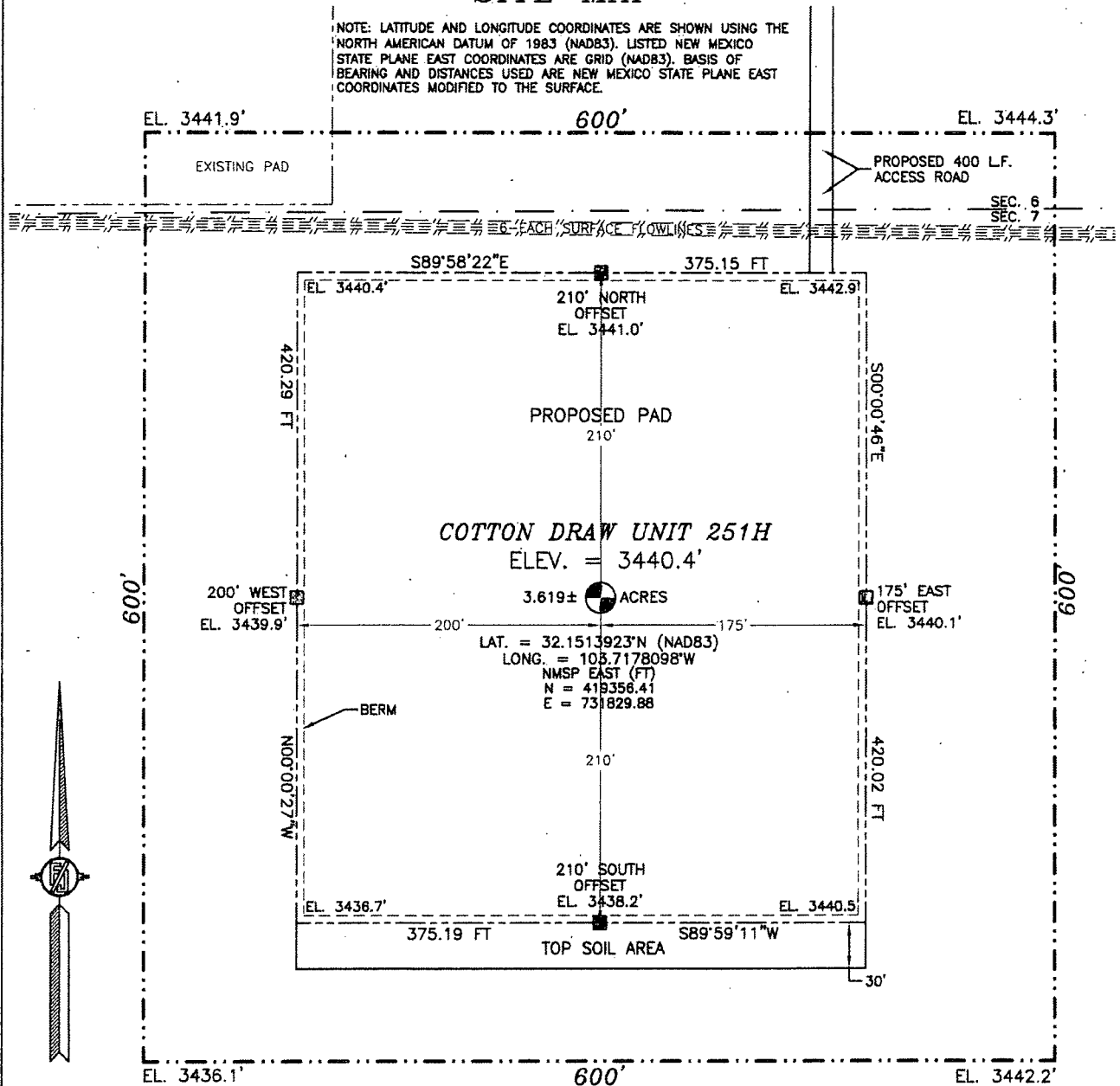


**SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP**

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 ROAD, CR 1 AND MONSANTO ROAD GO WEST ON MONSANTO ROAD APPROX. 2.1 MILES, TURN RIGHT AT ROAD INTERSECTION GO NORTH APPROX. 0.9 MILE ROAD TURNS LEFT GO WEST APPROX. 2.0 MILES TURN RIGHT AT ROAD INTERSECTION GO NORTH APPROX. 1.3 MILES TO CALICHE LEASE ROAD ON RIGHT GO EAST 1.3 MILES TO A PROPOSED ROAD SURVEY ON RIGHT (SOUTH) FOLLOW FLAGS SOUTH APPROX. 400 FEET TO NORTHEAST CORNER OF PROPOSED PAD.

**DEVON ENERGY PRODUCTION COMPANY, L.P.
COTTON DRAW UNIT 251H**

**LOCATED 250 FT. FROM THE NORTH LINE
AND 1600 FT. FROM THE WEST LINE OF
SECTION 7, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO**

