Form 3160-3
(June 2015)

NM OIL CONSERVATION
ARTESIA DISTRICT
OCT 25 2019
RECEIVED

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.
NMNM088134

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.
MR. POTATO HEAD 11-14 FED COM
711H

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP

9. API Well No.
30-015-46422

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
PURPLE SAGE-WOLFCAMP / WOLFCAI

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

At surface NWNW / 350 FNL / 1075 FWL / LAT 32.2384591 / LONG -103.9603064

At proposed prod. zone SWSW / 20 FSL / 990 FWL / LAT 32.210295 / LONG -103.9605485

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 11 / T24S / R29E / 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)
350 feet

16. No of acres in lease
560

17. Spacing Unit dedicated to this well
640

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
1025 feet

19. Proposed Depth
10390 feet / 20700 feet

20. BLM/BIA Bond No. in file
FED: NMB000807

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3051 feet

22. Approximate date work will start*
10/15/2020

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	Name *(Printed/Typed)*	Date
(Electronic Submission)	Erin Workman / Ph: (405)552-7970	09/17/2018

Title
Regulatory Compliance Professional

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	10/18/2019

Title	Office
Assistant Field Manager Lands & Minerals	CARLSBAD

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.

Hold C-104 for NSL Required.

RWP 10-28-19

APPROVED WITH CONDITIONS

Approval Date: 10/18/2019

(Continued on page 2)

*(Instructions on page 2)

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION CO. LP
LEASE NO.:	NMNM88134
WELL NAME & NO.:	711H – MR. POTATO HEAD 11-14 FED COM
SURFACE HOLE FOOTAGE:	350'/N & 1075'/W
BOTTOM HOLE FOOTAGE	230'/S & 990'/W
LOCATION:	Section 11 T.24 S., R.29 E., NMP
COUNTY:	EDDY County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	◉ Medium	○ High
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

Primary Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **400 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 **7-5/8** inch intermediate casing is:

Option 1 (Single Stage):

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

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

Operator has proposed to pump down 13-3/8" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" 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.

Alternate Casing Design:

4. The **13-3/8** inch surface casing shall be set at approximately **400 feet** (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    e. 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.
    f. 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)
    g. 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.
    h. 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.

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

    Option 1 (Single Stage):

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

    Option 2:

    Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

    c. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

d. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

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

Variance requested to drill 10.625" hole with BTC connection is Approved. Cement excess is less than -19%, more cement will be required.

6. 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.

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.

Option 1:

a. 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.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **10,000 (10M)** psi.

Option 2:

1. 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 **10,000 (10M)** 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 Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, 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.

- NGL Removal – On lease
    - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

1. Geologic Formations

TVD of target	10390	Pilot hole depth	N/A
MD at TD:	20700	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	375		
Top Salt	500		
Base of Salt	2700		
Delaware	2600		
Lamar	3106		
Bell Canyon	3157		
Brushy Canyon	5230		
Bone Spring Lime	6812		
1st BSPG Sand	7872		
Bone Spring 2nd	8716		
Bone Spring 3rd	9791		
Wolfcamp	10133		
Wolfcamp XY	10164		
Wolfcamp 100	10268		

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

2. Casing Program (Primary Design)

Hole Size	Casing Interval		Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17 1/2	0	400 TVD	13 3/8	48.0	H40	STC	1.125	1.25	1.6
9 7/8	0	9791 TVD	7 5/8	29.7	P110	Flushmax III	1.125	1.25	1.6
6 3/4	0	TD	5 1/2	20.0	P110	Vam SG	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.
• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.

• Int casing shoe will be selected based on drilling data/gamma, setting depth with be revised accordingly if needed.

• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.

• A variance is requested to set intermediate casing in the curve if hole conditions dictate that a higher shoe strength is required.

Casing Program (Alternative Design)

Hole Size	Casing Interval		Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17 1/2	0	400 TVD	13 3/8	48.0	H40	STC	1.125	1.25	1.6
9 7/8	0	9791 TVD	8 5/8	32.0	P110	TLW	1.125	1.25	1.6
7 7/8	0	TD	5 1/2	17.0	P110	BTC	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.
• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.
• Int casing shoe will be selected based on drilling data/gamma, setting depth with be revised accordingly if needed.
• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.
•Variance requested to drill 10.625" hole instead of 9.875" for intermediate 1, the 8.625" connection will change from TLW to BTC.
• A variance is requested to set intermediate casing in the curve if hole conditions dictate that a higher shoe strength is required.

