

NM OIL CONSERVATION

ARTESIA DISTRICT

OCD Artesia

JUN 15 2015

Form 3160-3
(March 2012)

RECEIVED

ATS-15-96

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. BHL:NMNM0503/SHL:NMLC061862/NMNM120903	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Devon Energy Production Company, L.P.		7. If Unit or CA Agreement, Name and No.	
3a. Address 333 West Sheridan Avenue Oklahoma City, OK 73102-5010		8. Lease Name and Well No. Belgian 15 Fed Com 1H	
3b. Phone No. (include area code) 405.228.7203		9. API Well No. 30-015-43187	
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 14 FSL & 1610 FEL, Unit O PP: 200 FSL & 1980 FEL At proposed prod. zone 330 FNL & 1980 FEL, Unit B		10. Field and Pool, or Exploratory Well; Bone Spring (96403) 96641	
14. Distance in miles and direction from nearest town or post office* Approximately 12 miles SE of Malaga, NM		11. Sec., T. R. M. or Blk. and Survey or Area Section 15 T25S R31E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig, unit line, if any) See attached map		12. County or Parish Eddy County	
16. No. of acres in lease NMNM00503 - 2,360.80 ac NMLC06182 - 1,720 ac NMNM120903 - 40 ac		13. State NM	
17. Spacing Unit dedicated to this well 160 ac		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See attached map	
19. Proposed Depth TVD - 10,338' MD - 15,121'		20. BLM/BIA Bond No. on file CO-1104; NBM-000801	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3362.9' GL		22. Approximate date work will start* 6/5/2014	
23. Estimated duration 45 days		24. Attachments	

UNORTHODOX LOCATION

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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 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). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature <i>Trina C. Couch</i>	Name (Printed/Typed) Trina C. Couch	Date 10/20/2014
Title Regulatory Analyst		

Approved by Steve Caffey	Name (Printed/Typed) Steve Caffey	Date JUN 10 2015
Title FIELD MANAGER		Office CARLSBAD FIELD 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)

ARC
6/17/15

Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

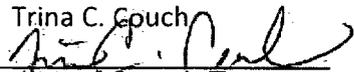
Certification

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 Company, 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.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this 20th day of October, 2014.

Printed Name: Trina C. Couch

Signed Name: 

Position Title: Regulatory Analyst

Address: 333 W. Sheridan, OKC OK 73102

Telephone: (405)-552-6559

NM OIL CONSERVATION
ARTESIA DISTRICT

JUN 15 2015

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87305
Phone: (505) 476-3460 Fax: (505) 476-3462

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

RECEIVED

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

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-4387	² Pool Code 9664/06403	³ Pool Name Adaca Wildcat, Bone Spring (0)
⁴ Property Code 314983	⁵ Property Name BELGIAN 15 FED COM	
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	
⁶ Well Number 1H		
⁹ Elevation 3362.9		

¹⁰ Surface Location

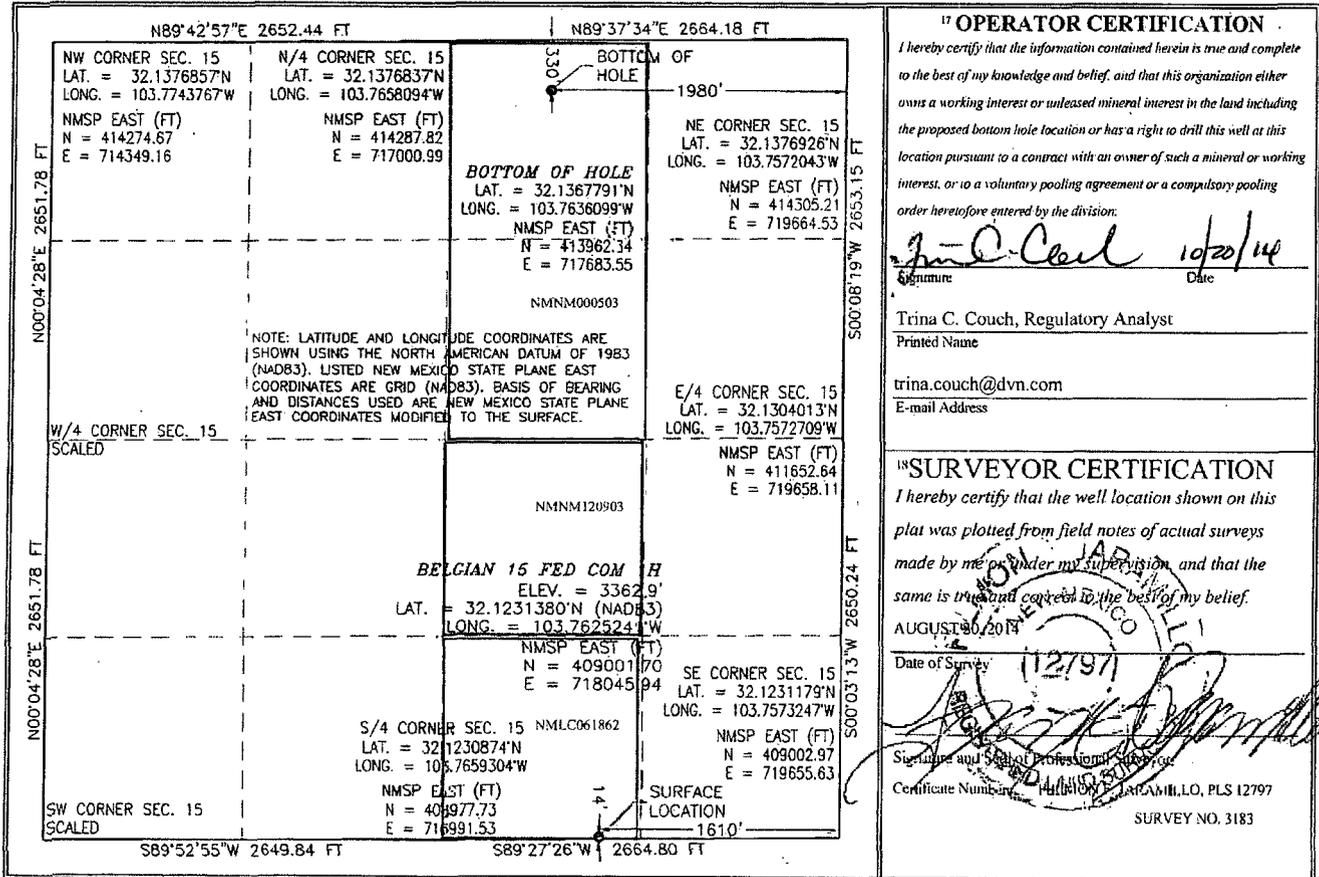
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	15	25 S	31 E		14	SOUTH	1610	EAST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	15	25 S	31 E		330	NORTH	1980	EAST	EDDY

¹² Dedicated Acres 160 ac	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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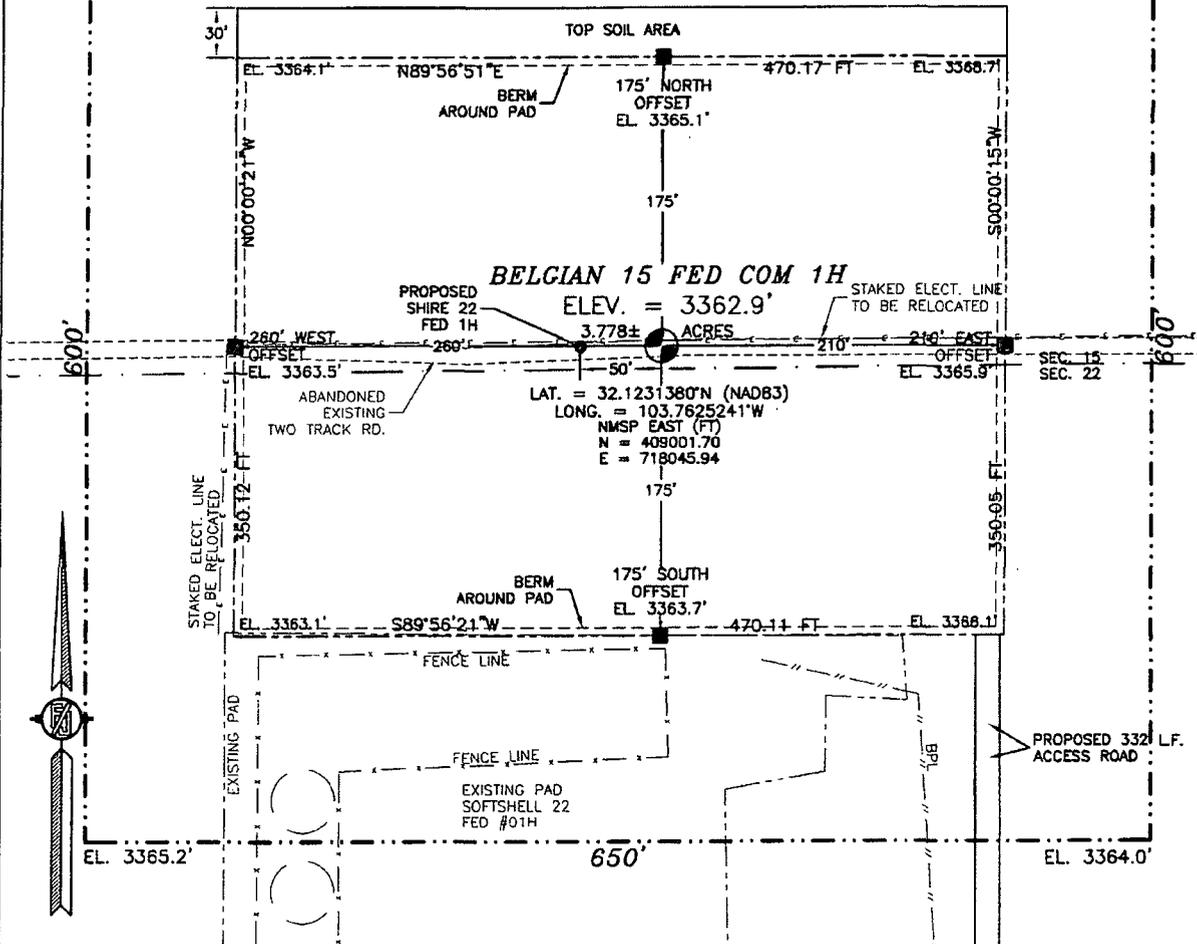
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



**SECTION 15, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP**

EL. 3364.4' 650' EL. 3369.6'

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE.



LAT. = 32.1231380°N (NAD83)
LONG. = 103.7625241°W
NMSP EAST (FT)
N = 409001.70
E = 718045.94

**DEVON ENERGY PRODUCTION COMPANY, L.P.
BELGIAN 15 FED COM 1H
LOCATED 14 FT. FROM THE SOUTH LINE
AND 1610 FT. FROM THE EAST LINE OF
SECTION 15, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO**

AUGUST 20, 2014

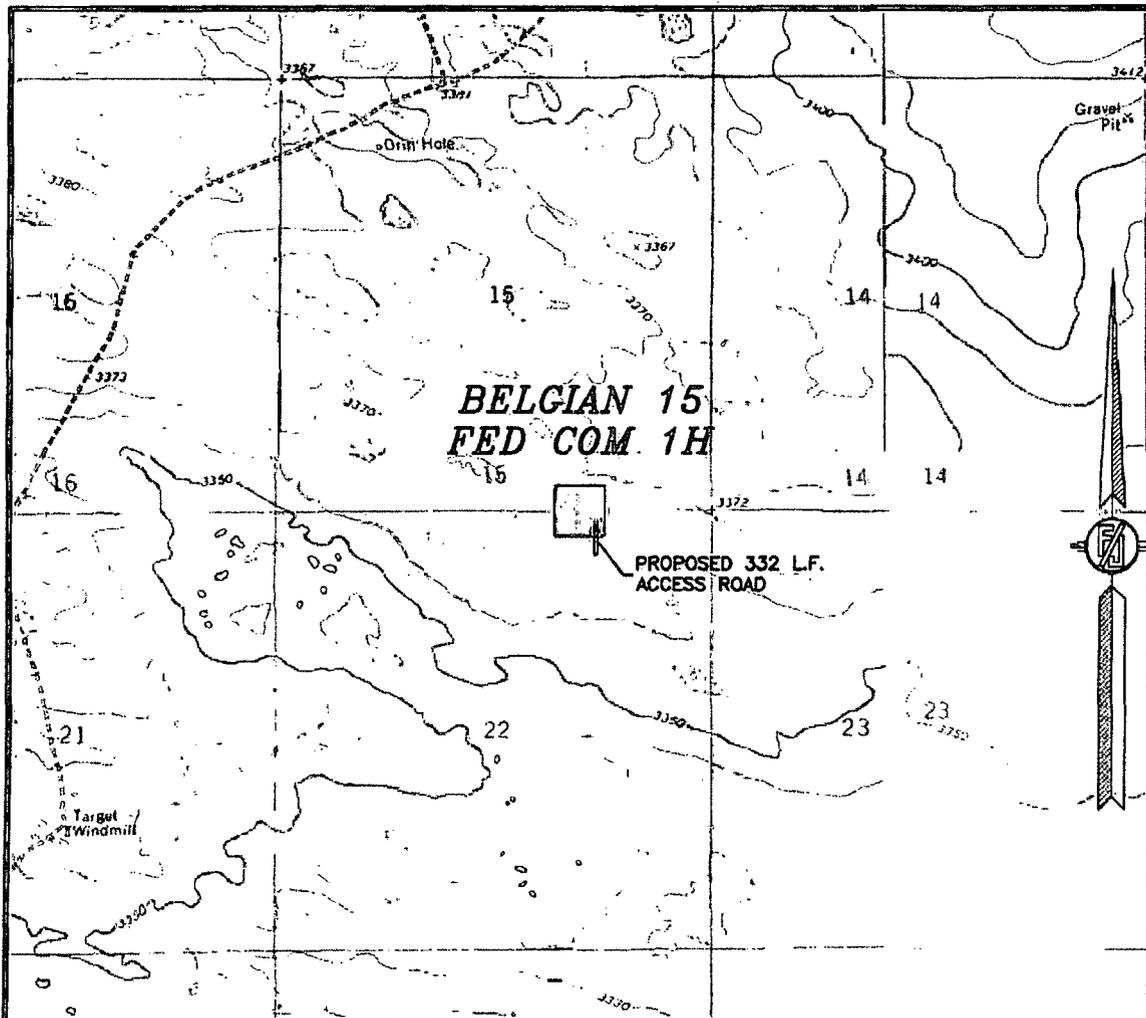
010 50 100 200
SCALE 1" = 100'

