

DATE IN 10.28.11 SUSPENSE ENGINEER DKB LOGGED IN 10.28.11 TYPE NSL APP NO. 1130153954

ABOVE THIS LINE FOR DIVISION USE ONLY

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



Devon 6137
Acturus 18 Fed 3H

ADMINISTRATIVE APPLICATION CHECKLIST 30-015-38953

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

Application Acronyms:

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

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

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

Check One Only for [B] or [C]

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

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

[D] Other: Specify _____

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

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

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

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

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

James Bruce
Print or Type Name

James H. Bruce
Signature

Attorney
Title

jamesbruc@aol.com
e-mail Address

10/26/11
Date

RECEIVED OGD

2011 OCT 27 A 7:49

6507

JAMES BRUCE
ATTORNEY AT LAW

POST OFFICE BOX 1056
SANTA FE, NEW MEXICO 87504

369 MONTEZUMA, NO. 213
SANTA FE, NEW MEXICO 87501

(505) 982-2043 (Phone)
(505) 660-6612 (Cell)
(505) 982-2151 (Fax)

jamesbruc@aol.com

October 26, 2011

David K. Brooks
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Dear Mr. Brooks:

Pursuant to Division Rule NMAC 19.15.15.13, Devon Energy Production Company, L.P. applies for approval of an unorthodox oil well location for the following well:

<u>Well:</u>	Arcturus 18 Federal Well No. 3H
<u>Surface location:</u>	1200 feet FSL & 340 feet FWL
<u>Penetration point:</u>	Same as surface location
<u>Bottom hole location:</u>	2300 feet FSL & 340 feet FEL
<u>Well unit (project area):</u>	Lot 3, NE¼SW¼, and N½SE¼ (the N½S½) of Section 18, Township 19 South, Range 31 East, N.M.P.M., Eddy County, New Mexico

Applicant proposes to drill the well to test the Bone Spring formation (Northwest Hackberry-Bone Spring Pool). The pool is spaced on 40 acres, with wells to be located no closer than 330 feet to a quarter-quarter section line. An APD with a Form C-102 is attached as **Exhibit A**. A drilling plan is attached as **Exhibit B**.

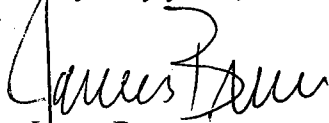
The surface location is unorthodox because applicant is attempting to minimize surface use and reduce costs by using the same drilling pad for this well and the Arcturus 18 Federal Well No. 4H (with a S½S½ of Section 18 well unit). In addition, the Bureau of Land Management requested that applicant place the well at this location to avoid potential cave/karst features at an orthodox location in Lot 3. **The producing interval will be at least 1650 feet FSL.**

The well encroaches on the S½SW¼ of Section 18. However, the entire SW¼ of Section 18 is covered by Federal Lease LC 069464-A, which has common ownership. **Exhibit C**. The well does not get nearer than 340 feet to offsetting Section 13, Township 19 South, Range 30 East,

N.M.P.M., covered by federal Lease NM 025559 (**Exhibit D**), so notice was not given to the west offsets (who also own interests in the subject well).

Please contact me if you need any further information on this application.

Very truly yours,

A handwritten signature in black ink, appearing to read "James Bruce". The signature is written in a cursive, flowing style with a large initial "J".

James Bruce

Attorney for Devon Energy Production Company, L.P.

Form 3160-3
(February 2005)

SECRETARY'S POTASH

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

EA 210

5. Lease Serial No.
USA NMNM LC 069464-A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.

Arcturus-18-Federal-3H

9. API Well No.

30-015-38953

10. Field and Pool, or Exploratory

Hackberry; Bone Spring, NW

11. Sec., T. R. M. or Blk. and Survey or Area

Sec 18 T19S-R31E

12. County or Parish

Eddy

13. State

NM

1a. Type of work: ☒ DRILL☐ REENTER1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator

Devon Energy Production Co., LP

3a. Address 20 North Broadway
OKC, OK 731023b. Phone No. (include area code)
(405)-552-78024. Location of Well (Report location clearly and in accordance with any State requirements*)
At surface SWSW 1000' FSL & 340' FWL (Lot M)
At proposed prod. zone NESE 2300' FSL & 340' FEL Lot I14. Distance in miles and direction from nearest town or post office*
Approximately 12 miles southwest of Loco Hills, NM.15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)

340'

16. No. of acres in lease

760

17. Spacing Unit dedicated to this well

160

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.

SL: 50' BHL: 600'

19. Proposed Depth

TVD 8854' MD 13657'

20. BLM/BIA Bond No. on file

CO-1104

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3410.6' GL22. Approximate date work will start*
12/15/201023. Estimated duration
45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

1. Well plat certified by a registered surveyor.

2. A Drilling Plan.

3. A Surface Use Plan (if the location is on National Forest System Lands, the
SUPO must be filed with the appropriate Forest Service Office).4. Bond to cover the operations unless covered by an existing bond on file (see
Item 20 above).

5. Operator certification.

6. Such other site specific information and/or plans as may be required by the
BLM.

25. Signature

Name (Printed/Typed)

Stephanie A. Ysasaga

Date

11/01/2010

Title

Sr. Staff Engineering Technician

Approved by (Signature)

/s/ Linda S.C. Rundell

Name (Printed/Typed)

Date

MAR 24 2011

Title

STATE DIRECTOR

Office

NM STATE OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to
conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United
States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*(Instructions on page 2)

CAPTAN CONTROLLED WATER BASIN

RECEIVED

MAR 31 2011

NM OGD ARTESIA

OCD CONDITION OF APPROVAL of Drilling:
Intent to drill ONLY -- CANNOT produce until the Non-Standard
Location has been approved by OCD Santa Fe office.APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL CONDITIONS

ATT

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

EXHIBIT

A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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 & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr
Santa Fe, NM 87505

Form C-102
Revised October 15, 2009
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number		2 Pool Code		3 Pool Name HACKBERRY; BONE SPRING, NW	
4 Property Code		5 Property Name ARCTURUS "18" FEDERAL			6 Well Number 3H
7 OGRID No. 6137		8 Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P			9 Elevation 3410.2

10 Surface Location

UL or lot no.	Section	Township	Range	Lot ldn	Feet from the	North/South line	Feet from the	East/West line	County
M	18	19 S	31 E		1200	SOUTH	340	WEST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot ldn	Feet from the	North/South line	Feet from the	East/West line	County
I	18	19 S	31 E		2300	SOUTH	340	EAST	EDDY

12 Dedicated Acres 160	13 Joint or Infill	14 Consolidation Code	15 Order No.
----------------------------------	--------------------	-----------------------	--------------

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.

NW CORNER SEC. 18 LAT. = 32.667617°N LONG. = 103.916936°W NMSP EAST (FT) N = 606846.48 E = 669467.90		NE CORNER SEC. 18 LAT. = 32.667674°N LONG. = 103.900078°W NMSP EAST (FT) N = 606887.83 E = 674656.73	
ARCTURUS "18" FED. #3H ELEV. = 3410.2' LAT = 32.656405°N (NAD83) LONG. = 103.915841°W NMSP EAST (FT) N = 602767.62 E = 669820.93		BOTTOM OF HOLE LAT. = 32.659479°N LONG. = 103.901153°W NMSP EAST (FT) N = 603904.48 E = 674338.01	
SURFACE LOCATION 340'		BOTTOM OF HOLE 340'	
SW CORNER SEC. 18 LAT. = 32.653103°N LONG. = 103.916948°W NMSP EAST (FT) N = 601564.85 E = 669485.12		SE CORNER SEC. 18 LAT. = 32.653162°N LONG. = 103.900025°W NMSP EAST (FT) N = 601607.32 E = 674694.79	

17 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 mineral interest in the land including the proposed bottom hole location or has a right to drill this well in 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: *[Signature]* Date: *2/10/2010*
Printed Name: **STEPHANIE A. YSASAGA**

18 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.

