Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMLC062300

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.
BIG SINKS DRAW 25-13 FED COM
533H

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP

9. API Well No.
30 015 47794

3a. Address
333 West Sheridan Avenue, Oklahoma City, OK 73102

3b. Phone No. *(include area code)*
(800) 583-3866

10. Field and Pool, or Exploratory
Paduca Bone Spring/BONESPRING & Jennings;BS, West

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SWNE / 2333 FNL / 1750 FEL / LAT 32.1021295 / LONG -103.728704
At proposed prod. zone NWNE / 20 FNL / 2190 FWL / LAT 32.1375256 / LONG -103.730079

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 25/T25S/R31E/NMP

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
1750 feet

16. No of acres in lease

17. Spacing Unit dedicated to this well
800.0

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

19. Proposed Depth
8899 feet / 21501 feet

20. BLM/BIA Bond No. in file
FED: NMB000801

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3335 feet

22. Approximate date work will start*
07/31/2021

23. Estimated duration
45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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 requested by the BLM.

25. Signature
(Electronic Submission)

Name *(Printed/Typed)*
JENNY HARMS / Ph: (800) 583-3866

Date
08/13/2020

Title
Regulatory Compliance Professional

Approved by *(Signature)*
(Electronic Submission)

Name *(Printed/Typed)*
Cody Layton / Ph: (575) 234-5959

Date
12/04/2020

Title
Assistant Field Manager Lands & Minerals

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.

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.

Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

- Will require a directional survey with the C-104 SL

Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string

KP 12/10/2020 GEO Review

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 12/04/2020

Entered - KMS NMOCD

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 47794	96641	Paduca Bone Spring

[4] Property Code	[5] Property Name	[6] Well Number
329886	BIG SINKS DRAW 25-13 FED COM	533H

[7] OGRID No.	[8] Operator Name	[9] Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3334.5

[10] Surface Location

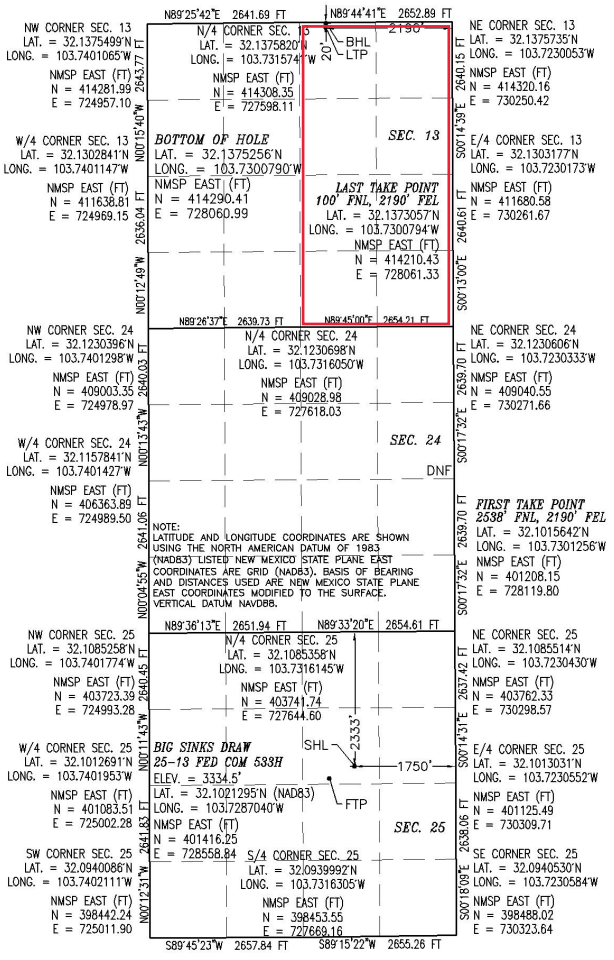
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	25	25 S	31 E		2333	NORTH	1750	EAST	EDDY

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	13	25 S	31 E		20	NORTH	2190	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320			

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.

Jenny Harms — 7-29-2020
Signature — Date

JENNY HARMS
Printed Name

JENNY.HARMS@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.

JUNE 22, 2020
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: FILLMON F. JARAMILLO, PLS 12797

FILLMON F. JARAMILLO — NEW MEXICO — 12797 — REGISTERED PROFESSIONAL SURVEYOR — SURVEY NO. 8346

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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
		Jennings Bone Spring West 97860

[4] Property Code	[5] Property Name	[6] Well Number
	BIG SINKS DRAW 25-13 FED COM	533H

[7] OGRID No.	[8] Operator Name	[9] Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3334.5

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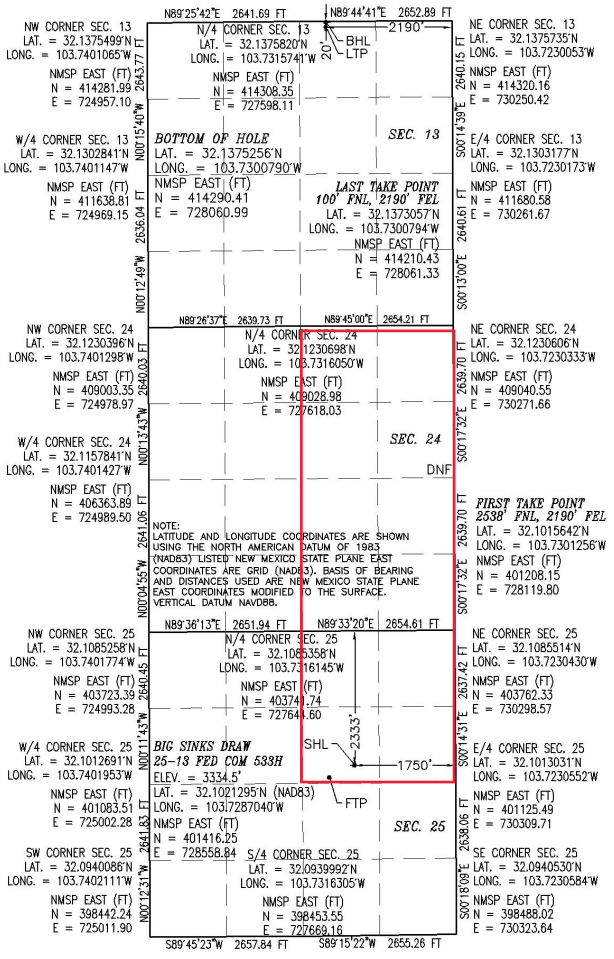
[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
480			

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.



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Jenny Harms — 7-29-2020
Signature — Date

JENNY HARMS
Printed Name

JENNY.HARMS@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.