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF NM HIGHWAY 128 (JAL HWY) AND ORLA ROAD (CR-1) GO SOUTH ON ORLA ROAD 5.2 MILES TO MONSANTO ROAD ON RIGHT GO WEST ON MONSANTO ROAD 2.0 MILES TO ROAD INTERSECTION GO NORTH (RIGHT) 2.8 MILES TO ROAD INTERSECTION NORTH, SOUTH & SOUTHWEST GO SOUTHWEST 1.35 MILES ABOUT 200'± PAST A CATTLE GUARD TURN RIGHT OVER ANOTHER CATTLE GUARD GO WEST 0.25 MILES ON RIGHT FOLLOW FLAGS 332 L.F. NORTH TO SOUTHEAST CORNER OF PAD

SURVEY NO. 3183

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

SECTION 15, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
BIG SINKS
PHANTOM BANKS

NOT TO SCALE

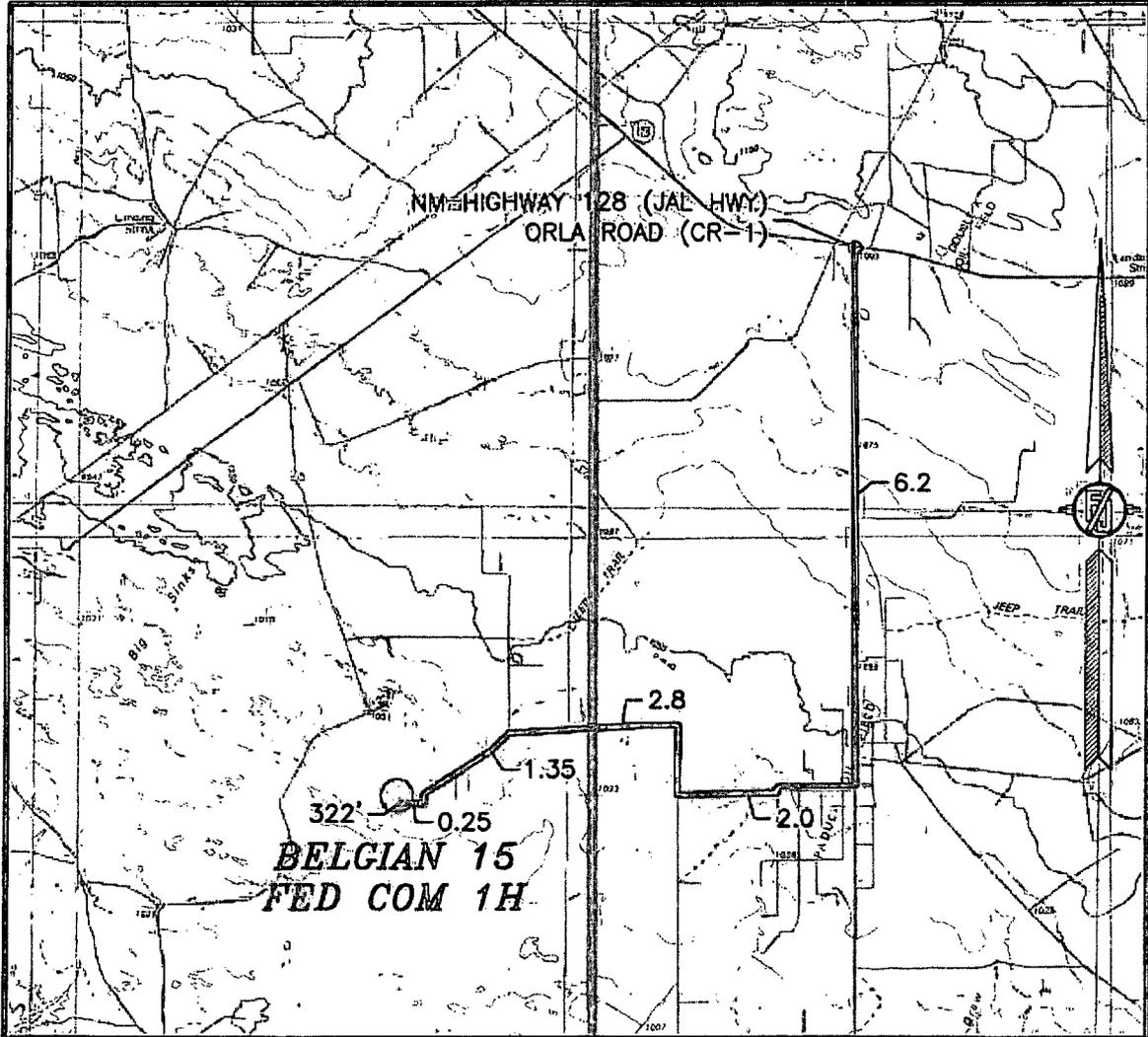
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SURVEY NO. 3183

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(575) 234-3341

SECTION 15, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

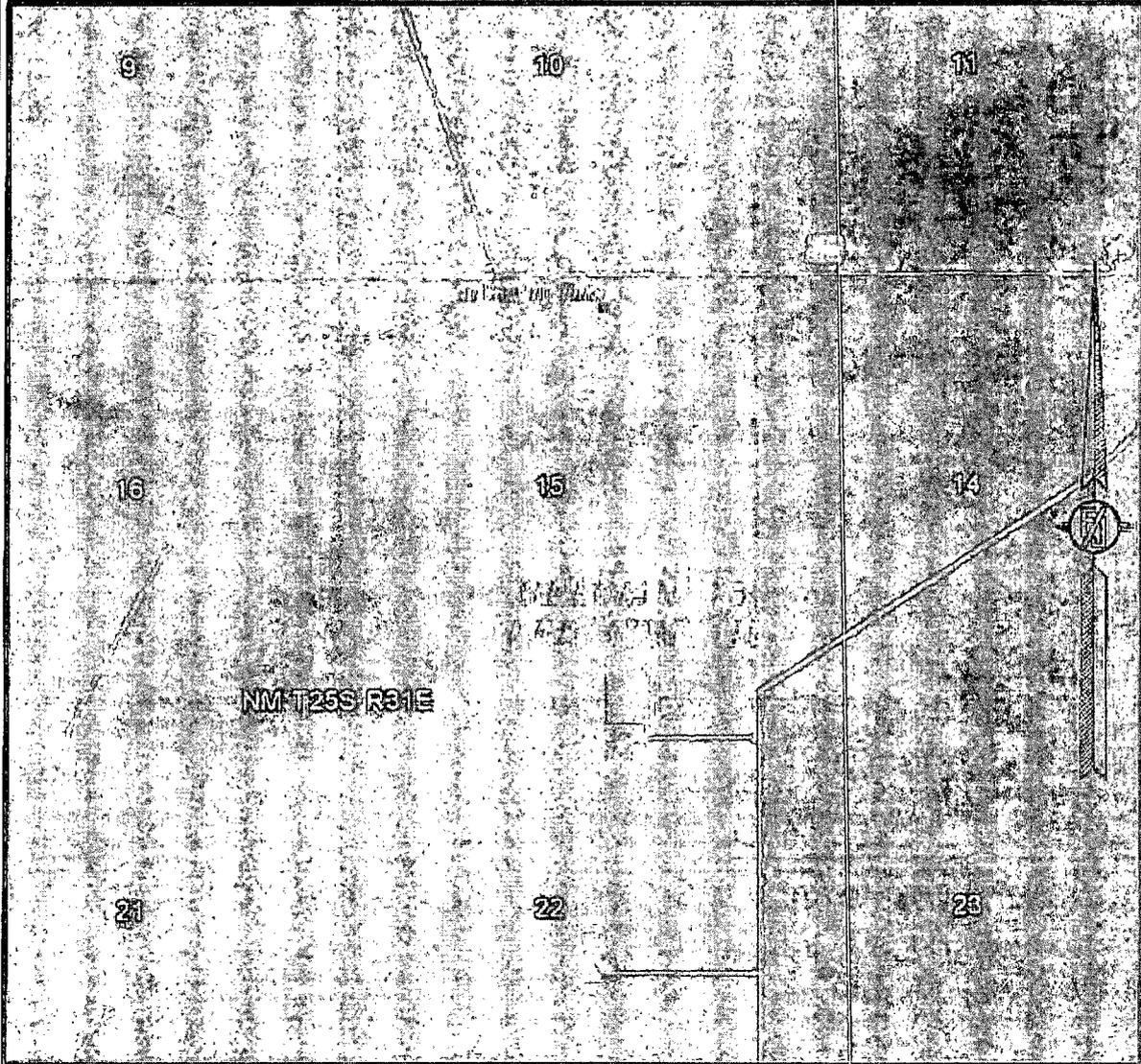
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AUGUST 20, 2014

MADRON SURVEYING, INC. 301 SOUTH CANAL SURVEY NO. 3183
 (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 15, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
APR. 2013

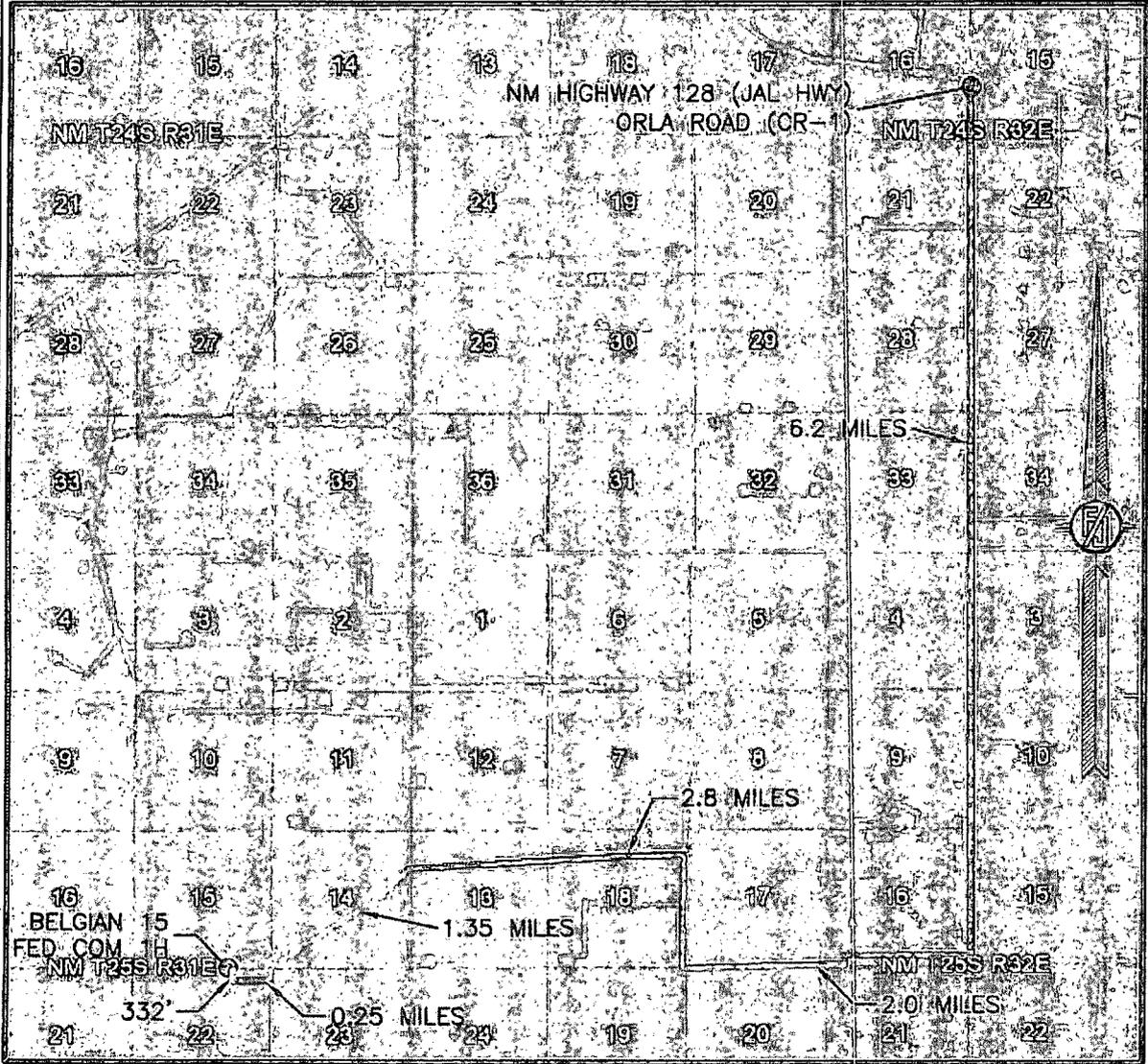
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(575) 234-3341

