ATS-12-987

EA-12-1311

R-111-POTASH

Form 3160-3
(March 2012)

OCD Artesia

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

TES 5/24/2013

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NM-89052

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. APACHE 25 FED 18H <31920>

2. Name of Operator DEVON ENERGY PRODUCTION COMPANY, L. P. <6137>

9. API Well No. 30-015-41395

3a. Address 333 W. SHERIDAN OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code) 405-552-4524

10. Field and Pool, or Exploratory LOS MEDANOS; BONE SPRING 40295

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface 1080 FNL & 330 FEL
At proposed prod. zone 1980 FNL & 330 FWL

11. Sec., T. R. M. or Blk. and Survey or Area SECTION 25, T. 22 S., R. 30 E.

14. Distance in miles and direction from nearest town or post office* 17 MILES NORTHEAST OF LOVING, NM

12. County or Parish EDDY

13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330 FT.

16. No. of acres in lease 560

17. Spacing Unit dedicated to this well 160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 50 ft to proposed 19H 180' to existing 14H

19. Proposed Depth TVD: ~~10980~~ 10940 MD: ~~15515~~ 15185

20. BLM/BIA Bond No. on file NMB-000801 CO-1104

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3371.8' GL

22. Approximate date work will start*

23. Estimated duration 30 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 Barry W. Hunt — Name (Printed/Typed) BARRY W. HUNT — Date 7/18/12

Title PERMIT AGENT FOR DEVON ENERGY PRODUCTION, L.P.

Approved by (Signature) /s/ Jesse J. Juen — Name (Printed/Typed) — Date MAY - 8 2013

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.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

C101 & 2 only

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

RECEIVED
MAY 16 2013
NMOCD ARTESIA

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 Rd., 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, New Mexico 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-41395	40295	LOS MEDANOS; BONE SPRING

Property Code	Property Name	Well Number
31920	APACHE 25 FED	18H

OGRID No.	Operator Name	Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, LP.	3371.8'

Surface Location

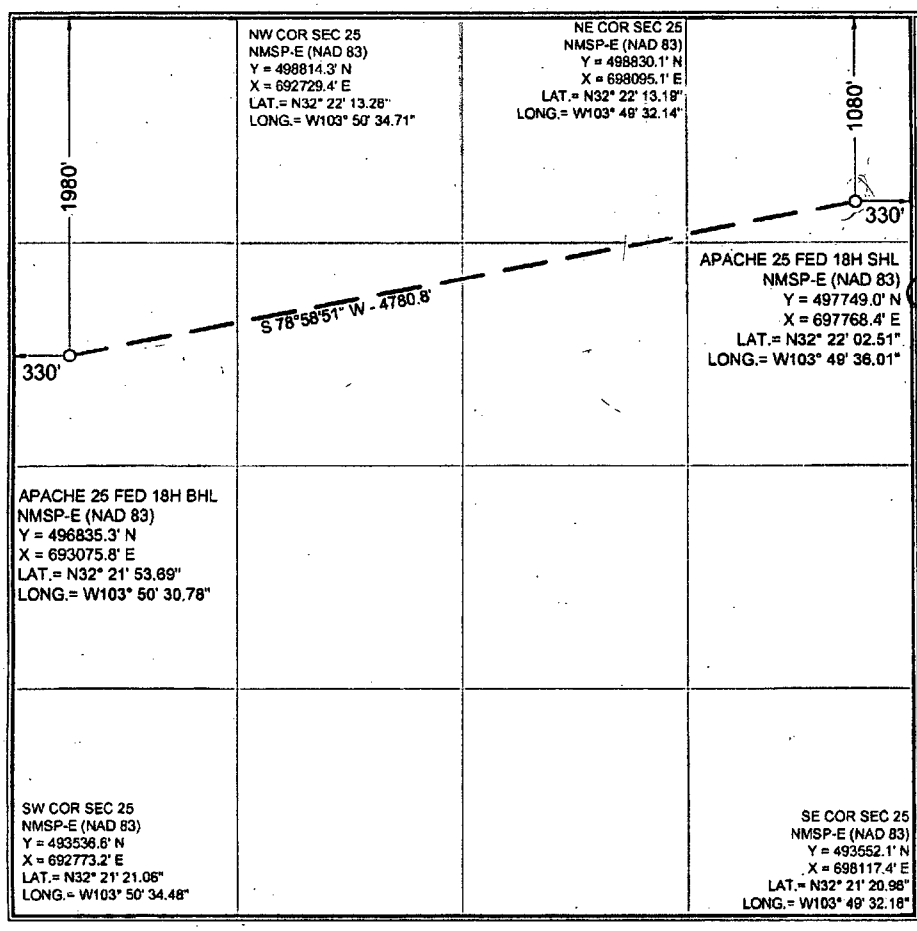
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	25	22 S	30 E		1080	NORTH	330	EAST	EDDY

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
E	25	22 S	30 E		1980	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidated Code	Order No.
160			

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.



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 voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Barry W. Hunt 7/18/12
Signature Date

Barry W. Hunt
Print Name

E-mail Address

SURVEYORS 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.

JUNE 7, 2012
Date of Survey

Signature and Seal of Professional Surveyor

JAMES E. TOMPKINS
NEW MEXICO
14729
REGISTERED PROFESSIONAL LAND SURVEYOR

James E. Tompkins

Job No.: WTC48540
JAMES E. TOMPKINS 14729
Certificate Number

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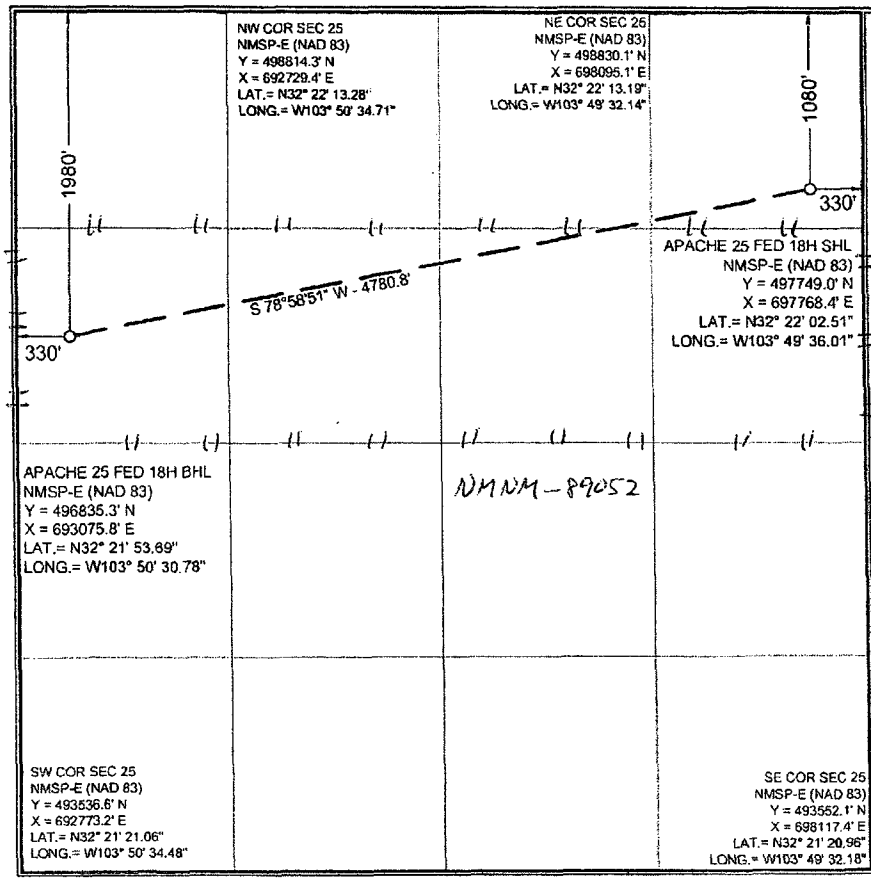
Dedicated Acres	Joint or Infill	Consolidated Code	Order No.
160			

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.



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 voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Barry W. Hunt 7/18/12
Signature Date

Barry W. Hunt
Print Name

E-mail Address

SURVEYORS 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.

JUNE 7, 2012
Date of Survey

Signature and Seal of Professional Surveyor

JAMES E. TOMPKINS
NEW MEXICO
14729
REGISTERED PROFESSIONAL LAND SURVEYOR

James E. Tompkins

Job No.: WTC48540
JAMES E. TOMPKINS 14729
Certificate Number

CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct, and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Devon Energy Production, L.P. am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U. S. C. 1001 for the filing of false statements. Executed this 18th day of July 2012.

Signed: Barry W. Hunt

Printed Name: Barry Hunt
Position: Agent for Devon Energy Production, LLC.
Address: 1403 Springs Farm Place, Carlsbad, NM 88220
Telephone: (575) 361-4078
E-mail: specialtpermitting@gmail.com
Field Representative: Don Mayberry
Address: P. O. Box 250, Artesia, NM 88211-0250
Telephone: Office: (575) 748-0164, Cell: (575) 748-5235

devon

Devon Energy Corporation
20 North Broadway
Oklahoma City, OK 73102-8260

405 235 3611 Phone
www.devonenergy.com

June 5, 2012

To Whom It May Concern:

Mr. Barry Hunt is contracted by Devon Energy, L.P. to sign as their agent for APDs and Right of Ways in the state of New Mexico.

If you have any questions, please contact me at my office at (405) 228-8379.

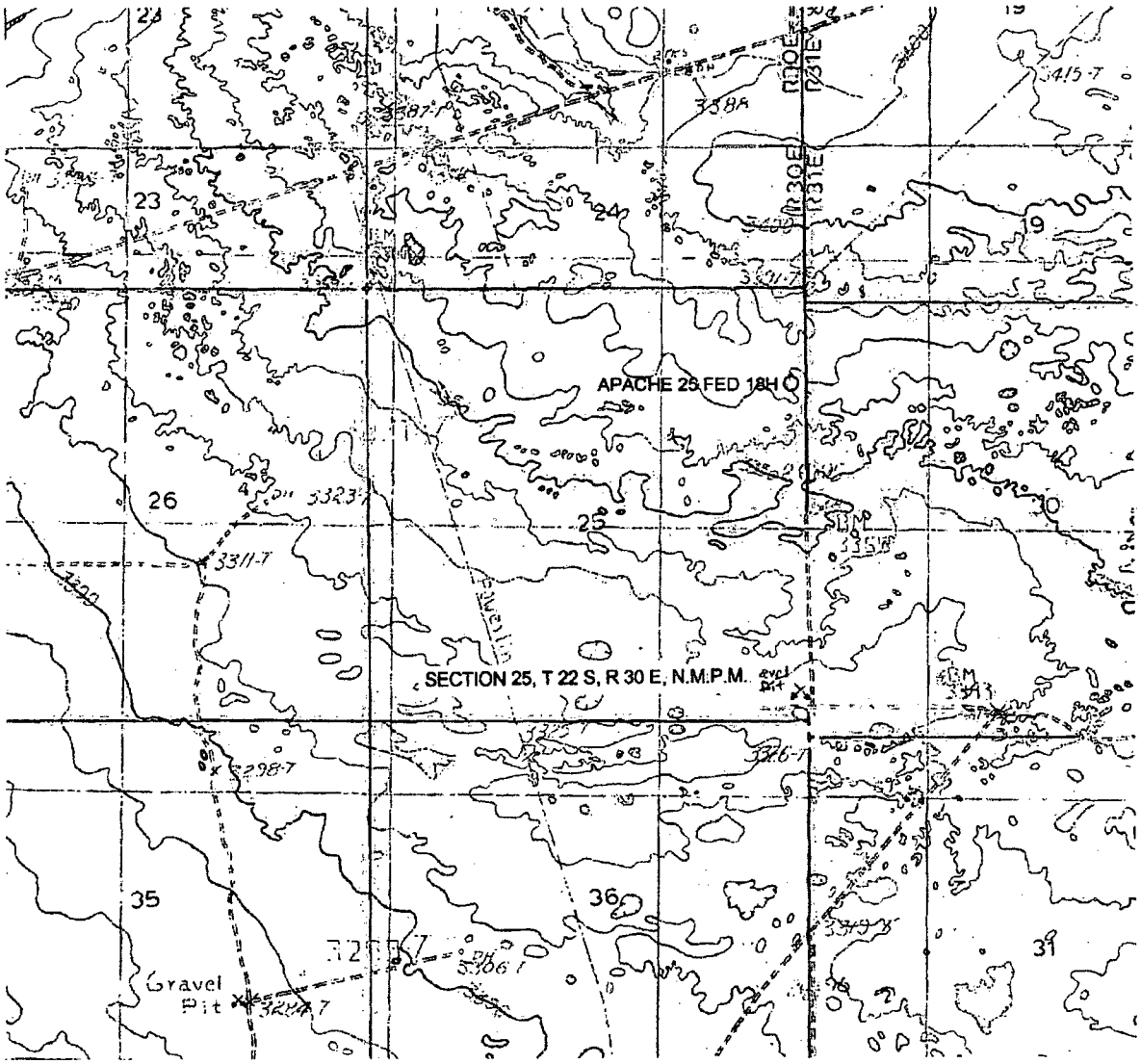
Sincerely,

Victoria Sanchez

Victoria Sanchez

Supervisor, Regulatory Compliance
Mid-Continent Division
Devon Energy, L.P.

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

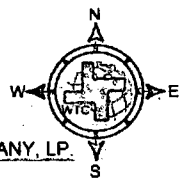
SECTION 25, T 22 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 1080' FNL & 330' FEL

OPERATOR: DEVON ENERGY PRODUCTION COMPANY, LP.

WELL NAME: APACHE 25 FED 18H



DRIVING DIRECTIONS:

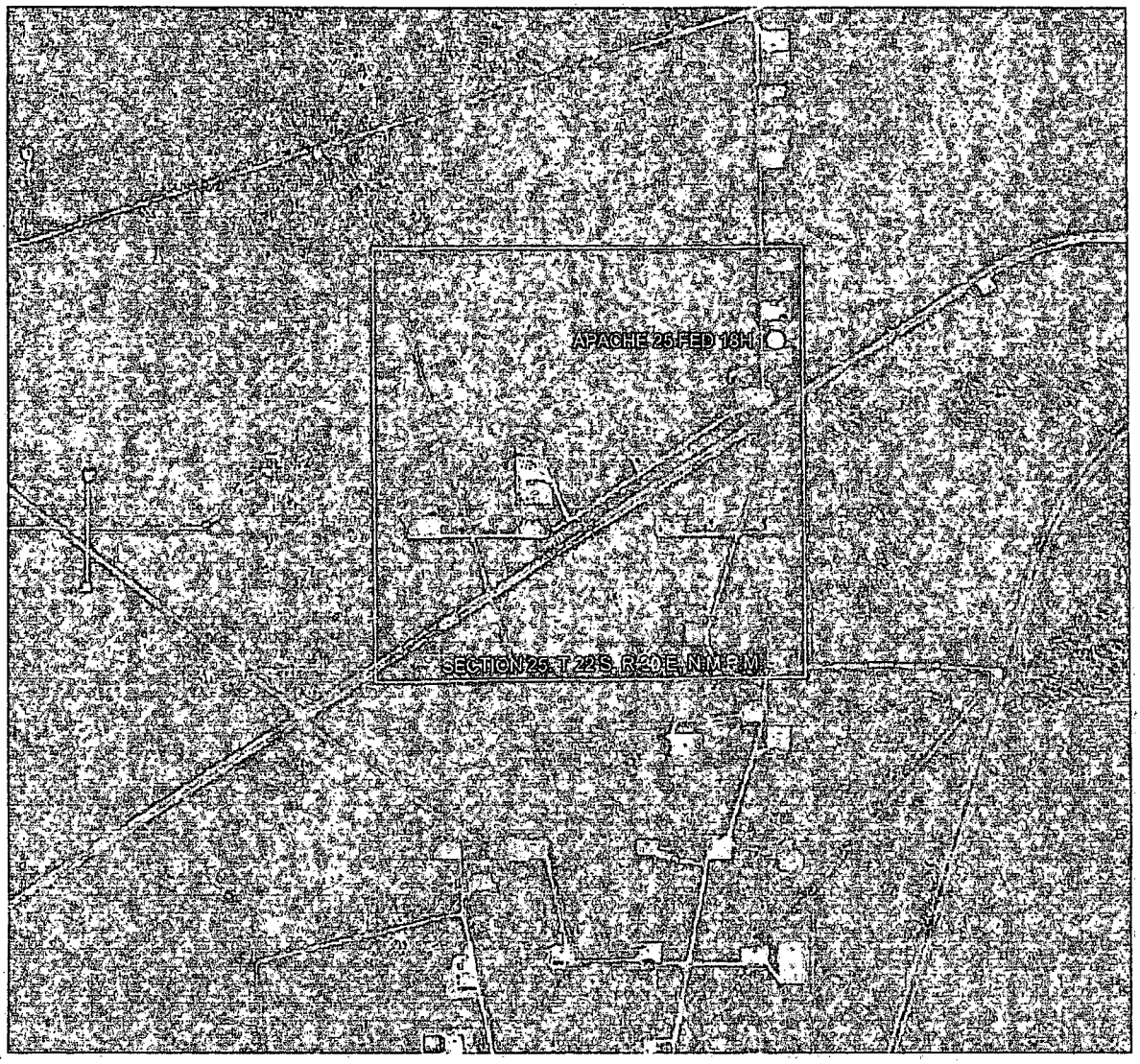
FROM THE JUNCTION OF STATE HIGHWAY 128 AND WIPP RD, ABOUT 42 MILES WEST OF JAL, NM. GO NORTH ON WIPP RD FOR 3.8 MILES, TURN LEFT AND CONTINUE NORTH ON WIPP RD FOR 1.3 MILES TO A LEASE ROAD ON THE LEFT. GO WEST FOR 1.8 MILES TO A LEASE ROAD TO THE LEFT. GO SOUTH 0.7 MILES AND THE LOCATION IS ±185 FEET EAST.