JUNE 22, 2020
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: FILLMON F. JARAMILLO, PLS 12797

FILLMON F. JARAMILLO — NEW MEXICO — 12797 — REGISTERED PROFESSIONAL SURVEYOR — SURVEY NO. 8346

Intent [X] As Drilled [ ]

API #

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION CO., L.P.	**BIG SINKS DRAW 25-13 FED COM**	**533H**

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	25	25S	31E		2283 FNL		2190 FEL		EDDY

Latitude	Longitude	NAD
32.10227400	-103.73012400	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
G	**25**	**25S**	**31E**		**2538**	**NORTH**	**2190**	**EAST**	**EDDY**

Latitude	Longitude	NAD
32.1015642	**103.7301256**	**83**

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
B	**13**	**25S**	**31E**		**100**	**NORTH**	**2190**	**EAST**	**EDDY**

Latitude	Longitude	NAD
32.1373057	**103.7300794**	**83**

Is this well the defining well for the Horizontal Spacing Unit? NO

Is this well an infill well? YES

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number

KZ 06/29/2018

Additional Operator Remarks

Location of Well

0. SHL: SWNE / 2333 FNL / 1750 FEL / TWSP: 25S / RANGE: 31E / SECTION: 25 / LAT: 32.1021295 / LONG: -103.728704 (TVD: 0 feet, MD: 0 feet)

PPP: NWNE / 1 FNL / 2190 FEL / TWSP: 25S / RANGE: 31E / SECTION: 24 / LAT: 32.123061 / LONG: -103.730098 (TVD: 8899 feet, MD: 16239 feet)

PPP: SWSE / 1 FSL / 2190 FEL / TWSP: 25S / RANGE: 31E / SECTION: 24 / LAT: 32.10866 / LONG: -103.730116 (TVD: 8899 feet, MD: 11000 feet)

PPP: SWNE / 2538 FNL / 2190 FEL / TWSP: 25S / RANGE: 31E / SECTION: 25 / LAT: 32.1015642 / LONG: -103.7301256 (TVD: 8326 feet, MD: 8350 feet)

BHL: NWNE / 20 FNL / 2190 FWL / TWSP: 25S / RANGE: 31E / SECTION: 13 / LAT: 32.1375256 / LONG: -103.730079 (TVD: 8899 feet, MD: 21501 feet)

BLM Point of Contact

Name: Candy Vigil
Title: LIE
Phone: (575) 234-5982
Email: cvigil@blm.gov

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1625 N. French Dr., Hobbs, NM 88240
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State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
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Santa Fe, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: August 10, 2020

☒ Original Devon & OGRID No.: Devon Energy Production Co., L.P. 6137

☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Devon to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	SHL FOOTAGES					Expected MCF/D	Flared or Vented	CTB
Big Sinks Draw 25-13 Fed Com 521H		25-25S-31E	925	FWL	2334	FNL			Big Sinks Draw 25 CTB 4
Big Sinks Draw 25-13 Fed Com 531H		25-25S-31E	955	FWL	2334	FNL			Big Sinks Draw 25 CTB 4
Big Sinks Draw 25-13 Fed Com 525H		25-25S-31E	985	FWL	2334	FNL			Big Sinks Draw 25 CTB 4
Big Sinks Draw 25-13 Fed Com 523H		25-25S-31E	1780	FEL	2333	FNL			Big Sinks Draw 25 CTB 4
Big Sinks Draw 25-13 Fed Com 533H		25-25S-31E	1750	FEL	2333	FNL			Big Sinks Draw 25 CTB 4
Big Sinks Draw 25-13 Fed Com 535H		25-25S-31E	1720	FEL	2333	FNL			Big Sinks Draw 25 CTB 4
Big Sinks Draw 25-13 Fed Com 524H		25-25S-31E	510	FEL	2332	FNL			Big Sinks Draw 25 CTB 4
Big Sinks Draw 25-13 Fed Com 534H		25-25S-31E	480	FEL	2332	FNL			Big Sinks Draw 25 CTB 4

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if DCP system is in place. The gas produced from production facility is dedicated to DCP and will be connected to DCP low/high pressure gathering system located in Lea County, New Mexico. It will require 0' of pipeline to connect the facility to low/high pressure gathering system. Devon provides (periodically) to DCP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Devon and DCP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP Processing Plant located in the reference table. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP system at that time. Based on current information, it is Devon's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

Reference Table:

DCP Plant locations
Artesia Sec. 7, T18S, R28E,
Eunice Sec. 5, T21S, R36E
Linam Sec. 6, T19S, R37E
Zia II Sec. 19, T19S, R32E

APD ID: 10400060248 **Submission Date:** 08/13/2020

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BIG SINKS DRAW 25-13 FED COM **Well Number:** 533H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
819513	UNKNOWN	3335	0	0	ALLUVIUM, OTHER : Surface	NONE	N
819514	RUSTLER	2385	950	950	SANDSTONE	NONE	N
819518	TOP SALT	2020	1315	1315	SALT	NONE	N
819522	BELL CANYON	-785	4120	4120	SANDSTONE	NATURAL GAS, OIL	N
819516	BASE OF SALT	-785	4120	4120	SALT	NONE	N
819523	CHERRY CANYON	-2015	5350	5350	SANDSTONE	NATURAL GAS, OIL	N
819524	BRUSHY CANYON	-3340	6675	6675	SANDSTONE	NATURAL GAS, OIL	N
819525	BONE SPRING LIME	-4990	8325	8325	LIMESTONE	NATURAL GAS, OIL	Y
819515	BONE SPRING	-6045	9380	9380	SANDSTONE	NATURAL GAS, OIL	N
819512	BONE SPRING 2ND	-6275	9610	9610	SANDSTONE	NATURAL GAS, OIL	N
819526	BONE SPRING LIME	-7215	10550	10550	LIMESTONE	NATURAL GAS, OIL	N
819527	BONE SPRING 3RD	-8015	11350	11350	SANDSTONE	NATURAL GAS, OIL	N
819528	WOLFCAMP	-8335	11670	11670	SANDSTONE	NATURAL GAS, OIL	N
819529	STRAWN	-10660	13995	13995	LIMESTONE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

1. Geologic Formations

TVD of target	8899	Pilot hole depth	N/A
MD at TD:	21501	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	950		
Salt	1315		
Base of Salt	4120		
Delaware	4270		
Bone Spring 1st	9380		
Bone Spring 2nd	9610		
Bone Spring 3rd	11350		
Wolfcamp	11670		

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

2. Casing Program

Hole Size	Csg. Size	Wt (PPF)	Grade	Conn	Casing Interval		Casing Interval	
					From (MD)	To (MD)	From (TVD)	To (TVD)
17 1/2	13 3/8	48	H40	BTC	0	975	0	975
12 1/4	9 5/8	40	J-55	BTC	0	4245	0	4245
8 3/4	5 1/2	17	P110	BTC	0	21501	0	8899

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.