SECTION 15, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 APR. 2013

DEVON ENERGY PRODUCTION COMPANY, L.P.
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AUGUST 20, 2014

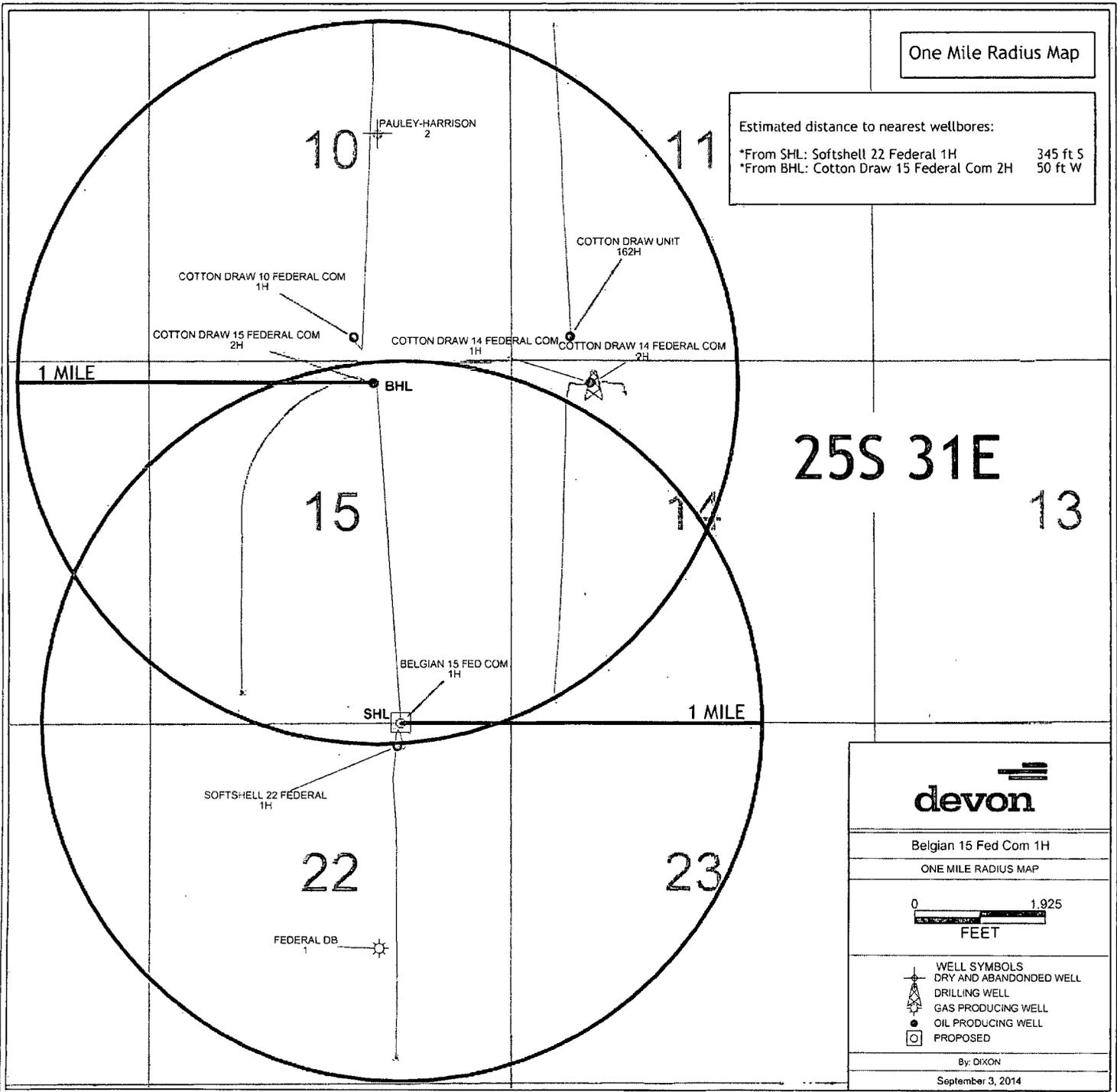
SURVEY NO. 3183

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

One Mile Radius Map

Estimated distance to nearest wellbores:

- *From SHL: Softshell 22 Federal 1H 345 ft S
- *From BHL: Cotton Draw 15 Federal Com 2H 50 ft W



Devon Energy, Belgian 15 Fed Com 1H

1. Geologic Formations

TVD of target	10338	Pilot hole depth	N/A
MD at TD:	15121	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	599	Water	
Top of Salt	994	Salt	
Base of Salt	3900	Salt	
Lamar	3950	Barren	
Bell Canyon	4407	Oil/Gas	
Cherry Canyon	5296	Oil/Gas	
Bushy Canyon	6621	Oil/Gas	
Bone Spring	8203	Target Zone	
1 st Bone Spring Sand	9330	Target Zone	
2 nd Bone Spring Lime	9700	Target Zone	
2 nd Bone Spring Sand	9890	Target Zone	
Wolfcamp	11645	Target Zone	

*H2S, water flows, loss of circulation, abnormal pressures, etc.

Devon Energy, Belgian 15 Fed Com 1H

2. Casing Program

See
COA

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	750 860'	13.375"	48	H40	STC	1.77	3.98	7.71
12.25"	0	3400	9.625"	36	J55	LTC	1.15	1.74	2.15
12.25"	3400	4100 4310'	9.625"	40	J55	LTC	1.21	4.37	4.40
8.75"	0	15121	5.5"	17	P110	BTC	1.55	1.25	2.17
BLM Minimum Safety Factor							1.10	1.10	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Devon Energy, Belgian 15 Fed Com 1H

3. Cementing Program

Casing	# Sks	Wt. lb/gal	H ₂ O gal/sk	Yld ft ³ /sack	500# Comp. Strength (hours)	Slurry Description
Surf.	820	14.8	6.32	1.33	7	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
Inter.	850	12.9	9.81	1.85	17	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	430	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
Prod.	870	12.5	10.86	1.96	30	1 st Lead: (65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake
	1390	14.5	5.31	1.2	25	1 st Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
	DV/ECP Tool 4500'					
	100	11	14.81	2.55	22	2nd stage Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake
	120	14.8	6.32	1.33	6	2nd stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	100%
Intermediate	0'	75%
Production	3900' 200' tie back	25%

Devon Energy, Belgian 15 Fed Com 1H

4. Pressure Control Equipment

A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
--

*3M
Multi-bowl
being
used*

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
---	--

Devon Energy, Belgian 15 Fed Com 1H

Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
N	Are anchors required by manufacturer?
Y	<p>A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.</p> <p>Devon proposes using a multi-bowl wellhead assembly (FMC Uni-head). This assembly will only be tested when installed on the surface casing. 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.</p> <ul style="list-style-type: none"> • Wellhead will be installed by FMC's representatives. • If the welding is performed by a third party, the FMC's representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. • FMC representative will install the test plug for the initial BOP test. • FMC will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 5M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. • If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. • Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. • Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. <p>After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the FMC Uni-head wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.</p> <p>After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the FMC Uni-head.</p> <p>The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. 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.</p>

*See
COA*

Devon Energy, Belgian 15 Fed Com 1H

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.

See attached schematic.

See COA

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	750' 860'	FW Gel	8.6-8.8	28-34	N/C
750'	4100' 4310'	Saturated Brine	10.0-10.2	28-34	N/C
4100'	15121'	Cut Brine	8.5-9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?

PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
Resistivity	Int. shoe to KOP
Density	Int. shoe to KOP
X CBL	Production casing
X Mud log	Intermediate shoe to TD
PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4652 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Devon Energy, Belgian 15 Fed Com 1H

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

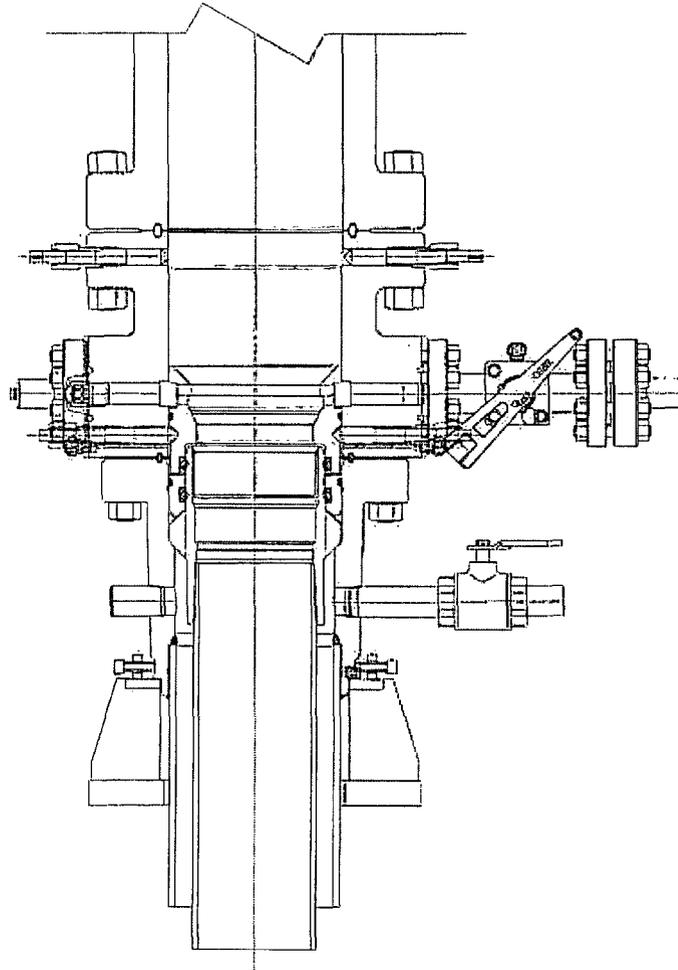
Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

Directional Plan

Other, describe



PRIMARY MODE

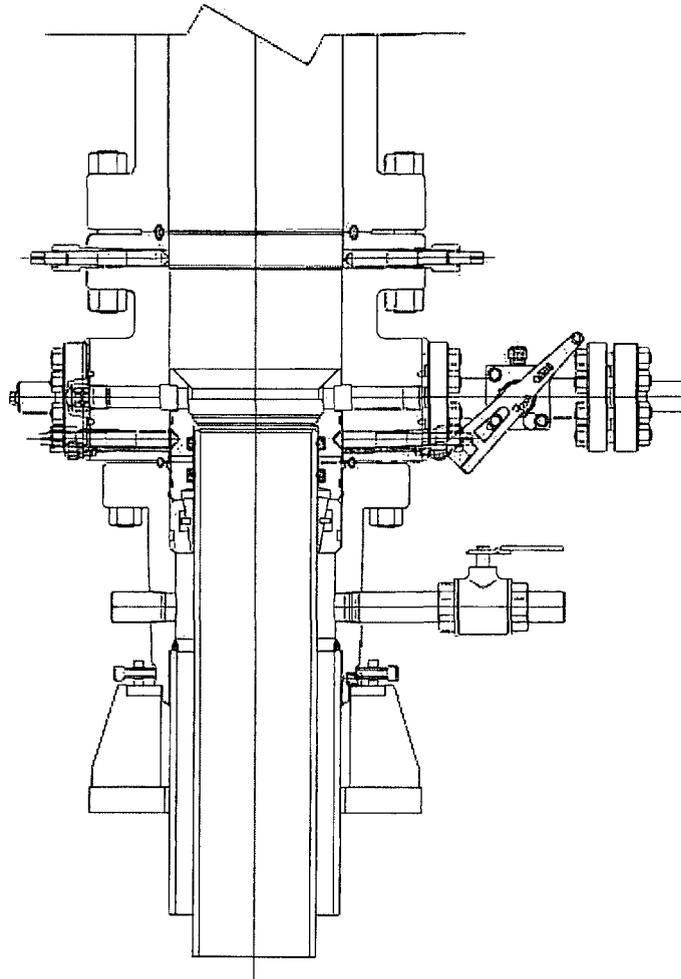
DEVON ENERGY

ARTESIA
S.E.N.M

13 3/8 X 9 5/8

QUOTE LAYOUT
F18648
REF: DM100161737
DM100151315

<p>PRIVATE AND CONFIDENTIAL</p> <p>THIS DOCUMENT AND ALL THE INFORMATION CONTAINED HEREIN ARE THE CONFIDENTIAL AND EXCLUSIVE PROPERTY OF FMC TECHNOLOGIES AND MAY NOT BE REPRODUCED, USED, DISCLOSED OR MADE PUBLIC IN ANY MANNER PRIOR TO EXPRESS WRITTEN AUTHORIZATION BY FMC TECHNOLOGIES. THIS DOCUMENT IS ACCEPTED BY RECIPIENT PURSUANT TO AGREEMENT TO THE FOREGOING AND MUST BE RETURNED UPON DEMAND.</p> <p>MANUFACTURER AGREES THAT ARTICLES MADE IN ACCORDANCE WITH THIS DOCUMENT SHALL BE CONSIDERED FMC TECHNOLOGIES DESIGN AND THAT IDENTICAL ARTICLES OR PARTS THEREOF SHALL NOT BE MANUFACTURED FOR THE USE OR SALE BY MANUFACTURER OR ANY OTHER PERSON WITHOUT THE PRIOR EXPRESS WRITTEN AUTHORIZATION BY FMC TECHNOLOGIES</p>	<p>REVISIONS</p> <p>A 05-08-13</p> <p>B 1-22-14</p> <p>C 5-13-14</p>	<p>DESCRIPTION</p> <p>SURFACE WELLHEAD LAYOUT UNIHEAD, UH-1, SOW, DEVON ENERGY, ODESSA</p>	<p>DRAWN BY</p> <p>K. VU 05-08-13</p>	<p>FMC Technologies</p> <p>DRAWING NUMBER</p> <p>DM100161771-2A</p>
			<p>QUALITY REVIEW</p> <p>Z. MARQUEZ 05-08-13</p>	
			<p>DESIGN REVIEW</p> <p>K. TAHA 05-08-13</p>	
			<p>APPROVED BY</p> <p>R. HAMILTON 05-08-13</p>	