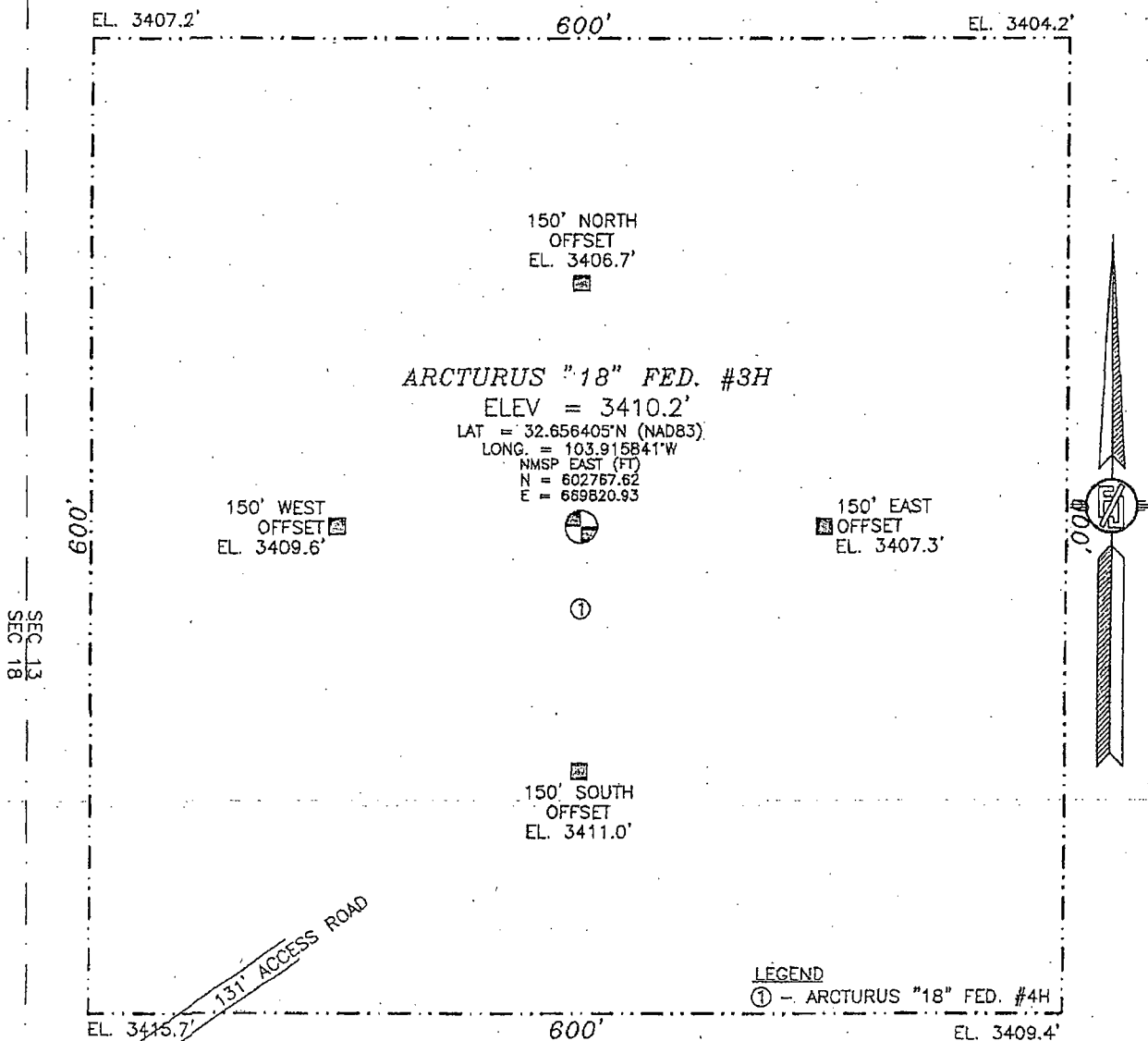
JANUARY 31, 2010
Date of Survey

Signature and Seal of Professional Surveyor: *[Signature]*
Certificate Number: **FILJONG F. JARAMILLO, PLS 12797**
SURVEY NO. 269-R1

PENETRATION POINT: 1650' FSL & 1840' FWL

☐ PRODUCING AREA ☐ PROJECT AREA

SECTION 18, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N M P M.
EDDY COUNTY, STATE OF NEW MEXICO



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM PAVED CR #222 (SHUGART RD.) AND PAVED RC #248 (LUSK PLANT RD.) GO SOUTHWEST ON 222 4.3 MILES TURN RIGHT ON CALICHE ROAD AND GO NORTH 1.0 MILES TURN LEFT AND GO WEST 0.35 MILES BEND RIGHT AND GO NORTH 0.5 MILES TURN LEFT AND GO SOUTHWEST 0.4 MILES TURN RIGHT AND GO NORTH 1.1 MILES AND LOCATION IS ON RIGHT (EAST) 320'

DEVON ENERGY PRODUCTION COMPANY, L.P.
ARCTURUS "18" FED. #3H
LOCATED 1200 FT FROM THE SOUTH LINE
AND 340 FT FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 19 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

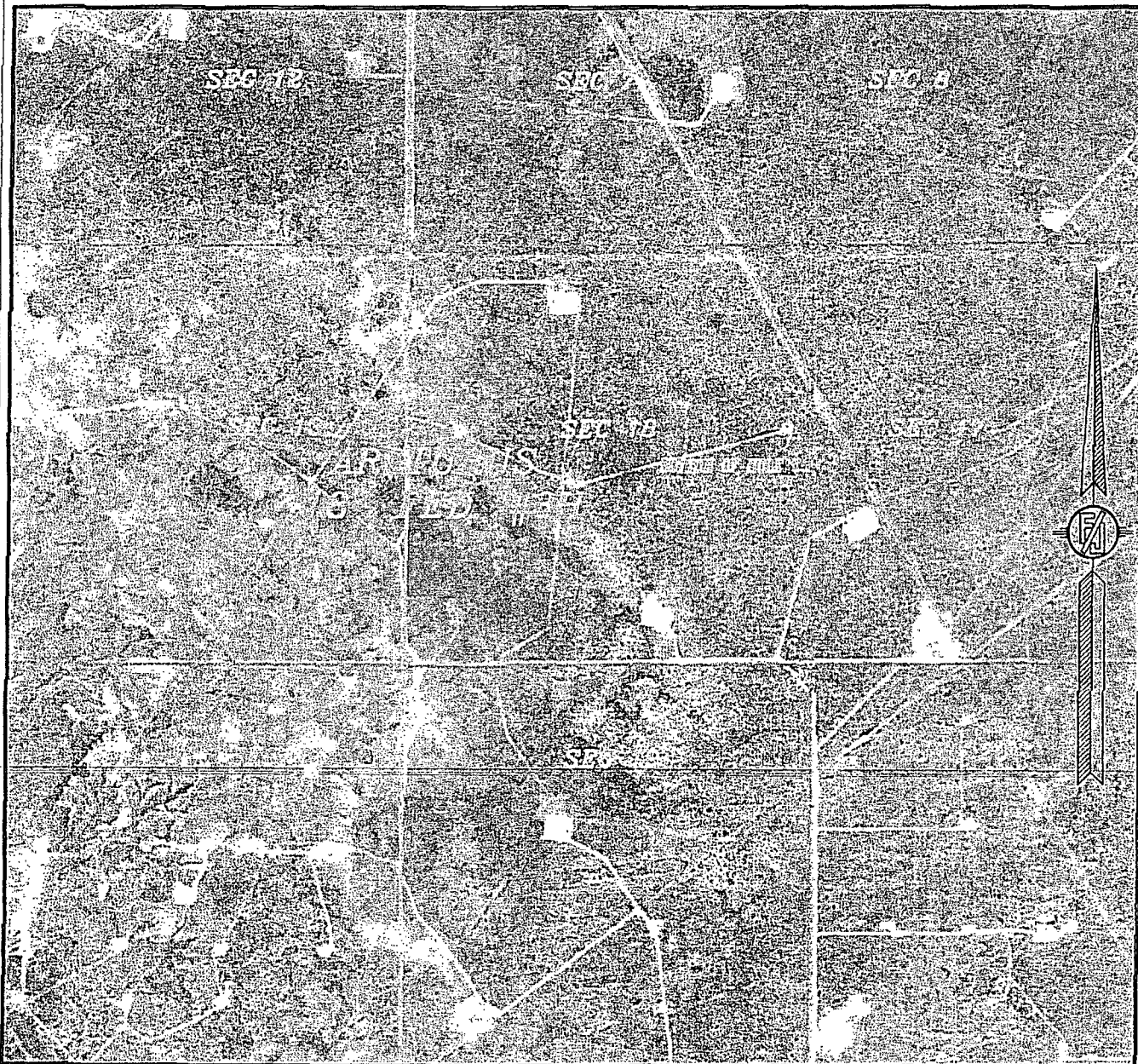
JANUARY 31, 2011

SURVEY NO. 269-R1

MADRON SURVEYING, INC. 301 SOUTH CAHAL (575) 697-5630 CARLSBAD, NEW MEXICO

SECTION 18, 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
USDA - AUG, 2009

DEVON ENERGY PRODUCTION COMPANY, L.P.
ARCTURUS "18" FED. #3H
LOCATED 1200 FT. FROM THE SOUTH LINE
AND 340 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 19 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JANUARY 31, 2011

SURVEY NO. 269-R1

MADRON SURVEYING, INC. 501 SOUTH CANAL CARLSBAD, NEW MEXICO
(505) 857-5830

DRILLING PROGRAM

~~#~~ Devon Energy Production Company, LP

Arcturus 18 Federal 3H

Surface Location: ¹²⁰⁰ 1000' FSL & 340' FWL, Unit M, Sec 18 T19S R31E, Eddy, NM

Bottom hole Location: 2300' FSL & 340' FEL, Unit I, Sec 18 T19S R31E, Eddy, NM

1. Geologic Name of Surface Formation

a. Permian

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

a. Rustler	425'	Barren
b. Salado	508'	Barren
c. Tansil Dolomite	1965'	Barren
d. Yates	2039'	Oil
e. Seven Rivers	2254'	Oil
f. Queen	3151'	Oil
g. San Andres	3974'	Oil
h. Delaware	4699'	Oil
i. Bone Springs	6394'	Oil
j. 1 st Bone Spring Ss	7786'	Oil
k. 2 nd Bone Spring Lime	8044'	Oil
l. 2 nd Bone Spring Ss	8554'	Oil
m. 2 nd Bone Spring Middle Ss	8714'	Oil
n. 2 nd Bone Spring Middle Ss Base	8789'	Oil
o. 3 rd Bone Spring Lime	9004'	Oil
p. PTD (Pilot Hole)	9080'	
q. Total Depth	TVD 8854' MD 13657'	

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at ~~475'~~^{400'} and circulating cement back to surface. The fresh water sands will be protected by setting 9 5/8" casing at 3100' and circulating cement to surface. The Delaware intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 9 5/8" casing. All casing is new and API approved.

3. Casing Program: See COA

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17 1/2"	0' - 475' ^{400'}	13 3/8"	0' - 475' ^{400'}	48#	STC	H-40
12 1/4"	^{400'} 475' - 3100'	9 5/8"	0' - 3100'	40#	LTC	J-55
8 3/4"	3100' - 8100	5 1/2"	0' - 8100'	17#	LTC	P-110HC
8 3/4"	8100' - 13657'	5 1/2"	8100' - 13657'	17#	BTC	P-110HC



Weatherford®

Drilling Services

Proposal



devon

ARCTURUS 18 FEDERAL 3H

EDDY COUNTY, NM

WELL FILE: PLAN 1

NOVEMBER 12, 2010

Weatherford International, Ltd.