WEST TEXAS CONSULTANTS, INC.
ENGINEERS PLANNERS SURVEYORS
405 S.W. 1st. STREET
ANDREWS, TEXAS 79714
(432) 523-2181

devon

JOB No.: WTC48540

AERIAL MAP



SCALE: 1" = 2000'

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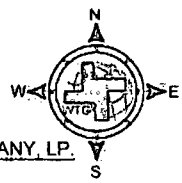

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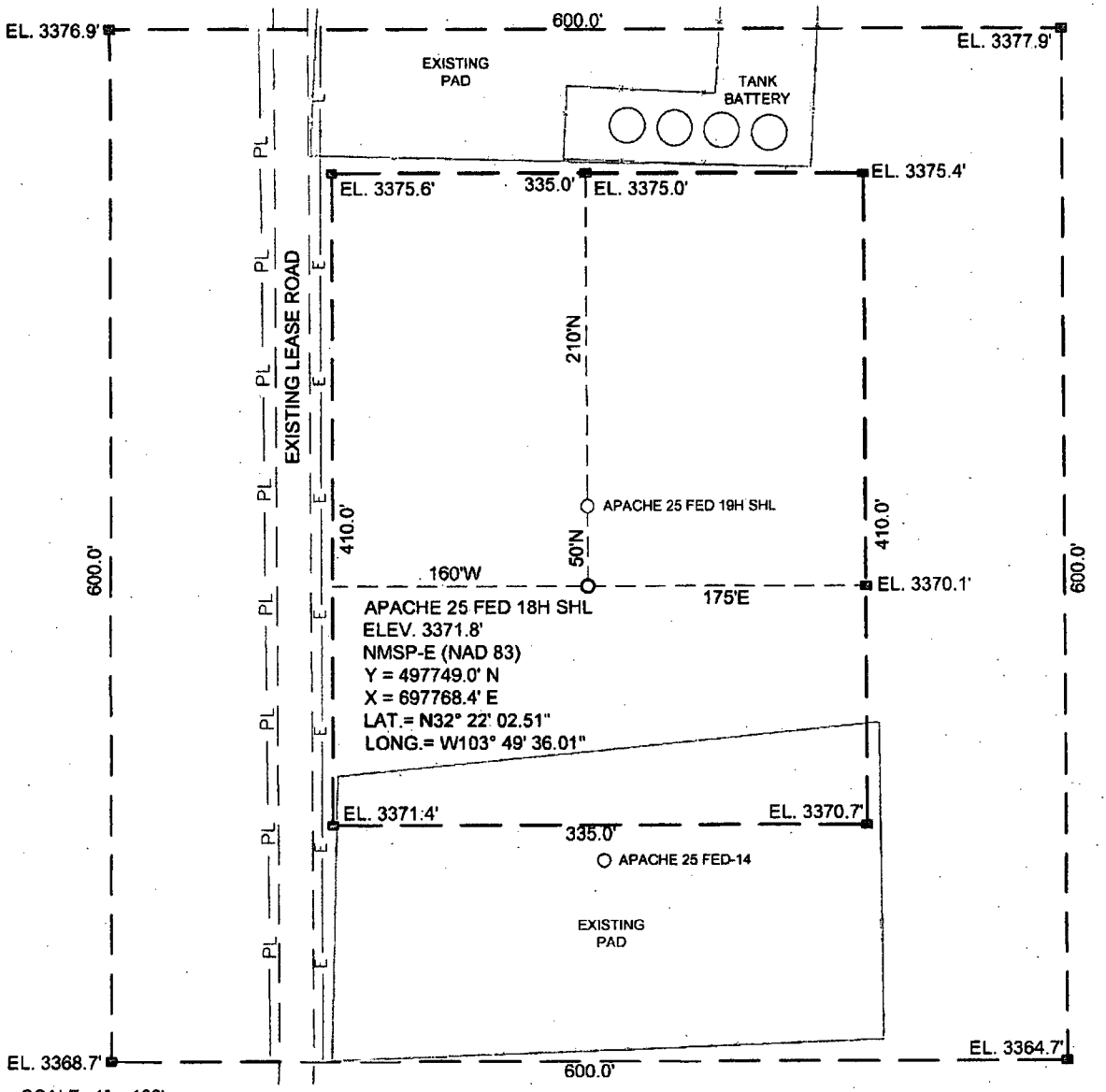
JOB No.: WTC48540

SITE LOCATION



SCALE: 1" = 100'

SECTION 25,T 22 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

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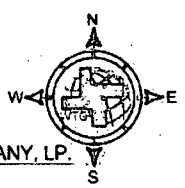

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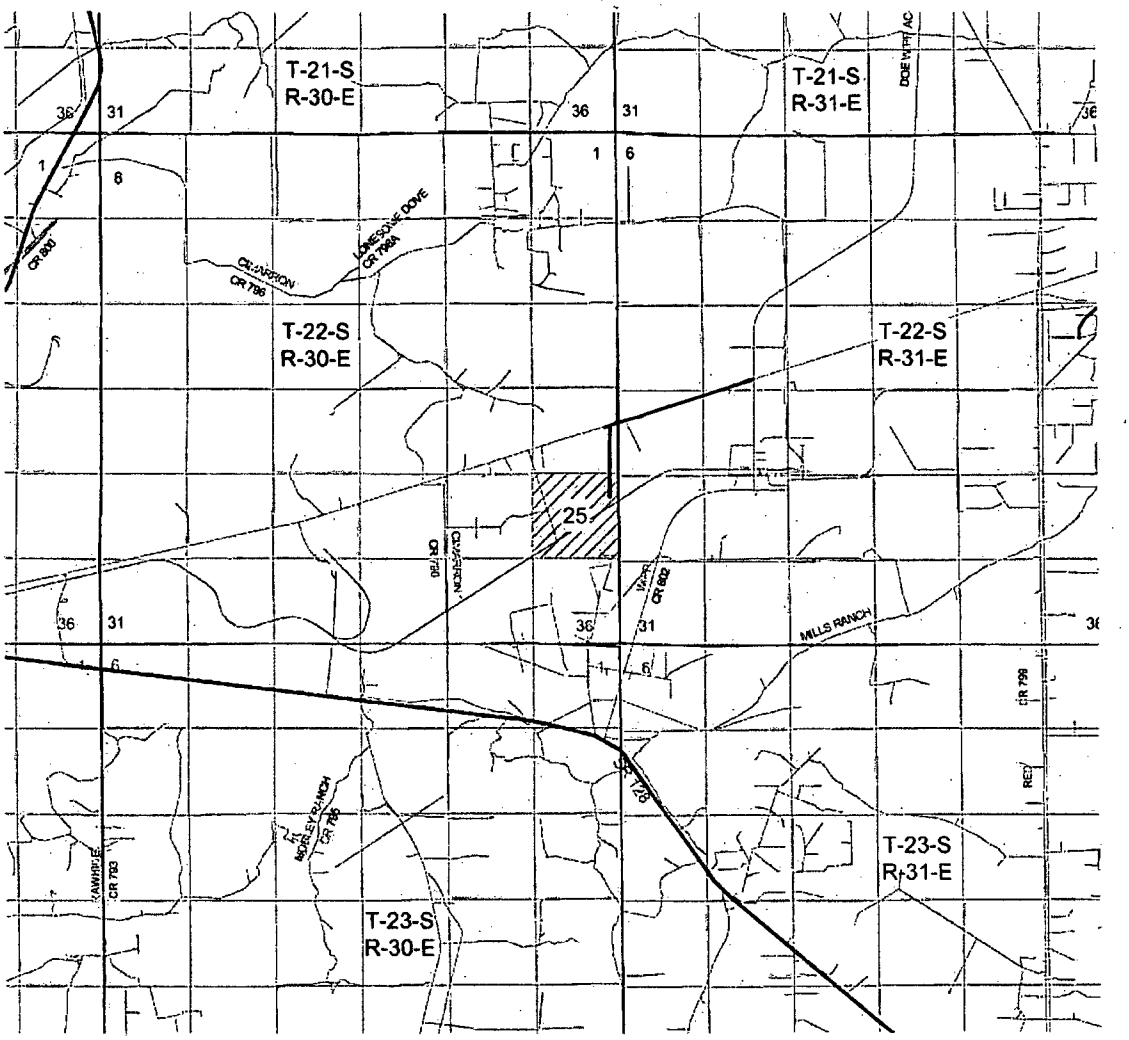
devon

JOB No.: WTC48540

Exhibit A Access

VICINITY MAP



0 2 4 6

GRAPHIC SCALE OF MILES 1" = 2 MILE

SECTION 25, T 22 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 1080' FNL & 330' FEL

OPERATOR: DEVON ENERGY PRODUCTION COMPANY, LP.

WELL NAME: APACHE 25 FED 18H

N W E S

DRIVING DIRECTIONS:

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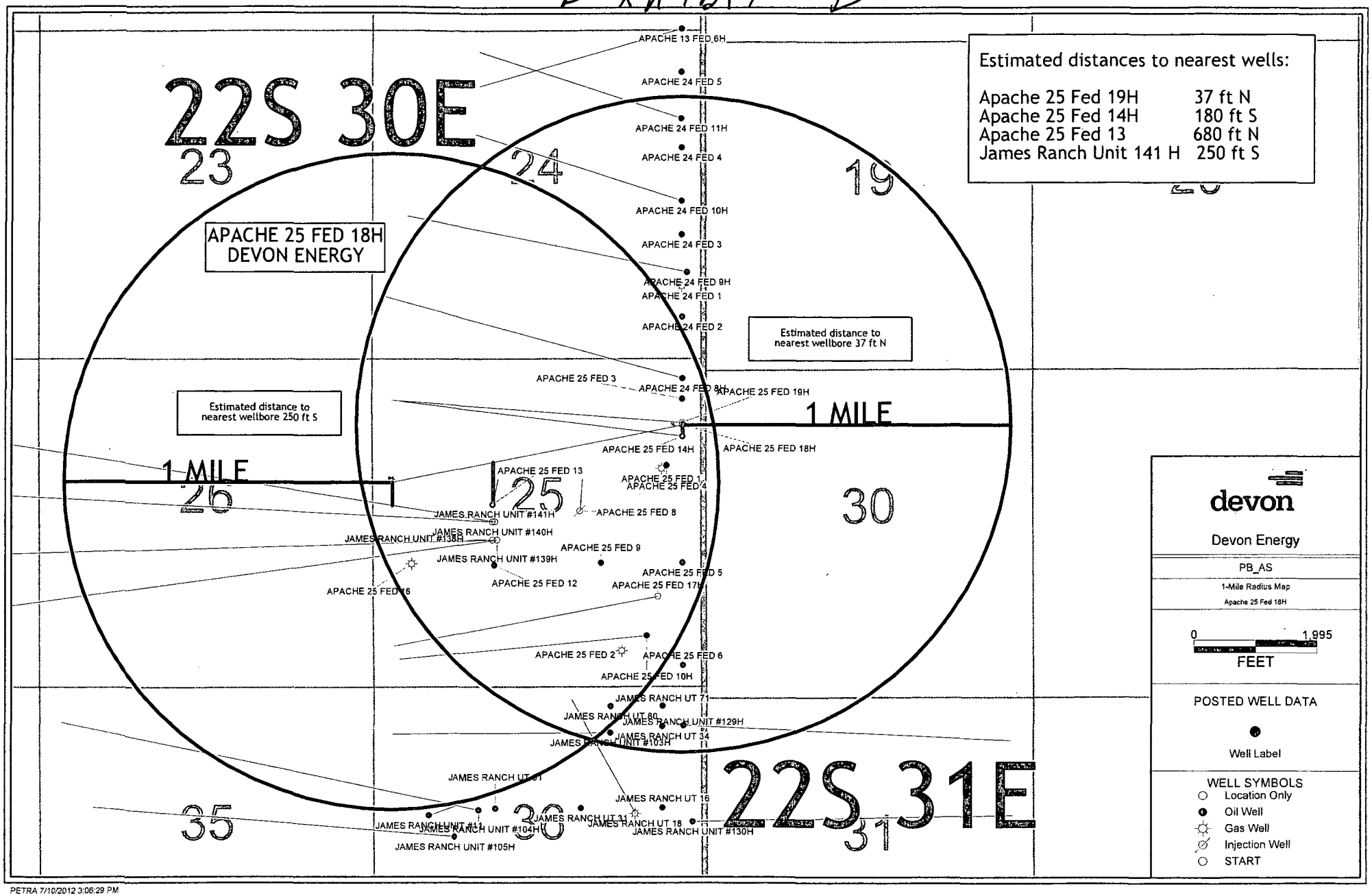
ANDREWS, TEXAS 79714
(432) 523-2181

devon

JOB No.: WTC48540

Exhibit B



PETRA 7/10/2012 3:06:29 PM

DEVON ENERGY PRODUCTION, L. P.
DRILLING PLAN

APACHE 25 FEDERAL 18H
SHL: 1080 FNL & 330 FEL
BHL: 1980 FNL & 330 FWL
Section 25-22S-30E
Eddy County, NM

The elevation of the unprepared ground is 3371.8' feet above sea level.

The geologic name of the surface formation is Quaternary - Alluvium.

A rotary rig will be utilized to drill the well.

Proposed total depth is: MD: ~~15515'~~. TVD: ~~10980'~~. See your directional plan

Estimated tops of important geologic markers:

Quaternary – Alluvium	Surface*
Rustler	435'
Top of Salt/Salado	720'
Base Salt	3630'
Delaware	3894'
Bell Canyon Sand	3931'
Cherry Canyon Sand	4878'
Brushy Canyon Sand	6080'
Bone Spring	7779'
Fist Bone Spring	8815'
Second Bone Spring	9630'
Third Bone Spring	10610'
TVD	10980' (145 degree F)

*Water anticipated at 200 feet.

Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

Delaware	Oil (1713 psi)
Bell Canyon	Oil (1729 psi)
Cherry Canyon	Oil (2146 psi)
Brushy Canyon	Oil (2675 psi)
Bone Spring	Oil (3422 psi)
TVD	Oil BHP (4831 psi)

APACHE 25 FED 18H– APD DRILLING PLAN
SKS 6.28.12

Casing Program (All new casing)

See COA

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
17-1/2"	0 - ~~710~~ 520'	13-3/8"	0 - 710	48#	STC	H-40
12-1/4"	520' ~~710~~ - 3870	9-5/8"	0 - 3870	40#	LTC	J-55
8-3/4"	3870 - 10307	5-1/2"	0 - 10307	17#	LTC	P-110
8-3/4"	10307 - ~~15515~~ 15183 per directional plan	5-1/2"	10307 - 15515	17#	BTC	P-110

MAX TVD: 10,980 FT

Design Factors

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
13-3/8"48# H-40 LTC	2.3	5.2	15.9
9-5/8" 40# J-55 LTC	1.3	2.0	4.1
5-1/2" 17# P-110 LTC	1.8	2.2	1.7
5-1/2" 17# P-110 BTC	1.7	2.1	5.0

NOTE REGARDING COLLAPSE DESIGN FACTOR FOR INTERMEDIATE CASING: The maximum possible collapse load that the intermediate casing will experience will result from evacuated casing with the pore pressure exerting a collapse load at TD. The pore pressure is estimated to be 9.0 ppg for this calculation. This results in a collapse design factor of 1.2 for the 9-5/8" 40# J-55 LTC casing at a depth of 3,870 ft. While running the intermediate casing, the casing string will never be completely evacuated. There is no potential for the intermediate casing to be used as a production string.

Mud Program

See COA

Depth	Mud Wt.	Visc.	Fluid Loss	Type System
0 - ~~710~~ 520'	8.4 – 9.0	30 – 34	N/C	FW
~~710~~ - 3870	9.8 – 10.0	28 – 32	N/C	Brine
3870 - ~~15515~~ 15183 per directional plan	8.6 – 9.0	28 – 32	N/C	FW

Pressure Control Equipment

The BOP system used to drill the intermediate hole will consist of a 13-5/8" 3M Triple Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **3M system** prior to drilling out the surface casing shoe.

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The pipe rams will be operated and checked as per Onshore Order No 2. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at **3,000 psi WP**.

