OCD Artesia

NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 22 2015

Form 3160-3
(March 2012)

RECEIVED

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

5. Lease Serial No. NMNM000503

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER — ATS-14-985

7. If Unit or CA Agreement, Name and No. Cotton Draw Unit NM 70928X (300635)

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

8. Lease Name and Well No. Cotton Draw Unit 227H

2. Name of Operator Devon Energy Production Company, L.P.

9. API Well No. 30-015-42932

3a. Address 333 W. Sheridan, Oklahoma City, OK 73102-5010

3b. Phone No. *(include area code)* 405.228.7203

10. Field and Pool, or Exploratory Cotton Draw; Bone Spring (13367)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface 200 FNL & 660 FEL Unit A PP: 200 FNL & 660 FEL

At proposed prod. zone 330 FSL & 660 FEL Unit P

11. Sec., T. R. M. or Blk. and Survey or Area Sec. 11 T25S R31E

14. Distance in miles and direction from nearest town or post office* Approximately 20 miles SE of Malaga, NM

12. County or Parish Eddy County

13. State NM

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

16. No. of acres in lease NMNM000503 - 2,360 ac

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 14,899' MD 10,448' TVD

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

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3,454.4 GL

22. Approximate date work will start* 09/01/2014

23. Estimated duration 45 Days

24. Attachments

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature — Name *(Printed/Typed)* Trina C. Couch — Date 06/18/2014

Title Regulatory Analyst

Approved by *(Signature)* Steve Caffey — Name *(Printed/Typed)* — Date JAN 15 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)

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 22 2015
RECEIVED

1/28/2015

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 _19th__ day of __June 2014.
Printed Name: Trina Couch
Signed Name: _____
Position Title: Regulatory Analyst
Address: 333 W. Sheridan, OKC OK 73102
Telephone: (405)-552-6559

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-42932	13367	Cotton Draw; Bone Spring

[4] Property Code	[5] Property Name	[6] Well Number
300635	COTTON DRAW UNIT	227H

[7] OGRID No.	[8] Operator Name	[9] Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3454.4

[10] Surface Location

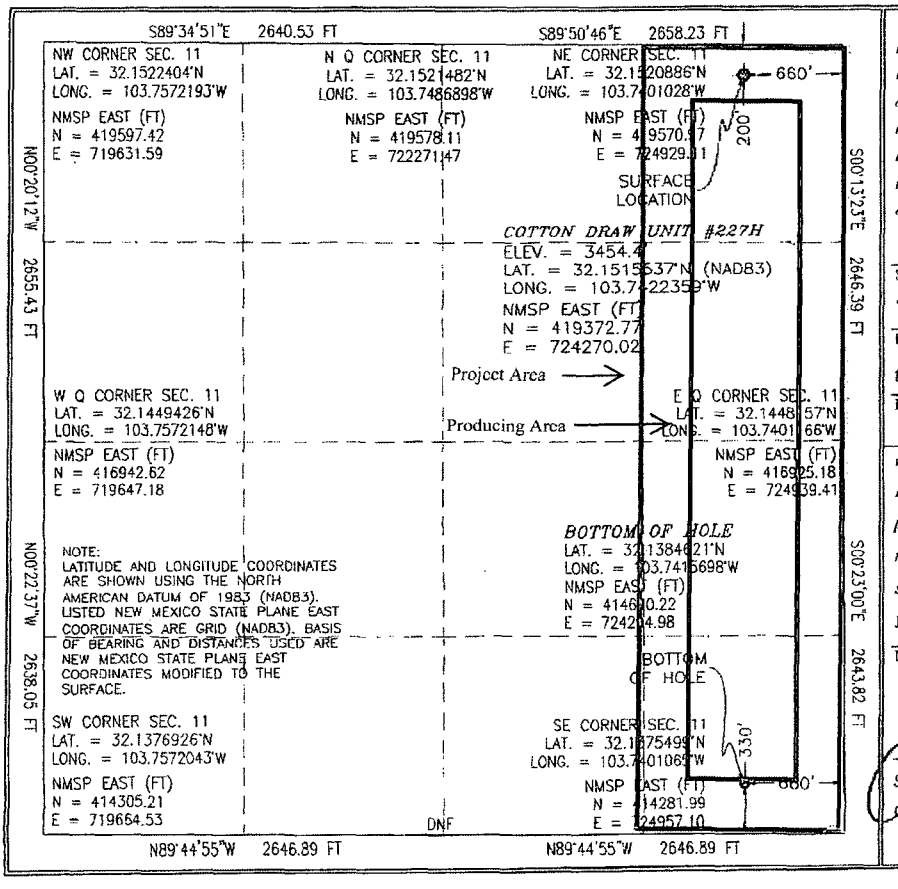
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	11	25 S	31 E		200	NORTH	660	EAST	EDDY

[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
P	11	25 S	31 E		330	SOUTH	660	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160 ac			

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.



[17] OPERATOR CERTIFICATION

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

Signature — Date: 6/26/14

Trina C. Couch, Regulatory Analsyt
Printed Name

trina.couch@dvn.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

JULY 2, 2013
Date of Survey

FILIMON F. JARAMILLO
NEW MEXICO
12797
REGISTERED PROFESSIONAL SURVEYOR

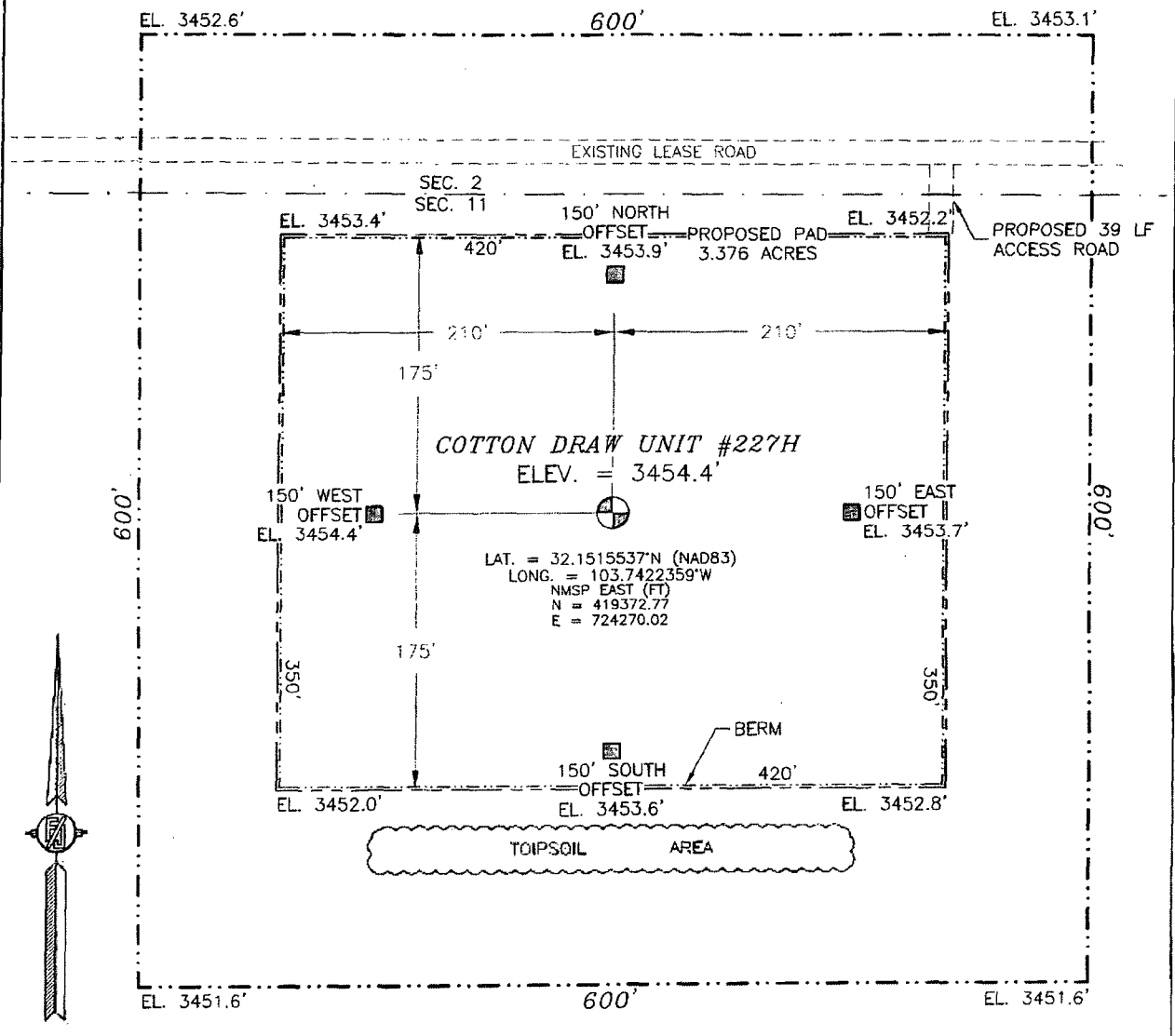
Signature and Seal of Professional Surveyor

Certificate Number: FILIMON F. JARAMILLO, PLS 12797

SURVEY NO. 2012

SECTION 11, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

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



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ORLA HIGHWAY #1 AND MONSANTO ROAD GO WEST ON MONSANTO ROAD APPROX. 2.1 MILES, ROAD TURNS RIGHT (NORTH) GO NORTH APPROX. 0.9 MILES, ROAD TURNS LEFT (WEST) GO WEST APPROX. 2.0 MILES, ROAD TURNS RIGHT (NORTH) GO NORTH APPROX. 1.15 MILES TO A LEASE ROAD ON LEFT (WEST) TURN WEST GO APPROX. 0.1 MILES, LOCATION IS ON THE LEFT (SOUTH) OF LEASE ROAD 200'.

DEVON ENERGY PRODUCTION COMPANY, L.P.

COTTON DRAW UNIT #227H

LOCATED 200 FT. FROM THE NORTH LINE AND 660 FT. FROM THE EAST LINE OF SECTION 11, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO

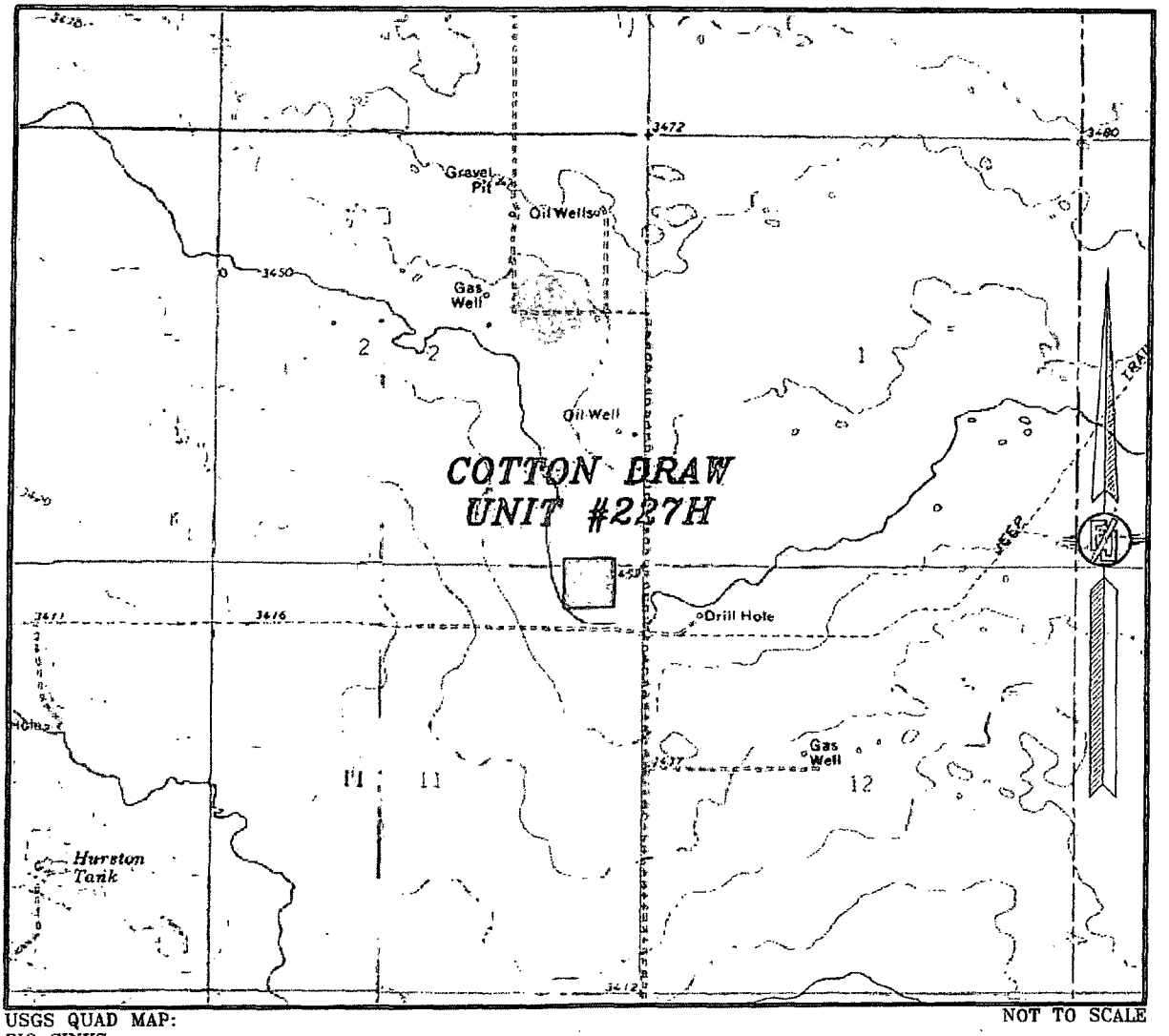
JULY 2, 2013

SURVEY NO. 2012

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

SECTION 11, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
BIG SINKS

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

COTTON DRAW UNIT #227H

LOCATED 200 FT. FROM THE NORTH LINE
AND 660 FT. FROM THE EAST LINE OF
SECTION 11, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

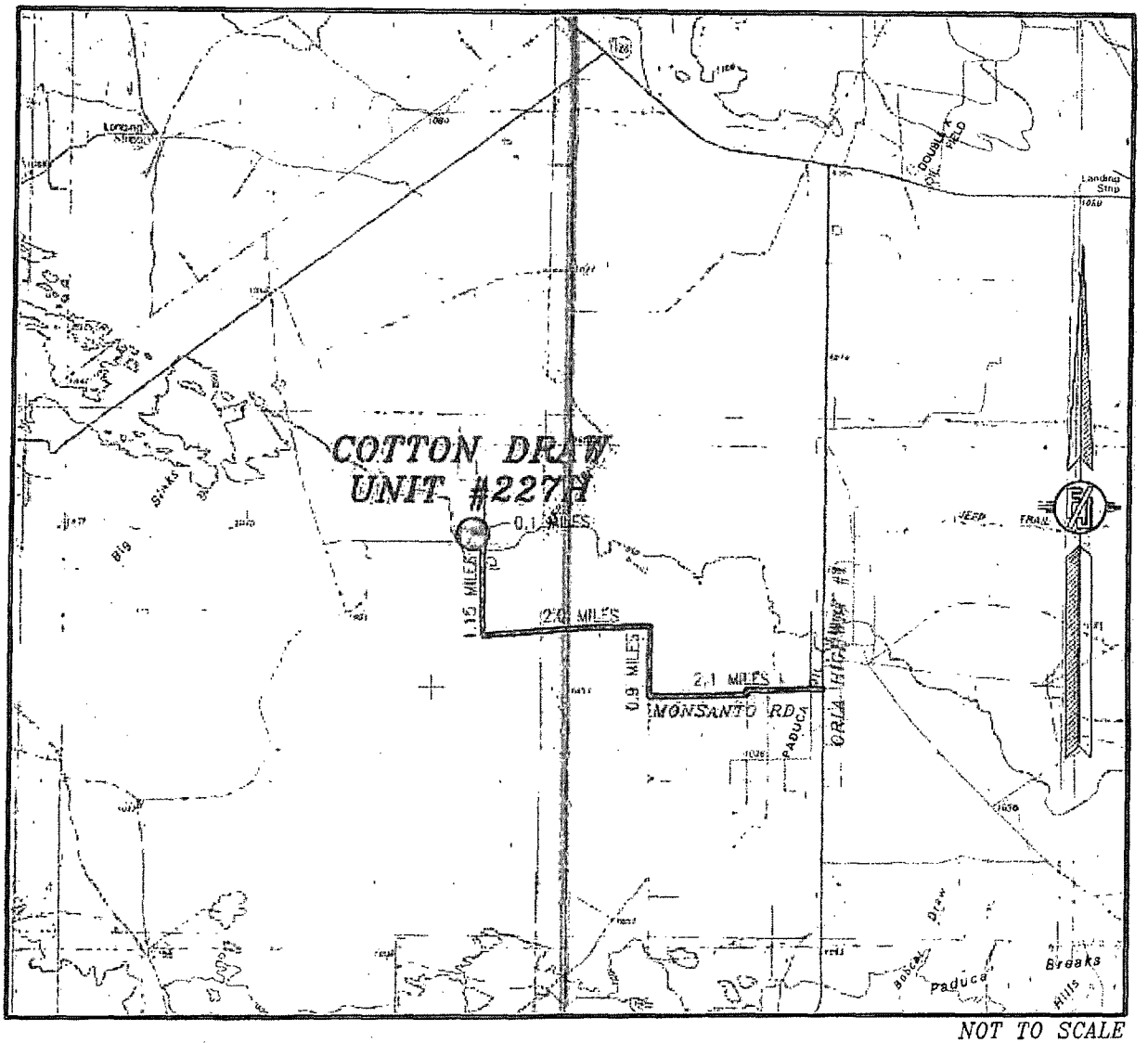
JULY 2, 2013

SURVEY NO. 2012

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

SECTION 11, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

VICINITY MAP



NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

COTTON DRAW UNIT #227H

LOCATED 200 FT. FROM THE NORTH LINE
AND 660 FT. FROM THE EAST LINE OF
SECTION 11, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 2, 2013

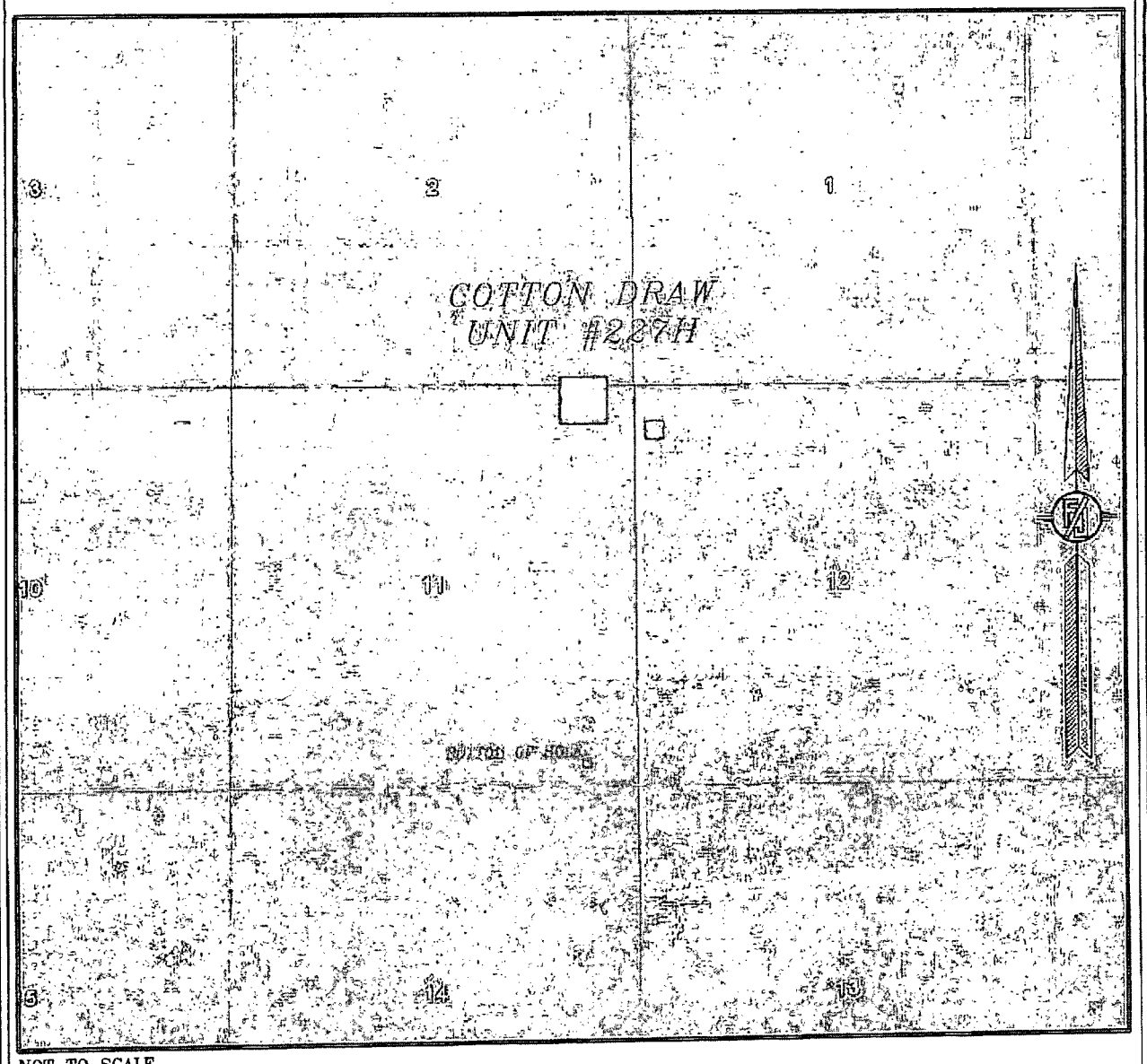
DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF ORLA HIGHWAY #1 AND MONSANTO ROAD GO WEST ON MONSANTO ROAD APPROX. 2.1 MILES, ROAD TURNS RIGHT (NORTH) GO NORTH APPROX. 0.9 MILES, ROAD TURNS LEFT (WEST) GO WEST APPROX. 2.0 MILES, ROAD TURNS RIGHT (NORTH) GO NORTH APPROX. 1.15 MILES TO A LEASE ROAD ON LEFT (WEST) TURN WEST GO APPROX. 0.1 MILES. LOCATION IS ON THE LEFT (SOUTH) OF LEASE ROAD 200'.

SURVEY NO. 2012

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

SECTION 11, 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
MARCH 2012

DEVON ENERGY PRODUCTION COMPANY, L.P.

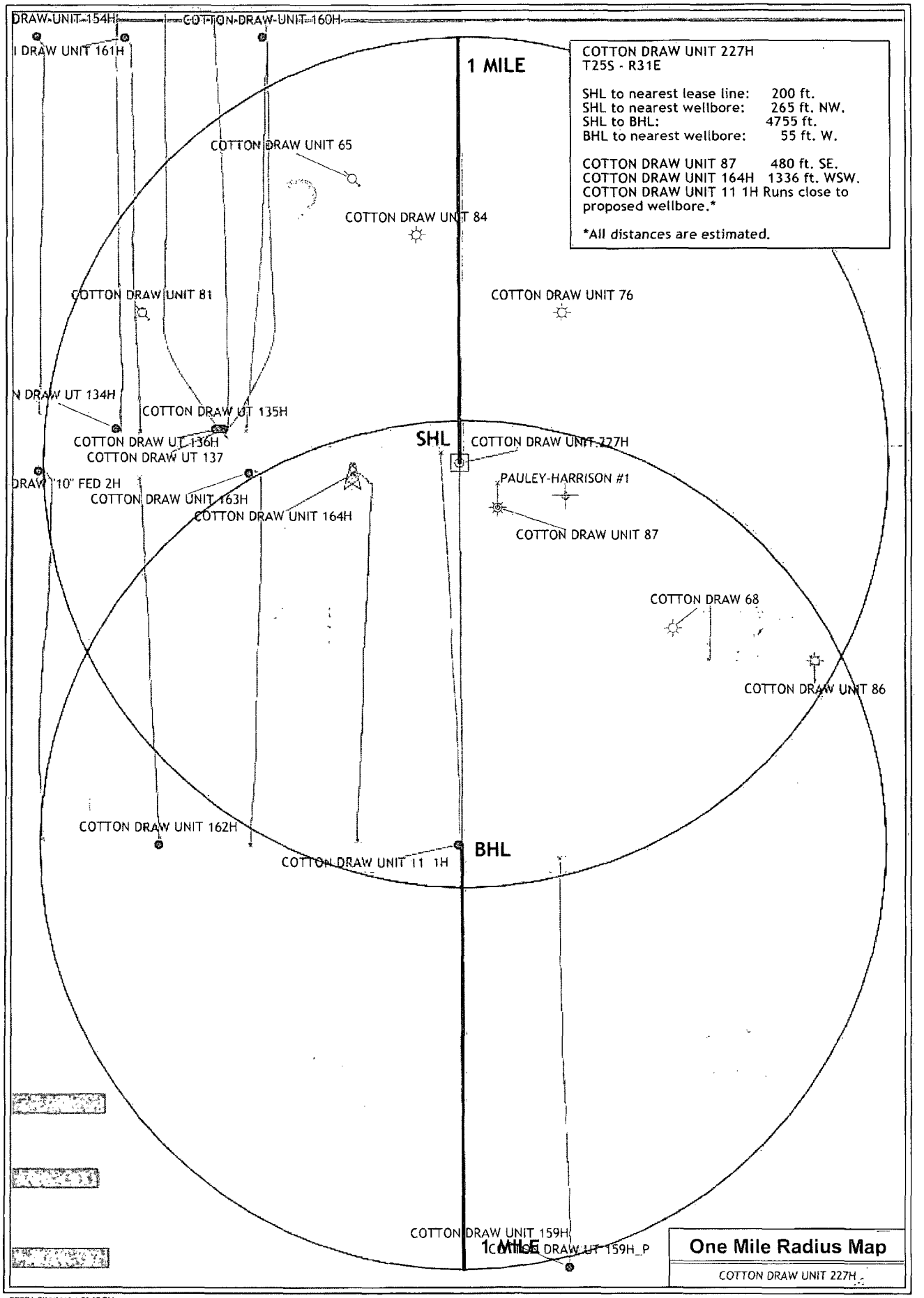
COTTON DRAW UNIT #227H

LOCATED 200 FT. FROM THE NORTH LINE
AND 660 FT. FROM THE EAST LINE OF
SECTION 11, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 2, 2013

SURVEY NO. 2012

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



PETRA 7/23/2013 1:52:37 PM

DRILLING PROGRAM

Devon Energy Production Company, L.P.
Cotton Draw Unit 227H

1. **Geologic Name of Surface Formation:** Quaternary

2. **Estimated Tops of Geological Markers & Depths of Anticipated FW, Oil, or Gas:**

a.	Fresh Water	400'	
b.	Rustler	599'	Barren
c.	Top of Salt	994'	Barren
d.	Base of Salt/Castille	4113'	Barren
e.	Bell Canyon	4407'	Oil / Gas
f.	Cherry Canyon	5296'	Oil / Gas
g.	Brushy Canyon	6621'	Oil / Gas
h.	Bone Spring Lime	8203'	Oil / Gas
i.	1st Bone Spring SS	9334'	Oil / Gas
j.	2nd Bone Spring SS	9890'	Oil / Gas
	Total Depths	10448' TVD	14899' MD

3. **Pressure Control Equipment:**

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the surface casing shoe. The BOP system used to drill the intermediate hole will be tested per BLM Onshore Oil and Gas Order 2.

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the intermediate casing shoe. The BOP system used to drill the production hole will be tested per BLM Onshore Oil and Gas Order 2.

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.

See COA

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line); **if an H&P rig drills this well. Otherwise no flex line is needed**. The line will be kept as straight as possible with minimal turns.

Auxiliary Well Control and Monitoring Equipment:

a. A Kelly cock will be in the drill string at all times.
b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

See COA

4. Casing Program:

Hole Size	Hole Interval	Casing OD	Casing Interval	Weight (lb/ft)	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17-1/2"	0 – 650' 775'	13-3/8"	0 – 650'	48#	STC	H-40	2.37	5.33	10.32
12-1/4"	650 - 3,400 4400'	9-5/8"	0 – 3,400'	36#	LTC	J-55	1.15	1.66	1.97
12-1/4"	3,400' – 4,300'	9-5/8"	3,400 – 4,300'	40#	BTC	J-55	1.15	1.77	3.02
8-3/4"	4,300' – 14,899'	5-1/2"	0-14,899'	17#	BTC	P-110	1.76	2.19	2.24

Casing Notes:

- All casing is new and API approved

Maximum Lateral TVD: 10,448'

See COA

5. Proposed mud Circulations System:

Depth 775'	Mud Weight	Viscosity	Fluid Loss	Type System
0 - 650'	8.4-9.0	30-34	N/C	FW
650' – 4,300' 4400'	10-10.2	28-32	N/C	Brine
4,300' – 14,899'	8.6-9.0	28-32	N/C	FW

The necessary mud products for weight addition and fluid loss control will be on location at all times. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume. If abnormal pressures are encountered, electronic/mechanical mud monitoring equipment will be installed.

6. Cementing Table:

String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
13-3/8" Surface	680	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water
9-5/8" Intermediate	910	12.9	9.81	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	430	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water
5-1/2" Production Casing 2-Stage See COA	975	12.5	10.86	1.96	Lead	(65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 74.1 % Fresh Water
	1025	14.5	5.38	1.22	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.25% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water
	DV Tool at least 50' into open hole					
	190	11.0	15.23	2.71	Lead	Tuned Light Blend + 0.125 lb/sk Pol-E-Flake + 76.3% Fresh Water
	120	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water

TOC for all Strings:

13-3/8" Surface	0ft
9-5/8" Intermediate	0ft
5-1/2" Production 2-Stage	Stage #1 = DV Tool Depth
	Stage #2 = 3800ft

Notes:

- Cement volumes Surface 100%, Intermediate 75% and Production based on at least 25% excess
- Actual cement volumes will be adjusted based on fluid caliper and caliper log data
- If lost circulation is encountered while drilling the production and/or the intermediate wellbores, a DV tool will be installed a minimum of 50' below the previous casing shoe and a minimum of 200' above the current shoe. If the DV tool has to be moved, the cement volumes will be adjusted proportionately. The cement will tie back 500' into the 9-5/8" casing shoe.

7. Logging, Coring, and Testing Program:

a. Drill stem tests will be based on geological sample shows.
b. If a drill stem test is anticipated, a procedure, equipment to be used, and safety measures will be provided via sundry notice to the BLM.
c. No logs are planned.
d. No coring program is planned
e. Additional Testing will be initiated subsequent to setting the production casing. Specific intervals will be targeted based on log evaluation (if applicable), geological sample shows, and drill stem tests.

See COA

8. Potential Hazards:

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area, and none is anticipated to be encountered. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation being used to drill this well. Estimated BHP: 4702 psi, and estimated BHT: 165 degrees.
b. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production string is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached.

9. Anticipated Starting Date and Duration of Operations:

a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 20 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

Devon

HALLIBURTON
Sperry Drilling

Project: Eddy County, NM (NAD 83)
Site: Sec.11 T. 25 S, R31 E
Well: Cotton Draw Unit 227H
Wellbore: Wellbore #1
Plan: Plan #1 061714 RevA0 (Cotton Draw Unit 227H/Wellbore #1)
25'KB

WELL DETAILS: Cotton Draw Unit 227H

Ground Level: 3454.40

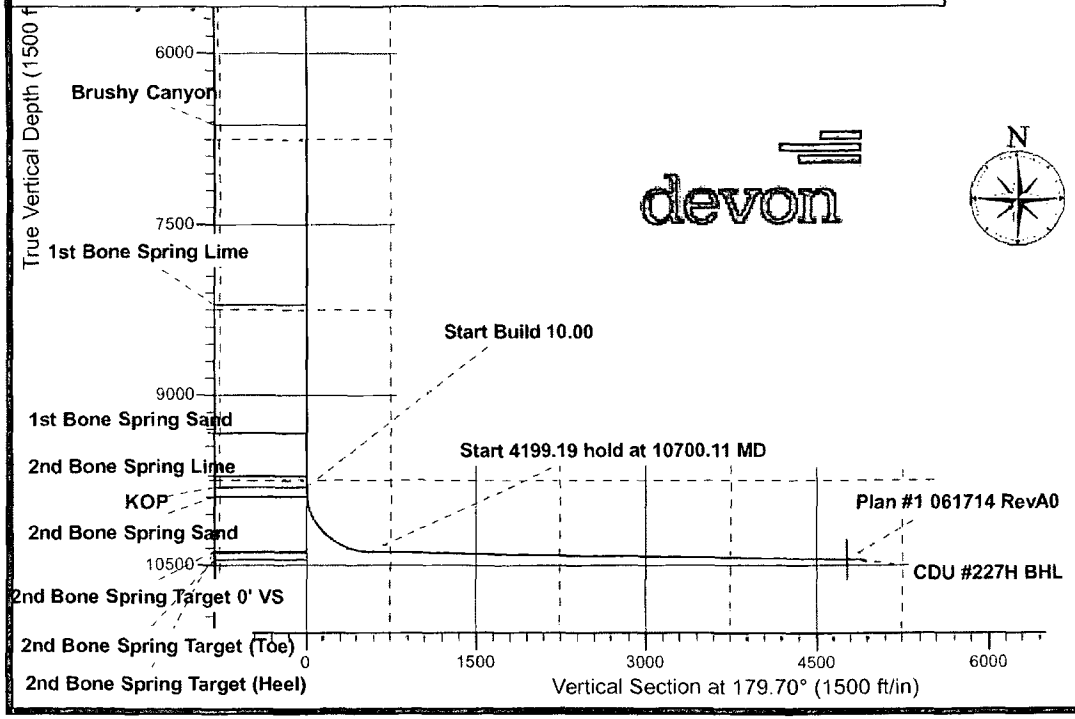
Northing	Easting	Latitude	Longitude
419372.77	724270.02	32° 9' 5.593 N	103° 44' 32.049 W

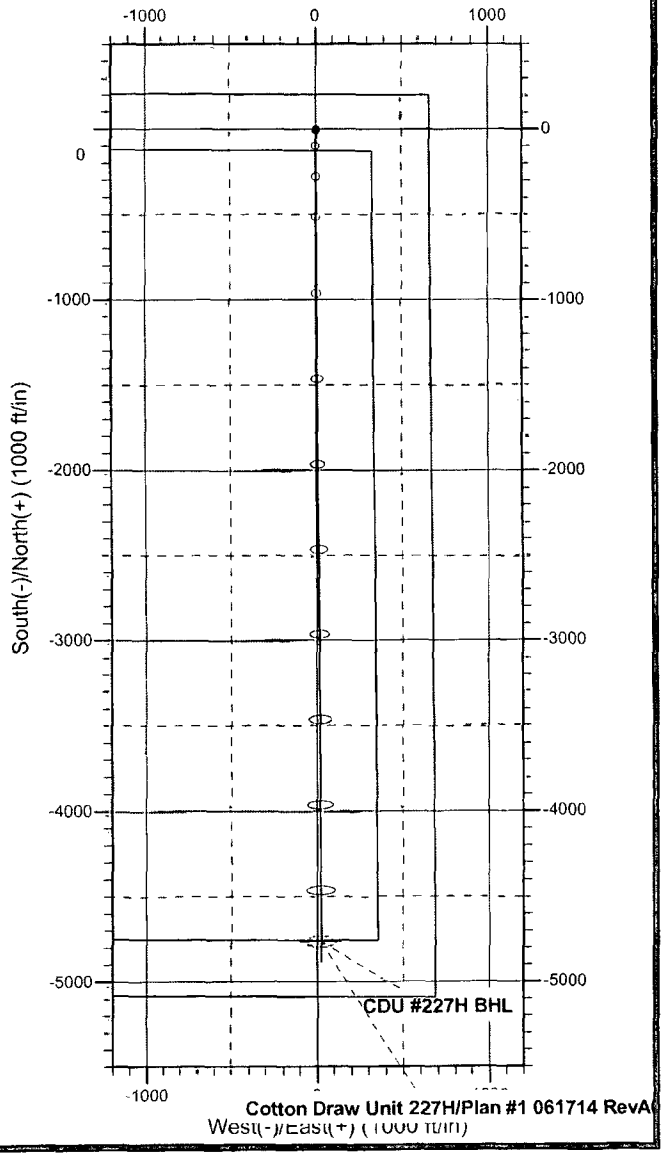
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9809.11	0.00	0.00	9809.11	0.00	0.00	0.00	0.00	0.00	
10700.11	89.10	179.70	10382.00	-563.95	2.96	10.00	179.70	563.95	CDU #227H BHL
14899.30	89.10	179.70	10448.00	-4762.56	24.96	0.00	0.00	4762.62	CDU #227H BHL

WELLBORE TARGET DETAILS

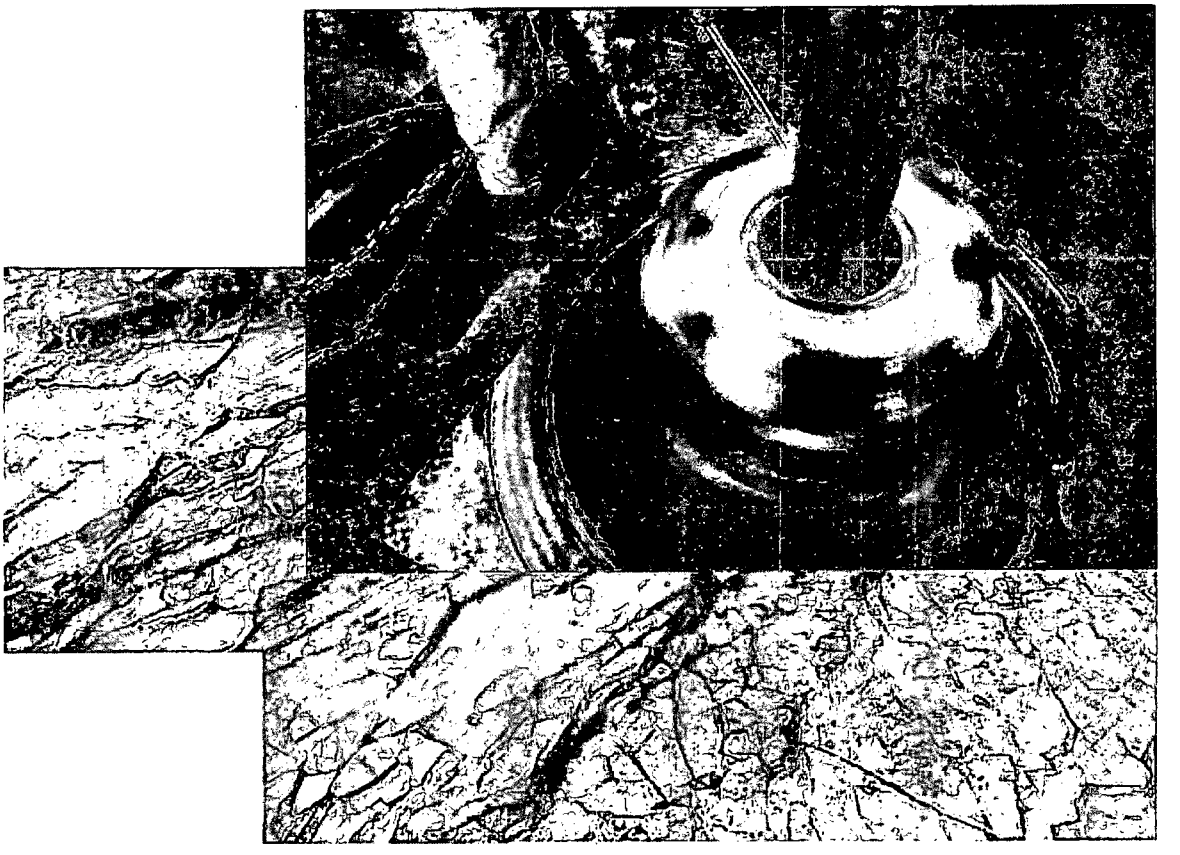
Name	TVD	+N/-S	+E/-W	Shape
CDU #227H BHL	10448.00	-4762.56	24.96	Point





devon

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.

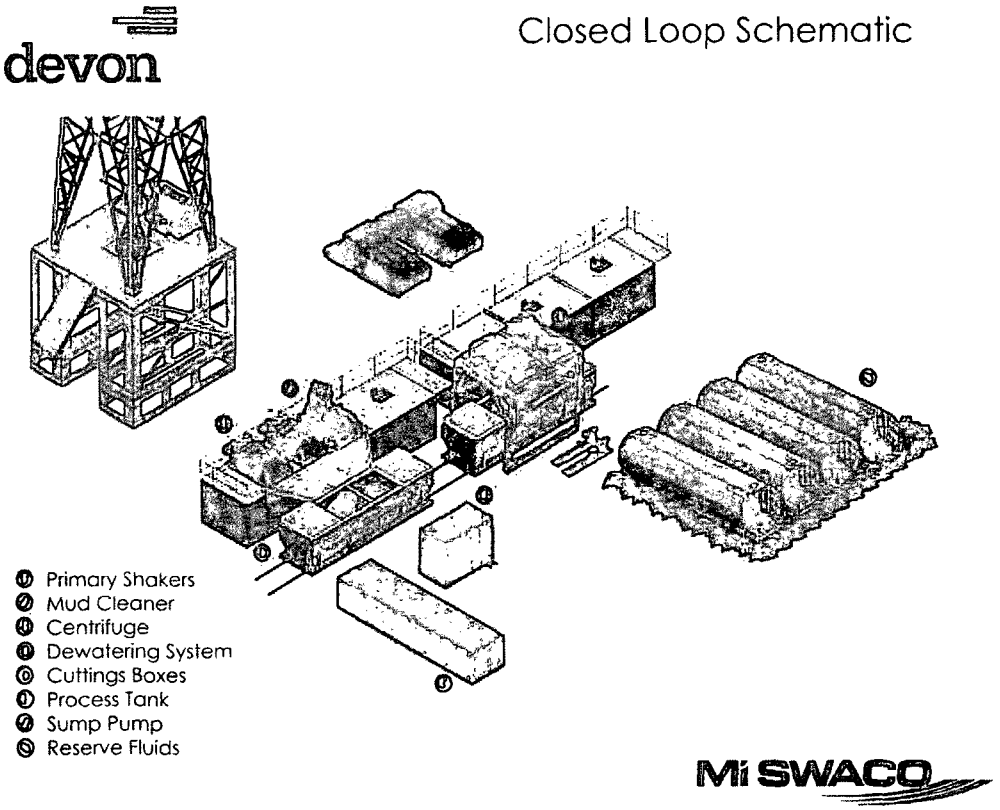
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

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.



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.

Job#
25'KB

Devon

Eddy County, NM (NAD 83) Sec.11 T. 25 S, R31 E
API#

Cotton Draw Unit 227H (200' FNL & 660' FEL)

Wellbore #1

Plan: Plan #1 061714 RevA0

Sperry Drilling Services

Combo Report

17 June, 2014

Well Coordinates:	32° 09' 05.59" N 103° 44' 32.05" W	North American Datum 1983 New Mexico Eastern Zone 419,372.77 N 724,270.02 E
Ground Level: 3,454.40 ft		
Local Coordinate Origin:		Centered on Well Cotton Draw Unit 227H
Viewing Datum:		WELL @ 3479.40ft (25'KB)
TVDs to System:		N
North Reference:		**Grid**
Unit System:		API US Survey Feet

Version: 5000.1 Build: 65

Report Version: Midcon Combo v1.30

HALLIBURTON

Plan Report for Cotton Draw Unit 227H - Plan #1 061714 RevA0

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	-3,479.40	0.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
100.00	0.00	0.00	-3,379.40	100.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
200.00	0.00	0.00	-3,279.40	200.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
300.00	0.00	0.00	-3,179.40	300.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
400.00	0.00	0.00	-3,079.40	400.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
500.00	0.00	0.00	-2,979.40	500.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
600.00	0.00	0.00	-2,879.40	600.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
604.40	0.00	0.00	-2,875.00	604.40	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	RUSTLER
700.00	0.00	0.00	-2,779.40	700.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
800.00	0.00	0.00	-2,679.40	800.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
900.00	0.00	0.00	-2,579.40	900.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
999.40	0.00	0.00	-2,480.00	999.40	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	TOP SALT
1,000.00	0.00	0.00	-2,479.40	1,000.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
1,100.00	0.00	0.00	-2,379.40	1,100.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
1,200.00	0.00	0.00	-2,279.40	1,200.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
1,300.00	0.00	0.00	-2,179.40	1,300.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
1,400.00	0.00	0.00	-2,079.40	1,400.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
1,500.00	0.00	0.00	-1,979.40	1,500.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
1,600.00	0.00	0.00	-1,879.40	1,600.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
1,700.00	0.00	0.00	-1,779.40	1,700.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
1,800.00	0.00	0.00	-1,679.40	1,800.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
1,900.00	0.00	0.00	-1,579.40	1,900.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
2,000.00	0.00	0.00	-1,479.40	2,000.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
2,100.00	0.00	0.00	-1,379.40	2,100.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
2,200.00	0.00	0.00	-1,279.40	2,200.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
2,300.00	0.00	0.00	-1,179.40	2,300.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
2,400.00	0.00	0.00	-1,079.40	2,400.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
2,500.00	0.00	0.00	-979.40	2,500.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
2,600.00	0.00	0.00	-879.40	2,600.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
2,700.00	0.00	0.00	-779.40	2,700.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
2,800.00	0.00	0.00	-679.40	2,800.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
2,805.40	0.00	0.00	-674.00	2,805.40	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	CASTILE
2,900.00	0.00	0.00	-579.40	2,900.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
3,000.00	0.00	0.00	-479.40	3,000.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
3,100.00	0.00	0.00	-379.40	3,100.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
3,200.00	0.00	0.00	-279.40	3,200.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
3,300.00	0.00	0.00	-179.40	3,300.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
3,400.00	0.00	0.00	-79.40	3,400.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
3,500.00	0.00	0.00	20.60	3,500.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
3,600.00	0.00	0.00	120.60	3,600.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
3,700.00	0.00	0.00	220.60	3,700.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	

Plan Report for Cotton Draw Unit 227H - Plan #1 061714 RevA0

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
3,800.00	0.00	0.00	320.60	3,800.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
3,900.00	0.00	0.00	420.60	3,900.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
4,000.00	0.00	0.00	520.60	4,000.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
4,100.00	0.00	0.00	620.60	4,100.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
4,200.00	0.00	0.00	720.60	4,200.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
4,300.00	0.00	0.00	820.60	4,300.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
4,400.00	0.00	0.00	920.60	4,400.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
4,412.40	0.00	0.00	933.00	4,412.40	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	Bell Canyon
4,500.00	0.00	0.00	1,020.60	4,500.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
4,600.00	0.00	0.00	1,120.60	4,600.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
4,700.00	0.00	0.00	1,220.60	4,700.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
4,800.00	0.00	0.00	1,320.60	4,800.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
4,900.00	0.00	0.00	1,420.60	4,900.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
5,000.00	0.00	0.00	1,520.60	5,000.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
5,100.00	0.00	0.00	1,620.60	5,100.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
5,200.00	0.00	0.00	1,720.60	5,200.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
5,300.00	0.00	0.00	1,820.60	5,300.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
5,301.40	0.00	0.00	1,822.00	5,301.40	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	Cherry Canyon
5,400.00	0.00	0.00	1,920.60	5,400.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
5,500.00	0.00	0.00	2,020.60	5,500.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
5,600.00	0.00	0.00	2,120.60	5,600.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
5,700.00	0.00	0.00	2,220.60	5,700.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
5,800.00	0.00	0.00	2,320.60	5,800.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
5,900.00	0.00	0.00	2,420.60	5,900.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
6,000.00	0.00	0.00	2,520.60	6,000.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
6,100.00	0.00	0.00	2,620.60	6,100.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
6,200.00	0.00	0.00	2,720.60	6,200.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
6,300.00	0.00	0.00	2,820.60	6,300.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
6,400.00	0.00	0.00	2,920.60	6,400.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
6,500.00	0.00	0.00	3,020.60	6,500.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
6,600.00	0.00	0.00	3,120.60	6,600.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
6,626.40	0.00	0.00	3,147.00	6,626.40	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	Brushy Canyon
6,700.00	0.00	0.00	3,220.60	6,700.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
6,800.00	0.00	0.00	3,320.60	6,800.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
6,900.00	0.00	0.00	3,420.60	6,900.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
7,000.00	0.00	0.00	3,520.60	7,000.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
7,100.00	0.00	0.00	3,620.60	7,100.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
7,200.00	0.00	0.00	3,720.60	7,200.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
7,300.00	0.00	0.00	3,820.60	7,300.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
7,400.00	0.00	0.00	3,920.60	7,400.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
7,500.00	0.00	0.00	4,020.60	7,500.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	

Plan Report for Cotton Draw Unit 227H - Plan #1 061714 RevA0

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
7,600.00	0.00	0.00	4,120.60	7,600.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
7,700.00	0.00	0.00	4,220.60	7,700.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
7,800.00	0.00	0.00	4,320.60	7,800.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
7,900.00	0.00	0.00	4,420.60	7,900.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
8,000.00	0.00	0.00	4,520.60	8,000.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
8,100.00	0.00	0.00	4,620.60	8,100.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
8,200.00	0.00	0.00	4,720.60	8,200.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
8,208.40	0.00	0.00	4,729.00	8,208.40	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	1st Bone Spring Lime
8,300.00	0.00	0.00	4,820.60	8,300.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
8,400.00	0.00	0.00	4,920.60	8,400.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
8,500.00	0.00	0.00	5,020.60	8,500.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
8,600.00	0.00	0.00	5,120.60	8,600.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
8,700.00	0.00	0.00	5,220.60	8,700.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
8,800.00	0.00	0.00	5,320.60	8,800.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
8,900.00	0.00	0.00	5,420.60	8,900.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
9,000.00	0.00	0.00	5,520.60	9,000.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
9,100.00	0.00	0.00	5,620.60	9,100.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
9,200.00	0.00	0.00	5,720.60	9,200.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
9,300.00	0.00	0.00	5,820.60	9,300.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
9,339.40	0.00	0.00	5,860.00	9,339.40	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	1st Bone Spring Sand
9,400.00	0.00	0.00	5,920.60	9,400.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
9,500.00	0.00	0.00	6,020.60	9,500.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
9,600.00	0.00	0.00	6,120.60	9,600.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
9,700.00	0.00	0.00	6,220.60	9,700.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
9,716.40	0.00	0.00	6,237.00	9,716.40	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	2nd Bone Spring Lime
9,800.00	0.00	0.00	6,320.60	9,800.00	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	
9,809.11	0.00	0.00	6,329.71	9,809.11	0.00 N	0.00 E	419,372.77	724,270.02	0.00	0.00	Start Build 10.00
9,814.40	0.53	179.70	6,335.00	9,814.40	0.02 S	0.00 E	419,372.75	724,270.02	10.00	0.02	KOP
9,895.73	8.66	179.70	6,416.00	9,895.40	6.53 S	0.03 E	419,366.24	724,270.05	10.00	6.54	2nd Bone Spring Sand
9,900.00	9.09	179.70	6,420.22	9,899.62	7.19 S	0.04 E	419,365.58	724,270.06	10.00	7.19	
10,000.00	19.09	179.70	6,517.09	9,996.49	31.51 S	0.17 E	419,341.26	724,270.19	10.00	31.51	
10,100.00	29.09	179.70	6,608.26	10,087.66	72.27 S	0.38 E	419,300.50	724,270.40	10.00	72.27	
10,200.00	39.09	179.70	6,690.98	10,170.38	128.24 S	0.67 E	419,244.53	724,270.69	10.00	128.25	
10,300.00	49.09	179.70	6,762.71	10,242.11	197.73 S	1.04 E	419,175.04	724,271.06	10.00	197.74	
10,400.00	59.09	179.70	6,821.29	10,300.69	278.62 S	1.46 E	419,094.15	724,271.48	10.00	278.63	
10,500.00	69.09	179.70	6,864.93	10,344.33	368.45 S	1.93 E	419,004.32	724,271.95	10.00	368.46	
10,600.00	79.09	179.70	6,892.31	10,371.71	464.50 S	2.43 E	418,908.27	724,272.45	10.00	464.51	
10,653.79	84.47	179.70	6,900.00	10,379.40	517.71 S	2.71 E	418,855.06	724,272.73	10.00	517.72	2nd Bone Spring Target 0' VS
10,700.00	89.09	179.70	6,902.60	10,382.00	563.84 S	2.96 E	418,808.93	724,272.98	10.00	563.85	
10,700.11	89.10	179.70	6,902.60	10,382.00	563.95 S	2.96 E	418,808.83	724,272.98	10.00	563.95	Start 4199.19 hold at 10700.11 MD
10,800.00	89.10	179.70	6,904.17	10,383.57	663.83 S	3.48 E	418,708.95	724,273.50	0.00	663.84	

Plan Report for Cotton Draw Unit 227H - Plan #1 061714 RevA0

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
10,900.00	89.10	179.70	6,905.74	10,385.14	763.81 S	4.00 E	418,608.96	724,274.02	0.00	763.82	
11,000.00	89.10	179.70	6,907.31	10,386.71	863.80 S	4.53 E	418,508.97	724,274.55	0.00	863.81	
11,043.78	89.10	179.70	6,908.00	10,387.40	907.58 S	4.76 E	418,465.20	724,274.78	0.00	907.59	2nd Bone Spring Target (Heel)
11,100.00	89.10	179.70	6,908.88	10,388.28	963.78 S	5.05 E	418,408.99	724,275.07	0.00	963.80	
11,200.00	89.10	179.70	6,910.46	10,389.86	1,063.77 S	5.58 E	418,309.00	724,275.60	0.00	1,063.79	
11,300.00	89.10	179.70	6,912.03	10,391.43	1,163.76 S	6.10 E	418,209.01	724,276.12	0.00	1,163.77	
11,400.00	89.10	179.70	6,913.60	10,393.00	1,263.74 S	6.62 E	418,109.03	724,276.64	0.00	1,263.76	
11,500.00	89.10	179.70	6,915.17	10,394.57	1,363.73 S	7.15 E	418,009.04	724,277.17	0.00	1,363.75	
11,600.00	89.10	179.70	6,916.74	10,396.14	1,463.72 S	7.67 E	417,909.06	724,277.69	0.00	1,463.74	
11,700.00	89.10	179.70	6,918.31	10,397.71	1,563.70 S	8.20 E	417,809.07	724,278.22	0.00	1,563.72	
11,800.00	89.10	179.70	6,919.89	10,399.29	1,663.69 S	8.72 E	417,709.08	724,278.74	0.00	1,663.71	
11,900.00	89.10	179.70	6,921.46	10,400.86	1,763.68 S	9.24 E	417,609.10	724,279.26	0.00	1,763.70	
12,000.00	89.10	179.70	6,923.03	10,402.43	1,863.66 S	9.77 E	417,509.11	724,279.79	0.00	1,863.69	
12,100.00	89.10	179.70	6,924.60	10,404.00	1,963.65 S	10.29 E	417,409.13	724,280.31	0.00	1,963.67	
12,200.00	89.10	179.70	6,926.17	10,405.57	2,063.63 S	10.82 E	417,309.14	724,280.84	0.00	2,063.66	
12,300.00	89.10	179.70	6,927.74	10,407.14	2,163.62 S	11.34 E	417,209.15	724,281.36	0.00	2,163.65	
12,400.00	89.10	179.70	6,929.32	10,408.72	2,263.61 S	11.86 E	417,109.17	724,281.88	0.00	2,263.64	
12,500.00	89.10	179.70	6,930.89	10,410.29	2,363.59 S	12.39 E	417,009.18	724,282.41	0.00	2,363.63	
12,600.00	89.10	179.70	6,932.46	10,411.86	2,463.58 S	12.91 E	416,909.20	724,282.93	0.00	2,463.61	
12,700.00	89.10	179.70	6,934.03	10,413.43	2,563.57 S	13.44 E	416,809.21	724,283.46	0.00	2,563.60	
12,800.00	89.10	179.70	6,935.60	10,415.00	2,663.55 S	13.96 E	416,709.22	724,283.98	0.00	2,663.59	
12,900.00	89.10	179.70	6,937.18	10,416.58	2,763.54 S	14.48 E	416,609.24	724,284.50	0.00	2,763.58	
13,000.00	89.10	179.70	6,938.75	10,418.15	2,863.52 S	15.01 E	416,509.25	724,285.03	0.00	2,863.56	
13,100.00	89.10	179.70	6,940.32	10,419.72	2,963.51 S	15.53 E	416,409.27	724,285.55	0.00	2,963.55	
13,200.00	89.10	179.70	6,941.89	10,421.29	3,063.50 S	16.06 E	416,309.28	724,286.08	0.00	3,063.54	
13,300.00	89.10	179.70	6,943.46	10,422.86	3,163.48 S	16.58 E	416,209.29	724,286.60	0.00	3,163.53	
13,400.00	89.10	179.70	6,945.03	10,424.43	3,263.47 S	17.10 E	416,109.31	724,287.12	0.00	3,263.51	
13,500.00	89.10	179.70	6,946.61	10,426.01	3,363.46 S	17.63 E	416,009.32	724,287.65	0.00	3,363.50	
13,600.00	89.10	179.70	6,948.18	10,427.58	3,463.44 S	18.15 E	415,909.34	724,288.17	0.00	3,463.49	
13,700.00	89.10	179.70	6,949.75	10,429.15	3,563.43 S	18.68 E	415,809.35	724,288.70	0.00	3,563.48	
13,800.00	89.10	179.70	6,951.32	10,430.72	3,663.41 S	19.20 E	415,709.36	724,289.22	0.00	3,663.46	
13,900.00	89.10	179.70	6,952.89	10,432.29	3,763.40 S	19.72 E	415,609.38	724,289.74	0.00	3,763.45	
14,000.00	89.10	179.70	6,954.47	10,433.87	3,863.39 S	20.25 E	415,509.39	724,290.27	0.00	3,863.44	
14,100.00	89.10	179.70	6,956.04	10,435.44	3,963.37 S	20.77 E	415,409.40	724,290.79	0.00	3,963.43	
14,200.00	89.10	179.70	6,957.61	10,437.01	4,063.36 S	21.30 E	415,309.42	724,291.32	0.00	4,063.42	
14,300.00	89.10	179.70	6,959.18	10,438.58	4,163.35 S	21.82 E	415,209.43	724,291.84	0.00	4,163.40	
14,400.00	89.10	179.70	6,960.75	10,440.15	4,263.33 S	22.34 E	415,109.45	724,292.36	0.00	4,263.39	
14,500.00	89.10	179.70	6,962.32	10,441.72	4,363.32 S	22.87 E	415,009.46	724,292.89	0.00	4,363.38	
14,600.00	89.10	179.70	6,963.90	10,443.30	4,463.30 S	23.39 E	414,909.47	724,293.41	0.00	4,463.37	
14,700.00	89.10	179.70	6,965.47	10,444.87	4,563.29 S	23.92 E	414,809.49	724,293.94	0.00	4,563.35	
14,800.00	89.10	179.70	6,967.04	10,446.44	4,663.28 S	24.44 E	414,709.50	724,294.46	0.00	4,663.34	

Plan Report for Cotton Draw Unit 227H - Plan #1 061714 RevA0

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
14,899.30	89.10	179.70	6,968.60	10,448.00	4,762.56 S	24.96 E	414,610.22	724,294.98	0.00	4,762.62	TD at 14899.30

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
9,809.11	9,809.11	0.00	0.00	Start Build 10.00
10,700.11	10,382.00	-563.95	2.96	Start 4199.19 hold at 10700.11 MD
14,899.30	10,448.00	-4,762.56	24.96	TD at 14899.30

Vertical Section Information

	Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
TD		No Target (Freehand)	179.70	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	14,898.89	Plan #1 061714 RevA0	MWD

Plan Report for Cotton Draw Unit 227H - Plan #1 061714 RevA0

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	TVDSS (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
604.40	604.40	-2,875.00	RUSTLER		0.00	
999.40	999.40	-2,480.00	TOP SALT		0.00	
2,805.40	2,805.40	-674.00	CASTILE		0.00	
4,412.40	4,412.40	933.00	Bell Canyon		0.00	
5,301.40	5,301.40	1,822.00	Cherry Canyon		0.00	
6,626.40	6,626.40	3,147.00	Brushy Canyon		0.00	
8,208.40	8,208.40	4,729.00	1st Bone Spring Lime		0.00	
9,339.40	9,339.40	5,860.00	1st Bone Spring Sand		0.00	
9,716.40	9,716.40	6,237.00	2nd Bone Spring Lime		0.00	
9,814.40	9,814.40	6,335.00	KOP		0.00	
9,895.73	9,895.40	6,416.00	2nd Bone Spring Sand		0.00	
10,653.79	10,379.40	6,900.00	2nd Bone Spring Target 0' VS		0.00	
11,043.78	10,387.40	6,908.00	2nd Bone Spring Target (Heel)		0.00	

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
CDU #227H BHL ()									
- plan hits target center - Point	0.00	0.00	10,448.00	-4,762.56	24.96	414,610.22	724,294.98	32° 8' 18.464 N	103° 44' 32.063 W

Directional Difficulty Index

Average Dogleg over Survey:	0.60 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 10,700.11 ft
Net Tortousity applicable to Plans:	0.60 °/100usft	Directional Difficulty Index:	6.034

Audit Info

North Reference Sheet for Sec.11 T. 25 S, R31 E - Cotton Draw Unit 227H - Wellbore #1

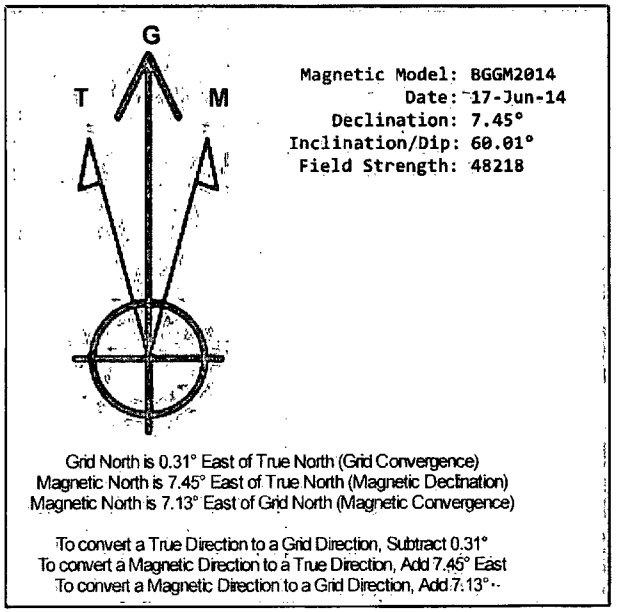
All data is in Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.
Vertical Depths are relative to WELL @ 3479.40ft (25'KB). Northing and Easting are relative to Cotton Draw Unit 227H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980
Projection method is Transverse Mercator (Gauss-Kruger)
Central Meridian is 104° 20' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:0° 0' 0.000 N°
False Easting: 541,337.50usft, False Northing: 0.00usft, Scale Reduction: 0.99994742

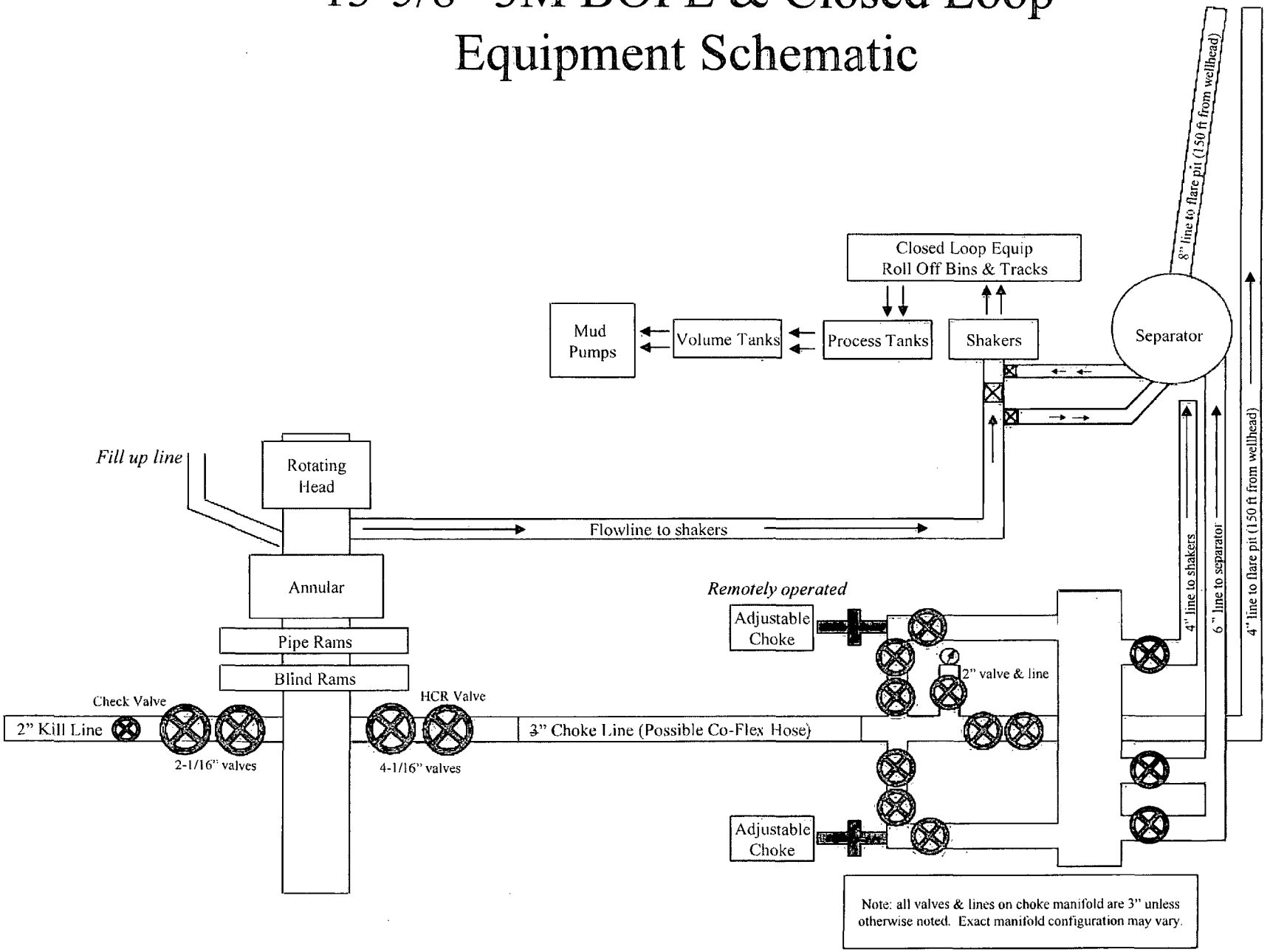
Grid Coordinates of Well: 419,372.77 usft N, 724,270.02 usft E
Geographical Coordinates of Well: 32° 09' 05.59" N, 103° 44' 32.05" W
Grid Convergence at Surface is: 0.31°

Based upon Minimum Curvature type calculations, at a Measured Depth of 14,899.30ft
the Bottom Hole Displacement is 4,762.62ft in the Direction of 179.70° (Grid).

Magnetic Convergence at surface is: -7.13° (17 June 2014, , BGGM2014)



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



NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, L.P.
Cotton Draw Unit 227H

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.

Continental CONTITECH

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 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com

RIG 212

PHOENIX

QUALITY DOCUMENT

PHOENIX RUBBER INDUSTRIAL LTD.
6728 Szeged, Budapesti út 10. Hungary • H-6701 Szeged, P. O. Box 152
Phone: (3662) 566-737 • Fax: (3662) 566-738
SALES & MARKETING: H-1092 Budapest, Ráday u. 42-44. Hungary • H-1440 Budapest, P. O. Box 26
Phone: (361) 456-4200 • Fax: (361) 217-2972, 456-4273 • www.taurusemerge.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 552
PURCHASER: Phoenix Beattie Co.				P.O. N°: 1519FA-871
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID		Choke and Kill Hose
HOSE SERIAL N°: 34128		NOMINAL / ACTUAL LENGTH:		11,43 m
W.P. 68,96 MPa	10000 psi	T.P. 103,4 MPa	15000 psi	Duration: 60 min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 25 MPa

COUPLINGS

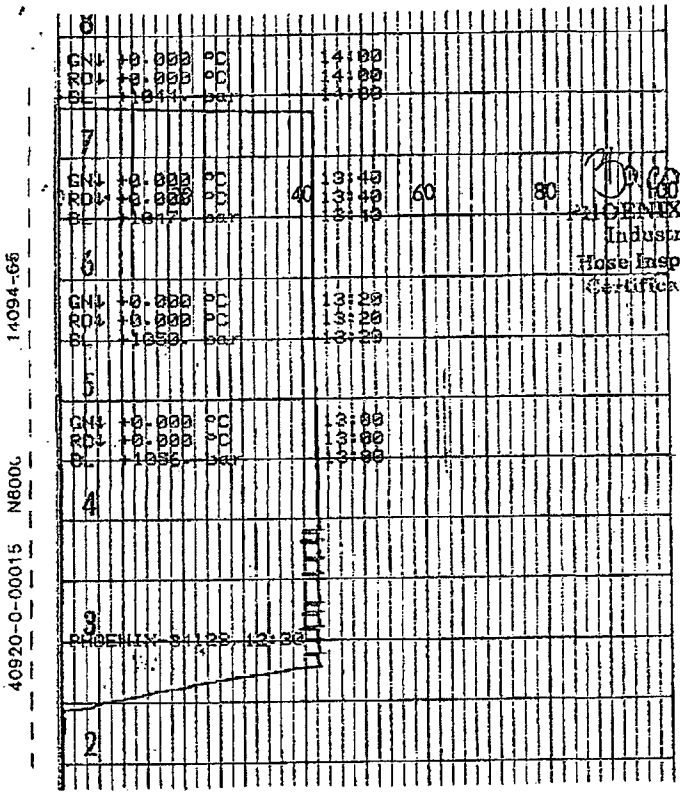
Type	Serial N°	Quality	Heat N°
3" coupling with	720 719	AISI 4130	C7626
4 1/16" Flange end		AISI 4130	47357

API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

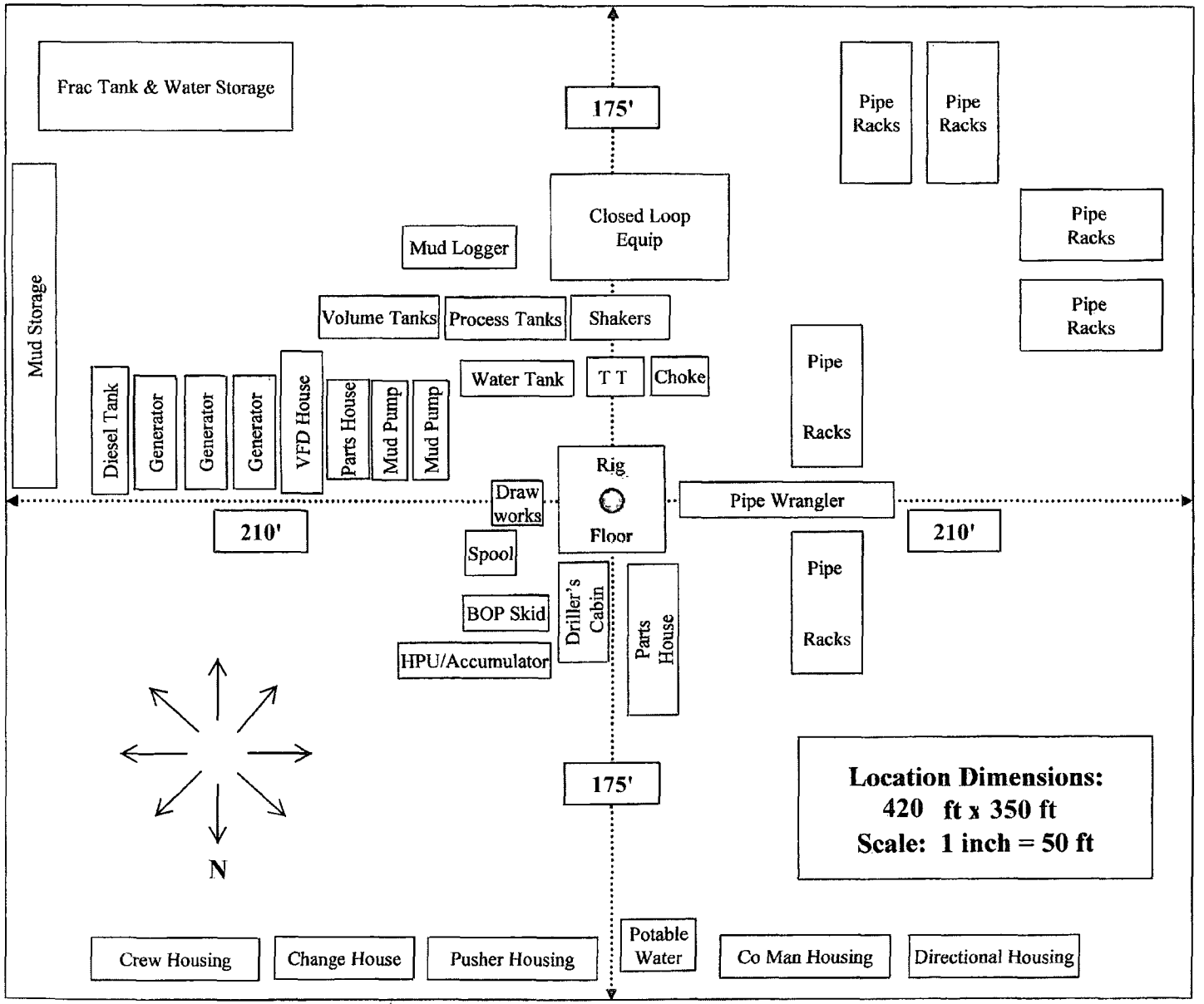
Date:	Inspector	Quality Control
29. April. 2002.		PHOENIX RUBBER Industrial Ltd. Hose Inspection and Test. VERIFIED THE CONTENTS PHOENIX RUBBER Q.C.



PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE CO
PHOENIX RUBBER Q.C.

H&P Flex Rig Location Layout



devon

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

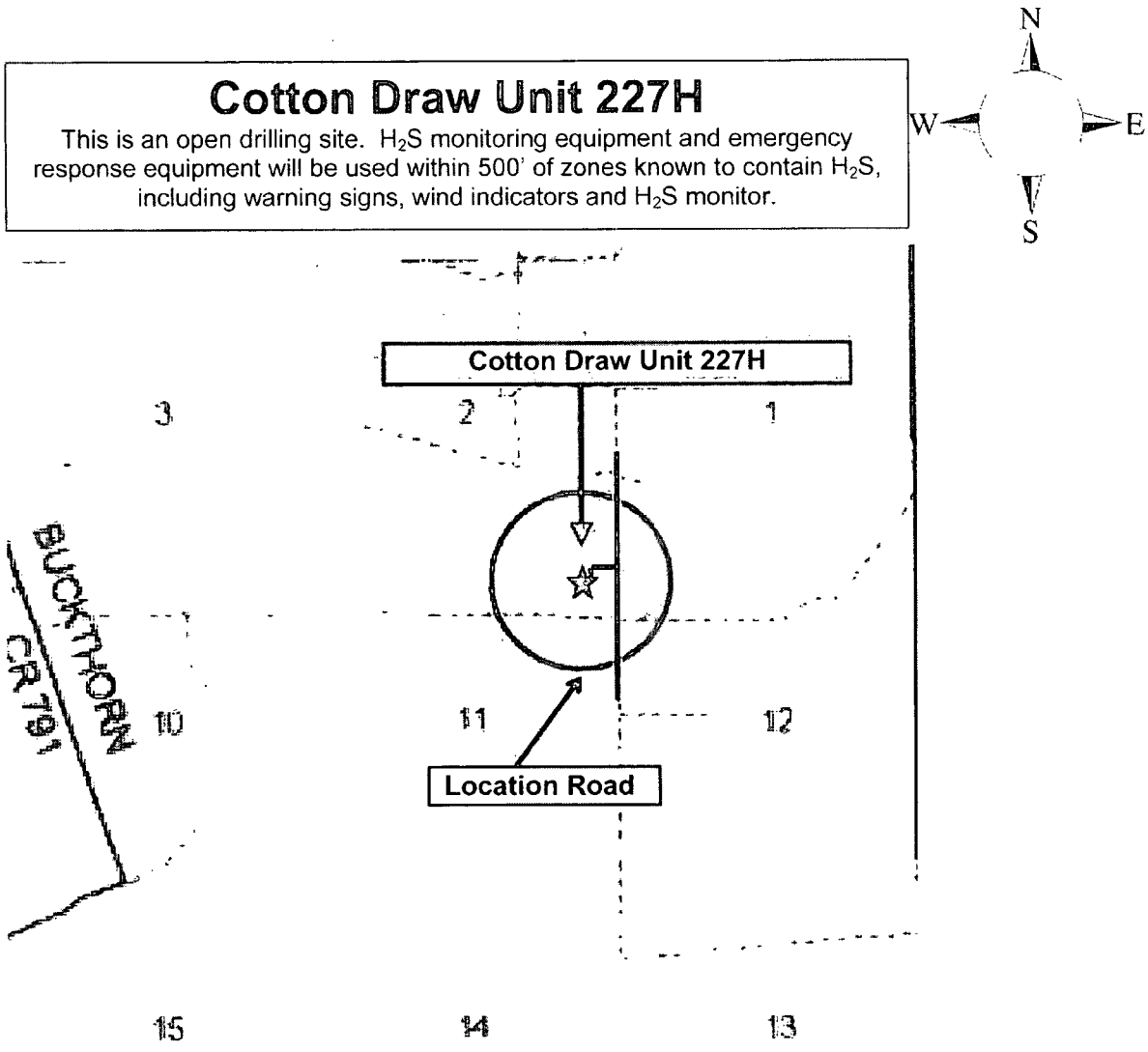
Cotton Draw Unit 227H

Sec-11, T-25S R-31E
200' FNL & 660' FEL,
LAT. = 32.1515537'N (NAD83)
LONG = 103.7422359'W

Eddy County NM

Cotton Draw Unit 227H

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



Assumed 100 ppm 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 H_2S concentration shall trigger activation of this plan.

Emergency Procedures

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

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

Ignition of Gas Source

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

Characteristics of H_2S and SO_2

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

Contacting Authorities

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

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

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

1. The hazards and characteristics of hydrogen sulfide (H_2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

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

1. The effects of H_2S metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and Public Protection Plan.

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

II. HYDROGEN SULFIDE TRAINING

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

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   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. **H_2S detection and monitoring equipment:**

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

4. **Visual warning systems:**

A. Wind direction indicators as shown on well site diagram

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

5. Mud program:

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

6. Metallurgy:

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

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

7. Communication:

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

B. Land line (telephone) communications at Office

8. Well testing:

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

B. There will be no drill stem testing.

Devon Energy Corp. Company Call List

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

Agency Call List

Lea County (575)

Hobbs

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

Eddy County (575)

Carlsbad

State Police	885-3137
City Police	885-2111
Sheriff's Office	887-7551
Ambulance	911
Fire Department	885-2111
LEPC (Local Emergency Planning Committee)	887-3798
US Bureau of Land Management	887-6544
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

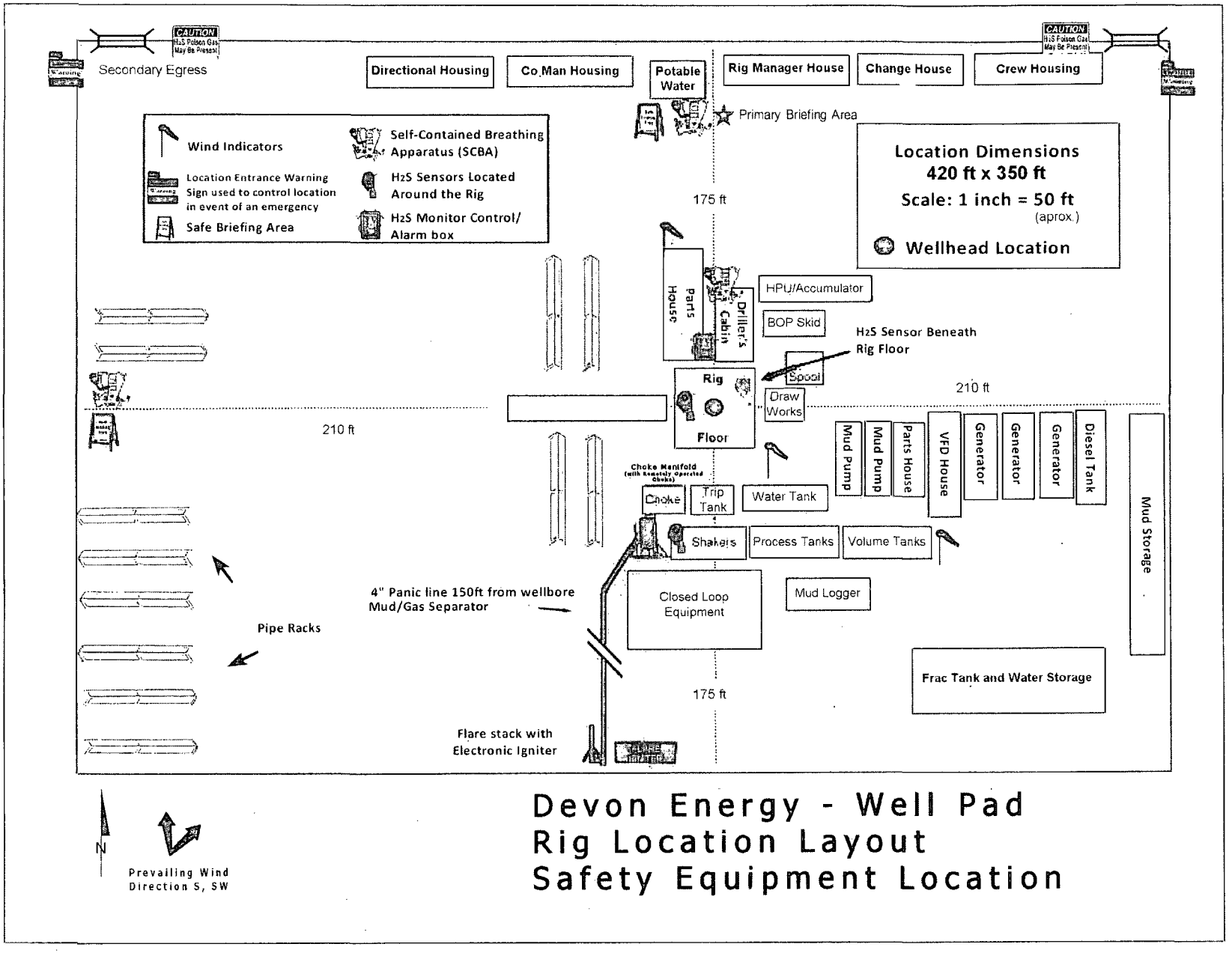
Boots & Coots IWC	(800)-256-9688 or (281) 931-8884
Cudd Pressure Control	(915) 699-0139 or (915) 563-3356
Halliburton	(575) 746-2757
B. J. Services	(575) 746-3569

Give GPS position:

Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
Flight For Life - Lubbock, TX	(806) 743-9911
Aerocare - Lubbock, TX	(806) 747-8923
Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
Lifeguard Air Med Svc. Albuquerque, NM	(575) 272-3115

Prepared in conjunction with
Dave Small

SHARP COMMUNICATIONS & CONSULTING, LLC


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

devon

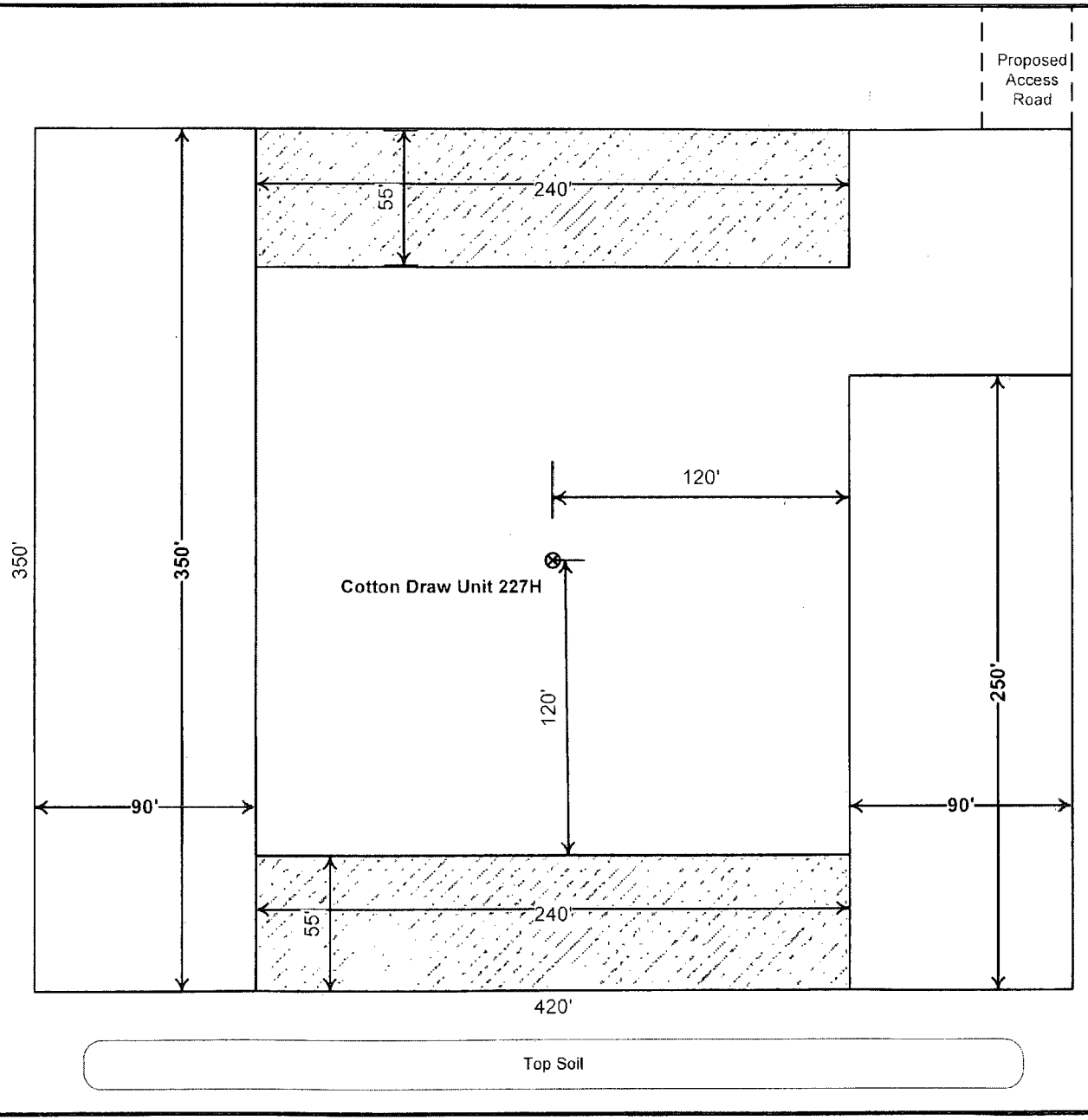
Proposed Interim Site Reclamation

Devon Energy Production Co.
Cotton Draw Unit #227H
Sec. 11-T25S-R31E
Eddy County, NM

N

Proposed Reclamation Area

Scale: 1in = 60ft.

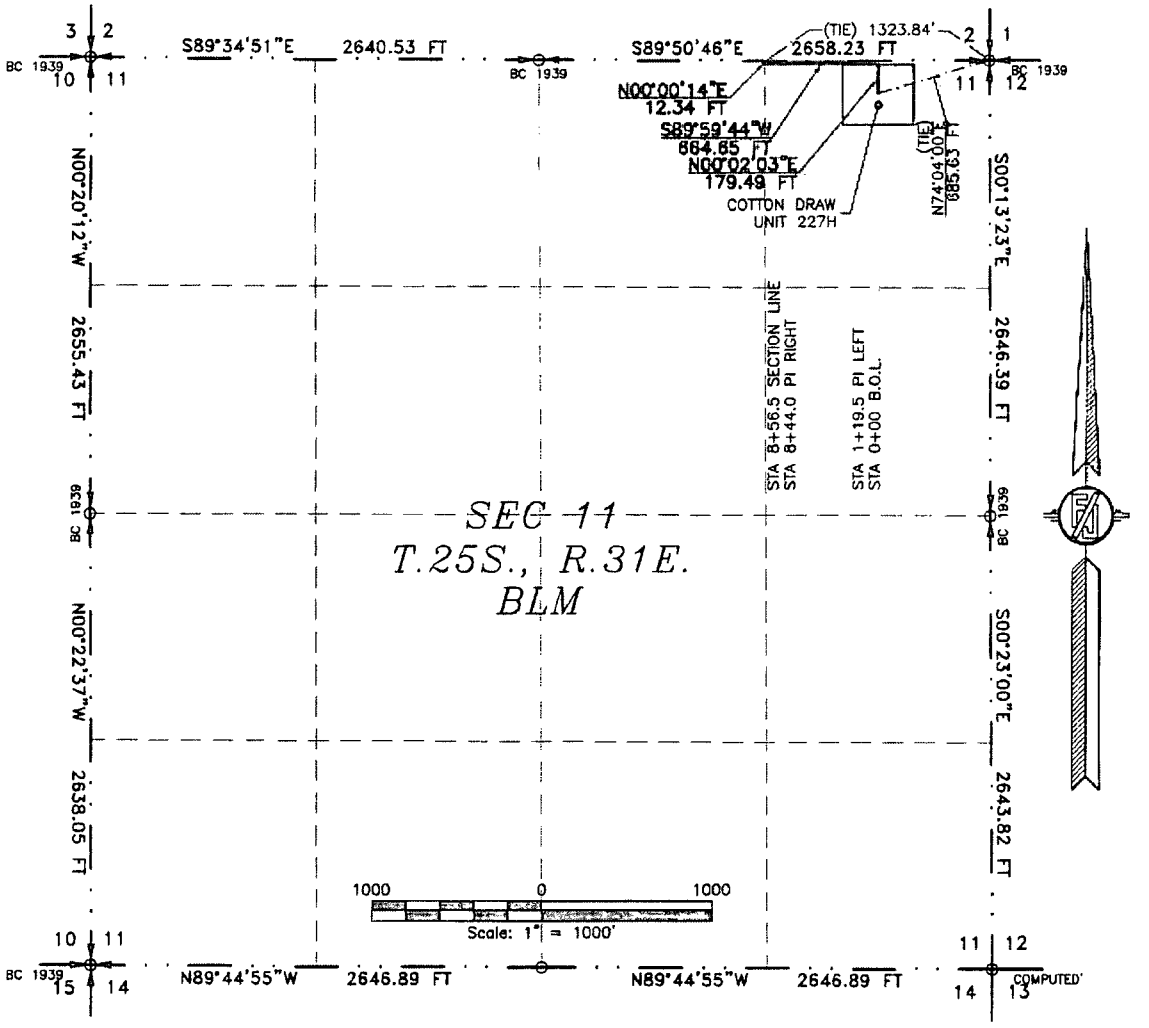


FLOWLINE PLAT

BURIED 4" FIBERFLEX POLY FLOWLINE FROM COTTON DRAW UNIT 227H
TO COTTON DRAW UNIT 219H & 220H BATTERY

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 11, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JULY 8, 2014



SEE NEXT SHEET (2-6) FOR DESCRIPTION

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 17 DAY OF JULY 2014

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST MODIFIED TO SURFACE COORDINATES.

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILIMON F. JARAMILLO, PLS 12797
301 SOUTH CANAL
(575) 234-3341

SHEET: 1-6

SURVEY NO. 3123

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

FLOWLINE PLAT

BURIED 4" FIBERFLEX POLY FLOWLINE FROM COTTON DRAW UNIT 227H TO COTTON DRAW UNIT 219H & 220H BATTERY

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 11, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JULY 8, 2014

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 11, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NE/4 NE/4 OF SAID SECTION 11, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHEAST CORNER OF SAID SECTION 11, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N74°04'00"E, A DISTANCE OF 685.63 FEET;
THENCE N00°02'03"E A DISTANCE OF 179.49 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S89°59'44"W A DISTANCE OF 664.65 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N00°00'14"E A DISTANCE OF 12.34 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHEAST CORNER OF SAID SECTION 11, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°50'46"E, A DISTANCE OF 1323.84 FEET;

SAID STRIP OF LAND BEING 856.48 FEET OR 51.91 RODS IN LENGTH, CONTAINING 0.590 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NE/4	856.48 L.F.	51.91 RODS	0.590 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST MODIFIED TO SURFACE COORDINATES.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 14 DAY OF JULY 2014

FILIMON F. JARAMILLO PLS# 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 2-6

SURVEY NO. 3123

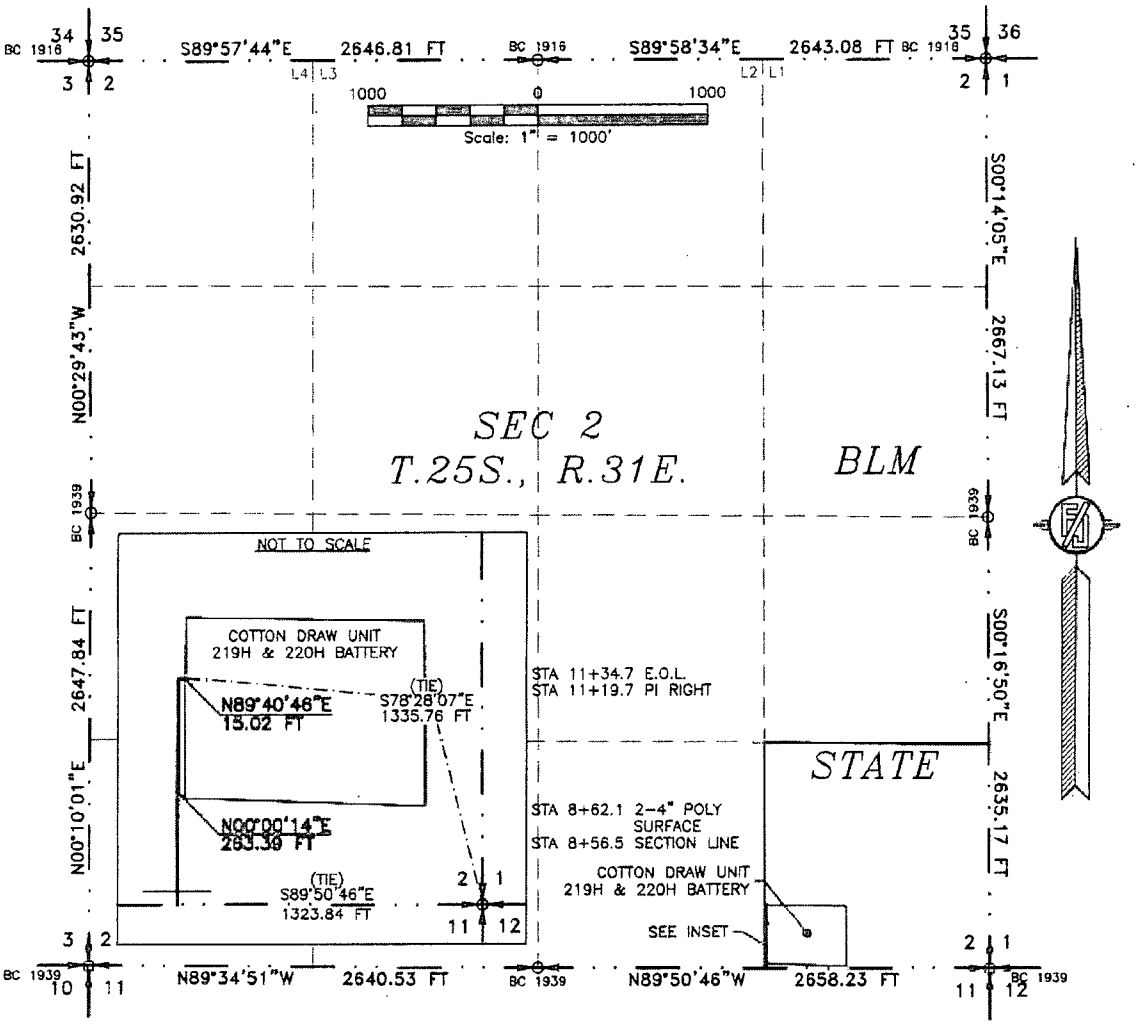
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

FLOWLINE PLAT

BURIED 4" FIBERFLEX POLY FLOWLINE FROM COTTON DRAW UNIT 227H
TO COTTON DRAW UNIT 219H & 220H BATTERY

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 2, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JULY 8, 2014



SEE NEXT SHEET (4-6) FOR DESCRIPTION

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 17 DAY OF JULY 2014.

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST MODIFIED TO SURFACE COORDINATES.

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILIMON F. JARAMILLO, PLS 12797
301 SOUTH CANAL (575) 234-3341

SHEET: 3-6

SURVEY NO. 3123

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

FLOWLINE PLAT

BURIED 4" FIBERFLEX POLY FLOWLINE FROM COTTON DRAW UNIT 227H TO COTTON DRAW UNIT 219H & 220H BATTERY

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 2, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JULY 8, 2014

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING STATE OF NEW MEXICO LAND IN SECTION 2, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SE/4 SE/4 OF SAID SECTION 2, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE SOUTHEAST CORNER OF SAID SECTION 2, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S89°50'46"E, A DISTANCE OF 1323.84 FEET;
THENCE N00°00'14"E A DISTANCE OF 263.39 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N89°40'46"E A DISTANCE OF 15.02 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHEAST CORNER OF SAID SECTION 2, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS S78°28'07"E, A DISTANCE OF 1335.76 FEET;

SAID STRIP OF LAND BEING 278.41 FEET OR 16.87 RODS IN LENGTH, CONTAINING 0.192 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 SE/4	278.41 L.F.	16.87 RODS	0.192 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST MODIFIED TO SURFACE COORDINATES.

SURVEYOR CERTIFICATE

I, FILLMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 11 DAY OF JULY 2014

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILLMON F. JARAMILLO PLS. 12797

SURVEY NO. 3123

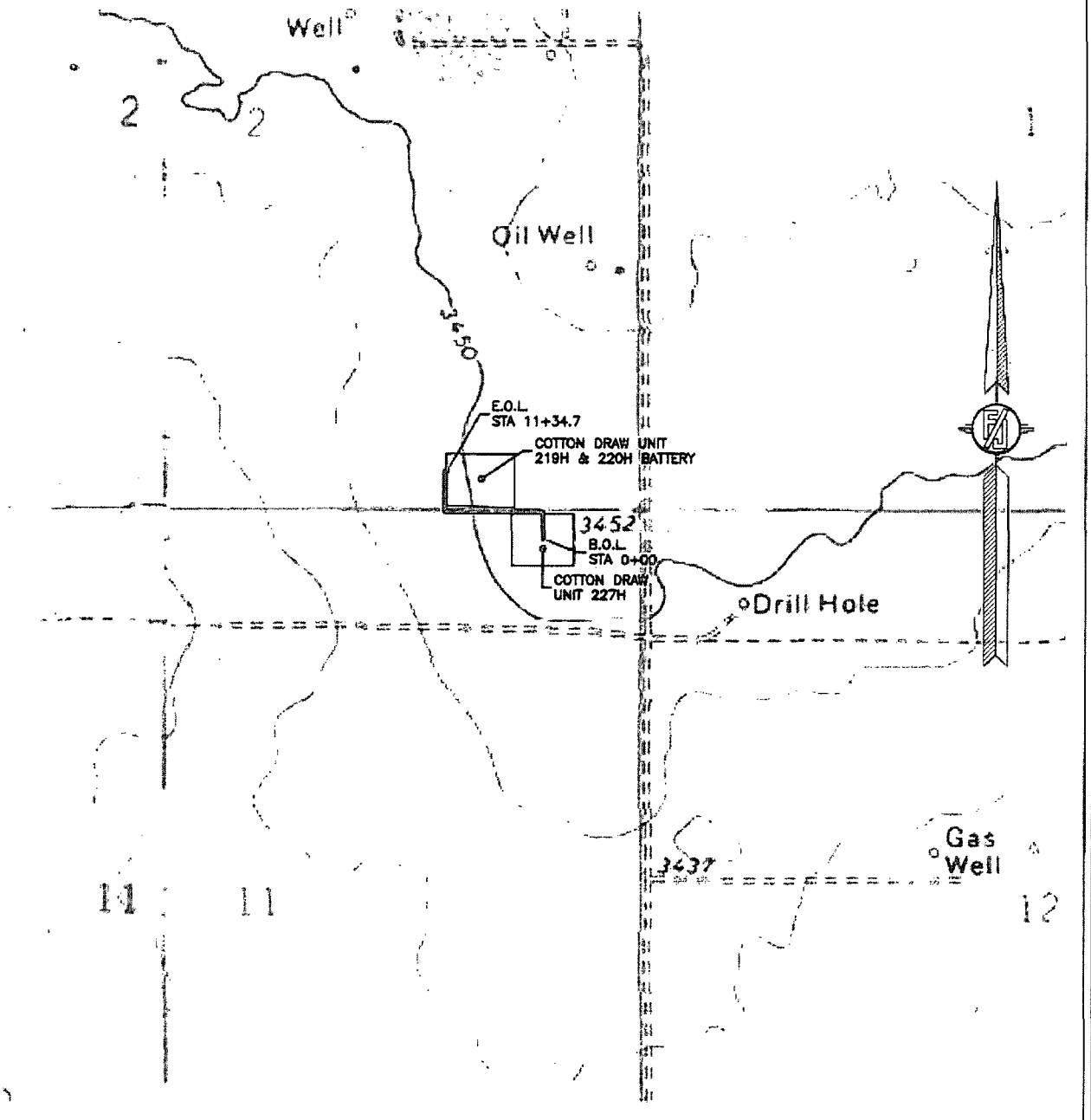
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

FLOWLINE PLAT

BURIED 4" FIBERFLEX POLY FLOWLINE FROM COTTON DRAW UNIT 227H
TO COTTON DRAW UNIT 219H & 220H BATTERY

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTIONS 11 & 2, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JULY 8, 2014



SHEET: 5-6 SURVEY NO. 3123

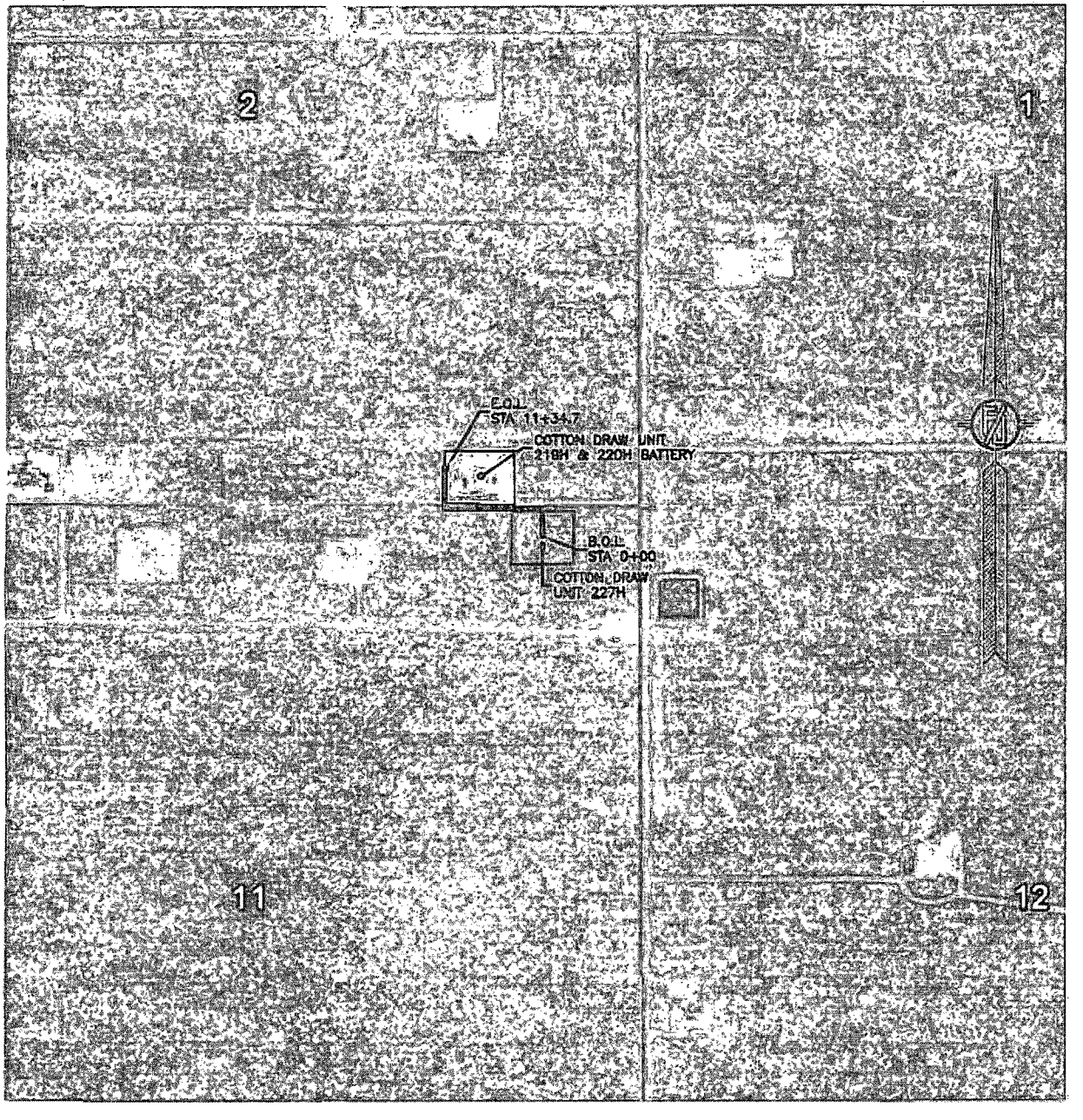
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

FLOWLINE PLAT

BURIED 4" FIBERFLEX POLY FLOWLINE FROM COTTON DRAW UNIT 227H
TO COTTON DRAW UNIT 219H & 220H BATTERY

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTIONS 11 & 2, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
JULY 8, 2014



SHEET: 6-6 *SURVEY NO. 3123*

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

SURFACE USE PLAN

Devon Energy Production Company, L.P.
Cotton Draw Unit 227H

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 Orla Highway #1 and Monsanto Road, go West on Monsanto Road approx. 2.1 miles, road turns right (North) go North approx. 0.9 miles, road turns left (West) go West approx. 2.0 miles, road turns right (North) go approx. 1.15 miles to a lease road on left (West) turn West and go approx. 0.1 miles. Location is on the left (South) of lease road 200'.

2. **New or Reconstructed Access Roads:**
   a. The "Site Map" shows new constructed access road, which will be approximately 39 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, the Cotton Draw Unit 219H & 220H tank battery would be utilized and shared, and the necessary production equipment will be installed at the well site. This facility is located in Sec 2 T25S R31E. See proposed "Flowline Plat".
   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.

Kim Henderson - Operations Engineer
Devon Energy Production Company, L.P.
333 W. Sheridan
Oklahoma City, OK 73102-5010
(405) 552-6505 (office)
(405) 479-3869 (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)

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company, L.P.**
LEASE NO.:	**NMNM-0503**
WELL NAME & NO.:	**Cotton Draw Unit 227H**
SURFACE HOLE FOOTAGE:	**0200' FNL & 0660' FEL**
BOTTOM HOLE FOOTAGE	**0330' FSL & 0660' FEL**
LOCATION:	**Section 11, 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**
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
  - Commercial Well Determination
  - Unit Well Sign Specs
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - Cement Requirements
  - H2S Requirements
  - Logging Requirements
  - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
- ☐ **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.

Commercial Well Determination
A commercial well determination shall be submitted after production has been established for at least six months.

Unit Wells
The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number 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.

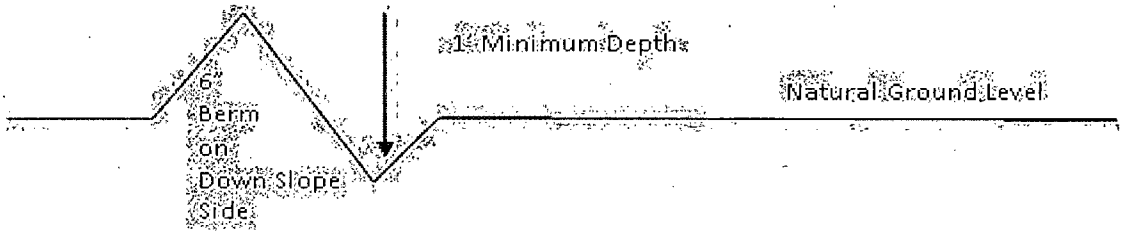
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ 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

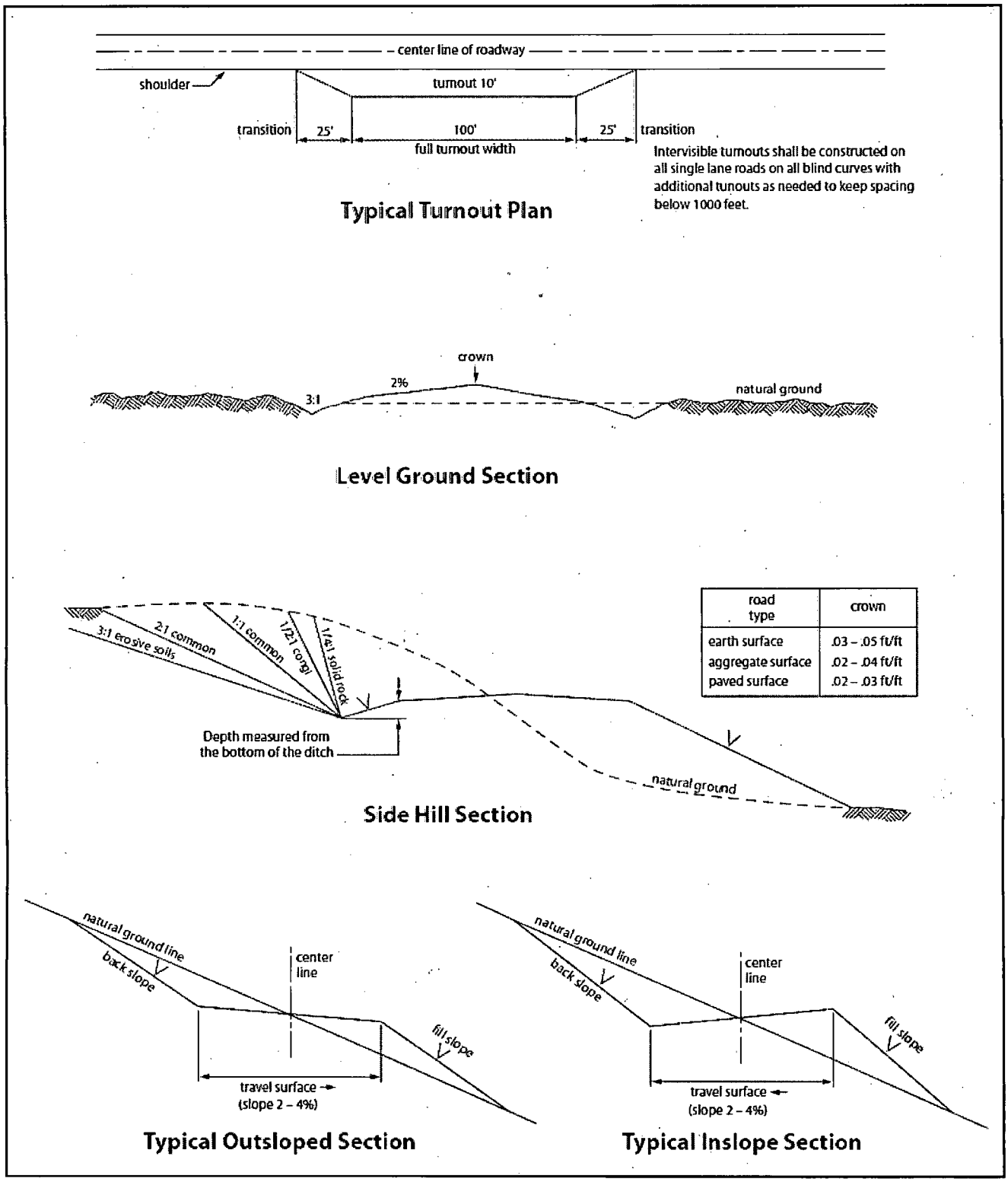


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe. If Hydrogen Sulfide is encountered, report measured amounts 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) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

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

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 **775** feet **(in a competent bed <u>below the Magenta Dolomite</u>, which is a <u>Member of the Rustler</u>, 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 **4400** feet **(in the basal anhydrite of the Castile formation or 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 a DV tool 50' below previous shoe, 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. **Excess calculates to 20% - Additional cement may be required.**

b. Second stage above DV tool:

☒ Cement should tie-back at least 500 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 RP 53 Sec. 17.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

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

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

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

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

JAM 011515

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).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting

Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless

otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
( ) seed mixture 2	( ) seed mixture 4
(x) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. The period of time that any trenches or other excavations are kept open will be held to the minimum compatible with construction requirements. The holder shall not leave more than one-half mile of trench open overnight or otherwise unattended. Open trenches will have ramps, bridges, or earthen plugs, at least six feet wide, every one-quarter mile to pass livestock and wildlife.

20. Special Stipulations:

Lesser Prairie-Chicken

Oil and gas activities 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, geophysical exploration other than 3-D operations, and 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. 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 ft. from the source of the noise.

IX. INTERIM RECLAMATION

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

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

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

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

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

X. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

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