CONTINGENCY MODE

DEVON ENERGY
 ARTESIA
 S.E.N.M
 13 3/8 X 9 5/8

QUOTE LAYOUT
 F18648
 REF: DM100161737
 DM100151315

PRIVATE AND CONFIDENTIAL THIS DOCUMENT AND ALL THE INFORMATION CONTAINED HEREIN ARE THE CONFIDENTIAL AND EXCLUSIVE PROPERTY OF FMC TECHNOLOGIES AND MAY NOT BE REPRODUCED, USED, DISCLOSED, OR MADE PUBLIC IN ANY MANNER PRIOR TO EXPRESS WRITTEN AUTHORIZATION BY FMC TECHNOLOGIES. THIS DOCUMENT IS ACCEPTED BY RECIPIENT PURSUANT TO AGREEMENT TO THE FOREGOING, AND MUST BE RETURNED UPON DEMAND. MANUFACTURER AGREES THAT ARTICLES MADE IN ACCORDANCE WITH THIS DOCUMENT SHALL BE CONSIDERED FMC TECHNOLOGIES DESIGN AND THAT IDENTICAL ARTICLES OR PARTS THEREOF SHALL NOT BE MANUFACTURED FOR THE USE OR SALE BY MANUFACTURER OR ANY OTHER PERSON WITHOUT THE PRIOR EXPRESS WRITTEN AUTHORIZATION BY FMC TECHNOLOGIES.	REVISIONS A 05-08-13 B 1-22-14 C 5-13-14	DESCRIPTION SURFACE WELLHEAD LAYOUT UNIHEAD, UH-1, SOW, DEVON ENERGY, ODESSA	DRAWN BY K. VU 05-08-13	
			DRAFTING REVIEW Z. MARQUEZ 05-08-13	
			CUSTOM REVIEW K. TAHA 05-08-13	
			APPROVED BY R. HAMILTON 05-08-13	
			DRAWING NUMBER DM100161771-2B	

DEVON ENERGY

Project: Eddy County, NM (NAD-83)
 Site: Belgian 15 Fed Com
 Well: 1H
 Wellbore: 1H OH
 Design: Plan #1



Azimuths to Grid North
 True North: -0.30°
 Magnetic North: 7.13°
 Magnetic Field
 Strength: 48168.2snT
 Dip Angle: 59.97°
 Date: 9/15/2014
 Model: BGGM2014



PROJECT DETAILS: Eddy County, NM (NAD-83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone

DESIGN TARGET DETAILS

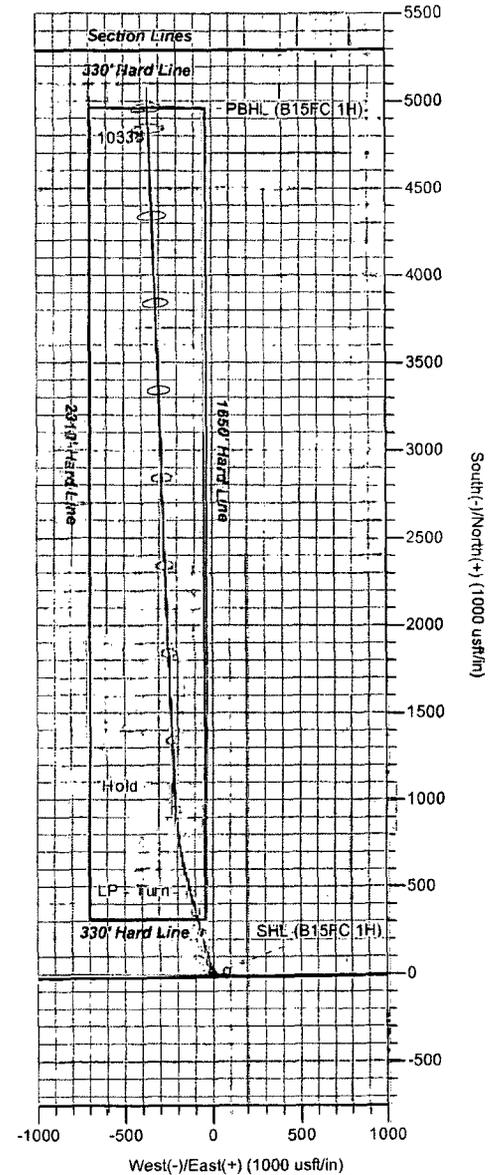
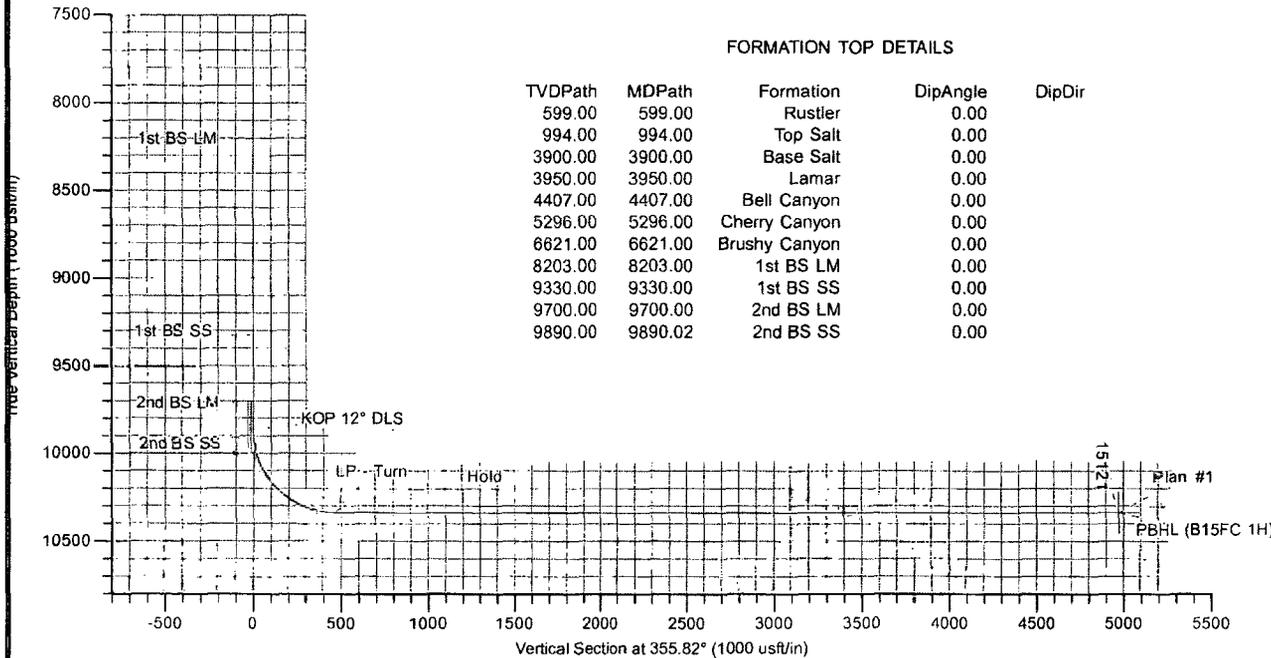
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (B15FC 1H)	0.00	0.00	0.00	409001.70	718045.94	32° 7' 23.297 N	103° 45' 45.087 W
PBHL (B15FC 1H)	10338.00	4960.64	-362.39	413962.34	717683.55	32° 8' 12.405 N	103° 45' 48.996 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	9860.54	0.00	0.00	9860.54	0.00	0.00	0.00	0.00	0.00	KOP 12° DLS
3	10610.54	90.00	345.00	10338.00	461.20	-123.58	12.00	345.00	468.97	LP - Turn
4	11254.45	90.00	357.88	10338.00	1096.59	-219.23	2.00	90.00	1109.65	Hold
5	15121.15	90.00	357.88	10338.00	4960.64	-362.39	0.00	0.00	4973.86	TD

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
599.00	599.00	Rustler	0.00	
994.00	994.00	Top Salt	0.00	
3900.00	3900.00	Base Salt	0.00	
3950.00	3950.00	Lamar	0.00	
4407.00	4407.00	Bell Canyon	0.00	
5296.00	5296.00	Cherry Canyon	0.00	
6621.00	6621.00	Brushy Canyon	0.00	
8203.00	8203.00	1st BS LM	0.00	
9330.00	9330.00	1st BS SS	0.00	
9700.00	9700.00	2nd BS LM	0.00	
9890.00	9890.02	2nd BS SS	0.00	



LEAM DRILLING SYSTEMS LLC
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax 936/756-7595

Plan: Plan #1 (1H/1H OH)
 Belgian 15 Fed Com
 Created By: Brady Deaver Date: 10/49, September 15 2014
 Date: _____
 Approved: _____ Date: _____

NM OIL CONSERVATION
ARTESIA DISTRICT

JUN 15 2015

RECEIVED

DEVON ENERGY

Eddy County, NM (NAD-83)

Belgian 15 Fed Com

1H

1H OH

Plan: Plan #1

Standard Planning Report

15 September, 2014

www.nm.gov



LEAM Drilling Systems LLC
Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	TVD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Project:	Eddy County, NM (NAD-83)	IMD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Site:	Belgian 15 Fed Com-	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	1H OH		
Design:	Plan #1		

Project	Eddy County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Belgian 15 Fed Com				
Site Position:		Northing:	409,001.70 usft	Latitude:	32° 7' 23.297 N
From:	Map	Easting:	718,045.94 usft	Longitude:	103° 45' 45.087 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.30 °

Well	1H, 2nd BS SS					
Well Position	+N-S	0.00 usft	Northing:	409,001.70 usft	Latitude:	32° 7' 23.297 N
	+E-W	0.00 usft	Easting:	718,045.94 usft	Longitude:	103° 45' 45.087 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	3,387.90 usft	Ground Level:	3,362.90 usft

Wellbore	1H OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	9/15/2014	7.43	59.97	48,168

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.00	0.00	0.00	355.82	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Dogleg Rate (%/100usft)	Build Rate (%/100usft)	Turn Rate (%/100usft)	TFQ (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,860.54	0.00	0.00	9,860.54	0.00	0.00	0.00	0.00	0.00	0.00	
10,610.54	90.00	345.00	10,338.01	461.20	-123.58	12.00	12.00	0.00	345.00	
11,254.45	90.00	357.88	10,338.00	1,096.59	-219.23	2.00	0.00	2.00	90.00	
15,121.15	90.00	357.88	10,338.00	4,960.64	-362.39	0.00	0.00	0.00	0.00	PBHL (B15FC 1H)

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	TVD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Site:	Belgian 15 Fed Corn	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	1H OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (B15FC 1H)										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
599.00	0.00	0.00	599.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rüstler										
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
994.00	0.00	0.00	994.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt										
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Salt										
3,950.00	0.00	0.00	3,950.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lamar										
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,407.00	0.00	0.00	4,407.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	TVD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Site:	Belgian 15 Fed Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	1H OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Bell Canyon									
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,296.00	0.00	0.00	5,296.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon									
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,621.00	0.00	0.00	6,621.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,203.00	0.00	0.00	8,203.00	0.00	0.00	0.00	0.00	0.00	0.00
1st BS LM									
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00