P.O. Box 61028

Midland, TX 79711 USA

+1.432.561.8892 Main

+1.432.561.8895 Fax

www.weatherford.com

EXHIBIT B

devon

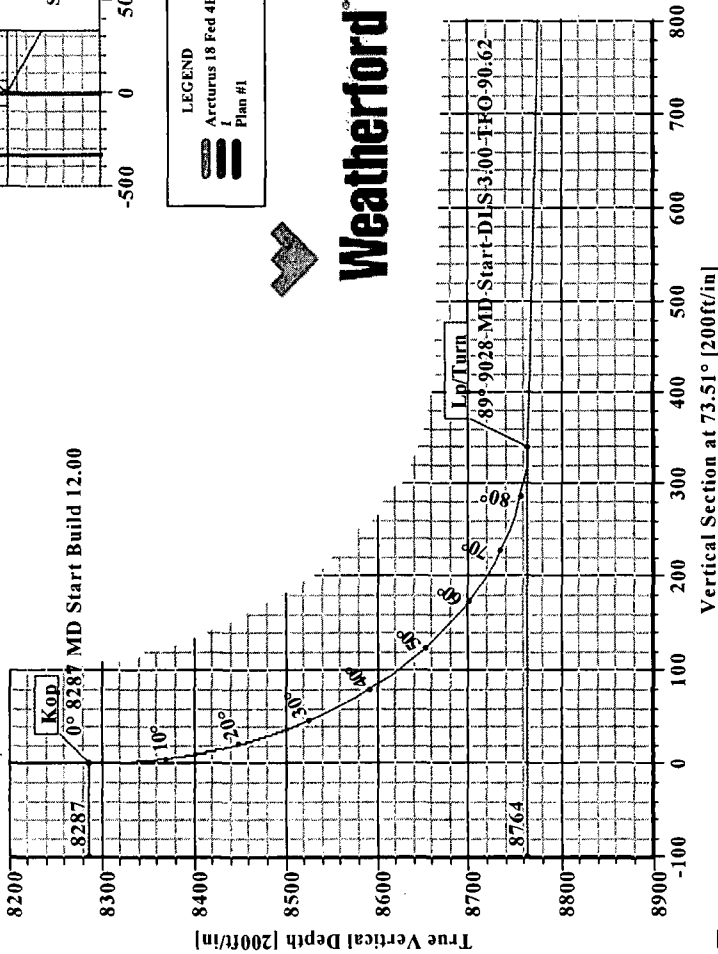
ARCTURUS 18 FED 3H
EDDY CO., NEW MEXICO

Azimuths to Grid North
True North: -0.23°
Magnetic North: 7.56°
Magnetic Field
Strength: 4883nT
Dip Angle: 60.53°
Date: 5/15/2011
Model: IGRF2010

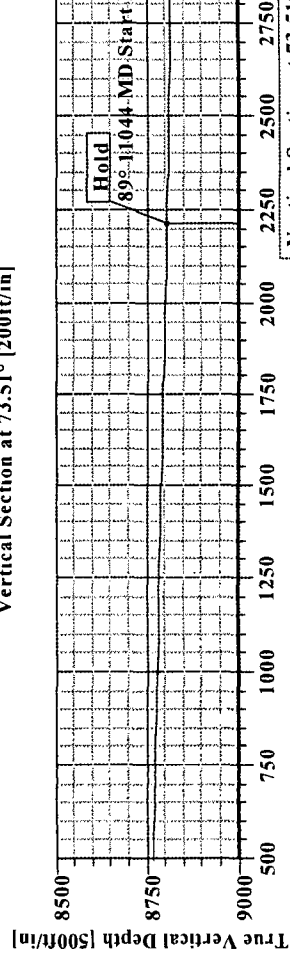
Total Correction to Grid North: 7.56°

KR ELEV: 3436
GL ELEV: 3411

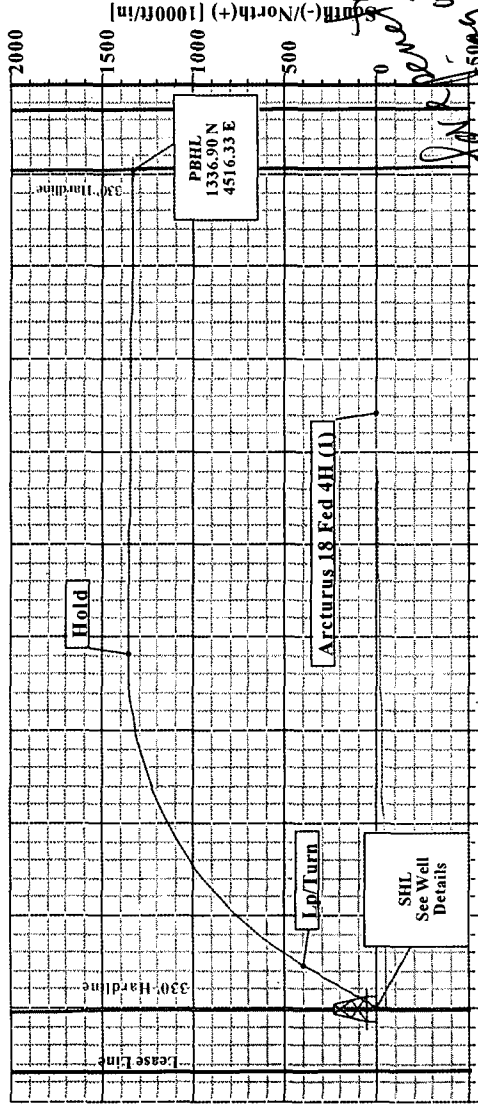
0° 8287 MD Start Build 12.00



Vertical Section at 73.51° [200ft/in]



Vertical Section at 73.51° [500ft/in]



West(-)/East(+) [1000ft/in]

LEGEND
Arcturus 18 Fed 4H (1)
Plan #1

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DDg	TFace	VS	Target
1	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	8286.62	0.00	30.00	8286.62	0.00	0.00	0.00	0.00	0.00	0.00
3	9027.74	88.93	30.00	8764.00	405.81	234.29	12.04	30.00	339.84	0.00
4	11044.45	88.93	90.51	8805.43	1360.27	1904.70	3.00	90.62	2212.46	0.00
5	13656.64	88.93	90.51	8854.00	1336.90	4516.33	0.00	0.00	4710.05	Pbhl

WELL DETAILS

Name	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
Arcturus 18 Fed 3H	0.00	0.00	602567.58	669821.68	32°39'20.90"N	103°54'57.094"W	N/A

TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Shape	Point
Pbhl	8854.00	1336.90	4516.33	603904.48	674338.01		

FIELD DETAILS

Eddy Co., NM (NAD 83)
Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Eastern Zone
Magnetic Model: IGRF2010
System Datum: Mean Sea Level
Local North: Grid North

SITE DETAILS

Arcturus 18 Fed 3H
Site Centre Northing: 602567.58
Easting: 669821.68
Ground Level: 3411.00
Positional Uncertainty: 0.00
Convergence: 0.23

Plan: Plan #1 (Arcturus 18 Fed 3H/1)

Created By: Russell W. Joyner

Date: 11/12/2010



Company: Devon Energy	Date: 11/12/2010	Time: 11:36:01	Page: 1
Field: Eddy Co., NM (NAD 83)	Co-ordinate(NE) Reference:	Well: Arcturus 18 Fed 3H, Grid North	
Site: Arcturus 18 Fed 3H	Vertical (TVD) Reference:	SITE 3436.0	
Well: Arcturus 18 Fed 3H	Section (VS) Reference:	Well (0.00N,0.00E,73.51Azi)	
Wellpath: 1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Plan: Plan #1	Date Composed: 11/12/2010
Principal: Yes	Version: 1
	Tied-to: From Surface

Field: Eddy Co., NM (NAD 83)

Map System: US State Plane Coordinate System 1983
 Geo Datum: GRS 1980
 Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
 Coordinate System: Well Centre
 Geomagnetic Model: IGRF2010

Site: Arcturus 18 Fed 3H

Site Position:	Northing: 602567.58 ft	Latitude: 32 39 20.907 N
From: Map	Easting: 669821.68 ft	Longitude: 103 54 57.094 W
Position Uncertainty: 0.00 ft		North Reference: Grid
Ground Level: 3411.00 ft		Grid Convergence: 0.23 deg

Well: Arcturus 18 Fed 3H	Slot Name:
Well Position: +N/-S 0.00 ft	Latitude: 32 39 20.907 N
+E/-W 0.00 ft	Longitude: 103 54 57.094 W
Position Uncertainty: 0.00 ft	

Wellpath: 1	Drilled From: Surface
Current Datum: SITE	Tie-on Depth: 0.00 ft
Magnetic Data: 5/15/2011	Above System Datum: Mean Sea Level
Field Strength: 48873 nT	Declination: 7.79 deg
Vertical Section: Depth From (TVD)	Mag Dip Angle: 60.53 deg
ft	+N/-S
	+E/-W
	ft
	Direction
	deg
0.00	0.00
0.00	0.00
0.00	73.51

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8286.62	0.00	30.00	8286.62	0.00	0.00	0.00	0.00	0.00	30.00	
9027.74	88.93	30.00	8764.00	405.81	234.29	12.00	12.00	0.00	30.00	
11044.45	88.93	90.51	8805.43	1360.27	1904.70	3.00	0.00	3.00	90.62	
13656.64	88.93	90.51	8854.00	1336.90	4516.33	0.00	0.00	0.00	0.00	Pbhl