See COA

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

Cementing Program (cement volumes based on at least 25% excess)

13-3/8" Surface

Mix and pump 760 sks
HalCem – C
lbm/gal
2 % Calcium Chloride - Flake (Accelerator)
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	14.80
Slurry Yield:	1.35 ft^3/sk
Total Mixing Fluid:	6.37 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	710 ft
Volume:	181.96 bbl
Calculated Sacks:	759.03 sks
Proposed Sacks:	760 sks

9-5/8" Intermediate

Lead with 855 sks
EconoCem – HLC
lbm/gal
5 % Salt (Salt)
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	12.90
Slurry Yield:	1.85 ft^3/sk
Total Mixing Fluid:	9.81 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	3096 ft
Volume:	280.52 bbl
Calculated Sacks:	853.21 sks
Proposed Sacks:	855 sks

Tail-in with 335 sks
HalCem – C
lbm/gal
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	14.80
Slurry Yield:	1.33 ft^3/sk
Total Mixing Fluid:	6.32 Gal/sk
Top of Fluid:	3096 ft
Calculated Fill:	774 ft
Volume:	78.59 bbl
Calculated Sacks:	333.01 sks
Proposed Sacks:	335 sks

5-1/2" Production See COA

Stage 1

Lead with 955 sks
EconoCem – HLH
lbm/gal
0.2 % HR-601 (Retarder)

Fluid Weight	12.50
Slurry Yield:	1.95 ft^3/sk
Total Mixing Fluid:	10.81 Gal/sk
Top of Fluid:	5500 ft
Calculated Fill:	4907 ft
Volume:	331.14 bbl
Calculated Sacks:	952.96 sks
Proposed Sacks:	955 sks

Tail-in with 1330 sks
VersaCem – H
lbm/gal
0.5 % Halad(R)-344 (Low Fluid Loss Control)
0.4 % CFR-3 (Dispersant)
1 lbm/sk Salt (Salt)
0.1 % HR-601 (Retarder)

Fluid Weight	14.50
Slurry Yield:	1.22 ft^3/sk
Total Mixing Fluid:	5.37 Gal/sk
Top of Fluid:	10407 ft
Calculated Fill:	5108 ft
Volume:	288.18 bbl
Calculated Sacks:	1327.35 sks
Proposed Sacks:	1330 sks

DV TOOL at 5,500 ft

Stage 2

Lead with 440 sks
ExtendaCem – C
lbm/gal
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	11.40
Slurry Yield:	2.87 ft^3/sk
Total Mixing Fluid:	17.69 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	4500 ft
Volume:	222.24 bbl
Calculated Sacks:	435.53 sks
Proposed Sacks:	440 sks

Tail-in with 290 sks
HalCem – C
lbm/gal
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	14.80
Slurry Yield:	1.33 ft^3/sk
Total Mixing Fluid:	6.32 Gal/sk
Top of Fluid:	4500 ft
Calculated Fill:	1000 ft
Volume:	67.48 bbl
Calculated Sacks:	285.96 sks
Proposed Sacks:	290 sks

TOC @ Surface

TOC for All Strings:

Surface:	0
Intermediate:	0
Production:	0

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.

AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

a. A Kelly cock will be in the drill string at all times.
b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 ½" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

LOGGING, CORING, AND TESTING PROGRAM:

a. Drill stem tests will be based on geological sample shows.
b. If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
c. The open hole electrical logging program will be:
   1. Total depth to intermediate casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
   2. Total Depth to Surface Compensated Neutron with Gamma Ray.
   3. No coring program is planned.
   4. Additional testing will be initiated subsequent to setting the 5 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

POTENTIAL HAZARDS:

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area; therefore, no H2S is anticipated. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. **Estimated BHP 4831 and estimated BHT 145.**

ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

a. Road and location construction will begin after BLM has approved the APD. Anticipated spud date will be soon after BLM approval and as soon as a rig is available. Move in operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

Weatherford®

Drilling Services

Proposal

devon

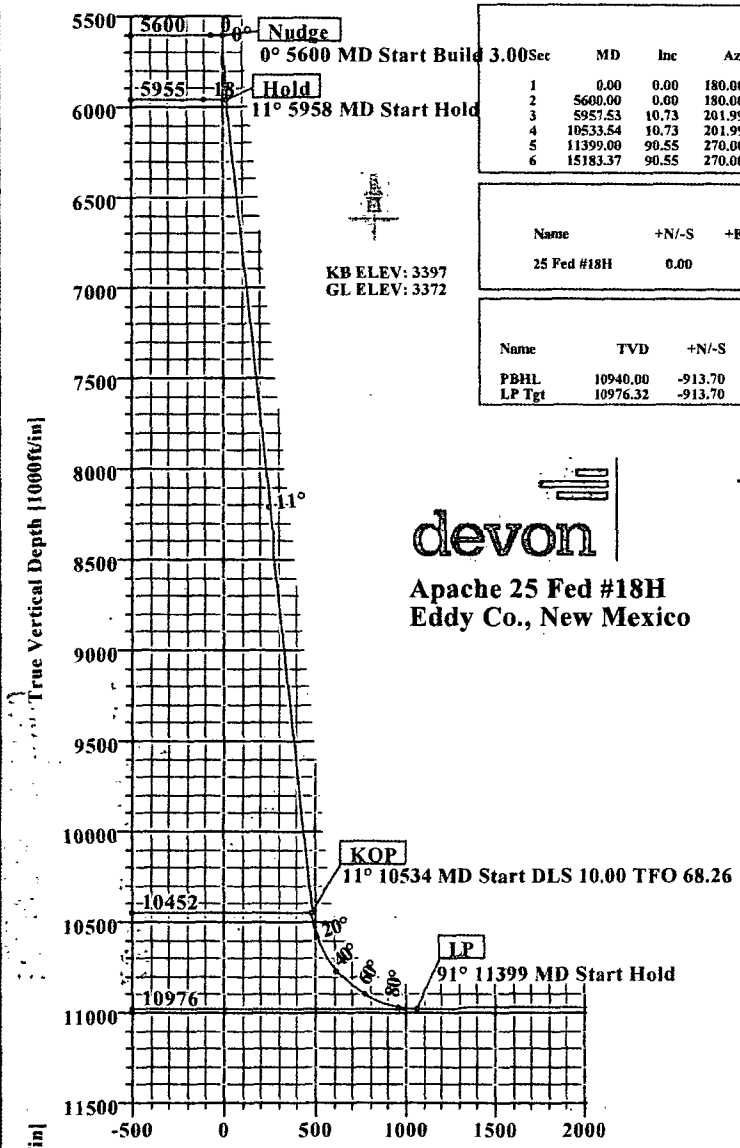
APACHE 25 FED #18H

EDDY COUNTY, NM

WELL FILE: **PLAN 2**

JANUARY 15, 2013

Weatherford International, Ltd.
P.O. Box 61028
Midland, TX 79711 USA
+1.432.561.8892 Main
+1.432.561.8895 Fax
www.weatherford.com



devon

Apache 25 Fed #18H
Eddy Co., New Mexico

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	180.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5600.00	0.00	180.00	5600.00	0.00	0.00	0.00	180.00	0.00	
3	5957.53	10.73	201.99	5955.45	-30.94	-12.50	3.00	0.00	18.18	
4	10533.54	10.73	201.99	10451.51	-820.61	-331.42	0.00	0.00	482.17	
5	11399.00	90.55	270.00	10976.32	-913.70	-908.40	10.00	68.26	1066.30	LP Tgt
6	15183.37	90.55	270.00	10940.00	-913.70	-4692.60	0.00	0.00	4780.73	PBHL

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
25 Fed #18H	0.00	0.00	497749.00	697768.40	32°22'02.501N	103°49'36.030W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	10940.00	-913.70	-4692.60	496835.30	693075.80	32°21'53.676N	103°50'30.793W	Point
LP Tgt	10976.32	-913.70	-908.40	496835.30	696860.00	32°21'53.502N	103°49'46.671W	Point

SITE DETAILS

Apache 25 Fed #18H

Site Centre Northing: 497749.00
Easting: 697768.40

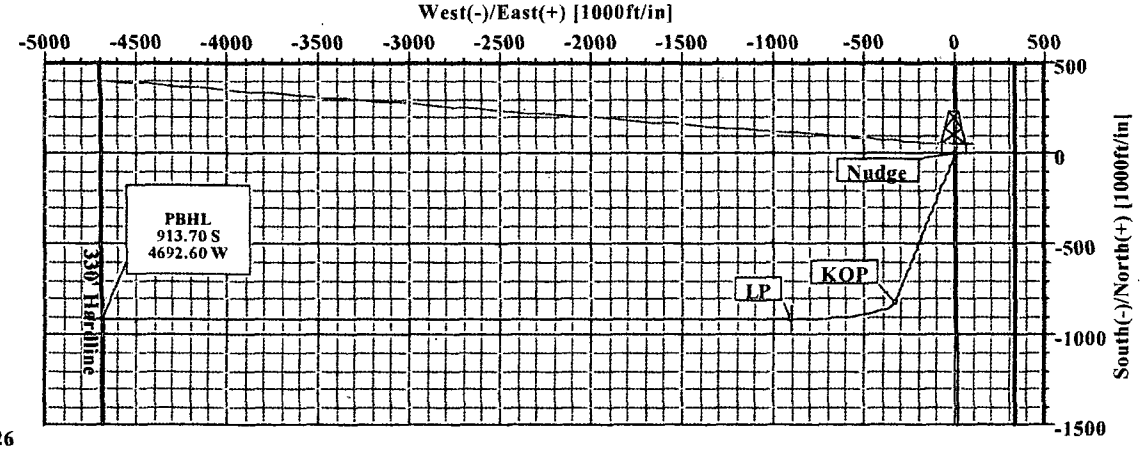
Ground Level: 3372.00
Positional Uncertainty: 0.00
Convergence: 0.27

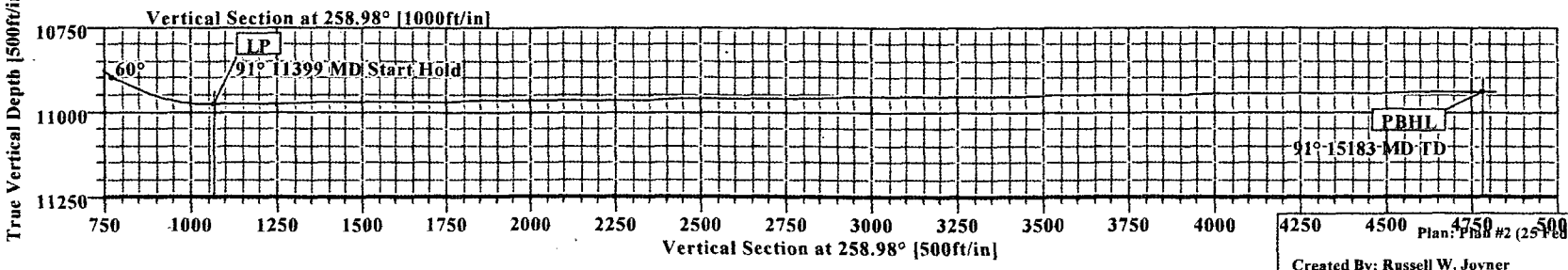
FIELD DETAILS

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





LEGEND
25 Fed #19H (1)
I
Plan #2

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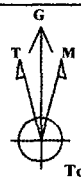

Azimuths to Grid North
True North: -0.27°
Magnetic North: 7.27°

Magnetic Field
Strength: 48558nT
Dip Angle: 60.24°
Date: 11/15/2012
Model: IGRF2010

Total Correction to Grid North: 7.26°

Plan: Plan #2 (25 Fed #18H/1)

Created By: Russell W. Joyner Date: 1/15/2013

Weatherford
Wft Plan Report X Y's.

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Company: Devon Energy		Date: 1/15/2013 Time: 13:31:18	Page: 1
Field: Eddy Co. NM (NAD 83)		Co-ordinate(NE) Reference: Well: 25 Fed #18H, Grid North	
Site: Apache 25 Fed #18H		Vertical (TVD) Reference: SITE 3397.0	
Well: 25 Fed #18H		Section (VS) Reference: Well (0.00N,0.00E,258.98Azi)	
Wellpath: 1		Survey Calculation Method: Minimum Curvature	Db: Sybase

Plan: Plan #2 — **Date Composed:** 6/27/2012
Version: 1
Principal: Yes — **Tied-to:** From Surface

Site: Apache 25 Fed #18H

Site Position:		**Northing:**	497749.00 ft	**Latitude:**	32	22	2.501	N
From:	Map	**Easting:**	697768.40 ft	**Longitude:**	103	49	36.030	W
Position Uncertainty:	0.00 ft			**North Reference:**			Grid	
Ground Level:	3372.00 ft			**Grid Convergence:**			0.27	deg

Well: 25 Fed #18H — **Slot Name:**

Well Position:	+N/-S 0.00 ft	**Northing:**	497749.00 ft	**Latitude:**	32	22	2.501	N
	+E/-W 0.00 ft	**Easting :**	697768.40 ft	**Longitude:**	103	49	36.030	W
Position Uncertainty:	0.00 ft							

Wellpath: 1 — **Drilled From:** Surface
Tie-on Depth: 0.00 ft
Current Datum: SITE — **Height** 3397.00 ft — **Above System Datum:** Mean Sea Level
Magnetic Data: 11/15/2012 — **Declination:** 7.54 deg
Field Strength: 48558 nT — **Mag Dip Angle:** 60.24 deg

Vertical Section: Depth From (TVD) ft	+N/-S ft	+E/-W ft	Direction deg
0.00	0.00	0.00	258.98

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	180.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5600.00	0.00	180.00	5600.00	0.00	0.00	0.00	0.00	0.00	180.00	
5957.53	10.73	201.99	5955.45	-30.94	-12.50	3.00	3.00	0.00	0.00	
10533.54	10.73	201.99	10451.51	-820.61	-331.42	0.00	0.00	0.00	0.00	
11399.00	90.55	270.00	10976.32	-913.70	-908.40	10.00	9.22	7.86	68.26	LP Tgt
15183.37	90.55	270.00	10940.00	-913.70	-4692.60	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
5600.00	0.00	180.00	5600.00	0.00	0.00	0.00	0.00	497749.00	697768.40	Nudge
5700.00	3.00	201.99	5699.95	-2.43	-0.98	1.43	3.00	497746.57	697767.42	
5800.00	6.00	201.99	5799.63	-9.70	-3.92	5.70	3.00	497739.30	697764.48	
5900.00	9.00	201.99	5898.77	-21.80	-8.81	12.81	3.00	497727.20	697759.59	
5957.53	10.73	201.99	5955.45	-30.94	-12.50	18.18	3.00	497718.06	697755.90	Hold
6000.00	10.73	201.99	5997.17	-38.27	-15.46	22.49	0.00	497710.73	697752.94	
6100.00	10.73	201.99	6095.43	-55.53	-22.42	32.63	0.00	497693.47	697745.98	
6200.00	10.73	201.99	6193.68	-72.78	-29.39	42.76	0.00	497676.22	697739.01	
6300.00	10.73	201.99	6291.93	-90.04	-36.36	52.90	0.00	497658.96	697732.04	
6400.00	10.73	201.99	6390.18	-107.30	-43.33	63.04	0.00	497641.70	697725.07	
6500.00	10.73	201.99	6488.44	-124.55	-50.30	73.18	0.00	497624.45	697718.10	
6600.00	10.73	201.99	6586.69	-141.81	-57.27	83.32	0.00	497607.19	697711.13	
6700.00	10.73	201.99	6684.94	-159.07	-64.24	93.46	0.00	497589.93	697704.16	
6800.00	10.73	201.99	6783.20	-176.32	-71.21	103.60	0.00	497572.68	697697.19	
6900.00	10.73	201.99	6881.45	-193.58	-78.18	113.74	0.00	497555.42	697690.22	
7000.00	10.73	201.99	6979.70	-210.84	-85.15	123.88	0.00	497538.16	697683.25	
7100.00	10.73	201.99	7077.96	-228.09	-92.12	134.02	0.00	497520.91	697676.28	
7200.00	10.73	201.99	7176.21	-245.35	-99.09	144.16	0.00	497503.65	697669.31	
7300.00	10.73	201.99	7274.46	-262.61	-106.06	154.30	0.00	497486.39	697662.34	
7400.00	10.73	201.99	7372.71	-279.86	-113.03	164.44	0.00	497469.14	697655.37	
7500.00	10.73	201.99	7470.97	-297.12	-120.00	174.58	0.00	497451.88	697648.40	

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Wft Plan Report X Y's.