LEAM Drilling Systems LLC
Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well: 1H
Company:	DEVON ENERGY	TVD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Site:	Belgian 15 Fed Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	1H OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,330.00	0.00	0.00	9,330.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1st BS SS										
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2nd BS LM										
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,860.54	0.00	0.00	9,860.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP 12° DLS										
9,875.00	1.74	345.00	9,875.00	0.21	-0.06	0.22	12.00	12.00	0.00	0.00
9,890.02	3.54	345.00	9,890.00	0.88	-0.24	0.89	12.00	12.00	0.00	0.00
2nd BS SS										
9,900.00	4.74	345.00	9,899.96	1.57	-0.42	1.60	12.00	12.00	0.00	0.00
9,925.00	7.74	345.00	9,924.80	4.20	-1.12	4.27	12.00	12.00	0.00	0.00
9,950.00	10.74	345.00	9,949.48	8.07	-2.16	8.21	12.00	12.00	0.00	0.00
9,975.00	13.74	345.00	9,973.91	13.19	-3.53	13.41	12.00	12.00	0.00	0.00
10,000.00	16.74	345.00	9,998.03	19.53	-5.23	19.86	12.00	12.00	0.00	0.00
10,025.00	19.74	345.00	10,021.77	27.09	-7.26	27.55	12.00	12.00	0.00	0.00
10,050.00	22.74	345.00	10,045.07	35.83	-9.60	36.44	12.00	12.00	0.00	0.00
10,075.00	25.74	345.00	10,067.86	45.75	-12.26	46.52	12.00	12.00	0.00	0.00
10,100.00	28.74	345.00	10,090.09	56.80	-15.22	57.75	12.00	12.00	0.00	0.00
10,125.00	31.74	345.00	10,111.68	68.95	-18.48	70.12	12.00	12.00	0.00	0.00
10,150.00	34.74	345.00	10,132.59	82.19	-22.02	83.57	12.00	12.00	0.00	0.00
10,175.00	37.74	345.00	10,152.75	96.46	-25.85	98.09	12.00	12.00	0.00	0.00
10,200.00	40.74	345.00	10,172.12	111.73	-29.94	113.62	12.00	12.00	0.00	0.00
10,225.00	43.74	345.00	10,190.62	127.96	-34.29	130.12	12.00	12.00	0.00	0.00
10,250.00	46.74	345.00	10,208.23	145.11	-38.88	147.55	12.00	12.00	0.00	0.00
10,275.00	49.74	345.00	10,224.88	163.12	-43.71	165.87	12.00	12.00	0.00	0.00
10,300.00	52.74	345.00	10,240.53	181.94	-48.75	185.01	12.00	12.00	0.00	0.00
10,325.00	55.74	345.00	10,255.14	201.53	-54.00	204.93	12.00	12.00	0.00	0.00
10,350.00	58.74	345.00	10,268.67	221.84	-59.44	225.58	12.00	12.00	0.00	0.00
10,375.00	61.74	345.00	10,281.08	242.80	-65.06	246.89	12.00	12.00	0.00	0.00
10,400.00	64.74	345.00	10,292.33	264.36	-70.83	268.81	12.00	12.00	0.00	0.00
10,425.00	67.74	345.00	10,302.41	286.45	-76.76	291.29	12.00	12.00	0.00	0.00
10,450.00	70.74	345.00	10,311.27	309.03	-82.80	314.24	12.00	12.00	0.00	0.00
10,475.00	73.74	345.00	10,318.90	332.03	-88.97	337.62	12.00	12.00	0.00	0.00
10,500.00	76.74	345.00	10,325.27	355.37	-95.22	361.37	12.00	12.00	0.00	0.00
10,525.00	79.74	345.00	10,330.36	379.01	-101.56	385.40	12.00	12.00	0.00	0.00
10,550.00	82.74	345.00	10,334.17	402.88	-107.95	409.67	12.00	12.00	0.00	0.00
10,575.00	85.74	345.00	10,336.68	426.90	-114.39	434.10	12.00	12.00	0.00	0.00
10,600.00	88.74	345.00	10,337.89	451.02	-120.85	458.62	12.00	12.00	0.00	0.00
10,610.54	90.00	345.00	10,338.01	461.20	-123.58	468.97	12.00	12.00	0.00	0.00
LP Turn										
10,700.00	90.00	346.79	10,338.01	547.95	-145.38	557.09	2.00	0.00	2.00	2.00
10,800.00	90.00	348.79	10,338.01	645.69	-166.53	656.10	2.00	0.00	2.00	2.00
10,900.00	90.00	350.79	10,338.00	744.10	-184.25	755.55	2.00	0.00	2.00	2.00
11,000.00	90.00	352.79	10,338.00	843.07	-198.53	855.29	2.00	0.00	2.00	2.00
11,100.00	90.00	354.79	10,338.00	942.48	-209.35	955.22	2.00	0.00	2.00	2.00
11,200.00	90.00	356.79	10,338.00	1,042.20	-216.70	1,055.22	2.00	0.00	2.00	2.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	TVD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Project:	Eddy County NM (NAD-83)	MD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Site:	Belgian 15 Fed Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	1H:OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,254.45	90.00	357.88	10,338.00	1,096.59	-219.23	1,109.65	2.00	0.00	2.00
Hold									
11,300.00	90.00	357.88	10,338.00	1,142.11	-220.91	1,155.17	0.00	0.00	0.00
11,400.00	90.00	357.88	10,338.00	1,242.04	-224.62	1,255.11	0.00	0.00	0.00
11,500.00	90.00	357.88	10,338.00	1,341.97	-228.32	1,355.04	0.00	0.00	0.00
11,600.00	90.00	357.88	10,338.00	1,441.90	-232.02	1,454.98	0.00	0.00	0.00
11,700.00	90.00	357.88	10,338.00	1,541.84	-235.72	1,554.91	0.00	0.00	0.00
11,800.00	90.00	357.88	10,338.00	1,641.77	-239.43	1,654.85	0.00	0.00	0.00
11,900.00	90.00	357.88	10,338.00	1,741.70	-243.13	1,754.78	0.00	0.00	0.00
12,000.00	90.00	357.88	10,338.00	1,841.63	-246.83	1,854.72	0.00	0.00	0.00
12,100.00	90.00	357.88	10,338.00	1,941.56	-250.53	1,954.66	0.00	0.00	0.00
12,200.00	90.00	357.88	10,338.00	2,041.49	-254.24	2,054.59	0.00	0.00	0.00
12,300.00	90.00	357.88	10,338.00	2,141.42	-257.94	2,154.53	0.00	0.00	0.00
12,400.00	90.00	357.88	10,338.00	2,241.36	-261.64	2,254.46	0.00	0.00	0.00
12,500.00	90.00	357.88	10,338.00	2,341.29	-265.34	2,354.40	0.00	0.00	0.00
12,600.00	90.00	357.88	10,338.00	2,441.22	-269.05	2,454.33	0.00	0.00	0.00
12,700.00	90.00	357.88	10,338.00	2,541.15	-272.75	2,554.27	0.00	0.00	0.00
12,800.00	90.00	357.88	10,338.00	2,641.08	-276.45	2,654.20	0.00	0.00	0.00
12,900.00	90.00	357.88	10,338.00	2,741.01	-280.15	2,754.14	0.00	0.00	0.00
13,000.00	90.00	357.88	10,338.00	2,840.95	-283.86	2,854.08	0.00	0.00	0.00
13,100.00	90.00	357.88	10,338.00	2,940.88	-287.56	2,954.01	0.00	0.00	0.00
13,200.00	90.00	357.88	10,338.00	3,040.81	-291.26	3,053.95	0.00	0.00	0.00
13,300.00	90.00	357.88	10,338.00	3,140.74	-294.96	3,153.88	0.00	0.00	0.00
13,400.00	90.00	357.88	10,338.00	3,240.67	-298.67	3,253.82	0.00	0.00	0.00
13,500.00	90.00	357.88	10,338.00	3,340.60	-302.37	3,353.75	0.00	0.00	0.00
13,600.00	90.00	357.88	10,338.00	3,440.53	-306.07	3,453.69	0.00	0.00	0.00
13,700.00	90.00	357.88	10,338.00	3,540.47	-309.77	3,553.63	0.00	0.00	0.00
13,800.00	90.00	357.88	10,338.00	3,640.40	-313.48	3,653.56	0.00	0.00	0.00
13,900.00	90.00	357.88	10,338.00	3,740.33	-317.18	3,753.50	0.00	0.00	0.00
14,000.00	90.00	357.88	10,338.00	3,840.26	-320.88	3,853.43	0.00	0.00	0.00
14,100.00	90.00	357.88	10,338.00	3,940.19	-324.58	3,953.37	0.00	0.00	0.00
14,200.00	90.00	357.88	10,338.00	4,040.12	-328.29	4,053.30	0.00	0.00	0.00
14,300.00	90.00	357.88	10,338.00	4,140.05	-331.99	4,153.24	0.00	0.00	0.00
14,400.00	90.00	357.88	10,338.00	4,239.99	-335.69	4,253.17	0.00	0.00	0.00
14,500.00	90.00	357.88	10,338.00	4,339.92	-339.39	4,353.11	0.00	0.00	0.00
14,600.00	90.00	357.88	10,338.00	4,439.85	-343.09	4,453.05	0.00	0.00	0.00
14,700.00	90.00	357.88	10,338.00	4,539.78	-346.80	4,552.98	0.00	0.00	0.00
14,800.00	90.00	357.88	10,338.00	4,639.71	-350.50	4,652.92	0.00	0.00	0.00
14,900.00	90.00	357.88	10,338.00	4,739.64	-354.20	4,752.85	0.00	0.00	0.00
15,000.00	90.00	357.88	10,338.00	4,839.57	-357.90	4,852.79	0.00	0.00	0.00
15,100.00	90.00	357.88	10,338.00	4,939.51	-361.61	4,952.72	0.00	0.00	0.00
15,121.15	90.00	357.88	10,338.00	4,960.64	-362.39	4,973.86	0.00	0.00	0.00
TD: PBHL (B15FC 1H)									

LEAM Drilling Systems LLC
 Planning Report

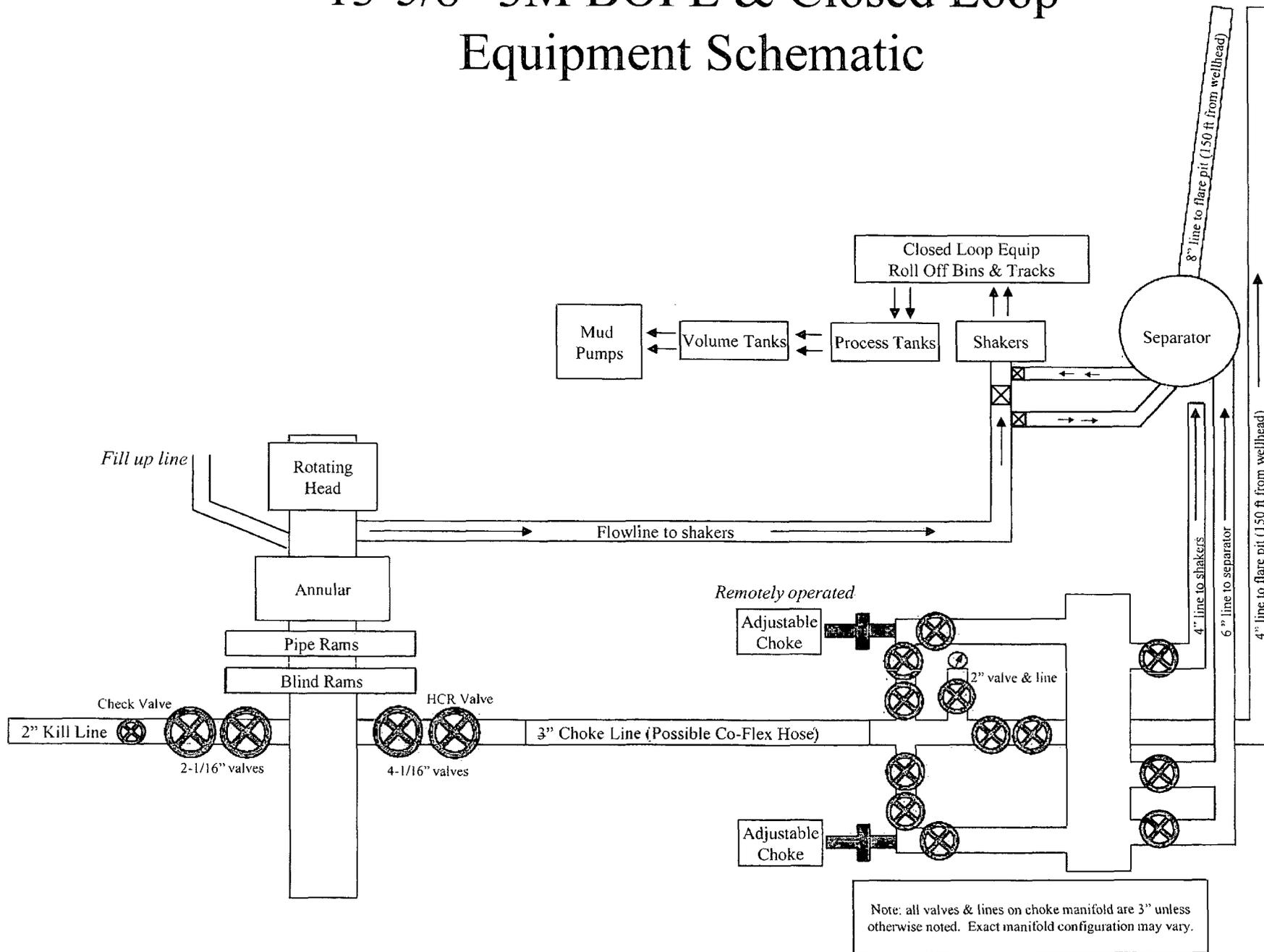
Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	DEVON ENERGY	TVD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3362.9' GL + 25' RKB @ 3387.90usft
Site:	Belgian 15 Fed Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	1H OH		
Design:	Plan #1		

Design Targets										
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/S (usft)	+E/W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (B15FC 1H)		0.00	0.00	0.00	0.00	0.00	409,001.70	718,045.94	32° 7' 23.297 N	103° 45' 45.087 W
- plan hits target center										
- Point										
PBHL (B15FC 1H)		0.00	0.00	10,338.00	4,960.64	-362.39	413,962.34	717,683.55	32° 8' 12.405 N	103° 45' 48.996 W
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
599.00	599.00	Rustler		0.00		
994.00	994.00	Top Salt		0.00		
3,900.00	3,900.00	Base Salt		0.00		
3,950.00	3,950.00	Lamar		0.00		
4,407.00	4,407.00	Bell Canyon		0.00		
5,296.00	5,296.00	Cherry Canyon		0.00		
6,621.00	6,621.00	Brushy Canyon		0.00		
8,203.00	8,203.00	1st BS LM		0.00		
9,330.00	9,330.00	1st BS SS		0.00		
9,700.00	9,700.00	2nd BS LM		0.00		
9,890.02	9,890.00	2nd BS SS		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/S (usft)	+E/W (usft)		
9,860.54	9,860.54	0.00	0.00	KOP 12" DLS	
10,610.54	10,338.01	461.20	-123.58	LP - Turn	
11,254.45	10,338.00	1,096.59	-219.23	Hold	
15,121.15	10,338.00	4,960.64	-362.39	TD	

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



NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, L.P.
Belgian 15 Fed Com 1H

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 filings will be in operable condition to withstand a minimum of 3000psi working pressure.
4. All fittings will be flanged.
5. A fill bore safety valve tested to a minimum of 3000psi 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.



Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly. It is good practice to use lifting & safety equipment but not mandatory.