	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 specficition sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd 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 2nd 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?	

3. Cementing Program (Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft³/sack)	Slurry Description
Surface	328	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	529	Surf	9	3.27	Lead: Class C Cement + additives
	783	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 Two Stage w/ DV @ TVD of Delaware	763	Surf	9	3.27	1st stage Lead: Class C Cement + additives
	93	500' above shoe	13.2	1.44	1st stage Tail: Class H / C + additives
	209	Surf	9	3.27	2nd stage Lead: Class C Cement + additives
	93	500' above DV	13.2	1.44	2nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	9	1.44	Squeeze Lead: Class C Cement + additives
	529	Surf	9	3.27	Lead: Class C Cement + additives
	783	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Production	62	7827	9.0	3.3	Lead: Class H /C + additives
	694	9827	13.2	1.4	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

3. Cementing Program (Alternative Design)

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	328	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	329	Surf	9	3.27	Lead: Class C Cement + additives
	465	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	448	Surf	9	3.27	1st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.44	1st stage Tail: Class H / C + additives
	140	Surf	9	3.27	2nd stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.44	2nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.44	Squeeze Lead: Class C Cement + additives
	329	Surf	9	3.27	Lead: Class C Cement + additives
	465	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 (10.625" Hole Size)	508	Surf	9	3.27	Lead: Class C Cement + additives
	768	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Production	117	7827	9.0	3.3	Lead: Class H /C + additives
	1439	9827	13.2	1.4	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	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 (5M)	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*		

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
Y	A variance is requested to run a 5 M annular on a 10M system

5. Mud Program (Three String Design)

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	DBE / Cut Brine	10-10.5
Production	OBM	10-10.5

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 Rpeort 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	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH pressure at deepest TVD	5673
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 pa.
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. A 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 11-T24S-R29E
Mr. Potato Head 11-14 Fed Com 711H

Wellbore #1

Plan: Permit Plan 2

Standard Planning Report - Geographic

04 June, 2019

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 711H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3076.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3076.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 711H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

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 11-T24S-R29E

Site Position:		**Northing:**	451,030.14 usft	**Latitude:**	32.239417
From:	Map	**Easting:**	655,595.01 usft	**Longitude:**	-103.963784
Position Uncertainty:	5.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.20 °

Well Mr. Potato Head 11-14 Fed Com 711H

Well Position	**+N/-S**	0.00 ft	**Northing:**	450,685.25 usft	**Latitude:**	32.238459
	+E/-W	0.00 ft	**Easting:**	656,671.49 usft	**Longitude:**	-103.960307
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,051.30 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/3/2019	6.94	59.99	47,723.90469302

Design Permit Plan 2

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	180.22

Plan Survey Tool Program **Date** 6/4/2019

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,700.26	Permit Plan 2 (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	
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,804.43	3.81	344.18	4,804.21	9.72	-2.75	1.25	1.25	0.00	344.18	
9,223.46	3.81	344.18	9,213.49	291.90	-82.70	0.00	0.00	0.00	0.00	
9,477.15	0.00	0.00	9,467.00	300.00	-85.00	1.50	-1.50	0.00	180.00	
9,827.19	0.00	0.00	9,817.04	300.00	-85.00	0.00	0.00	0.00	0.00	
10,727.20	90.00	179.75	10,390.00	-272.95	-82.52	10.00	10.00	0.00	179.75	PBHL - Mr. Potato He
20,700.26	90.00	179.75	10,390.00	-10,245.92	-39.31	0.00	0.00	0.00	0.00	PBHL - Mr. Potato He

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 711H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3076.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3076.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 711H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

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	450,685.25	656,671.49	32.238459	-103.960307
100.00	0.00	0.00	100.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
200.00	0.00	0.00	200.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
300.00	0.00	0.00	300.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
400.00	0.00	0.00	400.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
500.00	0.00	0.00	500.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
600.00	0.00	0.00	600.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
700.00	0.00	0.00	700.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
800.00	0.00	0.00	800.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
900.00	0.00	0.00	900.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
1,000.00	0.00	0.00	1,000.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
1,100.00	0.00	0.00	1,100.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
1,200.00	0.00	0.00	1,200.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
1,300.00	0.00	0.00	1,300.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
1,400.00	0.00	0.00	1,400.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
1,500.00	0.00	0.00	1,500.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
1,600.00	0.00	0.00	1,600.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
1,700.00	0.00	0.00	1,700.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
1,800.00	0.00	0.00	1,800.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
1,900.00	0.00	0.00	1,900.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
2,000.00	0.00	0.00	2,000.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
2,100.00	0.00	0.00	2,100.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
2,200.00	0.00	0.00	2,200.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
2,300.00	0.00	0.00	2,300.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
2,400.00	0.00	0.00	2,400.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
2,500.00	0.00	0.00	2,500.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
2,600.00	0.00	0.00	2,600.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
2,700.00	0.00	0.00	2,700.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
2,800.00	0.00	0.00	2,800.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
2,900.00	0.00	0.00	2,900.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
3,000.00	0.00	0.00	3,000.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
3,100.00	0.00	0.00	3,100.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
3,200.00	0.00	0.00	3,200.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
3,300.00	0.00	0.00	3,300.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
3,400.00	0.00	0.00	3,400.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
3,500.00	0.00	0.00	3,500.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
3,600.00	0.00	0.00	3,600.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
3,700.00	0.00	0.00	3,700.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
3,800.00	0.00	0.00	3,800.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
3,900.00	0.00	0.00	3,900.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
4,000.00	0.00	0.00	4,000.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
4,100.00	0.00	0.00	4,100.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
4,200.00	0.00	0.00	4,200.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
4,300.00	0.00	0.00	4,300.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
4,400.00	0.00	0.00	4,400.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
4,500.00	0.00	0.00	4,500.00	0.00	0.00	450,685.25	656,671.49	32.238459	-103.960307
4,600.00	1.25	344.18	4,599.99	1.05	-0.30	450,686.30	656,671.20	32.238462	-103.960308
4,700.00	2.50	344.18	4,699.94	4.20	-1.19	450,689.45	656,670.31	32.238471	-103.960310
4,800.00	3.75	344.18	4,799.79	9.44	-2.68	450,694.69	656,668.82	32.238485	-103.960315
4,804.43	3.81	344.18	4,804.21	9.72	-2.75	450,694.97	656,668.74	32.238486	-103.960315
4,900.00	3.81	344.18	4,899.57	15.83	-4.48	450,701.08	656,667.01	32.238503	-103.960321
5,000.00	3.81	344.18	4,999.35	22.21	-6.29	450,707.46	656,665.20	32.238520	-103.960327
5,100.00	3.81	344.18	5,099.12	28.60	-8.10	450,713.85	656,663.39	32.238538	-103.960333
5,200.00	3.81	344.18	5,198.90	34.98	-9.91	450,720.23	656,661.58	32.238555	-103.960338

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 711H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3076.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3076.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 711H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,300.00	3.81	344.18	5,298.68	41.37	-11.72	450,726.62	656,659.77	32.238573	-103.960344
5,400.00	3.81	344.18	5,398.46	47.75	-13.53	450,733.00	656,657.96	32.238591	-103.960350
5,500.00	3.81	344.18	5,498.24	54.14	-15.34	450,739.39	656,656.16	32.238608	-103.960356
5,600.00	3.81	344.18	5,598.02	60.52	-17.15	450,745.77	656,654.35	32.238626	-103.960361
5,700.00	3.81	344.18	5,697.80	66.91	-18.96	450,752.16	656,652.54	32.238643	-103.960367
5,800.00	3.81	344.18	5,797.58	73.29	-20.77	450,758.54	656,650.73	32.238661	-103.960373
5,900.00	3.81	344.18	5,897.36	79.68	-22.58	450,764.93	656,648.92	32.238678	-103.960379
6,000.00	3.81	344.18	5,997.14	86.07	-24.39	450,771.32	656,647.11	32.238696	-103.960385
6,100.00	3.81	344.18	6,096.92	92.45	-26.19	450,777.70	656,645.30	32.238714	-103.960390
6,200.00	3.81	344.18	6,196.70	98.84	-28.00	450,784.09	656,643.49	32.238731	-103.960396
6,300.00	3.81	344.18	6,296.48	105.22	-29.81	450,790.47	656,641.68	32.238749	-103.960402
6,400.00	3.81	344.18	6,396.26	111.61	-31.62	450,796.86	656,639.87	32.238766	-103.960408
6,500.00	3.81	344.18	6,496.04	117.99	-33.43	450,803.24	656,638.06	32.238784	-103.960413
6,600.00	3.81	344.18	6,595.82	124.38	-35.24	450,809.63	656,636.25	32.238801	-103.960419
6,700.00	3.81	344.18	6,695.60	130.76	-37.05	450,816.01	656,634.45	32.238819	-103.960425
6,800.00	3.81	344.18	6,795.38	137.15	-38.86	450,822.40	656,632.64	32.238837	-103.960431
6,900.00	3.81	344.18	6,895.16	143.53	-40.67	450,828.78	656,630.83	32.238854	-103.960437
7,000.00	3.81	344.18	6,994.94	149.92	-42.48	450,835.17	656,629.02	32.238872	-103.960442
7,100.00	3.81	344.18	7,094.72	156.31	-44.29	450,841.55	656,627.21	32.238889	-103.960448
7,200.00	3.81	344.18	7,194.49	162.69	-46.10	450,847.94	656,625.40	32.238907	-103.960454
7,300.00	3.81	344.18	7,294.27	169.08	-47.90	450,854.33	656,623.59	32.238924	-103.960460
7,400.00	3.81	344.18	7,394.05	175.46	-49.71	450,860.71	656,621.78	32.238942	-103.960465
7,500.00	3.81	344.18	7,493.83	181.85	-51.52	450,867.10	656,619.97	32.238960	-103.960471
7,600.00	3.81	344.18	7,593.61	188.23	-53.33	450,873.48	656,618.16	32.238977	-103.960477
7,700.00	3.81	344.18	7,693.39	194.62	-55.14	450,879.87	656,616.35	32.238995	-103.960483
7,800.00	3.81	344.18	7,793.17	201.00	-56.95	450,886.25	656,614.54	32.239012	-103.960489
7,900.00	3.81	344.18	7,892.95	207.39	-58.76	450,892.64	656,612.73	32.239030	-103.960494
8,000.00	3.81	344.18	7,992.73	213.77	-60.57	450,899.02	656,610.93	32.239047	-103.960500
8,100.00	3.81	344.18	8,092.51	220.16	-62.38	450,905.41	656,609.12	32.239065	-103.960506
8,200.00	3.81	344.18	8,192.29	226.54	-64.19	450,911.79	656,607.31	32.239083	-103.960512
8,300.00	3.81	344.18	8,292.07	232.93	-66.00	450,918.18	656,605.50	32.239100	-103.960517
8,400.00	3.81	344.18	8,391.85	239.32	-67.81	450,924.57	656,603.69	32.239118	-103.960523
8,500.00	3.81	344.18	8,491.63	245.70	-69.62	450,930.95	656,601.88	32.239135	-103.960529
8,600.00	3.81	344.18	8,591.41	252.09	-71.42	450,937.34	656,600.07	32.239153	-103.960535
8,700.00	3.81	344.18	8,691.19	258.47	-73.23	450,943.72	656,598.26	32.239170	-103.960541
8,800.00	3.81	344.18	8,790.97	264.86	-75.04	450,950.11	656,596.45	32.239188	-103.960546
8,900.00	3.81	344.18	8,890.75	271.24	-76.85	450,956.49	656,594.64	32.239206	-103.960552
9,000.00	3.81	344.18	8,990.53	277.63	-78.66	450,962.88	656,592.83	32.239223	-103.960558
9,100.00	3.81	344.18	9,090.31	284.01	-80.47	450,969.26	656,591.02	32.239241	-103.960564
9,200.00	3.81	344.18	9,190.09	290.40	-82.28	450,975.65	656,589.22	32.239258	-103.960569
9,223.46	3.81	344.18	9,213.49	291.90	-82.70	450,977.15	656,588.79	32.239262	-103.960571
9,300.00	2.66	344.18	9,289.91	296.05	-83.88	450,981.30	656,587.61	32.239274	-103.960575
9,400.00	1.16	344.18	9,389.85	299.25	-84.79	450,984.50	656,586.71	32.239283	-103.960577
9,477.15	0.00	0.00	9,467.00	300.00	-85.00	450,985.25	656,586.49	32.239285	-103.960578
9,500.00	0.00	0.00	9,489.85	300.00	-85.00	450,985.25	656,586.49	32.239285	-103.960578
9,600.00	0.00	0.00	9,589.85	300.00	-85.00	450,985.25	656,586.49	32.239285	-103.960578
9,700.00	0.00	0.00	9,689.85	300.00	-85.00	450,985.25	656,586.49	32.239285	-103.960578
9,800.00	0.00	0.00	9,789.85	300.00	-85.00	450,985.25	656,586.49	32.239285	-103.960578
9,827.19	0.00	0.00	9,817.04	300.00	-85.00	450,985.25	656,586.49	32.239285	-103.960578
KOP @ 9827' MD, 50' FNL, 990' FWL									
9,900.00	7.28	179.75	9,889.65	295.38	-84.98	450,980.63	656,586.51	32.239272	-103.960578
10,000.00	17.28	179.75	9,987.24	274.14	-84.89	450,959.39	656,586.61	32.239214	-103.960578

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 711H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3076.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3076.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 711H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,068.34	24.11	179.75	10,051.13	250.00	-84.78	450,935.25	656,586.71	32.239147	-103.960578
FTP @ 10068' MD, 100' FNL, 990' FWL									
10,100.00	27.28	179.75	10,079.66	236.27	-84.72	450,921.52	656,586.77	32.239109	-103.960578
10,200.00	37.28	179.75	10,164.09	182.93	-84.49	450,868.18	656,587.00	32.238963	-103.960578
10,300.00	47.28	179.75	10,237.98	115.74	-84.20	450,800.99	656,587.29	32.238778	-103.960578
10,400.00	57.28	179.75	10,299.09	36.74	-83.86	450,721.99	656,587.64	32.238561	-103.960577
10,500.00	67.28	179.75	10,345.54	-51.67	-83.48	450,633.58	656,588.02	32.238318	-103.960577
10,600.00	77.28	179.75	10,375.94	-146.80	-83.06	450,538.45	656,588.43	32.238056	-103.960577
10,700.00	87.28	179.75	10,389.35	-245.77	-82.64	450,439.48	656,588.86	32.237784	-103.960577
10,727.20	90.00	179.75	10,390.00	-272.95	-82.52	450,412.30	656,588.98	32.237710	-103.960577
10,800.00	90.00	179.75	10,390.00	-345.76	-82.20	450,339.49	656,589.29	32.237510	-103.960576
10,900.00	90.00	179.75	10,390.00	-445.76	-81.77	450,239.49	656,589.73	32.237235	-103.960576
11,000.00	90.00	179.75	10,390.00	-545.76	-81.34	450,139.50	656,590.16	32.236960	-103.960576
11,100.00	90.00	179.75	10,390.00	-645.76	-80.90	450,039.50	656,590.59	32.236685	-103.960576
11,200.00	90.00	179.75	10,390.00	-745.75	-80.47	449,939.50	656,591.03	32.236410	-103.960575
11,300.00	90.00	179.75	10,390.00	-845.75	-80.04	449,839.50	656,591.46	32.236135	-103.960575
11,400.00	90.00	179.75	10,390.00	-945.75	-79.60	449,739.50	656,591.89	32.235860	-103.960575
11,500.00	90.00	179.75	10,390.00	-1,045.75	-79.17	449,639.50	656,592.33	32.235585	-103.960574
11,600.00	90.00	179.75	10,390.00	-1,145.75	-78.74	449,539.50	656,592.76	32.235310	-103.960574
11,700.00	90.00	179.75	10,390.00	-1,245.75	-78.30	449,439.50	656,593.19	32.235036	-103.960574
11,800.00	90.00	179.75	10,390.00	-1,345.75	-77.87	449,339.50	656,593.62	32.234761	-103.960574
11,900.00	90.00	179.75	10,390.00	-1,445.75	-77.44	449,239.51	656,594.06	32.234486	-103.960573
12,000.00	90.00	179.75	10,390.00	-1,545.75	-77.00	449,139.51	656,594.49	32.234211	-103.960573
12,100.00	90.00	179.75	10,390.00	-1,645.75	-76.57	449,039.51	656,594.92	32.233936	-103.960573
12,200.00	90.00	179.75	10,390.00	-1,745.74	-76.14	448,939.51	656,595.36	32.233661	-103.960572
12,300.00	90.00	179.75	10,390.00	-1,845.74	-75.70	448,839.51	656,595.79	32.233386	-103.960572
12,400.00	90.00	179.75	10,390.00	-1,945.74	-75.27	448,739.51	656,596.22	32.233111	-103.960572
12,500.00	90.00	179.75	10,390.00	-2,045.74	-74.84	448,639.51	656,596.66	32.232836	-103.960572
12,600.00	90.00	179.75	10,390.00	-2,145.74	-74.40	448,539.51	656,597.09	32.232562	-103.960571
12,700.00	90.00	179.75	10,390.00	-2,245.74	-73.97	448,439.51	656,597.52	32.232287	-103.960571
12,800.00	90.00	179.75	10,390.00	-2,345.74	-73.54	448,339.52	656,597.96	32.232012	-103.960571
12,900.00	90.00	179.75	10,390.00	-2,445.74	-73.10	448,239.52	656,598.39	32.231737	-103.960571
13,000.00	90.00	179.75	10,390.00	-2,545.74	-72.67	448,139.52	656,598.82	32.231462	-103.960570
13,100.00	90.00	179.75	10,390.00	-2,645.74	-72.24	448,039.52	656,599.26	32.231187	-103.960570
13,200.00	90.00	179.75	10,390.00	-2,745.74	-71.80	447,939.52	656,599.69	32.230912	-103.960570
13,300.00	90.00	179.75	10,390.00	-2,845.73	-71.37	447,839.52	656,600.12	32.230637	-103.960569
13,400.00	90.00	179.75	10,390.00	-2,945.73	-70.94	447,739.52	656,600.56	32.230363	-103.960569
13,500.00	90.00	179.75	10,390.00	-3,045.73	-70.50	447,639.52	656,600.99	32.230088	-103.960569
13,600.00	90.00	179.75	10,390.00	-3,145.73	-70.07	447,539.52	656,601.42	32.229813	-103.960569
13,700.00	90.00	179.75	10,390.00	-3,245.73	-69.64	447,439.53	656,601.86	32.229538	-103.960568
13,800.00	90.00	179.75	10,390.00	-3,345.73	-69.20	447,339.53	656,602.29	32.229263	-103.960568
13,900.00	90.00	179.75	10,390.00	-3,445.73	-68.77	447,239.53	656,602.72	32.228988	-103.960568
14,000.00	90.00	179.75	10,390.00	-3,545.73	-68.34	447,139.53	656,603.16	32.228713	-103.960567
14,100.00	90.00	179.75	10,390.00	-3,645.73	-67.91	447,039.53	656,603.59	32.228438	-103.960567
14,200.00	90.00	179.75	10,390.00	-3,745.73	-67.47	446,939.53	656,604.02	32.228163	-103.960567
14,300.00	90.00	179.75	10,390.00	-3,845.73	-67.04	446,839.53	656,604.46	32.227889	-103.960567
14,400.00	90.00	179.75	10,390.00	-3,945.72	-66.61	446,739.53	656,604.89	32.227614	-103.960566
14,500.00	90.00	179.75	10,390.00	-4,045.72	-66.17	446,639.53	656,605.32	32.227339	-103.960566
14,600.00	90.00	179.75	10,390.00	-4,145.72	-65.74	446,539.54	656,605.76	32.227064	-103.960566
14,700.00	90.00	179.75	10,390.00	-4,245.72	-65.31	446,439.54	656,606.19	32.226789	-103.960565
14,800.00	90.00	179.75	10,390.00	-4,345.72	-64.87	446,339.54	656,606.62	32.226514	-103.960565
14,900.00	90.00	179.75	10,390.00	-4,445.72	-64.44	446,239.54	656,607.06	32.226239	-103.960565
15,000.00	90.00	179.75	10,390.00	-4,545.72	-64.01	446,139.54	656,607.49	32.225964	-103.960565
15,100.00	90.00	179.75	10,390.00	-4,645.72	-63.57	446,039.54	656,607.92	32.225689	-103.960564

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 711H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3076.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3076.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 711H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,200.00	90.00	179.75	10,390.00	-4,745.72	-63.14	445,939.54	656,608.36	32.225415	-103.960564
15,300.00	90.00	179.75	10,390.00	-4,845.72	-62.71	445,839.54	656,608.79	32.225140	-103.960564
15,384.00	90.00	179.75	10,390.00	-4,929.71	-62.34	445,755.55	656,609.15	32.224909	-103.960564
Cross section @ 15384' MD, 0' FNL, 990' FWL									
15,400.00	90.00	179.75	10,390.00	-4,945.71	-62.27	445,739.55	656,609.22	32.224865	-103.960564
15,500.00	90.00	179.75	10,390.00	-5,045.71	-61.84	445,639.55	656,609.65	32.224590	-103.960563
15,600.00	90.00	179.75	10,390.00	-5,145.71	-61.41	445,539.55	656,610.09	32.224315	-103.960563
15,700.00	90.00	179.75	10,390.00	-5,245.71	-60.97	445,439.55	656,610.52	32.224040	-103.960563
15,800.00	90.00	179.75	10,390.00	-5,345.71	-60.54	445,339.55	656,610.95	32.223765	-103.960562
15,900.00	90.00	179.75	10,390.00	-5,445.71	-60.11	445,239.55	656,611.39	32.223490	-103.960562
16,000.00	90.00	179.75	10,390.00	-5,545.71	-59.67	445,139.55	656,611.82	32.223215	-103.960562
16,100.00	90.00	179.75	10,390.00	-5,645.71	-59.24	445,039.55	656,612.25	32.222941	-103.960562
16,200.00	90.00	179.75	10,390.00	-5,745.71	-58.81	444,939.55	656,612.69	32.222666	-103.960561
16,300.00	90.00	179.75	10,390.00	-5,845.71	-58.37	444,839.56	656,613.12	32.222391	-103.960561
16,400.00	90.00	179.75	10,390.00	-5,945.71	-57.94	444,739.56	656,613.55	32.222116	-103.960561
16,500.00	90.00	179.75	10,390.00	-6,045.70	-57.51	444,639.56	656,613.99	32.221841	-103.960560
16,600.00	90.00	179.75	10,390.00	-6,145.70	-57.07	444,539.56	656,614.42	32.221566	-103.960560
16,700.00	90.00	179.75	10,390.00	-6,245.70	-56.64	444,439.56	656,614.85	32.221291	-103.960560
16,800.00	90.00	179.75	10,390.00	-6,345.70	-56.21	444,339.56	656,615.29	32.221016	-103.960560
16,900.00	90.00	179.75	10,390.00	-6,445.70	-55.77	444,239.56	656,615.72	32.220742	-103.960559
17,000.00	90.00	179.75	10,390.00	-6,545.70	-55.34	444,139.56	656,616.15	32.220467	-103.960559
17,100.00	90.00	179.75	10,390.00	-6,645.70	-54.91	444,039.56	656,616.59	32.220192	-103.960559
17,200.00	90.00	179.75	10,390.00	-6,745.70	-54.47	443,939.57	656,617.02	32.219917	-103.960559
17,300.00	90.00	179.75	10,390.00	-6,845.70	-54.04	443,839.57	656,617.45	32.219642	-103.960558
17,400.00	90.00	179.75	10,390.00	-6,945.70	-53.61	443,739.57	656,617.89	32.219367	-103.960558
17,500.00	90.00	179.75	10,390.00	-7,045.70	-53.17	443,639.57	656,618.32	32.219092	-103.960558
17,600.00	90.00	179.75	10,390.00	-7,145.69	-52.74	443,539.57	656,618.75	32.218817	-103.960557
17,700.00	90.00	179.75	10,390.00	-7,245.69	-52.31	443,439.57	656,619.19	32.218542	-103.960557
17,800.00	90.00	179.75	10,390.00	-7,345.69	-51.88	443,339.57	656,619.62	32.218268	-103.960557
17,900.00	90.00	179.75	10,390.00	-7,445.69	-51.44	443,239.57	656,620.05	32.217993	-103.960557
18,000.00	90.00	179.75	10,390.00	-7,545.69	-51.01	443,139.57	656,620.49	32.217718	-103.960556
18,100.00	90.00	179.75	10,390.00	-7,645.69	-50.58	443,039.58	656,620.92	32.217443	-103.960556
18,200.00	90.00	179.75	10,390.00	-7,745.69	-50.14	442,939.58	656,621.35	32.217168	-103.960556
18,300.00	90.00	179.75	10,390.00	-7,845.69	-49.71	442,839.58	656,621.79	32.216893	-103.960555
18,400.00	90.00	179.75	10,390.00	-7,945.69	-49.28	442,739.58	656,622.22	32.216618	-103.960555
18,500.00	90.00	179.75	10,390.00	-8,045.69	-48.84	442,639.58	656,622.65	32.216343	-103.960555
18,600.00	90.00	179.75	10,390.00	-8,145.68	-48.41	442,539.58	656,623.09	32.216068	-103.960555
18,700.00	90.00	179.75	10,390.00	-8,245.68	-47.98	442,439.58	656,623.52	32.215794	-103.960554
18,800.00	90.00	179.75	10,390.00	-8,345.68	-47.54	442,339.58	656,623.95	32.215519	-103.960554
18,900.00	90.00	179.75	10,390.00	-8,445.68	-47.11	442,239.58	656,624.39	32.215244	-103.960554
19,000.00	90.00	179.75	10,390.00	-8,545.68	-46.68	442,139.59	656,624.82	32.214969	-103.960553
19,100.00	90.00	179.75	10,390.00	-8,645.68	-46.24	442,039.59	656,625.25	32.214694	-103.960553
19,200.00	90.00	179.75	10,390.00	-8,745.68	-45.81	441,939.59	656,625.68	32.214419	-103.960553
19,300.00	90.00	179.75	10,390.00	-8,845.68	-45.38	441,839.59	656,626.12	32.214144	-103.960553
19,400.00	90.00	179.75	10,390.00	-8,945.68	-44.94	441,739.59	656,626.55	32.213869	-103.960552
19,500.00	90.00	179.75	10,390.00	-9,045.68	-44.51	441,639.59	656,626.98	32.213594	-103.960552
19,600.00	90.00	179.75	10,390.00	-9,145.68	-44.08	441,539.59	656,627.42	32.213320	-103.960552
19,700.00	90.00	179.75	10,390.00	-9,245.67	-43.64	441,439.59	656,627.85	32.213045	-103.960552
19,800.00	90.00	179.75	10,390.00	-9,345.67	-43.21	441,339.60	656,628.28	32.212770	-103.960551
19,900.00	90.00	179.75	10,390.00	-9,445.67	-42.78	441,239.60	656,628.72	32.212495	-103.960551
20,000.00	90.00	179.75	10,390.00	-9,545.67	-42.34	441,139.60	656,629.15	32.212220	-103.960551
20,100.00	90.00	179.75	10,390.00	-9,645.67	-41.91	441,039.60	656,629.58	32.211945	-103.960550
20,200.00	90.00	179.75	10,390.00	-9,745.67	-41.48	440,939.60	656,630.02	32.211670	-103.960550
20,300.00	90.00	179.75	10,390.00	-9,845.67	-41.04	440,839.60	656,630.45	32.211395	-103.960550

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Mr. Potato Head 11-14 Fed Com 711H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3076.30ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3076.30ft
Site:	Sec 11-T24S-R29E	**North Reference:**	Grid
Well:	Mr. Potato Head 11-14 Fed Com 711H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,400.00	90.00	179.75	10,390.00	-9,945.67	-40.61	440,739.60	656,630.88	32.211120	-103.960550
20,500.00	90.00	179.75	10,390.00	-10,045.67	-40.18	440,639.60	656,631.32	32.210846	-103.960549
20,600.00	90.00	179.75	10,390.00	-10,145.67	-39.74	440,539.60	656,631.75	32.210571	-103.960549
20,620.26	90.00	179.75	10,390.00	-10,165.93	-39.66	440,519.34	656,631.84	32.210515	-103.960549
LTP @ 20620' MD, 100' FSL, 990' FWL									
20,700.00	90.00	179.75	10,390.00	-10,245.67	-39.31	440,439.61	656,632.18	32.210296	-103.960549
20,700.25	90.00	179.75	10,390.00	-10,245.92	-39.31	440,439.36	656,632.18	32.210295	-103.960549
PBHL; 20' FSL, 990' FWL									
20,700.26	90.00	179.75	10,390.00	-10,245.92	-39.31	440,439.35	656,632.18	32.210295	-103.960549

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 - Mr. Potato Head	0.00	0.00	0.00	-10,245.92	-39.31	440,439.35	656,632.18	32.210295	-103.960549
- plan misses target center by 10246.00ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
9,827.19	9,817.04	300.00	-85.00	KOP @ 9827' MD, 50' FNL, 990' FWL
10,068.34	10,051.13	250.00	-84.78	FTP @ 10068' MD, 100' FNL, 990' FWL
15,384.00	10,390.00	-4,929.71	-62.34	Cross section @ 15384' MD, 0' FNL, 990' FWL
20,620.26	10,390.00	-10,165.93	-39.66	LTP @ 20620' MD, 100' FSL, 990' FWL
20,700.25	10,390.00	-10,245.92	-39.31	PBHL; 20' FSL, 990' FWL