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
8200.00	0.00	30.00	8200.00	0.00	0.00	0.00	0.00	602567.58	669821.68	
8286.62	0.00	30.00	8286.62	0.00	0.00	0.00	0.00	602567.58	669821.68	Kop
8300.00	1.61	30.00	8300.00	0.16	0.09	0.14	12.00	602567.74	669821.77	
8400.00	13.61	30.00	8398.94	11.60	6.70	9.72	12.00	602579.18	669828.38	
8500.00	25.61	30.00	8492.97	40.61	23.45	34.01	12.00	602608.19	669845.13	
8600.00	37.61	30.00	8577.98	85.91	49.60	71.95	12.00	602653.49	669871.28	
8700.00	49.61	30.00	8650.26	145.53	84.02	121.88	12.00	602713.11	669905.70	
8800.00	61.61	30.00	8706.64	216.86	125.21	181.61	12.00	602784.44	669946.89	
8900.00	73.61	30.00	8744.67	296.79	171.35	248.54	12.00	602864.37	669993.03	
9000.00	85.61	30.00	8762.68	381.81	220.44	319.75	12.00	602949.39	670042.12	
9027.74	88.93	30.00	8764.00	405.81	234.29	339.84	12.00	602973.39	670055.97	Lp/Turn
9100.00	88.91	32.17	8765.36	467.68	271.59	393.17	3.00	603035.26	670093.27	
9200.00	88.88	35.17	8767.29	550.88	327.01	469.92	3.00	603118.46	670148.69	
9300.00	88.86	38.17	8769.26	631.06	386.71	549.93	3.00	603198.64	670208.39	
9400.00	88.83	41.17	8771.27	708.01	450.53	632.96	3.00	603275.59	670272.21	
9500.00	88.81	44.17	8773.32	781.52	518.28	718.79	3.00	603349.10	670339.96	



Company: Devon Energy Date: 11/12/2010 Time: 11:36:01 Page: 2
 Field: Eddy Co. NM (NAD 83) Co-ordinate(NE) Reference: Well: Arcturus 18 Fed 3H Grid North
 Site: Arcturus 18 Fed 3H Vertical (TVD) Reference: SITE 3436.0
 Well: Arcturus 18 Fed 3H Section (VS) Reference: Well (0.00N,0.00E,73.51Azi)
 Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
9600.00	88.80	47.17	8775.41	851.37	589.79	807.19	3.00	603418.95	670411.47	
9700.00	88.79	50.17	8777.52	917.39	664.86	897.91	3.00	603484.97	670486.54	
9800.00	88.78	53.17	8779.64	979.38	743.28	990.70	3.00	603546.96	670564.96	
9900.00	88.77	56.17	8781.79	1037.19	824.84	1085.31	3.00	603604.77	670646.52	
10000.00	88.77	59.17	8783.94	1090.65	909.31	1181.48	3.00	603658.23	670730.99	
10100.00	88.77	62.17	8786.09	1139.61	996.46	1278.95	3.00	603707.19	670818.14	
10200.00	88.77	65.17	8788.24	1183.94	1086.06	1377.44	3.00	603751.52	670907.74	
10300.00	88.78	68.18	8790.38	1223.52	1177.86	1476.70	3.00	603791.10	670999.54	
10400.00	88.79	71.18	8792.50	1258.24	1271.60	1576.44	3.00	603825.82	671093.28	
10500.00	88.80	74.18	8794.60	1288.01	1367.03	1676.40	3.00	603855.59	671188.71	
10600.00	88.82	77.18	8796.68	1312.74	1463.89	1776.29	3.00	603880.32	671285.57	
10700.00	88.84	80.18	8798.72	1332.37	1561.91	1875.85	3.00	603899.95	671383.59	
10800.00	88.86	83.18	8800.72	1346.83	1660.83	1974.81	3.00	603914.41	671482.51	
10900.00	88.89	86.18	8802.68	1356.11	1760.37	2072.88	3.00	603923.69	671582.05	
11000.00	88.92	89.18	8804.59	1360.15	1860.26	2169.81	3.00	603927.73	671681.94	
11044.45	88.93	90.51	8805.43	1360.27	1904.70	2212.46	3.00	603927.85	671726.38	Hold
11100.00	88.93	90.51	8806.46	1359.78	1960.24	2265.57	0.00	603927.36	671781.92	
11200.00	88.93	90.51	8808.32	1358.88	2060.21	2361.19	0.00	603926.46	671881.89	
11300.00	88.93	90.51	8810.18	1357.99	2160.19	2456.80	0.00	603925.57	671981.87	
11400.00	88.93	90.51	8812.04	1357.09	2260.17	2552.41	0.00	603924.67	672081.85	
11500.00	88.93	90.51	8813.90	1356.20	2360.15	2648.03	0.00	603923.78	672181.83	
11600.00	88.93	90.51	8815.76	1355.30	2460.13	2743.64	0.00	603922.88	672281.81	
11700.00	88.93	90.51	8817.62	1354.41	2560.11	2839.25	0.00	603921.99	672381.79	
11800.00	88.93	90.51	8819.48	1353.51	2660.09	2934.86	0.00	603921.09	672481.77	
11900.00	88.93	90.51	8821.34	1352.62	2760.07	3030.48	0.00	603920.20	672581.75	
12000.00	88.93	90.51	8823.19	1351.72	2860.04	3126.09	0.00	603919.30	672681.72	
12100.00	88.93	90.51	8825.05	1350.83	2960.02	3221.70	0.00	603918.41	672781.70	
12200.00	88.93	90.51	8826.91	1349.93	3060.00	3317.31	0.00	603917.51	672881.68	
12300.00	88.93	90.51	8828.77	1349.04	3159.98	3412.93	0.00	603916.62	672981.66	
12400.00	88.93	90.51	8830.63	1348.14	3259.96	3508.54	0.00	603915.72	673081.64	
12500.00	88.93	90.51	8832.49	1347.25	3359.94	3604.15	0.00	603914.83	673181.62	
12600.00	88.93	90.51	8834.35	1346.36	3459.92	3699.77	0.00	603913.94	673281.60	
12700.00	88.93	90.51	8836.21	1345.46	3559.90	3795.38	0.00	603913.04	673381.58	
12800.00	88.93	90.51	8838.07	1344.57	3659.87	3890.99	0.00	603912.15	673481.55	
12900.00	88.93	90.51	8839.93	1343.67	3759.85	3986.60	0.00	603911.25	673581.53	
13000.00	88.93	90.51	8841.79	1342.78	3859.83	4082.22	0.00	603910.36	673681.51	
13100.00	88.93	90.51	8843.65	1341.88	3959.81	4177.83	0.00	603909.46	673781.49	
13200.00	88.93	90.51	8845.51	1340.99	4059.79	4273.44	0.00	603908.57	673881.47	
13300.00	88.93	90.51	8847.37	1340.09	4159.77	4369.05	0.00	603907.67	673981.45	
13400.00	88.93	90.51	8849.23	1339.20	4259.75	4464.67	0.00	603906.78	674081.43	
13500.00	88.93	90.51	8851.09	1338.30	4359.72	4560.28	0.00	603905.88	674181.40	
13600.00	88.93	90.51	8852.95	1337.41	4459.70	4655.89	0.00	603904.99	674281.38	
13656.64	88.93	90.51	8854.00	1336.90	4516.33	4710.05	0.00	603904.48	674338.01	Pbhl

Targets

Name	Description	TVD	+N/S	+E/W	Map	Map	Latitude			Longitude		
Dip.	Dir.	ft	ft	ft	Northing	Easting	Deg	Min	Sec	Deg	Min	Sec
					ft	ft						
Pbhl		8854.00	1336.90	4516.33	603904.48	674338.01	32	39	33.957 N	103	54	4.202 W



Weatherford International Ltd.

WFT Plan Report - X & Y's

**Weatherford**

Company: Devon Energy Date: 11/12/2010 Time: 11:36:01 Page: 3
Field: Eddy Co., NM (NAD 83) Co-ordinate(NE) Reference: Well: Arcturus 18 Fed 3H, Grid North
Site: Arcturus 18 Fed 3H Vertical (TVD) Reference: SITE 3436.0
Well: Arcturus 18 Fed 3H Section (VS) Reference: Well (0.00N,0.00E,73.51Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Casing Points

MD	TVD	Diameter	Hole Size	Name

Annotation

MD ft	TVD ft	
8286.62	8286.62	Kop
9027.74	8764.00	Lp/Turn
11044.45	8805.43	Hold
13656.64	8854.00	Pbhl

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction



Company: Devon Energy Date: 11/12/2010 Time: 12:36:42 Page: 1
 Field: Eddy Co., NM (NAD 83)
 Reference Site: Arcturus 18 Fed 3H Co-ordinate(NE) Reference: Well: Arcturus 18 Fed 3H; Grid North
 Reference Well: Arcturus 18 Fed 3H Vertical (TVD) Reference: SITE 3436.0
 Reference Wellpath: 1 Db: Sybase

NO GLOBAL SCAN: Using user defined selection & scan criteria

Interpolation Method: MD Interval: 100.00 ft

Depth Range: 0.00 to 13656.64 ft

Maximum Radius: 10000.00 ft

Reference: Plan: Plan #1

Error Model: ISCWSA Ellipse

Scan Method: Closest Approach 3D

Error Surface: Ellipse

Plan: Plan #1

Date Composed: 11/12/2010

Principal: Yes

Version: 1

Tied-to: From Surface

Summary

Site	Offset Wellpath	Reference MD	Offset MD	Ctr-Ctr Distance	Edge Distance	Separation Factor	Warning
Well	Wellpath	ft	ft	ft	ft		
Arcturus 18 Fed 4H	Arcturus 18 Fed 4H 1 V0 Plan: Plan #1 V1	8300.00	8300.02	50.14	13.11	1.35	Level 3