Weatherford

Company: Devon Energy		Date: 1/15/2013 Time: 13:31:18	Page: 2
Field: Eddy Co., NM (NAD 83)		Co-ordinate(NE) Reference: Well: 25 Fed #18H, Grid North	
Site: Apache 25 Fed #18H		Vertical (TVD) Reference: SITE 3397.0	
Well: 25 Fed #18H		Section (VS) Reference: Well (0.00N,0.00E,258.98Azi)	
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
7600.00	10.73	201.99	7569.22	-314.38	-126.97	184.72	0.00	497434.62	697641.43	
7700.00	10.73	201.99	7667.47	-331.63	-133.94	194.86	0.00	497417.37	697634.46	
7800.00	10.73	201.99	7765.73	-348.89	-140.91	205.00	0.00	497400.11	697627.49	
7900.00	10.73	201.99	7863.98	-366.15	-147.88	215.14	0.00	497382.85	697620.52	
8000.00	10.73	201.99	7962.23	-383.41	-154.85	225.28	0.00	497365.59	697613.55	
8100.00	10.73	201.99	8060.48	-400.66	-161.81	235.42	0.00	497348.34	697606.59	
8200.00	10.73	201.99	8158.74	-417.92	-168.78	245.56	0.00	497331.08	697599.62	
8300.00	10.73	201.99	8256.99	-435.18	-175.75	255.70	0.00	497313.82	697592.65	
8400.00	10.73	201.99	8355.24	-452.43	-182.72	265.84	0.00	497296.57	697585.68	
8500.00	10.73	201.99	8453.50	-469.69	-189.69	275.98	0.00	497279.31	697578.71	
8600.00	10.73	201.99	8551.75	-486.95	-196.66	286.12	0.00	497262.05	697571.74	
8700.00	10.73	201.99	8650.00	-504.20	-203.63	296.26	0.00	497244.80	697564.77	
8800.00	10.73	201.99	8748.25	-521.46	-210.60	306.40	0.00	497227.54	697557.80	
8900.00	10.73	201.99	8846.51	-538.72	-217.57	316.54	0.00	497210.28	697550.83	
9000.00	10.73	201.99	8944.76	-555.97	-224.54	326.67	0.00	497193.03	697543.86	
9100.00	10.73	201.99	9043.01	-573.23	-231.51	336.81	0.00	497175.77	697536.89	
9200.00	10.73	201.99	9141.27	-590.49	-238.48	346.95	0.00	497158.51	697529.92	
9300.00	10.73	201.99	9239.52	-607.74	-245.45	357.09	0.00	497141.26	697522.95	
9400.00	10.73	201.99	9337.77	-625.00	-252.42	367.23	0.00	497124.00	697515.98	
9500.00	10.73	201.99	9436.02	-642.26	-259.39	377.37	0.00	497106.74	697509.01	
9600.00	10.73	201.99	9534.28	-659.51	-266.36	387.51	0.00	497089.49	697502.04	
9700.00	10.73	201.99	9632.53	-676.77	-273.33	397.65	0.00	497072.23	697495.07	
9800.00	10.73	201.99	9730.78	-694.03	-280.30	407.79	0.00	497054.97	697488.10	
9900.00	10.73	201.99	9829.04	-711.29	-287.27	417.93	0.00	497037.71	697481.13	
10000.00	10.73	201.99	9927.29	-728.54	-294.23	428.07	0.00	497020.46	697474.17	
10100.00	10.73	201.99	10025.54	-745.80	-301.20	438.21	0.00	497003.20	697467.20	
10200.00	10.73	201.99	10123.79	-763.06	-308.17	448.35	0.00	496985.94	697460.23	
10300.00	10.73	201.99	10222.05	-780.31	-315.14	458.49	0.00	496968.69	697453.26	
10400.00	10.73	201.99	10320.30	-797.57	-322.11	468.63	0.00	496951.43	697446.29	
10500.00	10.73	201.99	10418.55	-814.83	-329.08	478.77	0.00	496934.17	697439.32	
10533.54	10.73	201.99	10451.51	-820.61	-331.42	482.17	0.00	496928.39	697436.98	KOP
10550.00	11.44	209.72	10467.66	-823.45	-332.80	484.07	10.00	496925.55	697435.60	
10600.00	14.55	227.33	10516.39	-832.02	-339.88	492.66	10.00	496916.98	697428.52	
10650.00	18.49	238.24	10564.33	-840.45	-351.25	505.42	10.00	496908.55	697417.15	
10700.00	22.84	245.27	10611.11	-848.69	-366.81	522.27	10.00	496900.31	697401.59	
10750.00	27.40	250.11	10656.38	-856.67	-386.45	543.08	10.00	496892.33	697381.95	
10800.00	32.08	253.65	10699.78	-864.32	-410.03	567.69	10.00	496884.68	697358.37	
10850.00	36.84	256.36	10741.00	-871.60	-437.36	595.90	10.00	496877.40	697331.04	
10900.00	41.65	258.52	10779.71	-878.45	-468.23	627.51	10.00	496870.55	697300.17	
10950.00	46.50	260.31	10815.62	-884.81	-502.41	662.28	10.00	496864.19	697265.99	
11000.00	51.36	261.84	10848.46	-890.64	-539.64	699.93	10.00	496858.36	697228.76	
11050.00	56.25	263.17	10877.98	-895.89	-579.63	740.19	10.00	496853.11	697188.77	
11100.00	61.14	264.35	10903.95	-900.52	-622.08	782.75	10.00	496848.48	697146.32	
11150.00	66.05	265.43	10926.18	-904.49	-666.68	827.28	10.00	496844.51	697101.72	
11200.00	70.96	266.43	10944.50	-907.79	-713.07	873.44	10.00	496841.21	697055.33	
11250.00	75.88	267.37	10958.76	-910.37	-760.90	920.89	10.00	496838.63	697007.50	
11300.00	80.80	268.27	10968.86	-912.23	-809.82	969.26	10.00	496836.77	696958.58	
11350.00	85.72	269.15	10974.73	-913.34	-859.45	1018.19	10.00	496835.66	696908.95	
11399.00	90.55	270.00	10976.32	-913.70	-908.40	1066.30	10.00	496835.30	696860.00	LP Tgt
11400.00	90.55	270.00	10976.31	-913.70	-909.40	1067.29	0.00	496835.30	696859.00	
11500.00	90.55	270.00	10975.35	-913.70	-1009.40	1165.44	0.00	496835.30	696759.00	
11600.00	90.55	270.00	10974.39	-913.70	-1109.40	1263.59	0.00	496835.30	696659.00	
11700.00	90.55	270.00	10973.43	-913.70	-1209.39	1361.75	0.00	496835.30	696559.01	

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Wft Plan Report X Y's.

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Company: Devon Energy		Date: 1/15/2013 Time: 13:31:18	Page: 3
Field: Eddy Co., NM (NAD 83)		Co-ordinate(NE) Reference: Well: 25 Fed #18H, Grid North	
Site: Apache 25 Fed #18H		Vertical (TVD) Reference: SITE 3397.0	
Well: 25 Fed #18H		Section (VS) Reference: Well (0.00N,0.00E,258.98Azi)	
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
11800.00	90.55	270.00	10972.47	-913.70	-1309.39	1459.90	0.00	496835.30	696459.01	
11900.00	90.55	270.00	10971.51	-913.70	-1409.38	1558.05	0.00	496835.30	696359.02	
12000.00	90.55	270.00	10970.55	-913.70	-1509.38	1656.20	0.00	496835.30	696259.02	
12100.00	90.55	270.00	10969.59	-913.70	-1609.37	1754.35	0.00	496835.30	696159.03	
12200.00	90.55	270.00	10968.63	-913.70	-1709.37	1852.50	0.00	496835.30	696059.03	
12300.00	90.55	270.00	10967.67	-913.70	-1809.36	1950.65	0.00	496835.30	695959.04	
12400.00	90.55	270.00	10966.71	-913.70	-1909.36	2048.81	0.00	496835.30	695859.04	
12500.00	90.55	270.00	10965.75	-913.70	-2009.35	2146.96	0.00	496835.30	695759.05	
12600.00	90.55	270.00	10964.79	-913.70	-2109.35	2245.11	0.00	496835.30	695659.05	
12700.00	90.55	270.00	10963.83	-913.70	-2209.34	2343.26	0.00	496835.30	695559.06	
12800.00	90.55	270.00	10962.87	-913.70	-2309.34	2441.41	0.00	496835.30	695459.06	
12900.00	90.55	270.00	10961.91	-913.70	-2409.34	2539.56	0.00	496835.30	695359.06	
13000.00	90.55	270.00	10960.95	-913.70	-2509.33	2637.72	0.00	496835.30	695259.07	
13100.00	90.55	270.00	10959.99	-913.70	-2609.33	2735.87	0.00	496835.30	695159.07	
13200.00	90.55	270.00	10959.04	-913.70	-2709.32	2834.02	0.00	496835.30	695059.08	
13300.00	90.55	270.00	10958.08	-913.70	-2809.32	2932.17	0.00	496835.30	694959.08	
13400.00	90.55	270.00	10957.12	-913.70	-2909.31	3030.32	0.00	496835.30	694859.09	
13500.00	90.55	270.00	10956.16	-913.70	-3009.31	3128.47	0.00	496835.30	694759.09	
13600.00	90.55	270.00	10955.20	-913.70	-3109.30	3226.62	0.00	496835.30	694659.10	
13700.00	90.55	270.00	10954.24	-913.70	-3209.30	3324.78	0.00	496835.30	694559.10	
13800.00	90.55	270.00	10953.28	-913.70	-3309.29	3422.93	0.00	496835.30	694459.11	
13900.00	90.55	270.00	10952.32	-913.70	-3409.29	3521.08	0.00	496835.30	694359.11	
14000.00	90.55	270.00	10951.36	-913.70	-3509.29	3619.23	0.00	496835.30	694259.11	
14100.00	90.55	270.00	10950.40	-913.70	-3609.28	3717.38	0.00	496835.30	694159.12	
14200.00	90.55	270.00	10949.44	-913.70	-3709.28	3815.53	0.00	496835.30	694059.12	
14300.00	90.55	270.00	10948.48	-913.70	-3809.27	3913.69	0.00	496835.30	693959.13	
14400.00	90.55	270.00	10947.52	-913.70	-3909.27	4011.84	0.00	496835.30	693859.13	
14500.00	90.55	270.00	10946.56	-913.70	-4009.26	4109.99	0.00	496835.30	693759.14	
14600.00	90.55	270.00	10945.60	-913.70	-4109.26	4208.14	0.00	496835.30	693659.14	
14700.00	90.55	270.00	10944.64	-913.70	-4209.25	4306.29	0.00	496835.30	693559.15	
14800.00	90.55	270.00	10943.68	-913.70	-4309.25	4404.44	0.00	496835.30	693459.15	
14900.00	90.55	270.00	10942.72	-913.70	-4409.24	4502.59	0.00	496835.30	693359.16	
15000.00	90.55	270.00	10941.76	-913.70	-4509.24	4600.75	0.00	496835.30	693259.16	
15100.00	90.55	270.00	10940.80	-913.70	-4609.23	4698.90	0.00	496835.30	693159.17	
15183.37	90.55	270.00	10940.00	-913.70	-4692.60	4780.73	0.00	496835.30	693075.80	PBHL

Targets

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg	Min	Sec	<--- Longitude ---> Deg	Min	Sec
PBHL		10940.00	-913.70	-4692.60	496835.30	693075.80	32	21	53.676 N	103	50	30.793 W
LP Tgt		10976.32	-913.70	-908.40	496835.30	696860.00	32	21	53.502 N	103	49	46.671 W

Casing Points

MD	TVD	Diameter	Hole Size	Name

Weatherford
Wft Plan Report X Y's.

Company:	Devon Energy	**Date:** 1/15/2013	**Time:** 13:31:18	**Page:**	4
Field:	Eddy Co., NM (NAD 83)	**Co-ordinate(NE) Reference:**	Well: 25 Fed #18H, Grid North		
Site:	Apache 25 Fed #18H	**Vertical (TVD) Reference:**	SITE 3397.0		
Well:	25 Fed #18H	**Section (VS) Reference:**	Well (0.00N,0.00E,258.98Azi)		
Wellpath:	1	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Annotation

MD ft	TVD ft	
5600.00	5600.00	Nudge
5957.53	5955.45	Hold
10533.54	10451.51	KOP
11399.00	10976.32	LP
15183.36	10940.00	PBHL

devon

Weatherford
Anticollision Report

Weatherford

Company:	Devon Energy	**Date:** 1/15/2013	**Time:** 13:25:06	**Page:**	1
Field:	Eddy Co., NM (NAD 83)				
Reference Site:	Apache 25 Fed #18H	**Co-ordinate(NE) Reference:**	Well: 25 Fed #18H, Grid North		
Reference Well:	25 Fed #18H	**Vertical (TVD) Reference:**	SITE 3397.0		
Reference Wellpath:	1			**Db:**	Sybase

NO GLOBAL SCAN: Using user defined selection & scan criteria		**Reference:**	Plan: Plan #2
Interpolation Method: MD + Stations **Interval:** 100.00 ft		**Error Model:**	ISCWSA Ellipse
Depth Range: 100.00 **to** 11514.92 ft		**Scan Method:**	Closest Approach 3D
Maximum Radius: 10000.00 ft		**Error Surface:**	Ellipse

Plan:	Plan #2	**Date Composed:**	6/27/2012
		Version:	1
Principal:	Yes	**Tied-to:**	From Surface

Summary

<------ Offset Wellpath ------> Site	Well	Wellpath	Reference MD ft	Offset MD ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
Apache 25 Fed #19H	25 Fed #19H	1 V0 Plan: Plan #1 V1	5600.00	5600.00	50.20	25.31	2.02	

Site: Apache 25 Fed #19H
Well: 25 Fed #19H
Wellpath: 1 V0 Plan: Plan #1 V1 **Inter-Site Error:** 0.00 ft

Reference MD ft	Reference TVD ft	Offset MD ft	Offset TVD ft	Semi-Major Axis Ref ft	Semi-Major Axis Offset ft	TFO-HS deg	Offset Location North ft	Offset Location East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
100.00	100.00	100.00	100.00	0.08	0.08	-0.11	50.20	-0.10	50.20	50.03	297.79	
200.00	200.00	200.00	200.00	0.31	0.31	-0.11	50.20	-0.10	50.20	49.58	81.22	
300.00	300.00	300.00	300.00	0.53	0.53	-0.11	50.20	-0.10	50.20	49.13	47.02	
400.00	400.00	400.00	400.00	0.76	0.76	-0.11	50.20	-0.10	50.20	48.68	33.09	
500.00	500.00	500.00	500.00	0.98	0.98	-0.11	50.20	-0.10	50.20	48.23	25.53	
600.00	600.00	600.00	600.00	1.21	1.21	-0.11	50.20	-0.10	50.20	47.78	20.78	
700.00	700.00	700.00	700.00	1.43	1.43	-0.11	50.20	-0.10	50.20	47.33	17.52	
800.00	800.00	800.00	800.00	1.66	1.66	-0.11	50.20	-0.10	50.20	46.88	15.14	
900.00	900.00	900.00	900.00	1.88	1.88	-0.11	50.20	-0.10	50.20	46.44	13.33	
1000.00	1000.00	1000.00	1000.00	2.11	2.11	-0.11	50.20	-0.10	50.20	45.99	11.91	
1100.00	1100.00	1100.00	1100.00	2.33	2.33	-0.11	50.20	-0.10	50.20	45.54	10.76	
1200.00	1200.00	1200.00	1200.00	2.56	2.56	-0.11	50.20	-0.10	50.20	45.09	9.82	
1300.00	1300.00	1300.00	1300.00	2.78	2.78	-0.11	50.20	-0.10	50.20	44.64	9.02	
1400.00	1400.00	1400.00	1400.00	3.01	3.01	-0.11	50.20	-0.10	50.20	44.19	8.35	
1500.00	1500.00	1500.00	1500.00	3.23	3.23	-0.11	50.20	-0.10	50.20	43.74	7.77	
1600.00	1600.00	1600.00	1600.00	3.46	3.46	-0.11	50.20	-0.10	50.20	43.29	7.26	
1700.00	1700.00	1700.00	1700.00	3.68	3.68	-0.11	50.20	-0.10	50.20	42.84	6.82	
1800.00	1800.00	1800.00	1800.00	3.91	3.91	-0.11	50.20	-0.10	50.20	42.39	6.43	
1900.00	1900.00	1900.00	1900.00	4.13	4.13	-0.11	50.20	-0.10	50.20	41.94	6.08	
2000.00	2000.00	2000.00	2000.00	4.35	4.35	-0.11	50.20	-0.10	50.20	41.49	5.76	
2100.00	2100.00	2100.00	2100.00	4.58	4.58	-0.11	50.20	-0.10	50.20	41.04	5.48	
2200.00	2200.00	2200.00	2200.00	4.80	4.80	-0.11	50.20	-0.10	50.20	40.59	5.22	
2300.00	2300.00	2300.00	2300.00	5.03	5.03	-0.11	50.20	-0.10	50.20	40.14	4.99	
2400.00	2400.00	2400.00	2400.00	5.25	5.25	-0.11	50.20	-0.10	50.20	39.69	4.78	
2500.00	2500.00	2500.00	2500.00	5.48	5.48	-0.11	50.20	-0.10	50.20	39.24	4.58	
2600.00	2600.00	2600.00	2600.00	5.70	5.70	-0.11	50.20	-0.10	50.20	38.79	4.40	
2700.00	2700.00	2700.00	2700.00	5.93	5.93	-0.11	50.20	-0.10	50.20	38.34	4.23	
2800.00	2800.00	2800.00	2800.00	6.15	6.15	-0.11	50.20	-0.10	50.20	37.89	4.08	
2900.00	2900.00	2900.00	2900.00	6.38	6.38	-0.11	50.20	-0.10	50.20	37.44	3.94	
3000.00	3000.00	3000.00	3000.00	6.60	6.60	-0.11	50.20	-0.10	50.20	37.00	3.80	
3100.00	3100.00	3100.00	3100.00	6.83	6.83	-0.11	50.20	-0.10	50.20	36.55	3.68	
3200.00	3200.00	3200.00	3200.00	7.05	7.05	-0.11	50.20	-0.10	50.20	36.10	3.56	
3300.00	3300.00	3300.00	3300.00	7.28	7.28	-0.11	50.20	-0.10	50.20	35.65	3.45	
3400.00	3400.00	3400.00	3400.00	7.50	7.50	-0.11	50.20	-0.10	50.20	35.20	3.35	
3500.00	3500.00	3500.00	3500.00	7.73	7.73	-0.11	50.20	-0.10	50.20	34.75	3.25	
3600.00	3600.00	3600.00	3600.00	7.95	7.95	-0.11	50.20	-0.10	50.20	34.30	3.16	