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittonmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com



PACKING LIST



**Midwest Hose
& Specialty, Inc.**

Ship From
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Road
Oklahoma City OK 73129
USA

Ship To
Cactus Drilling Co., LLC
8300 SW 15th
Oklahoma City OK
USA

Bill To
Cactus Drilling Co., LLC
ATTN: Accounts Payable
8300 SW 15th Street
Oklahoma City OK 73128-9594
USA

Payment Terms	15 10 - NET 30 DAYS (NET30)
Ship Method	BELIVR
Freight Terms	Prepaid
Customer Ship	CACTUS01
Cartons	1
Weight	0.00
Tracking Nbrs	

Shipping Notes:

Cost phone: 577-5347
Written by: MSMILEY

Customer PO: JEFF WILBUR R-129 15062

Mark Number: ASSET#ML3387

Packing List #: 00137890

INVOICE REQUIREMENTS:

1. Purchase Order Number and Rig # Required
2. Proof of Delivery Required

*****GIVE ALL PACKING LISTS TO MENDI JACKSON TO APPROVE PRIOR TO DELIVERY**

Richard
OK papers attach

Received By: *[Signature]*
Date Received: 2-8-12

Print Name: RICHARD
Work Phone #: _____

LINE	ITEM / DESCRIPTION	UOM	QUANTITY ORDERED	QUANTITY PREV SHIPPED	QUANTITY BACK ORDERED	QUANTITY THIS SHIPMENT
0010	CR64-SS-10K-6410K-6410K-35.00' FT-W/LIFTER4 Choke & Mill 10K with 10K Flanges	EA	1.00	0.00	0.00	1.00
					Unit Price: 29500.0000	Est. Price: 29500.00
	PLI: 00137890 SOI: 00116983	Picked by: DMCLEMORE Shipped by: AMARTIN			AMOUNT	29,500.00
					FREIGHT/INSUR/BUNDLE	0.00
					SALES TAX	\$2,470.63
					TOTAL	31,970.63



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

February 7, 2012

Customer: Cactus

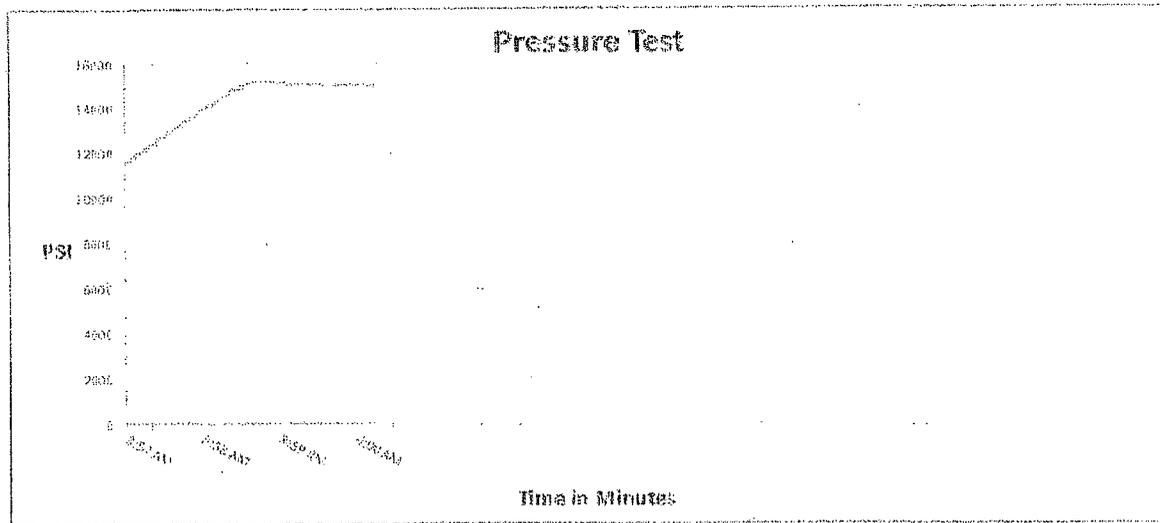
Pick Ticket #: 137350

Hose Specifications

Hose Type	Length
E	35'
I.D.	Q.D.
4"	6 7/8"
Working Pressure	Burst Pressure
2500 P.S.I.	Standard Hydrostatic Test Series

Verification

Type of End Use	Inspection Method
4 1/2" SDR	Surge
Min. Size	Final O.D.
6.50	6.50
Hose Serial #	Hose Assembly Serial #
715	137350



Test Pressure
15000 PSI

Time Held at Test Pressure
1 3/4 Minutes

Actual Burst Pressure

End Pressure
15279 PSI

Comments: Hose assembly pressure tested with water @ ambient temperature.

Tested By: *Donald McLamb*

Approved By: *Kim Thomas*



Midwest Hose
& Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT		
Customer: CACTUS		Customer P.O. Number: R-129
HOSE SPECIFICATIONS		
Type: Rotary / Vibrator Hose C & K/API 7K	Hose Length: 35 FEET	
I.D. 4 INCHES	O.D. 6 7/64 INCHES	
WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE
7,500 PSI	15,000 PSI	N/A PSI
COUPLINGS		
Part Number	Stem Lot Number	Ferrule Lot Number
E4.0X64WB	LOT 10-10	LOT 10-10
E4.0X64WB	LOT 10-10	LOT 10-10
Type of Coupling: Swage-It	Die Size: 6.56 INCHES	
PROCEDURE		
<i>Hose assembly pressure tested with water at ambient temperature.</i>		
TIME HELD AT TEST PRESSURE	ACTUAL BURST PRESSURE:	
1 3/4 MIN.	N/A PSI	
Hose Assembly Serial Number: 137800	Hose Serial Number: 7718	
Comments:		
Date: 2/7/2012	Tested: <i>[Signature]</i>	Approved: <i>[Signature]</i>



Cactus Drilling Company, L.L.C.
 8300 SW 15TH
 P.O. Box 270848
 Oklahoma City, OK 73128-9594
 405-577-5347 fax 405-577-9306

Purchase Order No. **15062**
 Date **06-Feb-12**

PURCHASE ORDER

Vendor		Ship To	
Name	Midwest Hose	Name	Cactus Drilling Company, L.L.C.
Attn:	Mendi Jackson	Attn:	
Address	3312 I-35 Service Road	Address	8300 SW 15TH
City	OKC St. OK Zip 73129	City	Oklahoma City St. OK Zip 73128
Phone	405-670-6718	Phone	405-577-5347

Qty	Units	Description	Unit Price	Total
1	EA	CK64-SS-10K-6410K-6410K-35.00' FT-W/LIFTER4 Choke & Kill 10K with 10K Flanges	\$29,500.00	\$29,500.00
<p><i>SO# 116983</i></p> <p><i>file</i></p>				
ORDER# 00132487				

For Cactus Use	
Cap. or Exp.	EXP <input type="checkbox"/> Issued <input type="checkbox"/>
Equipment	BOP EQUIP.
Rig No.	129
Asset No.	M13387
Job No.	

Sub Total	\$29,500.00
Shipping & Handling	
Taxes	
TOTAL	\$29,500.00

Approval

Josh Simons Ron Tyson

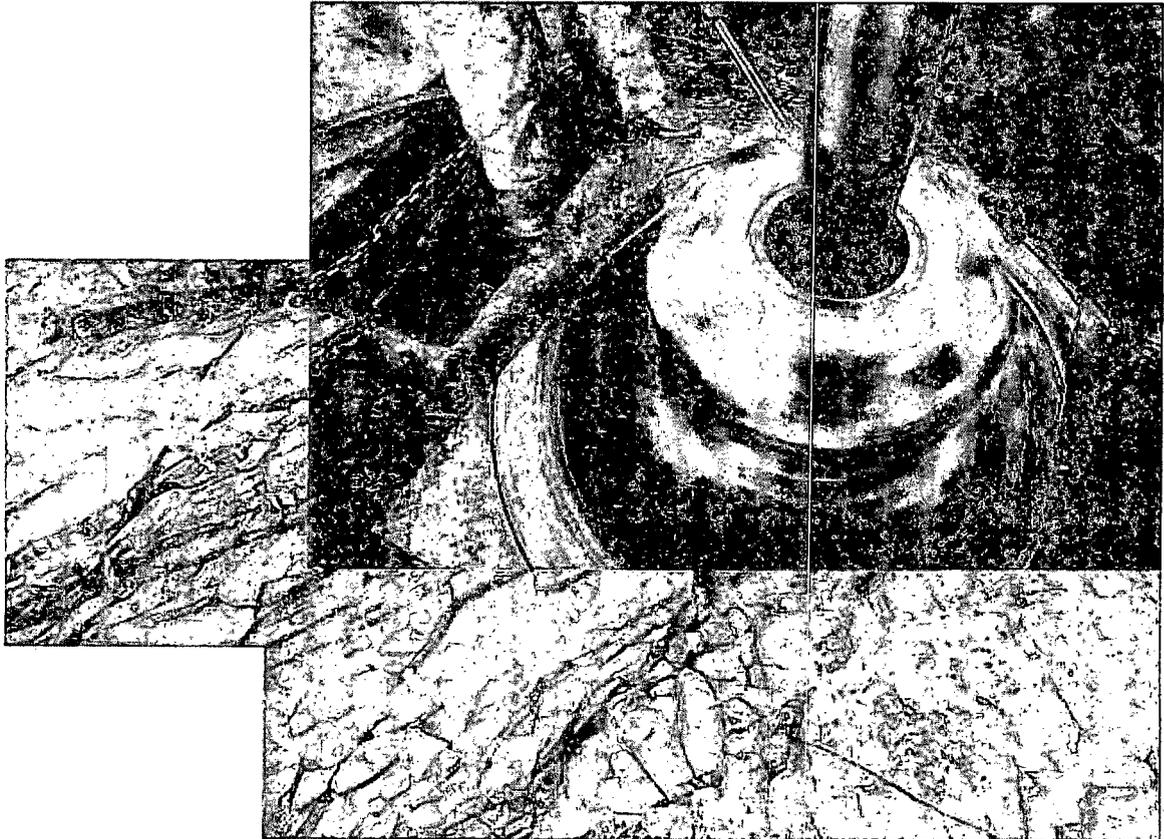
Shipping Date

Notes/Remarks

Please include this purchase order number on your invoice



Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

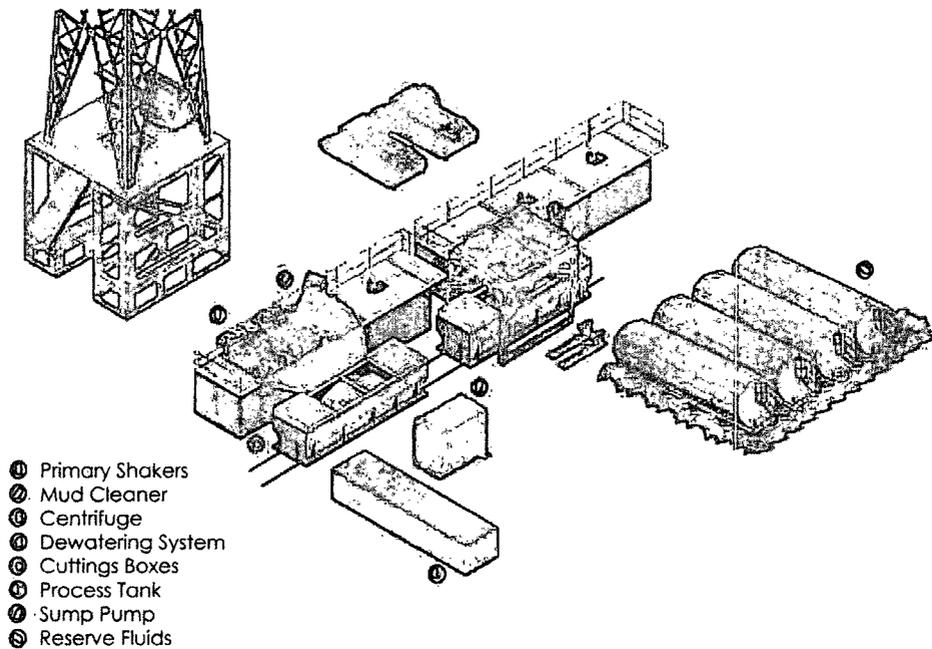
II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Closed Loop Schematic



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

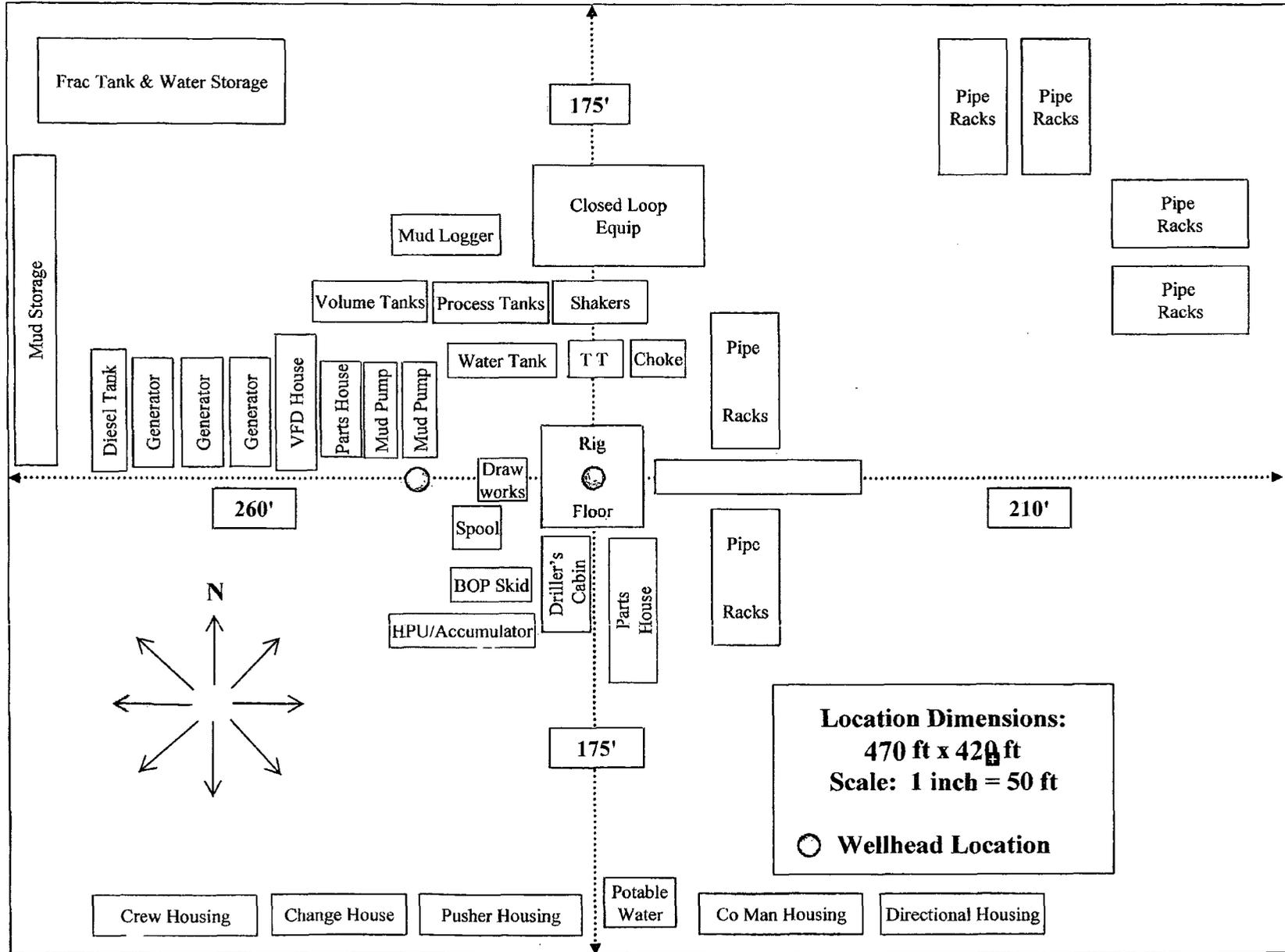
A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