Site: Arcturus 18 Fed 4H

Well: Arcturus 18 Fed 4H

Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr	Edge	Separation	Warning
MD	TVD	MD	TVD	Ref	Offset	TFO-HS	North	East	Distance	Distance	Factor	
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft		
0.00	0.00	0.00	0.00	0.00	0.00	179.85	-49.98	0.13	49.98			No Data
100.00	100.00	100.00	100.00	0.08	0.08	179.85	-49.98	0.13	49.98	49.81	296.49	
200.00	200.00	200.00	200.00	0.31	0.31	179.85	-49.98	0.13	49.98	49.36	80.86	
300.00	300.00	300.00	300.00	0.53	0.53	179.85	-49.98	0.13	49.98	48.91	46.81	
400.00	400.00	400.00	400.00	0.76	0.76	179.85	-49.98	0.13	49.98	48.46	32.94	
500.00	500.00	500.00	500.00	0.98	0.98	179.85	-49.98	0.13	49.98	48.01	25.41	
600.00	600.00	600.00	600.00	1.21	1.21	179.85	-49.98	0.13	49.98	47.56	20.69	
700.00	700.00	700.00	700.00	1.43	1.43	179.85	-49.98	0.13	49.98	47.11	17.44	
800.00	800.00	800.00	800.00	1.66	1.66	179.85	-49.98	0.13	49.98	46.66	15.08	
900.00	900.00	900.00	900.00	1.88	1.88	179.85	-49.98	0.13	49.98	46.22	13.28	
1000.00	1000.00	1000.00	1000.00	2.11	2.11	179.85	-49.98	0.13	49.98	45.77	11.86	
1100.00	1100.00	1100.00	1100.00	2.33	2.33	179.85	-49.98	0.13	49.98	45.32	10.72	
1200.00	1200.00	1200.00	1200.00	2.56	2.56	179.85	-49.98	0.13	49.98	44.87	9.77	
1300.00	1300.00	1300.00	1300.00	2.78	2.78	179.85	-49.98	0.13	49.98	44.42	8.98	
1400.00	1400.00	1400.00	1400.00	3.01	3.01	179.85	-49.98	0.13	49.98	43.97	8.31	
1500.00	1500.00	1500.00	1500.00	3.23	3.23	179.85	-49.98	0.13	49.98	43.52	7.73	
1600.00	1600.00	1600.00	1600.00	3.46	3.46	179.85	-49.98	0.13	49.98	43.07	7.23	
1700.00	1700.00	1700.00	1700.00	3.68	3.68	179.85	-49.98	0.13	49.98	42.62	6.79	
1800.00	1800.00	1800.00	1800.00	3.91	3.91	179.85	-49.98	0.13	49.98	42.17	6.40	
1900.00	1900.00	1900.00	1900.00	4.13	4.13	179.85	-49.98	0.13	49.98	41.72	6.05	
2000.00	2000.00	2000.00	2000.00	4.35	4.35	179.85	-49.98	0.13	49.98	41.27	5.74	
2100.00	2100.00	2100.00	2100.00	4.58	4.58	179.85	-49.98	0.13	49.98	40.82	5.46	
2200.00	2200.00	2200.00	2200.00	4.80	4.80	179.85	-49.98	0.13	49.98	40.37	5.20	
2300.00	2300.00	2300.00	2300.00	5.03	5.03	179.85	-49.98	0.13	49.98	39.92	4.97	
2400.00	2400.00	2400.00	2400.00	5.25	5.25	179.85	-49.98	0.13	49.98	39.47	4.76	
2500.00	2500.00	2500.00	2500.00	5.48	5.48	179.85	-49.98	0.13	49.98	39.02	4.56	
2600.00	2600.00	2600.00	2600.00	5.70	5.70	179.85	-49.98	0.13	49.98	38.57	4.38	
2700.00	2700.00	2700.00	2700.00	5.93	5.93	179.85	-49.98	0.13	49.98	38.12	4.22	
2800.00	2800.00	2800.00	2800.00	6.15	6.15	179.85	-49.98	0.13	49.98	37.67	4.06	
2900.00	2900.00	2900.00	2900.00	6.38	6.38	179.85	-49.98	0.13	49.98	37.22	3.92	
3000.00	3000.00	3000.00	3000.00	6.60	6.60	179.85	-49.98	0.13	49.98	36.78	3.78	
3100.00	3100.00	3100.00	3100.00	6.83	6.83	179.85	-49.98	0.13	49.98	36.33	3.66	
3200.00	3200.00	3200.00	3200.00	7.05	7.05	179.85	-49.98	0.13	49.98	35.88	3.54	
3300.00	3300.00	3300.00	3300.00	7.28	7.28	179.85	-49.98	0.13	49.98	35.43	3.43	
3400.00	3400.00	3400.00	3400.00	7.50	7.50	179.85	-49.98	0.13	49.98	34.98	3.33	
3500.00	3500.00	3500.00	3500.00	7.73	7.73	179.85	-49.98	0.13	49.98	34.53	3.23	



Company: Devon Energy
 Field: Eddy Co., NM (NAD 83)
 Reference Site: Arcturus 18 Fed 3H
 Reference Well: Arcturus 18 Fed 3H
 Reference Wellpath: 1

Date: 11/12/2010
 Time: 12:36:42
 Page: 2

Co-ordinate(NE) Reference: Well: Arcturus 18 Fed 3H, Grid North
 Vertical (TVD) Reference: SITE 3436.0
 Db: Sybase

Site: Arcturus 18 Fed 4H
 Well: Arcturus 18 Fed 4H
 Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference MD	Reference TVD	Offset MD	Offset TVD	Semi-Major Axis Ref	Semi-Major Axis Offset	Semi-Major Axis TFO-HS	Offset Location North	Offset Location East	Ctr-Ctr Distance	Edge Distance	Separation Factor	Warning
3600.00	3600.00	3600.00	3600.00	7.95	7.95	179.85	-49.98	0.13	49.98	34.08	3.14	
3700.00	3700.00	3700.00	3700.00	8.18	8.18	179.85	-49.98	0.13	49.98	33.63	3.06	
3800.00	3800.00	3800.00	3800.00	8.40	8.40	179.85	-49.98	0.13	49.98	33.18	2.97	
3900.00	3900.00	3900.00	3900.00	8.63	8.63	179.85	-49.98	0.13	49.98	32.73	2.90	
4000.00	4000.00	4000.00	4000.00	8.85	8.85	179.85	-49.98	0.13	49.98	32.28	2.82	
4100.00	4100.00	4100.00	4100.00	9.07	9.07	179.85	-49.98	0.13	49.98	31.83	2.75	
4200.00	4200.00	4200.00	4200.00	9.30	9.30	179.85	-49.98	0.13	49.98	31.38	2.69	
4300.00	4300.00	4300.00	4300.00	9.52	9.52	179.85	-49.98	0.13	49.98	30.93	2.62	
4400.00	4400.00	4400.00	4400.00	9.75	9.75	179.85	-49.98	0.13	49.98	30.48	2.56	
4500.00	4500.00	4500.00	4500.00	9.97	9.97	179.85	-49.98	0.13	49.98	30.03	2.51	
4600.00	4600.00	4600.00	4600.00	10.20	10.20	179.85	-49.98	0.13	49.98	29.58	2.45	
4700.00	4700.00	4700.00	4700.00	10.42	10.42	179.85	-49.98	0.13	49.98	29.13	2.40	
4800.00	4800.00	4800.00	4800.00	10.65	10.65	179.85	-49.98	0.13	49.98	28.68	2.35	
4900.00	4900.00	4900.00	4900.00	10.87	10.87	179.85	-49.98	0.13	49.98	28.23	2.30	
5000.00	5000.00	5000.00	5000.00	11.10	11.10	179.85	-49.98	0.13	49.98	27.78	2.25	
5100.00	5100.00	5100.00	5100.00	11.32	11.32	179.85	-49.98	0.13	49.98	27.33	2.21	
5200.00	5200.00	5200.00	5200.00	11.55	11.55	179.85	-49.98	0.13	49.98	26.89	2.16	
5300.00	5300.00	5300.00	5300.00	11.77	11.77	179.85	-49.98	0.13	49.98	26.44	2.12	
5400.00	5400.00	5400.00	5400.00	12.00	12.00	179.85	-49.98	0.13	49.98	25.99	2.08	
5500.00	5500.00	5500.00	5500.00	12.22	12.22	179.85	-49.98	0.13	49.98	25.54	2.04	
5600.00	5600.00	5600.00	5600.00	12.45	12.45	179.85	-49.98	0.13	49.98	25.09	2.01	
5700.00	5700.00	5700.00	5700.00	12.67	12.67	179.85	-49.98	0.13	49.98	24.64	1.97	
5800.00	5800.00	5800.00	5800.00	12.90	12.90	179.85	-49.98	0.13	49.98	24.19	1.94	
5900.00	5900.00	5900.00	5900.00	13.12	13.12	179.85	-49.98	0.13	49.98	23.74	1.90	
6000.00	6000.00	6000.00	6000.00	13.35	13.35	179.85	-49.98	0.13	49.98	23.29	1.87	
6100.00	6100.00	6100.00	6100.00	13.57	13.57	179.85	-49.98	0.13	49.98	22.84	1.84	
6200.00	6200.00	6200.00	6200.00	13.80	13.80	179.85	-49.98	0.13	49.98	22.39	1.81	
6300.00	6300.00	6300.00	6300.00	14.02	14.02	179.85	-49.98	0.13	49.98	21.94	1.78	
6400.00	6400.00	6400.00	6400.00	14.24	14.24	179.85	-49.98	0.13	49.98	21.49	1.75	
6500.00	6500.00	6500.00	6500.00	14.47	14.47	179.85	-49.98	0.13	49.98	21.04	1.73	
6600.00	6600.00	6600.00	6600.00	14.69	14.69	179.85	-49.98	0.13	49.98	20.59	1.70	
6700.00	6700.00	6700.00	6700.00	14.92	14.92	179.85	-49.98	0.13	49.98	20.14	1.68	
6800.00	6800.00	6800.00	6800.00	15.14	15.14	179.85	-49.98	0.13	49.98	19.69	1.65	
6900.00	6900.00	6900.00	6900.00	15.37	15.37	179.85	-49.98	0.13	49.98	19.24	1.63	
7000.00	7000.00	7000.00	7000.00	15.59	15.59	179.85	-49.98	0.13	49.98	18.79	1.60	
7100.00	7100.00	7100.00	7100.00	15.82	15.82	179.85	-49.98	0.13	49.98	18.34	1.58	
7200.00	7200.00	7200.00	7200.00	16.04	16.04	179.85	-49.98	0.13	49.98	17.89	1.56	
7300.00	7300.00	7300.00	7300.00	16.27	16.27	179.85	-49.98	0.13	49.98	17.45	1.54	
7400.00	7400.00	7400.00	7400.00	16.49	16.49	179.85	-49.98	0.13	49.98	17.00	1.52	
7500.00	7500.00	7500.00	7500.00	16.72	16.72	179.85	-49.98	0.13	49.98	16.55	1.49	Level 3
7600.00	7600.00	7600.00	7600.00	16.94	16.94	179.85	-49.98	0.13	49.98	16.10	1.48	Level 3
7700.00	7700.00	7700.00	7700.00	17.17	17.17	179.85	-49.98	0.13	49.98	15.65	1.46	Level 3
7800.00	7800.00	7800.00	7800.00	17.39	17.39	179.85	-49.98	0.13	49.98	15.20	1.44	Level 3
7900.00	7900.00	7900.00	7900.00	17.62	17.62	179.85	-49.98	0.13	49.98	14.75	1.42	Level 3
8000.00	8000.00	8000.00	8000.00	17.84	17.84	179.85	-49.98	0.13	49.98	14.30	1.40	Level 3
8100.00	8100.00	8100.00	8100.00	18.07	18.07	179.85	-49.98	0.13	49.98	13.85	1.38	Level 3
8200.00	8200.00	8200.00	8200.00	18.29	18.29	179.85	-49.98	0.13	49.98	13.40	1.37	Level 3
8300.00	8300.00	8300.02	8300.02	18.52	18.52	149.75	-49.98	0.30	50.14	13.11	1.35	Level 3
8400.00	8398.94	8398.68	8397.67	18.73	18.74	143.11	-49.75	13.08	61.70	24.47	1.66	
8500.00	8492.97	8490.95	8484.82	18.95	18.95	133.11	-49.23	42.94	92.29	55.03	2.48	
8600.00	8577.98	8573.37	8556.54	19.18	19.16	124.30	-48.53	83.33	140.26	102.88	3.75	