Weatherford
Anticollision Report

Company:	Devon Energy	Date: 1/15/2013	Time: 13:25:06	Page:	2
Field:	Eddy Co., NM (NAD 83)				
Reference Site:	Apache 25 Fed #18H	Co-ordinate(NE) Reference:	Well: 25 Fed #18H, Grid North		
Reference Well:	25 Fed #18H	Vertical (TVD) Reference:	SITE 3397.0		
Reference Wellpath:	1			Db:	Sybase

Site: Apache 25 Fed #19H
Well: 25 Fed #19H
Wellpath: 1 V0 Plan: Plan #1 V1 — Inter-Site Error: 0.00 ft

Reference MD ft	Reference TVD ft	Offset MD ft	Offset TVD ft	Semi-Major Axis Ref ft	Semi-Major Axis Offset ft	TFO-HS deg	Offset Location North ft	Offset Location East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
3700.00	3700.00	3700.00	3700.00	8.18	8.18	-0.11	50.20	-0.10	50.20	33.85	3.07	
3800.00	3800.00	3800.00	3800.00	8.40	8.40	-0.11	50.20	-0.10	50.20	33.40	2.99	
3900.00	3900.00	3900.00	3900.00	8.63	8.63	-0.11	50.20	-0.10	50.20	32.95	2.91	
4000.00	4000.00	4000.00	4000.00	8.85	8.85	-0.11	50.20	-0.10	50.20	32.50	2.84	
4100.00	4100.00	4100.00	4100.00	9.07	9.07	-0.11	50.20	-0.10	50.20	32.05	2.77	
4200.00	4200.00	4200.00	4200.00	9.30	9.30	-0.11	50.20	-0.10	50.20	31.60	2.70	
4300.00	4300.00	4300.00	4300.00	9.52	9.52	-0.11	50.20	-0.10	50.20	31.15	2.64	
4400.00	4400.00	4400.00	4400.00	9.75	9.75	-0.11	50.20	-0.10	50.20	30.70	2.57	
4500.00	4500.00	4500.00	4500.00	9.97	9.97	-0.11	50.20	-0.10	50.20	30.25	2.52	
4600.00	4600.00	4600.00	4600.00	10.20	10.20	-0.11	50.20	-0.10	50.20	29.80	2.46	
4700.00	4700.00	4700.00	4700.00	10.42	10.42	-0.11	50.20	-0.10	50.20	29.35	2.41	
4800.00	4800.00	4800.00	4800.00	10.65	10.65	-0.11	50.20	-0.10	50.20	28.90	2.36	
4900.00	4900.00	4900.00	4900.00	10.87	10.87	-0.11	50.20	-0.10	50.20	28.45	2.31	
5000.00	5000.00	5000.00	5000.00	11.10	11.10	-0.11	50.20	-0.10	50.20	28.00	2.26	
5100.00	5100.00	5100.00	5100.00	11.32	11.32	-0.11	50.20	-0.10	50.20	27.55	2.22	
5200.00	5200.00	5200.00	5200.00	11.55	11.55	-0.11	50.20	-0.10	50.20	27.11	2.17	
5300.00	5300.00	5300.00	5300.00	11.77	11.77	-0.11	50.20	-0.10	50.20	26.66	2.13	
5400.00	5400.00	5400.00	5400.00	12.00	12.00	-0.11	50.20	-0.10	50.20	26.21	2.09	
5500.00	5500.00	5500.00	5500.00	12.22	12.22	-0.11	50.20	-0.10	50.20	25.76	2.05	
5600.00	5600.00	5600.00	5600.00	12.45	12.45	-0.11	50.20	-0.10	50.20	25.31	2.02	
5700.00	5699.95	5699.95	5699.95	12.67	12.67	158.94	50.20	-0.10	52.63	27.31	2.08	
5800.00	5799.63	5799.63	5799.63	12.90	12.90	161.56	50.20	-0.10	60.02	34.29	2.33	
5900.00	5898.77	5898.77	5898.77	13.13	13.12	164.72	50.20	-0.10	72.53	46.42	2.78	
5957.53	5955.45	5955.45	5955.45	13.27	13.25	166.47	50.20	-0.10	82.08	55.77	3.12	
6000.00	5997.17	5997.17	5997.17	13.37	13.34	167.65	50.20	-0.10	89.79	63.29	3.39	
6100.00	6095.43	6095.43	6095.43	13.62	13.56	169.76	50.20	-0.10	108.06	81.12	4.01	
6200.00	6193.68	6193.68	6193.68	13.88	13.78	171.26	50.20	-0.10	126.42	99.04	4.62	
6300.00	6291.93	6291.93	6291.93	14.14	14.00	172.37	50.20	-0.10	144.85	117.03	5.21	
6400.00	6390.18	6390.18	6390.18	14.41	14.22	173.24	50.20	-0.10	163.32	135.05	5.78	
6500.00	6488.44	6488.44	6488.44	14.69	14.44	173.93	50.20	-0.10	181.82	153.10	6.33	
6600.00	6586.69	6586.69	6586.69	14.97	14.66	174.49	50.20	-0.10	200.34	171.17	6.87	
6700.00	6684.94	6684.94	6684.94	15.26	14.89	174.96	50.20	-0.10	218.88	189.26	7.39	
6800.00	6783.20	6783.20	6783.20	15.56	15.11	175.36	50.20	-0.10	237.42	207.35	7.90	
6900.00	6881.45	6881.45	6881.45	15.85	15.33	175.69	50.20	-0.10	255.98	225.46	8.39	
7000.00	6979.70	6979.70	6979.70	16.16	15.55	175.98	50.20	-0.10	274.54	243.57	8.86	
7100.00	7077.96	7077.96	7077.96	16.47	15.77	176.24	50.20	-0.10	293.11	261.68	9.33	
7200.00	7176.21	7176.21	7176.21	16.78	15.99	176.46	50.20	-0.10	311.69	279.80	9.78	
7300.00	7274.46	7274.46	7274.46	17.10	16.21	176.66	50.20	-0.10	330.27	297.93	10.21	
7400.00	7372.71	7372.71	7372.71	17.42	16.43	176.84	50.20	-0.10	348.85	316.05	10.64	
7500.00	7470.97	7470.97	7470.97	17.74	16.65	177.00	50.20	-0.10	367.43	334.18	11.05	
7600.00	7569.22	7569.22	7569.22	18.07	16.87	177.15	50.20	-0.10	386.02	352.31	11.45	
7700.00	7667.47	7667.47	7667.47	18.40	17.09	177.28	50.20	-0.10	404.61	370.44	11.84	
7800.00	7765.73	7765.73	7765.73	18.74	17.31	177.40	50.20	-0.10	423.20	388.57	12.22	
7900.00	7863.98	7863.98	7863.98	19.07	17.54	177.51	50.20	-0.10	441.80	406.71	12.59	
8000.00	7962.23	7962.23	7962.23	19.41	17.76	177.61	50.20	-0.10	460.39	424.84	12.95	
8100.00	8060.48	8060.48	8060.48	19.75	17.98	177.70	50.20	-0.10	478.99	442.97	13.30	
8200.00	8158.74	8158.74	8158.74	20.10	18.20	177.79	50.20	-0.10	497.58	461.11	13.64	
8300.00	8256.99	8256.99	8256.99	20.45	18.42	177.87	50.20	-0.10	516.18	479.25	13.97	
8400.00	8355.24	8355.24	8355.24	20.80	18.64	177.94	50.20	-0.10	534.78	497.38	14.30	
8500.00	8453.50	8453.50	8453.50	21.15	18.86	178.01	50.20	-0.10	553.38	515.52	14.62	
8600.00	8551.75	8551.75	8551.75	21.50	19.08	178.07	50.20	-0.10	571.98	533.65	14.92	

Weatherford
Anticollision Report

Company:	Devon Energy	Date: 1/15/2013	Time: 13:25:06	Page: 3	
Field:	Eddy Co., NM (NAD 83)				
Reference Site:	Apache 25 Fed #18H	Co-ordinate(NE) Reference:	Well: 25 Fed #18H, Grid North		
Reference Well:	25 Fed #18H	Vertical (TVD) Reference:	SITE 3397.0		
Reference Wellpath:	1			Db:	Sybase

Site: Apache 25 Fed #19H
Well: 25 Fed #19H
Wellpath: 1 V0 Plan: Plan #1 V1 — Inter-Site Error: 0.00 ft

Reference MD ft	Reference TVD ft	Offset MD ft	Offset TVD ft	Semi-Major Axis Ref ft	Semi-Major Axis Offset ft	TFO-HS deg	Offset Location North ft	Offset Location East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
8700.00	8650.00	8650.00	8650.00	21.86	19.30	178.13	50.20	-0.10	590.58	551.79	15.22	
8800.00	8748.25	8748.25	8748.25	22.21	19.52	178.19	50.20	-0.10	609.18	569.93	15.52	
8900.00	8846.51	8846.51	8846.51	22.57	19.74	178.24	50.20	-0.10	627.79	588.07	15.80	
9000.00	8944.76	8944.76	8944.76	22.93	19.96	178.30	50.20	-0.10	646.39	606.20	16.08	
9100.00	9043.01	9043.01	9043.01	23.30	20.19	178.34	50.20	-0.10	664.99	624.34	16.36	
9200.00	9141.27	9141.27	9141.27	23.66	20.41	178.39	50.20	-0.10	683.60	642.48	16.62	
9300.00	9239.52	9239.52	9239.52	24.03	20.63	178.43	50.20	-0.10	702.20	660.62	16.89	
9400.00	9337.77	9337.77	9337.77	24.39	20.85	178.47	50.20	-0.10	720.81	678.75	17.14	
9500.00	9436.02	9436.02	9436.02	24.76	21.07	178.51	50.20	-0.10	739.41	696.89	17.39	
9600.00	9534.28	9534.28	9534.28	25.13	21.29	178.55	50.20	-0.10	758.02	715.03	17.63	
9700.00	9632.53	9632.53	9632.53	25.50	21.51	178.58	50.20	-0.10	776.62	733.16	17.87	
9800.00	9730.78	9730.78	9730.78	25.87	21.73	178.61	50.20	-0.10	795.23	751.30	18.10	
9900.00	9829.04	9829.04	9829.04	26.24	21.95	178.65	50.20	-0.10	813.83	769.44	18.33	
10000.00	9927.29	9927.29	9927.29	26.62	22.17	178.68	50.20	-0.10	832.44	787.58	18.56	
10100.00	10025.54	10025.54	10025.54	26.99	22.39	178.71	50.20	-0.10	851.05	805.71	18.77	
10200.00	10123.79	10123.79	10123.79	27.37	22.61	178.73	50.20	-0.10	869.65	823.85	18.99	
10300.00	10222.05	10222.05	10222.05	27.74	22.84	178.76	50.20	-0.10	888.26	841.99	19.20	
10400.00	10320.30	10320.30	10320.30	28.12	23.06	178.79	50.20	-0.10	906.87	860.12	19.40	
10500.00	10418.55	10428.27	10428.26	28.50	23.30	178.79	50.23	-0.49	925.41	878.18	19.59	
10533.54	10451.51	10489.09	10488.81	28.63	23.44	178.48	50.64	-5.94	930.81	883.37	19.62	
10550.00	10467.66	10518.67	10517.96	28.68	23.50	170.40	51.02	-10.90	933.19	885.67	19.64	
10600.00	10516.39	10606.85	10602.82	28.74	23.70	151.57	52.80	-34.48	940.02	892.27	19.68	
10650.00	10564.33	10691.75	10680.18	28.71	23.91	139.24	55.43	-69.18	946.35	898.34	19.71	
10700.00	10611.11	10772.68	10748.37	28.58	24.13	130.63	58.71	-112.52	952.30	903.96	19.70	
10750.00	10656.38	10849.31	10806.69	28.39	24.39	124.13	62.45	-162.01	957.99	909.22	19.64	
10800.00	10699.78	10921.61	10855.18	28.18	24.71	118.90	66.50	-215.41	963.56	914.21	19.53	
10850.00	10741.00	10989.72	10894.36	27.99	25.10	114.49	70.70	-270.91	969.10	919.03	19.36	
10900.00	10779.71	11053.93	10925.01	27.86	25.55	110.65	74.95	-327.14	974.68	923.74	19.13	
10950.00	10815.62	11114.60	10948.00	27.82	26.07	107.24	79.19	-383.09	980.33	928.39	18.87	
11000.00	10848.46	11172.07	10964.20	27.87	26.64	104.16	83.35	-438.05	986.08	933.03	18.58	
11050.00	10877.98	11226.71	10974.40	28.03	27.26	101.34	87.40	-491.55	991.92	937.66	18.28	
11100.00	10903.95	11278.84	10979.33	28.27	27.91	98.76	91.31	-543.28	997.81	942.30	17.98	
11150.00	10926.18	11327.25	10979.86	28.60	28.56	96.44	94.97	-591.55	1003.72	946.94	17.68	
11200.00	10944.50	11373.08	10979.42	29.00	29.22	94.47	98.43	-637.25	1009.67	951.62	17.39	
11250.00	10958.76	11420.45	10978.96	29.49	29.94	92.81	102.00	-684.47	1015.45	956.09	17.11	
11300.00	10968.86	11468.99	10978.49	30.04	30.72	91.51	105.66	-732.87	1020.84	960.09	16.80	
11350.00	10974.73	11518.33	10978.01	30.65	31.54	90.57	109.39	-782.07	1025.65	963.47	16.49	
11399.00	10976.32	11567.10	10977.54	31.31	32.40	90.03	113.07	-830.70	1029.70	966.04	16.17	

Weatherford

Weatherford Drilling Services

GeoDec v5.03

Report Date:	June 27, 2012
Job Number:	
Customer:	Devon Energy
Well Name:	Apache 25 Fed #18H
API Number:	
Rig Name:	
Location:	Eddy Co., NM (NAD 83)
Block:	
Engineer:	RWJ

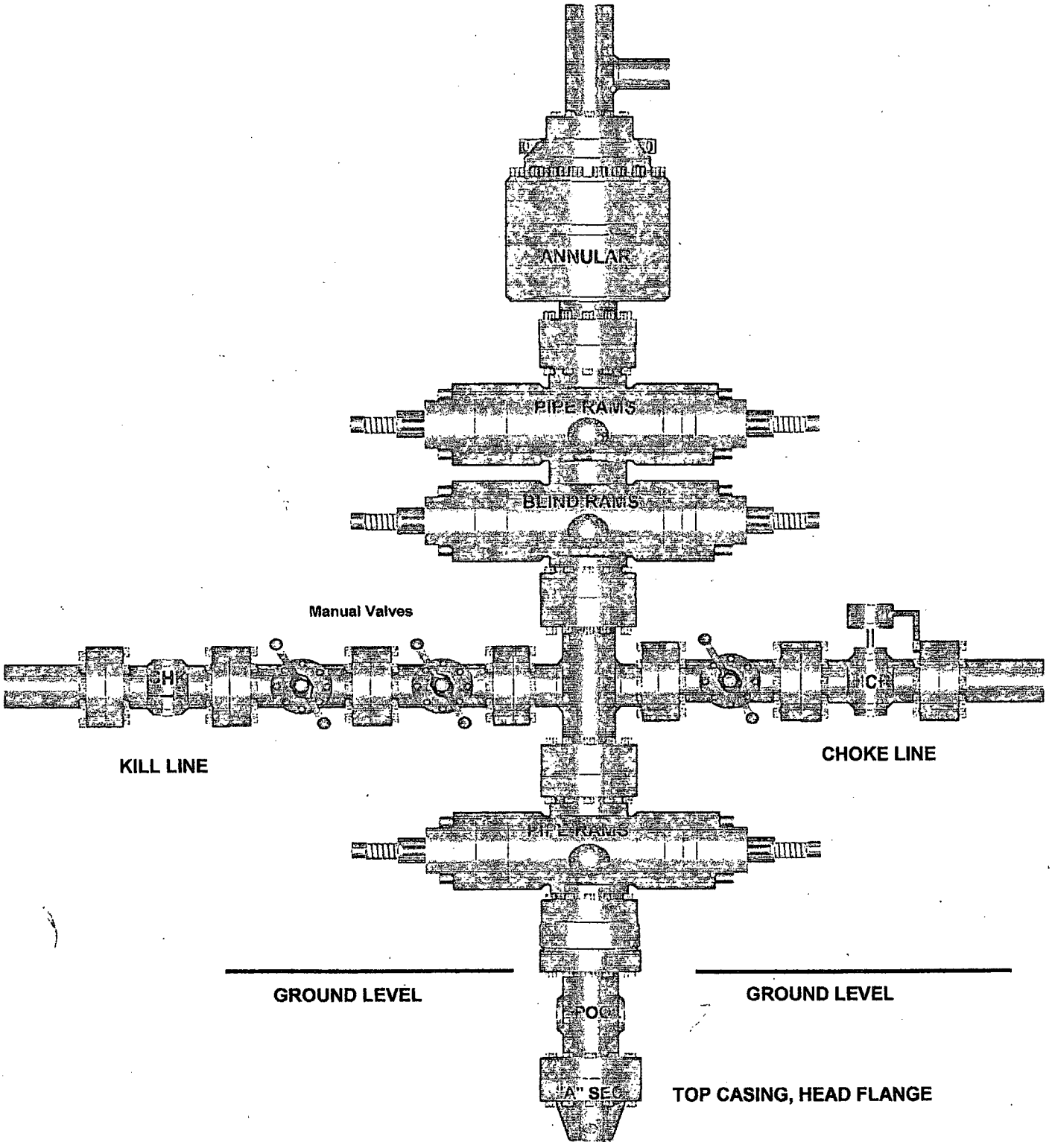
US State Plane 1983	Geodetic Latitude / Longitude
System: New Mexico Eastern Zone	System: Latitude / Longitude
Projection: Transverse Mercator/Gauss Kruger	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
North/South 497749.000 USFT	Latitude 32.3673640 DEG
East/West 697768.400 USFT	Longitude -103.8266704 DEG
~~Grid Convergence: .27°~~	
Total Correction: +7.28°	

Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	32.36736° N	32° 22 min 2.511 sec
Longitude =	103.82667° W	103° 49 min 36.013 sec

Magnetic Declination =	7.55°	[True North Offset]	
Local Gravity =	.9988 g	CheckSum =	6599
Local Field Strength =	48563 nT	Magnetic Vector X =	23894 nT
Magnetic Dip =	60.24°	Magnetic Vector Y =	3168 nT
Magnetic Model =	IGRF-2010g11	Magnetic Vector Z =	42159 nT
Spud Date =	Oct 15, 2012	Magnetic Vector H =	24103 nT

Signed:_____ Date:_____

13-5/8" x 3,000 psi BOP Stack



L:\Western\Drilling\Wes Handley\Drawings\BOPS\BOPs.xls

Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
Apache 25 Fed 18H
Surface Location: 1080' FNL & 330' FEL, Unit A, Sec 25 T22S R30E, Eddy, NM
Bottom Hole Location: 1980' FNL & 330' FWL, Unit E, Sec 25 T22S R30E, Eddy, NM

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.