JULY 13, 2015

SURVEY NO. 2969A

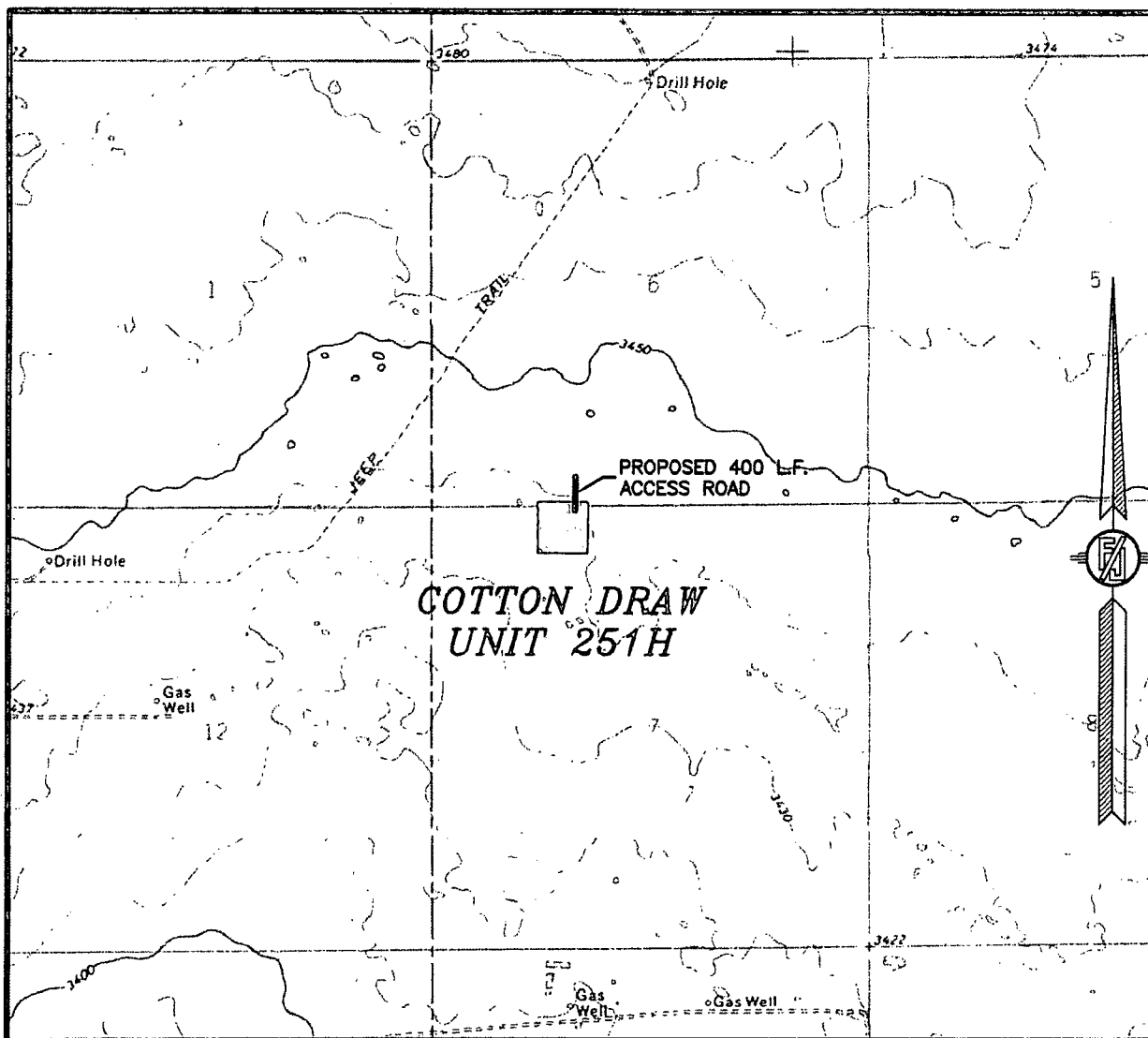
MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SEP 18 2015

SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
PADUCA BREAKS NW

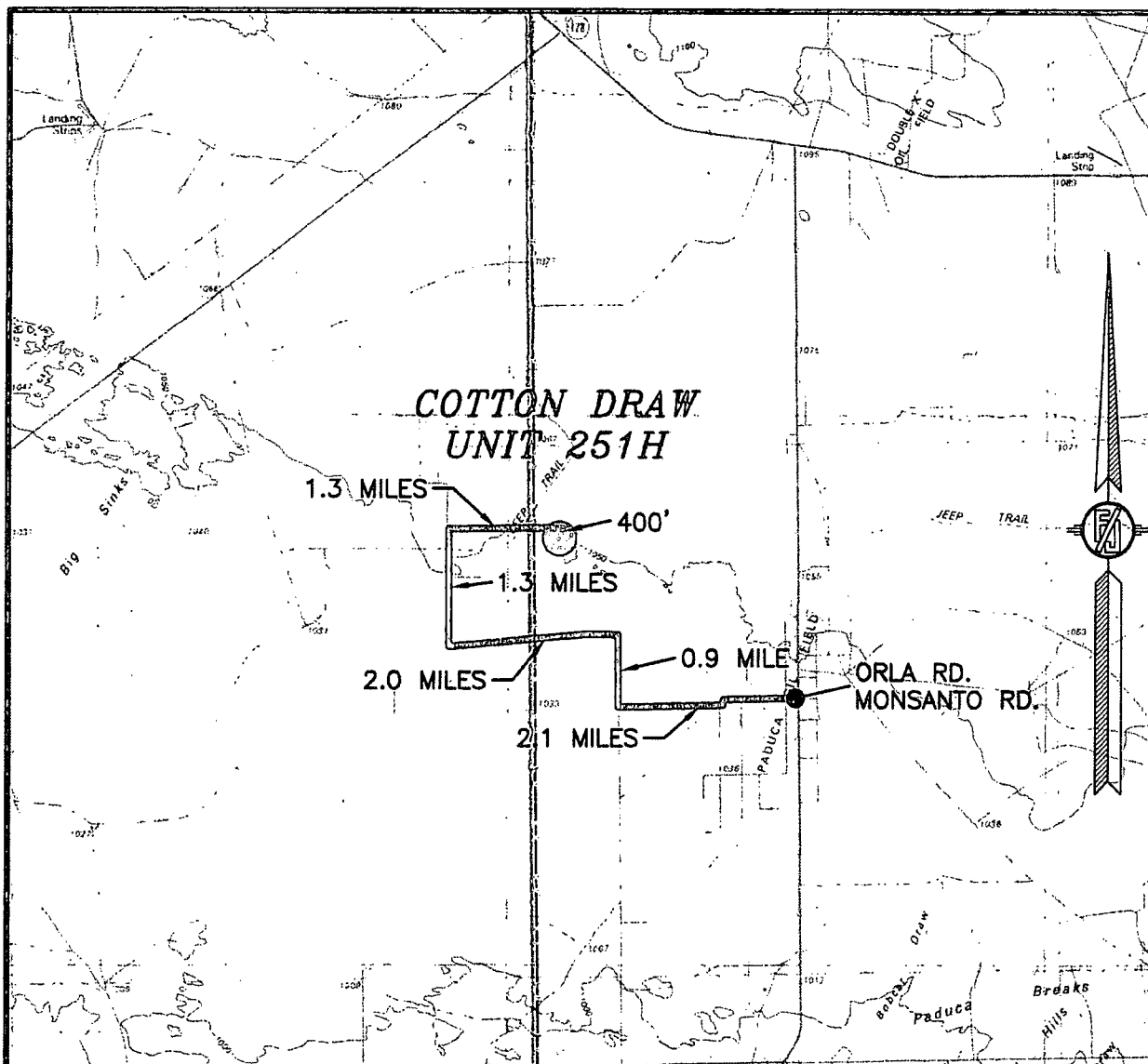
NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
COTTON DRAW UNIT 251H
LOCATED 250 FT. FROM THE NORTH LINE
AND 1600 FT. FROM THE WEST LINE OF
SECTION 7, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