Company: Devon Energy Date: 11/12/2010 Time: 12:36:42 Page: 3
 Field: Eddy Co., NM (NAD 83)
 Reference Site: Arcturus 18 Fed 3H Co-ordinate(NE) Reference: Well: Arcturus 18 Fed 3H Grid North
 Reference Well: Arcturus 18 Fed 3H Vertical (TVD) Reference: SITE 3436.0
 Reference Wellpath: 1 Db: Sybase

Site: Arcturus 18 Fed 4H
 Well: Arcturus 18 Fed 4H
 Wellpath: 1 VO Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference MD	TVD	Offset MD	TVD	Semi-Major Axis Ref	Offset	TFO-HS	Offset Location North	East	Ctr-Ctr Distance	Edge Distance	Separation Factor	Warning
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft		
8700.00	8650.26	8645.02	8612.46	19.47	19.39	115.90	-47.75	128.03	201.80	163.95	5.33	
8800.00	8706.64	8706.69	8654.77	19.88	19.65	106.62	-46.97	172.82	273.06	234.24	7.03	
8900.00	8744.67	8759.91	8686.39	20.42	19.94	95.90	-46.22	215.59	350.73	310.64	8.75	
9000.00	8762.68	8806.35	8709.94	21.11	20.26	84.02	-45.52	255.59	432.01	390.85	10.49	
9100.00	8765.36	8850.60	8728.67	21.93	20.61	84.41	-44.82	295.66	514.37	471.95	12.13	
9200.00	8767.29	8901.59	8745.54	22.90	21.09	88.00	-43.98	343.74	595.49	551.53	13.54	
9300.00	8769.26	8959.59	8758.38	24.00	21.74	89.94	-43.00	400.26	674.29	628.55	14.74	
9400.00	8771.27	9023.65	8764.62	25.22	22.56	90.53	-41.89	463.97	750.05	702.27	15.70	
9500.00	8773.32	9092.69	8768.28	26.54	23.55	90.68	-40.68	532.90	822.35	772.25	16.42	
9600.00	8775.41	9165.42	8772.13	27.95	24.72	90.79	-39.42	605.51	890.93	838.26	16.92	
9700.00	8777.52	9241.63	8776.16	29.42	26.04	90.87	-38.09	681.60	955.62	900.17	17.23	
9800.00	8779.64	9321.12	8780.37	30.93	27.52	90.93	-36.70	760.97	1016.24	957.79	17.39	
9900.00	8781.79	9403.67	8784.74	32.49	29.14	90.98	-35.27	843.40	1072.62	1010.99	17.41	
10000.00	8783.94	9489.06	8789.26	34.06	30.92	91.02	-33.78	928.65	1124.60	1059.63	17.31	
10100.00	8786.09	9577.04	8793.92	35.65	32.82	91.05	-32.25	1016.50	1172.05	1103.58	17.12	
10200.00	8788.24	9667.39	8798.70	37.23	34.84	91.08	-30.67	1106.70	1214.83	1142.77	16.86	
10300.00	8790.38	9759.85	8803.59	38.79	36.97	91.11	-29.06	1199.01	1252.83	1177.08	16.54	
10400.00	8792.50	9854.16	8808.59	40.33	39.18	91.14	-27.42	1293.18	1285.94	1206.43	16.17	
10500.00	8794.60	9950.07	8813.66	41.83	41.48	91.18	-25.75	1388.95	1314.08	1230.77	15.77	
10600.00	8796.68	10047.32	8818.81	43.29	43.85	91.22	-24.05	1486.04	1337.16	1250.03	15.35	
10700.00	8798.72	10145.64	8824.02	44.69	46.28	91.26	-22.34	1584.21	1355.12	1264.17	14.90	
10800.00	8800.72	10244.76	8829.26	46.02	48.76	91.32	-20.61	1683.18	1367.93	1273.16	14.44	
10900.00	8802.68	10344.41	8834.54	47.28	51.27	91.38	-18.88	1782.67	1375.53	1277.00	13.96	
11000.00	8804.59	10444.32	8839.83	48.46	53.82	91.46	-17.14	1882.42	1377.92	1275.67	13.48	
11100.00	8806.46	10544.23	8845.12	50.33	56.38	91.58	-15.39	1982.18	1375.89	1269.21	12.90	
11200.00	8808.32	10644.14	8850.40	52.83	58.96	91.73	-13.65	2081.93	1373.35	1261.61	12.29	
11300.00	8810.18	10744.05	8855.69	55.35	61.55	91.88	-11.91	2181.68	1370.83	1253.98	11.73	
11400.00	8812.04	10843.95	8860.98	57.89	64.16	92.02	-10.17	2281.44	1368.31	1246.33	11.22	
11500.00	8813.90	10943.86	8866.27	60.45	66.77	92.17	-8.43	2381.19	1365.80	1238.65	10.74	
11600.00	8815.76	11043.76	8871.56	63.03	69.40	92.32	-6.69	2480.94	1363.30	1230.96	10.30	
11700.00	8817.62	11143.67	8876.85	65.62	72.04	92.47	-4.95	2580.69	1360.80	1223.26	9.89	
11800.00	8819.48	11243.58	8882.14	68.22	74.68	92.62	-3.21	2680.44	1358.32	1215.55	9.51	
11900.00	8821.34	11343.48	8887.42	70.84	77.33	92.77	-1.47	2780.19	1355.85	1207.84	9.16	
12000.00	8823.19	11443.39	8892.71	73.46	79.98	92.92	0.27	2879.94	1353.39	1200.11	8.83	
12100.00	8825.05	11543.29	8898.00	76.10	82.64	93.07	2.01	2979.69	1350.93	1192.39	8.52	
12200.00	8826.91	11643.20	8903.29	78.74	85.31	93.22	3.75	3079.44	1348.49	1184.66	8.23	
12300.00	8828.77	11743.11	8908.58	81.39	87.98	93.37	5.49	3179.19	1346.05	1176.93	7.96	
12400.00	8830.63	11769.95	8910.00	84.05	88.70	93.42	5.96	3205.99	1345.61	1173.14	7.80	
12500.00	8832.49	11769.95	8910.00	86.71	88.70	93.42	5.96	3205.99	1352.32	1177.20	7.72	
12600.00	8834.35	11769.95	8910.00	89.38	88.70	93.42	5.96	3205.99	1366.33	1188.56	7.69	
12700.00	8836.21	11769.95	8910.00	92.06	88.70	93.42	5.96	3205.99	1387.43	1207.00	7.69	
12800.00	8838.07	11769.95	8910.00	94.73	88.70	93.42	5.96	3205.99	1415.29	1232.21	7.73	
12900.00	8839.93	11769.95	8910.00	97.42	88.70	93.42	5.96	3205.99	1449.53	1263.79	7.80	
13000.00	8841.79	11769.95	8910.00	100.10	88.70	93.42	5.96	3205.99	1489.71	1301.30	7.91	
13100.00	8843.65	11769.95	8910.00	102.79	88.70	93.42	5.96	3205.99	1535.36	1344.28	8.04	
13200.00	8845.51	11769.95	8910.00	105.49	88.70	93.42	5.96	3205.99	1586.01	1392.26	8.19	
13300.00	8847.37	11769.95	8910.00	108.19	88.70	93.42	5.96	3205.99	1641.19	1444.77	8.36	
13400.00	8849.23	11769.95	8910.00	110.89	88.70	93.42	5.96	3205.99	1700.47	1501.37	8.54	
13500.00	8851.09	11769.95	8910.00	113.59	88.70	93.42	5.96	3205.99	1763.44	1561.65	8.74	
13600.00	8852.95	11769.95	8910.00	116.29	88.70	93.42	5.96	3205.99	1829.70	1625.24	8.95	
13656.64	8854.00	11769.95	8910.00	117.83	88.70	93.42	5.96	3205.99	1868.56	1662.58	9.07	