2. Wear ring will be properly installed in head.

3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 5000 psi working pressure.

4. All fittings will be flanged.

5. A full bore safety valve tested to a minimum 5000 psi WP with proper thread connections will be available on the rotary rig floor at all times.

6. All choke lines will be anchored to prevent movement.

7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.

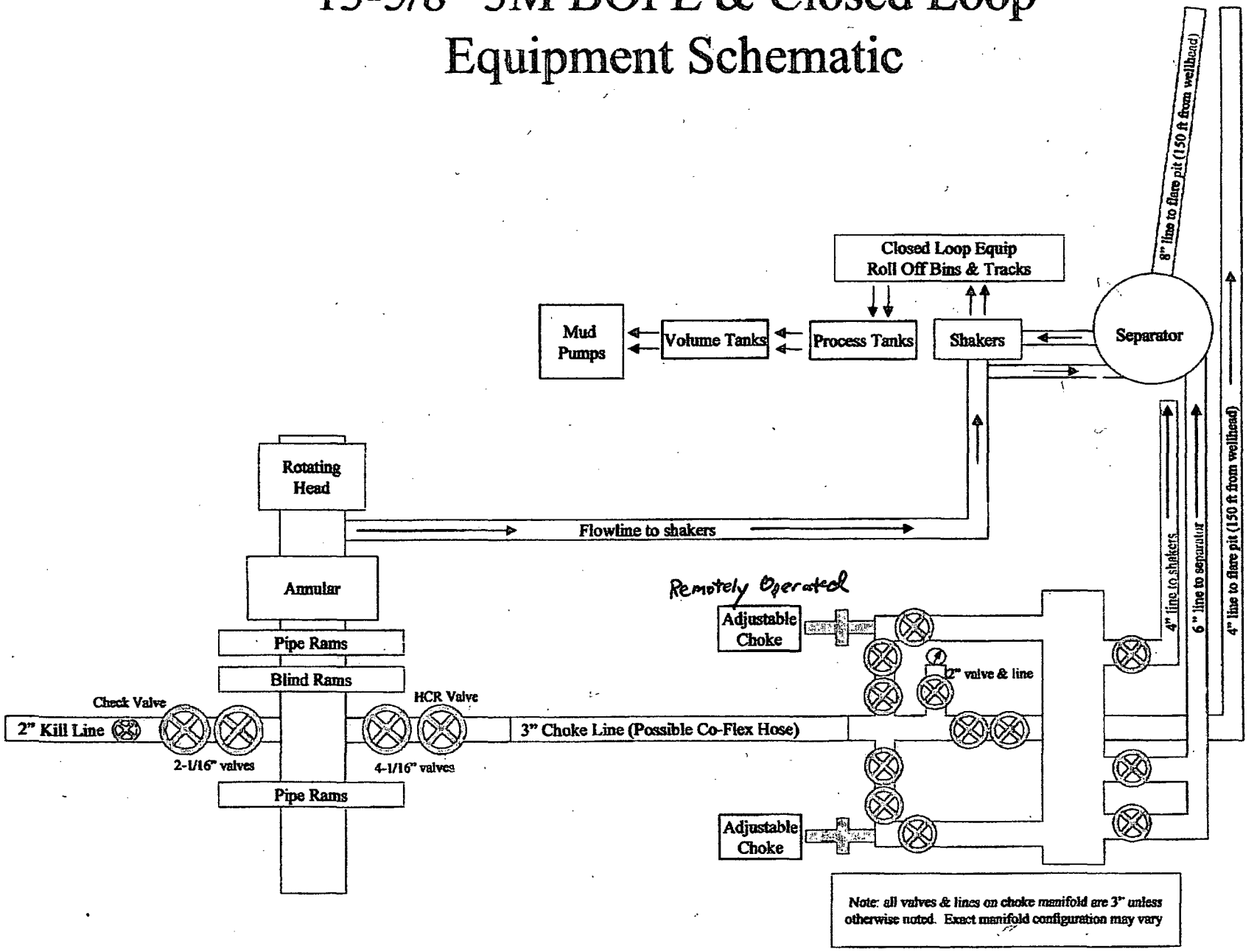
8. Will maintain a kelly cock attached to the kelly.

9. Hand wheels and wrenches will be properly installed and tested for safe operation.

10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.

11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

13-5/8" 3M BOPE & Closed Loop Equipment Schematic



Hydrostatic Test Certificate

Continental CONTITECH

Certificate Number: 4520	**PBC No:** 10321	**Customer Name & Address**
Customer Purchase Order No:	RIG 300	HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER TULSA, OK 74119
Project:		

Test Centre Address	Accepted by ContiTech Beattie Inspection		Accepted by Client Inspection
ContiTech Beattie Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA	Signed:	Josh Sims	
	Date:	10/27/10	

We certify that the goods detailed hereon have been inspected by our Quality Management System, and to the best of our knowledge are found to conform to relevant industrial standards within the requirements of the purchase order as issued to ContiTech Beattie Corporation.

These goods were made in the United States of America.

Item	Part No.	Description	Qnty	Serial Number	As-Built Length (m)	Work Press.	Test Press.	Test Time (minutes)
1		3" ID 10K Choke & Kill Hose x 35ft OAL End A: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange End B: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange Working Pressure: 10,000psi Test Pressure: 15,000psi Serial#: 49106	1	49106		10 kpsi	15 kpsi	60

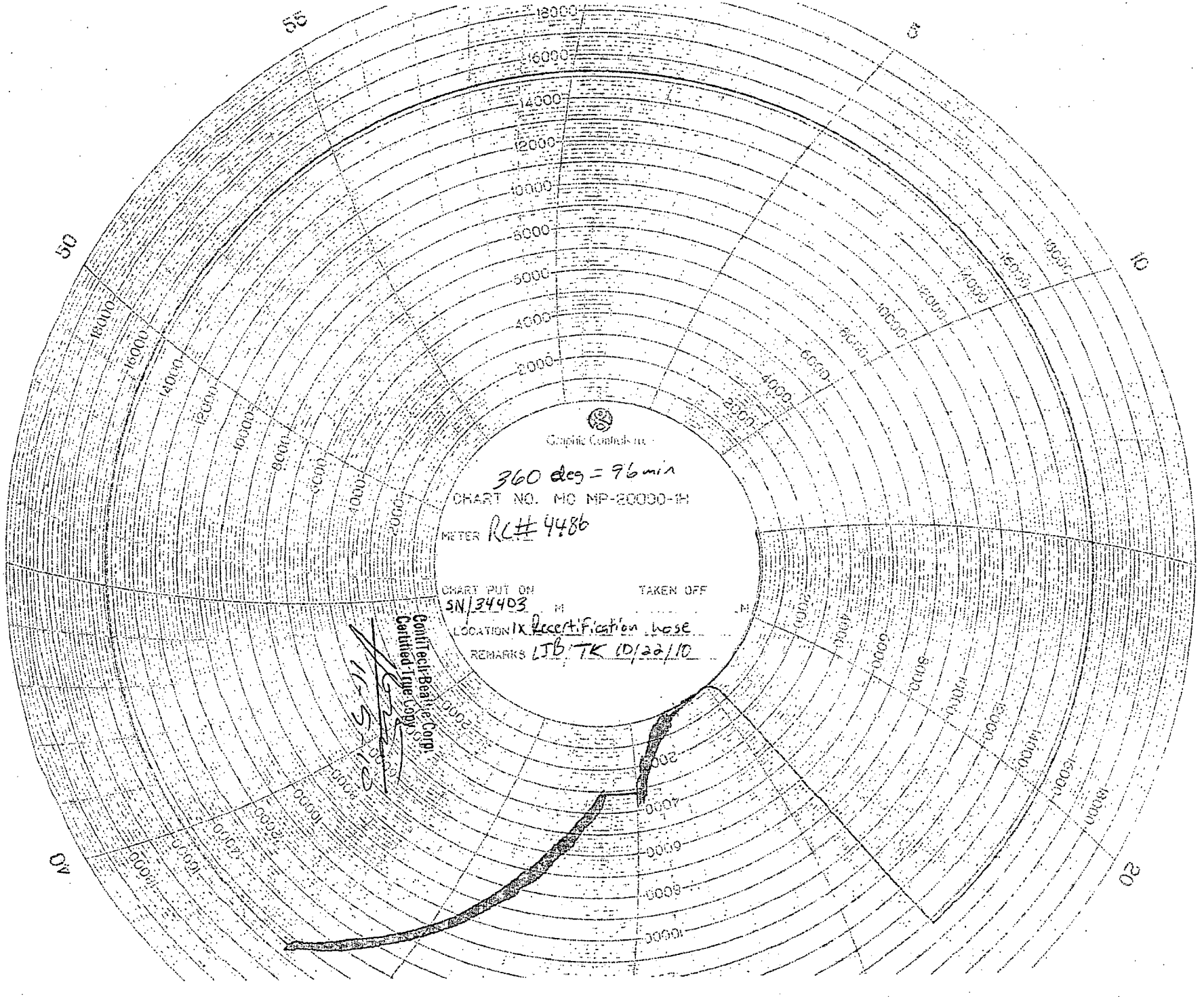
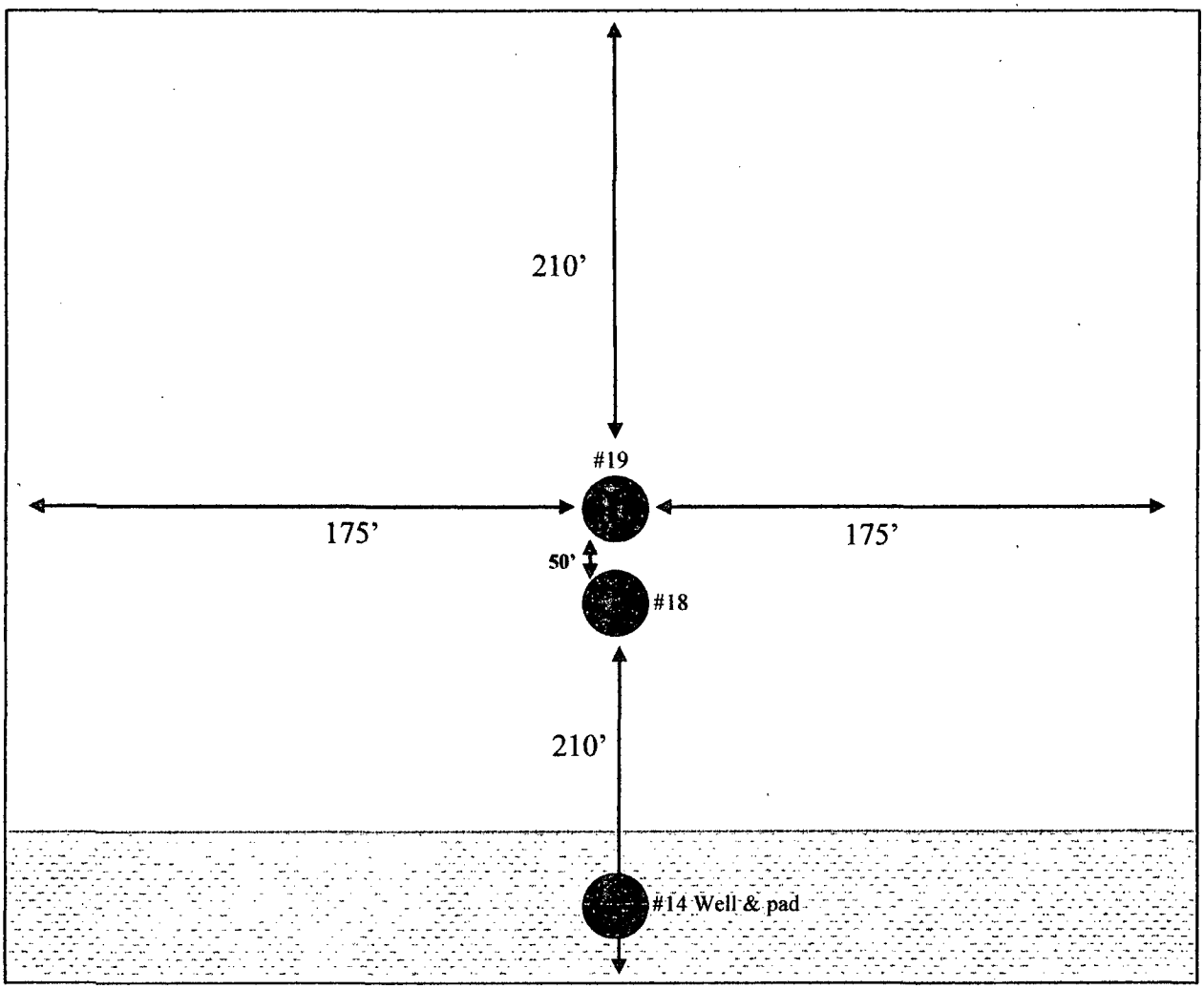

Graphic Controls Inc.
360 deg = 96 min
CHART NO. MC MP-20000-1H
METER RC# 4486
CHART PUT ON
TAKEN OFF
SN/34403
LOCATION 1X Recertification hose
REMARKS LJB TK 10/22/10
ContiTech-Beattie Corp.
Certified True Copy