JULY 13, 2015

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO
SURVEY NO. 2969A

SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ORLA ROAD, CR 1 AND MONSANTO ROAD GO WEST ON MONSANTO ROAD APPROX. 2.1 MILES, TURN RIGHT AT ROAD INTERSECTION GO NORTH APPROX. 0.9 MILE ROAD TURNS LEFT GO WEST APPROX. 2.0 MILES TURN RIGHT AT ROAD INTERSECTION GO NORTH APPROX. 1.3 MILES TO CALICHE LEASE ROAD ON RIGHT GO EAST 1.3 MILES TO A PROPOSED ROAD SURVEY ON RIGHT (SOUTH) FOLLOW FLAGS SOUTH APPROX. 400 FEET TO NORTHEAST CORNER OF PROPOSED PAD.

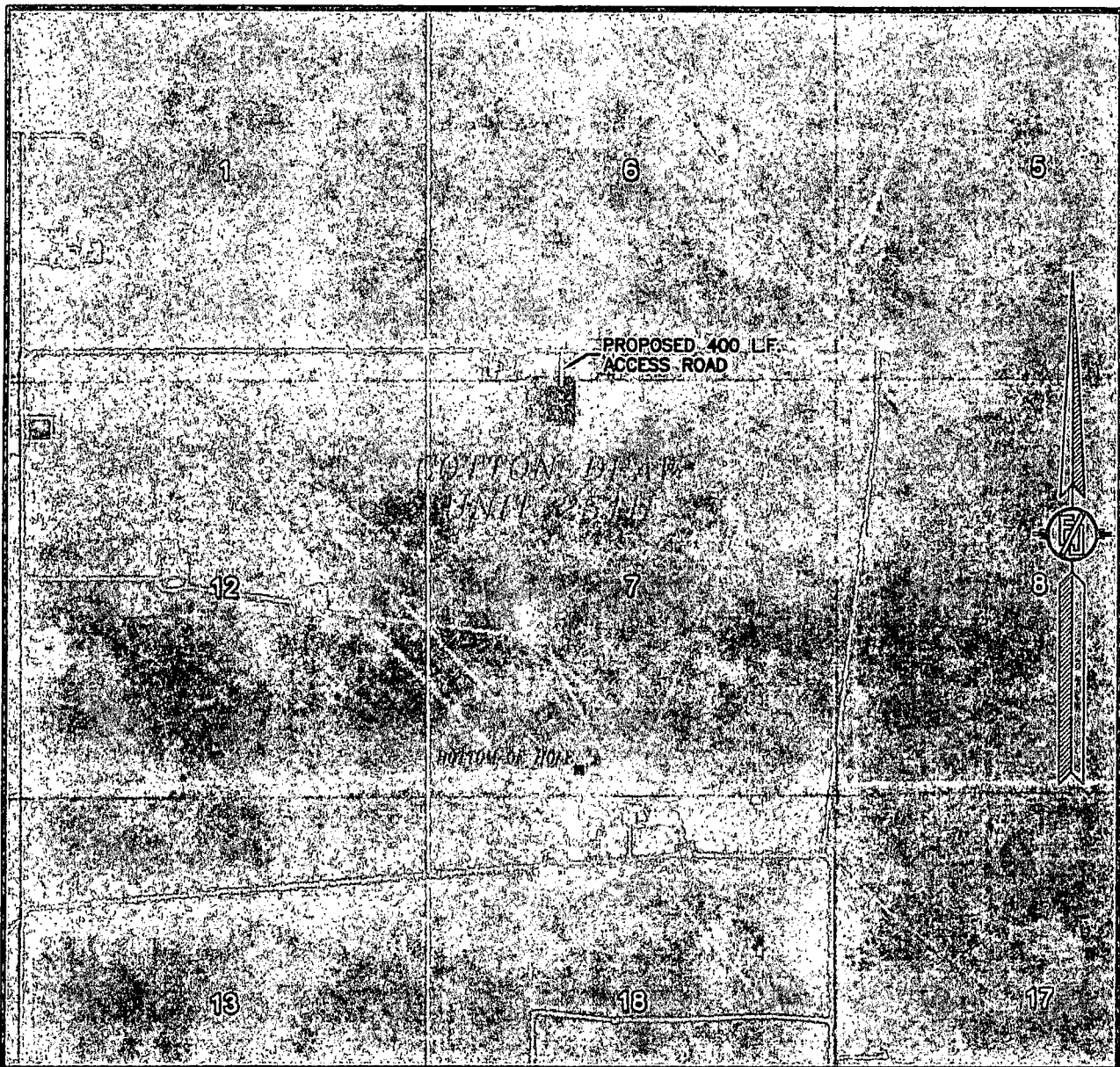
**DEVON ENERGY PRODUCTION COMPANY, L.P.
COTTON DRAW UNIT 251H**

LOCATED 250 FT. FROM THE NORTH LINE
AND 1600 FT. FROM THE WEST LINE OF
SECTION 7, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

JULY 13, 2015

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO SURVEY NO. 2969A

SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEB. 2014

DEVON ENERGY PRODUCTION COMPANY, L.P.
COTTON DRAW UNIT 251H

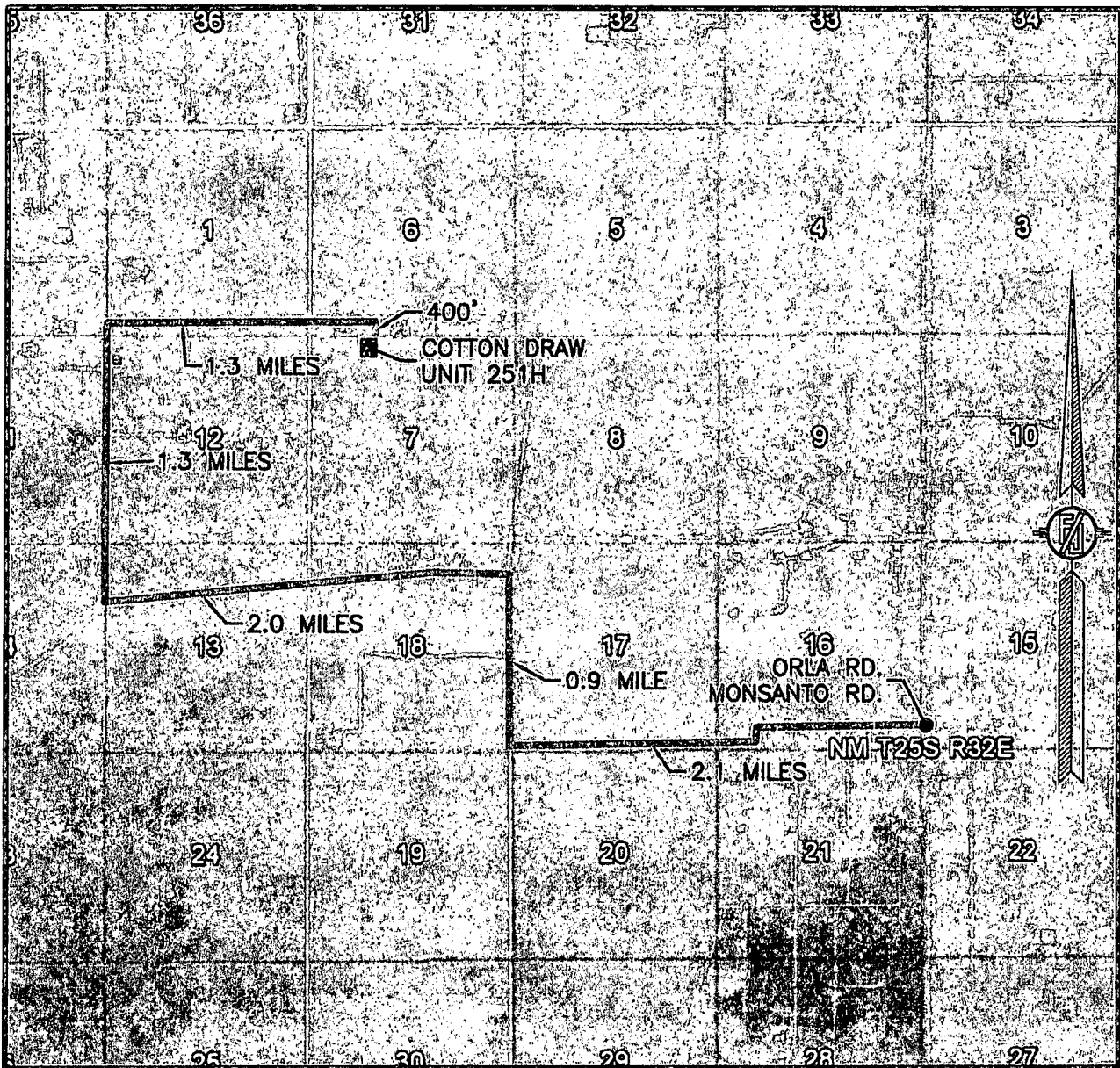
LOCATED 250 FT. FROM THE NORTH LINE
AND 1600 FT. FROM THE WEST LINE OF
SECTION 7, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

JULY 13, 2015

SURVEY NO. 2969A

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

SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEB. 2014

DEVON ENERGY PRODUCTION COMPANY, L.P.
COTTON DRAW UNIT 251H

LOCATED 250 FT. FROM THE NORTH LINE
AND 1600 FT. FROM THE WEST LINE OF
SECTION 7, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

JULY 13, 2015

SURVEY NO. 2969A

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

Devon Energy, Cotton Draw Unit 251H

1. Geologic Formations

TVD of target	8,195'	Pilot hole depth	N/A
MD at TD:	12,702'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	724	Barren	
Top of Salt	1,139	Barren	
Base of Salt	4,219	Baren	
Lamar	4,250	Oil	
Delaware	4,437	Oil	
Bell Canyon	4,458	Oil	
Cherry Canyon	5,400	Oil	
Bushy Canyon	6,696	Oil	
Bone Spring	8,359	Oil	

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

Devon Energy, Cotton Draw Unit 251H

2. Casing Program

See
COA

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	760' 800'	13.375"	48	H-40	STC	2.27	5.09	14.83
12.25"	0	4,390' ✓	9.625"	40	J-55	LTC	1.126	1.73	2.96
8.75"	0	12,702'	5.5"	17	P-110	BTC	2.19	2.71	4.08
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

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

Must have table for contingency casing

See
COA

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

Devon Energy, Cotton Draw Unit 251H

3. Cementing Program

Casing	# Sks	Wt. lb/gal	H ₂ O gal/sk	Yld ft ³ /sack	500# Comp. Strength (hours)	Slurry Description
Surf.	830	14.8	6.32	1.33	7	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
Inter.	940	12.9	9.81	1.85	17	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	430	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
Prod.	530	12.5	10.86	1.96	30	1 st Lead: (65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake
	1320	14.5	5.31	1.2	25	1 st Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
	DV/ECP Tool 4440'					
	20	11	14.81	2.55	22	2 nd stage Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake
	30	14.8	6.32	1.33	6	2 nd stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake

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

Casing String	TOC	% Excess
Surface	0'	100%
Intermediate	0'	75%
Production	1 st Stage = 4440' / 2 nd Stage = 4190'	25%

200' tie back

Devon Energy, Cotton Draw Unit 251H

4. Pressure Control Equipment

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

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

*Specify if additional ram is utilized.

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

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

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

Devon Energy, Cotton Draw Unit 251H

Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
N	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly (FMC Uni-head). This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. - Wellhead will be installed by FMC's representatives. - If the welding is performed by a third party, the FMC's representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. - FMC representative will install the test plug for the initial BOP test. - FMC will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 5M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. - If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. - Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. - Devon will test the casing to 70% of burst or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the FMC Uni-head wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8" intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the FMC Uni-head. 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 Energy, Cotton Draw Unit 251H

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

See COA

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	760'	FW Gel	8.6-8.8	28-34	N/C
760'	4,390'	Saturated Brine	10.0-10.2	28-34	N/C
4,390'	12,702'	Cut Brine	8.5-9.3	28-34	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
---	-----------------------------

6. Logging and Testing Procedures

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

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

Devon Energy, Cotton Draw Unit 251H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	3688 psi
Abnormal Temperature	No

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

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

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

☒ Directional Plan

☐ Other, describe

DEVON ENERGY

Project: Eddy County, NM (NAD-83)
Site: Cotton Draw Unit
Well: 251H
Wellbore: 251H OH
Design: Plan #1



Azimuths to Grid North
True North: -0.33°
Magnetic North: 7.08°

Magnetic Field
Strength: 48191.6nT
Dip Angle: 60.01°
Date: 9/11/2014
Model: BGGM2014

devon

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

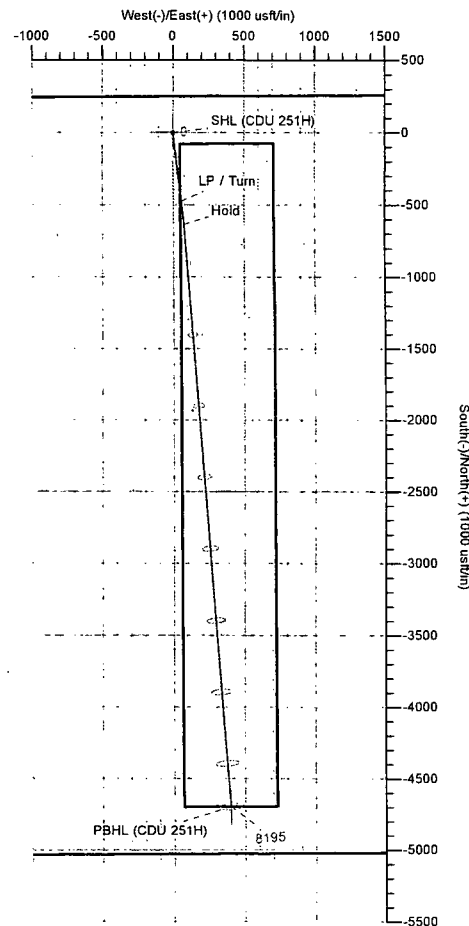
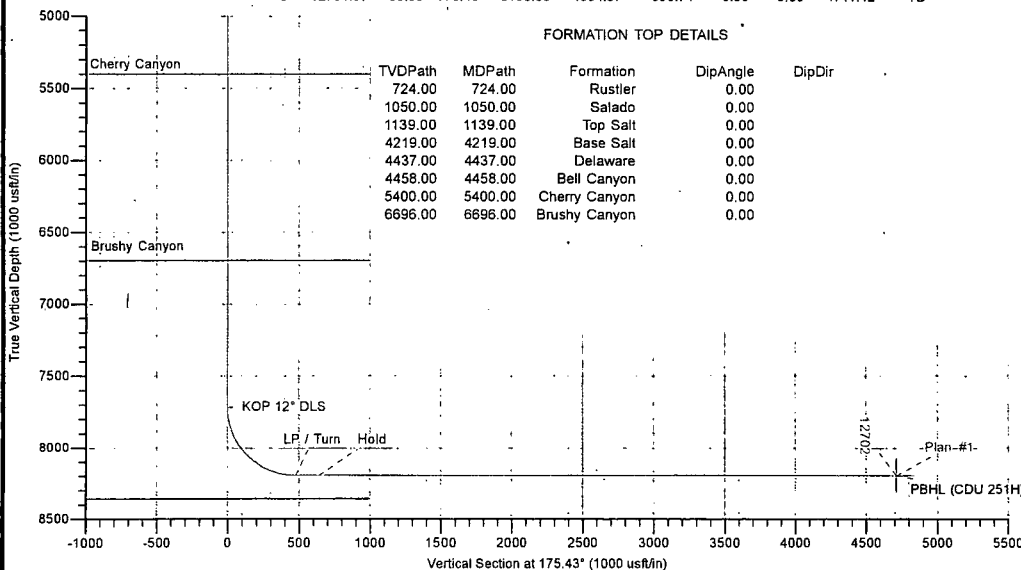
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (CDU 251H)	0.00	0.00	0.00	419356.41	731829.88	32° 9' 5.012 N	103° 43' 4.115 W
PBHL (CDU 251H)	8195.00	-4694.57	398.74	414661.84	732228.62	32° 8' 18.534 N	103° 42' 59.790 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	7717.54	0.00	0.00	7717.54	0.00	0.00	0.00	0.00	0.00	KOP 12" DLS
3	8467.54	90.00	173.00	8195.00	-473.91	58.19	12.00	173.00	477.04	LP / Turn
4	8629.78	90.00	175.43	8195.00	-635.31	74.54	1.50	90.00	639.23	Hold
5	12701.97	90.00	175.43	8195.00	-4694.57	398.74	0.00	0.00	4711.42	TD

FORMATION TOP DETAILS



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

Plan: Plan #1 (251H/251H OH)
Created By: Brady Deaver
Date: 8/20, August 03 2015
Approved: _____ Date: _____

DEVON ENERGY

Eddy County, NM (NAD-83)

Cotton Draw Unit

251H

251H OH

Plan: Plan #1

Standard Planning Report

03 August, 2015

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 251H
Company:	DEVON ENERGY	TVD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Site:	Cotton Draw Unit	North Reference:	Grid
Well:	251H	Survey Calculation Method:	Minimum Curvature
Wellbore:	251H OH		
Design:	Plan #1		

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

Site:	Cotton Draw Unit		
Site Position:		Northing:	419,194.51 usft
From:	Map	Easting:	722,955.98 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 9' 3.901 N
		Longitude:	103° 44' 47.345 W
		Grid Convergence:	0.31 °

Well:	251H, Brushy Canyon					
Well Position	+N/-S	161.90 usft	Northing:	419,356.41 usft	Latitude:	32° 9' 5.012 N
	+E/-W	8,873.90 usft	Easting:	731,829.88 usft	Longitude:	103° 43' 4.115 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	3,469.10 usft	Ground Level:	3,444.10 usft

Wellbore	251H OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	BGGM2014	9/11/2014	7.41	60.01	48,192

Design:	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	175.43

Plan Sections:										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,717.54	0.00	0.00	7,717.54	0.00	0.00	0.00	0.00	0.00	0.00	
8,467.54	90.00	173.00	8,195.01	-473.91	58.19	12.00	12.00	0.00	173.00	
8,629.78	90.00	175.43	8,195.00	-635.31	74.54	1.50	0.00	1.50	90.00	
12,701.97	90.00	175.43	8,195.00	-4,694.57	398.74	0.00	0.00	0.00	0.00	PBHL (CDU 251H)

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 251H
Company:	DEVON ENERGY	TVD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Site:	Cotton Draw Unit	North Reference:	Grid
Well:	251H	Survey Calculation Method:	Minimum Curvature
Wellbore:	251H OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (CDU 251H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
724.00	0.00	0.00	724.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,139.00	0.00	0.00	1,139.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,219.00	0.00	0.00	4,219.00	0.00	0.00	0.00	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 251H
Company:	DEVON ENERGY	TVD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Site:	Cotton Draw Unit	North Reference:	Grid
Well:	251H	Survey Calculation Method:	Minimum Curvature
Wellbore:	251H OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Base Salt									
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,437.00	0.00	0.00	4,437.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware									
4,458.00	0.00	0.00	4,458.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell Canyon									
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon									
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,696.00	0.00	0.00	6,696.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,717.54	0.00	0.00	7,717.54	0.00	0.00	0.00	0.00	0.00	0.00
KOP 12° DLS									
7,725.00	0.90	173.00	7,725.00	-0.06	0.01	0.06	12.00	12.00	0.00
7,750.00	3.90	173.00	7,749.98	-1.09	0.13	1.10	12.00	12.00	0.00
7,775.00	6.90	173.00	7,774.86	-3.43	0.42	3.45	12.00	12.00	0.00
7,800.00	9.90	173.00	7,799.59	-7.05	0.87	7.10	12.00	12.00	0.00
7,825.00	12.90	173.00	7,824.10	-11.95	1.47	12.03	12.00	12.00	0.00
7,850.00	15.90	173.00	7,848.31	-18.12	2.22	18.24	12.00	12.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 251H
Company:	DEVON ENERGY	TVD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Site:	Cotton Draw Unit	North Reference:	Grid
Well:	251H	Survey Calculation Method:	Minimum Curvature
Wellbore:	251H OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7,875.00	18.90	173.00	7,872.16	-25.54	3.14	25.71	12.00	12.00	0.00	
7,900.00	21.90	173.00	7,895.59	-34.18	4.20	34.41	12.00	12.00	0.00	
7,925.00	24.90	173.00	7,918.53	-44.04	5.41	44.33	12.00	12.00	0.00	
7,950.00	27.90	173.00	7,940.92	-55.07	6.76	55.43	12.00	12.00	0.00	
7,975.00	30.90	173.00	7,962.70	-67.24	8.26	67.69	12.00	12.00	0.00	
8,000.00	33.90	173.00	7,983.81	-80.54	9.89	81.07	12.00	12.00	0.00	
8,025.00	36.90	173.00	8,004.19	-94.91	11.65	95.53	12.00	12.00	0.00	
8,050.00	39.90	173.00	8,023.78	-110.32	13.55	111.04	12.00	12.00	0.00	
8,075.00	42.90	173.00	8,042.53	-126.72	15.56	127.56	12.00	12.00	0.00	
8,100.00	45.90	173.00	8,060.39	-144.08	17.69	145.03	12.00	12.00	0.00	
8,125.00	48.90	173.00	8,077.31	-162.34	19.93	163.41	12.00	12.00	0.00	
8,150.00	51.90	173.00	8,093.25	-181.46	22.28	182.66	12.00	12.00	0.00	
8,175.00	54.90	173.00	8,108.15	-201.38	24.73	202.70	12.00	12.00	0.00	
8,200.00	57.90	173.00	8,121.99	-222.04	27.26	223.51	12.00	12.00	0.00	
8,225.00	60.90	173.00	8,134.72	-243.39	29.89	245.00	12.00	12.00	0.00	
8,250.00	63.90	173.00	8,146.30	-265.38	32.58	267.13	12.00	12.00	0.00	
8,275.00	66.90	173.00	8,156.71	-287.94	35.35	289.84	12.00	12.00	0.00	
8,300.00	69.90	173.00	8,165.91	-311.01	38.19	313.06	12.00	12.00	0.00	
8,325.00	72.90	173.00	8,173.89	-334.52	41.07	336.73	12.00	12.00	0.00	
8,350.00	75.90	173.00	8,180.61	-358.42	44.01	360.78	12.00	12.00	0.00	
8,375.00	78.90	173.00	8,186.07	-382.63	46.98	385.16	12.00	12.00	0.00	
8,400.00	81.90	173.00	8,190.24	-407.09	49.98	409.78	12.00	12.00	0.00	
8,425.00	84.90	173.00	8,193.11	-431.74	53.01	434.59	12.00	12.00	0.00	
8,450.00	87.90	173.00	8,194.68	-456.50	56.05	459.52	12.00	12.00	0.00	
8,467.54	90.00	173.00	8,195.01	-473.91	58.19	477.04	12.00	12.00	0.00	
LP / Turn										
8,500.00	90.00	173.49	8,195.01	-506.14	62.01	509.47	1.50	0.00	1.50	
8,600.00	90.00	174.99	8,195.00	-605.63	72.05	609.45	1.50	0.00	1.50	
8,629.78	90.00	175.43	8,195.00	-635.31	74.54	639.23	1.50	0.00	1.50	
Hold										
8,700.00	90.00	175.43	8,195.00	-705.31	80.13	709.45	0.00	0.00	0.00	
8,800.00	90.00	175.43	8,195.00	-804.99	88.09	809.45	0.00	0.00	0.00	
8,900.00	90.00	175.43	8,195.00	-904.67	96.05	909.45	0.00	0.00	0.00	
9,000.00	90.00	175.43	8,195.00	-1,004.35	104.01	1,009.45	0.00	0.00	0.00	
9,100.00	90.00	175.43	8,195.00	-1,104.04	111.97	1,109.45	0.00	0.00	0.00	
9,200.00	90.00	175.43	8,195.00	-1,203.72	119.93	1,209.45	0.00	0.00	0.00	
9,300.00	90.00	175.43	8,195.00	-1,303.40	127.89	1,309.45	0.00	0.00	0.00	
9,400.00	90.00	175.43	8,195.00	-1,403.08	135.86	1,409.45	0.00	0.00	0.00	
9,500.00	90.00	175.43	8,195.00	-1,502.77	143.82	1,509.45	0.00	0.00	0.00	
9,600.00	90.00	175.43	8,195.00	-1,602.45	151.78	1,609.45	0.00	0.00	0.00	
9,700.00	90.00	175.43	8,195.00	-1,702.13	159.74	1,709.45	0.00	0.00	0.00	
9,800.00	90.00	175.43	8,195.00	-1,801.81	167.70	1,809.45	0.00	0.00	0.00	
9,900.00	90.00	175.43	8,195.00	-1,901.50	175.66	1,909.45	0.00	0.00	0.00	
10,000.00	90.00	175.43	8,195.00	-2,001.18	183.62	2,009.45	0.00	0.00	0.00	
10,100.00	90.00	175.43	8,195.00	-2,100.86	191.59	2,109.45	0.00	0.00	0.00	
10,200.00	90.00	175.43	8,195.00	-2,200.54	199.55	2,209.45	0.00	0.00	0.00	
10,300.00	90.00	175.43	8,195.00	-2,300.23	207.51	2,309.45	0.00	0.00	0.00	
10,400.00	90.00	175.43	8,195.00	-2,399.91	215.47	2,409.45	0.00	0.00	0.00	
10,500.00	90.00	175.43	8,195.00	-2,499.59	223.43	2,509.45	0.00	0.00	0.00	
10,600.00	90.00	175.43	8,195.00	-2,599.27	231.39	2,609.45	0.00	0.00	0.00	
10,700.00	90.00	175.43	8,195.00	-2,698.96	239.35	2,709.45	0.00	0.00	0.00	
10,800.00	90.00	175.43	8,195.00	-2,798.64	247.32	2,809.45	0.00	0.00	0.00	

LEAM Drilling Systems LLC

Planning Report

Database Company:	EDM 5000.1 Single User Db DEVON ENERGY	Local Co-ordinate Reference:	Well 251H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Site:	Cotton Draw Unit	MD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Well:	251H	North Reference:	Grid
Wellbore:	251H OH	Survey/Calculation Method:	Minimum Curvature
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,900.00	90.00	175.43	8,195.00	-2,898.32	255.28	2,909.45	0.00	0.00	0.00	
11,000.00	90.00	175.43	8,195.00	-2,998.00	263.24	3,009.45	0.00	0.00	0.00	
11,100.00	90.00	175.43	8,195.00	-3,097.69	271.20	3,109.45	0.00	0.00	0.00	
11,200.00	90.00	175.43	8,195.00	-3,197.37	279.16	3,209.45	0.00	0.00	0.00	
11,300.00	90.00	175.43	8,195.00	-3,297.05	287.12	3,309.45	0.00	0.00	0.00	
11,400.00	90.00	175.43	8,195.00	-3,396.73	295.08	3,409.45	0.00	0.00	0.00	
11,500.00	90.00	175.43	8,195.00	-3,496.42	303.05	3,509.45	0.00	0.00	0.00	
11,600.00	90.00	175.43	8,195.00	-3,596.10	311.01	3,609.45	0.00	0.00	0.00	
11,700.00	90.00	175.43	8,195.00	-3,695.78	318.97	3,709.45	0.00	0.00	0.00	
11,800.00	90.00	175.43	8,195.00	-3,795.46	326.93	3,809.45	0.00	0.00	0.00	
11,900.00	90.00	175.43	8,195.00	-3,895.15	334.89	3,909.45	0.00	0.00	0.00	
12,000.00	90.00	175.43	8,195.00	-3,994.83	342.85	4,009.45	0.00	0.00	0.00	
12,100.00	90.00	175.43	8,195.00	-4,094.51	350.81	4,109.45	0.00	0.00	0.00	
12,200.00	90.00	175.43	8,195.00	-4,194.20	358.78	4,209.45	0.00	0.00	0.00	
12,300.00	90.00	175.43	8,195.00	-4,293.88	366.74	4,309.45	0.00	0.00	0.00	
12,400.00	90.00	175.43	8,195.00	-4,393.56	374.70	4,409.45	0.00	0.00	0.00	
12,500.00	90.00	175.43	8,195.00	-4,493.24	382.66	4,509.45	0.00	0.00	0.00	
12,600.00	90.00	175.43	8,195.00	-4,592.93	390.62	4,609.45	0.00	0.00	0.00	
12,701.97	90.00	175.43	8,195.00	-4,694.57	398.74	4,711.42	0.00	0.00	0.00	
TD - PBHL (CDU 251H)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
SHL (CDU 251H)	0.00	0.00	0.00	0.00	0.00	419,356.41	731,829.88	32° 9' 5.012 N	103° 43' 4.115 W	
- plan hits target center										
- Point										
PBHL (CDU 251H)	0.00	0.00	8,195.00	-4,694.57	398.74	414,661.84	732,228.62	32° 8' 18.534 N	103° 42' 59.790 W	
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
724.00	724.00	Rustler		0.00		
1,050.00	1,050.00	Salado		0.00		
1,139.00	1,139.00	Top Salt		0.00		
4,219.00	4,219.00	Base Salt		0.00		
4,437.00	4,437.00	Delaware		0.00		
4,458.00	4,458.00	Bell Canyon		0.00		
5,400.00	5,400.00	Cherry Canyon		0.00		
6,696.00	6,696.00	Brushy Canyon		0.00		

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 251H
Company:	DEVON ENERGY	TVD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Project:	Eddy County, NM (NAD-83)	MD Reference:	Cactus 126: 3444.1' GL + 25' RKB @ 3469.10usft (Original Well Elev)
Site:	Cotton Draw Unit	North Reference:	Grid
Well:	251H	Survey Calculation Method:	Minimum Curvature
Wellbore:	251H OH		
Design:	Plan #1		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,717.54	7,717.54	0.00	0.00	KOP 12° DLS	
8,467.54	8,195.01	-473.91	58.19	LP / Turn	
8,629.78	8,195.00	-635.31	74.54	Hold	
12,701.97	8,195.00	-4,694.57	398.74	TD	

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company, L.P.
LEASE NO.:	NMLC-061873
WELL NAME & NO.:	Cotton Draw Unit 251H
SURFACE HOLE FOOTAGE:	0250' FNL & 1600' FWL
BOTTOM HOLE FOOTAGE:	0330' FSL & 1980' FWL
LOCATION:	Section 07, T. 25 S., R 32 E., NMPM
COUNTY:	Lea County, New Mexico

Original COA still applies except for the Casing Section of the approved Drilling Program (VII. B.). That portion has been replaced with the following condition:

CASING

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

The initial wellhead installed on the well will remain on the well with spools used as needed.

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

Wait on cement (WOC) for Water Basin:

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. **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. Have well specific cement details onsite prior to pumping the cement for each casing string.

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 Bed, Rustler, and Delaware.

1. The **13-3/8 inch** surface casing shall be set at approximately **800 feet** (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

2. The minimum required fill of cement behind the **9-5/8 inch** intermediate casing, which shall be set at approximately **4390 feet** (**basal anhydrite of the Castile formation or 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:

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.

Operator has proposed DV tool at depth of 4440 feet, but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50 feet below previous shoe and a minimum of 200 feet above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

b. Second stage above DV tool:

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

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

KGR 09102015