**Weatherford®****Weatherford Drilling Services**

GeoDec v5.03

Report Date: November 12, 2010
Job Number: _____
Customer: Devon Energy
Well Name: Arcturus 18 Fed 3H
API Number: _____
Rig Name: _____
Location: Eddy Co., NM (NAD 83)
Block: _____
Engineer: RWJ

US State Plane 1983	Geodetic Latitude / Longitude
System: New Mexico Eastern Zone	System: Latitude / Longitude
Projection: Transverse Mercator/Gauss Kruger	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
North/South 602567.580 USFT	Latitude 32.6558109 DEG
East/West 669821.680 USFT	Longitude -103.9158550 DEG
Grid Convergence: .23°	
Total Correction: +7.56°	

Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	32.65581° N	32° 39 min 20.919 sec
Longitude =	103.91585° W	103° 54 min 57.078 sec

Magnetic Declination =	7.79°	[True North Offset]
Local Gravity =	.9988 g	Checksum = 6674
Local Field Strength =	48869 nT	Magnetic Vector X = 23820 nT
Magnetic Dip =	60.53°	Magnetic Vector Y = 3259 nT
Magnetic Model =	IGRF-2010g11	Magnetic Vector Z = 42546 nT
Spud Date =	May 15, 2011	Magnetic Vector H = 24042 nT

Signed: _____

Date: _____

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01 02-25-1920;041STAT0437;30USC226

Case Type 311111: O&G LSE NONCOMP PUB LAND

Commodity 459: OIL & GAS L

Case Disposition: AUTHORIZED

Total Acres

744.120

Serial Number

NMLC-- 0 069464A

			Serial Number: NMLC-- 0 069464A		
Name & Address			Int Rel	% Interest	
ACTS INC	1304 W BROADWAY PL	HOBBS NM 88240	OPERATING RIGHTS	0.0000000	
BANNON EXPL CO	3608 SCR 1184	MIDLAND TX 79706	OPERATING RIGHTS	0.0000000	
BAUERDORF G F	9363 WILSHIRE BLVD	BEVERLY HILLS CA 90210	LESSEE	25.0000000	
DEVON ENERGY PROD CO LP	20 N BROADWAY #1500	OKLAHOMA CITY OK 73102	OPERATING RIGHTS	0.0000000	
DOMINION OK TX EXPL & PROD INC	14000 QUAIL SPGS PKY #600	OKLAHOMA CITY OK 73134	OPERATING RIGHTS	0.0000000	
DRM PROPERTIES INC	4110 E 37TH ST	ODESSA TX 79762	OPERATING RIGHTS	0.0000000	
ELLIOTT ROGER T	4105 BAYBROOK DR	MIDLAND TX 79707	OPERATING RIGHTS	0.0000000	
HOLLYHOCK CORP	415 W WALL #1106	MIDLAND TX 79701	OPERATING RIGHTS	0.0000000	
IRWIN DAN W	118 N GRANT ST	HINSDALE IL 60521	LESSEE	6.2500000	
KHODY LAND & MINERALS CO	3817 NW EXPRESSWAY STE 950	OKLAHOMA CITY OK 731121488	OPERATING RIGHTS	0.0000000	
SCHUSTER KATHLEEN IRWIN	3213 PEPPERWOOD LN	FORT COLLINS CO 80525	LESSEE	6.2500000	
WALLFAM LTD	1811 HERITAGE BLVD STE 200	MIDLAND TX 797079715	LESSEE	12.5000000	
WILSON TODD M	3608 S CTY RD #1184	MIDLAND TX 79701	OPERATING RIGHTS	0.0000000	
WK LAND CO	911 KIMBARK ST	LONGMONT CO 80501	OPERATING RIGHTS	0.0000000	
WK LAND CO	911 KIMBARK ST	LONGMONT CO 80501	LESSEE	50.0000000	

Serial Number: NMLC-- 0 069464A

Mer Twp	Rng	Sec	SType	SNr Suff	Subdivision	District/Field Office	County	Mgmt Agency
23 0190S	0310E	007	ALIQ		E2SW;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT
23 0190S	0310E	007	LOTS		3,4;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT
23 0190S	0310E	018	ALIQ		NE,E2W2,N2SE,SWSE;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT
23 0190S	0310E	018	LOTS		1-4;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT

Relinquished/Withdrawn Lands

Serial Number: NMLC-- 0 069464A

23 0190S 0310E 707	FF	N2NE,SEGR;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT
23 0190S 0310E 718	FF	SESE,ASGN;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT

Serial Number: NMLC-- 0 069464A

Act Date	Code	Action	Action Remark	Pending Office
06/30/1949	387	CASE ESTABLISHED		
07/01/1949	237	LEASE ISSUED		
07/01/1949	496	FUND CODE	05;145003	
07/01/1949	530	RLTY RATE - 12 1/2%		
07/01/1949	868	EFFECTIVE DATE		
08/26/1953	553	CASE CREATED BY ASGN	OUT OF NMLC069464;	
07/22/1954	235	EXTENDED	THRU 07/01/59;	
02/17/1959	140	ASGN FILED	SRN CA PETRO/ANDERSON	
03/01/1959	570	CASE SEGREGATED BY ASGN	INTO NMLC069464-C;	
03/11/1959	235	EXTENDED	THRU 02/28/61;	
02/09/1961	500	GEOGRAPHIC NAME	UNDEFINED FIELD;	
02/09/1961	510	KMA CLASSIFIED		
02/09/1961	643	PRODUCTION DETERMINATION		
02/09/1961	650	HELD BY PROD - ACTUAL		
02/09/1961	658	MEMO OF 1ST PROD-ACTUAL		
04/03/1961	102	NOTICE SENT-PROD STATUS		
05/17/1965	940	NAME CHANGE RECOGNIZED	SRN CA PETRO/SCOPE	
09/01/1968	500	GEOGRAPHIC NAME	E BENSON YATES FIELD;	
10/17/1968	512	KMA EXPANDED		
10/11/1972	140	ASGN FILED	CULBERTSON/BAUERDORF	

EXHIBIT C

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10/26/1981	700	LEASE SEGREGATED	INTO NMNM54112;
06/21/1983	940	NAME CHANGE RECOGNIZED	SCOPE IND/SCOPE ENE;
12/06/1983	512	KMA EXPANDED	
10/21/1986	932	TRF OPER RGTS FILED	
02/02/1987	933	TRF OPER RGTS APPROVED	EFF 11/01/86;
02/11/1987	963	CASE MICROFILMED	CNUM 103,279 DS
03/01/1991	396	TRF OF INTEREST FILED	CULBERTSON EST/TRST
04/13/1992	643	PRODUCTION DETERMINATION	
10/01/1992	621	RLTY RED-STRIPPER WELL	1.3%:/1/
01/11/1993	625	RLTY REDUCTION APPV	/1/
05/10/1993	932	TRF OPER RGTS FILED	BAUERDORF/C & W
05/10/1993	932	TRF OPER RGTS FILED	IRWIN/COLLINS & WARE
05/10/1993	932	TRF OPER RGTS FILED	SCOPE/COLLINS & WARE
05/10/1993	932	TRF OPER RGTS FILED	WALLACE/COLLINS&WARE
05/12/1993	909	BOND ACCEPTED	EFF 05/03/93;NM2177
08/23/1993	933	TRF OPER RGTS APPROVED	(1)EFF 06/01/93;
08/23/1993	933	TRF OPER RGTS APPROVED	(2)EFF 06/01/93;
08/23/1993	933	TRF OPER RGTS APPROVED	(3)EFF 06/01/93;
08/23/1993	933	TRF OPER RGTS APPROVED	(4)EFF 06/01/93;
12/30/1994	932	TRF OPER RGTS FILED	C&W P LP/DREYFUS
03/22/1995	933	TRF OPER RGTS APPROVED	EFF 01/01/95;
03/22/1995	974	AUTOMATED RECORD VERIF	MV/MV
07/25/1996	932	TRF OPER RGTS FILED	DREYFUS/SANTA FE ENE
10/03/1996	933	TRF OPER RGTS APPROVED	EFF 08/01/96;
10/03/1996	974	AUTOMATED RECORD VERIF	JLV
11/06/1996	932	TRF OPER RGTS FILED	T WILSON/SF ENERGY
12/18/1996	933	TRF OPER RGTS APPROVED	EFF 12/01/96;
12/18/1996	974	AUTOMATED RECORD VERIF	JLV
06/01/1997	246	LEASE COMMITTED TO CA	NMNM94536;
07/02/1997	575	APD FILED	
07/30/1997	576	APD APPROVED	#1 HACKBERRY "18" FED
11/25/1997	932	TRF OPER RGTS FILED	CARTWRIGHT/L DREYFUS
12/11/1997	933	TRF OPER RGTS APPROVED	EFF 12/01/97;
12/15/1997	974	AUTOMATED RECORD VERIF	ANN
04/03/1998	932	TRF OPER RGTS FILED	L DREYFUS/SF ENE RES
04/22/1998	933	TRF OPER RGTS APPROVED	EFF 05/01/98;
04/22/1998	974	AUTOMATED RECORD VERIF	JLV
07/01/1999	940	NAME CHANGE RECOGNIZED	SF ENE RES/SF SNYDER
07/01/1999	974	AUTOMATED RECORD VERIF	JLV
10/11/2000	940	NAME CHANGE RECOGNIZED	SANTA FE/DEVON SFS
10/11/2000	974	AUTOMATED RECORD VERIF	AT
12/12/2001	817	MERGER RECOGNIZED	L DREYFUS/DOMINION
01/07/2002	396	TRF OF INTEREST FILED	IRWIN EST/K SCHUSTER
01/07/2002	396	TRF OF INTEREST FILED	W IRWIN EST/DAN IRWIN
01/07/2002	974	AUTOMATED RECORD VERIF	BTM
07/01/2002	246	LEASE COMMITTED TO CA	NMNM107709;
07/01/2002	660	MEMO OF 1ST PROD-ALLOC	/2/
12/12/2002	817	MERGER RECOGNIZED	DEVONSFS/DEVONENEPD
12/16/2002	643	PRODUCTION DETERMINATION	/2/ NMNM107709
01/18/2005	933	TRF OPER RGTS APPROVED	EFF 01/01/06;
03/28/2005	932	TRF OPER RGTS FILED	SCOPE IND/WEBB RODN;1
03/31/2005	522	CA TERMINATED	NMNM94536;
05/11/2005	522	CA TERMINATED	NMNM107709;
05/17/2005	933	TRF OPER RGTS APPROVED	EFF 04/01/05;
05/17/2005	974	AUTOMATED RECORD VERIF	LR