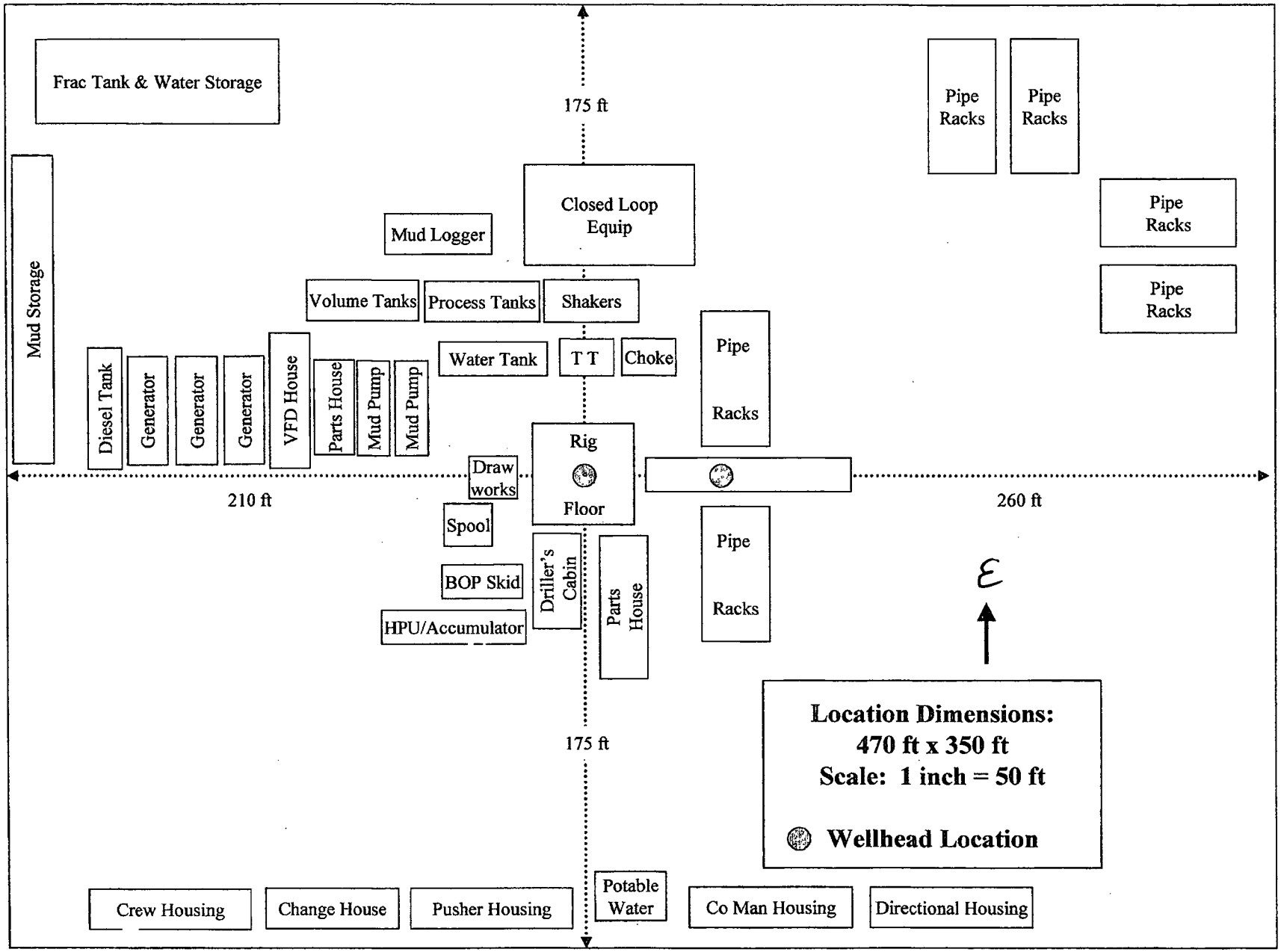
EXHIBIT D

Pad Size Only
APACHE 25 FED #18 & #19
V-DOOR SOUTH



NORTH

H&P Flex Rig Location Layout
2 Well Pad



devon

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

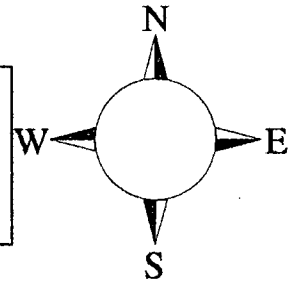
Apache 25 Fed 18H

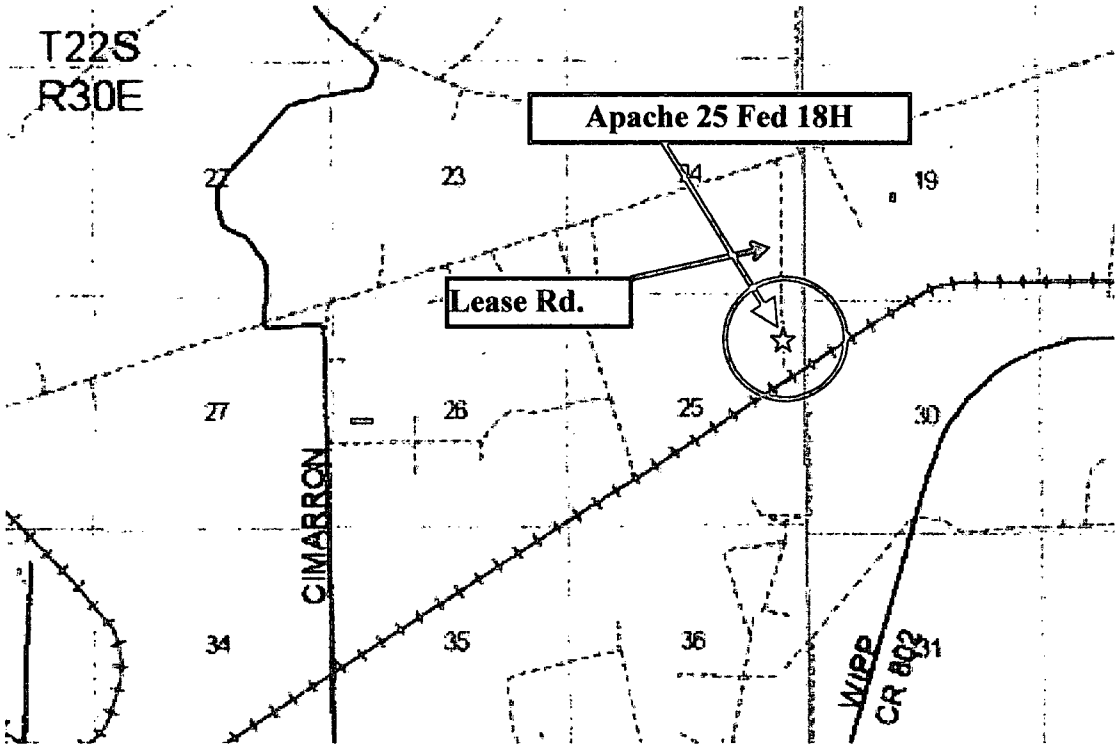
Sec-25, T-22S R-30E
1080' FNL & 330' FEL,
LAT. = 32.220251'N (NAD83)
LONG = 103.493601'W

Eddy County NM

Apache 25 fed 18H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.





Assumed 100 ppm ROE = 3000' ( )
100 ppm H_2S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance North on lease road. Crews should then block the road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. <u>There are no homes or buildings in or near the ROE</u>. The WIPP site is North approximately 1.6 miles. Efforts should be made to communicate the hazards to their personnel, in the case of an emergency release.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S)

2. The proper use and maintenance of personal protective equipment and life support systems.

3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.

4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.

2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.

3. The contents and requirements of the H_2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

2. **Protective equipment for essential personnel:**

   A. 30-minute SCBA units located in the doghouse and at briefing areas, as indicated on well site diagram. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   A. Portable H_2S monitors positioned on location for best coverage and response. These unites have warning lights and audible sirens when H_2S levels of 20 PPM are reached. These units are usually capable of detecting SO_2, which is a byproduct of burning H_2S.

4. **Visual warning systems:**

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate..

5. **Mud program:**

   A. The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

6. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

   B. All elastomers used for packing and seals shall be H_2S trim.

7. **Communication:**

   A. Radio communications in company vehicles including cellular telephones and 2-way radio

   B. Land line (telephone) communications at Office

8. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

   B. There will be no drill stem testing.

Devon Energy Corp. Company Call List

Artesia (575)	Cellular	Office	Home
Foreman – Robert Bell	748-7448	748-0178	746-2991
Asst. Foreman –Tommy Polly	748-5290	748-0165	748-2846
Don Mayberry	748-5235	748-0164	746-4945
Montral Walker	390-5182	748-0193	936-414-6246
Engineer – Marcos Ortiz	(405) 317-0666	(405) 552-8152	(405) 381-4350

Agency Call List

Lea County (575)

Hobbs

State Police	392-5588
City Police	397-9265
Sheriff's Office	393-2515
Ambulance	911
Fire Department	397-9308
LEPC (Local Emergency Planning Committee)	393-2870
NMOCD	393-6161
US Bureau of Land Management	393-3612

Eddy County (575)

Carlsbad

State Police	885-3137
City Police	885-2111
Sheriff's Office	887-7551
Ambulance	911
Fire Department	885-2111
LEPC (Local Emergency Planning Committee)	887-3798
US Bureau of Land Management	887-6544
New Mexico Emergency Response Commission (Santa Fe)	(505)476-9600
24 HR	(505) 827-9126
National Emergency Response Center (Washington, DC)	(800) 424-8802

Emergency Services

Boots & Coots IWC	1-800-256-9688 or (281) 931-8884
Cudd Pressure Control	(915) 699-0139 or (915) 563-3356
Halliburton	(575) 746-2757
B. J. Services	(575) 746-3569

Give GPS position:

Flight For Life - Lubbock, TX	(806) 743-9911
Aerocare - Lubbock, TX	(806) 747-8923
Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
Lifeguard Air Med Svc. Albuquerque, NM	(575) 272-3115

Prepared in conjunction with
Wade Rohloff

Graphic Safety LLC
GraphicSafety.com
PO Box 2734 • Hobbs NM 88240
575.631.9561 • Fax 866.352.2183

V-Door South

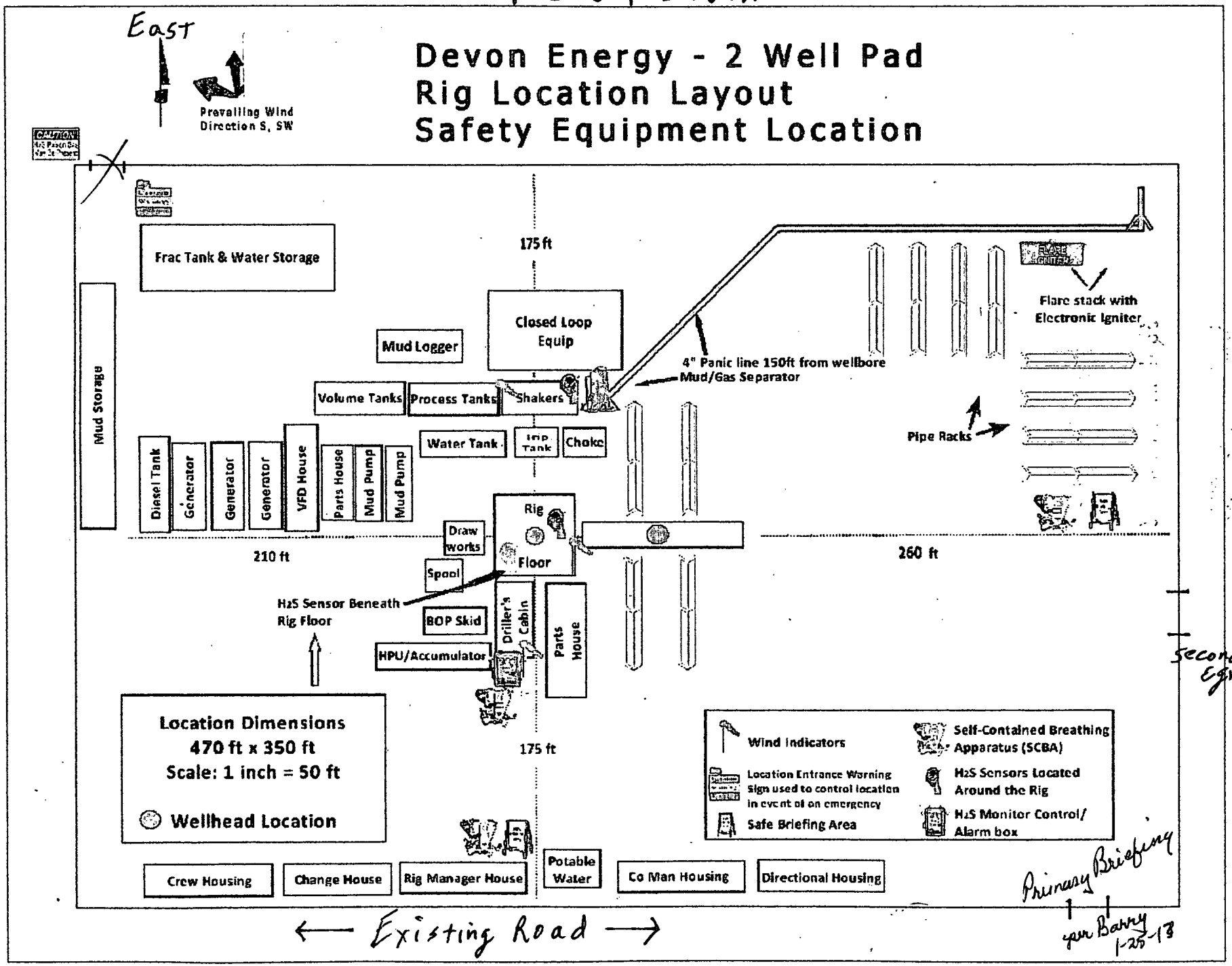
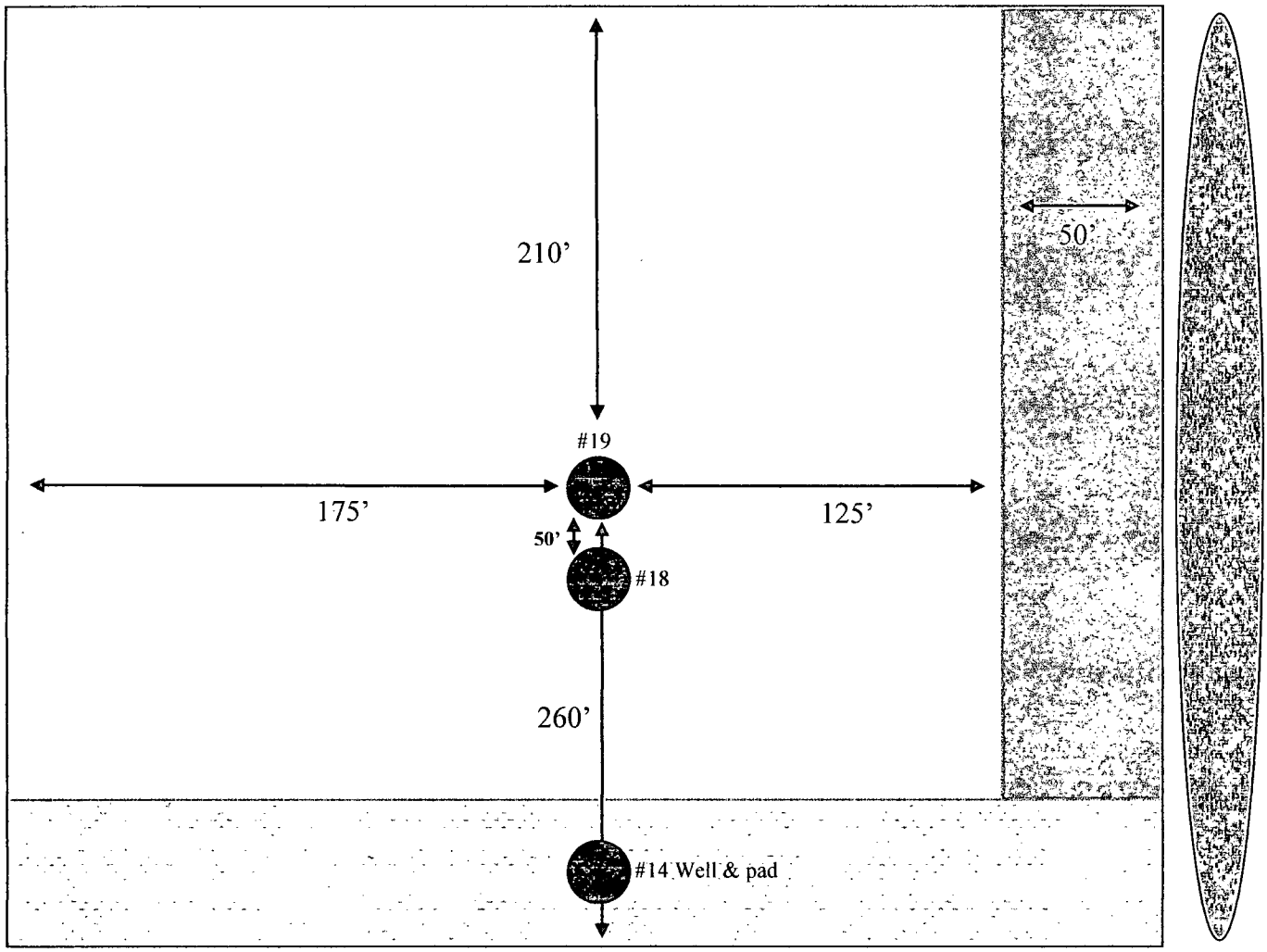

East
Prevailing Wind Direction S, SW
Devon Energy - 2 Well Pad
Rig Location Layout
Safety Equipment Location
Frac Tank & Water Storage
Mud Storage
175 ft
Closed Loop Equip
Mud Logger
Volume Tanks
Process Tanks
Shakers
4" Panic line 150ft from wellbore Mud/Gas Separator
Flare stack with Electronic Igniter
Pipe Racks
Water Tank
Trip Tank
Choke
Diesel Tank
Generator
Generator
Generator
VFD House
Parts House
Mud Pump
Mud Pump
Rig Floor
Draw works
Spool
210 ft
260 ft
H2S Sensor Beneath Rig Floor
BOP Skid
HPU/Accumulator
Driller's Cabin
Parts House
Secondary Egress
Location Dimensions
470 ft x 350 ft
Scale: 1 inch = 50 ft
Wellhead Location
175 ft
Wind Indicators
Self-Contained Breathing Apparatus (SCBA)
Location Entrance Warning Sign used to control location in event of an emergency
H2S Sensors Located Around the Rig
Safe Briefing Area
H2S Monitor Control/ Alarm box
Crew Housing
Change House
Rig Manager House
Potable Water
Co Man Housing
Directional Housing
Primary Briefing
per Barry 1-25-13
Existing Road

EXHIBIT C

Interim Reclamation & Production Facilities
APACHE 25 FED #18 & #19
V-DOOR SOUTH



LEGEND

Well Bore

Topsoil

Interim Reclamation

Production Facilities

NORTH

SURFACE USE PLAN

Devon Energy Production Company, L. P.
Apache 25 Fed 18H
Surface Hole: 1080 FNL & 330 FEL
Bottom Hole: 1980 FNL & 330 FWL
Section 25, T. 22 S., R. 30 E
Eddy County, New Mexico

This plan is submitted with form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

A. DIRECTIONS: Go north of Highway 128 (Jal Highway), on County Road 802 (WIPP road) for 3.8 miles. Turn left (west) continuing on County Road 802 for 1.3 miles. Turn left (west) on lease road for 1.8 miles. Turn south on lease road for 0.7 mile. The new location is off to the east. All existing roads are either paved or a caliche lease road.