H&P Flex Rig Location Layout

2 Well Pad





**Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015**

Hydrogen Sulfide (H₂S) Contingency Plan

For

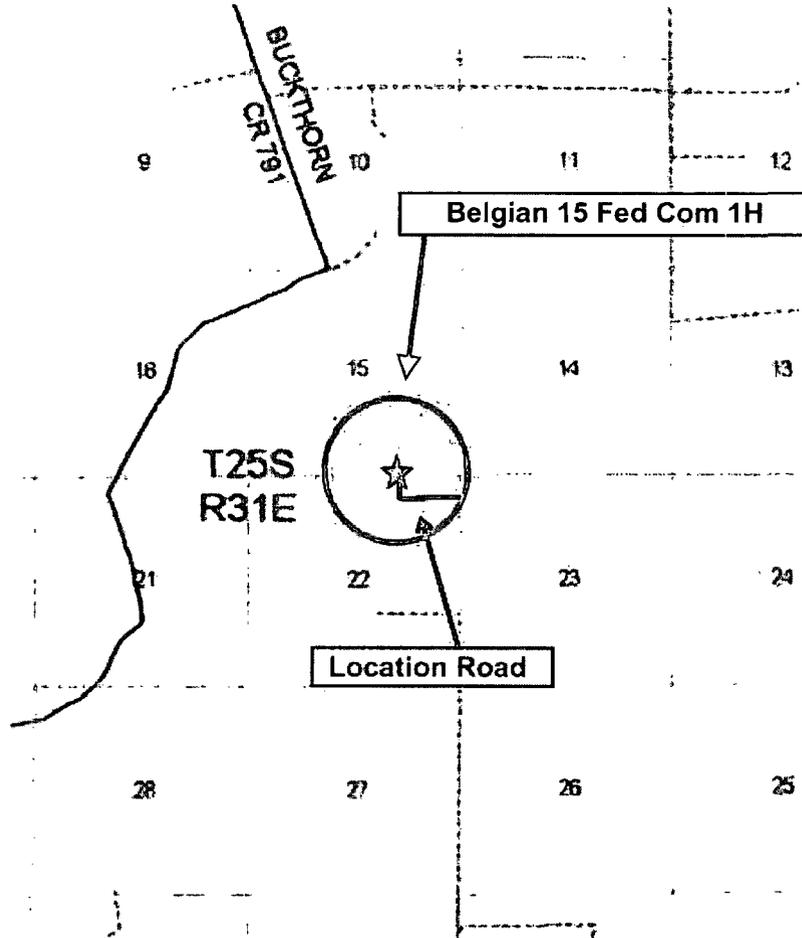
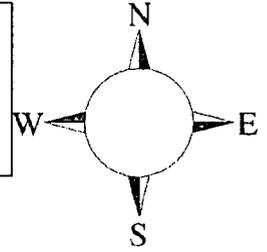
Belgian 15 Fed Com 1H

**Sec-15, T-25S R-31E
14' FSL & 1610' FEL
LAT. = 32.1231380'N (NAD83)
LONG = 103.7625241'W**

Eddy County NM

Belgian 15 Fed Com 1H

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



Assumed 100 ppm 3000' ()
100 ppm H₂S 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 road, West then Northwest on lease road. Crews should then block entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, 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 H₂S 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 H₂S, 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 (SO₂). 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 H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H₂S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO₂	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 (H₂S) 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 (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S 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 H₂S 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 H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S 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 H₂S.

1. Well Control Equipment

- A. Flare line
- B. Choke manifold – (with Remotely Operated Choke)
- 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.
- E. Mud/Gas Separator

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. H₂S detection and monitoring equipment:

- A. Portable H₂S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H₂S levels of 20 PPM are reached. These units are usually capable of detecting SO₂, which is a byproduct of burning H₂S.

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 H₂S circulated to surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

6. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
- B. All elastomers used for packing and seals shall be H₂S 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 H₂S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

Devon Energy Corp. Company Call List

<u>Artesia (575)</u>	<u>Cellular</u>	<u>Office</u>	<u>Home</u>
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

<u>Lea County (575)</u>	<u>Hobbs</u>	
	Lea County Communication Authority	393-3981
	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

<u>Eddy County (575)</u>	<u>Carlsbad</u>	
	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
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center (Washington, DC)	(800) 424-8802

Emergency Services

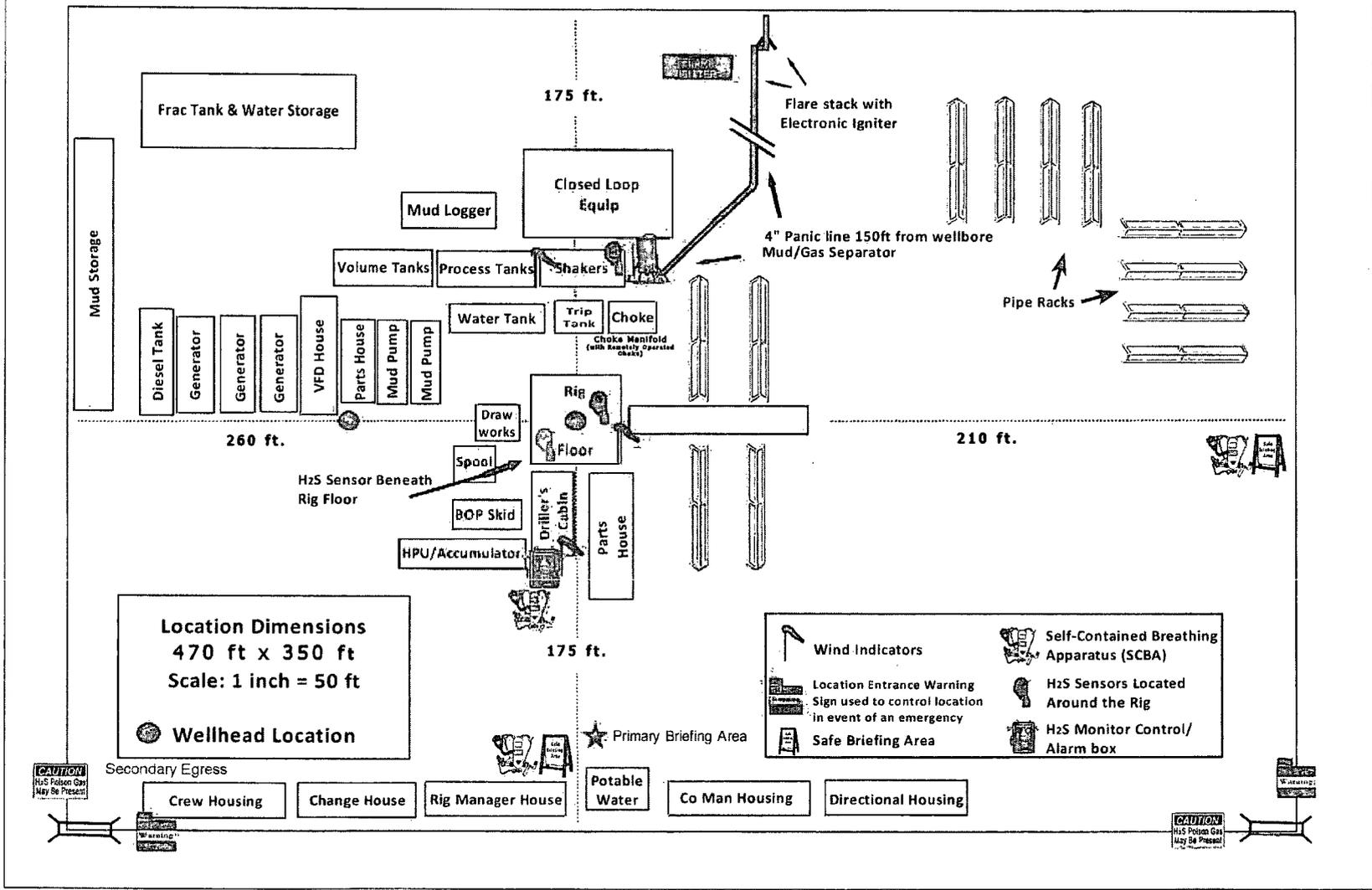
	Boots & Coots IWC	(800)-256-9688 or (281) 931-8884
	Cudd Pressure Control.....	(915) 699-0139 or (915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services.....	(575) 746-3569
<i>Give</i>	Native Air – Emergency Helicopter – Hobbs.....	(575) 392-6429
<i>GPS</i>	Flight For Life - Lubbock, TX	(806) 743-9911
<i>position:</i>	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
Dave Small





Devon Energy - Well Pad Rig Location Layout Safety Equipment Location



Location Dimensions
470 ft x 350 ft
Scale: 1 inch = 50 ft

Wellhead Location

- Wind Indicators
- Self-Contained Breathing Apparatus (SCBA)
- H2S Sensors Located Around the Rig
- Location Entrance Warning Sign used to control location in event of an emergency
- Safe Briefing Area
- H2S Monitor Control/ Alarm box

Secondary Egress

CAUTION H2S Poison Gas May Be Present

Crew Housing

Change House

Rig Manager House

Potable Water

Co Man Housing

Directional Housing

CAUTION H2S Poison Gas May Be Present



Proposed Interim Site Reclamation

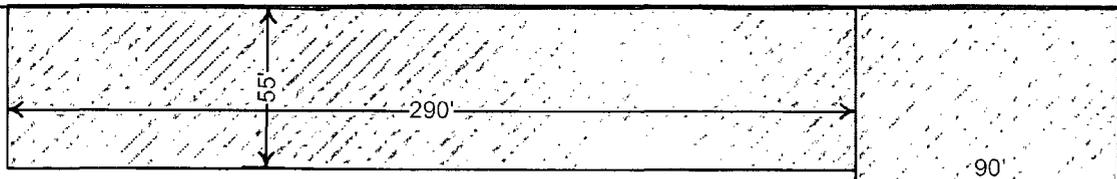
Devon Energy Production Co.
Belgian 15 Fed Com 1H
Sec 15-T25S-R31E
Eddy County, NM



350'

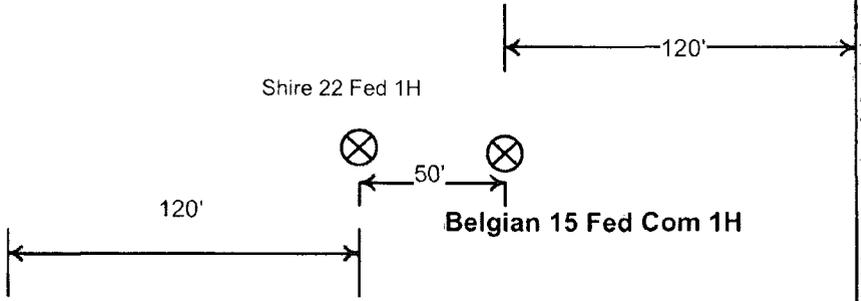
Vessels

Topsoil Area



Shire 22 Fed 1H

Belgian 15 Fed Com 1H



Tanks

470'



Proposed Reclamation Area



Scale: 1 in = 60ft.

Proposed Access Road

SURFACE USE PLAN

Devon Energy Production Company, L.P.
Begin 15 Fed Com 1H

1. Existing Roads:

- a. The well site and elevation plat for the proposed well are reflected on the "Site Map". The well was staked by Madron Surveying, Inc.
- b. All roads into the location are depicted on the "Vicinity Map". The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.
- c. Directions to Location: From the intersection of NM Highway 128 (Jal Hwy) and Orla Road (CR-1) go South on Orla Road 6.2 miles to Monsanto Road on right go West on Monsanto Road 2.0 miles to road intersection go North (right) 2.8 miles to road intersection North, South & Southwest go Southwest 1.35 miles about 200' +/- past a cattle guard turn right over another cattle guard, go West 0.25 miles on right follow flags 332 LF. North to Southeast corner of pad.

2. New or Reconstructed Access Roads:

- a. The "Site Map" shows new constructed access road, which will be approximately 332 LF from the existing Lease road.
- b. The maximum driving width of the access road will be 14 feet. The maximum width of surface disturbance when constructing the access road will not exceed 25 feet. The road will be crowned and ditched with 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 3 feet wide with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.
- c. No cattle guards, grates or fence cuts will be required. No turnouts are planned.

3. Location of Existing Wells:

The attached "One Mile Radius Map" shows all existing and proposed wells within a one-mile radius of the proposed location.

4. Location of Existing and/or Proposed Production Facilities:

- a. In the event the well is found productive, a tank battery and necessary production equipment will be installed onsite on Sec. 15 - 25S - T31E. See "Interim Reclamation Diagram".
- b. If necessary, the well will be operated by means of an electric prime mover. If electric power poles are needed, a plat and a sundry notice will be filed with your office.
- c. All flow lines will adhere to API standards.
- d. If the well is productive, rehabilitation plans are as follows:
 - i. A closed loop system will be utilized.
 - ii. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

5. Location and Types of Water Supply:

This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads described and depicted on the "Vicinity Map". On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If a poly pipeline is used, the size, distance, and map showing route will be provided to the BLM via sundry notice.

6. Construction Materials:

Obtaining caliche: One primary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means caliche will be obtained from the actual well site. Actual amounts will vary for each pad. The procedure below has been approved by BLM personnel:

- a. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
- b. Subsoil is removed and stockpiled within the surveyed well pad.
- c. When caliche is found, material will be stock piled within the pad site to build the location and road.
- d. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
- e. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced.
- f. Neither caliche, nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat.

In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or land.

7. Methods of Handling Waste Material:

- a. Drill cuttings will be safely contained in a closed loop system and disposed of properly at a NMOCD approved disposal site.
- b. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary landfill.
- c. The supplier will pick up salts remaining after completion of well, including broken sacks.
- d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- e. Remaining drilling fluids will be sent to a closed loop system. Water produced during completion will be put into a closed loop system. Oil and condensate produced will be put into a storage tank and sold.
- f. Disposal of fluids to be transported by the following companies:
 - i. American Production Service Inc, Odessa TX
 - ii. Gandy Corporation, Lovington NM
 - iii. I & W Inc, Loco Hill NM

iv. Jims Water Service of Co Inc, Denver CO

8. **Ancillary Facilities:** No campsite or other facilities will be constructed as a result of this well.
9. **Well Site Layout**
 - a. The Rig Location Layout attachment shows the proposed well site layout and pad dimensions.
 - b. The Rig Location Layout attachment proposes location of sump pits and living facilities.
 - c. Mud pits in the active circulating system will be steel pits.
 - d. A closed loop system will be utilized.
 - e. If a pit or closed loop system is utilized, Devon will provide a copy of the Design Plan to the BLM.
10. **Plans for Surface Reclamation:**
 - a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.
 - b. The location and road will be rehabilitated as recommended by the BLM.
 - c. If the well is deemed commercially productive, caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.
 - d. All disturbed areas not needed for active support of production operations will undergo interim reclamation. The portions of the cleared well site not needed for operational and safety purposes will be recontoured to a final or intermediate contour that blends with the surrounding topography as much as possible. Topsoil will be respread over areas not needed for all-weather operations.
11. **Surface Ownership**
 - a. The surface is owned by the US Government and is administered 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.
 - b. The proposed road routes and the surface location will be restored as directed by the BLM.
12. **Other Information:**
 - a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sage bush, yucca and miscellaneous weeds. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
 - b. There is no permanent or live water in the general proximity of the location.
 - c. There are no dwellings within 2 miles of location.

- d. A Cultural Resources Examination will be completed by the Permian Basin Cultural Resource Fund in lieu of being required to conduct a Class III Survey for cultural resources associated with their project within the BLM office in Carlsbad, New Mexico.

13. Bond Coverage:

Bond Coverage is Nationwide; Bond # is CO-1104 & NMB-000801.

Operators Representative:

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

Dan McCorkel - Operations Engineer
Devon Energy Production Company, L.P.
333 W. Sheridan
Oklahoma City, OK 73102-5010
(405) 228-7528 (office)
(405) 443-8697 (Cellular)

Don Mayberry - Superintendent
Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250
(575) 748-3371 (office)
(575) 746-4945 (home)

Form NM 8140-9
(March 2008)

United States Department of the Interior
Bureau of Land Management
New Mexico State Office

Permian Basin Cultural Resource Mitigation Fund

The company shown below has agreed to contribute funding to the Permian Basin Cultural Resource Fund in lieu of being required to conduct a Class III survey for cultural resources associated with their project. This form verifies that the company has elected to have the Bureau of Land Management (BLM) follow the procedures specified within the Memorandum of Agreement (MOA) concerning improved strategies for managing historic properties within the Permian Basin, New Mexico, for the undertaking rather than the Protocol to meet the agency's Section 106 obligations.

Company Name: Devon Energy Production Co., LP

Address: 333 W. Sheridan, OKC, OK 73102

Project description: Application for Permit to Drill

Cultural Resource Inventory for the Belgian 15 Fed Com 1H proposed well location and access road.

Application for Permit to Drill (wells and immediate environment)

- \$1552.00 well for the pad and a ¼ mile of road**
- Anything over ¼ mile of road is \$0.18/linear foot**
- Total arch cost \$1,463.00**

5,280 = 1 mile => ¼ = 1,320
Total access road: 332' - ¼ mile of road included (1320) = 0' over 1320'
0' x \$0.20 = \$0.00
(See above & see well pad topo)

T. 25S, R. 31E, Section 15 NMPM, Eddy County, New Mexico

Amount of contribution: \$ 1552.00

****This well is to be pad-drilled with the Shire 22 Fed 1H****

Provisions of the MOA:

- A. No new Class III inventories are required of industry within the Project Area for those projects where industry elects to contribute to the mitigation fund.
- B. The amount of funds contributed was derived from the rate schedule established within Appendix B of the MOA. The amount of the funding contribution acknowledged on this form reflects those rates.
- C. The BLM will utilize the funding to carry out a program of mitigation at high-priority sites whose study is needed to answer key questions identified within the Regional Research Design.
- D. Donating to the fund is voluntary. Industry acknowledges that it is aware it has the right to pay for Class III survey rather than contributing to the mitigation fund, and that it must avoid or fund data recovery at those sites already recorded that are eligible for nomination to the National Register or whose eligibility is unknown and that any such payments are independent of the mitigation funds established by this MOA.
- E. Previously recorded archeological sites determined eligible for nomination to the National Register or whose eligibility remains undetermined must be avoided or mitigated.
- F. If any skeletal remains that might be human or funerary objects are discovered by any activities, the land-use applicant will cease activities in the area of discovery, protect the remains, and notify the BLM within 24 hours. The BLM will determine the appropriate treatment of the remains in consultation with culturally affiliated Indian Tribe(s) and lineal descendents. Applicants will be required to pay for treatment of the cultural items independent and outside of the mitigation fund.

Trina C. Couch
Company-Authorized Officer

10/21/2014
Date

BLM-Authorized Officer

Date

JUN 15 2015

**PECOS DISTRICT
CONDITIONS OF APPROVAL**

RECEIVED

OPERATOR'S NAME:	Devon Energy Production Company, L.P.
LEASE NO.:	NMNM-0503
WELL NAME & NO.:	Belgian 15 Fed Com 1H
SURFACE HOLE FOOTAGE:	0014' FSL & 1610' FEL
BOTTOM HOLE FOOTAGE:	0330' FNL & 1980' FEL
LOCATION:	Section 15, T. 25 S., R 31 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.

- General Provisions**
- Permit Expiration**
- Archaeology, Paleontology, and Historical Sites**
- Noxious Weeds**
- Special Requirements**
 - Communitization Agreement
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
- Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- Road Section Diagram**
- Drilling**
 - Cement Requirements
 - Logging Requirements
 - Waste Material and Fluids
- Production (Post Drilling)**
 - Well Structures & Facilities
- Interim Reclamation**
- Final Abandonment & Reclamation**

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.

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.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. In addition, the well sign shall include the surface and bottom hole lease numbers. If the Communitization Agreement number is known, it shall also be on the sign. If not, it shall be placed on the sign when the sign is replaced.

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) 234-5909 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 strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area 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. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. 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-five (25) 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

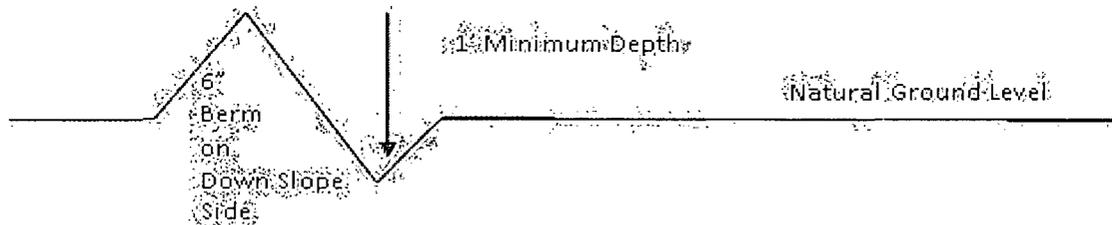
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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:

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

Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route 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 cattleguards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted 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 fences.

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

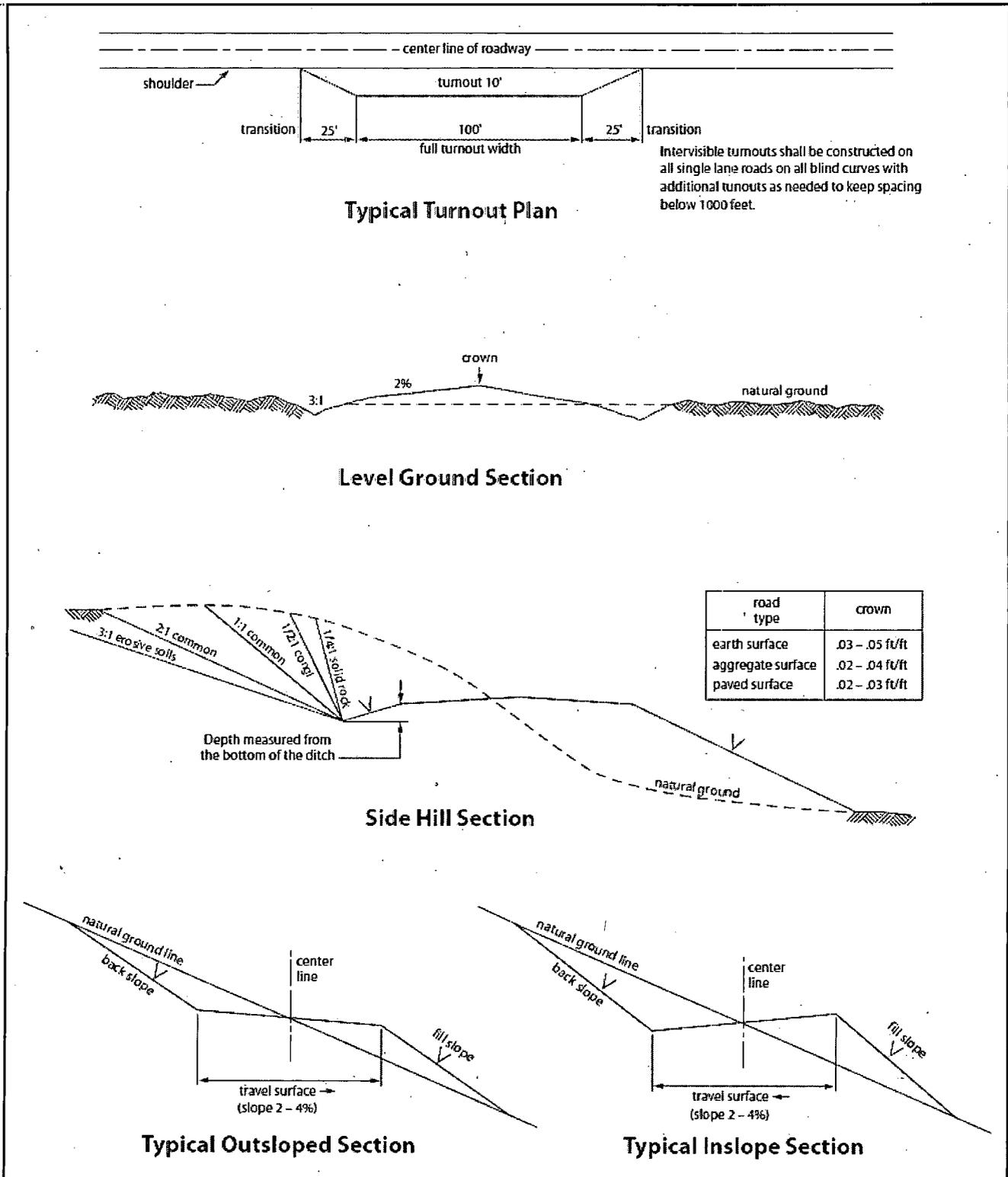


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

Eddy County

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

1. **Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall 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 or are Non-API. 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.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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

Wait on cement (WOC) for Water Basin:

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least **8 hours**. WOC time will be recorded in the driller's log. 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.

Possibility of water flows in the Salado and Castile.

Possibility of lost circulation in the Red Beds, Rustler, and Delaware.

1. The 13-3/8 inch surface casing shall be set at approximately 860 feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**) 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.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing, which shall be set at approximately 4310 feet (**basal anhydrite of the Castile formation or the top of the Lamar Limestone**) is:

Cement to surface. If cement does not circulate see B.1.a, c-d above.

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 4500', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

- 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 approved top of cement on the next stage.

- b. Second stage above DV tool:

Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

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.

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 53.

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. These documents shall be posted in the company man's trailer and on the rig floor.** 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. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. 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. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
 - b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
 - c. **Manufacturer representative shall install the test plug for the initial BOP test.**
 - d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
 - e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, 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. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer.**

- 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. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two 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.

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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.

Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the

largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

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** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VRM Facility Requirement

Low-profile tanks not greater than eight-feet-high shall be used.

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.