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12/16/2005	932	TRF OPER RGTS FILED	WEBB OIL/ACTS;1
01/18/2006	974	AUTOMATED RECORD VERIF	ANN
05/01/2006	899	TRF OF ORR FILED	1
01/04/2007	932	TRF OPER RGTS FILED	DOMINION/LOBOS ENE;1
02/28/2007	933	TRF OPER RGTS APPROVED	EFF 02/01/07;
02/28/2007	974	AUTOMATED RECORD VERIF	ANN
09/10/2007	932	TRF OPER RGTS FILED	B CARTWRI/DRM PROPE;1
10/24/2007	933	TRF OPER RGTS APPROVED	EFF 10/01/07;
10/24/2007	974	AUTOMATED RECORD VERIF	ANN
01/28/2008	626	RLTY REDUCTION DENIED	/3/
03/07/2008	974	AUTOMATED RECORD VERIF	LR
09/29/2008	140	ASGN FILED	SCOPE INDU/W K LAND;1
09/29/2008	932	TRF OPER RGTS FILED	SCOPE INDU/W K LAND;1
02/01/2010	817	MERGER RECOGNIZED	LOBOS ENE/KHODY LAND
06/18/2010	104	ADDTL INFO RQSTD	09/29/08 RT ASGN;
06/18/2010	104	ADDTL INFO RQSTD	2 09/29/08 OR
06/18/2010	974	AUTOMATED RECORD VERIF	MV
07/20/2010	269	ASGN DENIED	09/29/08 OR;
07/20/2010	269	ASGN DENIED	09/29/08 RT;
07/20/2010	974	AUTOMATED RECORD VERIF	MV
08/26/2010	140	ASGN FILED	SCOPE INDU/W K LAND;1
10/21/2010	140	ASGN FILED	CULBERTSON/WALLFAM;1
11/10/2010	269	ASGN DENIED	SCOPE/WK LAND CO;
11/10/2010	974	AUTOMATED RECORD VERIF	BTM
12/22/2010	139	ASGN APPROVED	EFF 11/01/2010;
12/22/2010	974	AUTOMATED RECORD VERIF	MJD
04/08/2011	140	ASGN FILED	SCOPE INDU/W/K LAND;1
04/08/2011	932	TRF OPER RGTS FILED	SCOPE INDU/W/K LAND;1
08/31/2011	139	ASGN APPROVED	EFF 08/01/11;
08/31/2011	933	TRF OPER RGTS APPROVED	EFF 08/01/11;
08/31/2011	974	AUTOMATED RECORD VERIF	BTM

Serial Number: NMLC-- 0 069464A

Line Nr	Remarks	
0002	NMNM54112 IS EXTENDED FOR AS LONG AS NMLC069464A	
0003	EXISTS.	
0004	CURRENT RECORD TITLE HOLDERS	
0005	T. 19 S., R 31 E:	
0006	SEC 18; LOTS 1,2,3,4, NE,E2W2,W2SE,NESE	
0007	W/K LAND COMPANY	50.00
0008	CULBERTSON MGMT TRST	25.00
0009	DAN W IRWIN	12.50
0010	KATHLEEN IRWIN SCHUSTER	12.50
0011	T. 19 S., R 31 E:	
0012	SEC. 7: LOTS 3, 4, E2SW	
0013	W/K LAND COMPANY	50.00
0014	CULBERSTON MGMT TRST	12.50
0015	DAN W IRWIN	6.25
0016	KATHLEEN IRWIN SCHUSTER	6.25
0017	GEORGE F BAUERDORF	25.00
0018	12/11/1997 - BONDED OPERATOR	
0019	FI-RO CORP - NM2177 - SW	
0020	BONDED TRANSFEREE - PER ABSS	
0021	05/17/2005 - RODNEY D WEBB - NMB000274 - S/W;	

NO WARRANTY IS MADE BY BLM FOR USE OF THE DATA FOR PURPOSES NOT INTENDED BY BLM

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0022	01/18/2006 - BONDED LESSEE
0023	G F BAUERDORF - NM1049 - INDIVIDUAL LEASE BOND
0024	OPERATOR BONDED - 10/24/2007
0025	DEVON ENERGY CO LP - WY3322 - N/W;
0026	OPERATOR BONDED T.R.CONE SW NM0404-NM2196 12/22/10

**DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CASE RECORDATION
(MASS) Serial Register Page**

Run Time: 11:58 AM

Page 1 of 1

Run Date: 10/26/2011

01 02-25-1920;041STAT0437;30USC226

Total Acres

Serial Number

Case Type 311111: O&G LSE NONCOMP PUB LAND

640.000

NMNM-- 0 025559

Commodity 459: OIL & GAS L

Case Disposition: AUTHORIZED

Serial Number: NMNM-- 0 025559

Name & Address			Int Rel	% Interest
IRWIN DAN W	118 N GRANT ST	HINSDALE IL 60521	LESSEE	12.5000000
SCHUSTER KATHLEEN IRWIN	3213 PEPPERWOOD LN	FORT COLLINS CO 80525	LESSEE	12.5000000
WALLFAM LTD	1811 HERITAGE BLVD STE 200	MIDLAND TX 797079715	LESSEE	25.0000000
WK LAND CO	911 KIMBARK ST	LONGMONT CO 80501	OPERATING RIGHTS	0.0000000
WK LAND CO	911 KIMBARK ST	LONGMONT CO 80501	LESSEE	50.0000000

Serial Number: NMNM-- 0 025559

Mer Twp Rng Sec	SType	SNr Suff	Subdivision	District/Field Office	County	Mgmt Agency
23 0190S 0300E 013	ALIQ		ALL;	CARLSBAD FIELD OFFICE	EDDY	BUREAU OF LAND MGMT

Serial Number: NMNM-- 0 025559

Act Date	Code	Action	Action Remark	Pending Office
08/13/1956	124	APLN RECD		
08/31/1956	237	LEASE ISSUED		
09/01/1956	496	FUND CODE	05;145003	
09/01/1956	530	RLTY RATE - 12 1/2%		
09/01/1956	868	EFFECTIVE DATE		DMG
07/06/1960	500	GEOGRAPHIC NAME	UNNAMED FIELD;	
07/06/1960	510	KMA CLASSIFIED		
08/18/1960	315	RENTAL RATE DET/ADJ	\$1.00;	
12/23/1960	512	KMA EXPANDED		
12/23/1960	650	HELD BY PROD - ACTUAL		BP
08/29/1987	974	AUTOMATED RECORD VERIF		MRR
08/16/1988	963	CASE MICROFILMED	CNUM 103,212	
03/01/1991	396	TRF OF INTEREST FILED	CLBRTSN/CLBRTSN TRUST	
03/01/1991	974	AUTOMATED RECORD VERIF		GLC/GC
05/23/1994	909	BOND ACCEPTED	EFF 05/06/94;NM2304	
06/28/1994	974	AUTOMATED RECORD VERIF		BTM/KRP
01/07/2002	396	TRF OF INTEREST FILED	IRWIN EST/K SCHUSTER	
01/07/2002	396	TRF OF INTEREST FILED	W IRWIN EST/DAN IRWIN	
01/07/2002	974	AUTOMATED RECORD VERIF	BTM	
09/29/2008	140	ASGN FILED	SCOPE INDU/W K LAND;1	
09/29/2008	932	TRF OPER RGTS FILED	SCOPE INDU/W K LAND;1	
11/07/2008	139	ASGN APPROVED	EFF 10/01/08;	
11/07/2008	933	TRF OPER RGTS APPROVED	EFF 10/01/08;	
11/07/2008	974	AUTOMATED RECORD VERIF	MV	
10/21/2010	140	ASGN FILED	CULBERTSON/WALLFAM;1	
12/22/2010	139	ASGN APPROVED	EFF 11/01/2010;	
12/22/2010	974	AUTOMATED RECORD VERIF	MJD	

EXHIBIT D

Serial Number: NMNM-- 0 025559

Line Nr	Remarks
0001	-
0002	11/07/08 CULBERTSON MGMT TR BONDED LESSEE NM2900/SW
0003	OPERTOR CONE, TOM R BONDED SW NM0404-NM2196 12/22/10

NO WARRANTY IS MADE BY BLM FOR USE OF THE DATA FOR PURPOSES NOT INTENDED BY BLM