B. See attached plats and maps provided by WTC Surveys.

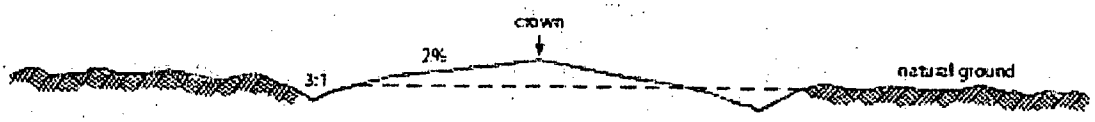
C. The access routes from C.R. 802 (WIPP Rd) to the well location is depicted on **Exhibit A.** The route highlighted in red has been approved under a previous ROW.

D. Existing roads on the access route will be improved and maintained to the standard set forth in Section 2 of this Surface Use Plan of Operations.

2. NEW OR RECONSTRUCTED ACCESS ROADS:

A. No new access road is required due to well being adjacent to the lease road west and an existing well to the south. The description below relates to any road improvement to existing roads to access this well.

B. The maximum width of the driving surface will be 14 feet. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1 foot deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.



Level Ground Section

C. Surface material will be native caliche. The average grade of the entire road will be approximately 3%.
D. Fence Cuts: No
E. Cattle guards: No
F. Turnouts: No
G. Culverts: No

H. Cuts and Fills: Not significant

I. Approximately 6 inches of topsoil (root zone) will be stripped from the proposed access road prior to any further construction activity. The topsoil that was stripped will be spread along the edge of the road and within the ditch. The topsoil will be seeded with the proper seed mix designated by the BLM.

J. The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along the access road route.

K. The access road and associated drainage structures will be constructed and maintained in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

3. LOCATION OF EXISTING WELLS:

See attached map **(Exhibit B)** showing all wells within a one-mile radius.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

A. In the event the well is found productive, a flowline will be laid to the battery, which will be applied for at a later time.

B. All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted to BLM specifications.

C. Containment berms will be constructed completely around production facilities designed to hold fluids. The containment berns will be constructed or compacted subsoil, be sufficiently impervious, hold 1 ½ times the capacity of the largest tank and away from cut or fill areas.

5. LOCATION AND TYPE OF WATER SUPPLY:

The well will be drilled using a combination of water mud systems as outlined in the Drilling Program. The water will be obtained from commercial water stations in the area and hauled to the location by transport truck using the existing and proposed roads shown in the attached survey plats. If a commercial water well is nearby, a temporary, surface poly line, will be laid along existing roads or other ROW easements and the water pumped to the well. No water well will be drilled on the location.

6. SOURCE OF CONSTRUCTION MATERIALS:

Any construction material that may be required for surfacing of the drill pad and access road will be from a contractor having a permitted source of materials within the general area. No construction materials will be removed from Federal lands without prior approval from the appropriate surface management agency. All roads will be constructed of 6" rolled and compacted caliche.

7. METHODS OF HANDLING WASTE DISPOSAL:

A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site.

B. Drilling fluids will be contained in steel mud pits.

C. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility.

D. Oil produced during operations will be stored in tanks until sold.
E. Portable, self-contained chemical toilets will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved sewage disposal facility. All state and local laws and regulations pertaining to disposal of human and solid waste will be complied with. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
F. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Immediately after drilling all debris and other waste materials on and around the well location, not contained in the trash cage will be cleaned up and removed from the location. No potentially adverse materials or substances will be left on the location.

8. ANCILLARY FACILITIES:

No campsite, airstrip, or other facilities will be built as a result of the operation of this well. No staging areas are needed.

9. WELL SITE LAYOUT:

A. Exhibit A shows the dimensions of the proposed well pad.
B. The proposed well pad size will be 350' x 460' **(See Exhibit D). There will be two wells drilled off the same pad (50' apart). This well will be the south well.** There will be no reserve pit due to the well being drilled utilizing a closed loop mud system. The closed loop system will meet the NMOCD requirements 19.15.17 .
C. The WTC Surveyor's plat, Form C-102 and **Exhibit D**, shows how the well will be turned to a V-Door South.
D. A 600' x 600' area has been staked and flagged.
E. All equipment and vehicles will be confined to the approved disturbed areas of this APD (i.e., access road, well pad, and topsoil storage areas)

10. PLANS FOR SURFACE RECLAMATION:

A. After concluding the drilling and/or completion operations, if the well is found non-commercial, all the equipment will be removed, the surface material, caliche, will be removed from the well pad and road and transported to the original caliche pit or used for other roads. The original stock piled top soil will be returned to the pad and contoured, as close as possible, to the original topography. The access road will have the caliche removed and the road ripped, barricaded and seeded as directed by the BLM.
B. If the well is a producer, the portions of the location not essential to production facilities or space required for workover operations, will be reclaimed and seeded as per BLM requirements. **(SEE EXHIBIT C FOR INTERIM RECLAMATION PLAT FOR THIS WELL)**
C. Reclamation Performance Standards
The following reclamation performance standards will be met:

Interim Reclamation – Includes disturbed areas that may be redisturbed during operations and will be redisturbed at final reclamation to achieve restoration of the original landform and a natural vegetative community.

- Disturbed areas not needed for active, long-term production operations or vehicle travel will be recontoured, protected from erosion, and

revegetated with a self-sustaining, vigorous, diverse, native (or as otherwise approved) plant community sufficient to minimize visual impacts, provide forage, stabilize soils, and impede the invasion of noxious, invasive, and non-native weeds.

Final Reclamation – Includes disturbed areas where the original landform and a natural vegetative community will be restored and it is anticipated the site will not be redisturbed for future development.

- The original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors.
- A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community will be established on the site, with a density sufficient to control erosion and invasion by non-native plants and to re-establish wildlife habitat or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation.
- Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gullying, headcutting, slumping, and deep or excessive rills (greater than 3 inches) are not observed.
- The site will be free of State- or county-listed noxious weeds, oil field debris and equipment, and contaminated soil. Invasive and non-native weeds are controlled.

D. Reclamation Actions

Earthwork for interim and final reclamation will be completed within 6 months of well completion or plugging unless a delay is approved in writing by the BLM authorized officer.

The following minimum reclamation actions will be taken to ensure that the reclamation objectives and standards are met. It may be necessary to take additional reclamation actions beyond the minimum in order to achieve the Reclamation Standards.

<u>Reclamation – General</u>

Notification:
- The BLM will be notified at least 3 days prior to commencement of any reclamation operations.

Housekeeping:
- Within 30 days of well completion, the well location and surrounding areas(s) will be cleared of, and maintained free of, all debris, materials, trash, and equipment not required for production.
- No hazardous substances, trash, or litter will be buried or placed in pits.

Topsoil Management:
- Operations will disturb the minimum amount of surface area necessary to conduct safe and efficient operations.
- Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, the topsoil will be stripped and stockpiled

around the perimeter of the well location and along the perimeter of the access road to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil will include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils.

- Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment or so dry that dust clouds greater than 30 feet tall are created. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet.
- No major depressions will be left that would trap water and cause ponding unless the intended purpose is to trap runoff and sediment.

Seeding:

- Seedbed Preparation. Initial seedbed preparation will consist of recontouring to the appropriate interim or final reclamation standard. All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4 – 6 inches. If the site is to be broadcast seeded, the surface will be left rough enough to trap seed and snow, control erosion, and increase water infiltration.
- If broadcast seeding is to be used and is delayed, final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
- Seed Application. Seeding will be conducted no more than two weeks following completion of final seedbed preparation. A certified weed-free seed mix designed by the BLM to meet reclamation standards will be used.
- If the site is harrowed or dragged, seed will be covered by no more than 0.25 inch of soil.

11. SURFACE OWNERSHIP:

A. The surface is owned by the Bureau of Land Management. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.

12. OTHER INFORMATION:

A. The area surrounding the well site is in a fairly flat, sandy loam type, within a rolling sand hills type area. The vegetation consists of Shinnery Oak, Mesquite, Yucca, Sand Sage with three-awns and some dropseed species.
B. There is no permanent or live water in the immediate area.
C. There are no dwellings within 2 miles of this location.
D. The location falls within the MOA area and all known sites were avoided. A check for $1463 was submitted with this application.

13. BOND COVERAGE:

Bond Coverage is Nationwide; Bond Number NMB-000801 and CO-1104.

OPERATORS REPRESENTATIVE:

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below:

Surface:
Barry W. Hunt – Permitting Agent
1403 Springs Farm Place
Carlsbad, NM 88220
(575) 885-1417 (Home)
(575) 361-4078 (Cell)

Drilling & Production:
James Cromer – Operations Engineer, Devon Energy Production, L.P.
333 W. Sheridan
Oklahoma City, Ok.73102
(405) 228-4464 (Office)
(405) 694-7718 (Cell)

ON-SITE PERFORMED ON 5/22/12 RESULTED IN PROPOSED LOCATION BEING MOVED 80 FT SOUTH, SO AS TO FIT IN BETWEEN TWO WELLS. IT WAS AGREED TO TURN THE LOCATION TO A V-DOOR SOUTH. INTERIM RECLAMATION WOULD BE THE EAST PORTION OF THE PAD. TOP SOIL TO BE TO THE EAST.

PRESENT AT ON-SITE:
BARRY HUNT – PERMIT AGENT FOR DEVON ENERGY PRODUCTION COMPANY
JUSTIN FRYE – BLM
WTC SURVEYORS

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company, L.P.**
LEASE NO.:	**NMNM-89052**
WELL NAME & NO.:	**Apache 25 Fed 18H**
SURFACE HOLE FOOTAGE:	**1080' FNL & 0330' FEL**
BOTTOM HOLE FOOTAGE	**1980' FNL & 0330' FWL**
LOCATION:	**Section 25, T. 22 S., R 30 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

*Note: Due to the location occurring in a Lesser Prairie-Chicken Habitat Evaluation Area (HEA), as described in the 2008 Special Status Species Resource Management Plan Amendment, **non-emergency exceptions to this condition-of-approval will not be granted.**

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Tank Battery Liners and Berms:

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-6235 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty (20) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

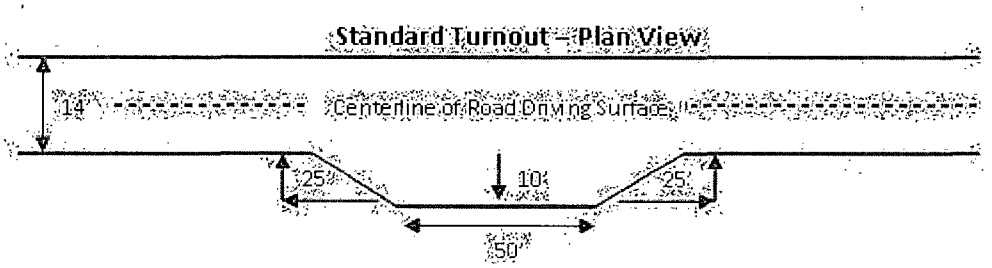
Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

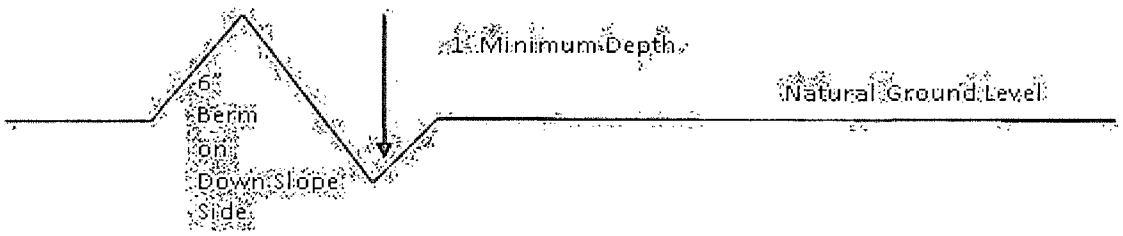
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

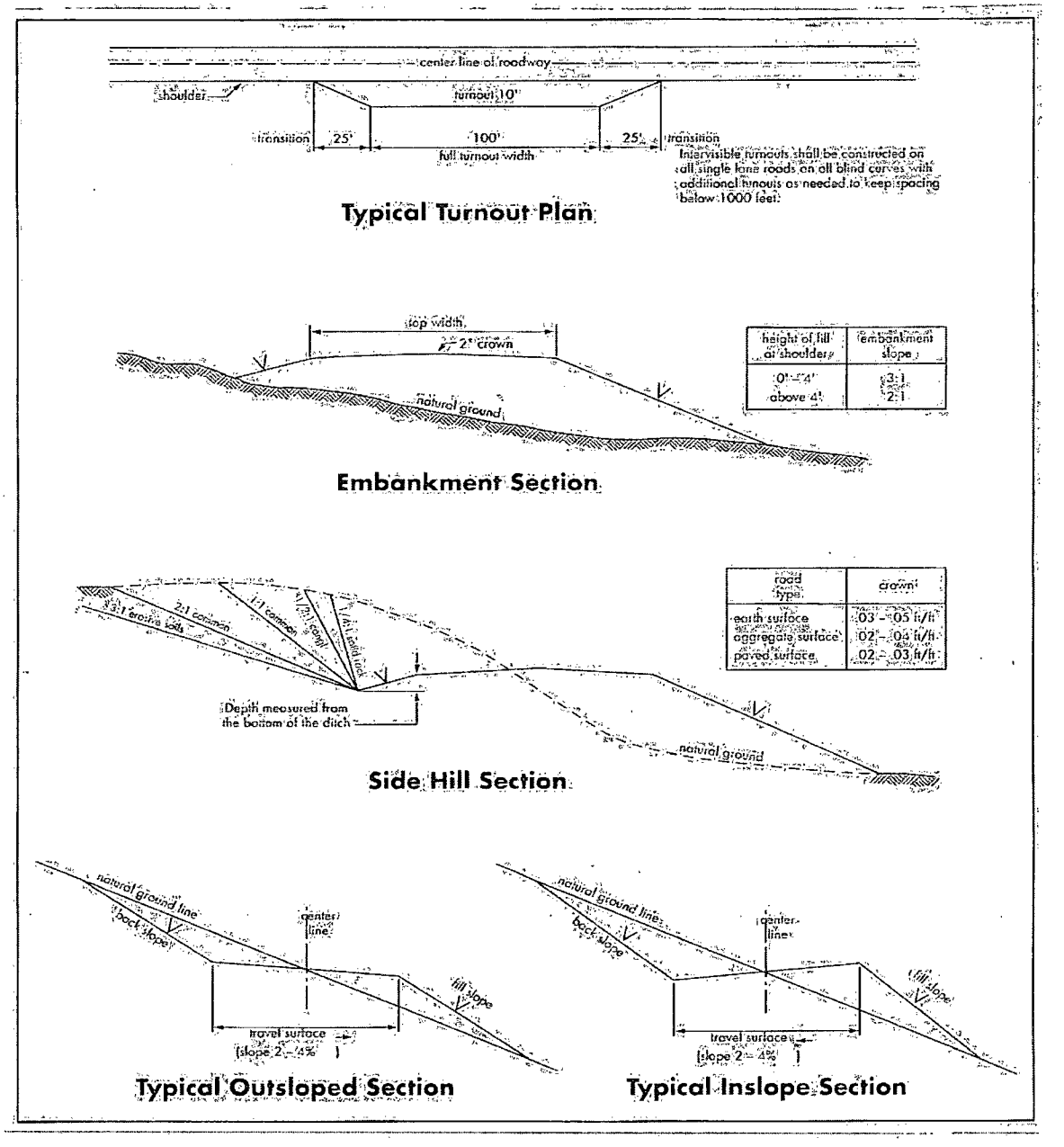
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **A Hydrogen Sulfide (H2S) Drilling Plan shall be activated prior to drilling out the surface shoe. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

High Cave/Karst
Possibility of water and brine flows in the Salado and Castile Groups.
Possibility of lost circulation in the Delaware and Bone Springs.

1. The **13-3/8** inch surface casing shall be set at approximately **520** feet (**in a competent bed <u>below the Magenta Dolomite</u>, a <u>Member of the Rustler</u>**) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to high cave/karst and R-111-potash.**

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

Operator has proposed DV tool at depth of 5500'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

   a. First stage to DV tool:

   ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage. **Excess calculates to 16% - Additional cement will be required.**

   b. Second stage above DV tool:

   ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

5. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review**. If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

    a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.

    d. The results of the test shall be reported to the appropriate BLM office.

    e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 031813

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES – not requested

C. ELECTRIC LINES – not requested

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed