Form 3160-3
(June 2015)

HOBBS OCD

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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.
NMLC0063798

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.
BLUE KRAIT 23-14 FED
33H (316705)

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP (6137)

9. API Well No.
30-025-46540

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
~~BRINNINSTOOL~~ / WOLFCAMP 98135

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

At surface SESE / 200 FSL / 1144 FEL / LAT 32.196399 / LONG -103.538285

At proposed prod. zone NWNE / 20 FNL / 1671 FEL / LAT 32.224802 / LONG -103.540006

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 23 / T24S / R33E / NMP

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

12. County or Parish
LEA

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
200 feet	2480	320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. in file**
215 feet	12525 feet / 22776 feet	FED: CO1104
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3557 feet	08/25/2019	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)	Rebecca Deal / Ph: (405)552-6556	01/28/2019
Title: Regulatory Compliance Professional		
Approved by *(Signature)* (Electronic Submission)	Name *(Printed/Typed)* Cody Layton / Ph: (575)234-5959	Date 10/18/2019
Title: Assistant Field Manager Lands & Minerals	Office: 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.

GCP Rec 11/25/19

KZ 11/25/19

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 Company LP**
LEASE NO.:	**NMLC0063798**
WELL NAME & NO.:	Blue Krait 23-14 Fed 33H
SURFACE HOLE FOOTAGE:	200'/S & 1144'/E
BOTTOM HOLE FOOTAGE	20'/N & 1671'/E
LOCATION:	Section 23, T.24 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico

COA

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

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Pitchfork Ranch Pool** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Primary Casing Design:

1. The **10-3/4** inch surface casing shall be set at approximately **1350 feet** (a minimum of **25 feet (Lea 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.

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.

Operator has proposed to pump down 10-3/4" 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.
      Cement excess is less than 25%, more cement might be required.

Alternate Casing Design:

4. The **13-3/8** inch surface casing shall be set at approximately 1350 feet (a minimum of **25 feet (Lea 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.
      Cement excess is less than 25%, more cement might be required.

    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.
  Cement excess is less than 25%, more cement might be required.

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.

Production casing must be kept fluid filled to meet BLM minimum collapse requirement.

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.
  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.

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. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) 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. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 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.

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.

APD ID: 10400038548 **Submission Date:** 01/28/2019

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

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
1	---	3557	0	0	OTHER : Surface	NONE	N
2	RUSTLER	2457	1101	1101	SANDSTONE	NONE	N
3	TOP SALT	1936	1622	1622	SALT	NONE	N
4	BASE OF SALT	-1490	5048	5048	LIMESTONE	NONE	N
5	BELL CANYON	-1709	5267	5267	SANDSTONE	NATURAL GAS,OIL	N
6	CHERRY CANYON	-2743	6301	6301	SANDSTONE	NATURAL GAS,OIL	N
7	BRUSHY CANYON	-4373	7931	7931	SANDSTONE	NATURAL GAS,OIL	N
8	BONE SPRING	-5883	9441	9441	SHALE	NATURAL GAS,OIL	N
9	BONE SPRING 1ST	-6642	10200	10200	SANDSTONE	NATURAL GAS,OIL	N
10	BONE SPRING 2ND	-7302	10860	10860	SANDSTONE	NATURAL GAS,OIL	N
11	BONE SPRING 3RD	-8638	12196	12196	SANDSTONE	NATURAL GAS,OIL	N
12	WOLFCAMP	-8699	12257	12257	SHALE	NATURAL GAS,OIL	Y
13	STRAWN	-10242	13800	13800	LIMESTONE	NATURAL GAS,OIL	N

Section 2 - Blowout Prevention

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

Pressure Rating (PSI): 10M **Rating Depth:** 12525

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below intermediate casing, a BOP/BOPE system with the above minimum rating will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.
Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart. Devon requests a variance to run a 5M annular on a 10M BOP system. See separately attached variance request and support documents in AFMSS.
Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. 5M annular on 10M system will be tested to 100% of rated working pressure.
Choke Diagram Attachment:

10M_BOPE_CHK_DR_CLS_RKL_20190124094056.pdf

BOP Diagram Attachment:

10M_BOPE_CHK_DR_CLS_RKL_20190124094339.pdf

Pressure Rating (PSI): 5M **Rating Depth:** 11965

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below surface casing, a BOP/BOPE system with the above minimum rating will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.
Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for hydrostatic test chart.
Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.
Choke Diagram Attachment:

5M_BOPE__CK_20190124094439.pdf

BOP Diagram Attachment:

5M_BOPE__CK_20190124094446.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	14.75	10.75	NEW	API	N	0	1350	0	1350			1350	J-55	40.5	ST&C	1.125	1.25	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	11965	0	11965			11965	P-110	29.7	OTHER - BTC	1.125	1.25	BUOY	1.6	BUOY	1.6
3	PRODUCTION	6.75	5.5	NEW	API	N	0	22775	0	12525			22775	P-110	20	OTHER - VAM SG	1.125	1.25	BUOY	1.6	BUOY	1.6

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Surf_Csg_Ass_20190128105505.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

Casing Attachments

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Int_Csg_Ass_20190124094716.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Prod_Csg_Ass_20190128105536.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1350	864	1.33	13.2	1149	50	CLASS C	Class C + adds
INTERMEDIATE	Lead		0	7965	1161	1.85	9	2148	30	TUNED	TUNED LIGHT
INTERMEDIATE	Tail		7965	11965	848	1.33	13.2	1128	30	CLASS H	Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		11465	22775	790	1.33	13.2	1051	25	Class H	0.125 lbs/sack Poly-E-Flake

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1350	WATER-BASED MUD	8.5	9				2			
0	11965	SALT SATURATED	9	10				2			
11965	22775	OIL-BASED MUD	10	10.5				12			

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Will run GRMWD from TD to from KOP. Cement bond logs will be run in vertical to determine top of cement. Stated logs run will be in the Completion Report and submitted to the BLM.

List of open and cased hole logs run in the well:

CALIPER,CBL,DS,GR,MUDLOG

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6839 **Anticipated Surface Pressure:** 4083.5

Anticipated Bottom Hole Temperature(F): 182

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Blue_Krait_23_14_Fed_33H_H2S_Plan_20190128105642.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Blue_Krait_23_14_Fed_33H_Dir_Svy_20190128105700.pdf

Blue_Krait_23_14_Fed_33H_Plot_20190128105700.pdf

Blue_Krait_23_14_Fed_33H_20190128105903.pdf

Other proposed operations facets description:

DIRECTIONAL SURVEY
PLOT
DRILLING PLAN
MULTI-BOWL VERBIAGE
MULTI-BOWL WELLHEAD - 2 VARIATIONS OF 10M
10M ANNULAR VARIANCE DOC & SCHEMATIC
CLOSED LOOP DESIGN PLAN
CO-FLEX HOSE
SPUDDER RIG REQUEST
GCP FORM
SPEC SHEETS - 6

Other proposed operations facets attachment:

7.625_29.70_P110_Flushmax_20180802151741.pdf

5.5_x_20_P110_EC_VAMSG_20180802151740.pdf
8.625_32__P110EC___7.875_SD_20180802151742.pdf
13.375_48__H40_20190124102551.pdf
5_500in_17_00__P110RY_DWC_C_20190124102614.pdf
MB_Verb_10M_20190124102727.pdf
Spudder_Rig_Info_20190124102728.pdf
MB_Wellhd_5M___Wolfcamp_5M_20190124103216.pdf
MB_Wellhd_10M_2_20190124102943.PDF
MB_Wellhd_10M_20190124102944.pdf
Clsd_Loop_20190124102727.pdf
10.750_40.50__J55_USS_20190124102537.PDF
Blue_Krait_23_Fed_WP_7_GCP_20190128103220.pdf

Other Variance attachment:

10M_BOPE_CHK_DR_CLS_RKL_20190124102805.pdf
Annular_Variance___Preventer_Summary_20190124102747.pdf
Co_flex_20190124102748.pdf

devon

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

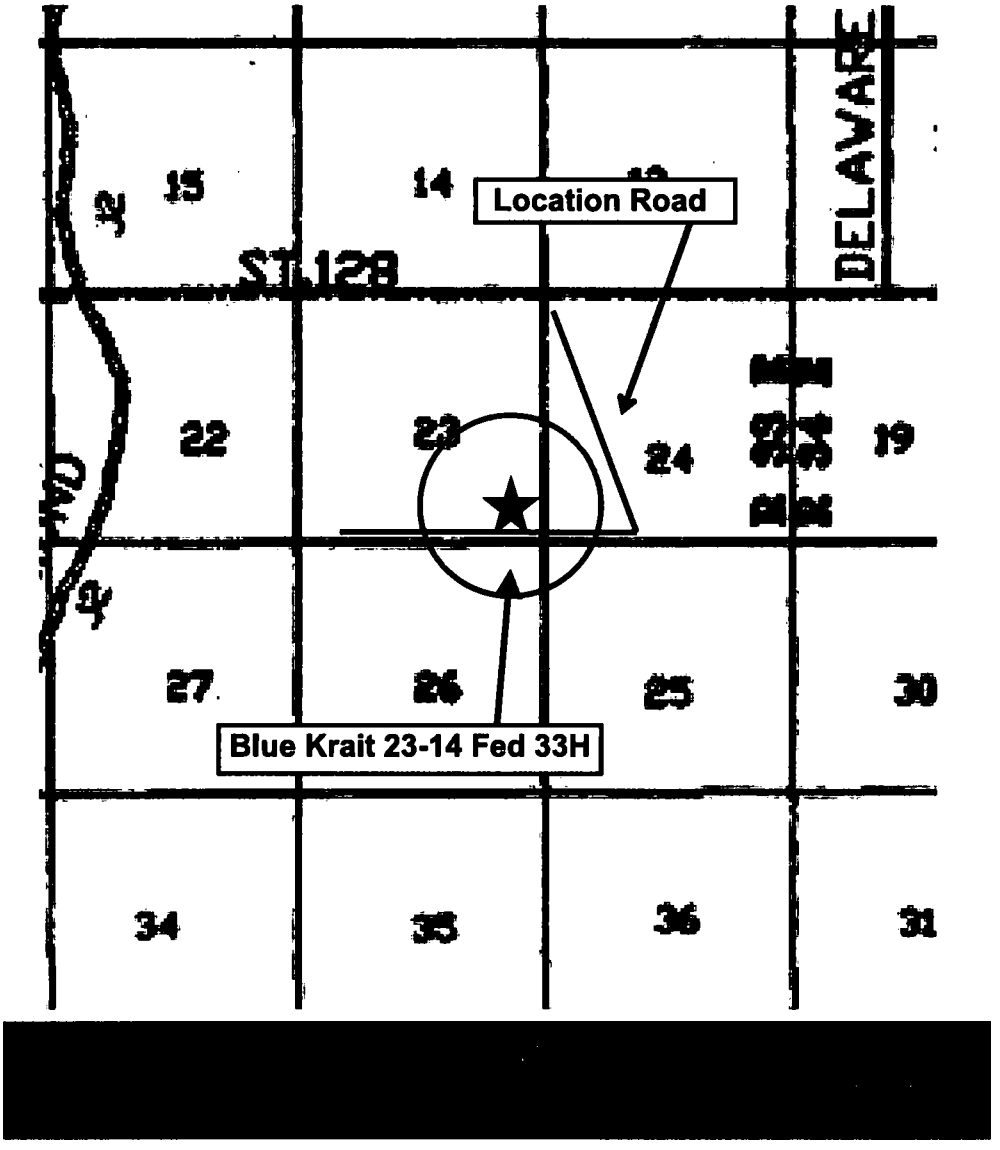
Blue Krait 23-14 Fed 33H

Sec-23 T-24S R-33E
200' FSL & 1144' FEL
LAT. = 32.196399' N (NAD83)
LONG = 103.538285' W

Lea County NM

Blue Krait 23-14 Fed 33H

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.



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:**

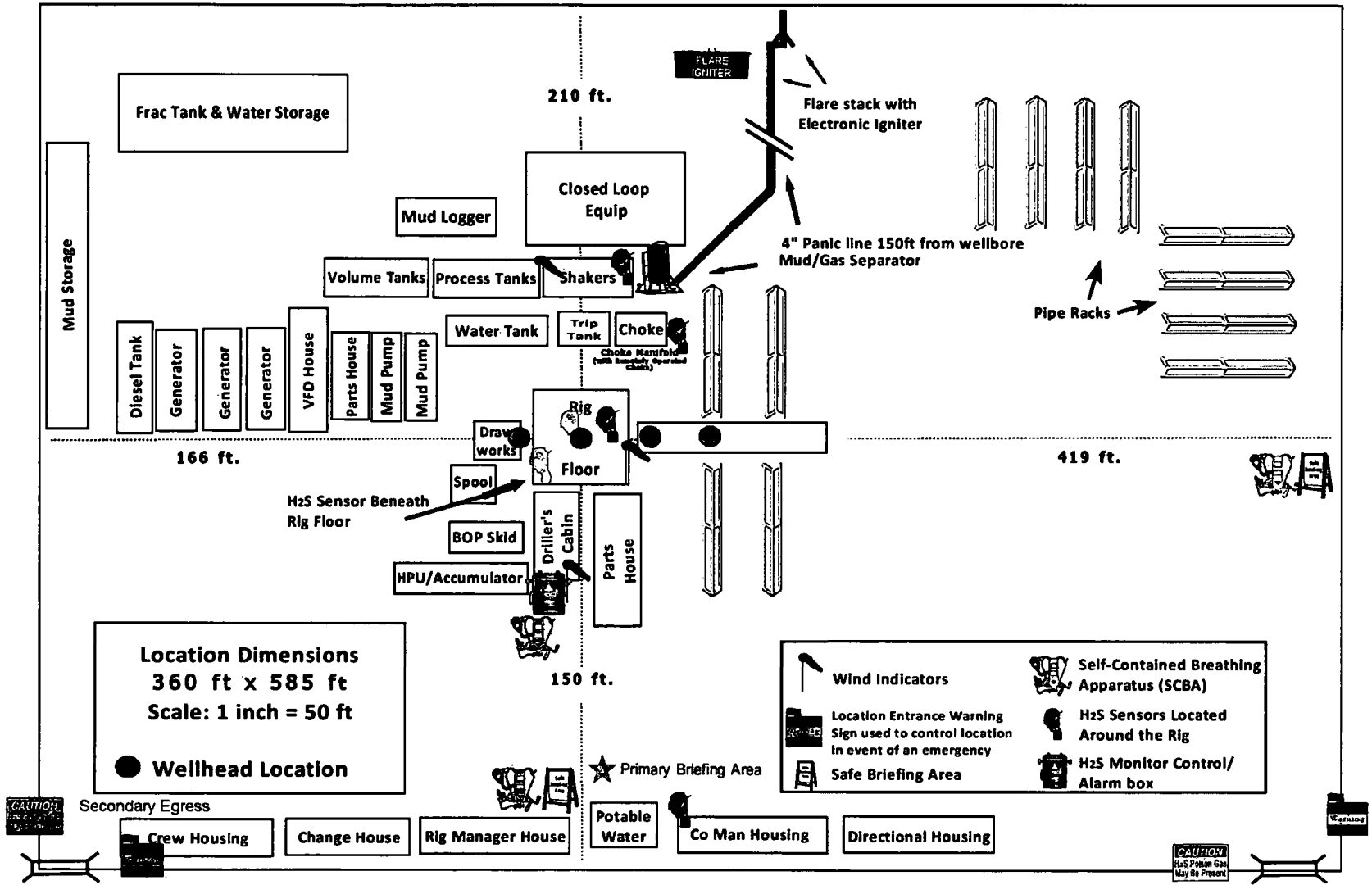
   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing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



WCDSC Permian NM

Lea County (NAD83 New Mexico East)
Sec 23-T24S-R33E
Blue Krait 23-14 Fed 33H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

27 December, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Blue Krait 23-14 Fed 33H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3582.20ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3582.20ft
Site:	Sec 23-T24S-R33E	**North Reference:**	Grid
Well:	Blue Krait 23-14 Fed 33H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Project	Lea County (NAD83 New Mexico East)		
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 23-T24S-R33E				
Site Position:		**Northing:**	446,417.68 usft	**Latitude:**	32.224862
From:	Map	**Easting:**	783,057.71 usft	**Longitude:**	-103.551658
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.42 °

Well	Blue Krait 23-14 Fed 33H					
Well Position	**+N/-S**	0.00 ft	**Northing:**	436,093.34 usft	**Latitude:**	32.196399
	+E/-W	0.00 ft	**Easting:**	787,269.71 usft	**Longitude:**	-103.538285
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,557.20 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	12/26/2018	6.77	60.02	47,767.34328065

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	356.63	

Plan Survey Tool Program **Date** 12/27/2018

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	22,775.82	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	
2,750.00	0.00	0.00	2,750.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,116.85	3.67	254.11	3,116.60	-3.21	-11.29	1.00	1.00	0.00	254.11	
11,374.77	3.67	254.11	11,357.60	-147.86	-519.47	0.00	0.00	0.00	0.00	
11,619.34	0.00	0.00	11,602.00	-150.00	-527.00	1.50	-1.50	0.00	180.00	
11,969.38	0.00	0.00	11,952.04	-150.00	-527.00	0.00	0.00	0.00	0.00	
12,869.38	90.00	359.55	12,525.00	422.94	-531.47	10.00	10.00	0.00	359.55	Blue Krait 23-14 Fed :
22,775.82	90.00	359.55	12,525.00	10,329.08	-608.68	0.00	0.00	0.00	0.00	Blue Krait 23-14 Fed :

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Blue Krait 23-14 Fed 33H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3582.20ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3582.20ft
Site:	Sec 23-T24S-R33E	**North Reference:**	Grid
Well:	Blue Krait 23-14 Fed 33H	**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	436,093.34	787,269.71	32.196399	-103.538285
100.00	0.00	0.00	100.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
200.00	0.00	0.00	200.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
300.00	0.00	0.00	300.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
400.00	0.00	0.00	400.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
500.00	0.00	0.00	500.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
600.00	0.00	0.00	600.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
700.00	0.00	0.00	700.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
800.00	0.00	0.00	800.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
900.00	0.00	0.00	900.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
1,000.00	0.00	0.00	1,000.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
1,100.00	0.00	0.00	1,100.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
1,200.00	0.00	0.00	1,200.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
1,300.00	0.00	0.00	1,300.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
1,400.00	0.00	0.00	1,400.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
1,500.00	0.00	0.00	1,500.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
1,600.00	0.00	0.00	1,600.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
1,700.00	0.00	0.00	1,700.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
1,800.00	0.00	0.00	1,800.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
1,900.00	0.00	0.00	1,900.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
2,000.00	0.00	0.00	2,000.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
2,100.00	0.00	0.00	2,100.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
2,200.00	0.00	0.00	2,200.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
2,300.00	0.00	0.00	2,300.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
2,400.00	0.00	0.00	2,400.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
2,500.00	0.00	0.00	2,500.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
2,600.00	0.00	0.00	2,600.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
2,700.00	0.00	0.00	2,700.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
2,750.00	0.00	0.00	2,750.00	0.00	0.00	436,093.34	787,269.71	32.196399	-103.538285
2,800.00	0.50	254.11	2,800.00	-0.06	-0.21	436,093.28	787,269.50	32.196398	-103.538286
2,900.00	1.50	254.11	2,899.98	-0.54	-1.89	436,092.80	787,267.82	32.196397	-103.538291
3,000.00	2.50	254.11	2,999.92	-1.49	-5.24	436,091.85	787,264.46	32.196395	-103.538302
3,100.00	3.50	254.11	3,099.78	-2.93	-10.28	436,090.41	787,259.43	32.196391	-103.538318
3,116.85	3.67	254.11	3,116.60	-3.21	-11.29	436,090.13	787,258.42	32.196390	-103.538322
3,200.00	3.67	254.11	3,199.58	-4.67	-16.41	436,088.67	787,253.30	32.196386	-103.538338
3,300.00	3.67	254.11	3,299.37	-6.42	-22.56	436,086.92	787,247.15	32.196381	-103.538358
3,400.00	3.67	254.11	3,399.17	-8.17	-28.72	436,085.17	787,240.99	32.196377	-103.538378
3,500.00	3.67	254.11	3,498.96	-9.93	-34.87	436,083.41	787,234.84	32.196372	-103.538398
3,600.00	3.67	254.11	3,598.76	-11.68	-41.02	436,081.66	787,228.68	32.196367	-103.538418
3,700.00	3.67	254.11	3,698.55	-13.43	-47.18	436,079.91	787,222.53	32.196363	-103.538438
3,800.00	3.67	254.11	3,798.35	-15.18	-53.33	436,078.16	787,216.38	32.196358	-103.538458
3,900.00	3.67	254.11	3,898.14	-16.93	-59.49	436,076.41	787,210.22	32.196353	-103.538478
4,000.00	3.67	254.11	3,997.94	-18.68	-65.64	436,074.66	787,204.07	32.196349	-103.538498
4,100.00	3.67	254.11	4,097.74	-20.43	-71.79	436,072.91	787,197.91	32.196344	-103.538518
4,200.00	3.67	254.11	4,197.53	-22.19	-77.95	436,071.15	787,191.76	32.196339	-103.538538
4,300.00	3.67	254.11	4,297.33	-23.94	-84.10	436,069.40	787,185.61	32.196335	-103.538557
4,400.00	3.67	254.11	4,397.12	-25.69	-90.25	436,067.65	787,179.45	32.196330	-103.538577
4,500.00	3.67	254.11	4,496.92	-27.44	-96.41	436,065.90	787,173.30	32.196325	-103.538597
4,600.00	3.67	254.11	4,596.71	-29.19	-102.56	436,064.15	787,167.15	32.196320	-103.538617
4,700.00	3.67	254.11	4,696.51	-30.94	-108.72	436,062.40	787,160.99	32.196316	-103.538637
4,800.00	3.67	254.11	4,796.30	-32.70	-114.87	436,060.64	787,154.84	32.196311	-103.538657
4,900.00	3.67	254.11	4,896.10	-34.45	-121.02	436,058.89	787,148.68	32.196306	-103.538677
5,000.00	3.67	254.11	4,995.89	-36.20	-127.18	436,057.14	787,142.53	32.196302	-103.538697
5,100.00	3.67	254.11	5,095.69	-37.95	-133.33	436,055.39	787,136.38	32.196297	-103.538717
5,200.00	3.67	254.11	5,195.48	-39.70	-139.49	436,053.64	787,130.22	32.196292	-103.538737

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Blue Krait 23-14 Fed 33H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3582.20ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3582.20ft
Site:	Sec 23-T24S-R33E	**North Reference:**	Grid
Well:	Blue Krait 23-14 Fed 33H	**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
5,300.00	3.67	254.11	5,295.28	-41.45	-145.64	436,051.89	787,124.07	32.196288	-103.538757
5,400.00	3.67	254.11	5,395.07	-43.20	-151.79	436,050.13	787,117.91	32.196283	-103.538777
5,500.00	3.67	254.11	5,494.87	-44.96	-157.95	436,048.38	787,111.76	32.196278	-103.538797
5,600.00	3.67	254.11	5,594.66	-46.71	-164.10	436,046.63	787,105.61	32.196274	-103.538817
5,700.00	3.67	254.11	5,694.46	-48.46	-170.26	436,044.88	787,099.45	32.196269	-103.538837
5,800.00	3.67	254.11	5,794.25	-50.21	-176.41	436,043.13	787,093.30	32.196264	-103.538856
5,900.00	3.67	254.11	5,894.05	-51.96	-182.56	436,041.38	787,087.15	32.196259	-103.538876
6,000.00	3.67	254.11	5,993.84	-53.71	-188.72	436,039.63	787,080.99	32.196255	-103.538896
6,100.00	3.67	254.11	6,093.64	-55.47	-194.87	436,037.87	787,074.84	32.196250	-103.538916
6,200.00	3.67	254.11	6,193.43	-57.22	-201.02	436,036.12	787,068.68	32.196245	-103.538936
6,300.00	3.67	254.11	6,293.23	-58.97	-207.18	436,034.37	787,062.53	32.196241	-103.538956
6,400.00	3.67	254.11	6,393.02	-60.72	-213.33	436,032.62	787,056.38	32.196236	-103.538976
6,500.00	3.67	254.11	6,492.82	-62.47	-219.49	436,030.87	787,050.22	32.196231	-103.538996
6,600.00	3.67	254.11	6,592.61	-64.22	-225.64	436,029.12	787,044.07	32.196227	-103.539016
6,700.00	3.67	254.11	6,692.41	-65.98	-231.79	436,027.36	787,037.91	32.196222	-103.539036
6,800.00	3.67	254.11	6,792.20	-67.73	-237.95	436,025.61	787,031.76	32.196217	-103.539056
6,900.00	3.67	254.11	6,892.00	-69.48	-244.10	436,023.86	787,025.61	32.196213	-103.539076
7,000.00	3.67	254.11	6,991.79	-71.23	-250.26	436,022.11	787,019.45	32.196208	-103.539096
7,100.00	3.67	254.11	7,091.59	-72.98	-256.41	436,020.36	787,013.30	32.196203	-103.539116
7,200.00	3.67	254.11	7,191.38	-74.73	-262.56	436,018.61	787,007.15	32.196199	-103.539136
7,300.00	3.67	254.11	7,291.18	-76.48	-268.72	436,016.86	787,000.99	32.196194	-103.539156
7,400.00	3.67	254.11	7,390.97	-78.24	-274.87	436,015.10	786,994.84	32.196189	-103.539175
7,500.00	3.67	254.11	7,490.77	-79.99	-281.02	436,013.35	786,988.68	32.196184	-103.539195
7,600.00	3.67	254.11	7,590.56	-81.74	-287.18	436,011.60	786,982.53	32.196180	-103.539215
7,700.00	3.67	254.11	7,690.36	-83.49	-293.33	436,009.85	786,976.38	32.196175	-103.539235
7,800.00	3.67	254.11	7,790.15	-85.24	-299.49	436,008.10	786,970.22	32.196170	-103.539255
7,900.00	3.67	254.11	7,889.95	-86.99	-305.64	436,006.35	786,964.07	32.196166	-103.539275
8,000.00	3.67	254.11	7,989.74	-88.75	-311.79	436,004.59	786,957.91	32.196161	-103.539295
8,100.00	3.67	254.11	8,089.54	-90.50	-317.95	436,002.84	786,951.76	32.196156	-103.539315
8,200.00	3.67	254.11	8,189.33	-92.25	-324.10	436,001.09	786,945.61	32.196152	-103.539335
8,300.00	3.67	254.11	8,289.13	-94.00	-330.26	435,999.34	786,939.45	32.196147	-103.539355
8,400.00	3.67	254.11	8,388.92	-95.75	-336.41	435,997.59	786,933.30	32.196142	-103.539375
8,500.00	3.67	254.11	8,488.72	-97.50	-342.56	435,995.84	786,927.15	32.196138	-103.539395
8,600.00	3.67	254.11	8,588.51	-99.26	-348.72	435,994.08	786,920.99	32.196133	-103.539415
8,700.00	3.67	254.11	8,688.31	-101.01	-354.87	435,992.33	786,914.84	32.196128	-103.539435
8,800.00	3.67	254.11	8,788.10	-102.76	-361.02	435,990.58	786,908.68	32.196123	-103.539455
8,900.00	3.67	254.11	8,887.90	-104.51	-367.18	435,988.83	786,902.53	32.196119	-103.539474
9,000.00	3.67	254.11	8,987.70	-106.26	-373.33	435,987.08	786,896.38	32.196114	-103.539494
9,100.00	3.67	254.11	9,087.49	-108.01	-379.49	435,985.33	786,890.22	32.196109	-103.539514
9,200.00	3.67	254.11	9,187.29	-109.76	-385.64	435,983.58	786,884.07	32.196105	-103.539534
9,300.00	3.67	254.11	9,287.08	-111.52	-391.79	435,981.82	786,877.91	32.196100	-103.539554
9,400.00	3.67	254.11	9,386.88	-113.27	-397.95	435,980.07	786,871.76	32.196095	-103.539574
9,500.00	3.67	254.11	9,486.67	-115.02	-404.10	435,978.32	786,865.61	32.196091	-103.539594
9,600.00	3.67	254.11	9,586.47	-116.77	-410.26	435,976.57	786,859.45	32.196086	-103.539614
9,700.00	3.67	254.11	9,686.26	-118.52	-416.41	435,974.82	786,853.30	32.196081	-103.539634
9,800.00	3.67	254.11	9,786.06	-120.27	-422.56	435,973.07	786,847.15	32.196077	-103.539654
9,900.00	3.67	254.11	9,885.85	-122.03	-428.72	435,971.31	786,840.99	32.196072	-103.539674
10,000.00	3.67	254.11	9,985.65	-123.78	-434.87	435,969.56	786,834.84	32.196067	-103.539694
10,100.00	3.67	254.11	10,085.44	-125.53	-441.02	435,967.81	786,828.68	32.196063	-103.539714
10,200.00	3.67	254.11	10,185.24	-127.28	-447.18	435,966.06	786,822.53	32.196058	-103.539734
10,300.00	3.67	254.11	10,285.03	-129.03	-453.33	435,964.31	786,816.38	32.196053	-103.539754
10,400.00	3.67	254.11	10,384.83	-130.78	-459.49	435,962.56	786,810.22	32.196048	-103.539773
10,500.00	3.67	254.11	10,484.62	-132.54	-465.64	435,960.80	786,804.07	32.196044	-103.539793
10,600.00	3.67	254.11	10,584.42	-134.29	-471.79	435,959.05	786,797.91	32.196039	-103.539813
10,700.00	3.67	254.11	10,684.21	-136.04	-477.95	435,957.30	786,791.76	32.196034	-103.539833

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Blue Krait 23-14 Fed 33H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3582.20ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3582.20ft
Site:	Sec 23-T24S-R33E	**North Reference:**	Grid
Well:	Blue Krait 23-14 Fed 33H	**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
10,800.00	3.67	254.11	10,784.01	-137.79	-484.10	435,955.55	786,785.61	32.196030	-103.539853
10,900.00	3.67	254.11	10,883.80	-139.54	-490.26	435,953.80	786,779.45	32.196025	-103.539873
11,000.00	3.67	254.11	10,983.60	-141.29	-496.41	435,952.05	786,773.30	32.196020	-103.539893
11,100.00	3.67	254.11	11,083.39	-143.04	-502.56	435,950.30	786,767.15	32.196016	-103.539913
11,200.00	3.67	254.11	11,183.19	-144.80	-508.72	435,948.54	786,760.99	32.196011	-103.539933
11,300.00	3.67	254.11	11,282.98	-146.55	-514.87	435,946.79	786,754.84	32.196006	-103.539953
11,374.77	3.67	254.11	11,357.60	-147.86	-519.47	435,945.48	786,750.24	32.196003	-103.539968
11,400.00	3.29	254.11	11,382.78	-148.28	-520.94	435,945.06	786,748.76	32.196002	-103.539973
11,500.00	1.79	254.11	11,482.68	-149.49	-525.21	435,943.85	786,744.50	32.195998	-103.539986
11,600.00	0.29	254.11	11,582.66	-149.99	-526.95	435,943.35	786,742.76	32.195997	-103.539992
11,619.34	0.00	0.00	11,602.00	-150.00	-527.00	435,943.34	786,742.71	32.195997	-103.539992
11,700.00	0.00	0.00	11,682.66	-150.00	-527.00	435,943.34	786,742.71	32.195997	-103.539992
11,800.00	0.00	0.00	11,782.66	-150.00	-527.00	435,943.34	786,742.71	32.195997	-103.539992
11,900.00	0.00	0.00	11,882.66	-150.00	-527.00	435,943.34	786,742.71	32.195997	-103.539992
11,969.38	0.00	0.00	11,952.04	-150.00	-527.00	435,943.34	786,742.71	32.195997	-103.539992
KOP @ 11969' MD, 50' FSL, 1671' FEL									
12,000.00	3.06	359.55	11,982.65	-149.18	-527.01	435,944.16	786,742.70	32.195999	-103.539992
12,100.00	13.06	359.55	12,081.53	-135.18	-527.12	435,958.16	786,742.59	32.196038	-103.539992
12,200.00	23.06	359.55	12,176.49	-104.21	-527.36	435,989.13	786,742.35	32.196123	-103.539992
12,211.00	24.16	359.55	12,186.56	-99.81	-527.39	435,993.53	786,742.32	32.196135	-103.539992
FTP @ 12211' MD, 100' FSL, 1671' FEL									
12,300.00	33.06	359.55	12,264.62	-57.23	-527.72	436,036.11	786,741.99	32.196252	-103.539992
12,400.00	43.06	359.55	12,343.25	4.34	-528.20	436,097.68	786,741.51	32.196421	-103.539992
12,500.00	53.06	359.55	12,410.00	78.63	-528.78	436,171.97	786,740.93	32.196625	-103.539992
12,600.00	63.06	359.55	12,462.83	163.38	-529.44	436,256.72	786,740.27	32.196858	-103.539993
12,700.00	73.06	359.55	12,500.14	256.02	-530.16	436,349.36	786,739.54	32.197113	-103.539993
12,800.00	83.06	359.55	12,520.80	353.73	-530.93	436,447.07	786,738.78	32.197382	-103.539993
12,869.38	90.00	359.55	12,525.00	422.94	-531.47	436,516.28	786,738.24	32.197572	-103.539993
12,900.00	90.00	359.55	12,525.00	453.56	-531.70	436,546.90	786,738.00	32.197656	-103.539993
13,000.00	90.00	359.55	12,525.00	553.56	-532.48	436,646.90	786,737.22	32.197931	-103.539993
13,100.00	90.00	359.55	12,525.00	653.55	-533.26	436,746.89	786,736.45	32.198206	-103.539993
13,200.00	90.00	359.55	12,525.00	753.55	-534.04	436,846.89	786,735.67	32.198481	-103.539993
13,300.00	90.00	359.55	12,525.00	853.55	-534.82	436,946.89	786,734.89	32.198756	-103.539994
13,400.00	90.00	359.55	12,525.00	953.55	-535.60	437,046.88	786,734.11	32.199030	-103.539994
13,500.00	90.00	359.55	12,525.00	1,053.54	-536.38	437,146.88	786,733.33	32.199305	-103.539994
13,600.00	90.00	359.55	12,525.00	1,153.54	-537.16	437,246.88	786,732.55	32.199580	-103.539994
13,700.00	90.00	359.55	12,525.00	1,253.54	-537.94	437,346.87	786,731.77	32.199855	-103.539994
13,800.00	90.00	359.55	12,525.00	1,353.53	-538.72	437,446.87	786,730.99	32.200130	-103.539994
13,900.00	90.00	359.55	12,525.00	1,453.53	-539.50	437,546.87	786,730.21	32.200405	-103.539994
14,000.00	90.00	359.55	12,525.00	1,553.53	-540.28	437,646.86	786,729.43	32.200680	-103.539994
14,100.00	90.00	359.55	12,525.00	1,653.52	-541.06	437,746.86	786,728.65	32.200955	-103.539995
14,200.00	90.00	359.55	12,525.00	1,753.52	-541.84	437,846.86	786,727.87	32.201229	-103.539995
14,300.00	90.00	359.55	12,525.00	1,853.52	-542.62	437,946.85	786,727.09	32.201504	-103.539995
14,400.00	90.00	359.55	12,525.00	1,953.52	-543.40	438,046.85	786,726.31	32.201779	-103.539995
14,500.00	90.00	359.55	12,525.00	2,053.51	-544.18	438,146.85	786,725.53	32.202054	-103.539995
14,600.00	90.00	359.55	12,525.00	2,153.51	-544.96	438,246.84	786,724.75	32.202329	-103.539995
14,700.00	90.00	359.55	12,525.00	2,253.51	-545.73	438,346.84	786,723.97	32.202604	-103.539995
14,800.00	90.00	359.55	12,525.00	2,353.50	-546.51	438,446.84	786,723.19	32.202879	-103.539996
14,900.00	90.00	359.55	12,525.00	2,453.50	-547.29	438,546.83	786,722.42	32.203154	-103.539996
15,000.00	90.00	359.55	12,525.00	2,553.50	-548.07	438,646.83	786,721.64	32.203428	-103.539996
15,100.00	90.00	359.55	12,525.00	2,653.49	-548.85	438,746.83	786,720.86	32.203703	-103.539996
15,200.00	90.00	359.55	12,525.00	2,753.49	-549.63	438,846.83	786,720.08	32.203978	-103.539996
15,300.00	90.00	359.55	12,525.00	2,853.49	-550.41	438,946.82	786,719.30	32.204253	-103.539996
15,400.00	90.00	359.55	12,525.00	2,953.48	-551.19	439,046.82	786,718.52	32.204528	-103.539996

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Blue Krait 23-14 Fed 33H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3582.20ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3582.20ft
Site:	Sec 23-T24S-R33E	**North Reference:**	Grid
Well:	Blue Krait 23-14 Fed 33H	**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
15,500.00	90.00	359.55	12,525.00	3,053.48	-551.97	439,146.82	786,717.74	32.204803	-103.539996
15,600.00	90.00	359.55	12,525.00	3,153.48	-552.75	439,246.81	786,716.96	32.205078	-103.539997
15,700.00	90.00	359.55	12,525.00	3,253.48	-553.53	439,346.81	786,716.18	32.205352	-103.539997
15,800.00	90.00	359.55	12,525.00	3,353.47	-554.31	439,446.81	786,715.40	32.205627	-103.539997
15,900.00	90.00	359.55	12,525.00	3,453.47	-555.09	439,546.80	786,714.62	32.205902	-103.539997
16,000.00	90.00	359.55	12,525.00	3,553.47	-555.87	439,646.80	786,713.84	32.206177	-103.539997
16,100.00	90.00	359.55	12,525.00	3,653.46	-556.65	439,746.80	786,713.06	32.206452	-103.539997
16,200.00	90.00	359.55	12,525.00	3,753.46	-557.43	439,846.79	786,712.28	32.206727	-103.539997
16,300.00	90.00	359.55	12,525.00	3,853.46	-558.21	439,946.79	786,711.50	32.207002	-103.539998
16,400.00	90.00	359.55	12,525.00	3,953.45	-558.99	440,046.79	786,710.72	32.207277	-103.539998
16,500.00	90.00	359.55	12,525.00	4,053.45	-559.76	440,146.78	786,709.94	32.207551	-103.539998
16,600.00	90.00	359.55	12,525.00	4,153.45	-560.54	440,246.78	786,709.16	32.207826	-103.539998
16,700.00	90.00	359.55	12,525.00	4,253.45	-561.32	440,346.78	786,708.39	32.208101	-103.539998
16,800.00	90.00	359.55	12,525.00	4,353.44	-562.10	440,446.77	786,707.61	32.208376	-103.539998
16,900.00	90.00	359.55	12,525.00	4,453.44	-562.88	440,546.77	786,706.83	32.208651	-103.539998
17,000.00	90.00	359.55	12,525.00	4,553.44	-563.66	440,646.77	786,706.05	32.208926	-103.539998
17,100.00	90.00	359.55	12,525.00	4,653.43	-564.44	440,746.76	786,705.27	32.209201	-103.539999
17,200.00	90.00	359.55	12,525.00	4,753.43	-565.22	440,846.76	786,704.49	32.209476	-103.539999
17,300.00	90.00	359.55	12,525.00	4,853.43	-566.00	440,946.76	786,703.71	32.209750	-103.539999
17,400.00	90.00	359.55	12,525.00	4,953.42	-566.78	441,046.75	786,702.93	32.210025	-103.539999
17,500.00	90.00	359.55	12,525.00	5,053.42	-567.56	441,146.75	786,702.15	32.210300	-103.539999
17,527.00	90.00	359.55	12,525.00	5,080.42	-567.77	441,173.75	786,701.94	32.210374	-103.539999
Cross Section @ 17527' MD, 0' FSL, 1671' FEL									
17,600.00	90.00	359.55	12,525.00	5,153.42	-568.34	441,246.75	786,701.37	32.210575	-103.539999
17,700.00	90.00	359.55	12,525.00	5,253.41	-569.12	441,346.74	786,700.59	32.210850	-103.539999
17,800.00	90.00	359.55	12,525.00	5,353.41	-569.90	441,446.74	786,699.81	32.211125	-103.540000
17,900.00	90.00	359.55	12,525.00	5,453.41	-570.68	441,546.74	786,699.03	32.211400	-103.540000
18,000.00	90.00	359.55	12,525.00	5,553.41	-571.46	441,646.73	786,698.25	32.211675	-103.540000
18,100.00	90.00	359.55	12,525.00	5,653.40	-572.24	441,746.73	786,697.47	32.211949	-103.540000
18,200.00	90.00	359.55	12,525.00	5,753.40	-573.02	441,846.73	786,696.69	32.212224	-103.540000
18,300.00	90.00	359.55	12,525.00	5,853.40	-573.79	441,946.72	786,695.91	32.212499	-103.540000
18,400.00	90.00	359.55	12,525.00	5,953.39	-574.57	442,046.72	786,695.13	32.212774	-103.540000
18,500.00	90.00	359.55	12,525.00	6,053.39	-575.35	442,146.72	786,694.36	32.213049	-103.540000
18,600.00	90.00	359.55	12,525.00	6,153.39	-576.13	442,246.72	786,693.58	32.213324	-103.540001
18,700.00	90.00	359.55	12,525.00	6,253.38	-576.91	442,346.71	786,692.80	32.213599	-103.540001
18,800.00	90.00	359.55	12,525.00	6,353.38	-577.69	442,446.71	786,692.02	32.213874	-103.540001
18,900.00	90.00	359.55	12,525.00	6,453.38	-578.47	442,546.71	786,691.24	32.214148	-103.540001
19,000.00	90.00	359.55	12,525.00	6,553.38	-579.25	442,646.70	786,690.46	32.214423	-103.540001
19,100.00	90.00	359.55	12,525.00	6,653.37	-580.03	442,746.70	786,689.68	32.214698	-103.540001
19,200.00	90.00	359.55	12,525.00	6,753.37	-580.81	442,846.70	786,688.90	32.214973	-103.540001
19,300.00	90.00	359.55	12,525.00	6,853.37	-581.59	442,946.69	786,688.12	32.215248	-103.540002
19,400.00	90.00	359.55	12,525.00	6,953.36	-582.37	443,046.69	786,687.34	32.215523	-103.540002
19,500.00	90.00	359.55	12,525.00	7,053.36	-583.15	443,146.69	786,686.56	32.215798	-103.540002
19,600.00	90.00	359.55	12,525.00	7,153.36	-583.93	443,246.68	786,685.78	32.216072	-103.540002
19,700.00	90.00	359.55	12,525.00	7,253.35	-584.71	443,346.68	786,685.00	32.216347	-103.540002
19,800.00	90.00	359.55	12,525.00	7,353.35	-585.49	443,446.68	786,684.22	32.216622	-103.540002
19,900.00	90.00	359.55	12,525.00	7,453.35	-586.27	443,546.67	786,683.44	32.216897	-103.540002
20,000.00	90.00	359.55	12,525.00	7,553.35	-587.05	443,646.67	786,682.66	32.217172	-103.540002
20,100.00	90.00	359.55	12,525.00	7,653.34	-587.82	443,746.67	786,681.88	32.217447	-103.540003
20,200.00	90.00	359.55	12,525.00	7,753.34	-588.60	443,846.66	786,681.10	32.217722	-103.540003
20,300.00	90.00	359.55	12,525.00	7,853.34	-589.38	443,946.66	786,680.33	32.217997	-103.540003
20,400.00	90.00	359.55	12,525.00	7,953.33	-590.16	444,046.66	786,679.55	32.218271	-103.540003
20,500.00	90.00	359.55	12,525.00	8,053.33	-590.94	444,146.65	786,678.77	32.218546	-103.540003
20,600.00	90.00	359.55	12,525.00	8,153.33	-591.72	444,246.65	786,677.99	32.218821	-103.540003

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Blue Krait 23-14 Fed 33H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3582.20ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3582.20ft
Site:	Sec 23-T24S-R33E	**North Reference:**	Grid
Well:	Blue Krait 23-14 Fed 33H	**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
20,700.00	90.00	359.55	12,525.00	8,253.32	-592.50	444,346.65	786,677.21	32.219096	-103.540003
20,800.00	90.00	359.55	12,525.00	8,353.32	-593.28	444,446.64	786,676.43	32.219371	-103.540004
20,900.00	90.00	359.55	12,525.00	8,453.32	-594.06	444,546.64	786,675.65	32.219646	-103.540004
21,000.00	90.00	359.55	12,525.00	8,553.31	-594.84	444,646.64	786,674.87	32.219921	-103.540004
21,100.00	90.00	359.55	12,525.00	8,653.31	-595.62	444,746.63	786,674.09	32.220196	-103.540004
21,200.00	90.00	359.55	12,525.00	8,753.31	-596.40	444,846.63	786,673.31	32.220470	-103.540004
21,300.00	90.00	359.55	12,525.00	8,853.31	-597.18	444,946.63	786,672.53	32.220745	-103.540004
21,400.00	90.00	359.55	12,525.00	8,953.30	-597.96	445,046.62	786,671.75	32.221020	-103.540004
21,500.00	90.00	359.55	12,525.00	9,053.30	-598.74	445,146.62	786,670.97	32.221295	-103.540004
21,600.00	90.00	359.55	12,525.00	9,153.30	-599.52	445,246.62	786,670.19	32.221570	-103.540005
21,700.00	90.00	359.55	12,525.00	9,253.29	-600.30	445,346.61	786,669.41	32.221845	-103.540005
21,800.00	90.00	359.55	12,525.00	9,353.29	-601.08	445,446.61	786,668.63	32.222120	-103.540005
21,900.00	90.00	359.55	12,525.00	9,453.29	-601.85	445,546.61	786,667.85	32.222395	-103.540005
22,000.00	90.00	359.55	12,525.00	9,553.28	-602.63	445,646.61	786,667.07	32.222669	-103.540005
22,100.00	90.00	359.55	12,525.00	9,653.28	-603.41	445,746.60	786,666.30	32.222944	-103.540005
22,200.00	90.00	359.55	12,525.00	9,753.28	-604.19	445,846.60	786,665.52	32.223219	-103.540005
22,300.00	90.00	359.55	12,525.00	9,853.28	-604.97	445,946.60	786,664.74	32.223494	-103.540006
22,400.00	90.00	359.55	12,525.00	9,953.27	-605.75	446,046.59	786,663.96	32.223769	-103.540006
22,500.00	90.00	359.55	12,525.00	10,053.27	-606.53	446,146.59	786,663.18	32.224044	-103.540006
22,600.00	90.00	359.55	12,525.00	10,153.27	-607.31	446,246.59	786,662.40	32.224319	-103.540006
22,695.81	90.00	359.55	12,525.00	10,249.07	-608.06	446,342.39	786,661.65	32.224582	-103.540006
LTP @ 22696' MD, 100' FNL, 1671' FEL									
22,700.00	90.00	359.55	12,525.00	10,253.26	-608.09	446,346.58	786,661.62	32.224593	-103.540006
22,775.81	90.00	359.55	12,525.00	10,329.07	-608.68	446,422.39	786,661.03	32.224802	-103.540006
PBHL; 20' FNL, 1671' FEL									
22,775.82	90.00	359.55	12,525.00	10,329.08	-608.68	446,422.40	786,661.03	32.224802	-103.540006

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
Blue Krait 23-14 Fed 33I	0.00	0.00	0.00	10,329.08	-608.68	446,422.40	786,661.03	32.224802	-103.540006
- plan misses target center by 10347.00ft 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)	+E/-W (ft)	Comment
11,969.38	11,952.04	-150.00	-527.00	KOP @ 11969' MD, 50' FSL, 1671' FEL
12,211.00	12,186.56	-99.81	-527.39	FTP @ 12211' MD, 100' FSL, 1671' FEL
17,527.00	12,525.00	5,080.42	-567.77	Cross Section @ 17527' MD, 0' FSL, 1671' FEL
22,695.81	12,525.00	10,249.07	-608.06	LTP @ 22696' MD, 100' FNL, 1671' FEL
22,775.81	12,525.00	10,329.07	-608.68	PBHL; 20' FNL, 1671' FEL

Devon Energy

WELL DETAILS: Blue Krait 23-14 Fed 33H

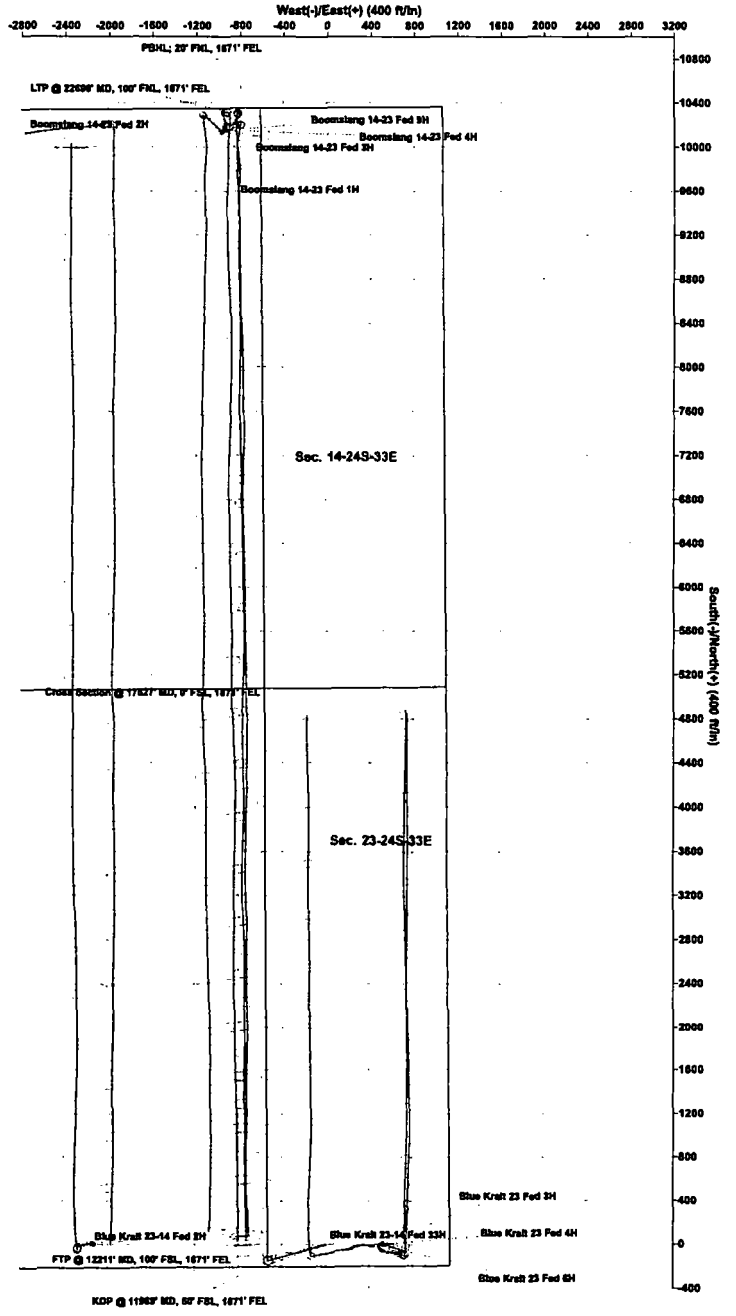
RKB @ 3582.20ft
3557.20

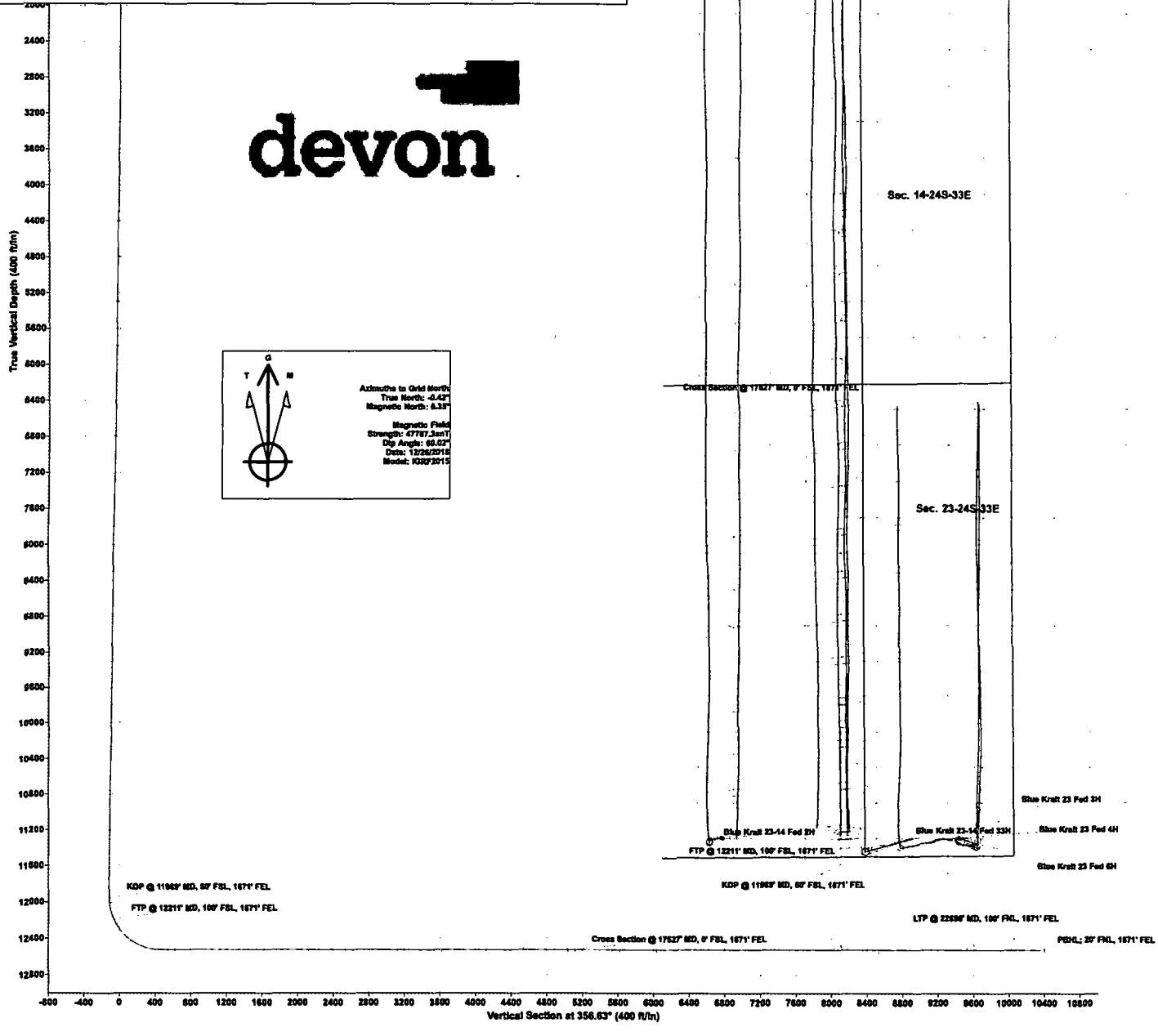
Northing	Easting	Latitude	Longitude
436093.34	787269.71	32.196399	-103.538285

SECTION DETAILS Permit Plan 1

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Annotation
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2750.00	0.00	0.00	2750.00	0.00	0.00	0.00	0.00	
	3116.85	3.67	254.11	3116.59	-3.21	-11.29	1.00	-2.54	
	11374.77	3.67	254.11	11357.60	-147.88	-519.47	0.00	-117.04	
5	11619.34	0.00	0.00	11602.00	-150.00	-527.00	1.50	-118.74	
6	11969.38	0.00	0.00	11952.04	-150.00	-527.00	0.00	-118.74	KOP @ 11969' MD, 50' FSL, 1671' FEL
7	12869.38	90.00	359.55	12525.00	422.94	-531.47	10.00	453.47	
8	22775.82	90.00	359.55	12525.00	10329.08	-608.68	0.00	10347.00	PBHL; 20' FNL, 1671' FEL

devon





Blue Krait 23-14 Fed 33H

1. Geologic Formations

TVD of target	12525	Pilot hole depth	N/A
MD at TD:	22775	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	1101		
Top of Salt	1622		
Base of Salt	5048		
Delaware	5267		
Lower Brushy Canyon	9010		
1st BSPG Lime	9196		
Leonard A	9274		
Leonard B	9617		
Leonard C	9895		
1st BSPG Sand	10200		
2nd BSPG Lime	10447		
2nd BSPG Sand	10860		
2BSSS Target Top	11127		
2BSSS Target Base	11211		
3rd BSPG Lime	11360		
3BSSS	11940		
WLFMP	12350		
WLFMP 100	12505		
WLFMP 120	12640		

*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							
14.75"	0	1350	10.75"	40.5	J-55	STC	1.125	1.25	1.6
9.875"	0	11965 TVD	7.625"	29.7	P110	BTC	1.125	1.25	1.6
6.75"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1.00	1.6 Dry 1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h Must have table for contingency casing
- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
- 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.

Casing Program (Alternate Design)

Hole Size	Casing Interval		Csg. Size	Wt. (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17.5"	0	Same as above	13.375"	48	H-40	STC	1.125	1.25	1.6
10.625"	0	Same as above	8.625"	32	P110EC	BTC	1.125	1.25	1.6
7.875"	0	TD	5.5"	17	P110	BTC	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1.00	1.6 Dry 1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h Must have table for contingency casing
- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
- Int 1 casing shoe will be selected based on drilling data / gamma, setting depth with be revised accordingly if needed.
- Option to drill change intermediate 1 hole size to 9.625, (8.625" connection will change from BTC to TLW)
- Option to run 8.625" TLW connection for intermediate 1
- A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.
- Variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing. No losses are expected in subsequent hole section.

Blue Krait 23-14 Fed 33H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 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	864	Surf	13.2	1.33	Lead: Class C Cement + additives
Int 1	1160	Surf	9	1.85	Lead: Class C Cement + additives
	847	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	580	Surf	9	1.85	1st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.33	1st stage Tail: Class H / C + additives
	600	Surf	9	1.85	2st stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.33	2st stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.33	Squeeze Lead: Class C Cement + additives
	1160	Surf	9	1.85	Lead: Class C Cement + additives
	847	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	790	500' tieback	13.2	1.33	Lead: 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	TOC
Surface	50%	0'
Intermediate 1	30%	0'
Intermediate 1 (Two Stage)	25%	0'
Prod	10%	200' Tie-Back to intermediate

Blue Krait 23-14 Fed 33H

Cementing Program (Alternate Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	1098	Surf	13.2	1.33	Lead: Class C Cement + additives
Int 1	1313	Surf	9	1.85	Lead: Class C Cement + additives
	831	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	650	Surf	9	1.85	1st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.33	1st stage Tail: Class H / C + additives
	670	Surf	9	1.85	2st stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.33	2st stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.33	Squeeze Lead: Class C Cement + additives
	1313	Surf	9	1.85	Lead: Class C Cement + additives
	831	4000' above shoe	13.2	1.33	Tail: Class H / C + additives
Production	1435	500' tieback	13.2	1.33	Lead: 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	TOC
Surface	50%	0'
Intermediate 1	30%	0'
Intermediate 1 (Two Stage)	25%	0'
Prod	10%	200' Tie-Back to intermediate

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	10M	Annular (5M)	X	100% of rated working pressure
			Blind Ram	X	10M
			Pipe Ram		
			Double Ram	X	
			Other *		
			Annular		
			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.				

Devon requests a variance to run a 5M annular on a 10M BOP system. See separately attached variance request and support documents in AFMSS.

5. Mud Program (3 String Design)

Section	Type	Weight (ppg)	Vis	Water Loss
Surface	FW Gel	8.5 - 9	28-34	N/C
Intermediate	DBE / Cut Brine	9 - 10	28-34	N/C
Production	OBM	10-10.5	28-34	N/C

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

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

6. Logging and Testing Procedures

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

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

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	6839 psi
Abnormal Temperature	No

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

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

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

PWD Data Report

10/21/2019

APD ID: 10400038548 **Submission Date:** 01/28/2019

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

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

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

10/21/2019

APD ID: 10400038548 **Submission Date:** 01/28/2019

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: BLUE KRAIT 23-14 FED **Well Number:** 33H

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

Highlighted data reflects the most recent changes

Show Final Text

Bond Information

Federal/Indian APD: FED

BLM Bond number: CO1104

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: