'	1333 sx/ surface 1750 sx / surface 950 sx / surface 1070 sx/ n/a no cmt / 9045 tol (md)
Santa Fe Energy	Lusk 20 Federal 1	30-015-25505	Eddy	1980' FNL 660' FEL	20	19S	31E	Oil	Active	12/27/1985	12/31/1985	2300	2295	Yates/Seven Rivers	2172-2195	8-5/8", 24# @ 505' 4-1/2", 10.6, @ 2300'	450 sx / surface 1100 sx / surface
El Ran, Inc.	B.B. State 2	30-015-25878	Eddy	660' FSL 1780' FWL	16	19S	31E	Oil	P&A	2/28/1988	3/13/2013	5874	Surf	Delaware	5300-5450	13-3/8", 54.5#, @ 476' 8-5/8", J-55 @ 1995' 5-1/2", 15.5#, @ 5873'	500 sx / surface 630 sx / surface 760 sx / surface
Kincaid & Watson Drilling Company	Gulf-State 1	30-015-05763	Eddy	660' FSL 1980' FWL	16	19S	31E	Oil	P&A	4/25/1962	5/15/2013	2479	Surf	Yates/Seven Rivers	2370-2381	8-5/8", 23# @ 80 - 350'	50 sx/ surf (see P&A schematic)

B penetrating top of interval at 13,395

EL RAN, INC.			
Well Name: B B STATE #2		Field: HACKBERRY DELAWARE	
Location: 660' FSL & 1780' FWL; SEC 16-T19S-R31E		County: EDDY	State: NM
Elevation: 3478' GL		Spud Date: 2/28/88	Compl Date:
API#: 30-015-25878	Prepared by: Ronnie Slack	Date: 9/19/13	Rev:

PLUGGING REPORT PER OCD RECORDS
PLUGGED 2/18/03 BY EL RAN, INC .



Cut wellhead off, set dry hole marker - 2/18/13
Perf @ 60'. Sqzd 30 sx to surf

17-1/2" hole
13-3/8", 54.5#, J55, @ 476'
Cmt'd w/500 sx to surface

Tagged TOC @ 391'

Perf @ 600'. Sqzd 60 sx

12-1/4" hole
8-5/8", J55, @ 1,995'
Cmt'd w/630 sx to surface

Tagged TOC @ 1,908'

Perf @ 2,058'. Sqzd 40 sx

Spot 25 sx @ 3,830' - 4,186'

Tagged TOC @ 4,921'

Spot 35 sx @ 5,265'.

DELAWARE 5,300' - 5,450'

7-7/8" Hole
5-1/2", 15.5#, J55, @ 5,873'
Cmt'd w/760 sx

PBD @ 5,754'

5,873' TD

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

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

Form C-103
Revised March 25, 1999

WELL API NO.
30-015-25878

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.
V-4460

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.)

7. Lease Name or Unit Agreement Name:
B.B. State

1. Type of Well:
Oil Well ☒ Gas Well ☐ Other

2. Name of Operator
El Ran, Inc.

8. Well No.
2

3. Address of Operator
P.O. Box 911, Lubbock, Texas 79408

9. Pool name or Wildcat
Hackberry Delaware

4. Well Location
Unit Letter **N** : **660** feet from the **South** line and **1780** feet from the **West** line

Section **16** Township **19-S** Range **31-E** NMPM **Eddy** County

10. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3480'

RECEIVED
OCD - ARTESIA

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☒
PULL OR ALTER CASING	☐	MULTIPLE COMPLETION	☐	CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER:			☐

12. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompilation.

02/05/03 Notified OCD, Gerry Guye. MIRU Triple N rig #26 and plugging equipment. NU BOP. RIH w/ wireline and tagged PBTD @ 5,754'. POOH. RIH w/ 2-7/8" tbg to 4,500'. SDFN.

02/06/03 Notified OCD, Gerry Guye. RIH w/ tbg to 5,265'. Pumped 35 sx C cmt w/ 2% $CaCl_2$ @ 5,265'. WOC 3 hrs and tagged cmt @ 4,921'. Circulated hole w/ mud. Pumped 25 sx C cmt 4,186 – 3,830'. POOH. RIH w/ wireline and perforated @ 2,058'. POOH. RIH w/ 5½" packer, set @ 1,750'. Established injection rate of 1 BPM @ 950 psi. Squeezed 40 sx C cmt from 2,058'. ISIP 500 psi. WOC. SDFN.

02/07/03 Notified OCD, Gerry Guye. Release packer. POOH. RIH w/ wireline and tagged cmt @ 1,908'. PUH , perforated @ 600'. POOH w/ wireline. RIH w/ packer, set @ 320'. Established circulation and squeezed 60 sx C cmt w/ 2% $CaCl_2$ @ 600'. POOH w/ packer. WOC and tagged @ 391'. Perforated @ 60'. POOH. RIH w/ packer, set @ 30'. Squeezed 30 sx cmt 60' to surface. RDMO.

Post PeA

02/18/03 Cut off wellhead and capped well, installed marker. Covered pit and cellar.

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

SIGNATURE _____ TITLE **Engineer** DATE **2/28/03**

Type or print name **James F. Newman, P.E.** Telephone No. **915-687-1994**

(This space for State use)

APPPROVED BY _____ TITLE Field Rep II DATE JUN 12 2003

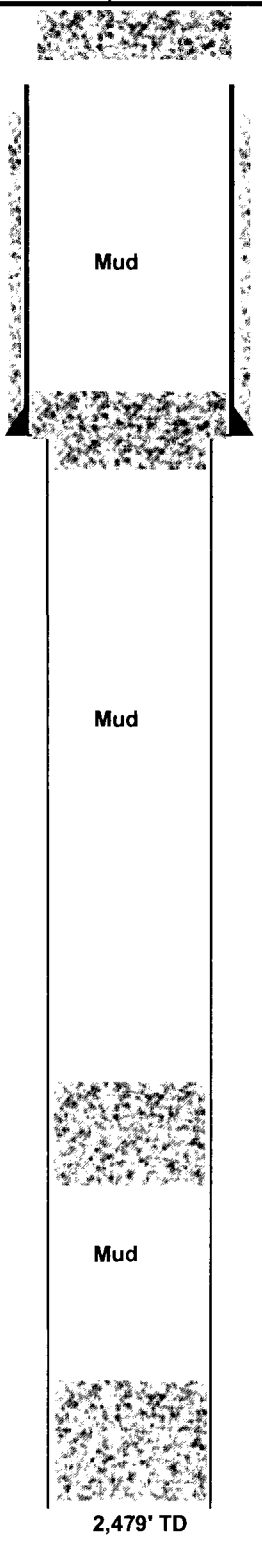
Conditions of approval, if any:

KINCAID & WATSON DRILLING COMPANY

Well Name: GULF STATE #1		Field: UNDESIGNATED	
Location: 660' FSL & 1980' FWL; SEC 16-T19S-R31E		County: EDDY	State: NM
Elevation: 3491' GL		Spud Date: 4/25/62	Compl Date:
API#: 30-015-05763	Prepared by: Ronnie Slack	Date: 9/23/13	Rev:

PLUGGED & ABANDONED--5/18/62

Plugging schemat per OCD P&A Records



10 sx surface plug

8-5/8" csg pulled from 80'

10" Hole
8-5/8", 24#, @ 717'
Cmt'd w/50 sx

15 sx cmt @ 720', top of salt

15 sx cmt @ 1,965', base of salt

7" Hole
No Casing Set

20 sx cmt in bottom of hole

2,479' TD

1980 / u

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103
(Rev 3-55)

MISCELLANEOUS REPORTS ON WELLS

(Submit to appropriate District Office as per Commission Rule 1106)

Name of Company	Address
Kincaid & Watson Drilling Company	Box 498, Artesia, New Mexico

Lease	Well No.	Unit Letter	Section	Township	Range
Gulf State	1	N	16	19 South	31 East

Date Work Performed	Pool	County
5-18-62	Undesignated	Eddy

THIS IS A REPORT OF: *(Check appropriate block)*

☐ Beginning Drilling Operations ☐ Casing Test and Cement Job ☐ Other *(Explain)*:

☒ Plugging ☐ Remedial Work

Detailed account of work done, nature and quantity of materials used, and results obtained.

This well was drilled to a total depth of 2479 feet without encountering oil or gas and we plugged as follows:

Cement plug of 20 sacks in bottom of hole
Cement plug of 15 sacks at 1965, base of salt
Cement plug of 15 sacks at 720, top of salt
Cemented surface with 10 sacks and put up regulation marker
8 5/8" casing was cemented at 718 feet and knocked off and pulled from 80 feet below surface.
All anular space between cement plugs was filled with mud.
We have moved off and cleaned up location.

RECEIVED
MAY 2 1962
O. C. C.
ARTESIA, OFFICE

Witnessed by	Position	Company
J. C. Watson	President	Kincaid & Watson Drilling Co.

FILL IN BELOW FOR REMEDIAL WORK REPORTS *ONLY*

ORIGINAL WELL DATA

D F Elev.	T D	P B T D	Producing Interval	Completion Date

Tubing Diameter	Tubing Depth	Oil String Diameter	Oil String Depth

Perforated Interval(s)

Open Hole Interval	Producing Formation(s)

RESULTS OF WORKOVER

Test	Date of Test	Oil Production BPD	Gas Production MCFPD	Water Production BPD	GOR Cubic feet/Bbl	Gas Well Potential MCFPD
Before Workover						
After Workover						

OIL CONSERVATION COMMISSION

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

Approved by	Name
Howard E. Lobley	Ray Holmes
Title	Position
	Assistant Secretary
Date	Company
MAY 21 1962	Kincaid & Watson Drilling Company

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
		DEVONIAN;SILURIAN;ORDOVICIAN

4 Property Code	5 Property Name	6 Well Number
	HACKBERRY 16 SWD	1

7 OGRID No.	8 Operator Name	9 Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3466.2

10 Surface Location

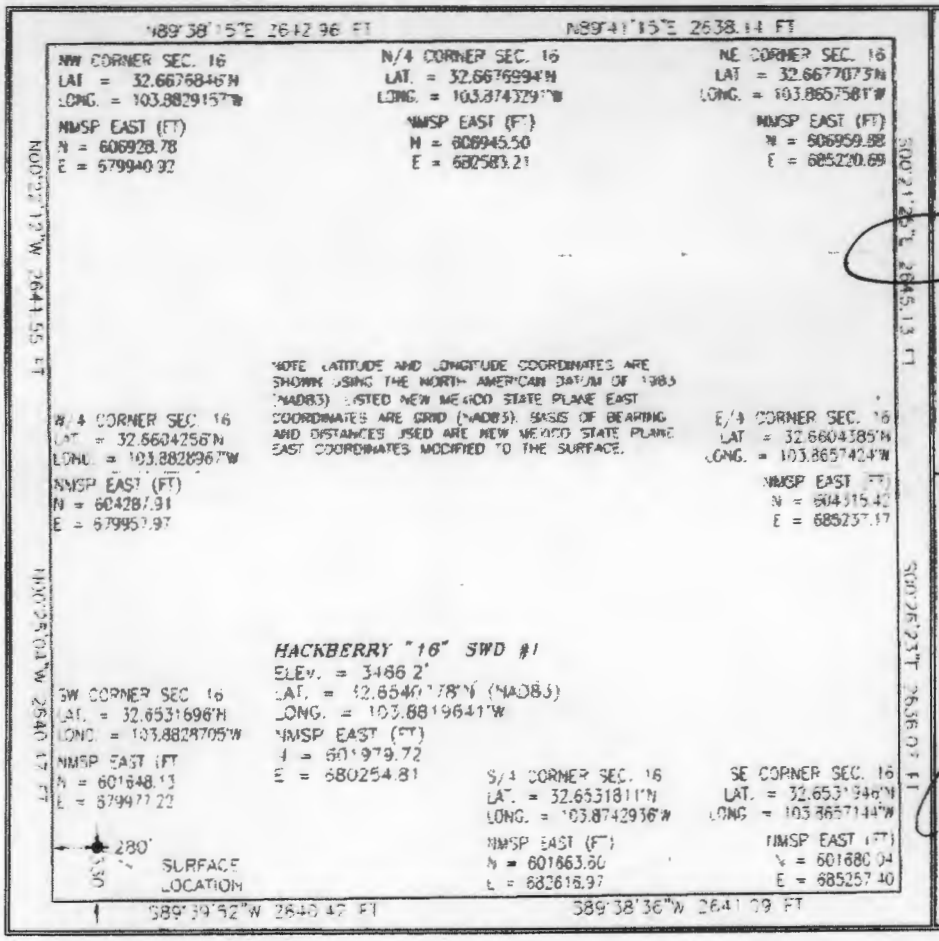
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	19 S	31 E		330	SOUTH	280	WEST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
40			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



16 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 11/7/2013

Judy A. Barnett Sr. Regulatory Specialist

Printed Name

E-mail Address

17 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

SEPTEMBER 16, 2013

Date of Survey

Signature and Seal of Professional Surveyor: GARY L. JONES 12797

Certificate Number: GARY L. JONES, PLS 12797

SURVEY NO. 2261A

Hackberry 16 SWD 1
C108 Application for Injection
Injection Water Analysis
Bone Spring Formation
Devon Energy Production Co LP

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 681-8300

Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	662769
Lease/Platform:	RIGEL 20	Analysis ID #:	136627
Entity (or well #):	1	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	WELL		

Summary	
Sampling Date:	09/18/13
Analysis Date:	09/25/13
Analyst:	STACEY SMITH
TDS (mg/l or g/m3):	201136.1
Density (g/cm3, tonne/m3):	1.139
Anion/Cation Ratio:	0.9354870
Carbon Dioxide:	250 PPM
Oxygen:	
Comments:	

Analysis of Sample 662769 @ 75 ℉

Anions	mg/l	meq/l
Chloride:	**125956.0**	**3552.76**
Bicarbonate:	**36.6**	**0.6**
Carbonate:	**0.0**	**0.**
Sulfate:	**737.0**	**15.34**
Phosphate:		
Borate:		
Silicate:		

Hydrogen Sulfide:	0 PPM
pH at time of sampling:	6.01
pH at time of analysis:	
pH used in Calculation:	**6.01**

Cations	mg/l	meq/l
Sodium:	**59715.0**	**2597.46**
Magnesium:	**1701.0**	**139.93**
Calcium:	**11080.0**	**552.89**
Strontium:	**407.0**	**9.29**
Barium:	**1.5**	**0.02**
Iron:	**43.0**	**1.55**
Potassium:	1457.0	37.26
Aluminum:		
Chromium:		
Copper:		
Lead:		
Manganese:	2.000	0.07
Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
℉	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.66	0.00	-0.19	0.00	-0.17	0.00	0.02	8.95	0.69	0.58	0.23
100	0	-0.58	0.00	-0.27	0.00	-0.18	0.00	0.00	0.29	0.50	0.58	0.28
120	0	-0.50	0.00	-0.32	0.00	-0.16	0.00	-0.01	0.00	0.33	0.29	0.32
140	0	-0.41	0.00	-0.37	0.00	-0.11	0.00	-0.01	0.00	0.18	0.29	0.37

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

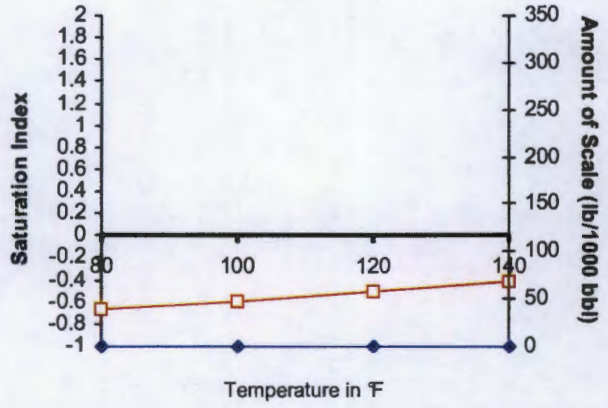
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

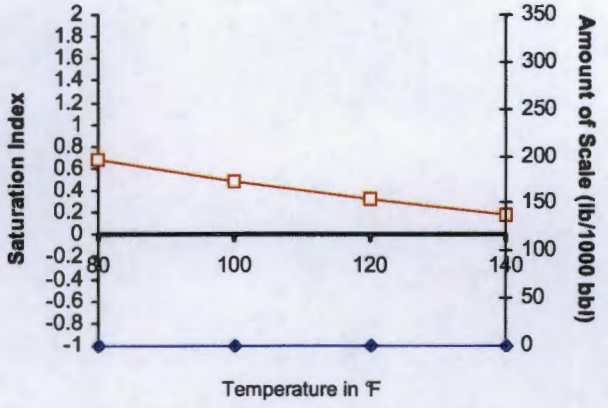
Scale Predictions from Baker Petrolite

Analysis of Sample 662769 @ 75 ℉ for DEVON ENERGY CORPORATION, 09/25/13

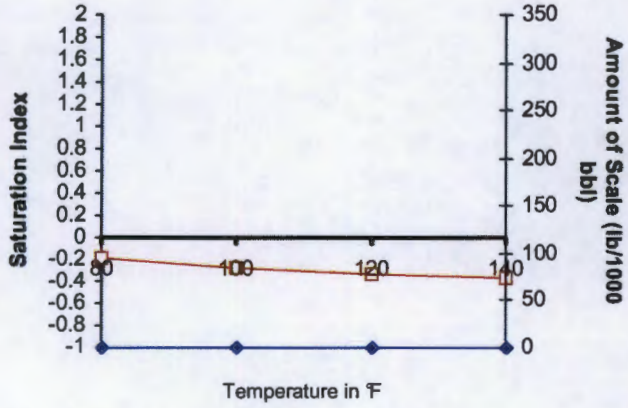
Calcite - CaCO3



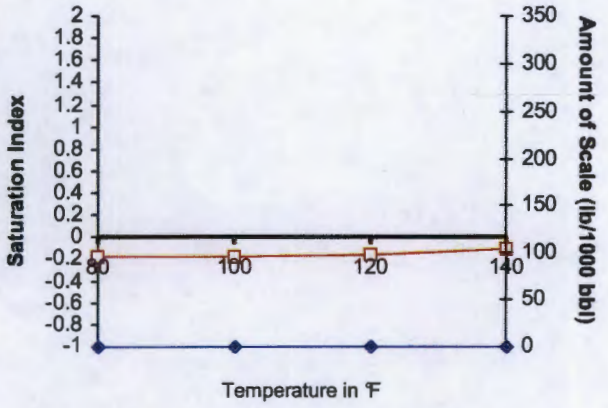
Barite - BaSO4



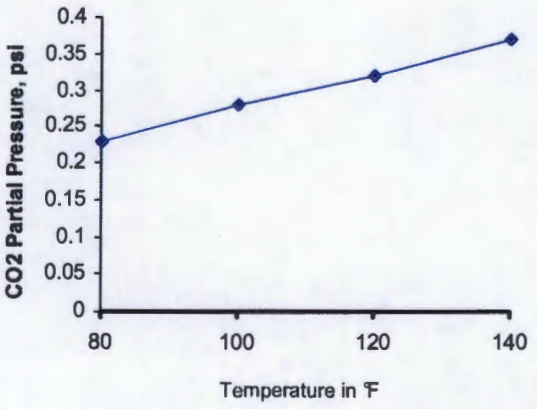
Gypsum - CaSO4*2H20



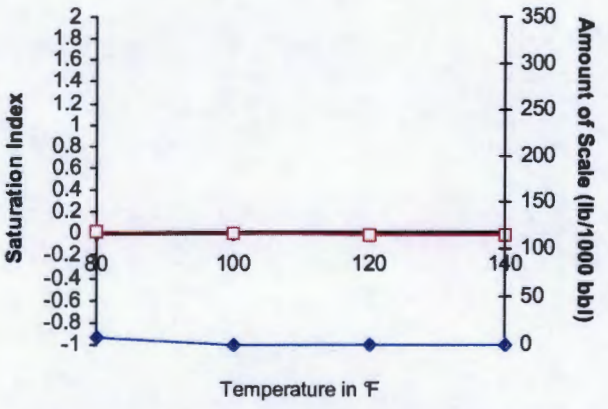
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



Hackberry 16 SWD 1
C108 Application for Injection
Injection Water Analysis
Bone Spring Formation
Devon Energy Production Co LP

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 681-8300

Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	662770
Lease/Platform:	RIGEL 20	Analysis ID #:	136628
Entity (or well #):	2	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	HEATER		

Summary	
Sampling Date:	09/18/13
Analysis Date:	09/25/13
Analyst:	STACEY SMITH
TDS (mg/l or g/m3):	196233.2
Density (g/cm3, tonne/m3):	1.138
Anion/Cation Ratio:	0.9479503
Carbon Dioxide:	250 PPM
Oxygen:	
Comments:	

Analysis of Sample 662770 @ 75 ℉

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**122278.0**	**3449.02**	**Sodium:**	**58779.0**	**2556.74**
Bicarbonate:	**36.6**	**0.6**	**Magnesium:**	**1658.0**	**136.39**
Carbonate:	**0.0**	**0.**	**Calcium:**	**10895.0**	**543.66**
Sulfate:	**714.0**	**14.87**	**Strontium:**	**397.0**	**9.06**
Phosphate:			**Barium:**	**0.6**	**0.01**
Borate:			**Iron:**	**52.0**	**1.88**
Silicate:			Potassium:	1421.0	36.34
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		6.09	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		**6.09**	Manganese:	2.000	0.07
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
℉	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.60	0.00	-0.22	0.00	-0.19	0.00	0.01	2.32	0.29	0.29	0.19
100	0	-0.52	0.00	-0.29	0.00	-0.20	0.00	-0.02	0.00	0.09	0.00	0.23
120	0	-0.43	0.00	-0.34	0.00	-0.18	0.00	-0.03	0.00	-0.08	0.00	0.27
140	0	-0.35	0.00	-0.39	0.00	-0.13	0.00	-0.03	0.00	-0.23	0.00	0.31

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

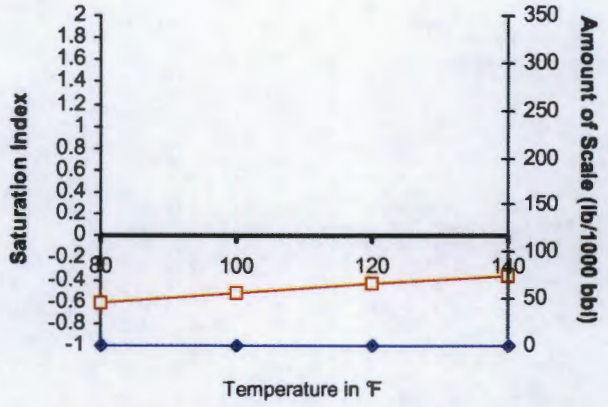
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

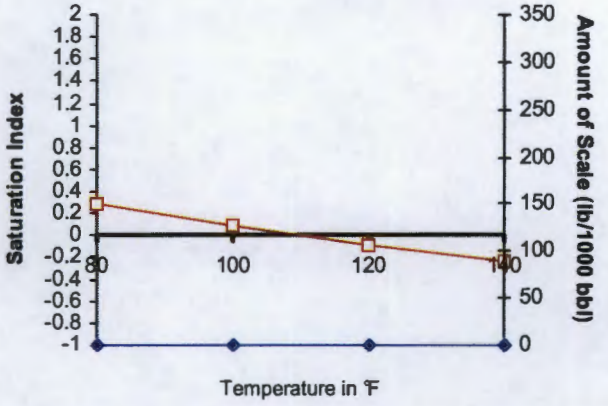
Scale Predictions from Baker Petrolite

Analysis of Sample 662770 @ 75 °F for DEVON ENERGY CORPORATION, 09/25/13

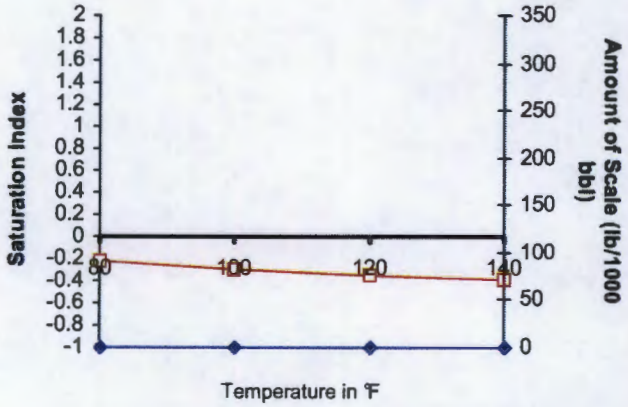
Calcite - CaCO3



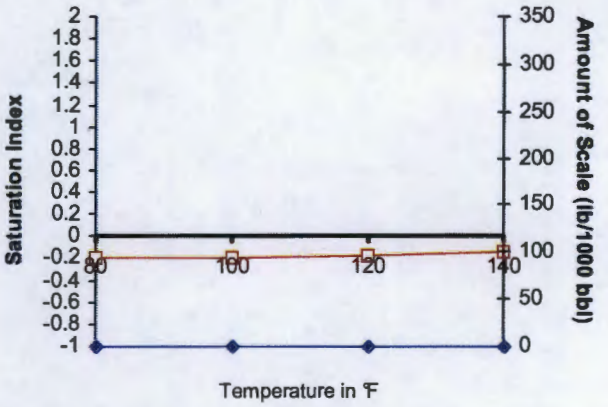
Barite - BaSO4



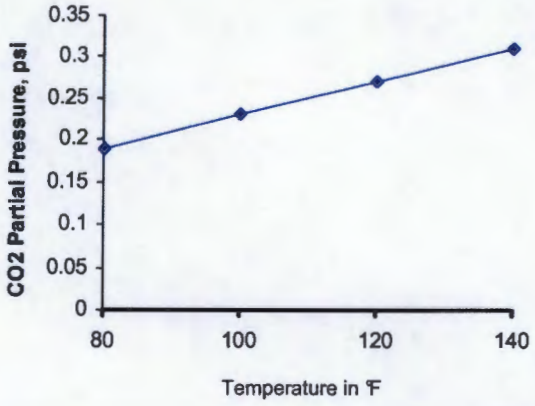
Gypsum - CaSO4*2H20



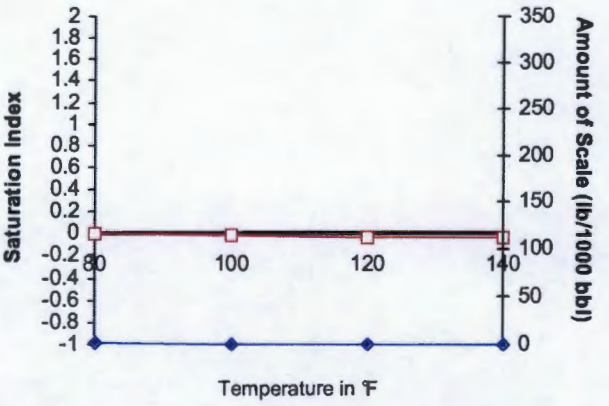
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



Hackberry 16 SWD 1
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Lab Team Leader - Sheila Hernandez
(432) 681-8300

Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	662767
Lease/Platform:	RIGEL 20	Analysis ID #:	136630
Entity (or well #):	3	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	HEATER		

Summary	
Sampling Date:	09/18/13
Analysis Date:	09/25/13
Analyst:	STACEY SMITH
TDS (mg/l or g/m3):	194992.5
Density (g/cm3, tonne/m3):	1.136
Anion/Cation Ratio:	0.9398240
Carbon Dioxide:	240 PPM
Oxygen:	
Comments:	

Analysis of Sample 662767 @ 75 ℉

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**121838.0**	**3436.61**	**Sodium:**	**57978.0**	**2521.9**
Bicarbonate:	**61.0**	**1.**	**Magnesium:**	**1640.0**	**134.91**
Carbonate:	**0.0**	**0.**	**Calcium:**	**10820.0**	**539.92**
Sulfate:	**745.0**	**15.51**	**Strontium:**	**391.0**	**8.92**
Phosphate:			**Barium:**	**0.5**	**0.01**
Borate:			**Iron:**	**75.0**	**2.71**
Silicate:			Potassium:	1442.0	36.88
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		6.43	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		**6.43**	Manganese:	2.000	0.07
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
℉	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.05	0.00	-0.20	0.00	-0.18	0.00	0.02	8.13	0.23	0.00	0.15
100	0	0.03	0.29	-0.27	0.00	-0.18	0.00	0.00	0.00	0.04	0.00	0.18
120	0	0.11	0.87	-0.33	0.00	-0.16	0.00	-0.01	0.00	-0.13	0.00	0.21
140	0	0.18	1.45	-0.37	0.00	-0.12	0.00	-0.01	0.00	-0.28	0.00	0.25

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

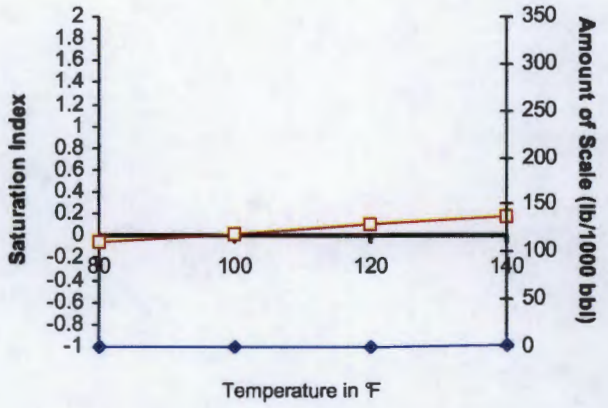
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

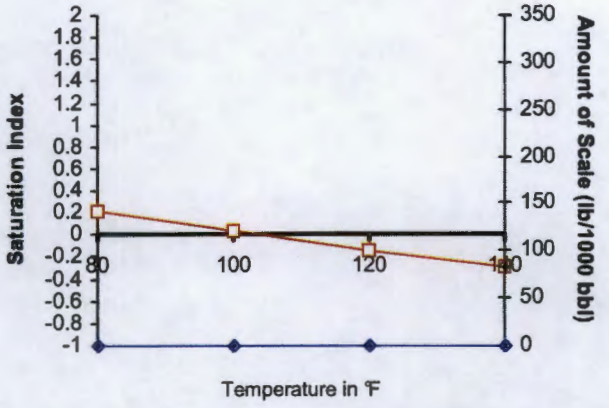
Scale Predictions from Baker Petrolite

Analysis of Sample 662767 @ 75 ℉ for DEVON ENERGY CORPORATION, 09/25/13

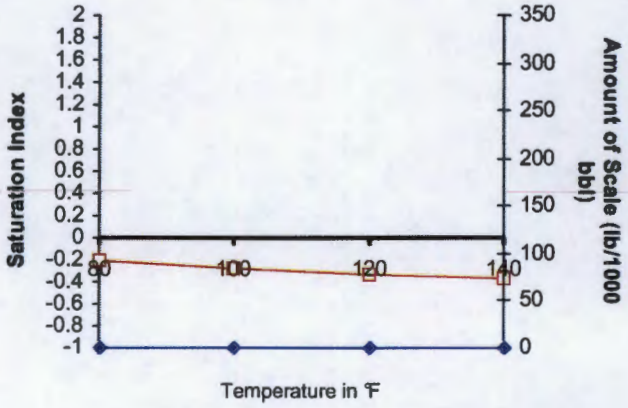
Calcite - CaCO3



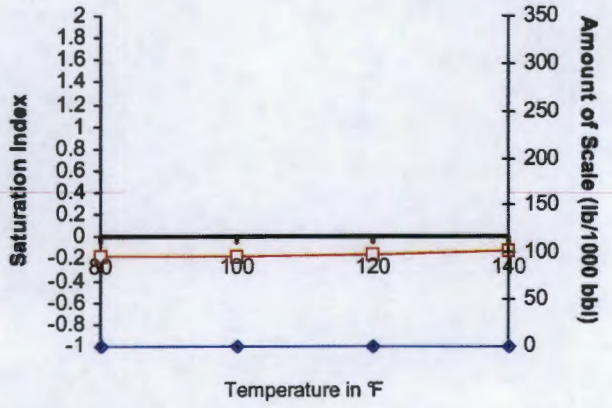
Barite - BaSO4



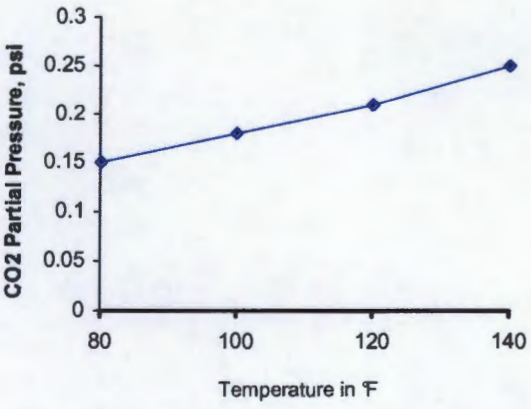
Gypsum - CaSO4*2H20



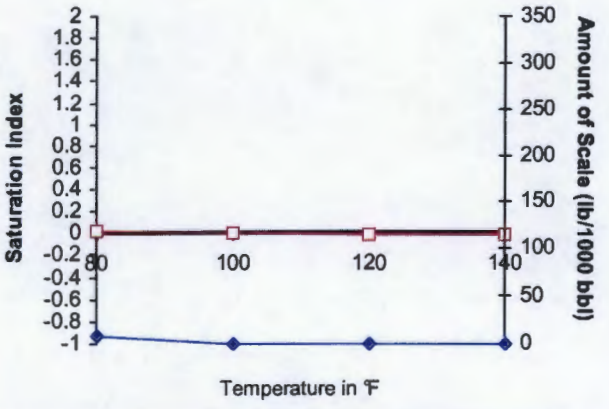
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



Hackberry 16 SWD 1
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(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 681-8300

Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	662768
Lease/Platform:	RIGEL 20	Analysis ID #:	136629
Entity (or well #):	4	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	WELL		

Summary	
Sampling Date:	09/18/13
Analysis Date:	09/25/13
Analyst:	STACEY SMITH
TDS (mg/l or g/m3):	177372.8
Density (g/cm3, tonne/m3):	1.129
Anion/Cation Ratio:	1.0091797
Carbon Dioxide:	240 PPM
Oxygen:	
Comments:	

Analysis of Sample 662768 @ 75 ℉

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**107822.0**	**3041.27**	**Sodium:**	**55343.0**	**2407.28**
Bicarbonate:	**48.8**	**0.8**	**Magnesium:**	**1549.0**	**127.43**
Carbonate:	**0.0**	**0.**	**Calcium:**	**10133.0**	**505.64**
Sulfate:	**712.0**	**14.82**	**Strontium:**	**367.0**	**8.38**
Phosphate:			**Barium:**	**0.5**	**0.01**
Borate:			**Iron:**	**44.0**	**1.59**
Silicate:			Potassium:	1352.0	34.58
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		6.11	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		**6.11**	Manganese:	1.500	0.05
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 * 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
℉	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.51	0.00	-0.25	0.00	-0.24	0.00	0.00	0.00	0.23	0.00	0.24
100	0	-0.43	0.00	-0.31	0.00	-0.24	0.00	-0.02	0.00	0.04	0.00	0.3
120	0	-0.34	0.00	-0.37	0.00	-0.21	0.00	-0.03	0.00	-0.13	0.00	0.35
140	0	-0.25	0.00	-0.41	0.00	-0.16	0.00	-0.03	0.00	-0.27	0.00	0.41

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

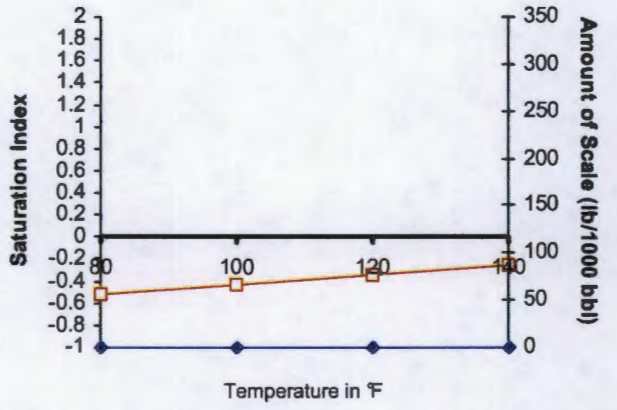
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

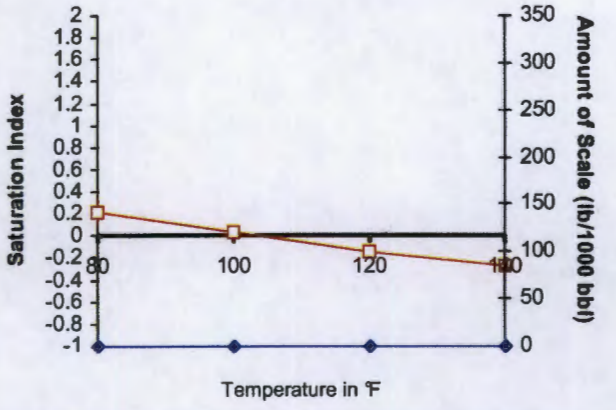
Scale Predictions from Baker Petrolite

Analysis of Sample 662768 @ 75 ℉ for DEVON ENERGY CORPORATION, 09/25/13

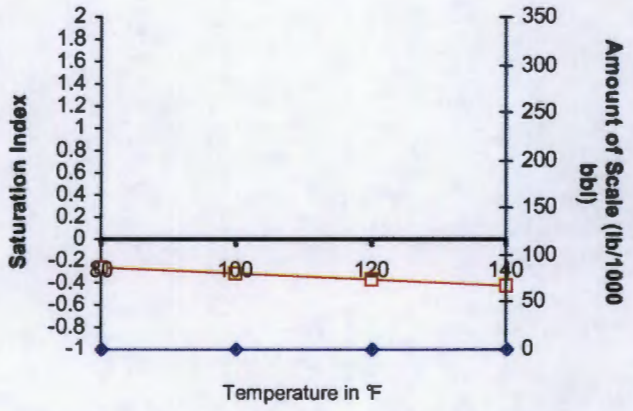
Calcite - CaCO3



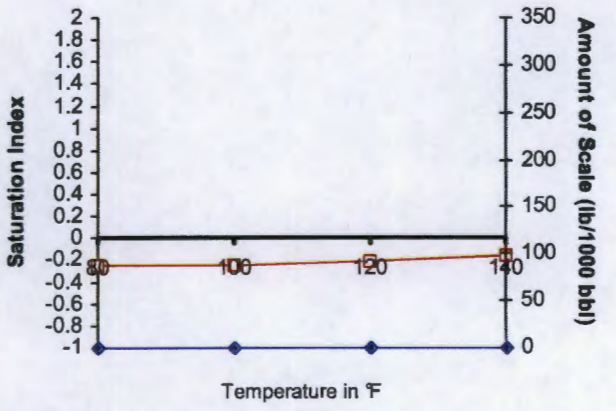
Barite - BaSO4



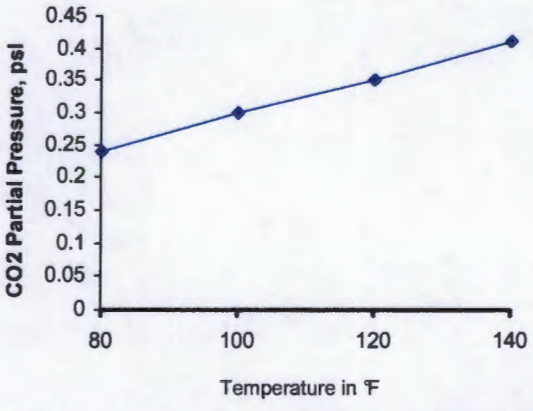
Gypsum - CaSO4*2H20



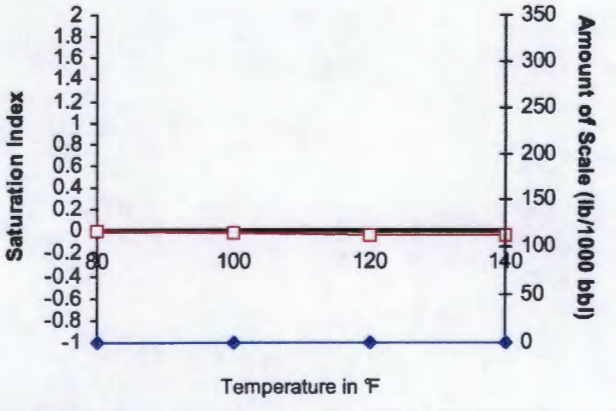
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



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Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	662773
Lease/Platform:	SIRIUS 17 FED	Analysis ID #:	136631
Entity (or well #):	1	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	HEATER		

Summary	
Sampling Date:	09/18/13
Analysis Date:	09/25/13
Analyst:	STACEY SMITH
TDS (mg/l or g/m3):	202490.5
Density (g/cm3, tonne/m3):	1.142
Anion/Cation Ratio:	0.9269780
Carbon Dioxide:	200 PPM
Oxygen:	
Comments:	

Analysis of Sample 662773 @ 75 ℉

Anions	mg/l	meq/l
Chloride:	**127260.0**	**3589.54**
Bicarbonate:	**36.6**	**0.6**
Carbonate:	**0.0**	**0.**
Sulfate:	**738.0**	**15.37**
Phosphate:		
Borate:		
Silicate:		

Hydrogen Sulfide:	0 PPM
pH at time of sampling:	6.02
pH at time of analysis:	
pH used in Calculation:	**6.02**

Cations	mg/l	meq/l
Sodium:	**59685.0**	**2596.15**
Magnesium:	**1721.0**	**141.58**
Calcium:	**11160.0**	**556.89**
Strontium:	**411.0**	**9.38**
Barium:	**0.4**	**0.01**
Iron:	**38.0**	**1.37**
Potassium:	1439.0	36.8
Aluminum:		
Chromium:		
Copper:		
Lead:		
Manganese:	1.500	0.05
Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 * 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
℉	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.65	0.00	-0.19	0.00	-0.17	0.00	0.03	9.80	0.12	0.00	0.22
100	0	-0.57	0.00	-0.26	0.00	-0.17	0.00	0.00	1.15	-0.08	0.00	0.27
120	0	-0.49	0.00	-0.32	0.00	-0.15	0.00	-0.01	0.00	-0.25	0.00	0.32
140	0	-0.40	0.00	-0.37	0.00	-0.11	0.00	-0.01	0.00	-0.40	0.00	0.36

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

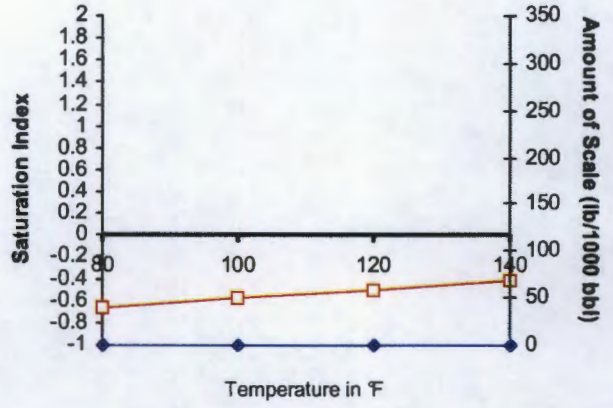
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

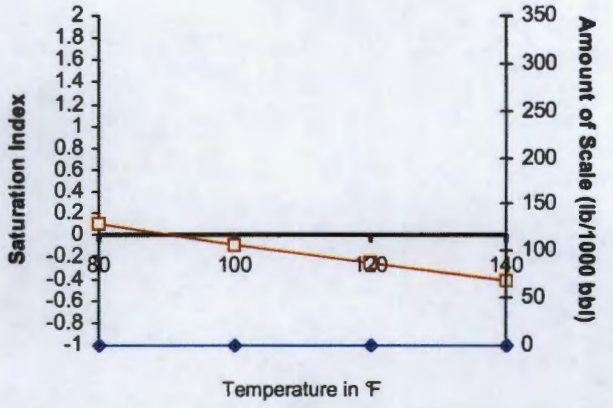
Scale Predictions from Baker Petrolite

Analysis of Sample 662773 @ 75 ℉ for DEVON ENERGY CORPORATION, 09/25/13

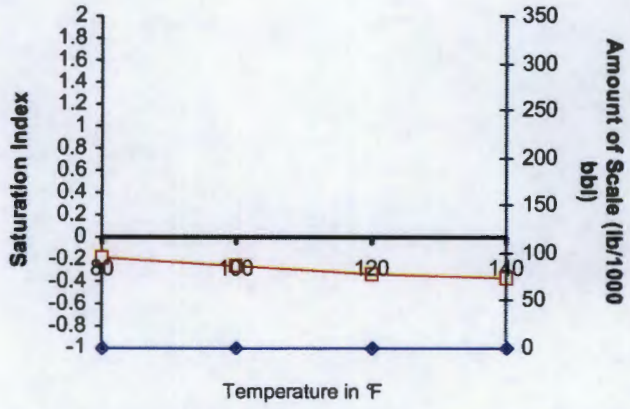
Calcite - CaCO3



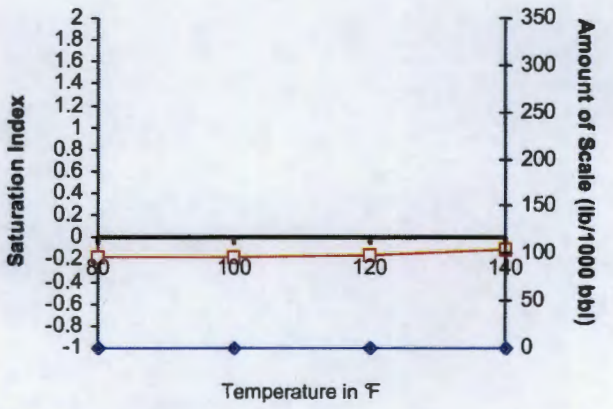
Barite - BaSO4



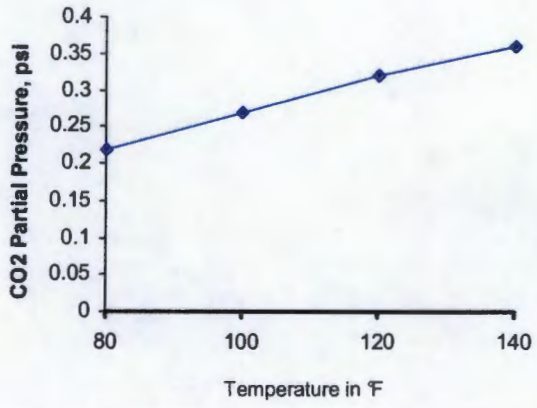
Gypsum - CaSO4*2H20



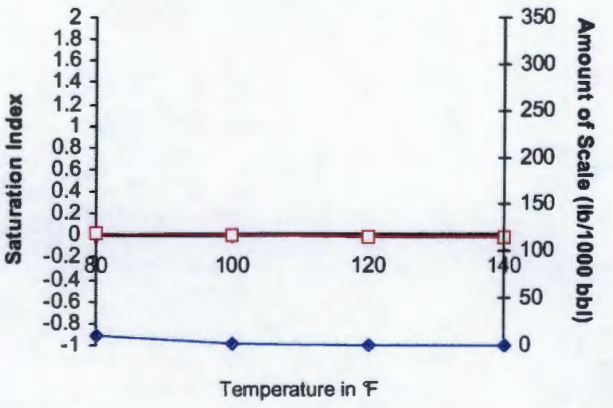
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



Hackberry 16 SWD 1
C108 Application for Injection
Injection Water Analysis
Bone Spring Formation
Devon Energy Production Co LP

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 681-8300

Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	662774
Lease/Platform:	SIRIUS 17 FED	Analysis ID #:	136632
Entity (or well #):	2	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	WELL		

Summary	
Sampling Date:	09/18/13
Analysis Date:	09/25/13
Analyst:	STACEY SMITH
TDS (mg/l or g/m3):	200513.5
Density (g/cm3, tonne/m3):	1.141
Anion/Cation Ratio:	0.9505893
Carbon Dioxide:	190 PPM
Oxygen:	
Comments:	

Analysis of Sample 662774 @ 75 ℉

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**124872.0**	**3522.18**	**Sodium:**	**59985.0**	**2609.2**
Bicarbonate:	**36.6**	**0.6**	**Magnesium:**	**1735.0**	**142.73**
Carbonate:	**0.0**	**0.**	**Calcium:**	**11269.0**	**562.33**
Sulfate:	**700.0**	**14.57**	**Strontium:**	**410.0**	**9.36**
Phosphate:			**Barium:**	**0.4**	**0.01**
Borate:			**Iron:**	**42.0**	**1.52**
Silicate:			Potassium:	1462.0	37.39
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		5.92	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		**5.92**	Manganese:	1.500	0.05
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 \cdot 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
℉	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.75	0.00	-0.21	0.00	-0.19	0.00	0.00	0.58	0.09	0.00	0.28
100	0	-0.67	0.00	-0.28	0.00	-0.20	0.00	-0.02	0.00	-0.10	0.00	0.34
120	0	-0.58	0.00	-0.34	0.00	-0.17	0.00	-0.03	0.00	-0.27	0.00	0.4
140	0	-0.49	0.00	-0.39	0.00	-0.13	0.00	-0.03	0.00	-0.42	0.00	0.45

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

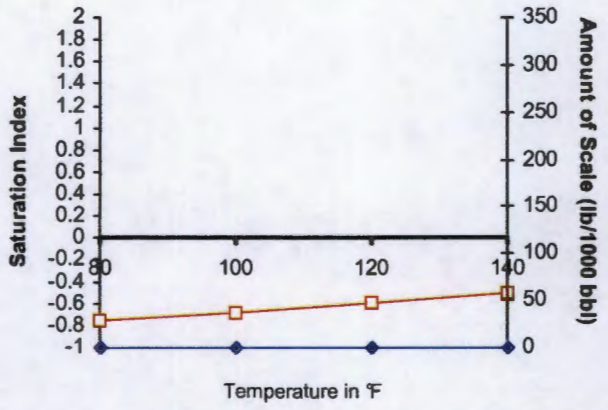
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

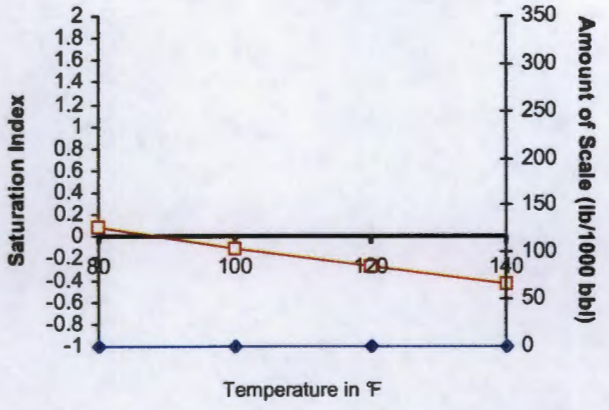
Scale Predictions from Baker Petrolite

Analysis of Sample 662774 @ 75 ℉ for DEVON ENERGY CORPORATION, 09/25/13

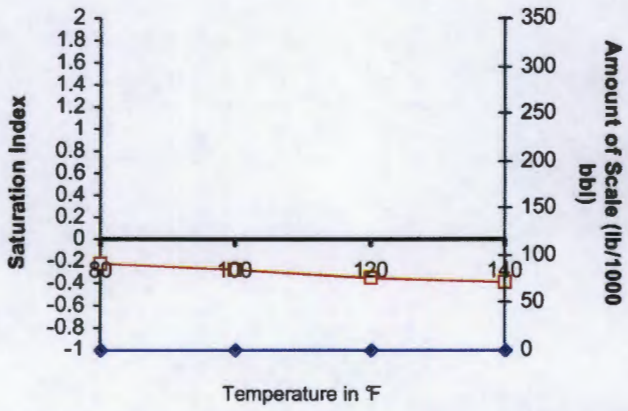
Calcite - CaCO3



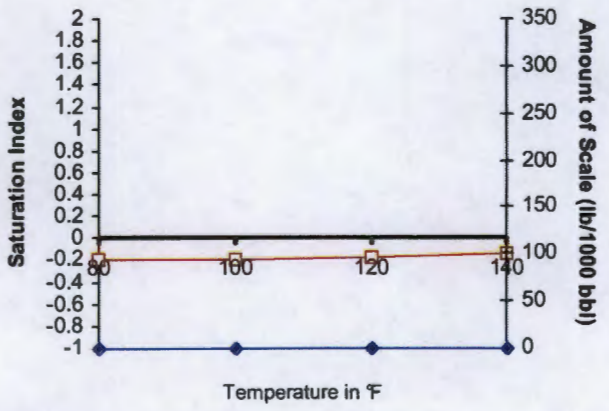
Barite - BaSO4



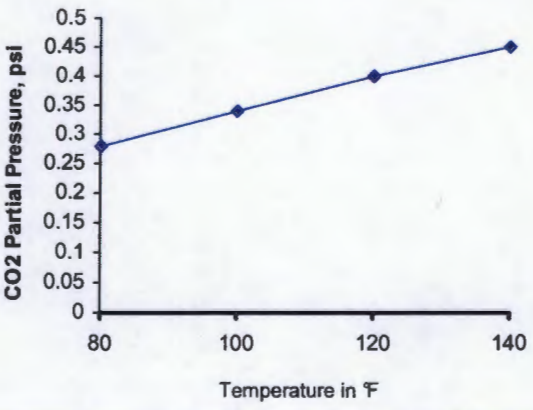
Gypsum - CaSO4*2H20



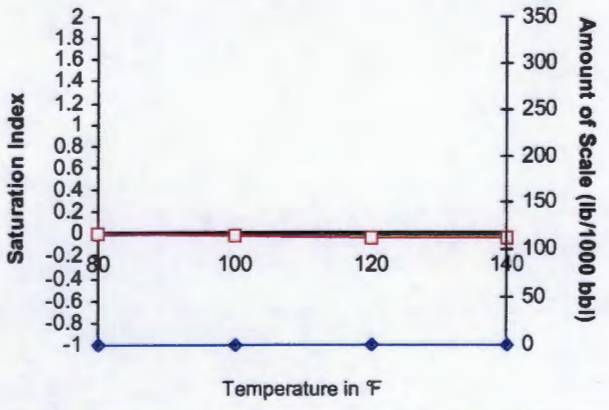
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



Hackberry 16 SWD 1
C108 Application for Injection
Injection Water Analysis
Bone Spring Formation
Devon Energy Production Co LP

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 681-8300

Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	662771
Lease/Platform:	SIRIUS 17 FED	Analysis ID #:	136633
Entity (or well #):	3	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	WELL		

Summary	
Sampling Date:	09/18/13
Analysis Date:	09/25/13
Analyst:	STACEY SMITH
TDS (mg/l or g/m3):	204290.2
Density (g/cm3, tonne/m3):	1.14
Anion/Cation Ratio:	0.9421932
Carbon Dioxide:	250 PPM
Oxygen:	
Comments:	

Analysis of Sample 662771 @ 75 ℉

Anions	mg/l	meq/l
Chloride:	**127628.0**	**3599.92**
Bicarbonate:	**48.8**	**0.8**
Carbonate:	**0.0**	**0.**
Sulfate:	**718.0**	**14.95**
Phosphate:		
Borate:		
Silicate:		
Hydrogen Sulfide:		0 PPM
pH at time of sampling:		6.1
pH at time of analysis:		
pH used in Calculation:		**6.1**

Cations	mg/l	meq/l
Sodium:	**60792.0**	**2644.3**
Magnesium:	**1750.0**	**143.96**
Calcium:	**11402.0**	**568.96**
Strontium:	**411.0**	**9.38**
Barium:	**0.4**	**0.01**
Iron:	**61.0**	**2.2**
Potassium:	1477.0	37.77
Aluminum:		
Chromium:		
Copper:		
Lead:		
Manganese:	2.000	0.07
Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 * 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
℉	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.43	0.00	-0.19	0.00	-0.17	0.00	0.01	3.45	0.10	0.00	0.24
100	0	-0.35	0.00	-0.27	0.00	-0.18	0.00	-0.01	0.00	-0.10	0.00	0.3
120	0	-0.27	0.00	-0.33	0.00	-0.16	0.00	-0.02	0.00	-0.27	0.00	0.35
140	0	-0.18	0.00	-0.38	0.00	-0.11	0.00	-0.02	0.00	-0.42	0.00	0.4

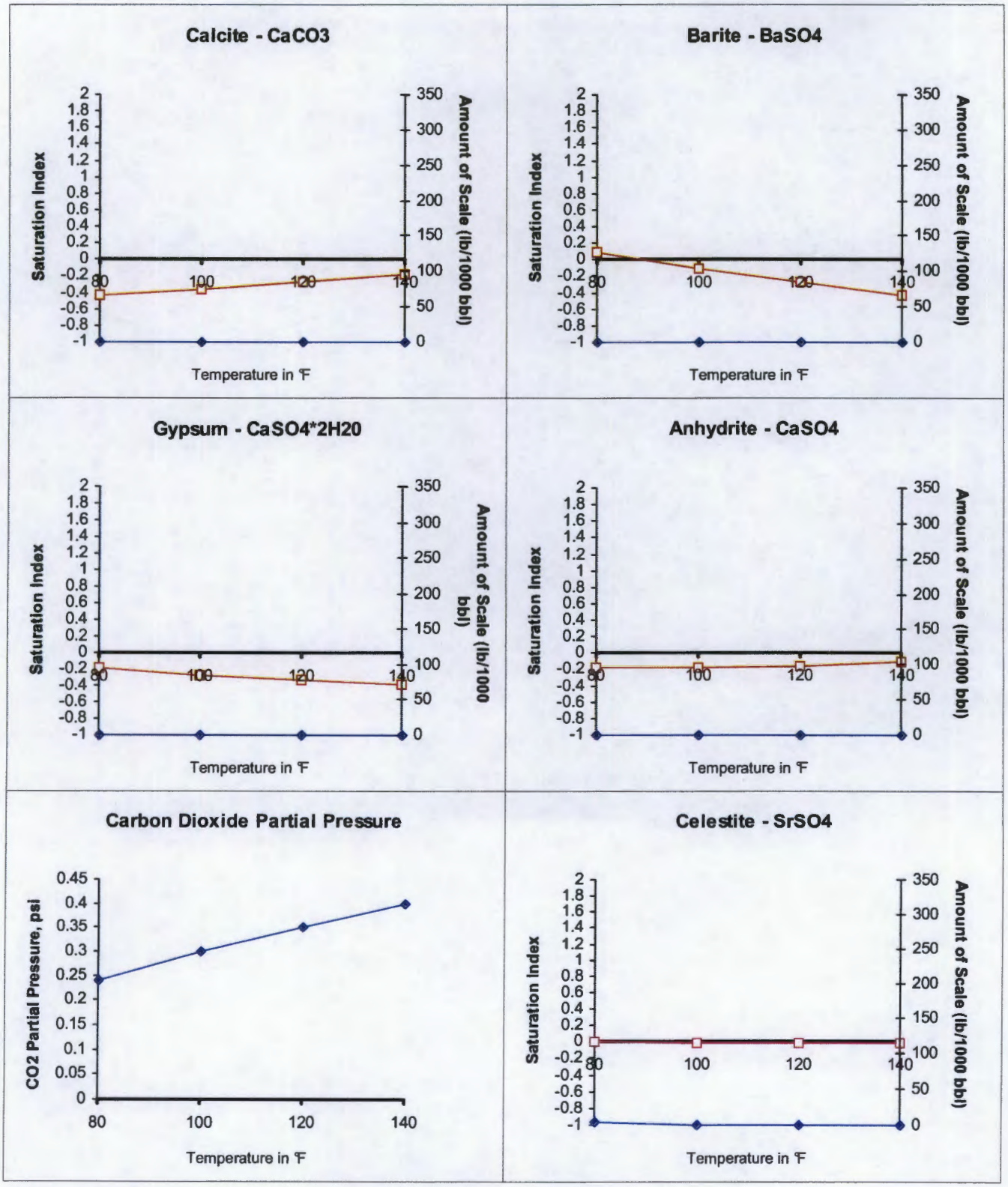
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

Scale Predictions from Baker Petrolite

Analysis of Sample 662771 @ 75 ℉ for DEVON ENERGY CORPORATION, 09/25/13



Hackberry 16 SWD 1
C108 Application for Injection
Injection Water Analysis
Bone Spring Formation
Devon Energy Production Co LP

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 681-8300

Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	662772
Lease/Platform:	SIRIUS 17 FED	Analysis ID #:	136634
Entity (or well #):	4	Analysis Cost:	$90.00
Formation:	UNKNOWN		
Sample Point:	WELL		

Summary	
Sampling Date:	09/18/13
Analysis Date:	09/25/13
Analyst:	STACEY SMITH
TDS (mg/l or g/m3):	202131.4
Density (g/cm3, tonne/m3):	1.139
Anion/Cation Ratio:	0.9665338
Carbon Dioxide:	250 PPM
Oxygen:	
Comments:	

Analysis of Sample 662772 @ 75 ℉

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**125070.0**	**3527.77**	**Sodium:**	**61085.0**	**2657.05**
Bicarbonate:	**61.0**	**1.**	**Magnesium:**	**1760.0**	**144.78**
Carbonate:	**0.0**	**0.**	**Calcium:**	**11487.0**	**573.2**
Sulfate:	**705.0**	**14.68**	**Strontium:**	**418.0**	**9.54**
Phosphate:			**Barium:**	**0.4**	**0.01**
Borate:			**Iron:**	**71.0**	**2.57**
Silicate:			Potassium:	1472.0	37.65
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		5.89	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		**5.89**	Manganese:	2.000	0.07
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
℉	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.55	0.00	-0.20	0.00	-0.18	0.00	0.01	3.17	0.09	0.00	0.49
100	0	-0.46	0.00	-0.27	0.00	-0.18	0.00	-0.01	0.00	-0.10	0.00	0.6
120	0	-0.38	0.00	-0.33	0.00	-0.16	0.00	-0.02	0.00	-0.28	0.00	0.7
140	0	-0.29	0.00	-0.38	0.00	-0.12	0.00	-0.02	0.00	-0.43	0.00	0.8

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

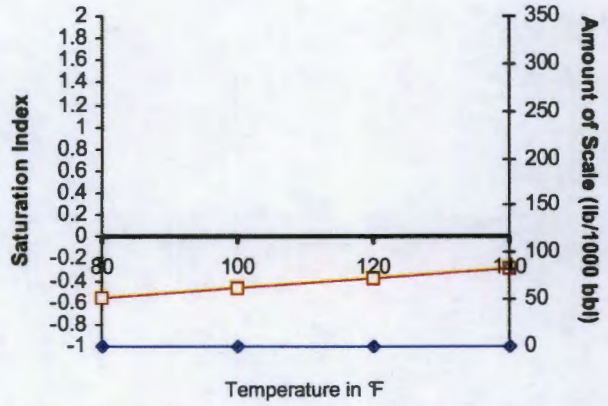
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

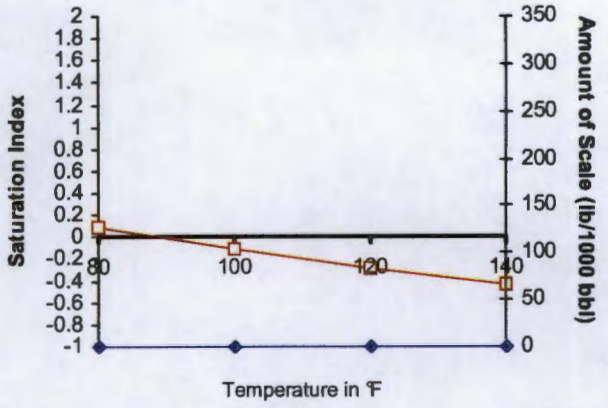
Scale Predictions from Baker Petrolite

Analysis of Sample 662772 @ 75 ℉ for DEVON ENERGY CORPORATION, 09/25/13

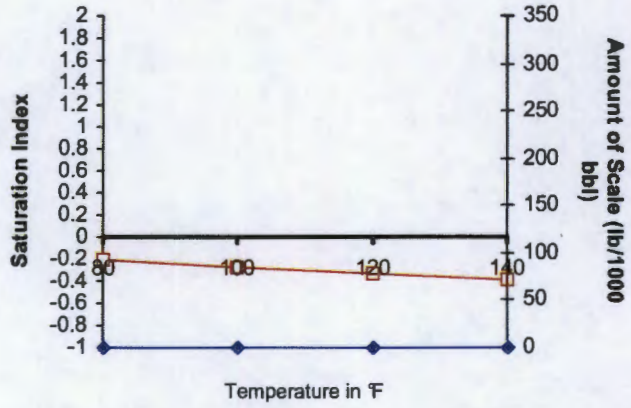
Calcite - CaCO3



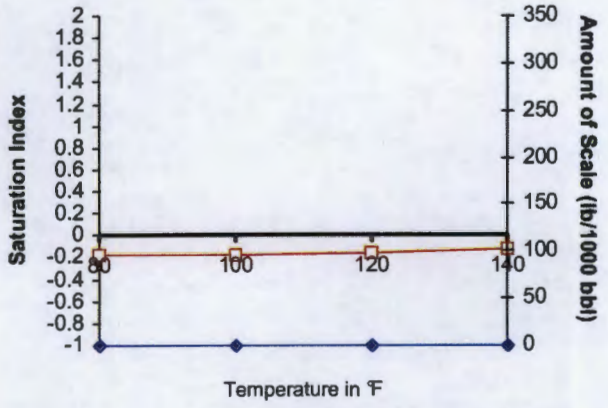
Barite - BaSO4



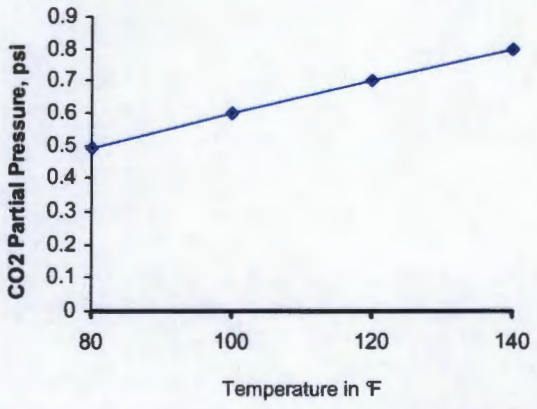
Gypsum - CaSO4*2H20



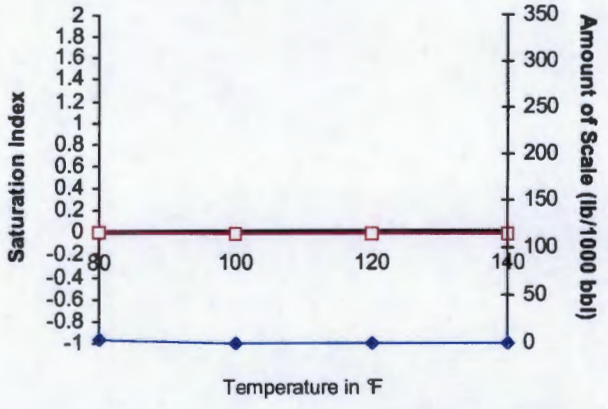
Anhydrite - CaSO4

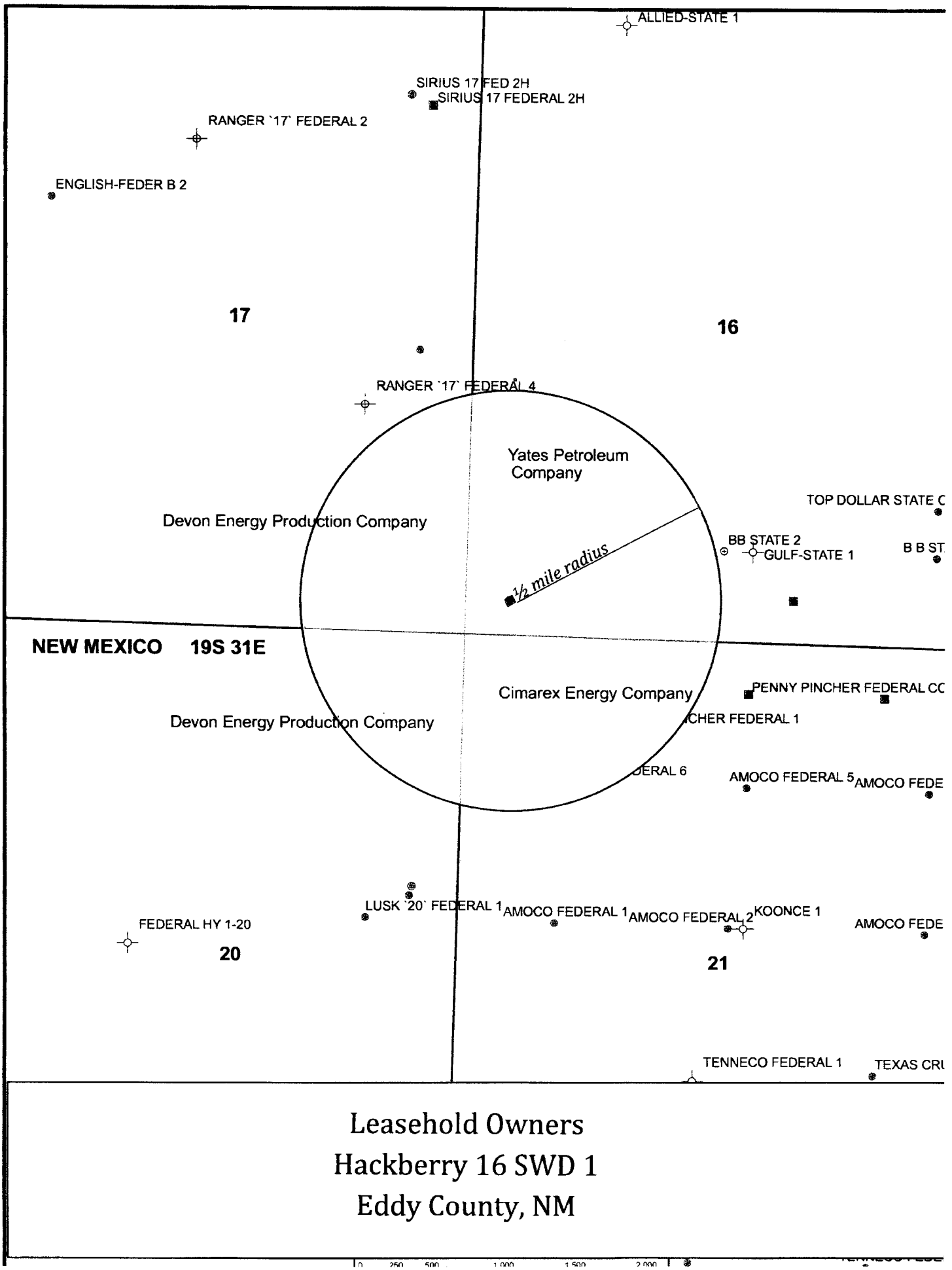


Carbon Dioxide Partial Pressure

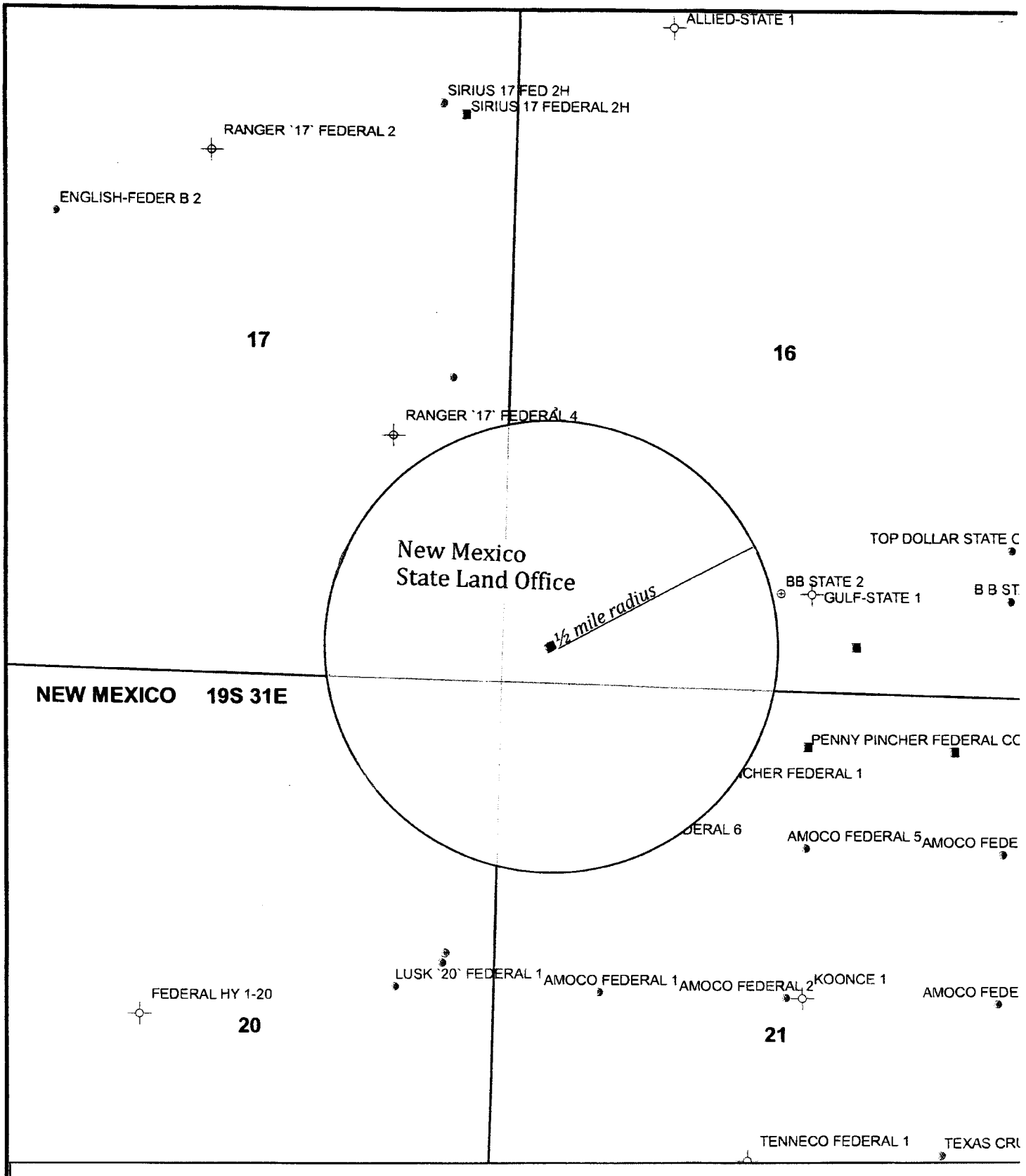


Celestite - SrSO4





Leasehold Owners
Hackberry 16 SWD 1
Eddy County, NM



Surface Owner
Hackberry 16 SWD 1
Eddy County, NM

Surface and Leasehold Ownership
½ mile radius to Hackberry 16 SWD 1

SURFACE:

T19S-R31E Section 16: SW/4

New Mexico State Land Office; Oil, Gas and Minerals Division
P.O. Box 1148 Santa Fe, NM 87504-1148

LEASEHOLD:

T19S-R31E Section 16: SW/4

1. Yates Petroleum Corporation *(Operator)*
   104 South Fourth Street Artesia, NewMexico 73102-8260

T19S-R31E Section 17: E/2 SE/4

1. Devon Energy Production Company, LP *(Operator)*
   333 West Sheridan Ave. Oklahoma City, OK 73102-8260
2. Nearburg Exploration Company, LLC
   3300 North A Street Midland, TX 79705-5421
   Bldg. 2, Suite 120

T19S-R31E Section 20: E/2 SE/4

1. Devon Energy Production Company, LP *(Operator)*
   333 West Sheridan Ave. Oklahoma City, OK 73102-8260
2. Dorchester Minerals, LP
   3838 Oak Lawn Avenue, Suite 300 Midland, TX 75219-4379
3. Jay Petroleum, LLC
   2425 West Loop South, Suite 810 Houston, TX 77027
4. Tritex Energy A, LP
   15455 Dallas Parkway, Suite 600 Addison, TX 75001
5. Sprayberry Oil & Gas LP
   10 Waterford Oaks Lane Kemah, TX 77565
6. Back Nine Oil & Gas Ltd.
   804 West 29th Street Austin, TX 78705

T19S-R31E Section 21: N/2 NW/4

1. Cimarex Energy Company *(Operator)*
   600 N. Marienfeld St., Ste. 600 Midland, TX 79701-8260

Section XIV--Proof of Notice to Surface Land Owner
Devon Energy Prod Co LP
C108 Application For Injection
Proposed Well: Hackberry 16 SWD 1

Proof of Notice to Surface Land Owner of well location site.

Certified receipt No.
7008 1830 0002 7422 0006

New Mexico State Land Office
Oil, Gas & Minerals Division
P.O. Box 1148
Santa Fe, NM 87504-1148

A copy of this application has been mailed to the above surface land owner by certified mail, pertaining to Devon Energy's application for salt water disposal in the Hackberry SWD #1.

Date Mailed: 11/05/2013

Signature: _____ Date: 11/05/2013

Stephanie A. Porter, Operations Technician
Devon Energy Production Co., L.P.
333 West Sheridan Avenue
Oklahoma City, OK 73102

Section XIV--Proof of Notice to Leasehold Operators
Devon Energy Prod Co LP
C108 Application For Injection
Proposed Well: Hackberry 16 SWD 1

Proof of Notice to Leasehold Operators within 1/2 mile of Hackberry 16 SWD #1

Yates Petroleum Corporation
104 South Forth Street
Artesia, New Mexico 73102-8260

Certified receipt No.
7008 1830 0002 7421 2537

Nearburg Exploration Company, LLC.
3300 North A Street
Bldg. 2, Suite 120
Midland, Texas 79705-5421

Certified receipt No.
7008-1830-0002-7421-2520

Dorchester Minerals, LP
3838 Oak Lawn Avenue, Suite 300
Midland, Texas 75219-4379

Certified receipt No.
7008-1830-0002-7421-2513

Jay Petroleum, LLC
2425 West Loop South, Suite 810
Houston, TX 77027

Certified receipt No.
7008-1830-0002-7421-9994

Tritex Energy A, LP
15455 Dallas Parkway, Suite 600
Addison, Texas 75001

Certified receipt No.
7008-1830-0002-7421-9987

Sprayberry Oil & Gas LP
10 Waterford Oaks Lane
Kemah, Texas 77565

Certified receipt No.
7008-1830-0002-7421-9970

Back Nine Oil & Gas Ltd.
804 West 29th Street
Austin, Texas 78705

Certified receipt No.
7008-1830-0002-7421-9963

Cimarex Energy Company
600 N. Marienfield St., Ste 600
Midland, Texas 79701-8260

Certified receipt No.
7008-1830-0002-7421-9956

A copy of this application has been mailed to the above leasehold operators by certified mail, pertaining to Devon Energy's application for salt water disposal in the Hackberry 16 SWD #1.

Date Mailed: 11/05/2013

Signature:

Date: 11/05/2013

Stephanie A. Porter, Operations Technician
Devon Energy Production Co., L.P.
333 West Sheridan Avenue
Oklahoma City, OK 73102

devon

Devon Energy Corporation
333 West Sheridan Avenue
Oklahoma City, OK 73102-5010

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

Yates Petroleum Corporation
104 South 4th Street
Artesia, New Mexico 73102-8260

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API 30-015-
Eddy County, NM
Section 16, T19S, R31E

Dear Yates Petroleum Corporation:

Please find attached Devon Energy Production Company, LP's Form C-108; Application for Authorization to Inject.

Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal in the Devonian/Silurian/Ordovician formation.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as having leasehold ownership within the ½ mile review area around the Hackberry 16 SWD #1 well. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

Stephanie A. Porter
Operations Technician

SP/sp
Enclosure

devon

Devon Energy Corporation
333 West Sheridan Avenue
Oklahoma City, OK 73102-5010

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

Nearburg Exploration Company, LLC
3300 North A Street
Bldg. 2, Suite 120
Midland, Texas 79705-5421

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API 30-015-
Eddy County, NM
Section 16, T19S, R31E

Dear Nearburg Exploration Company, LLC:

Please find attached Devon Energy Production Company, LP's Form C-108; Application for Authorization to Inject.

Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal in the Devonian/Silurian/Ordovician formation.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as having leasehold ownership within the ½ mile review area around the Hackberry 16 SWD #1 well. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

Stephanie A. Porter
Operations Technician

SP/sp
Enclosure

devon

Devon Energy Corporation
333 West Sheridan Avenue
Oklahoma City, OK 73102-5010

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

Dorchester Minerals, LP
3838 Oak Lawn Avenue, Suite 300
Midland, Texas 75219-4379

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API 30-015-
Eddy County, NM
Section 16, T19S, R31E

Dear Dorchester Minerals, LP:

Please find attached Devon Energy Production Company, LP's Form C-108; Application for Authorization to Inject.

Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal in the Devonian/Silurian/Ordovician formation.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as having leasehold ownership within the ½ mile review area around the Hackberry 16 SWD #1 well. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

Stephanie A. Porter
Operations Technician

SP/sp
Enclosure

devon

Devon Energy Corporation
333 West Sheridan Avenue
Oklahoma City, OK 73102-5010

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

Jay Petroleum, LLC
2425 West Loop South, Suite 810
Houston, Texas 77027

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API 30-015-
Eddy County, NM
Section 16, T19S, R31E

Dear Jay Petroleum, LLC:

Please find attached Devon Energy Production Company, LP's Form C-108; Application for Authorization to Inject.

Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal in the Devonian/Silurian/Ordovician formation.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as having leasehold ownership within the ½ mile review area around the Hackberry 16 SWD #1 well. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

Stephanie A. Porter
Operations Technician

SP/sp
Enclosure

devon

Devon Energy Corporation
333 West Sheridan Avenue
Oklahoma City, OK 73102-5010

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

Tritex Energy A, LP
15455 Dallas Parkway, Suite 600
Addison, Texas 75001

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API 30-015-
Eddy County, NM
Section 16, T19S, R31E

Dear Tritex Energy A, LP:

Please find attached Devon Energy Production Company, LP's Form C-108; Application for Authorization to Inject.

Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal in the Devonian/Silurian/Ordovician formation.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as having leasehold ownership within the ½ mile review area around the Hackberry 16 SWD #1 well. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

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Operations Technician

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devon

Devon Energy Corporation
333 West Sheridan Avenue
Oklahoma City, OK 73102-5010

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

Sprayberry Oil & Gas LP
10 Waterford Oaks Lane
Kemah, Texas 77565

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API 30-015-
Eddy County, NM
Section 16, T19S, R31E

Dear Sprayberry Oil & Gas LP:

Please find attached Devon Energy Production Company, LP's Form C-108; Application for Authorization to Inject.

Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal in the Devonian/Silurian/Ordovician formation.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as having leasehold ownership within the ½ mile review area around the Hackberry 16 SWD #1 well. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

Stephanie A. Porter
Operations Technician

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devon

Devon Energy Corporation
333 West Sheridan Avenue
Oklahoma City, OK 73102-5010

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

Back Nine Oil & Gas Ltd.
804 West 29th Street
Austin, Texas 78705

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API 30-015-
Eddy County, NM
Section 16, T19S, R31E

Dear Back Nine Oil & Gas Ltd.:

Please find attached Devon Energy Production Company, LP's Form C-108; Application for Authorization to Inject.

Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal in the Devonian/Silurian/Ordovician formation.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as having leasehold ownership within the ½ mile review area around the Hackberry 16 SWD #1 well. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

Stephanie A. Porter
Operations Technician

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devon

Devon Energy Corporation
333 West Sheridan Avenue
Oklahoma City, OK 73102-5010

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

Cimarex Energy Company .
600 N. Marienfield St., Ste 600
Midland, Texas 79701-8260

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API 30-015-
Eddy County, NM
Section 16, T19S, R31E

Dear Cimarex Energy Company:

Please find attached Devon Energy Production Company, LP's Form C-108; Application for Authorization to Inject.

Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal in the Devonian/Silurian/Ordovician formation.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as having leasehold ownership within the ½ mile review area around the Hackberry 16 SWD #1 well. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

Stephanie A. Porter
Operations Technician

SP/sp
Enclosure

devon

Devon Energy Corporation
333 West Sheridan
Oklahoma City, OK 73102-8260

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

New Mexico State Land Office
Oil, Gas & Minerals Division
P.O. Box 1148
Santa Fe, New Mexico 87504-1148

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API# 30-015-
Eddy County, NM
Section 16, T19S, R31E; 330' FSL & 280' FWL

Dear New Mexico State Land Office:

Please find attached Devon Energy Production Company, LP's Form C-108, Application for Authorization to Inject.

Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal. Produced waters will be injected into the Devonian/Silurian/Ordovician formation from 13,395' to 15,000'.

As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the well site surface land owner. Any objections must be submitted in writing to NMOCD, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within (15) days of receipt of this letter.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

Stephanie A. Porter
Operations Technician

SP/sp
Enclosure

devon

Devon Energy Corporation
333 West Sheridan Avenue
Oklahoma City, OK 73102-5010

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

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

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API 30-015-
Eddy County, NM
Section 16, T19S, R31E

Dear Santa Fe Oil Conservation Division:

Please find attached Devon Energy Production Company, LP's Form C-108, Application for Authorization to Inject. Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal in the Devonian/Silurian/Ordovician formation.

The surface land owner and operators with leasehold ownership have been notified with Devon's application to inject via certified mail. A copy of this application has been filed with the OCD-Artesia office.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

Stephanie A. Porter
Operations Technician

SP/sp
Enclosure

devon

Devon Energy Corporation
333 West Sheridan Avenue
Oklahoma City, OK 73102-5010

405 235 3611 Phone
www.devonenergy.com

November 5th, 2013

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

RE: Form C-108, Application for Authorization to Inject
Hackberry 16 SWD #1; API 30-015-
Eddy County, NM
Section 16, T19S, R31E

Dear Conservation Division-Artesia District Office:

Please find attached Devon Energy Production Company, LP's Form C-108, Application for Authorization to Inject. The original application has been filed with the Oil Conservation Division-Santa Fe Office.

Devon's application proposes to drill and convert the Hackberry 16 SWD #1 to salt water disposal in the Devonian/Silurian/Ordovician formation.

The surface land owner and operators with leasehold ownership have been notified with Devon's application to inject via certified mail.

If you have any questions, please contact Trevor Klaassen (405)-552-5069 or myself at (405)-552-7802.

Sincerely,

Stephanie A. Porter
Operations Technician

SP/sp
Enclosure

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:

September 17 2013

That the cost of publication is **$60.07** and that payment thereof has been made and will be assessed as court costs.

Kathy McCarroll

Subscribed and sworn to before me this

1st day of October, 2013

Shirley Maxwell

My commission Expires on May 18, 2015

Notary Public

OFFICIAL SEAL
Shirley Maxwell
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 5/18/15

September 17, 2013

Legal Notice

Devon Energy Production Company, LP, 333 West Sheridan Avenue, Oklahoma City, OK 73102-8260 has filed form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for an injection well. The proposed well, the Hackberry 16 SWD 2 will be a new drill; proposed location is 330' FSL & 280' FWL, Section 16, Township 19 South, Range 31 East, in Eddy County, New Mexico. Disposal water will be sourced from area wells producing from the Bone Spring and/or Delaware formations. The disposal water will be injected into the Devonian/Silurian/Ordovician formation at a depth of [illegible] to 18,000', open hole, at a maximum surface pressure of 3579 psi and a maximum rate of 10,000 BWPD. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505, within (15) days of this notice. Any interested party with questions or comments may contact Trevor Klaassen at Devon Energy Corporation, 333 West Sheridan Avenue, Oklahoma City, OK 73102-8260, or call (405) 552-5069.

C-108 Review Checklist: Received 11/08/13 Add. Request: — Reply Date: — Suspended: — [Ver 11]

PERMIT TYPE: WFX / PMX / SWD Number: 1456 Permit Date: 01/07/14 Legacy Permits/Orders: NA

Well No. 1 Well Name(s): Hackberry 16 SWD

API : 30-0 15-41783 Spud Date: TBD New or Old (N) (**UIC Class II Primacy 03/07/1982**)

Footages 320 FSL / 280 FWL Lot — Unit M Sec 16 Tsp 19S Rge 31E County Eddy

General Location: E. of Nimenim Ridge / south of Shugart Field Pool: NA for producing / SWD; Devonian - Ellenburger Pool No.: 97775

Operator: Devon Energy Production LP OGRID: 6137 Contact: —

COMPLIANCE RULE 5.9: Inactive Wells: 3 Total Wells: 1829 Fincl Assur: Yes Compl. Order? No **IS 5.9 OK?** Yes

Well File Reviewed ✓ Current Status: APD on file; new drill

Well Diagrams: NEW: Proposed ✓ RE-ENTER: Before Conv. ○ After Conv. ○ Are Elogs in Imaging?: not available

Planned Rehab Work to Well: No

Well Construction Details:	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Stage Tool	Cement Sx or Cf	Cement Top and Determination Method
Planned __ or Existing __ **Conductor**	—	—		—	—
Planned ✓ or Existing __ **Surface**	26 / 20	0 to 450		1090	Surf. Circulate to
Planned ✓ or Existing __ **Interm/Prod**	17 1/2 / 13 3/8	0 to 2535	No	1850	Surf.
Planned ✓ or Existing __ **Prod/Interm**	12 1/4 / 9 5/8	0 to 4900	No	1300	Surf.
Planned ✓ or Existing __ **Liner/Prod**	8 3/4 / 7	0 to 13395	No	1110	Calc TOC / 3000'
Planned ✓ or Existing __ **OH / PERF**	6 1/8	13,395 - 14765*	Inj Length 1370		

Injection Stratigraphic Units:	Depths (ft)	Injection or Confining Units	Tops?
Adjacent Unit: Litho. Struc. Por.	115	Mississippian Lime	12700
Confining Unit: Litho. Struc. Por.	0	Woodford	13280
Proposed Inj Interval TOP:	13395	Devonian	13395
Proposed Inj Interval BOTTOM:	14765	Ellenburger (upper)	14665
Confining Unit: Litho. Struc. (Por.)	-100'	Ellenburger	—
Adjacent Unit: Litho. Struc. Por.			+13000

Completion/Operation Details:

Drilled TD (Proposed 15000) PBTD NA

NEW TD 14765* NEW PBTD NA

NEW Open Hole ✓ or NEW Perfs ○

Tubing Size 4 1/2 in. Inter Coated? Yes

Proposed Packer Depth 13345 ft

Min. Packer Depth 13,295 (100-ft limit)

Proposed Max. Surface Press. 2679 psi

Admin. Inj. Press. 2679 (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P (NA) Noticed? NA **BLM Sec Ord** NA **WIPP** ○ Noticed? NA **SALADO:** T: 485 B: 1950 **CLIFF HOUSE** NA

FRESH WATER: Formation Minor alluvial Max Depth WL ~130' Wells? No FW Analysis? No **HYDROLOGIC AFFIRM By Qualified Person** ✓

Disposal Fluid: Formation Source(s) ~~No~~ Capitan Bone Spring / Delaware / Wolfcamp fms Analysis? Yes On Lease ○ Operator Only ✓ or Commercial ○

Disposal Interval: Injection Rate (Avg/Max BWPD) 5000 / 10,000 Protectable Waters: Unknown **CAPITAN REEF:** thru ✓ adj ○ NA ○

HC Potential: Producing Interval? No - Unknown Formerly Producing? — Method: Logs/DST/P&A/Other Potential due to new wells (low probability) 2-Mile Radius Pool Map ○

AOR Wells: 1/2-M Radius Map? Yes Well List? Yes Total No. Wells Penetrating Interval: 0 Horizontals? NA

Penetrating Wells: No. Active Wells 0 Num Repairs? 0 on which well(s)? — Diagrams? —

Penetrating Wells: No. P&A Wells 0 Num Repairs? 0 on which well(s)? — Diagrams? —

NOTICE: Newspaper Date 09/17/13 Mineral Owner SLO Surface Owner SLO N. Date 11/05/2013

RULE 26.7(A): Identified Tracts? Yes Affected Persons: Cimarex / Yates / Newberry / Dorchester Minerals, Trilex Energy, Book Nine 02G, Jay Petroleum N. Date 11/05/2013

Permit Conditions: Issues: * Too deep into Ellenburger; no salinity info; HC potential unknown

Add Permit Cond: Limit to top 100' of Ellenburger; CBL for TOC; Formation TOC calc.