3. Cementing Program (3-String Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	744	Surf	13.2	1.4	Lead: Class C Cement + additives
Int 1	457	Surf	9.0	3.3	Lead: Class C Cement + additives
	154	500' above shoe	13.2	1.4	Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	9.0	3.3	Squeeze Lead: Class C Cement + additives
	457	Surf	9.0	3.3	Lead: Class C Cement + additives
	154	500' above shoe	13.2	1.4	Tail: Class H / C + additives
Production	393	500' tieback	9.0	3.3	Lead: Class H /C + additives
	2538	KOP	13.2	1.4	Tail: Class H / C + additives

Casing String	% Excess
Surface	50%
Intermediate	30%
Production	10%

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-58"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
			Annular (5M)		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

5. Mud Program (Three String Design)

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	Brine	10-10.5
Production	WBM	8.5-9

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 sbumitted 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	
	Density	
X	CBL	Production casing
X	Mud log	KOP to TD
	PEX	

7. Drilling Conditions

Condition	Specfiy what type and where?
BH pressure at deepest TVD	4165
Abnormal temperature	No

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

Hydrogren 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? Potentially

1. If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2. The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

   NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1. Spudder rig will move in and batch drill surface hole.
   a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi-well pad.
6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with drilling rig. At that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
   a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

X Directional Plan

_____ Other, describe

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)
Sec 25-T25S-R31E
Big Sinks Draw 25-13 Fed Com 533H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

03 August, 2020

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Big Sinks Draw 25-13 Fed Com 533H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3359.50ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3359.50ft
Site:	Sec 25-T25S-R31E	**North Reference:**	Grid
Well:	Big Sinks Draw 25-13 Fed Com 533H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Project Eddy County (NAD 83 NM Eastern)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Sec 25-T25S-R31E

Site Position:		**Northing:**	403,723.39 usft	**Latitude:**	32.108526
From:	Map	**Easting:**	724,993.28 usft	**Longitude:**	-103.740178
Position Uncertainty:	5.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.32 °

Well Big Sinks Draw 25-13 Fed Com 533H

Well Position	**+N/-S**	0.00 ft	**Northing:**	401,416.25 usft	**Latitude:**	32.102130
	+E/-W	0.00 ft	**Easting:**	728,558.84 usft	**Longitude:**	-103.728704
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,334.50 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/3/2020	6.68	59.89	47,528.91518367

Design Permit Plan 1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	357.79

Plan Survey Tool Program **Date** 8/3/2020

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,501.08	Permit Plan 1 (Wellbore #1)	MWD+HDGM OWSG MWD + HDGM	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,141.09	6.41	276.48	4,139.75	4.05	-35.60	1.00	1.00	0.00	276.48	
7,572.29	6.41	276.48	7,549.50	47.30	-416.27	0.00	0.00	0.00	0.00	
7,999.68	0.00	0.00	7,976.00	50.00	-440.00	1.50	-1.50	0.00	180.00	
8,349.72	0.00	0.00	8,326.04	50.00	-440.00	0.00	0.00	0.00	0.00	
9,249.73	90.00	359.74	8,899.00	622.95	-442.58	10.00	10.00	0.00	359.74	PBHL - Big Sinks Dra
21,501.08	90.00	359.74	8,899.00	12,874.19	-497.85	0.00	0.00	0.00	0.00	PBHL - Big Sinks Dra

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Big Sinks Draw 25-13 Fed Com 533H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3359.50ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3359.50ft
Site:	Sec 25-T25S-R31E	**North Reference:**	Grid
Well:	Big Sinks Draw 25-13 Fed Com 533H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
100.00	0.00	0.00	100.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
200.00	0.00	0.00	200.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
300.00	0.00	0.00	300.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
400.00	0.00	0.00	400.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
500.00	0.00	0.00	500.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
600.00	0.00	0.00	600.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
700.00	0.00	0.00	700.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
800.00	0.00	0.00	800.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
900.00	0.00	0.00	900.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
1,000.00	0.00	0.00	1,000.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
1,100.00	0.00	0.00	1,100.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
1,200.00	0.00	0.00	1,200.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
1,300.00	0.00	0.00	1,300.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
1,400.00	0.00	0.00	1,400.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
1,500.00	0.00	0.00	1,500.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
1,600.00	0.00	0.00	1,600.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
1,700.00	0.00	0.00	1,700.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
1,800.00	0.00	0.00	1,800.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
1,900.00	0.00	0.00	1,900.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
2,000.00	0.00	0.00	2,000.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
2,100.00	0.00	0.00	2,100.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
2,200.00	0.00	0.00	2,200.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
2,300.00	0.00	0.00	2,300.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
2,400.00	0.00	0.00	2,400.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
2,500.00	0.00	0.00	2,500.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
2,600.00	0.00	0.00	2,600.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
2,700.00	0.00	0.00	2,700.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
2,800.00	0.00	0.00	2,800.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
2,900.00	0.00	0.00	2,900.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
3,000.00	0.00	0.00	3,000.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
3,100.00	0.00	0.00	3,100.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
3,200.00	0.00	0.00	3,200.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
3,300.00	0.00	0.00	3,300.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
3,400.00	0.00	0.00	3,400.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
3,500.00	0.00	0.00	3,500.00	0.00	0.00	401,416.25	728,558.84	32.102130	-103.728704
3,600.00	1.00	276.48	3,600.00	0.10	-0.87	401,416.35	728,557.97	32.102130	-103.728707
3,700.00	2.00	276.48	3,699.96	0.39	-3.47	401,416.64	728,555.37	32.102131	-103.728715
3,800.00	3.00	276.48	3,799.86	0.89	-7.80	401,417.14	728,551.03	32.102132	-103.728729
3,900.00	4.00	276.48	3,899.68	1.58	-13.87	401,417.82	728,544.97	32.102134	-103.728749
4,000.00	5.00	276.48	3,999.37	2.46	-21.66	401,418.71	728,537.17	32.102137	-103.728774
4,100.00	6.00	276.48	4,098.90	3.54	-31.19	401,419.79	728,527.65	32.102140	-103.728805
4,141.09	6.41	276.48	4,139.75	4.05	-35.60	401,420.29	728,523.24	32.102141	-103.728819
4,200.00	6.41	276.48	4,198.29	4.79	-42.14	401,421.04	728,516.70	32.102143	-103.728840
4,300.00	6.41	276.48	4,297.67	6.05	-53.23	401,422.30	728,505.61	32.102147	-103.728876
4,400.00	6.41	276.48	4,397.04	7.31	-64.32	401,423.56	728,494.51	32.102151	-103.728912
4,500.00	6.41	276.48	4,496.42	8.57	-75.42	401,424.82	728,483.42	32.102154	-103.728948
4,600.00	6.41	276.48	4,595.79	9.83	-86.51	401,426.08	728,472.32	32.102158	-103.728983
4,700.00	6.41	276.48	4,695.17	11.09	-97.61	401,427.34	728,461.23	32.102162	-103.729019
4,800.00	6.41	276.48	4,794.54	12.35	-108.70	401,428.60	728,450.14	32.102165	-103.729055
4,900.00	6.41	276.48	4,893.92	13.61	-119.80	401,429.86	728,439.04	32.102169	-103.729091
5,000.00	6.41	276.48	4,993.29	14.87	-130.89	401,431.12	728,427.95	32.102172	-103.729127
5,100.00	6.41	276.48	5,092.67	16.13	-141.98	401,432.38	728,416.85	32.102176	-103.729163
5,200.00	6.41	276.48	5,192.04	17.40	-153.08	401,433.64	728,405.76	32.102180	-103.729198
5,300.00	6.41	276.48	5,291.42	18.66	-164.17	401,434.90	728,394.66	32.102183	-103.729234

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Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3359.50ft
Site:	Sec 25-T25S-R31E	**North Reference:**	Grid
Well:	Big Sinks Draw 25-13 Fed Com 533H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	6.41	276.48	5,390.79	19.92	-175.27	401,436.17	728,383.57	32.102187	-103.729270
5,500.00	6.41	276.48	5,490.17	21.18	-186.36	401,437.43	728,372.48	32.102191	-103.729306
5,600.00	6.41	276.48	5,589.54	22.44	-197.46	401,438.69	728,361.38	32.102194	-103.729342
5,700.00	6.41	276.48	5,688.92	23.70	-208.55	401,439.95	728,350.29	32.102198	-103.729377
5,800.00	6.41	276.48	5,788.29	24.96	-219.64	401,441.21	728,339.19	32.102202	-103.729413
5,900.00	6.41	276.48	5,887.66	26.22	-230.74	401,442.47	728,328.10	32.102205	-103.729449
6,000.00	6.41	276.48	5,987.04	27.48	-241.83	401,443.73	728,317.00	32.102209	-103.729485
6,100.00	6.41	276.48	6,086.41	28.74	-252.93	401,444.99	728,305.91	32.102212	-103.729521
6,200.00	6.41	276.48	6,185.79	30.00	-264.02	401,446.25	728,294.82	32.102216	-103.729556
6,300.00	6.41	276.48	6,285.16	31.26	-275.12	401,447.51	728,283.72	32.102220	-103.729592
6,400.00	6.41	276.48	6,384.54	32.52	-286.21	401,448.77	728,272.63	32.102223	-103.729628
6,500.00	6.41	276.48	6,483.91	33.78	-297.30	401,450.03	728,261.53	32.102227	-103.729664
6,600.00	6.41	276.48	6,583.29	35.05	-308.40	401,451.29	728,250.44	32.102231	-103.729700
6,700.00	6.41	276.48	6,682.66	36.31	-319.49	401,452.55	728,239.34	32.102234	-103.729735
6,800.00	6.41	276.48	6,782.04	37.57	-330.59	401,453.82	728,228.25	32.102238	-103.729771
6,900.00	6.41	276.48	6,881.41	38.83	-341.68	401,455.08	728,217.16	32.102242	-103.729807
7,000.00	6.41	276.48	6,980.79	40.09	-352.78	401,456.34	728,206.06	32.102245	-103.729843
7,100.00	6.41	276.48	7,080.16	41.35	-363.87	401,457.60	728,194.97	32.102249	-103.729879
7,200.00	6.41	276.48	7,179.54	42.61	-374.96	401,458.86	728,183.87	32.102252	-103.729914
7,300.00	6.41	276.48	7,278.91	43.87	-386.06	401,460.12	728,172.78	32.102256	-103.729950
7,400.00	6.41	276.48	7,378.28	45.13	-397.15	401,461.38	728,161.68	32.102260	-103.729986
7,500.00	6.41	276.48	7,477.66	46.39	-408.25	401,462.64	728,150.59	32.102263	-103.730022
7,572.29	6.41	276.48	7,549.50	47.30	-416.27	401,463.55	728,142.57	32.102266	-103.730048
7,600.00	6.00	276.48	7,577.05	47.64	-419.24	401,463.89	728,139.60	32.102267	-103.730057
7,700.00	4.50	276.48	7,676.62	48.67	-428.33	401,464.92	728,130.51	32.102270	-103.730087
7,800.00	3.00	276.48	7,776.41	49.41	-434.82	401,465.66	728,124.02	32.102272	-103.730108
7,900.00	1.50	276.48	7,876.33	49.85	-438.71	401,466.10	728,120.13	32.102273	-103.730120
7,999.68	0.00	0.00	7,976.00	50.00	-440.00	401,466.25	728,118.84	32.102274	-103.730124
8,000.00	0.00	0.00	7,976.32	50.00	-440.00	401,466.25	728,118.84	32.102274	-103.730124
8,100.00	0.00	0.00	8,076.32	50.00	-440.00	401,466.25	728,118.84	32.102274	-103.730124
8,200.00	0.00	0.00	8,176.32	50.00	-440.00	401,466.25	728,118.84	32.102274	-103.730124
8,300.00	0.00	0.00	8,276.32	50.00	-440.00	401,466.25	728,118.84	32.102274	-103.730124
8,349.72	0.00	0.00	8,326.04	50.00	-440.00	401,466.25	728,118.84	32.102274	-103.730124
8,350.00	0.03	359.74	8,326.32	50.00	-440.00	401,466.25	728,118.84	32.102274	-103.730124
KOP & FTP @ 8350' MD, 2283' FNL, 2190' FEL									
8,400.00	5.03	359.74	8,376.25	52.20	-440.01	401,468.45	728,118.83	32.102280	-103.730124
8,500.00	15.03	359.74	8,474.60	69.59	-440.09	401,485.84	728,118.75	32.102328	-103.730124
8,600.00	25.03	359.74	8,568.43	103.80	-440.24	401,520.05	728,118.59	32.102422	-103.730124
8,700.00	35.03	359.74	8,654.90	153.78	-440.47	401,570.02	728,118.37	32.102559	-103.730124
8,800.00	45.03	359.74	8,731.38	218.01	-440.76	401,634.26	728,118.08	32.102736	-103.730124
8,900.00	55.03	359.74	8,795.54	294.55	-441.10	401,710.79	728,117.73	32.102946	-103.730123
9,000.00	65.03	359.74	8,845.43	381.06	-441.49	401,797.31	728,117.34	32.103184	-103.730123
9,100.00	75.03	359.74	8,879.55	474.93	-441.92	401,891.18	728,116.92	32.103442	-103.730123
9,200.00	85.03	359.74	8,896.84	573.29	-442.36	401,989.54	728,116.48	32.103712	-103.730122
9,249.73	90.00	359.74	8,899.00	622.95	-442.58	402,039.20	728,116.25	32.103849	-103.730122
9,300.00	90.00	359.74	8,899.00	673.23	-442.81	402,089.47	728,116.03	32.103987	-103.730122
9,400.00	90.00	359.74	8,899.00	773.23	-443.26	402,189.47	728,115.57	32.104262	-103.730122
9,500.00	90.00	359.74	8,899.00	873.22	-443.71	402,289.47	728,115.12	32.104537	-103.730121
9,600.00	90.00	359.74	8,899.00	973.22	-444.16	402,389.47	728,114.67	32.104812	-103.730121
9,700.00	90.00	359.74	8,899.00	1,073.22	-444.62	402,489.47	728,114.22	32.105086	-103.730121
9,800.00	90.00	359.74	8,899.00	1,173.22	-445.07	402,589.47	728,113.77	32.105361	-103.730120
9,900.00	90.00	359.74	8,899.00	1,273.22	-445.52	402,689.47	728,113.32	32.105636	-103.730120
10,000.00	90.00	359.74	8,899.00	1,373.22	-445.97	402,789.47	728,112.87	32.105911	-103.730120
10,100.00	90.00	359.74	8,899.00	1,473.22	-446.42	402,889.46	728,112.42	32.106186	-103.730119

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Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3359.50ft
Site:	Sec 25-T25S-R31E	**North Reference:**	Grid
Well:	Big Sinks Draw 25-13 Fed Com 533H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,200.00	90.00	359.74	8,899.00	1,573.22	-446.87	402,989.46	728,111.97	32.106461	-103.730119
10,300.00	90.00	359.74	8,899.00	1,673.22	-447.32	403,089.46	728,111.51	32.106736	-103.730119
10,400.00	90.00	359.74	8,899.00	1,773.22	-447.77	403,189.46	728,111.06	32.107011	-103.730118
10,500.00	90.00	359.74	8,899.00	1,873.21	-448.22	403,289.46	728,110.61	32.107286	-103.730118
10,600.00	90.00	359.74	8,899.00	1,973.21	-448.68	403,389.46	728,110.16	32.107560	-103.730118
10,700.00	90.00	359.74	8,899.00	2,073.21	-449.13	403,489.46	728,109.71	32.107835	-103.730117
10,800.00	90.00	359.74	8,899.00	2,173.21	-449.58	403,589.46	728,109.26	32.108110	-103.730117
10,900.00	90.00	359.74	8,899.00	2,273.21	-450.03	403,689.45	728,108.81	32.108385	-103.730117
10,960.00	90.00	359.74	8,899.00	2,333.21	-450.30	403,749.45	728,108.54	32.108550	-103.730116
Cross section @ 10960' MD, 0' FSL, 2190' FEL									
11,000.00	90.00	359.74	8,899.00	2,373.21	-450.48	403,789.45	728,108.36	32.108660	-103.730116
11,100.00	90.00	359.74	8,899.00	2,473.21	-450.93	403,889.45	728,107.91	32.108935	-103.730116
11,200.00	90.00	359.74	8,899.00	2,573.21	-451.38	403,989.45	728,107.45	32.109210	-103.730115
11,300.00	90.00	359.74	8,899.00	2,673.21	-451.83	404,089.45	728,107.00	32.109485	-103.730115
11,400.00	90.00	359.74	8,899.00	2,773.21	-452.28	404,189.45	728,106.55	32.109759	-103.730115
11,500.00	90.00	359.74	8,899.00	2,873.20	-452.74	404,289.45	728,106.10	32.110034	-103.730114
11,600.00	90.00	359.74	8,899.00	2,973.20	-453.19	404,389.45	728,105.65	32.110309	-103.730114
11,700.00	90.00	359.74	8,899.00	3,073.20	-453.64	404,489.45	728,105.20	32.110584	-103.730114
11,800.00	90.00	359.74	8,899.00	3,173.20	-454.09	404,589.44	728,104.75	32.110859	-103.730113
11,900.00	90.00	359.74	8,899.00	3,273.20	-454.54	404,689.44	728,104.30	32.111134	-103.730113
12,000.00	90.00	359.74	8,899.00	3,373.20	-454.99	404,789.44	728,103.85	32.111409	-103.730113
12,100.00	90.00	359.74	8,899.00	3,473.20	-455.44	404,889.44	728,103.39	32.111684	-103.730112
12,200.00	90.00	359.74	8,899.00	3,573.20	-455.89	404,989.44	728,102.94	32.111959	-103.730112
12,300.00	90.00	359.74	8,899.00	3,673.20	-456.34	405,089.44	728,102.49	32.112233	-103.730112
12,400.00	90.00	359.74	8,899.00	3,773.20	-456.80	405,189.44	728,102.04	32.112508	-103.730111
12,500.00	90.00	359.74	8,899.00	3,873.19	-457.25	405,289.44	728,101.59	32.112783	-103.730111
12,600.00	90.00	359.74	8,899.00	3,973.19	-457.70	405,389.43	728,101.14	32.113058	-103.730111
12,700.00	90.00	359.74	8,899.00	4,073.19	-458.15	405,489.43	728,100.69	32.113333	-103.730110
12,800.00	90.00	359.74	8,899.00	4,173.19	-458.60	405,589.43	728,100.24	32.113608	-103.730110
12,900.00	90.00	359.74	8,899.00	4,273.19	-459.05	405,689.43	728,099.79	32.113883	-103.730109
13,000.00	90.00	359.74	8,899.00	4,373.19	-459.50	405,789.43	728,099.33	32.114158	-103.730109
13,100.00	90.00	359.74	8,899.00	4,473.19	-459.95	405,889.43	728,098.88	32.114433	-103.730109
13,200.00	90.00	359.74	8,899.00	4,573.19	-460.40	405,989.43	728,098.43	32.114707	-103.730108
13,300.00	90.00	359.74	8,899.00	4,673.19	-460.86	406,089.43	728,097.98	32.114982	-103.730108
13,400.00	90.00	359.74	8,899.00	4,773.19	-461.31	406,189.42	728,097.53	32.115257	-103.730108
13,500.00	90.00	359.74	8,899.00	4,873.18	-461.76	406,289.42	728,097.08	32.115532	-103.730107
13,600.00	90.00	359.74	8,899.00	4,973.18	-462.21	406,389.42	728,096.63	32.115807	-103.730107
13,700.00	90.00	359.74	8,899.00	5,073.18	-462.66	406,489.42	728,096.18	32.116082	-103.730107
13,800.00	90.00	359.74	8,899.00	5,173.18	-463.11	406,589.42	728,095.73	32.116357	-103.730106
13,900.00	90.00	359.74	8,899.00	5,273.18	-463.56	406,689.42	728,095.27	32.116632	-103.730106
14,000.00	90.00	359.74	8,899.00	5,373.18	-464.01	406,789.42	728,094.82	32.116906	-103.730106
14,100.00	90.00	359.74	8,899.00	5,473.18	-464.46	406,889.42	728,094.37	32.117181	-103.730105
14,200.00	90.00	359.74	8,899.00	5,573.18	-464.92	406,989.41	728,093.92	32.117456	-103.730105
14,300.00	90.00	359.74	8,899.00	5,673.18	-465.37	407,089.41	728,093.47	32.117731	-103.730105
14,400.00	90.00	359.74	8,899.00	5,773.17	-465.82	407,189.41	728,093.02	32.118006	-103.730104
14,500.00	90.00	359.74	8,899.00	5,873.17	-466.27	407,289.41	728,092.57	32.118281	-103.730104
14,600.00	90.00	359.74	8,899.00	5,973.17	-466.72	407,389.41	728,092.12	32.118556	-103.730104
14,700.00	90.00	359.74	8,899.00	6,073.17	-467.17	407,489.41	728,091.67	32.118831	-103.730103
14,800.00	90.00	359.74	8,899.00	6,173.17	-467.62	407,589.41	728,091.22	32.119106	-103.730103
14,900.00	90.00	359.74	8,899.00	6,273.17	-468.07	407,689.41	728,090.76	32.119380	-103.730102
15,000.00	90.00	359.74	8,899.00	6,373.17	-468.52	407,789.41	728,090.31	32.119655	-103.730102
15,100.00	90.00	359.74	8,899.00	6,473.17	-468.98	407,889.40	728,089.86	32.119930	-103.730102
15,200.00	90.00	359.74	8,899.00	6,573.17	-469.43	407,989.40	728,089.41	32.120205	-103.730101
15,300.00	90.00	359.74	8,899.00	6,673.17	-469.88	408,089.40	728,088.96	32.120480	-103.730101

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Big Sinks Draw 25-13 Fed Com 533H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3359.50ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3359.50ft
Site:	Sec 25-T25S-R31E	**North Reference:**	Grid
Well:	Big Sinks Draw 25-13 Fed Com 533H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,400.00	90.00	359.74	8,899.00	6,773.16	-470.33	408,189.40	728,088.51	32.120755	-103.730101
15,500.00	90.00	359.74	8,899.00	6,873.16	-470.78	408,289.40	728,088.06	32.121030	-103.730100
15,600.00	90.00	359.74	8,899.00	6,973.16	-471.23	408,389.40	728,087.61	32.121305	-103.730100
15,700.00	90.00	359.74	8,899.00	7,073.16	-471.68	408,489.40	728,087.16	32.121579	-103.730100
15,800.00	90.00	359.74	8,899.00	7,173.16	-472.13	408,589.40	728,086.70	32.121854	-103.730099
15,900.00	90.00	359.74	8,899.00	7,273.16	-472.58	408,689.39	728,086.25	32.122129	-103.730099
16,000.00	90.00	359.74	8,899.00	7,373.16	-473.04	408,789.39	728,085.80	32.122404	-103.730099
16,100.00	90.00	359.74	8,899.00	7,473.16	-473.49	408,889.39	728,085.35	32.122679	-103.730098
16,200.00	90.00	359.74	8,899.00	7,573.16	-473.94	408,989.39	728,084.90	32.122954	-103.730098
16,239.00	90.00	359.74	8,899.00	7,612.16	-474.11	409,028.39	728,084.72	32.123061	-103.730098
Cross section @ 16239' MD, 0' FSL, 2190' FEL									
16,300.00	90.00	359.74	8,899.00	7,673.16	-474.39	409,089.39	728,084.45	32.123229	-103.730098
16,400.00	90.00	359.74	8,899.00	7,773.15	-474.84	409,189.39	728,084.00	32.123504	-103.730097
16,500.00	90.00	359.74	8,899.00	7,873.15	-475.29	409,289.39	728,083.55	32.123779	-103.730097
16,600.00	90.00	359.74	8,899.00	7,973.15	-475.74	409,389.39	728,083.10	32.124053	-103.730097
16,700.00	90.00	359.74	8,899.00	8,073.15	-476.19	409,489.38	728,082.64	32.124328	-103.730096
16,800.00	90.00	359.74	8,899.00	8,173.15	-476.64	409,589.38	728,082.19	32.124603	-103.730096
16,900.00	90.00	359.74	8,899.00	8,273.15	-477.10	409,689.38	728,081.74	32.124878	-103.730095
17,000.00	90.00	359.74	8,899.00	8,373.15	-477.55	409,789.38	728,081.29	32.125153	-103.730095
17,100.00	90.00	359.74	8,899.00	8,473.15	-478.00	409,889.38	728,080.84	32.125428	-103.730095
17,200.00	90.00	359.74	8,899.00	8,573.15	-478.45	409,989.38	728,080.39	32.125703	-103.730094
17,300.00	90.00	359.74	8,899.00	8,673.15	-478.90	410,089.38	728,079.94	32.125978	-103.730094
17,400.00	90.00	359.74	8,899.00	8,773.14	-479.35	410,189.38	728,079.49	32.126252	-103.730094
17,500.00	90.00	359.74	8,899.00	8,873.14	-479.80	410,289.37	728,079.04	32.126527	-103.730093
17,600.00	90.00	359.74	8,899.00	8,973.14	-480.25	410,389.37	728,078.58	32.126802	-103.730093
17,700.00	90.00	359.74	8,899.00	9,073.14	-480.70	410,489.37	728,078.13	32.127077	-103.730093
17,800.00	90.00	359.74	8,899.00	9,173.14	-481.16	410,589.37	728,077.68	32.127352	-103.730092
17,900.00	90.00	359.74	8,899.00	9,273.14	-481.61	410,689.37	728,077.23	32.127627	-103.730092
18,000.00	90.00	359.74	8,899.00	9,373.14	-482.06	410,789.37	728,076.78	32.127902	-103.730092
18,100.00	90.00	359.74	8,899.00	9,473.14	-482.51	410,889.37	728,076.33	32.128177	-103.730091
18,200.00	90.00	359.74	8,899.00	9,573.14	-482.96	410,989.37	728,075.88	32.128452	-103.730091
18,300.00	90.00	359.74	8,899.00	9,673.14	-483.41	411,089.36	728,075.43	32.128726	-103.730091
18,400.00	90.00	359.74	8,899.00	9,773.13	-483.86	411,189.36	728,074.98	32.129001	-103.730090
18,500.00	90.00	359.74	8,899.00	9,873.13	-484.31	411,289.36	728,074.52	32.129276	-103.730090
18,600.00	90.00	359.74	8,899.00	9,973.13	-484.76	411,389.36	728,074.07	32.129551	-103.730089
18,700.00	90.00	359.74	8,899.00	10,073.13	-485.22	411,489.36	728,073.62	32.129826	-103.730089
18,800.00	90.00	359.74	8,899.00	10,173.13	-485.67	411,589.36	728,073.17	32.130101	-103.730089
18,900.00	90.00	359.74	8,899.00	10,273.13	-486.12	411,689.36	728,072.72	32.130376	-103.730088
19,000.00	90.00	359.74	8,899.00	10,373.13	-486.57	411,789.36	728,072.27	32.130651	-103.730088
19,100.00	90.00	359.74	8,899.00	10,473.13	-487.02	411,889.36	728,071.82	32.130926	-103.730088
19,200.00	90.00	359.74	8,899.00	10,573.13	-487.47	411,989.35	728,071.37	32.131200	-103.730087
19,300.00	90.00	359.74	8,899.00	10,673.13	-487.92	412,089.35	728,070.92	32.131475	-103.730087
19,400.00	90.00	359.74	8,899.00	10,773.12	-488.37	412,189.35	728,070.46	32.131750	-103.730087
19,500.00	90.00	359.74	8,899.00	10,873.12	-488.82	412,289.35	728,070.01	32.132025	-103.730086
19,600.00	90.00	359.74	8,899.00	10,973.12	-489.28	412,389.35	728,069.56	32.132300	-103.730086
19,700.00	90.00	359.74	8,899.00	11,073.12	-489.73	412,489.35	728,069.11	32.132575	-103.730086
19,800.00	90.00	359.74	8,899.00	11,173.12	-490.18	412,589.35	728,068.66	32.132850	-103.730085
19,900.00	90.00	359.74	8,899.00	11,273.12	-490.63	412,689.35	728,068.21	32.133125	-103.730085
20,000.00	90.00	359.74	8,899.00	11,373.12	-491.08	412,789.34	728,067.76	32.133399	-103.730085
20,100.00	90.00	359.74	8,899.00	11,473.12	-491.53	412,889.34	728,067.31	32.133674	-103.730084
20,200.00	90.00	359.74	8,899.00	11,573.12	-491.98	412,989.34	728,066.86	32.133949	-103.730084
20,300.00	90.00	359.74	8,899.00	11,673.12	-492.43	413,089.34	728,066.40	32.134224	-103.730083
20,400.00	90.00	359.74	8,899.00	11,773.11	-492.88	413,189.34	728,065.95	32.134499	-103.730083
20,500.00	90.00	359.74	8,899.00	11,873.11	-493.34	413,289.34	728,065.50	32.134774	-103.730083

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Big Sinks Draw 25-13 Fed Com 533H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3359.50ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3359.50ft
Site:	Sec 25-T25S-R31E	**North Reference:**	Grid
Well:	Big Sinks Draw 25-13 Fed Com 533H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,600.00	90.00	359.74	8,899.00	11,973.11	-493.79	413,389.34	728,065.05	32.135049	-103.730082
20,700.00	90.00	359.74	8,899.00	12,073.11	-494.24	413,489.34	728,064.60	32.135324	-103.730082
20,800.00	90.00	359.74	8,899.00	12,173.11	-494.69	413,589.33	728,064.15	32.135599	-103.730082
20,900.00	90.00	359.74	8,899.00	12,273.11	-495.14	413,689.33	728,063.70	32.135873	-103.730081
21,000.00	90.00	359.74	8,899.00	12,373.11	-495.59	413,789.33	728,063.25	32.136148	-103.730081
21,100.00	90.00	359.74	8,899.00	12,473.11	-496.04	413,889.33	728,062.80	32.136423	-103.730081
21,200.00	90.00	359.74	8,899.00	12,573.11	-496.49	413,989.33	728,062.34	32.136698	-103.730080
21,300.00	90.00	359.74	8,899.00	12,673.10	-496.94	414,089.33	728,061.89	32.136973	-103.730080
21,400.00	90.00	359.74	8,899.00	12,773.10	-497.40	414,189.33	728,061.44	32.137248	-103.730080
21,421.00	90.00	359.74	8,899.00	12,794.10	-497.49	414,210.33	728,061.35	32.137306	-103.730080
LTP @ 21421' MD, 100' FNL, 2190' FEL									
21,500.00	90.00	359.74	8,899.00	12,873.10	-497.85	414,289.33	728,060.99	32.137523	-103.730079
21,501.07	90.00	359.74	8,899.00	12,874.17	-497.85	414,290.40	728,060.99	32.137526	-103.730079
PBHL; 20' FNL, 2190' FEL									
21,501.08	90.00	359.74	8,899.00	12,874.19	-497.85	414,290.41	728,060.99	32.137526	-103.730079

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
PBHL - Big Sinks Draw 2	0.00	0.00	0.00	12,874.19	-497.85	414,290.41	728,060.99	32.137526	-103.730079
- plan misses target center by 8899.00ft at 21501.08ft MD (8899.00 TVD, 12874.19 N, -497.85 E)									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,350.00	8,326.32	50.00	-440.00	KOP & FTP @ 8350' MD, 2283' FNL, 2190' FEL
10,960.00	8,899.00	2,333.21	-450.30	Cross section @ 10960' MD, 0' FSL, 2190' FEL
16,239.00	8,899.00	7,612.16	-474.11	Cross section @ 16239' MD, 0' FSL, 2190' FEL
21,421.00	8,899.00	12,794.10	-497.49	LTP @ 21421' MD, 100' FNL, 2190' FEL
21,501.07	8,899.00	12,874.17	-497.85	PBHL; 20' FNL, 2190' FEL

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

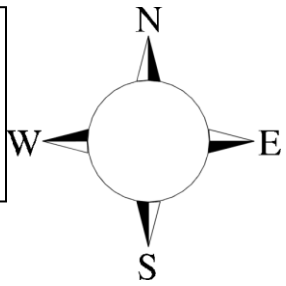
Big Sinks Draw 25-13 Fed Com 533H

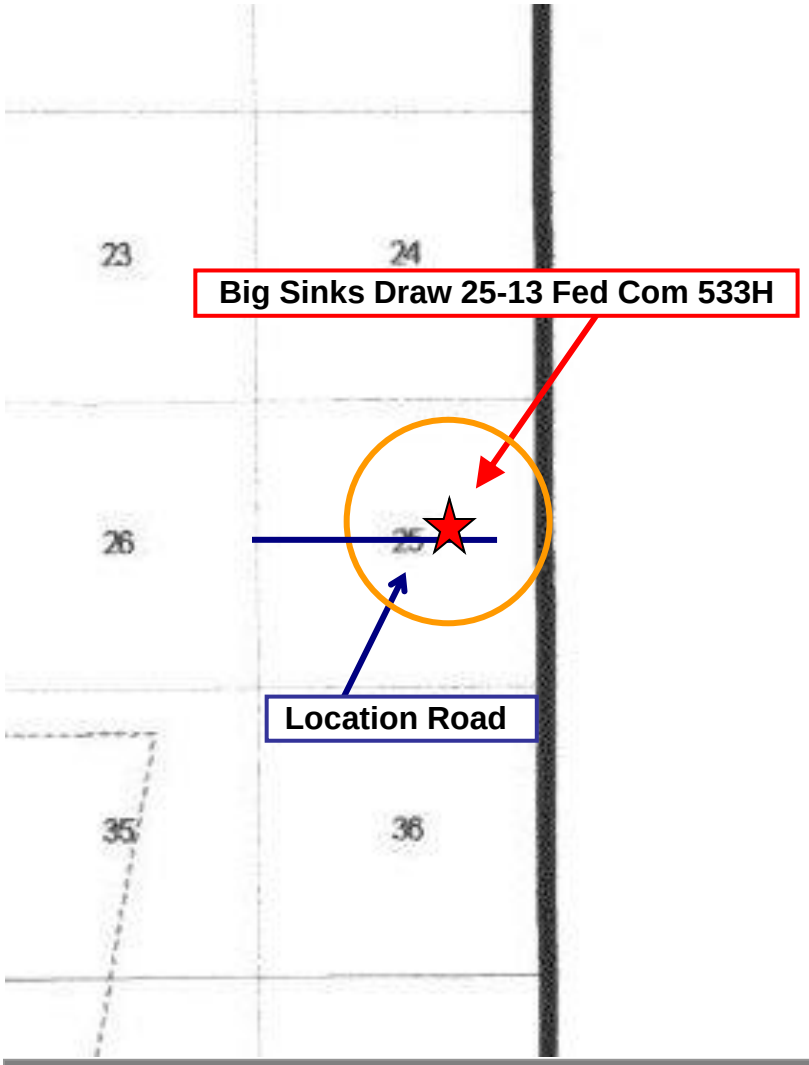
Sec-25 T-25S R-31E
2333’ FNL & 1750’ FEL
LAT. = 32.1021295’ N (NAD83)
LONG = 103.7287040’ W

Eddy County NM

Big Sinks Draw 25-13 Fed Com 533H

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





Assumed 100 ppm ROE = 3000' (Radius of Exposure)
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. Crews should then block the 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 tubulars 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 reasonably 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:**

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

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

   Portable H_2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H_2S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

   - **Bell nipple**
   - **Rig floor**
   - **Cellar**
   - **Possum Belly/Shale shaker**
   - **Choke manifold**

   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.

4. **Mud program:**

   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.

5. **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.

6. **Communication:**

   A. Company personnel have/use cellular telephones in the field.

   B. Land line (telephone) communications at Office

7. **Well testing:**

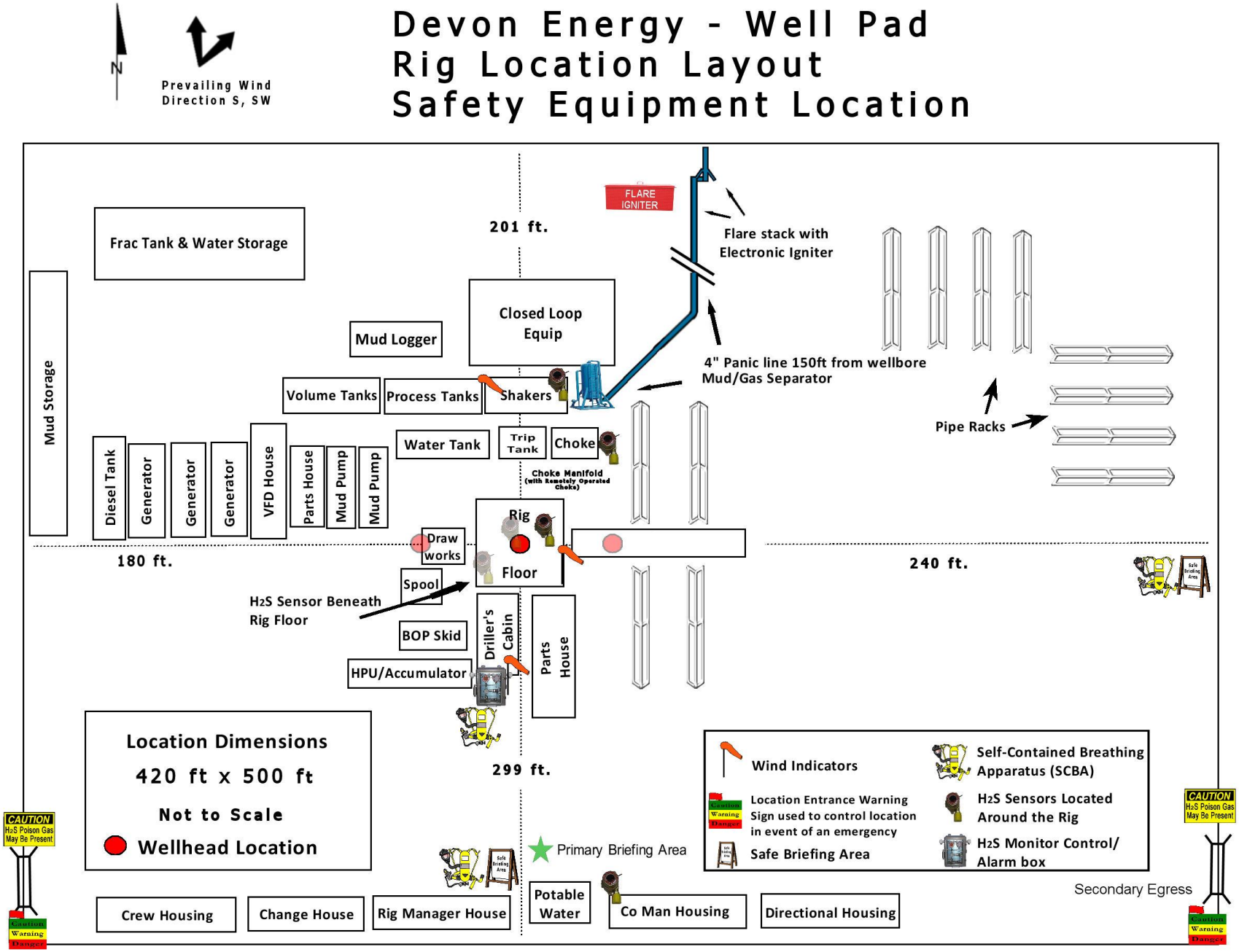
   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing 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			
Drilling Supervisor – Basin – Mark Kramer			405-823-4796
EHS Professional – Laura Wright			405-439-8129
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		885-3125
	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		(800) 424-8802
	National Pollution Control Center: Direct		(703) 872-6000
	For Oil Spills		(800) 280-7118
	Emergency Services		
	Wild Well Control		(281) 784-4700
	Cudd Pressure Control	(915) 699-0139	(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		(800) 222-1222
	Poison Control (24/7)		(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service		(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov		

Prepared in conjunction with
Dave Small SHARP communications and consulting

Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location



H2S	☐ Yes	☒ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Cave/Karst Potential	☐ Critical		
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☑ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1100 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and 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 will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
    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 must be kept fluid filled to meet BLM minimum collapse requirement.

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

    - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Cement excess is less than 25%, more cement might be required.**

Operator has proposed to pump down 13-3/8" X 9-5/8" annulus. Operator must run a CBL from TD of the 9-5/8" casing to surface. Submit results to BLM.

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

    - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification. **Cement excess is less than 25%, more cement might be required.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New

Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL 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

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. 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.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. 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 are located, this does not include the dog house or stairway area.

3. 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.

A. CASING

1. 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.

2. Wait on cement (WOC) for Potash Areas: 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 for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. 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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. 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.

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

6. 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. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. 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.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. 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. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. 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.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

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

c. 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 (8 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).

d. 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.

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

f. 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.

g. 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.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. 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.