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Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM086151

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.
PURRITO 18 FED COM
214H 325954

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

9. API Well No.
30-025-

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
333 West Sheridan Avenue Oklahoma City OK 73102	(800)583-3866	WC / BONE SPRING (53800)

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

At surface NENE / 71 FNL / 1166 FEL / LAT 32.3115627 / LONG -103.7089948

At proposed prod. zone SESE / 20 FSL / 660 FEL / LAT 32.2973129 / LONG -103.7073449

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 18 / T23S / R32E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
	LEA	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
71 feet	166	160

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
243 feet	10720 feet / 15757 feet	FED: NMB000801

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3571 feet	03/14/2020	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)	Jenny Harms / Ph: (405)552-6560	04/10/2019

Title
Regulatory Compliance Professional

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Christopher Walls / Ph: (575)234-2234	07/11/2019

Title	Office
Petroleum Engineer	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 07/15/19

KR 07/18/19

APPROVED WITH CONDITIONS

Approval Date: 07/11/2019

(Continued on page 2)

SL

*(Instructions on page 2)

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

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Additional Operator Remarks

Location of Well

1. SHL: NENE / 71 FNL / 1166 FEL / TWSP: 23S / RANGE: 32E / SECTION: 18 / LAT: 32.3115627 / LONG: -103.7089948 (TVD: 0 feet, MD: 0 feet)
   PPP: NENE / 100 FNL / 660 FEL / TWSP: 23S / RANGE: 32E / SECTION: 18 / LAT: 32.3114903 / LONG: -103.7073572 (TVD: 10381 feet, MD: 10411 feet)
   BHL: SESE / 20 FSL / 660 FEL / TWSP: 23S / RANGE: 32E / SECTION: 18 / LAT: 32.2973129 / LONG: -103.7073449 (TVD: 10720 feet, MD: 15757 feet)

BLM Point of Contact

Name: Candy Vigil
Title: Admin Support Assistant
Phone: 5752345982
Email: cvigil@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company LP**
LEASE NO.:	**NMNM086151**
WELL NAME & NO.:	Purrito 18 Fed Com 214H
SURFACE HOLE FOOTAGE:	71'/N & 1166'/E
BOTTOM HOLE FOOTAGE	20'/S & 660'/E
LOCATION:	Section 18, T.23 S., R.32 E., NMPM
COUNTY:	Lea 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

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Sand Dunes** 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

1. The **13-3/8** inch surface casing shall be set at approximately **1006 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 **9-5/8** inch intermediate casing shall be set at approximately **4610 feet** 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.

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

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

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

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

C. PRESSURE CONTROL

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

2.

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 **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 **5000 (5M)** psi.

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

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the 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.

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)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ 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.

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.

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: 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.

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.

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company LP
WELL NAME & NO.:	Purrito 18 Fed Com 214H
SURFACE HOLE FOOTAGE:	71'/N & 1166'/E
BOTTOM HOLE FOOTAGE	20'/S & 660'/E
LOCATION:	Section 18, T.23 S., R.32 E., NMPM
COUNTY:	Lea County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

Approval Date: 07/11/2019

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Build as you go; No Grading full Pad

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.

Raptor Nest Mitigation

- A BLM Wildlife Biologist must be contacted by the operator prior to construction activities to determine if the raptor nests/burrows are active.

- Raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments, will be protected by not allowing surface disturbance within up to 200 meters of nests or by delaying activity for up to 90 days, or a combination of both. Exceptions to this requirement for raptor nests will be considered if the nests expected to be disturbed are inactive, the proposed activity is of short duration (e.g. habitat enhancement projects, fences, pipelines), and will not result in continuing activity in proximity to the nest.
- Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Watershed

- The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pad and CTB pad during the life of the well and CTB will be corrected within two weeks and proper measures will be taken to prevent future erosion.
- Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.
- Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.
- Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control.

Range

Temporary Fence Crossing Requirement

Where entry is granted across a fence line, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Livestock Watering Requirement

Devon, in an agreement with the grazing allotment holder, would relocate a water pipeline and trough affected by several proposed actions. See Table 12 above.

Devon must contact the allotment holder prior to construction to identify the location of the pipelines. Devon must take measures to protect the pipelines from compression or other damages. If the pipelines are damaged or compromised in any way near the proposed project as a result of oil and gas activity, Devon is responsible for repairing the pipelines immediately. Devon must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

During construction, Devon shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. Devon is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the grazing permittee/allottee prior to disturbing any range improvement projects. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

Temporary Fencing Requirement

For the proposed Todd Apache 2 Pad 7-1, the BLM would require temporary fencing be installed before construction begins. This fencing would stay in place and be maintained throughout construction activities to protect nearby dune land habitat from harm.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

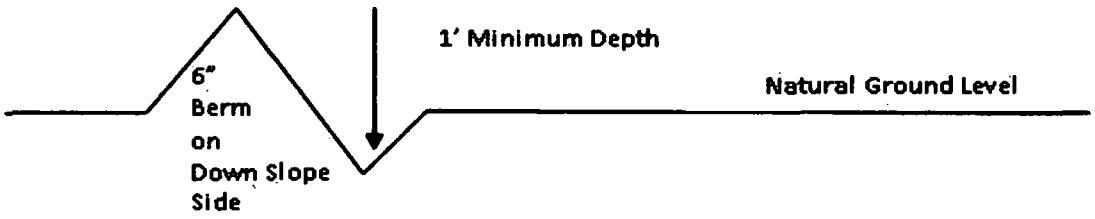
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

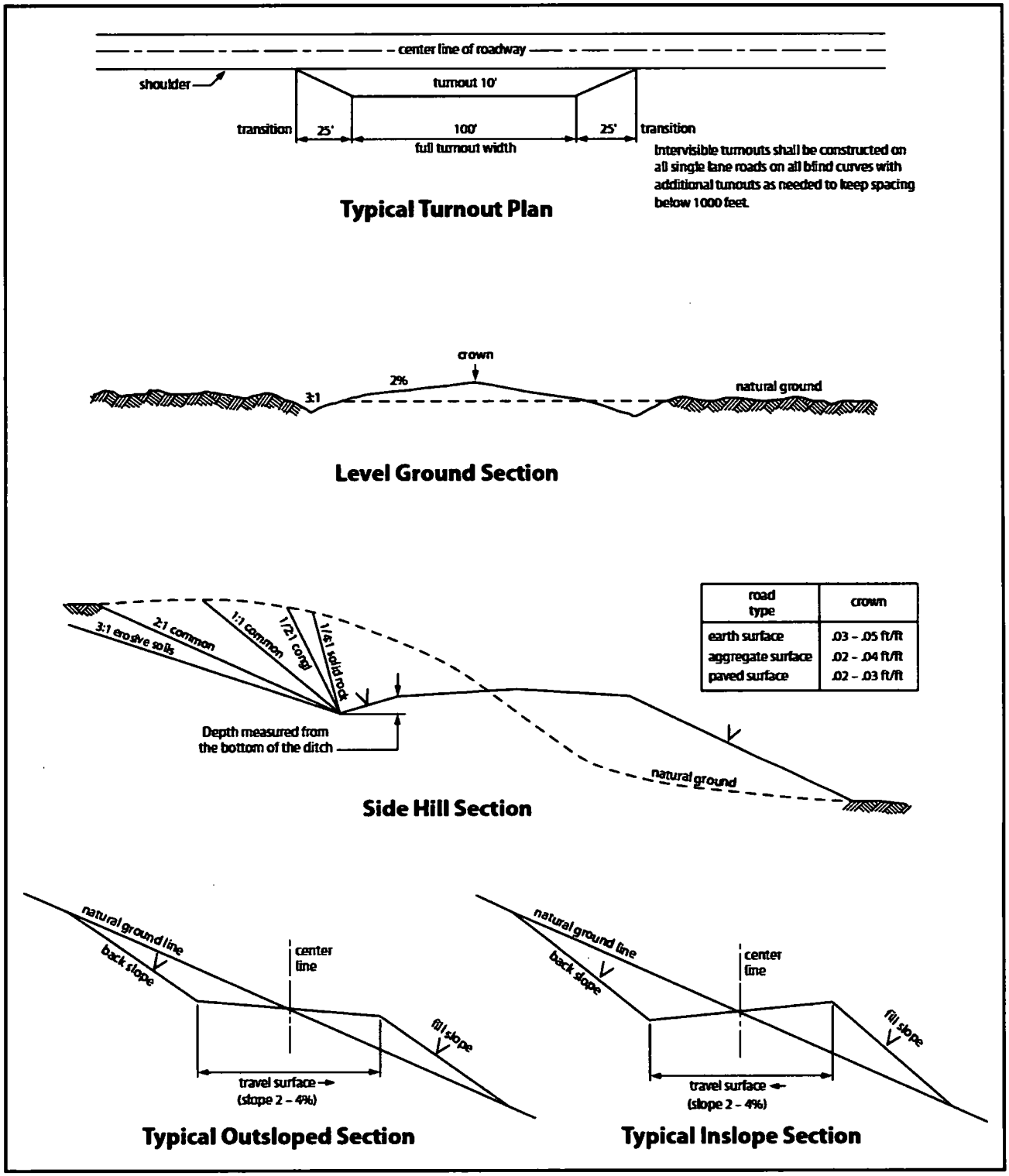


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VRM Facility Requirement
There are no mitigation measures for this project as currently proposed.

B. PIPELINES

BURIED PIPELINE STIPULATIONS

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

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

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

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

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way.

This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

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

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

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

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

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

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

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

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

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

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

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

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

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

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

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

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

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

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

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

19. Special Stipulations:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

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

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

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

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and

especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

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

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.
    (2) Earth-disturbing and earth-moving work.
    (3) Blasting.
    (4) Vandalism and sabotage.
c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of

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

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

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

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

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State

Interagency Committee.

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

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

18. Special Stipulations:

a. **Lesser Prairie-Chicken:** Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted.

b. This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous

Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

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

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

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

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

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the

above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

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

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

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

*Pounds of pure live seed:

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

AFMSS

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

Operator Certification Data Report

07/15/2019

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Jenny Harms **Signed on:** 04/06/2019

Title: Regulatory Compliance Professional

Street Address: 333 W Sheridan Ave

City: Oklahoma City **State:** OK **Zip:** 73102

Phone: (405)552-6560

Email address: jenny.harms@dvn.com

Field Representative

Representative Name: Ray vaz

Street Address: 333 WEST SHERIDAN AVE

City: OKLAHOMA CITY **State:** OK **Zip:** 73102

Phone: (575)748-1871

Email address: ray.vaz@dvn.com

AFMSS

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

Application Data Report

07/15/2019

APD ID: 10400040666 **Submission Date:** 04/10/2019

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

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

[redacted]

Show Final Text

Section 1 - General

APD ID: 10400040666 **Tie to previous NOS?** **Submission Date:** 04/10/2019

BLM Office: CARLSBAD **User:** Jenny Harms **Title:** Regulatory Compliance Professional

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM086151 **Lease Acres:** 166

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO **APD Operator:** DEVON ENERGY PRODUCTION COMPANY LP

Operator letter of designation:

Operator Info

Operator Organization Name: DEVON ENERGY PRODUCTION COMPANY LP

Operator Address: 333 West Sheridan Avenue **Zip:** 73102

Operator PO Box:

Operator City: Oklahoma City **State:** OK

Operator Phone: (800)583-3866

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? EXISTING **Master Development Plan name:** Todd/Apache MDP 2

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: PURRITO 18 FED COM **Well Number:** 214H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** WC **Pool Name:** BONE SPRING

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL,POTASH

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** TODD-APACHE MDP 2 PAD **Number:** 7-2

Well Class: HORIZONTAL **Number of Legs:**

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: **Distance to nearest well:** 243 FT **Distance to lease line:** 71 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: AA000115163_PURRITO_18_FED_COM_214H_WL_P__C102signed_20190410122711.pdf

Well work start Date: 03/14/2020 **Duration:** 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 6578

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	71	FNL	1166	FEL	23S	32E	18	Aliquot NENE	32.3115627	[redacted]	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 086151	3571	0	0
KOP Leg #1	50	FNL	660	FEL	23S	32E	18	Aliquot NENE	32.311613	[redacted]	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 086151	-6576	10170	10147
PPP Leg #1	100	FNL	660	FEL	23S	32E	18	Aliquot NENE	32.3114903	[redacted]	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 086151	-6810	10411	10381

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	100	FSL	660	FEL	23S	32E	18	Aliquot SESE	32.2975328	[redacted]	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 055953 9	-7149	15676	10720
BHL Leg #1	20	FSL	660	FEL	23S	32E	18	Aliquot SESE	32.2973129	[redacted]	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 055953 9	-7149	15757	10720

Drilling Plan Data Report

07/15/2019

APD ID: 10400040666 **Submission Date:** 04/10/2019

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

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

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1							
2							
3							
4							
5							
6							
7							
8							

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 4519

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.
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_20190406162412.pdf

BOP Diagram Attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

5M_BOPE__CK_20190406162412.pdf

5M_BOPE__CK_20190410092645.pdf

Pressure Rating (PSI): 5M **Rating Depth:** 10720

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.
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_20190406162442.pdf

BOP Diagram Attachment:

5M_BOPE__CK_20190406162458.pdf

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	17.5	13.375	NEW	API	N	0		0		-6965	-8031		H-40	48	OTHER - BTC	1.125	1	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0		0		-6965	-12965		J-55	40	OTHER - BTC	1.125	1	BUOY	1.6	BUOY	1.6
3	PRODUCTION	8.75	5.5	NEW	API	N	0		0		-6965	-17514		P-110	17	OTHER - BTC	1.125	1	BUOY	1.6	BUOY	1.6

Casing Attachments

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Surf_Csg_Ass_20190406163130.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Int_Csg_Ass_20190406163257.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Prod_Csg_Ass_20190406163405.pdf

Section 4 - Cement

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	979	747	1.44	13.2	1075.6	50	C	Class C + adds
INTERMEDIATE	Lead		0	4019	491.2	3.27	9	1606.3	30	C	Class C + Adds
INTERMEDIATE	Tail		4019	4519	153.8	1.44	13.2	221.5	30	C	Class C + Adds
PRODUCTION	Lead		4019	10170	524	3.27	9	1713.6	10	TUNED	Class C + adds
PRODUCTION	Tail		10170	15757	1078	1.44	13.2	1552.3	10	H	(50:50) Clas H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

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
4519	10720	WATER-BASED MUD	8.5	9				2			

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

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
979	10720	OTHER : BRINE	10	10.5				2			
0	10720	OTHER : FRESH WATER GEL	8.5	9							

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: 5017 **Anticipated Surface Pressure:** 2658.6

Anticipated Bottom Hole Temperature(F): 150

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:

Purrito_18_Fed_Com_214H_H2S_4_6_19_20190406180330.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Devon_Purrito_18_Fed_Com_214H_AC_Report__Permit_Plan_1_20190406180632.pdf

Devon_Purrito_18_Fed_Com_214H_Permit_Plan_1_20190406180633.pdf

Devon_Purrito_18_Fed_Com_214H_Plot_Permit_Plan_1_20190406180635.pdf

Purrito_18_Fed_Com_214H_Permit_Plan_1_20190406180636.pdf

Other proposed operations facets description:

Multi-Bowl Verbiage 5M
Multi-Bowl Wellhead 5M
Closed-Loop Design Plan
Gas Capture Plan
Spudder Rig

Other proposed operations facets attachment:

MB_Verb_5M_20190314132649.pdf

MB_Wellhd_5M_20190314132650.pdf

Spudder_Rig_Info_20190314132650.pdf

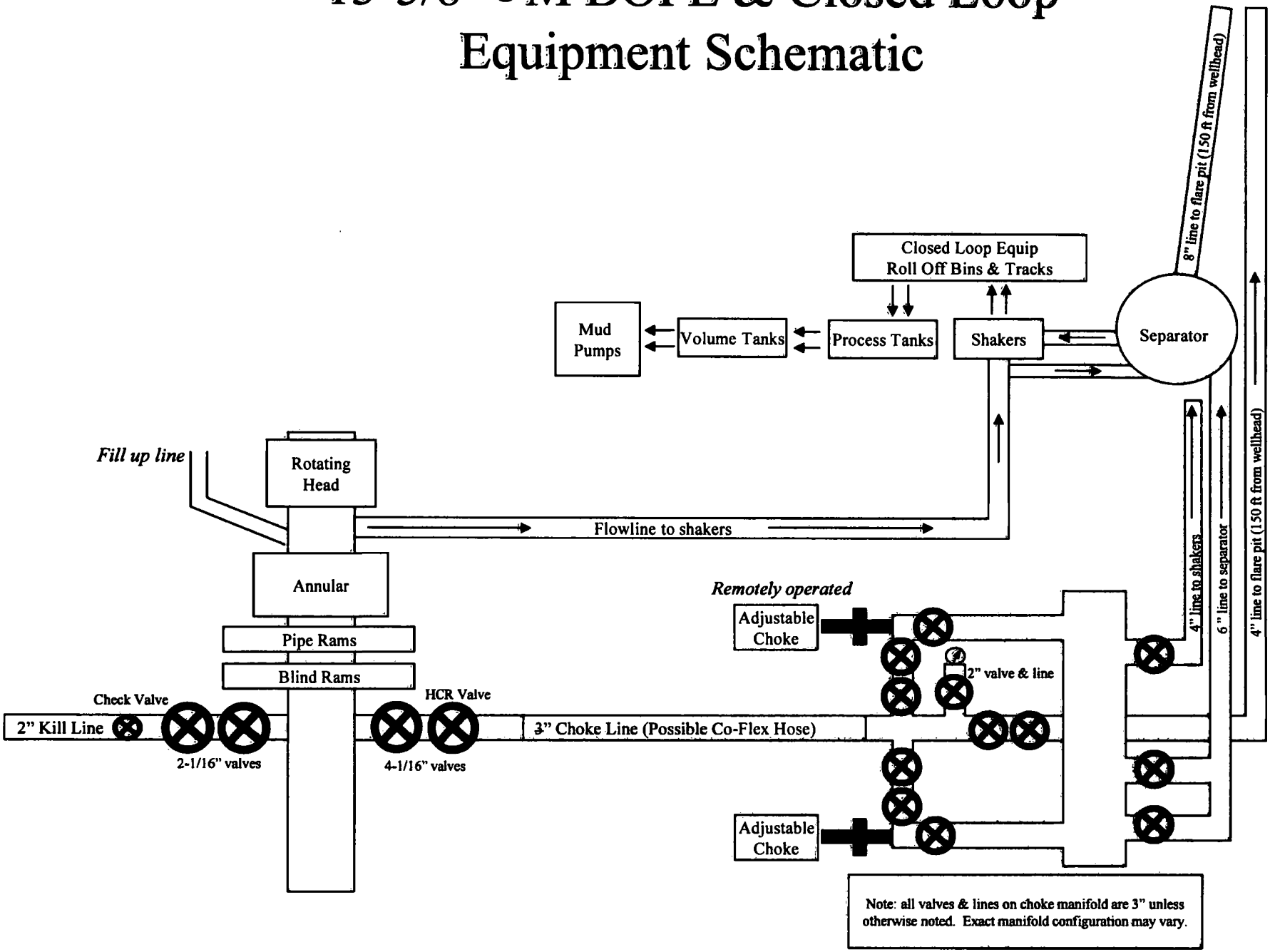
Clsd_Loop_20190314132649.pdf

GasCapturePlan_213H_214H_20190406180842.pdf

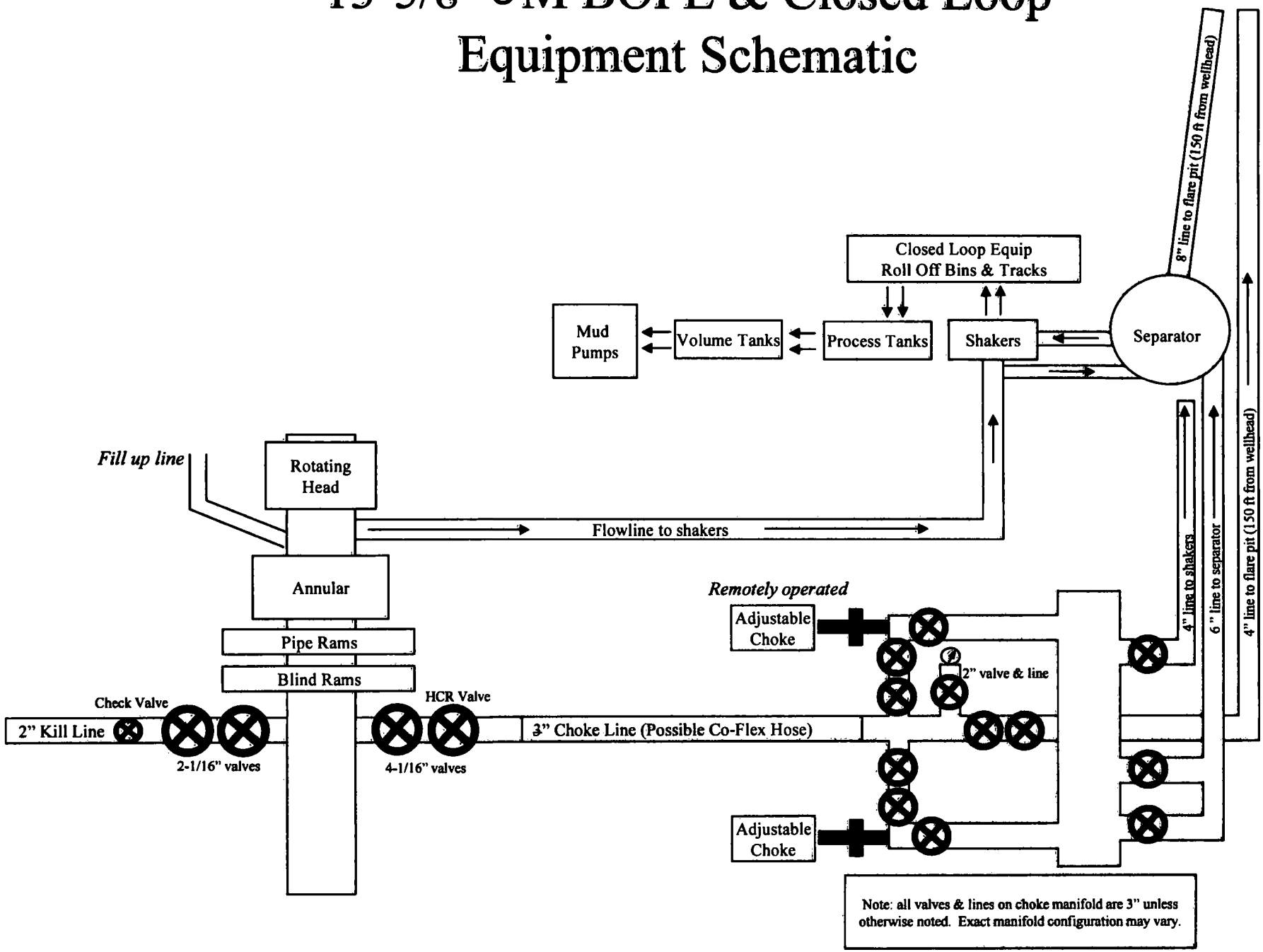
Other Variance attachment:

Co_flex_20190314132801.pdf

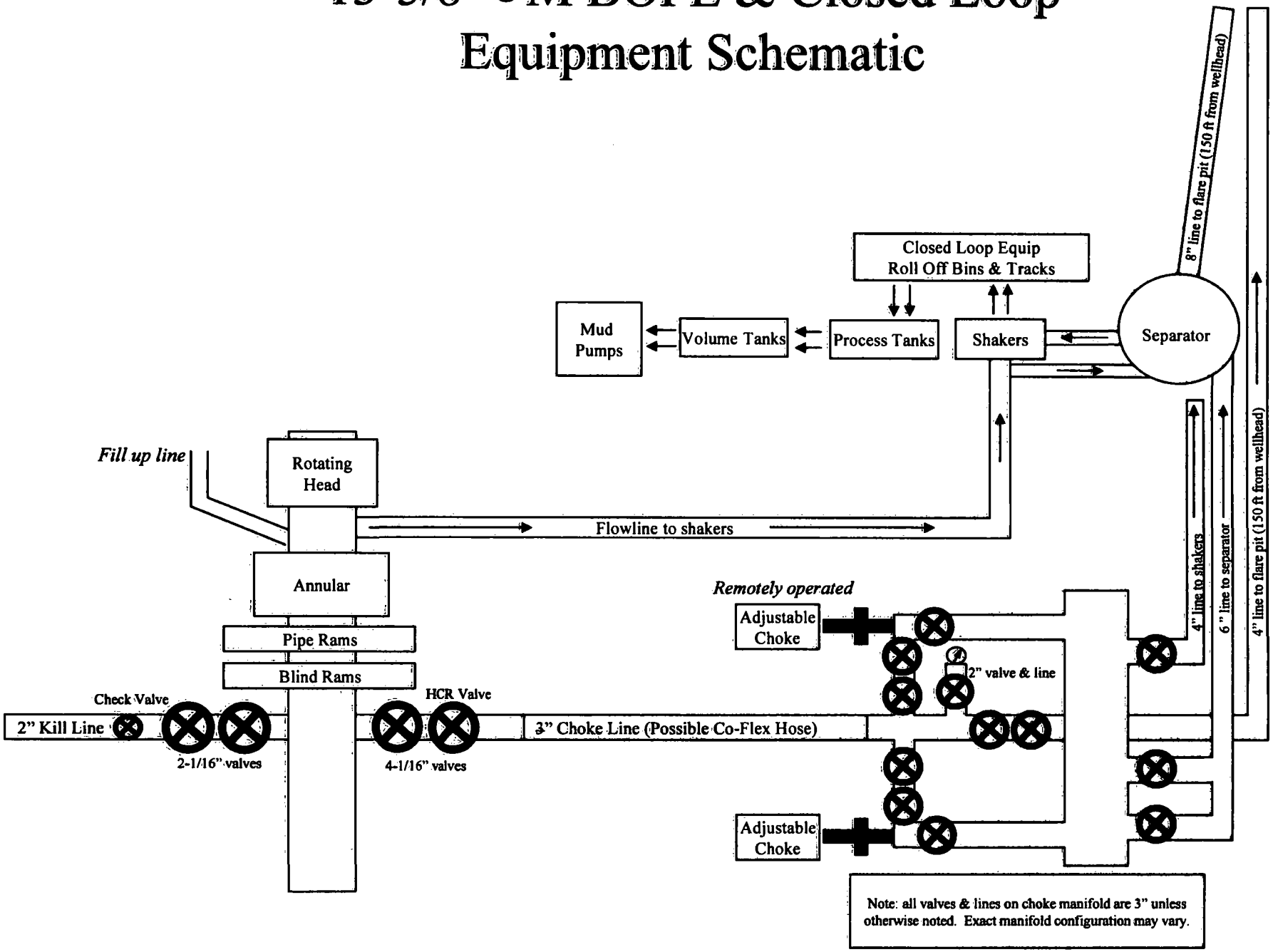
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



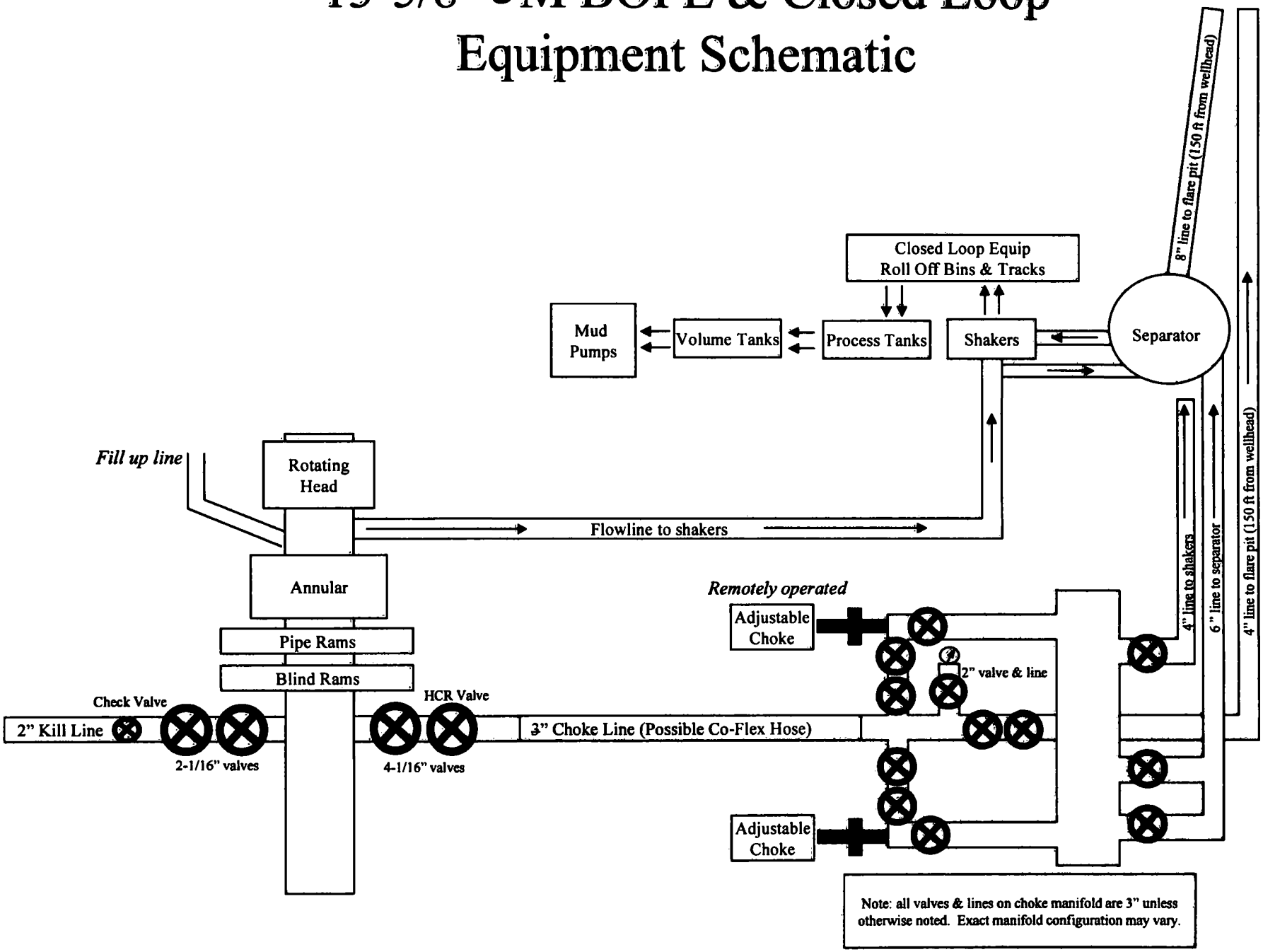
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



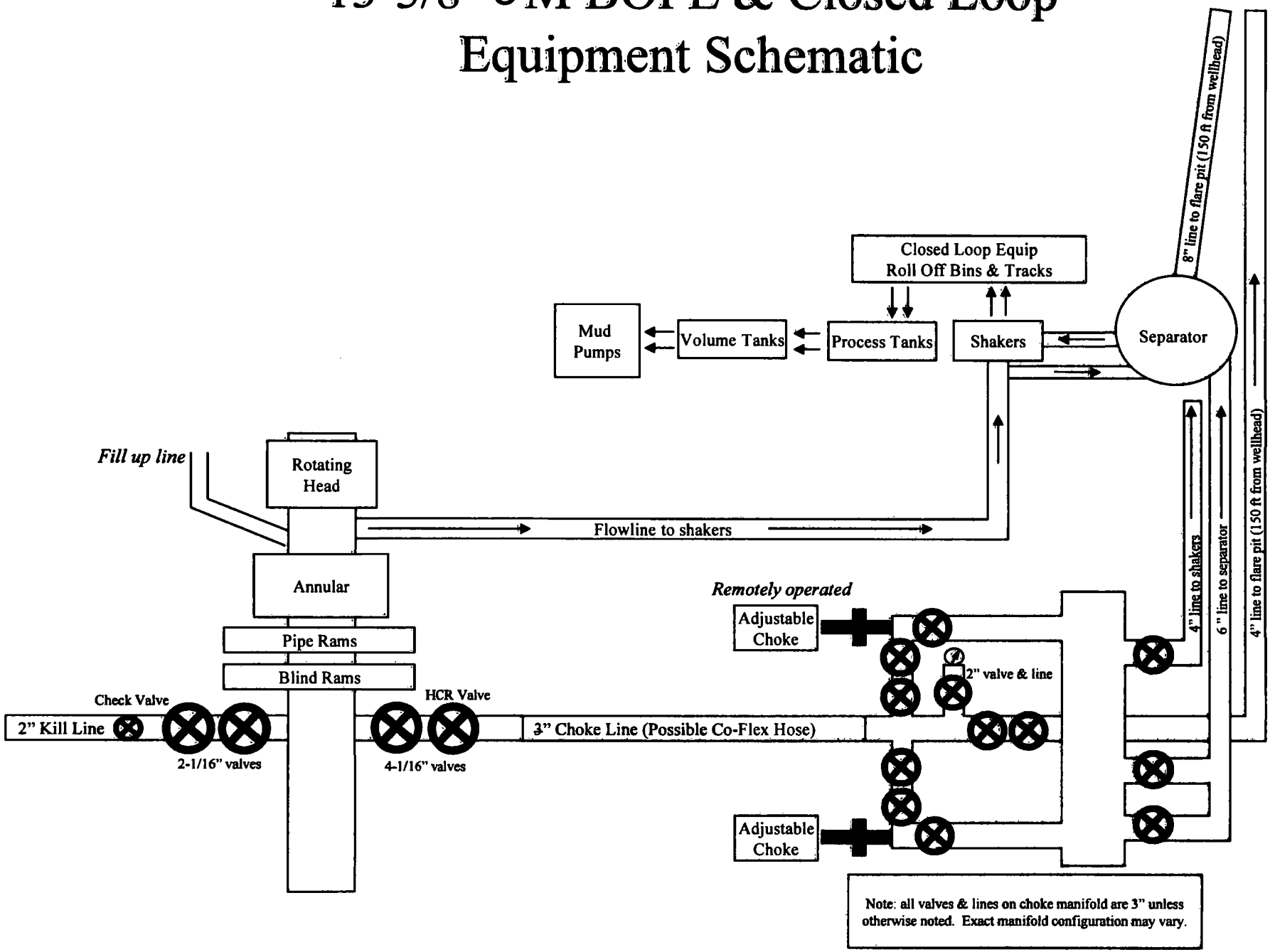
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



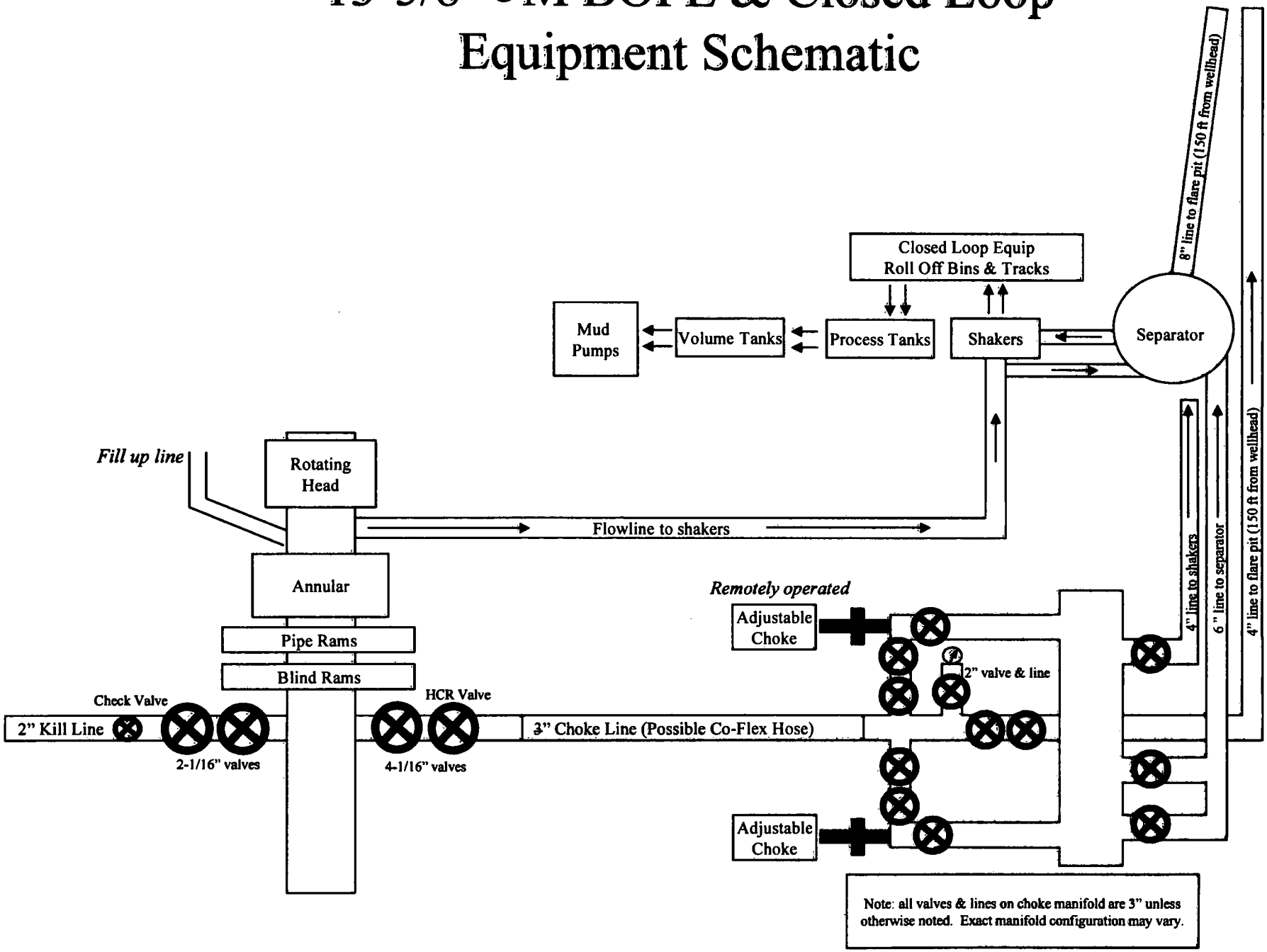
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



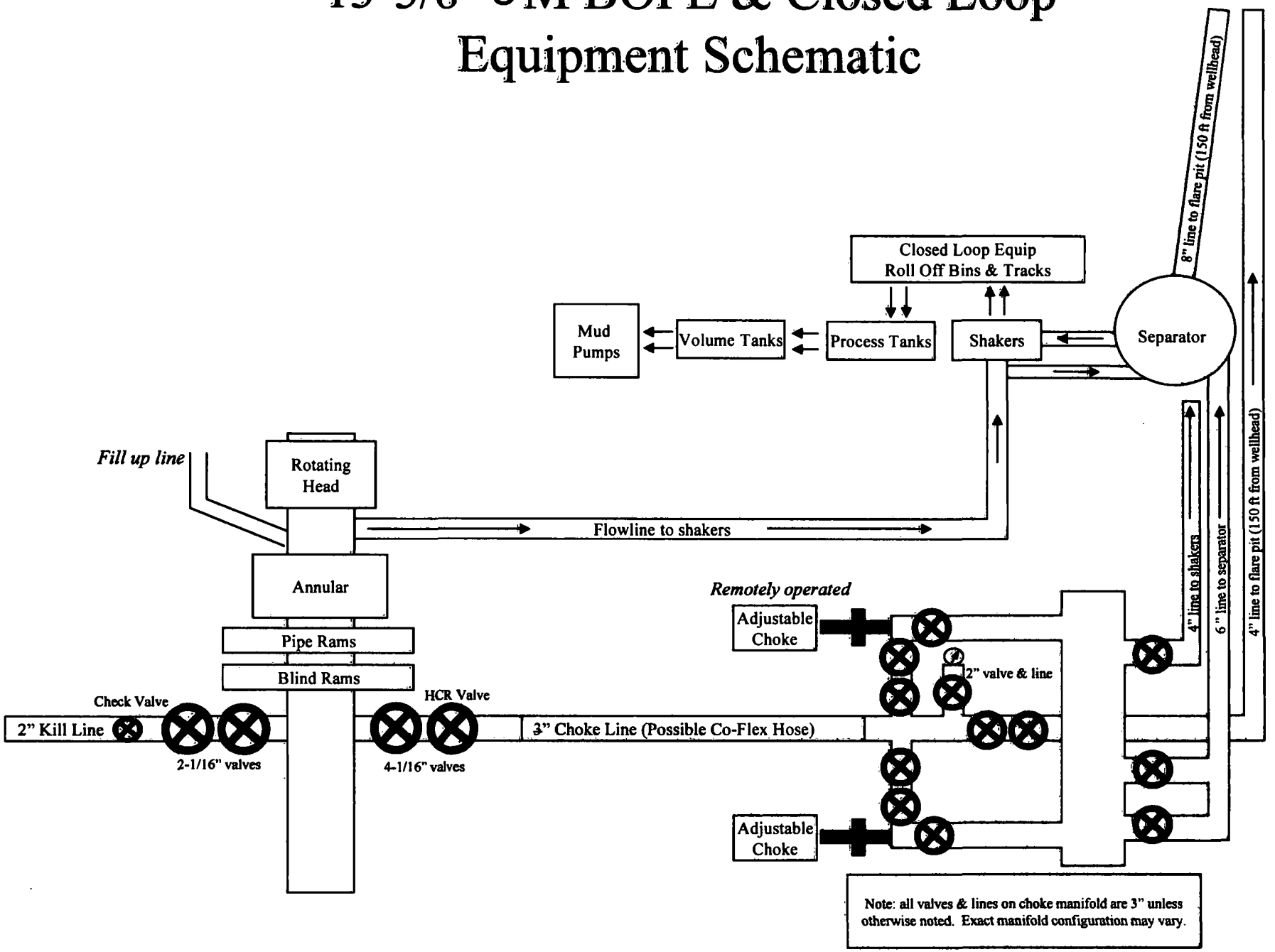
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



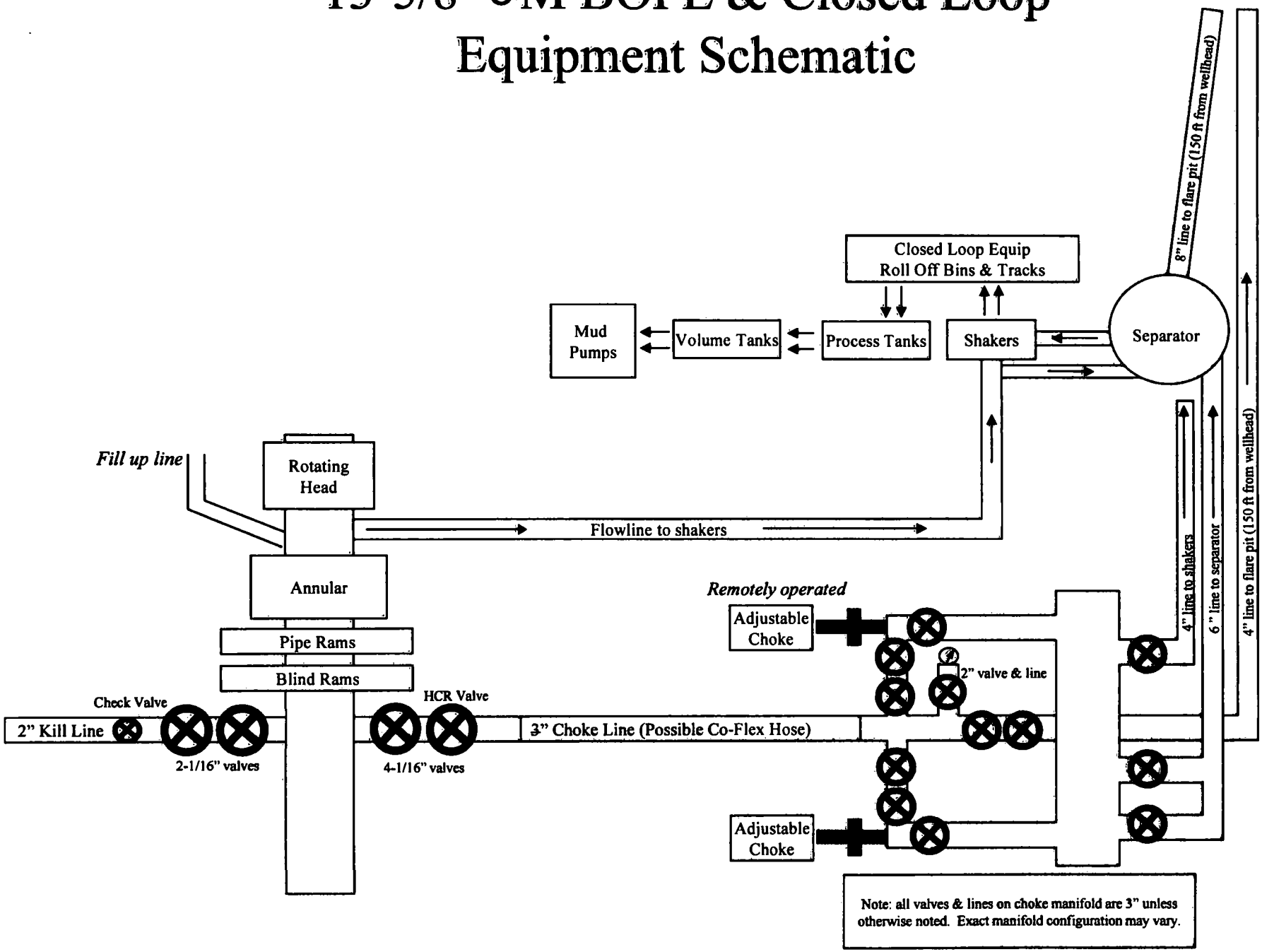
13-5/8" 5M BOPE & Closed Loop Equipment Schematic



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



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



Casing Assumptions and Load Cases

Surface

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Surface Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Displace to Gas	Formation Pore Pressure	Dry gas from next casing point

Surface Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Surface Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	3 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Intermediate

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Intermediate Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Fracture @ Shoe	Formation Pore Pressure	Dry gas

Intermediate Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Intermediate Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Surface

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Surface Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Displace to Gas	Formation Pore Pressure	Dry gas from next casing point

Surface Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Surface Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	3 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Intermediate

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Intermediate Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Fracture @ Shoe	Formation Pore Pressure	Dry gas

Intermediate Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Intermediate Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

devon

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

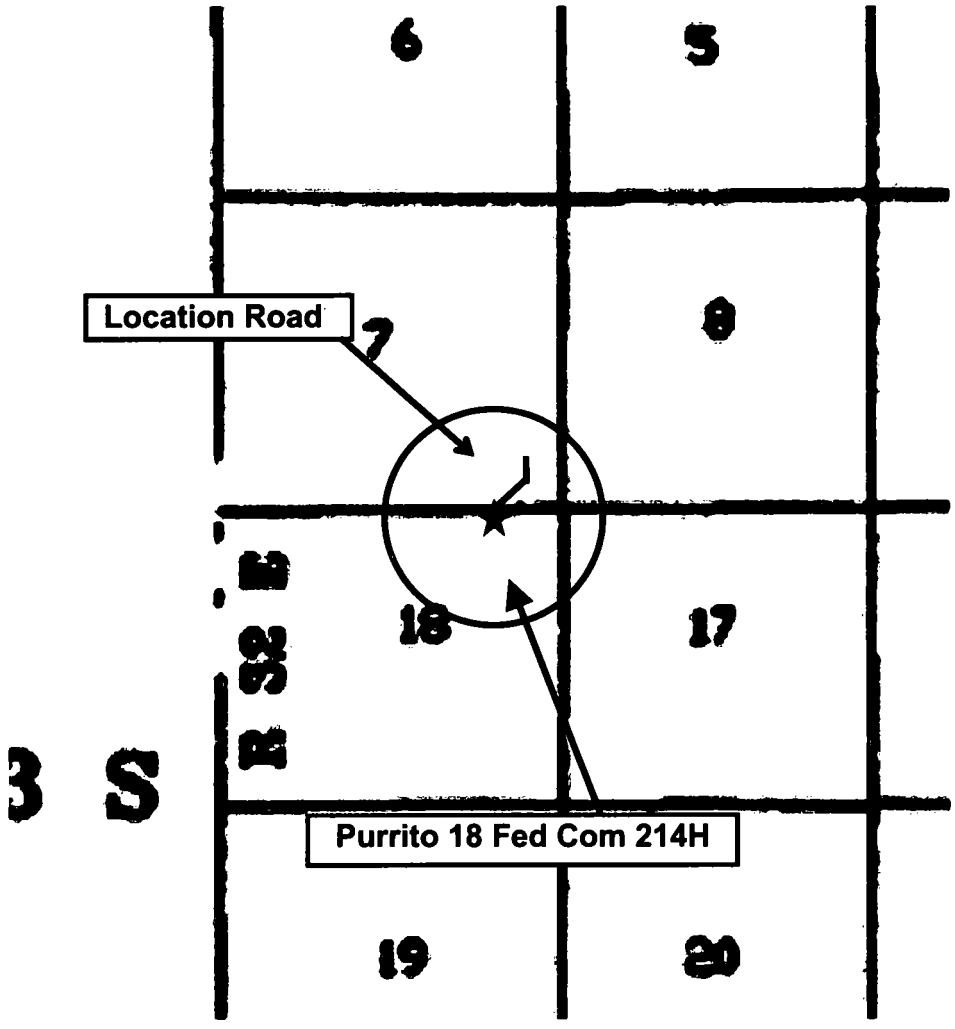
Purrito 18 Fed Com 214H

Sec-18 T-23S R-32E
71' FNL & 1166' FEL
LAT. = 32.3115627' N (NAD83)
LONG = 103.7089948' W

Lea County NM

Purrito 18 Fed Com 214H

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



Assumed 100 ppm ROE = **3000'** (Radius of Exposure)
100 ppm H2S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

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

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

Ignition of Gas Source

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

Characteristics of H_2S and SO_2

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

Contacting Authorities

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

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

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

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

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

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

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

II. HYDROGEN SULFIDE TRAINING

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

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

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

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

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

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

   Visual warning systems:

   A. Wind direction indicators as shown on well site diagram

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

4. **Mud program:**

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

5. **Metallurgy:**

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

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

6. **Communication:**

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

   B. Land line (telephone) communications at Office

7. **Well testing:**

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

   B. There will be no drill stem testing.

Devon Energy Corp. Company Call List		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
EHS Professional – Laura Wright		405-439-8129
Agency Call List		
Lea County (575)	**Hobbs**	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	**911**
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
Eddy County (575)	**Carlsbad**	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	**911**
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center	(800) 424-8802
	National Pollution Control Center: Direct	(703) 872-6000
	For Oil Spills	(800) 280-7118
	Emergency Services	
	Wild Well Control	(281) 784-4700
	Cudd Pressure Control (915) 699-0139	(915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services	(575) 746-3569
Give GPS position:	Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
	Flight For Life - Lubbock, TX	(806) 743-9911
	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(800) 222-1222
	Poison Control (24/7)	(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov	

Prepared in conjunction with
Dave Small SHARP communications and consulting

WCDSC Permian NM

Lea County (NAD83 New Mexico East)
Sec 18-T23S-R32E
Purrito 18 Fed Com 214H

Wellbore #1
Permit Plan 1

Anticollision Report

01 April, 2019

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Reference	Permit Plan 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.00ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,500.00 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 4/1/2019

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	15,756.93	Permit Plan 1 (Wellbore #1)	MWD+IFR1	OWSG MWD + IFR1

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Sec 18-T23S-R32E						
Purrito 18 Fed Com 213H - Wellbore #1 - Permit Plan 1	2,750.00	2,749.80	29.99	10.70	1.555	Minor Risk, CC
Purrito 18 Fed Com 213H - Wellbore #1 - Permit Plan 1	2,800.00	2,799.54	30.21	10.56	1.538	Minor Risk, ES, SF
Sand 18 Fed 1 SWD - Wellbore #1 - Wellbore #1	12,430.83	10,755.90	310.63	107.86	1.532	Minor Risk, CC, ES, SF
Tomcat 18 Fed 1 (Active) - Wellbore #1 - Wellbore #1	5,833.17	5,830.31	615.61	477.46	4.456	Alert, CC
Tomcat 18 Fed 1 (Active) - Wellbore #1 - Wellbore #1	7,550.00	7,539.66	636.11	457.27	3.557	Alert, ES
Tomcat 18 Fed 1 (Active) - Wellbore #1 - Wellbore #1	10,275.37	10,255.57	702.00	458.53	2.883	Alert, SF

Offset Design Sec 18-T23S-R32E - Purrito 18 Fed Com 213H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.20	-0.20	0.50	0.50	-90.63	-0.33	-29.99	29.99				
50.00	50.00	49.80	49.80	0.50	0.50	-90.63	-0.33	-29.99	29.99	28.99	1.01	29.799	
100.00	100.00	100.20	99.80	0.52	0.52	-90.63	-0.33	-29.99	29.99	28.96	1.04	28.958	
150.00	150.00	149.80	149.80	0.59	0.59	-90.63	-0.33	-29.99	29.99	28.81	1.18	25.415	
200.00	200.00	200.20	199.80	0.70	0.70	-90.63	-0.33	-29.99	29.99	28.59	1.40	21.351	
250.00	250.00	249.80	249.80	0.84	0.84	-90.63	-0.33	-29.99	29.99	28.32	1.67	17.907	
300.00	300.00	300.20	299.80	0.99	0.99	-90.63	-0.33	-29.99	29.99	28.02	1.98	15.184	
350.00	350.00	349.80	349.80	1.15	1.14	-90.63	-0.33	-29.99	29.99	27.70	2.29	13.095	
400.00	400.00	400.20	399.80	1.31	1.31	-90.63	-0.33	-29.99	29.99	27.37	2.62	11.452	
450.00	450.00	449.80	449.80	1.48	1.48	-90.63	-0.33	-29.99	29.99	27.04	2.95	10.160	
500.00	500.00	500.20	499.80	1.65	1.65	-90.63	-0.33	-29.99	29.99	26.70	3.29	9.108	
550.00	550.00	549.80	549.80	1.82	1.82	-90.63	-0.33	-29.99	29.99	26.36	3.63	8.252	
600.00	600.00	600.20	599.80	1.99	1.99	-90.63	-0.33	-29.99	29.99	26.01	3.98	7.532	
650.00	650.00	649.80	649.80	2.16	2.16	-90.63	-0.33	-29.99	29.99	25.66	4.33	6.929	
700.00	700.00	700.20	699.80	2.34	2.34	-90.63	-0.33	-29.99	29.99	25.31	4.68	6.409	
750.00	750.00	749.80	749.80	2.51	2.51	-90.63	-0.33	-29.99	29.99	24.96	5.03	5.964	
800.00	800.00	800.20	799.80	2.69	2.69	-90.63	-0.33	-29.99	29.99	24.61	5.38	5.573	
850.00	850.00	849.80	849.80	2.87	2.87	-90.63	-0.33	-29.99	29.99	24.26	5.73	5.231	
900.00	900.00	900.20	899.80	3.04	3.04	-90.63	-0.33	-29.99	29.99	23.90	6.09	4.927	Alert
950.00	950.00	949.80	949.80	3.22	3.22	-90.63	-0.33	-29.99	29.99	23.55	6.44	4.657	Alert
1,000.00	1,000.00	1,000.20	999.80	3.40	3.40	-90.63	-0.33	-29.99	29.99	23.20	6.80	4.413	Alert

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

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Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Purrito 18 Fed Com 213H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,050.00	1,050.00	1,049.80	1,049.80	3.58	3.57	-90.63	-0.33	-29.99	29.99	22.84	7.15	4.195	Alert
1,100.00	1,100.00	1,100.20	1,099.80	3.75	3.75	-90.63	-0.33	-29.99	29.99	22.49	7.51	3.996	Alert
1,150.00	1,150.00	1,149.80	1,149.80	3.93	3.93	-90.63	-0.33	-29.99	29.99	22.13	7.86	3.816	Alert
1,200.00	1,200.00	1,200.20	1,199.80	4.11	4.11	-90.63	-0.33	-29.99	29.99	21.77	8.22	3.650	Alert
1,250.00	1,250.00	1,249.80	1,249.80	4.29	4.29	-90.63	-0.33	-29.99	29.99	21.42	8.57	3.499	Alert
1,300.00	1,300.00	1,300.20	1,299.80	4.46	4.46	-90.63	-0.33	-29.99	29.99	21.06	8.93	3.359	Alert
1,350.00	1,350.00	1,349.80	1,349.80	4.64	4.64	-90.63	-0.33	-29.99	29.99	20.71	9.28	3.231	Alert
1,400.00	1,400.00	1,400.20	1,399.80	4.82	4.82	-90.63	-0.33	-29.99	29.99	20.35	9.64	3.111	Alert
1,450.00	1,450.00	1,449.80	1,449.80	5.00	5.00	-90.63	-0.33	-29.99	29.99	19.99	10.00	3.000	Alert
1,500.00	1,500.00	1,500.20	1,499.80	5.18	5.18	-90.63	-0.33	-29.99	29.99	19.64	10.36	2.896	Alert
1,550.00	1,550.00	1,549.80	1,549.80	5.36	5.35	-90.63	-0.33	-29.99	29.99	19.28	10.71	2.800	Alert
1,600.00	1,600.00	1,600.20	1,599.80	5.53	5.53	-90.63	-0.33	-29.99	29.99	18.92	11.07	2.710	Alert
1,650.00	1,650.00	1,649.80	1,649.80	5.71	5.71	-90.63	-0.33	-29.99	29.99	18.57	11.42	2.625	Alert
1,700.00	1,700.00	1,700.20	1,699.80	5.89	5.89	-90.63	-0.33	-29.99	29.99	18.21	11.78	2.545	Alert
1,750.00	1,750.00	1,749.80	1,749.80	6.07	6.07	-90.63	-0.33	-29.99	29.99	17.85	12.14	2.471	Minor Risk
1,800.00	1,800.00	1,800.20	1,799.80	6.25	6.25	-90.63	-0.33	-29.99	29.99	17.49	12.50	2.400	Minor Risk
1,850.00	1,850.00	1,849.80	1,849.80	6.43	6.43	-90.63	-0.33	-29.99	29.99	17.14	12.85	2.333	Minor Risk
1,900.00	1,900.00	1,900.20	1,899.80	6.61	6.61	-90.63	-0.33	-29.99	29.99	16.78	13.21	2.270	Minor Risk
1,950.00	1,950.00	1,949.80	1,949.80	6.78	6.78	-90.63	-0.33	-29.99	29.99	16.42	13.57	2.210	Minor Risk
2,000.00	2,000.00	2,000.20	1,999.80	6.96	6.96	-90.63	-0.33	-29.99	29.99	16.06	13.93	2.153	Minor Risk
2,050.00	2,050.00	2,049.80	2,049.80	7.14	7.14	-90.63	-0.33	-29.99	29.99	15.71	14.28	2.100	Minor Risk
2,100.00	2,100.00	2,100.20	2,099.80	7.32	7.32	-90.63	-0.33	-29.99	29.99	15.35	14.64	2.048	Minor Risk
2,150.00	2,150.00	2,149.80	2,149.80	7.50	7.50	-90.63	-0.33	-29.99	29.99	14.99	15.00	2.000	Minor Risk
2,200.00	2,200.00	2,200.20	2,199.80	7.68	7.68	-90.63	-0.33	-29.99	29.99	14.63	15.36	1.953	Minor Risk
2,250.00	2,250.00	2,249.80	2,249.80	7.86	7.86	-90.63	-0.33	-29.99	29.99	14.28	15.71	1.909	Minor Risk
2,300.00	2,300.00	2,300.20	2,299.80	8.04	8.04	-90.63	-0.33	-29.99	29.99	13.92	16.07	1.866	Minor Risk
2,350.00	2,350.00	2,349.80	2,349.80	8.22	8.21	-90.63	-0.33	-29.99	29.99	13.56	16.43	1.825	Minor Risk
2,400.00	2,400.00	2,400.20	2,399.80	8.39	8.39	-90.63	-0.33	-29.99	29.99	13.20	16.79	1.786	Minor Risk
2,450.00	2,450.00	2,449.80	2,449.80	8.57	8.57	-90.63	-0.33	-29.99	29.99	12.85	17.15	1.749	Minor Risk
2,500.00	2,500.00	2,500.20	2,499.80	8.75	8.75	-90.63	-0.33	-29.99	29.99	12.49	17.50	1.713	Minor Risk
2,550.00	2,550.00	2,549.80	2,549.80	8.93	8.93	-90.63	-0.33	-29.99	29.99	12.13	17.86	1.679	Minor Risk
2,600.00	2,600.00	2,600.20	2,599.80	9.11	9.11	-90.63	-0.33	-29.99	29.99	11.77	18.22	1.646	Minor Risk
2,650.00	2,650.00	2,649.80	2,649.80	9.29	9.29	-90.63	-0.33	-29.99	29.99	11.41	18.58	1.614	Minor Risk
2,700.00	2,700.00	2,700.20	2,699.80	9.47	9.47	-90.63	-0.33	-29.99	29.99	11.06	18.94	1.584	Minor Risk
2,750.00	2,750.00	2,749.80	2,749.80	9.65	9.65	-90.63	-0.33	-29.99	29.99	10.70	19.29	1.555	Minor Risk, CC
2,800.00	2,800.00	2,799.54	2,799.54	9.83	9.82	-90.62	-0.32	-30.20	30.21	10.56	19.65	1.538	Minor Risk, ES, SF
2,850.00	2,850.00	2,849.27	2,849.27	10.00	9.99	-90.57	-0.31	-30.85	30.86	10.86	19.99	1.543	Minor Risk
2,900.00	2,900.00	2,898.99	2,898.97	10.18	10.16	-90.50	-0.28	-31.93	31.94	11.60	20.34	1.570	Minor Risk
2,950.00	2,950.00	2,948.68	2,948.64	10.36	10.33	-90.41	-0.24	-33.43	33.45	12.77	20.68	1.618	Minor Risk
3,000.00	3,000.00	2,998.34	2,998.27	10.54	10.50	-90.30	-0.19	-35.37	35.40	14.38	21.02	1.684	Minor Risk
3,050.00	3,050.00	3,047.97	3,047.84	10.72	10.67	-90.19	-0.12	-37.73	37.78	16.42	21.37	1.768	Minor Risk
3,100.00	3,100.00	3,097.55	3,097.34	10.90	10.84	-90.07	-0.05	-40.52	40.60	18.89	21.71	1.870	Minor Risk
3,150.00	3,150.00	3,147.08	3,146.76	11.08	11.01	-89.95	0.04	-43.74	43.84	21.80	22.04	1.989	Minor Risk
3,200.00	3,200.00	3,196.55	3,196.10	11.26	11.19	-89.84	0.14	-47.38	47.52	25.14	22.38	2.123	Minor Risk
3,250.00	3,250.00	3,245.96	3,245.34	11.44	11.36	-89.73	0.24	-51.43	51.63	28.91	22.72	2.273	Minor Risk
3,300.00	3,300.00	3,295.29	3,294.46	11.62	11.53	-89.63	0.36	-55.91	56.16	33.11	23.05	2.437	Minor Risk
3,350.00	3,350.00	3,344.54	3,343.47	11.80	11.70	-89.53	0.50	-60.80	61.13	37.75	23.38	2.614	Alert
3,400.00	3,400.00	3,393.70	3,392.34	11.97	11.88	-89.45	0.64	-66.10	66.52	42.81	23.71	2.805	Alert
3,450.00	3,450.00	3,442.78	3,441.10	12.15	12.05	-89.37	0.79	-71.81	72.34	48.30	24.04	3.009	Alert
3,500.00	3,500.00	3,507.58	3,490.37	12.33	12.28	-89.30	0.95	-77.78	78.35	53.91	24.44	3.205	Alert
3,550.00	3,550.00	3,542.06	3,539.65	12.51	12.40	-89.24	1.11	-83.75	84.37	59.63	24.74	3.410	Alert
3,600.00	3,600.00	3,591.69	3,588.92	12.69	12.58	-89.19	1.27	-89.72	90.38	65.29	25.09	3.602	Alert

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Purrito 18 Fed Com 213H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
3,650.00	3,650.00	3,641.33	3,638.20	12.87	12.76	-89.14	1.43	-95.69	96.40	70.96	25.44	3.789	Alert
3,700.00	3,700.00	3,709.03	3,687.48	13.05	13.00	-89.10	1.59	-101.66	102.42	76.56	25.86	3.961	Alert
3,750.00	3,750.00	3,740.60	3,736.75	13.23	13.12	-89.07	1.75	-107.63	108.43	82.29	26.15	4.147	Alert
3,800.00	3,800.00	3,809.76	3,786.03	13.41	13.37	-89.04	1.91	-113.60	114.45	87.88	26.57	4.308	Alert
3,850.00	3,850.00	3,839.88	3,835.31	13.59	13.48	-89.01	2.07	-119.57	120.47	93.62	26.85	4.487	Alert
3,900.00	3,900.00	3,889.51	3,884.58	13.77	13.66	-88.98	2.23	-125.54	126.48	99.28	27.20	4.650	Alert
3,950.00	3,950.00	3,939.15	3,933.86	13.94	13.84	-88.96	2.39	-131.51	132.50	104.94	27.55	4.809	Alert
4,000.00	4,000.00	3,988.79	3,983.13	14.12	14.02	-88.94	2.55	-137.48	138.51	110.61	27.91	4.963	Alert
4,050.00	4,050.00	4,038.39	4,032.38	14.30	14.20	-176.54	2.71	-143.45	144.80	116.55	28.26	5.125	
4,100.00	4,099.99	4,087.92	4,081.55	14.47	14.39	-176.54	2.87	-149.41	151.63	123.02	28.60	5.301	
4,150.00	4,149.97	4,137.38	4,130.64	14.64	14.57	-176.55	3.03	-155.36	158.99	130.04	28.95	5.492	
4,200.00	4,199.94	4,186.75	4,179.65	14.82	14.75	-176.56	3.19	-161.30	166.90	137.60	29.29	5.698	
4,250.00	4,249.88	4,236.03	4,228.58	14.99	14.93	-176.59	3.35	-167.22	175.34	145.70	29.64	5.916	
4,300.00	4,299.79	4,285.22	4,277.41	15.16	15.11	-176.62	3.50	-173.14	184.31	154.33	29.98	6.148	
4,350.00	4,349.66	4,334.30	4,326.14	15.33	15.30	-176.66	3.66	-179.05	193.82	163.50	30.32	6.392	
4,400.00	4,399.49	4,383.28	4,374.76	15.50	15.48	-176.70	3.82	-184.94	203.87	173.20	30.66	6.648	
4,450.00	4,449.28	4,432.16	4,423.29	15.68	15.66	-176.75	3.98	-190.82	214.40	183.39	31.01	6.914	
4,500.00	4,499.06	4,481.02	4,471.79	15.85	15.84	-176.80	4.14	-196.69	225.01	193.66	31.35	7.178	
4,550.00	4,548.85	4,529.88	4,520.30	16.02	16.02	-176.84	4.29	-202.57	235.63	203.93	31.69	7.435	
4,600.00	4,598.63	4,578.74	4,568.80	16.20	16.21	-176.88	4.45	-208.45	246.24	214.21	32.03	7.687	
4,650.00	4,648.41	4,627.60	4,617.31	16.37	16.39	-176.92	4.61	-214.33	256.85	224.48	32.38	7.933	
4,700.00	4,698.19	4,676.46	4,665.81	16.54	16.57	-176.95	4.76	-220.20	267.47	234.75	32.72	8.174	
4,750.00	4,747.97	4,725.32	4,714.32	16.72	16.76	-176.99	4.92	-226.08	278.08	245.02	33.06	8.410	
4,800.00	4,797.76	4,774.18	4,762.82	16.89	16.94	-177.01	5.08	-231.96	288.70	255.29	33.41	8.642	
4,850.00	4,847.54	4,823.04	4,811.33	17.07	17.12	-177.04	5.24	-237.83	299.31	265.56	33.75	8.868	
4,900.00	4,897.32	4,871.90	4,859.83	17.24	17.31	-177.07	5.39	-243.71	309.93	275.83	34.10	9.090	
4,950.00	4,947.10	4,920.76	4,908.34	17.42	17.49	-177.09	5.55	-249.59	320.54	286.10	34.44	9.307	
5,000.00	4,996.88	4,969.62	4,956.84	17.59	17.68	-177.11	5.71	-255.47	331.16	296.37	34.79	9.520	
5,050.00	5,046.67	5,018.48	5,005.35	17.77	17.86	-177.13	5.87	-261.34	341.77	306.64	35.13	9.728	
5,100.00	5,096.45	5,067.34	5,053.85	17.94	18.05	-177.15	6.02	-267.22	352.39	316.91	35.48	9.932	
5,150.00	5,146.23	5,116.20	5,102.36	18.12	18.23	-177.17	6.18	-273.10	363.00	327.18	35.82	10.133	
5,200.00	5,196.01	5,165.06	5,150.86	18.29	18.42	-177.19	6.34	-278.98	373.62	337.45	36.17	10.329	
5,250.00	5,245.79	5,213.92	5,199.37	18.47	18.60	-177.21	6.50	-284.85	384.23	347.72	36.52	10.522	
5,300.00	5,295.57	5,262.78	5,247.87	18.64	18.79	-177.22	6.65	-290.73	394.85	357.98	36.86	10.711	
5,350.00	5,345.36	5,311.64	5,296.38	18.82	18.97	-177.24	6.81	-296.61	405.46	368.25	37.21	10.896	
5,400.00	5,395.14	5,360.50	5,344.88	19.00	19.16	-177.25	6.97	-302.48	416.08	378.52	37.56	11.078	
5,450.00	5,444.92	5,409.36	5,393.39	19.17	19.34	-177.26	7.13	-308.36	426.69	388.79	37.91	11.257	
5,500.00	5,494.70	5,458.22	5,441.89	19.35	19.53	-177.28	7.28	-314.24	437.31	399.05	38.25	11.432	
5,550.00	5,544.48	5,507.08	5,490.40	19.53	19.72	-177.29	7.44	-320.12	447.92	409.32	38.60	11.604	
5,600.00	5,594.27	5,555.94	5,538.90	19.70	19.90	-177.30	7.60	-325.99	458.54	419.59	38.95	11.773	
5,650.00	5,644.05	5,604.80	5,587.41	19.88	20.09	-177.31	7.76	-331.87	469.15	429.86	39.30	11.938	
5,700.00	5,693.83	5,653.66	5,635.91	20.06	20.28	-177.32	7.91	-337.75	479.77	440.12	39.65	12.101	
5,750.00	5,743.61	5,702.52	5,684.42	20.24	20.46	-177.33	8.07	-343.63	490.38	450.39	40.00	12.261	
5,800.00	5,793.39	5,751.38	5,732.92	20.41	20.65	-177.34	8.23	-349.50	501.00	460.66	40.34	12.418	
5,850.00	5,843.18	5,800.24	5,781.43	20.59	20.84	-177.35	8.39	-355.38	511.61	470.92	40.69	12.572	
5,900.00	5,892.96	5,849.10	5,829.93	20.77	21.02	-177.36	8.54	-361.26	522.23	481.19	41.04	12.724	
5,950.00	5,942.74	5,902.04	5,878.44	20.94	21.23	-177.37	8.70	-367.13	532.85	491.44	41.41	12.868	
6,000.00	5,992.52	5,946.82	5,926.94	21.12	21.40	-177.38	8.86	-373.01	543.46	501.72	41.74	13.020	
6,050.00	6,042.30	6,004.32	5,975.45	21.30	21.62	-177.38	9.02	-378.89	554.08	511.95	42.12	13.154	
6,100.00	6,092.08	6,044.54	6,023.95	21.48	21.77	-177.39	9.17	-384.77	564.69	522.25	42.44	13.305	
6,150.00	6,141.87	6,093.41	6,072.46	21.66	21.96	-177.40	9.33	-390.64	575.31	532.51	42.79	13.444	
6,200.00	6,191.65	6,142.27	6,120.96	21.83	22.15	-177.41	9.49	-396.52	585.92	542.78	43.14	13.581	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Purrito 18 Fed Com 213H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,250.00	6,241.43	6,191.13	6,169.47	22.01	22.34	-177.41	9.65	-402.40	596.54	553.04	43.49	13.716	
6,300.00	6,291.21	6,239.99	6,217.97	22.19	22.52	-177.42	9.80	-408.28	607.15	563.31	43.84	13.848	
6,350.00	6,340.99	6,288.85	6,266.48	22.37	22.71	-177.42	9.96	-414.15	617.77	573.57	44.19	13.978	
6,400.00	6,390.78	6,337.71	6,314.98	22.55	22.90	-177.43	10.12	-420.03	628.38	583.84	44.55	14.107	
6,450.00	6,440.56	6,386.57	6,363.49	22.73	23.09	-177.44	10.27	-425.91	639.00	594.10	44.90	14.233	
6,500.00	6,490.34	6,435.43	6,411.99	22.91	23.28	-177.44	10.43	-431.78	649.61	604.37	45.25	14.357	
6,550.00	6,540.12	6,484.29	6,460.50	23.08	23.47	-177.45	10.59	-437.66	660.23	614.63	45.60	14.479	
6,600.00	6,589.90	6,533.15	6,509.00	23.26	23.65	-177.45	10.75	-443.54	670.85	624.89	45.95	14.599	
6,650.00	6,639.69	6,582.01	6,557.51	23.44	23.84	-177.46	10.90	-449.42	681.48	635.16	46.30	14.718	
6,700.00	6,689.47	6,630.87	6,606.01	23.62	24.03	-177.46	11.06	-455.29	692.08	645.42	46.65	14.834	
6,750.00	6,739.25	6,679.73	6,654.52	23.80	24.22	-177.47	11.22	-461.17	702.69	655.69	47.01	14.949	
6,800.00	6,789.03	6,728.59	6,703.02	23.98	24.41	-177.47	11.38	-467.05	713.31	665.95	47.36	15.062	
6,850.00	6,838.81	6,777.45	6,751.53	24.16	24.60	-177.48	11.53	-472.92	723.92	676.21	47.71	15.173	
6,900.00	6,888.59	6,826.31	6,800.03	24.34	24.79	-177.48	11.69	-478.80	734.54	686.48	48.06	15.283	
6,950.00	6,938.38	6,875.17	6,848.54	24.52	24.98	-177.49	11.85	-484.68	745.15	696.74	48.41	15.391	
7,000.00	6,988.16	6,924.03	6,897.04	24.70	25.17	-177.49	12.01	-490.56	755.77	707.00	48.77	15.497	
7,050.00	7,037.94	6,972.89	6,945.55	24.88	25.35	-177.49	12.16	-496.43	766.38	717.26	49.12	15.602	
7,100.00	7,087.72	7,021.75	6,994.05	25.05	25.54	-177.50	12.32	-502.31	777.00	727.53	49.47	15.706	
7,150.00	7,137.50	7,070.61	7,042.56	25.23	25.73	-177.50	12.48	-508.19	787.61	737.79	49.83	15.807	
7,200.00	7,187.29	7,119.47	7,091.07	25.41	25.92	-177.51	12.64	-514.07	798.23	748.05	50.18	15.908	
7,250.00	7,237.07	7,168.33	7,139.57	25.59	26.11	-177.51	12.79	-519.94	808.85	758.31	50.53	16.007	
7,300.00	7,286.85	7,217.19	7,188.08	25.77	26.30	-177.51	12.95	-525.82	819.46	768.58	50.89	16.104	
7,350.00	7,336.63	7,266.05	7,236.58	25.95	26.49	-177.52	13.11	-531.70	830.08	778.84	51.24	16.200	
7,400.00	7,386.41	7,314.91	7,285.09	26.13	26.68	-177.52	13.27	-537.57	840.69	789.10	51.59	16.295	
7,450.00	7,436.20	7,363.77	7,333.59	26.31	26.87	-177.52	13.42	-543.45	851.31	799.36	51.95	16.389	
7,500.00	7,485.98	7,412.63	7,382.10	26.49	27.06	-177.53	13.58	-549.33	861.92	809.62	52.30	16.481	
7,550.00	7,535.76	7,461.49	7,430.60	26.67	27.25	-177.53	13.74	-555.21	872.54	819.89	52.65	16.572	
7,600.00	7,585.54	7,510.35	7,479.11	26.85	27.44	-177.53	13.90	-561.08	883.15	830.15	53.01	16.661	
7,650.00	7,635.32	7,559.21	7,527.61	27.03	27.63	-177.54	14.05	-566.96	893.77	840.41	53.36	16.750	
7,700.00	7,685.10	7,608.07	7,576.12	27.21	27.82	-177.54	14.21	-572.84	904.39	850.67	53.71	16.837	
7,750.00	7,734.89	7,656.93	7,624.62	27.39	28.01	-177.54	14.37	-578.72	915.00	860.93	54.07	16.923	
7,800.00	7,784.67	7,705.79	7,673.13	27.57	28.20	-177.54	14.53	-584.59	925.62	871.19	54.42	17.008	
7,850.00	7,834.45	7,754.65	7,721.63	27.75	28.39	-177.55	14.68	-590.47	936.23	881.45	54.78	17.092	
7,900.00	7,884.23	7,803.51	7,770.14	27.93	28.58	-177.55	14.84	-596.35	946.85	891.72	55.13	17.174	
7,950.00	7,934.01	7,852.37	7,818.64	28.11	28.77	-177.55	15.00	-602.22	957.46	901.98	55.49	17.256	
8,000.00	7,983.80	7,901.23	7,867.15	28.29	28.96	-177.55	15.16	-608.10	968.08	912.24	55.84	17.337	
8,050.00	8,033.58	7,950.09	7,915.65	28.47	29.15	-177.56	15.31	-613.98	978.69	922.50	56.19	17.416	
8,100.00	8,083.36	8,001.05	7,964.16	28.66	29.35	-177.56	15.47	-619.86	989.31	932.75	56.56	17.492	
8,150.00	8,133.14	8,047.81	8,012.66	28.84	29.53	-177.56	15.63	-625.73	999.92	943.02	56.90	17.572	
8,200.00	8,182.92	8,096.67	8,061.17	29.02	29.72	-177.56	15.78	-631.61	1,010.54	953.28	57.26	17.649	
8,250.00	8,232.71	8,145.53	8,109.67	29.20	29.91	-177.57	15.94	-637.49	1,021.16	963.54	57.61	17.724	
8,300.00	8,282.49	8,194.39	8,158.18	29.38	30.10	-177.57	16.10	-643.37	1,031.77	973.80	57.97	17.799	
8,350.00	8,332.27	8,243.25	8,206.68	29.56	30.29	-177.57	16.26	-649.24	1,042.39	984.06	58.32	17.872	
8,400.00	8,382.05	8,292.11	8,255.19	29.74	30.48	-177.57	16.41	-655.12	1,053.00	994.32	58.68	17.945	
8,450.00	8,431.83	8,340.97	8,303.69	29.92	30.67	-177.58	16.57	-661.00	1,063.62	1,004.58	59.03	18.017	
8,500.00	8,481.61	8,389.83	8,352.20	30.10	30.87	-177.58	16.73	-666.87	1,074.23	1,014.84	59.39	18.088	
8,550.00	8,531.40	8,438.69	8,400.70	30.28	31.06	-177.58	16.89	-672.75	1,084.85	1,025.10	59.75	18.158	
8,600.00	8,581.18	8,487.55	8,449.21	30.46	31.25	-177.58	17.04	-678.63	1,095.46	1,035.36	60.10	18.227	
8,650.00	8,630.96	8,536.41	8,497.71	30.64	31.44	-177.58	17.20	-684.51	1,106.08	1,045.62	60.46	18.296	
8,700.00	8,680.74	8,585.27	8,546.22	30.82	31.63	-177.59	17.36	-690.38	1,116.70	1,055.88	60.81	18.363	
8,750.00	8,730.52	8,634.13	8,594.72	31.01	31.82	-177.59	17.52	-696.26	1,127.31	1,066.14	61.17	18.430	
8,800.00	8,780.31	8,682.99	8,643.23	31.19	32.01	-177.59	17.67	-702.14	1,137.93	1,076.40	61.52	18.496	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Purrito 18 Fed Com 213H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,850.00	8,830.09	8,731.85	8,691.73	31.37	32.20	-177.59	17.83	-708.01	1,148.54	1,086.66	61.88	18.561	
8,900.00	8,879.87	8,780.71	8,740.24	31.55	32.39	-177.59	17.99	-713.89	1,159.16	1,096.92	62.23	18.626	
8,950.00	8,929.65	8,829.57	8,788.74	31.73	32.58	-177.59	18.15	-719.77	1,169.77	1,107.18	62.59	18.689	
9,000.00	8,979.43	8,878.43	8,837.25	31.91	32.77	-177.60	18.30	-725.65	1,180.39	1,117.44	62.95	18.752	
9,050.00	9,029.22	8,927.29	8,885.75	32.09	32.96	-177.60	18.46	-731.52	1,191.00	1,127.70	63.30	18.814	
9,100.00	9,079.00	8,976.15	8,934.26	32.27	33.16	-177.60	18.62	-737.40	1,201.62	1,137.96	63.66	18.876	
9,150.00	9,128.78	9,025.01	8,982.76	32.45	33.35	-177.60	18.78	-743.28	1,212.23	1,148.22	64.02	18.937	
9,200.00	9,178.56	9,073.87	9,031.27	32.64	33.54	-177.60	18.93	-749.16	1,222.85	1,158.48	64.37	18.997	
9,250.00	9,228.34	9,122.73	9,079.77	32.82	33.73	-177.60	19.09	-755.03	1,233.47	1,168.74	64.73	19.056	
9,300.00	9,278.13	9,171.59	9,128.28	33.00	33.92	-177.61	19.25	-760.91	1,244.08	1,179.00	65.08	19.115	
9,350.00	9,327.91	9,220.45	9,176.78	33.18	34.11	-177.61	19.41	-766.79	1,254.70	1,189.26	65.44	19.173	
9,400.00	9,377.69	9,269.31	9,225.29	33.36	34.30	-177.61	19.56	-772.66	1,265.31	1,199.52	65.80	19.230	
9,450.00	9,427.47	9,318.17	9,273.79	33.54	34.49	-177.61	19.72	-778.54	1,275.93	1,209.77	66.15	19.287	
9,500.00	9,477.27	9,367.07	9,322.34	33.72	34.69	-177.62	19.88	-784.42	1,286.37	1,219.86	66.51	19.341	
9,550.00	9,527.12	9,433.48	9,388.31	33.90	34.94	-177.62	20.08	-792.07	1,295.97	1,228.97	66.99	19.344	
9,600.00	9,577.02	9,508.28	9,462.75	34.08	35.23	-177.63	20.28	-799.34	1,304.01	1,236.48	67.52	19.312	
9,650.00	9,626.95	9,583.65	9,537.89	34.26	35.51	-177.63	20.43	-805.19	1,310.43	1,242.39	68.03	19.261	
9,700.00	9,676.91	9,659.47	9,613.58	34.44	35.78	-177.63	20.55	-809.59	1,315.21	1,246.69	68.52	19.193	
9,750.00	9,726.90	9,735.61	9,689.67	34.62	36.06	-177.64	20.63	-812.48	1,318.36	1,249.36	69.00	19.108	
9,800.00	9,776.89	9,811.94	9,765.98	34.79	36.32	-177.64	20.67	-813.86	1,319.85	1,250.41	69.44	19.006	
9,850.00	9,826.89	9,872.65	9,826.69	34.97	36.52	-90.01	20.67	-813.99	1,319.99	1,250.16	69.83	18.904	
9,900.00	9,876.89	9,922.65	9,876.69	35.14	36.69	-90.01	20.67	-813.99	1,319.99	1,249.82	70.17	18.811	
9,950.00	9,926.89	9,972.65	9,926.69	35.32	36.86	-90.01	20.67	-813.99	1,319.99	1,249.47	70.52	18.718	
10,000.00	9,976.89	10,022.65	9,976.69	35.49	37.03	-90.01	20.67	-813.99	1,319.99	1,249.12	70.87	18.627	
10,050.00	10,026.89	10,072.65	10,026.69	35.67	37.19	-90.01	20.67	-813.99	1,319.99	1,248.78	71.21	18.536	
10,100.00	10,076.89	10,122.65	10,076.69	35.84	37.36	-90.01	20.67	-813.99	1,319.99	1,248.43	71.56	18.446	
10,150.00	10,126.89	10,172.65	10,126.69	36.02	37.53	-90.01	20.67	-813.99	1,319.99	1,248.08	71.91	18.357	
10,200.00	10,176.88	10,223.09	10,177.12	36.19	37.69	85.99	19.88	-813.98	1,319.93	1,247.68	72.25	18.269	
10,250.00	10,226.64	10,273.83	10,227.60	36.36	37.85	86.03	14.98	-813.95	1,319.57	1,246.99	72.58	18.181	
10,300.00	10,275.79	10,324.55	10,277.44	36.52	38.01	86.09	5.63	-813.89	1,318.87	1,245.97	72.90	18.091	
10,350.00	10,323.95	10,375.25	10,326.23	36.67	38.16	86.18	-8.07	-813.80	1,317.85	1,244.63	73.22	17.998	
10,400.00	10,370.78	10,425.92	10,373.60	36.82	38.31	86.30	-26.03	-813.68	1,316.51	1,242.98	73.53	17.904	
10,450.00	10,415.90	10,476.55	10,419.16	36.96	38.45	86.45	-48.07	-813.54	1,314.87	1,241.03	73.84	17.808	
10,500.00	10,458.97	10,527.14	10,462.56	37.09	38.58	86.63	-74.03	-813.37	1,312.93	1,238.80	74.13	17.711	
10,550.00	10,499.67	10,577.68	10,503.46	37.20	38.71	86.83	-103.68	-813.17	1,310.72	1,236.30	74.42	17.613	
10,600.00	10,537.69	10,628.15	10,541.55	37.31	38.82	87.05	-136.78	-812.95	1,308.24	1,233.54	74.69	17.515	
10,650.00	10,572.73	10,678.57	10,576.54	37.40	38.92	87.30	-173.06	-812.72	1,305.51	1,230.55	74.96	17.415	
10,700.00	10,604.54	10,728.93	10,608.17	37.49	39.02	87.57	-212.22	-812.46	1,302.57	1,227.34	75.23	17.315	
10,750.00	10,632.86	10,779.21	10,636.20	37.56	39.11	87.86	-253.95	-812.18	1,299.42	1,223.94	75.48	17.215	
10,800.00	10,657.48	10,829.44	10,660.44	37.65	39.20	88.16	-297.91	-811.89	1,296.10	1,220.37	75.73	17.114	
10,850.00	10,678.22	10,879.59	10,680.71	37.74	39.30	88.48	-343.77	-811.59	1,292.63	1,216.65	75.98	17.013	
10,900.00	10,694.92	10,929.68	10,696.88	37.83	39.39	88.82	-391.16	-811.28	1,289.03	1,212.82	76.22	16.913	
10,950.00	10,707.45	10,979.71	10,708.84	37.92	39.50	89.16	-439.73	-810.96	1,285.34	1,208.89	76.45	16.814	
11,000.00	10,715.71	11,029.68	10,716.50	38.00	39.61	89.51	-489.09	-810.64	1,281.58	1,204.90	76.67	16.715	
11,050.00	10,719.64	11,079.59	10,719.84	38.07	39.74	89.86	-538.87	-810.31	1,277.77	1,200.89	76.89	16.619	
11,100.00	10,720.00	11,129.45	10,720.00	38.13	39.87	90.01	-588.73	-809.98	1,273.96	1,196.85	77.11	16.522	
11,150.00	10,720.00	11,179.31	10,720.00	38.20	40.02	90.01	-638.58	-809.65	1,270.14	1,192.80	77.34	16.423	
11,200.00	10,720.00	11,229.16	10,720.00	38.28	40.19	90.01	-688.43	-809.32	1,266.32	1,188.74	77.58	16.322	
11,250.00	10,720.00	11,279.02	10,720.00	38.36	40.37	90.01	-738.29	-808.99	1,262.51	1,184.66	77.85	16.217	
11,300.00	10,720.00	11,328.86	10,720.00	38.44	40.56	90.01	-788.13	-808.67	1,258.53	1,180.39	78.14	16.107	
11,350.00	10,720.00	11,378.63	10,720.00	38.54	40.76	90.01	-837.89	-808.34	1,253.74	1,175.30	78.44	15.983	
11,400.00	10,720.00	11,428.30	10,720.00	38.63	40.98	90.01	-887.57	-808.01	1,248.08	1,169.32	78.76	15.847	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Purrito 18 Fed Com 213H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,450.00	10,720.00	11,477.88	10,720.00	38.74	41.20	90.01	-937.14	-807.69	1,241.56	1,162.46	79.09	15.697	
11,500.00	10,720.00	11,527.33	10,720.00	38.84	41.44	90.01	-986.59	-807.36	1,234.17	1,154.73	79.44	15.535	
11,550.00	10,720.00	11,576.64	10,720.00	38.95	41.69	90.01	-1,035.91	-807.04	1,225.92	1,146.11	79.81	15.360	
11,600.00	10,720.00	11,625.80	10,720.00	39.06	41.95	90.01	-1,085.07	-806.71	1,216.81	1,136.62	80.19	15.174	
11,650.00	10,720.00	11,674.80	10,720.00	39.18	42.22	90.01	-1,134.06	-806.39	1,206.85	1,126.26	80.59	14.975	
11,700.00	10,720.00	11,723.62	10,720.00	39.31	42.50	90.01	-1,182.88	-806.07	1,196.03	1,115.03	81.00	14.767	
11,750.00	10,720.00	11,772.23	10,720.00	39.44	42.79	90.01	-1,231.49	-805.75	1,184.36	1,102.94	81.42	14.546	
11,800.00	10,720.00	11,820.64	10,720.00	39.57	43.08	90.01	-1,279.90	-805.43	1,171.85	1,089.99	81.85	14.316	
11,850.00	10,720.00	11,868.82	10,720.00	39.70	43.39	90.01	-1,328.08	-805.11	1,158.49	1,076.18	82.30	14.076	
11,900.00	10,720.00	11,916.81	10,720.00	39.84	43.70	90.01	-1,376.07	-804.80	1,144.45	1,061.69	82.76	13.828	
11,950.00	10,720.00	11,964.78	10,720.00	39.99	44.02	90.01	-1,424.04	-804.48	1,130.35	1,047.11	83.24	13.579	
12,000.00	10,720.00	12,012.76	10,720.00	40.14	44.35	90.01	-1,472.01	-804.17	1,116.25	1,032.53	83.72	13.333	
12,050.00	10,720.00	12,060.73	10,720.00	40.30	44.69	90.01	-1,519.98	-803.85	1,102.16	1,017.93	84.23	13.085	
12,100.00	10,720.00	12,108.70	10,720.00	40.46	45.03	90.01	-1,567.95	-803.53	1,088.06	1,003.32	84.74	12.840	
12,150.00	10,720.00	12,156.67	10,720.00	40.63	45.39	90.01	-1,615.92	-803.22	1,073.96	988.69	85.27	12.595	
12,200.00	10,720.00	12,204.70	10,720.00	40.80	45.75	90.01	-1,663.95	-802.90	1,060.06	974.26	85.81	12.354	
12,250.00	10,720.00	12,253.00	10,720.00	40.98	46.13	90.01	-1,712.25	-802.58	1,047.14	960.77	86.37	12.124	
12,300.00	10,720.00	12,301.57	10,720.00	41.17	46.51	90.01	-1,760.82	-802.26	1,035.28	948.34	86.94	11.908	
12,350.00	10,720.00	12,350.39	10,720.00	41.36	46.90	90.01	-1,809.63	-801.94	1,024.47	936.94	87.53	11.704	
12,400.00	10,720.00	12,400.57	10,720.00	41.55	47.31	90.01	-1,858.68	-801.62	1,014.74	926.60	88.13	11.514	
12,450.00	10,720.00	12,448.67	10,720.00	41.75	47.72	90.01	-1,907.92	-801.30	1,006.07	917.33	88.74	11.337	
12,500.00	10,720.00	12,501.91	10,720.00	41.95	48.17	90.01	-1,957.34	-800.97	998.48	909.09	89.40	11.169	
12,550.00	10,720.00	12,547.67	10,720.00	42.16	48.57	90.01	-2,006.91	-800.65	991.98	901.97	90.01	11.021	
12,600.00	10,720.00	12,602.63	10,720.00	42.37	49.05	90.01	-2,056.61	-800.32	986.55	895.85	90.70	10.877	
12,650.00	10,720.00	12,647.18	10,720.00	42.58	49.45	90.01	-2,106.42	-799.99	982.21	890.89	91.33	10.755	
12,700.00	10,720.00	12,702.93	10,720.00	42.80	49.95	90.01	-2,156.31	-799.66	978.96	886.91	92.05	10.635	
12,750.00	10,720.00	12,747.03	10,720.00	43.02	50.36	90.01	-2,206.26	-799.33	976.80	884.12	92.69	10.539	
12,800.00	10,720.00	12,802.99	10,720.00	43.25	50.87	90.01	-2,256.25	-799.00	975.73	882.30	93.43	10.443	
12,824.13	10,720.00	12,821.15	10,720.00	43.36	51.05	90.01	-2,280.38	-798.85	975.60	881.88	93.72	10.410	
12,850.00	10,720.00	12,847.01	10,720.00	43.47	51.29	90.01	-2,306.25	-798.67	975.75	881.66	94.09	10.371	
12,900.00	10,720.00	12,903.00	10,720.00	43.70	51.82	90.01	-2,356.23	-798.35	976.86	882.00	94.85	10.299	
12,950.00	10,720.00	12,946.95	10,720.00	43.94	52.25	90.01	-2,406.18	-798.02	979.06	883.53	95.52	10.249	
13,000.00	10,720.00	13,003.16	10,720.00	44.17	52.80	90.01	-2,456.07	-797.69	982.35	886.03	96.31	10.200	
13,050.00	10,720.00	13,046.65	10,720.00	44.41	53.23	90.01	-2,505.88	-797.36	986.72	889.73	96.99	10.173	
13,100.00	10,720.00	13,103.65	10,720.00	44.66	53.80	90.01	-2,555.58	-797.03	992.18	894.38	97.81	10.144	
13,150.00	10,720.00	13,145.92	10,720.00	44.90	54.23	90.01	-2,605.15	-796.71	998.73	900.24	98.49	10.140	
13,200.00	10,720.00	13,204.67	10,720.00	45.15	54.83	90.01	-2,654.56	-796.38	1,006.35	907.01	99.35	10.130	
13,250.00	10,720.00	13,244.57	10,720.00	45.40	55.24	90.01	-2,703.79	-796.06	1,015.06	915.04	100.02	10.149	
13,300.00	10,720.00	13,306.40	10,720.00	45.66	55.88	90.01	-2,752.83	-795.74	1,024.83	923.91	100.92	10.155	
13,350.00	10,720.00	13,342.41	10,720.00	45.92	56.26	90.01	-2,801.64	-795.41	1,035.67	934.10	101.57	10.197	
13,400.00	10,720.00	13,409.03	10,720.00	46.18	56.96	90.01	-2,850.20	-795.09	1,047.57	945.03	102.54	10.216	
13,450.00	10,720.00	13,439.43	10,720.00	46.45	57.29	90.01	-2,898.65	-794.78	1,059.89	956.75	103.14	10.276	
13,500.00	10,720.00	13,488.09	10,720.00	46.72	57.81	90.01	-2,947.31	-794.46	1,071.40	967.46	103.94	10.308	
13,550.00	10,720.00	13,536.94	10,720.00	47.01	58.34	90.01	-2,996.16	-794.13	1,082.05	977.29	104.76	10.329	
13,600.00	10,720.00	13,585.97	10,720.00	47.29	58.87	90.01	-3,045.19	-793.81	1,091.85	986.27	105.58	10.341	
13,650.00	10,720.00	13,635.16	10,720.00	47.58	59.41	90.01	-3,094.38	-793.49	1,100.80	994.38	106.42	10.344	
13,700.00	10,720.00	13,684.50	10,720.00	47.88	59.96	90.01	-3,143.72	-793.16	1,108.88	1,001.62	107.26	10.338	
13,750.00	10,720.00	13,733.98	10,720.00	48.18	60.51	90.01	-3,193.19	-792.84	1,116.10	1,007.98	108.12	10.323	
13,800.00	10,720.00	13,783.57	10,720.00	48.48	61.06	90.01	-3,242.79	-792.51	1,122.46	1,013.48	108.98	10.299	
13,850.00	10,720.00	13,833.27	10,720.00	48.79	61.62	90.01	-3,292.48	-792.18	1,127.95	1,018.09	109.86	10.268	
13,900.00	10,720.00	13,883.01	10,720.00	49.10	62.19	90.01	-3,342.23	-791.86	1,132.98	1,022.24	110.73	10.232	
13,950.00	10,720.00	13,932.76	10,720.00	49.42	62.75	90.01	-3,391.97	-791.53	1,138.01	1,026.38	111.62	10.195	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Purrito 18 Fed Com 213H - Wellbore #1 - Permit Plan 1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,000.00	10,720.00	13,982.51	10,720.00	49.74	63.32	90.01	-3,441.72	-791.20	1,143.03	1,030.52	112.51	10.159	
14,050.00	10,720.00	14,032.25	10,720.00	50.06	63.90	90.01	-3,491.46	-790.87	1,148.06	1,034.65	113.42	10.123	
14,100.00	10,720.00	14,082.00	10,720.00	50.39	64.47	90.01	-3,541.21	-790.55	1,153.09	1,038.77	114.32	10.087	
14,150.00	10,720.00	14,131.75	10,720.00	50.72	65.05	90.01	-3,590.96	-790.22	1,158.12	1,042.89	115.23	10.050	
14,200.00	10,720.00	14,181.49	10,720.00	51.05	65.63	90.01	-3,640.70	-789.89	1,163.15	1,047.00	116.15	10.014	
14,250.00	10,720.00	14,231.24	10,720.00	51.39	66.22	90.01	-3,690.45	-789.56	1,168.18	1,051.10	117.08	9.978	
14,300.00	10,720.00	14,280.99	10,720.00	51.72	66.81	90.01	-3,740.19	-789.24	1,173.20	1,055.20	118.00	9.942	
14,350.00	10,720.00	14,330.73	10,720.00	52.07	67.40	90.01	-3,789.94	-788.91	1,178.23	1,059.29	118.94	9.906	
14,400.00	10,720.00	14,380.48	10,720.00	52.41	67.99	90.01	-3,839.68	-788.58	1,183.26	1,063.38	119.88	9.871	
14,450.00	10,720.00	14,430.23	10,720.00	52.76	68.59	90.01	-3,889.43	-788.25	1,188.29	1,067.47	120.82	9.835	
14,500.00	10,720.00	14,479.97	10,720.00	53.10	69.18	90.01	-3,939.17	-787.93	1,193.32	1,071.54	121.77	9.800	
14,550.00	10,720.00	14,529.72	10,720.00	53.46	69.79	90.01	-3,988.92	-787.60	1,198.35	1,075.62	122.73	9.764	
14,600.00	10,720.00	14,579.47	10,720.00	53.81	70.39	90.01	-4,038.66	-787.27	1,203.38	1,079.69	123.69	9.729	
14,650.00	10,720.00	14,629.21	10,720.00	54.17	70.99	90.01	-4,088.41	-786.95	1,208.40	1,083.75	124.66	9.694	
14,700.00	10,720.00	14,678.96	10,720.00	54.53	71.60	90.01	-4,138.16	-786.62	1,213.43	1,087.81	125.62	9.659	
14,750.00	10,720.00	14,728.70	10,720.00	54.89	72.21	90.01	-4,187.90	-786.29	1,218.46	1,091.86	126.60	9.625	
14,800.00	10,720.00	14,778.45	10,720.00	55.26	72.82	90.01	-4,237.65	-785.96	1,223.49	1,095.91	127.58	9.590	
14,850.00	10,720.00	14,828.20	10,720.00	55.62	73.44	90.01	-4,287.39	-785.64	1,228.52	1,099.96	128.56	9.556	
14,900.00	10,720.00	14,877.94	10,720.00	55.99	74.05	90.01	-4,337.14	-785.31	1,233.55	1,104.00	129.55	9.522	
14,950.00	10,720.00	14,927.69	10,720.00	56.37	74.67	90.01	-4,386.88	-784.98	1,238.57	1,108.03	130.54	9.488	
15,000.00	10,720.00	14,977.44	10,720.00	56.74	75.29	90.01	-4,436.63	-784.65	1,243.60	1,112.07	131.54	9.454	
15,050.00	10,720.00	15,027.18	10,720.00	57.12	75.91	90.01	-4,486.37	-784.33	1,248.63	1,116.09	132.54	9.421	
15,100.00	10,720.00	15,076.93	10,720.00	57.49	76.53	90.01	-4,536.12	-784.00	1,253.66	1,120.12	133.54	9.388	
15,150.00	10,720.00	15,126.68	10,720.00	57.88	77.16	90.01	-4,585.86	-783.67	1,258.69	1,124.14	134.55	9.355	
15,200.00	10,720.00	15,176.42	10,720.00	58.26	77.79	90.01	-4,635.61	-783.34	1,263.72	1,128.16	135.56	9.322	
15,250.00	10,720.00	15,226.17	10,720.00	58.64	78.41	90.01	-4,685.36	-783.02	1,268.74	1,132.17	136.57	9.290	
15,300.00	10,720.00	15,275.92	10,720.00	59.03	79.05	90.01	-4,735.10	-782.69	1,273.77	1,136.18	137.59	9.258	
15,350.00	10,720.00	15,325.66	10,720.00	59.42	79.68	90.01	-4,784.85	-782.36	1,278.80	1,140.19	138.61	9.226	
15,400.00	10,720.00	15,375.41	10,720.00	59.81	80.31	90.01	-4,834.59	-782.03	1,283.83	1,144.19	139.64	9.194	
15,450.00	10,720.00	15,425.16	10,720.00	60.20	80.95	90.01	-4,884.34	-781.71	1,288.86	1,148.19	140.67	9.162	
15,500.00	10,720.00	15,474.90	10,720.00	60.60	81.58	90.01	-4,934.08	-781.38	1,293.89	1,152.19	141.70	9.131	
15,550.00	10,720.00	15,524.65	10,720.00	60.99	82.22	90.01	-4,983.83	-781.05	1,298.92	1,156.18	142.74	9.100	
15,600.00	10,720.00	15,574.40	10,720.00	61.39	82.86	90.01	-5,033.57	-780.72	1,303.94	1,160.17	143.77	9.069	
15,650.00	10,720.00	15,624.14	10,720.00	61.79	83.50	90.01	-5,083.32	-780.40	1,308.97	1,164.16	144.82	9.039	
15,700.00	10,720.00	15,673.89	10,720.00	62.19	84.14	90.01	-5,133.06	-780.07	1,314.00	1,168.14	145.86	9.009	
15,750.00	10,720.00	15,723.64	10,720.00	62.59	84.79	90.01	-5,182.81	-779.74	1,319.03	1,172.12	146.91	8.979	
15,756.93	10,720.00	15,730.53	10,720.00	62.65	84.87	90.01	-5,189.71	-779.70	1,319.73	1,172.67	147.05	8.975	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Sand 18 Fed 1 SWD - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 ft

Survey Program: 10-INC-ONLY — **Offset Well Error:** 10.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,000.00	10,715.71	10,751.61	10,751.61	38.00	161.09	-39.30	-1,933.40	514.24	1,453.29	1,254.49	198.79	7.310	
11,050.00	10,719.64	10,755.54	10,755.54	38.07	161.15	-71.24	-1,933.40	514.24	1,403.71	1,204.88	198.86	7.059	
11,100.00	10,720.00	10,755.90	10,755.90	38.13	161.16	-90.00	-1,933.40	514.24	1,353.99	1,155.13	198.87	6.809	
11,150.00	10,720.00	10,755.90	10,755.90	38.20	161.16	-90.00	-1,933.40	514.24	1,304.29	1,105.42	198.87	6.559	
11,200.00	10,720.00	10,755.90	10,755.90	38.28	161.16	-90.00	-1,933.40	514.24	1,254.61	1,055.74	198.87	6.309	
11,250.00	10,720.00	10,755.90	10,755.90	38.36	161.16	-90.00	-1,933.40	514.24	1,204.96	1,006.09	198.87	6.059	
11,300.00	10,720.00	10,755.90	10,755.90	38.44	161.16	-90.00	-1,933.40	514.24	1,155.36	956.48	198.87	5.810	
11,350.00	10,720.00	10,755.90	10,755.90	38.54	161.16	-90.00	-1,933.40	514.24	1,105.91	907.03	198.87	5.561	
11,400.00	10,720.00	10,755.90	10,755.90	38.63	161.16	-90.00	-1,933.40	514.24	1,056.65	857.78	198.87	5.313	
11,450.00	10,720.00	10,755.90	10,755.90	38.74	161.16	-90.00	-1,933.40	514.24	1,007.64	808.77	198.88	5.067	
11,500.00	10,720.00	10,755.90	10,755.90	38.84	161.16	-90.00	-1,933.40	514.24	958.93	760.05	198.88	4.822	Alert
11,550.00	10,720.00	10,755.90	10,755.90	38.95	161.16	-90.00	-1,933.40	514.24	910.57	711.69	198.88	4.578	Alert
11,600.00	10,720.00	10,755.90	10,755.90	39.06	161.16	-90.00	-1,933.40	514.24	862.66	663.77	198.89	4.337	Alert
11,650.00	10,720.00	10,755.90	10,755.90	39.18	161.16	-90.00	-1,933.40	514.24	815.27	616.37	198.89	4.099	Alert
11,700.00	10,720.00	10,755.90	10,755.90	39.31	161.16	-90.00	-1,933.40	514.24	768.52	569.61	198.91	3.864	Alert
11,750.00	10,720.00	10,755.90	10,755.90	39.44	161.16	-90.00	-1,933.40	514.24	722.55	523.62	198.93	3.632	Alert
11,800.00	10,720.00	10,755.90	10,755.90	39.57	161.16	-90.00	-1,933.40	514.24	677.54	478.59	198.96	3.406	Alert
11,850.00	10,720.00	10,755.90	10,755.90	39.70	161.16	-90.00	-1,933.40	514.24	633.71	434.71	199.00	3.184	Alert
11,900.00	10,720.00	10,755.90	10,755.90	39.84	161.16	-90.00	-1,933.40	514.24	591.24	392.17	199.06	2.970	Alert
11,950.00	10,720.00	10,755.90	10,755.90	39.99	161.16	-90.00	-1,933.40	514.24	550.07	350.91	199.16	2.762	Alert
12,000.00	10,720.00	10,755.90	10,755.90	40.14	161.16	-90.00	-1,933.40	514.24	510.48	311.19	199.29	2.561	Alert
12,050.00	10,720.00	10,755.90	10,755.90	40.30	161.16	-90.00	-1,933.40	514.24	472.87	273.39	199.47	2.371	Minor Risk
12,100.00	10,720.00	10,755.90	10,755.90	40.46	161.16	-90.00	-1,933.40	514.24	437.74	238.03	199.72	2.192	Minor Risk
12,150.00	10,720.00	10,755.90	10,755.90	40.63	161.16	-90.00	-1,933.40	514.24	405.75	205.71	200.04	2.028	Minor Risk
12,200.00	10,720.00	10,755.90	10,755.90	40.80	161.16	-90.00	-1,933.40	514.24	377.51	177.06	200.45	1.883	Minor Risk
12,250.00	10,720.00	10,755.90	10,755.90	40.98	161.16	-90.00	-1,933.40	514.24	353.19	152.26	200.94	1.758	Minor Risk
12,300.00	10,720.00	10,755.90	10,755.90	41.17	161.16	-90.00	-1,933.40	514.24	333.60	132.11	201.49	1.656	Minor Risk
12,350.00	10,720.00	10,755.90	10,755.90	41.36	161.16	-90.00	-1,933.40	514.24	319.60	117.55	202.04	1.582	Minor Risk
12,400.00	10,720.00	10,755.90	10,755.90	41.55	161.16	-90.00	-1,933.40	514.24	311.95	109.42	202.53	1.540	Minor Risk
12,430.83	10,720.00	10,755.90	10,755.90	41.67	161.16	-90.00	-1,933.40	514.24	310.63	107.86	202.78	1.532	Minor Risk, CC, ES, SF
12,450.00	10,720.00	10,755.90	10,755.90	41.75	161.16	-90.00	-1,933.40	514.24	311.15	108.25	202.89	1.534	Minor Risk
12,500.00	10,720.00	10,755.90	10,755.90	41.95	161.16	-90.00	-1,933.40	514.24	317.22	114.16	203.06	1.562	Minor Risk
12,550.00	10,720.00	10,755.90	10,755.90	42.16	161.16	-90.00	-1,933.40	514.24	329.80	126.75	203.05	1.624	Minor Risk
12,600.00	10,720.00	10,755.90	10,755.90	42.37	161.16	-90.00	-1,933.40	514.24	348.17	145.28	202.89	1.716	Minor Risk
12,650.00	10,720.00	10,755.90	10,755.90	42.58	161.16	-90.00	-1,933.40	514.24	371.47	168.83	202.64	1.833	Minor Risk
12,700.00	10,720.00	10,755.90	10,755.90	42.80	161.16	-90.00	-1,933.40	514.24	398.82	196.48	202.34	1.971	Minor Risk
12,750.00	10,720.00	10,755.90	10,755.90	43.02	161.16	-90.00	-1,933.40	514.24	429.44	227.41	202.03	2.126	Minor Risk
12,800.00	10,720.00	10,755.90	10,755.90	43.25	161.16	-90.00	-1,933.40	514.24	462.66	260.93	201.73	2.293	Minor Risk
12,850.00	10,720.00	10,755.90	10,755.90	43.47	161.16	-90.00	-1,933.40	514.24	497.96	296.50	201.46	2.472	Minor Risk
12,900.00	10,720.00	10,755.90	10,755.90	43.70	161.16	-90.00	-1,933.40	514.24	534.90	333.69	201.21	2.658	Alert
12,950.00	10,720.00	10,755.90	10,755.90	43.94	161.16	-90.00	-1,933.40	514.24	573.15	372.16	200.99	2.852	Alert
13,000.00	10,720.00	10,755.90	10,755.90	44.17	161.16	-90.00	-1,933.40	514.24	612.46	411.66	200.80	3.050	Alert
13,050.00	10,720.00	10,755.90	10,755.90	44.41	161.16	-90.00	-1,933.40	514.24	652.61	451.98	200.63	3.253	Alert
13,100.00	10,720.00	10,755.90	10,755.90	44.66	161.16	-90.00	-1,933.40	514.24	693.43	492.95	200.48	3.459	Alert
13,150.00	10,720.00	10,755.90	10,755.90	44.90	161.16	-90.00	-1,933.40	514.24	734.81	534.46	200.35	3.668	Alert
13,200.00	10,720.00	10,755.90	10,755.90	45.15	161.16	-90.00	-1,933.40	514.24	776.63	576.39	200.24	3.878	Alert
13,250.00	10,720.00	10,755.90	10,755.90	45.40	161.16	-90.00	-1,933.40	514.24	818.80	618.66	200.15	4.091	Alert
13,300.00	10,720.00	10,755.90	10,755.90	45.66	161.16	-90.00	-1,933.40	514.24	861.26	661.20	200.06	4.305	Alert
13,350.00	10,720.00	10,755.90	10,755.90	45.92	161.16	-90.00	-1,933.40	514.24	903.95	703.95	199.99	4.520	Alert
13,400.00	10,720.00	10,755.90	10,755.90	46.18	161.16	-90.00	-1,933.40	514.24	946.81	746.88	199.93	4.736	Alert
13,450.00	10,720.00	10,755.90	10,755.90	46.45	161.16	-90.00	-1,933.40	514.24	990.13	790.25	199.88	4.954	Alert
13,500.00	10,720.00	10,755.90	10,755.90	46.72	161.16	-90.00	-1,933.40	514.24	1,034.45	834.61	199.84	5.176	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Sand 18 Fed 1 SWD - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 ft

Survey Program: 10-INC-ONLY — **Offset Well Error:** 10.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,550.00	10,720.00	10,755.90	10,755.90	47.01	161.16	-90.00	-1,933.40	514.24	1,079.63	879.82	199.81	5.403	
13,600.00	10,720.00	10,755.90	10,755.90	47.29	161.16	-90.00	-1,933.40	514.24	1,125.56	925.77	199.79	5.634	
13,650.00	10,720.00	10,755.90	10,755.90	47.58	161.16	-90.00	-1,933.40	514.24	1,172.15	972.37	199.77	5.867	
13,700.00	10,720.00	10,755.90	10,755.90	47.88	161.16	-90.00	-1,933.40	514.24	1,219.29	1,019.53	199.77	6.104	
13,750.00	10,720.00	10,755.90	10,755.90	48.18	161.16	-90.00	-1,933.40	514.24	1,266.93	1,067.17	199.76	6.342	
13,800.00	10,720.00	10,755.90	10,755.90	48.48	161.16	-90.00	-1,933.40	514.24	1,314.98	1,115.22	199.76	6.583	
13,850.00	10,720.00	10,755.90	10,755.90	48.79	161.16	-90.00	-1,933.40	514.24	1,363.39	1,163.63	199.76	6.825	
13,900.00	10,720.00	10,755.90	10,755.90	49.10	161.16	-90.00	-1,933.40	514.24	1,412.02	1,212.26	199.77	7.068	
13,950.00	10,720.00	10,755.90	10,755.90	49.42	161.16	-90.00	-1,933.40	514.24	1,460.75	1,260.98	199.77	7.312	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Tomcat 18 Fed 1 (Active) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.00 ft

Survey Program: 10-INC-ONLY

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	3.90	3.90	0.50	0.50	163.84	-608.82	176.47	633.88				
50.00	50.00	53.90	53.90	0.50	1.02	163.84	-608.82	176.47	633.88	632.36	1.52	416.923	
100.00	100.00	103.90	103.90	0.52	1.96	163.84	-608.82	176.47	633.88	631.40	2.48	255.581	
150.00	150.00	153.90	153.90	0.59	2.95	163.84	-608.82	176.47	633.88	630.34	3.54	179.012	
200.00	200.00	203.90	203.90	0.70	3.95	163.84	-608.82	176.47	633.88	629.23	4.65	136.248	
250.00	250.00	253.90	253.90	0.84	4.95	163.84	-608.82	176.47	633.88	628.09	5.79	109.441	
300.00	300.00	303.90	303.90	0.99	5.96	163.84	-608.82	176.47	633.88	626.93	6.95	91.235	
350.00	350.00	353.90	353.90	1.15	6.97	163.84	-608.82	176.47	633.88	625.77	8.11	78.128	
400.00	400.00	403.90	403.90	1.31	7.98	163.84	-608.82	176.47	633.88	624.59	9.29	68.268	
450.00	450.00	453.90	453.90	1.48	8.98	163.84	-608.82	176.47	633.88	623.42	10.46	60.594	
500.00	500.00	503.90	503.90	1.65	9.99	163.84	-608.82	176.47	633.88	622.24	11.64	54.458	
550.00	550.00	553.90	553.90	1.82	11.00	163.84	-608.82	176.47	633.88	621.06	12.82	49.442	
600.00	600.00	603.90	603.90	1.99	12.01	163.84	-608.82	176.47	633.88	619.88	14.00	45.267	
650.00	650.00	653.90	653.90	2.16	13.02	163.84	-608.82	176.47	633.88	618.69	15.19	41.739	
700.00	700.00	703.90	703.90	2.34	14.03	163.84	-608.82	176.47	633.88	617.51	16.37	38.719	
750.00	750.00	753.90	753.90	2.51	15.04	163.84	-608.82	176.47	633.88	616.32	17.56	36.105	
800.00	800.00	803.90	803.90	2.69	16.05	163.84	-608.82	176.47	633.88	615.14	18.74	33.821	
850.00	850.00	853.90	853.90	2.87	17.06	163.84	-608.82	176.47	633.88	613.95	19.93	31.808	
900.00	900.00	903.90	903.90	3.04	18.07	163.84	-608.82	176.47	633.88	612.76	21.12	30.020	
950.00	950.00	953.90	953.90	3.22	19.08	163.84	-608.82	176.47	633.88	611.58	22.30	28.422	
1,000.00	1,000.00	1,003.90	1,003.90	3.40	20.09	163.84	-608.82	176.47	633.88	610.39	23.49	26.986	
1,050.00	1,050.00	1,053.90	1,053.90	3.58	21.10	163.84	-608.82	176.47	633.88	609.20	24.68	25.687	
1,100.00	1,100.00	1,103.90	1,103.90	3.75	22.11	163.84	-608.82	176.47	633.88	608.01	25.86	24.507	
1,150.00	1,150.00	1,153.90	1,153.90	3.93	23.12	163.84	-608.82	176.47	633.88	606.83	27.05	23.431	
1,200.00	1,200.00	1,203.90	1,203.90	4.11	24.13	163.84	-608.82	176.47	633.88	605.64	28.24	22.445	
1,250.00	1,250.00	1,253.90	1,253.90	4.29	25.14	163.84	-608.82	176.47	633.88	604.45	29.43	21.539	
1,300.00	1,300.00	1,303.90	1,303.90	4.46	26.15	163.84	-608.82	176.47	633.88	603.26	30.62	20.703	
1,350.00	1,350.00	1,353.90	1,353.90	4.64	27.16	163.84	-608.82	176.47	633.88	602.07	31.81	19.930	
1,400.00	1,400.00	1,403.90	1,403.90	4.82	28.17	163.84	-608.82	176.47	633.88	600.89	32.99	19.212	
1,450.00	1,450.00	1,453.90	1,453.90	5.00	29.18	163.84	-608.82	176.47	633.88	599.70	34.18	18.544	
1,500.00	1,500.00	1,503.90	1,503.90	5.18	30.19	163.84	-608.82	176.47	633.88	598.51	35.37	17.921	
1,550.00	1,550.00	1,553.90	1,553.90	5.36	31.20	163.84	-608.82	176.47	633.88	597.32	36.56	17.338	
1,600.00	1,600.00	1,603.90	1,603.90	5.53	32.22	163.84	-608.82	176.47	633.88	596.13	37.75	16.792	
1,650.00	1,650.00	1,653.90	1,653.90	5.71	33.23	163.84	-608.82	176.47	633.88	594.94	38.94	16.279	
1,700.00	1,700.00	1,703.90	1,703.90	5.89	34.24	163.84	-608.82	176.47	633.88	593.75	40.13	15.797	
1,750.00	1,750.00	1,753.90	1,753.90	6.07	35.25	163.84	-608.82	176.47	633.88	592.56	41.32	15.342	
1,800.00	1,800.00	1,803.90	1,803.90	6.25	36.26	163.84	-608.82	176.47	633.88	591.37	42.50	14.913	
1,850.00	1,850.00	1,853.90	1,853.90	6.43	37.27	163.84	-608.82	176.47	633.88	590.19	43.69	14.507	
1,900.00	1,900.00	1,903.90	1,903.90	6.61	38.28	163.84	-608.82	176.47	633.88	589.00	44.88	14.123	
1,950.00	1,950.00	1,953.90	1,953.90	6.78	39.29	163.84	-608.82	176.47	633.88	587.81	46.07	13.758	
2,000.00	2,000.00	2,003.90	2,003.90	6.96	40.30	163.84	-608.82	176.47	633.88	586.62	47.26	13.412	
2,050.00	2,050.00	2,053.90	2,053.90	7.14	41.31	163.84	-608.82	176.47	633.88	585.43	48.45	13.083	
2,100.00	2,100.00	2,103.90	2,103.90	7.32	42.32	163.84	-608.82	176.47	633.88	584.24	49.64	12.770	
2,150.00	2,150.00	2,153.90	2,153.90	7.50	43.33	163.84	-608.82	176.47	633.88	583.05	50.83	12.471	
2,200.00	2,200.00	2,203.90	2,203.90	7.68	44.34	163.84	-608.82	176.47	633.88	581.86	52.02	12.186	
2,250.00	2,250.00	2,253.90	2,253.90	7.86	45.35	163.84	-608.82	176.47	633.88	580.67	53.21	11.913	
2,300.00	2,300.00	2,303.90	2,303.90	8.04	46.36	163.84	-608.82	176.47	633.88	579.48	54.40	11.653	
2,350.00	2,350.00	2,353.90	2,353.90	8.22	47.37	163.84	-608.82	176.47	633.88	578.29	55.59	11.404	
2,400.00	2,400.00	2,403.90	2,403.90	8.39	48.38	163.84	-608.82	176.47	633.88	577.10	56.78	11.165	
2,450.00	2,450.00	2,453.90	2,453.90	8.57	49.39	163.84	-608.82	176.47	633.88	575.92	57.96	10.936	
2,500.00	2,500.00	2,503.90	2,503.90	8.75	50.40	163.84	-608.82	176.47	633.88	574.73	59.15	10.716	
2,550.00	2,550.00	2,553.90	2,553.90	8.93	51.41	163.84	-608.82	176.47	633.88	573.54	60.34	10.505	

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Tomcat 18 Fed 1 (Active) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.00 ft

Survey Program: 10-INC-ONLY

Offset Well Error: 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,600.00	2,600.00	2,603.90	2,603.90	9.11	52.42	163.84	-608.82	176.47	633.88	572.35	61.53	10.302	
2,650.00	2,650.00	2,653.90	2,653.90	9.29	53.43	163.84	-608.82	176.47	633.88	571.16	62.72	10.106	
2,700.00	2,700.00	2,703.90	2,703.90	9.47	54.44	163.84	-608.82	176.47	633.88	569.97	63.91	9.918	
2,750.00	2,750.00	2,753.90	2,753.90	9.65	55.45	163.84	-608.82	176.47	633.88	568.78	65.10	9.737	
2,800.00	2,800.00	2,803.90	2,803.90	9.83	56.46	163.84	-608.82	176.47	633.88	567.59	66.29	9.562	
2,850.00	2,850.00	2,853.90	2,853.90	10.00	57.47	163.84	-608.82	176.47	633.88	566.40	67.48	9.394	
2,900.00	2,900.00	2,903.90	2,903.90	10.18	58.49	163.84	-608.82	176.47	633.88	565.21	68.67	9.231	
2,950.00	2,950.00	2,953.90	2,953.90	10.36	59.50	163.84	-608.82	176.47	633.88	564.02	69.86	9.074	
3,000.00	3,000.00	3,003.90	3,003.90	10.54	60.51	163.84	-608.82	176.47	633.88	562.83	71.05	8.922	
3,050.00	3,050.00	3,053.90	3,053.90	10.72	61.52	163.84	-608.82	176.47	633.88	561.64	72.24	8.775	
3,100.00	3,100.00	3,103.90	3,103.90	10.90	62.53	163.84	-608.82	176.47	633.88	560.45	73.43	8.633	
3,150.00	3,150.00	3,153.90	3,153.90	11.08	63.54	163.84	-608.82	176.47	633.88	559.26	74.62	8.495	
3,200.00	3,200.00	3,203.90	3,203.90	11.26	64.55	163.84	-608.82	176.47	633.88	558.07	75.81	8.362	
3,250.00	3,250.00	3,253.90	3,253.90	11.44	65.56	163.84	-608.82	176.47	633.88	556.88	77.00	8.233	
3,300.00	3,300.00	3,303.90	3,303.90	11.62	66.57	163.84	-608.82	176.47	633.88	555.69	78.18	8.107	
3,350.00	3,350.00	3,353.90	3,353.90	11.80	67.58	163.84	-608.82	176.47	633.88	554.51	79.37	7.986	
3,400.00	3,400.00	3,403.90	3,403.90	11.97	68.59	163.84	-608.82	176.47	633.88	553.32	80.56	7.868	
3,450.00	3,450.00	3,453.90	3,453.90	12.15	69.60	163.84	-608.82	176.47	633.88	552.13	81.75	7.754	
3,500.00	3,500.00	3,503.90	3,503.90	12.33	70.61	163.84	-608.82	176.47	633.88	550.94	82.94	7.642	
3,550.00	3,550.00	3,553.90	3,553.90	12.51	71.62	163.84	-608.82	176.47	633.88	549.75	84.13	7.534	
3,600.00	3,600.00	3,603.90	3,603.90	12.69	72.63	163.84	-608.82	176.47	633.88	548.56	85.32	7.429	
3,650.00	3,650.00	3,653.90	3,653.90	12.87	73.64	163.84	-608.82	176.47	633.88	547.37	86.51	7.327	
3,700.00	3,700.00	3,703.90	3,703.90	13.05	74.65	163.84	-608.82	176.47	633.88	546.18	87.70	7.228	
3,750.00	3,750.00	3,753.90	3,753.90	13.23	75.66	163.84	-608.82	176.47	633.88	544.99	88.89	7.131	
3,800.00	3,800.00	3,803.90	3,803.90	13.41	76.67	163.84	-608.82	176.47	633.88	543.80	90.08	7.037	
3,850.00	3,850.00	3,853.90	3,853.90	13.59	77.68	163.84	-608.82	176.47	633.88	542.61	91.27	6.945	
3,900.00	3,900.00	3,903.90	3,903.90	13.77	78.69	163.84	-608.82	176.47	633.88	541.42	92.46	6.856	
3,950.00	3,950.00	3,953.90	3,953.90	13.94	79.70	163.84	-608.82	176.47	633.88	540.23	93.65	6.769	
4,000.00	4,000.00	4,003.90	4,003.90	14.12	80.71	163.84	-608.82	176.47	633.88	539.04	94.84	6.684	
4,050.00	4,050.00	4,053.90	4,053.90	14.30	81.72	76.24	-608.82	176.47	633.81	537.79	96.02	6.601	
4,100.00	4,099.99	4,103.89	4,103.89	14.47	82.74	76.31	-608.82	176.47	633.62	536.41	97.21	6.518	
4,150.00	4,149.97	4,153.87	4,153.87	14.64	83.75	76.43	-608.82	176.47	633.30	534.91	98.39	6.437	
4,200.00	4,199.94	4,203.84	4,203.84	14.82	84.76	76.61	-608.82	176.47	632.85	533.28	99.57	6.356	
4,250.00	4,249.88	4,253.78	4,253.78	14.99	85.76	76.83	-608.82	176.47	632.29	531.54	100.75	6.276	
4,300.00	4,299.79	4,303.69	4,303.69	15.16	86.77	77.10	-608.82	176.47	631.61	529.68	101.93	6.196	
4,350.00	4,349.66	4,353.56	4,353.56	15.33	87.78	77.43	-608.82	176.47	630.83	527.72	103.11	6.118	
4,400.00	4,399.49	4,403.39	4,403.39	15.50	88.79	77.80	-608.82	176.47	629.95	525.66	104.29	6.040	
4,450.00	4,449.28	4,453.18	4,453.18	15.68	89.79	78.21	-608.82	176.47	628.99	523.53	105.47	5.964	
4,500.00	4,499.06	4,502.96	4,502.96	15.85	90.80	78.63	-608.82	176.47	628.05	521.41	106.65	5.889	
4,550.00	4,548.85	4,552.75	4,552.75	16.02	91.81	79.04	-608.82	176.47	627.15	519.32	107.83	5.816	
4,600.00	4,598.63	4,602.53	4,602.53	16.20	92.81	79.46	-608.82	176.47	626.27	517.27	109.01	5.745	
4,650.00	4,648.41	4,652.31	4,652.31	16.37	93.82	79.88	-608.82	176.47	625.43	515.25	110.19	5.676	
4,700.00	4,698.19	4,702.09	4,702.09	16.54	94.82	80.30	-608.82	176.47	624.63	513.26	111.37	5.609	
4,750.00	4,747.97	4,751.87	4,751.87	16.72	95.83	80.72	-608.82	176.47	623.85	511.31	112.55	5.543	
4,800.00	4,797.76	4,801.66	4,801.66	16.89	96.84	81.14	-608.82	176.47	623.11	509.39	113.73	5.479	
4,850.00	4,847.54	4,851.44	4,851.44	17.07	97.84	81.56	-608.82	176.47	622.41	507.50	114.91	5.417	
4,900.00	4,897.32	4,901.22	4,901.22	17.24	98.85	81.98	-608.82	176.47	621.74	505.65	116.09	5.356	
4,950.00	4,947.10	4,951.00	4,951.00	17.42	99.85	82.41	-608.82	176.47	621.10	503.84	117.27	5.296	
5,000.00	4,996.88	5,000.78	5,000.78	17.59	100.86	82.83	-608.82	176.47	620.50	502.05	118.45	5.239	
5,050.00	5,046.67	5,050.57	5,050.57	17.77	101.87	83.26	-608.82	176.47	619.93	500.30	119.63	5.182	
5,100.00	5,096.45	5,100.35	5,100.35	17.94	102.87	83.69	-608.82	176.47	619.40	498.59	120.81	5.127	
5,150.00	5,146.23	5,150.13	5,150.13	18.12	103.88	84.11	-608.82	176.47	618.90	496.91	121.99	5.073	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Tomcat 18 Fed 1 (Active) - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 ft

Survey Program: 10-INC-ONLY — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.00	5,196.01	5,199.91	5,199.91	18.29	104.88	84.54	-608.82	176.47	618.44	495.27	123.18	5.021	
5,250.00	5,245.79	5,249.69	5,249.69	18.47	105.89	84.97	-608.82	176.47	618.01	493.66	124.36	4.970	Alert
5,300.00	5,295.57	5,299.47	5,299.47	18.64	106.90	85.40	-608.82	176.47	617.62	492.08	125.54	4.920	Alert
5,350.00	5,345.36	5,349.26	5,349.26	18.82	107.90	85.83	-608.82	176.47	617.26	490.54	126.72	4.871	Alert
5,400.00	5,395.14	5,399.04	5,399.04	19.00	108.91	86.26	-608.82	176.47	616.94	489.03	127.90	4.823	Alert
5,450.00	5,444.92	5,448.82	5,448.82	19.17	109.91	86.69	-608.82	176.47	616.65	487.56	129.09	4.777	Alert
5,500.00	5,494.70	5,498.60	5,498.60	19.35	110.92	87.12	-608.82	176.47	616.40	486.13	130.27	4.732	Alert
5,550.00	5,544.48	5,548.38	5,548.38	19.53	111.93	87.55	-608.82	176.47	616.18	484.73	131.45	4.687	Alert
5,600.00	5,594.27	5,598.17	5,598.17	19.70	112.93	87.98	-608.82	176.47	616.00	483.36	132.63	4.644	Alert
5,650.00	5,644.05	5,647.95	5,647.95	19.88	113.94	88.42	-608.82	176.47	615.85	482.03	133.82	4.602	Alert
5,700.00	5,693.83	5,697.73	5,697.73	20.06	114.94	88.85	-608.82	176.47	615.74	480.74	135.00	4.561	Alert
5,750.00	5,743.61	5,747.51	5,747.51	20.24	115.95	89.28	-608.82	176.47	615.66	479.48	136.18	4.521	Alert
5,800.00	5,793.39	5,797.29	5,797.29	20.41	116.96	89.71	-608.82	176.47	615.62	478.25	137.37	4.482	Alert
5,833.17	5,826.41	5,830.31	5,830.31	20.53	117.62	90.00	-608.82	176.47	615.61	477.46	138.15	4.456	Alert, CC
5,850.00	5,843.18	5,847.08	5,847.08	20.59	117.96	90.15	-608.82	176.47	615.62	477.06	138.55	4.443	Alert
5,900.00	5,892.96	5,896.86	5,896.86	20.77	118.97	90.58	-608.82	176.47	615.64	475.91	139.73	4.406	Alert
5,950.00	5,942.74	5,946.64	5,946.64	20.94	119.97	91.01	-608.82	176.47	615.71	474.79	140.92	4.369	Alert
6,000.00	5,992.52	5,996.42	5,996.42	21.12	120.98	91.44	-608.82	176.47	615.81	473.71	142.10	4.334	Alert
6,050.00	6,042.30	6,046.20	6,046.20	21.30	121.99	91.87	-608.82	176.47	615.95	472.66	143.29	4.299	Alert
6,100.00	6,092.08	6,095.98	6,095.98	21.48	122.99	92.31	-608.82	176.47	616.12	471.65	144.47	4.265	Alert
6,150.00	6,141.87	6,145.77	6,145.77	21.66	124.00	92.74	-608.82	176.47	616.32	470.67	145.65	4.231	Alert
6,200.00	6,191.65	6,195.55	6,195.55	21.83	125.01	93.17	-608.82	176.47	616.56	469.73	146.84	4.199	Alert
6,250.00	6,241.43	6,245.33	6,245.33	22.01	126.01	93.60	-608.82	176.47	616.84	468.82	148.02	4.167	Alert
6,300.00	6,291.21	6,295.11	6,295.11	22.19	127.02	94.03	-608.82	176.47	617.15	467.94	149.21	4.136	Alert
6,350.00	6,340.99	6,344.89	6,344.89	22.37	128.02	94.46	-608.82	176.47	617.50	467.11	150.39	4.106	Alert
6,400.00	6,390.78	6,394.68	6,394.68	22.55	129.03	94.89	-608.82	176.47	617.88	466.30	151.58	4.076	Alert
6,450.00	6,440.56	6,444.46	6,444.46	22.73	130.04	95.32	-608.82	176.47	618.30	465.54	152.76	4.047	Alert
6,500.00	6,490.34	6,494.24	6,494.24	22.91	131.04	95.75	-608.82	176.47	618.75	464.80	153.95	4.019	Alert
6,550.00	6,540.12	6,544.02	6,544.02	23.08	132.05	96.17	-608.82	176.47	619.24	464.10	155.13	3.992	Alert
6,600.00	6,589.90	6,593.80	6,593.80	23.26	133.05	96.60	-608.82	176.47	619.76	463.44	156.32	3.965	Alert
6,650.00	6,639.69	6,643.59	6,643.59	23.44	134.06	97.03	-608.82	176.47	620.31	462.81	157.50	3.938	Alert
6,700.00	6,689.47	6,693.37	6,693.37	23.62	135.07	97.45	-608.82	176.47	620.90	462.22	158.69	3.913	Alert
6,750.00	6,739.25	6,743.15	6,743.15	23.80	136.07	97.88	-608.82	176.47	621.53	461.66	159.87	3.888	Alert
6,800.00	6,789.03	6,792.93	6,792.93	23.98	137.08	98.30	-608.82	176.47	622.19	461.13	161.06	3.863	Alert
6,850.00	6,838.81	6,842.71	6,842.71	24.16	138.08	98.72	-608.82	176.47	622.88	460.64	162.24	3.839	Alert
6,900.00	6,888.59	6,892.49	6,892.49	24.34	139.09	99.15	-608.82	176.47	623.61	460.18	163.43	3.816	Alert
6,950.00	6,938.38	6,942.28	6,942.28	24.52	140.10	99.57	-608.82	176.47	624.37	459.76	164.61	3.793	Alert
7,000.00	6,988.16	6,992.06	6,992.06	24.70	141.10	99.99	-608.82	176.47	625.17	459.37	165.80	3.771	Alert
7,050.00	7,037.94	7,041.84	7,041.84	24.88	142.11	100.40	-608.82	176.47	626.00	459.01	166.98	3.749	Alert
7,100.00	7,087.72	7,091.62	7,091.62	25.05	143.11	100.82	-608.82	176.47	626.86	458.69	168.17	3.728	Alert
7,150.00	7,137.50	7,141.40	7,141.40	25.23	144.12	101.24	-608.82	176.47	627.75	458.40	169.35	3.707	Alert
7,200.00	7,187.29	7,191.19	7,191.19	25.41	145.13	101.65	-608.82	176.47	628.68	458.14	170.54	3.686	Alert
7,250.00	7,237.07	7,240.97	7,240.97	25.59	146.13	102.07	-608.82	176.47	629.65	457.92	171.73	3.667	Alert
7,300.00	7,286.85	7,290.75	7,290.75	25.77	147.14	102.48	-608.82	176.47	630.64	457.73	172.91	3.647	Alert
7,350.00	7,336.63	7,340.53	7,340.53	25.95	148.14	102.89	-608.82	176.47	631.67	457.58	174.10	3.628	Alert
7,400.00	7,386.41	7,390.31	7,390.31	26.13	149.15	103.30	-608.82	176.47	632.73	457.45	175.28	3.610	Alert
7,450.00	7,436.20	7,440.10	7,440.10	26.31	150.16	103.71	-608.82	176.47	633.83	457.36	176.47	3.592	Alert
7,500.00	7,485.98	7,489.88	7,489.88	26.49	151.16	104.12	-608.82	176.47	634.95	457.30	177.65	3.574	Alert
7,550.00	7,535.76	7,539.66	7,539.66	26.67	152.17	104.52	-608.82	176.47	636.11	457.27	178.84	3.557	Alert, ES
7,600.00	7,585.54	7,589.44	7,589.44	26.85	153.17	104.93	-608.82	176.47	637.30	457.28	180.03	3.540	Alert
7,650.00	7,635.32	7,639.22	7,639.22	27.03	154.18	105.33	-608.82	176.47	638.53	457.31	181.21	3.524	Alert
7,700.00	7,685.10	7,689.00	7,689.00	27.21	155.19	105.73	-608.82	176.47	639.78	457.38	182.40	3.508	Alert

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 18-T23S-R32E - Tomcat 18 Fed 1 (Active) - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 ft

Survey Program: 10-INC-ONLY — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,750.00	7,734.89	7,738.79	7,738.79	27.39	156.19	106.13	-608.82	176.47	641.07	457.48	183.58	3.492	Alert
7,800.00	7,784.67	7,788.57	7,788.57	27.57	157.20	106.53	-608.82	176.47	642.38	457.61	184.77	3.477	Alert
7,850.00	7,834.45	7,838.35	7,838.35	27.75	158.20	106.93	-608.82	176.47	643.73	457.78	185.96	3.462	Alert
7,900.00	7,884.23	7,888.13	7,888.13	27.93	159.21	107.32	-608.82	176.47	645.11	457.97	187.14	3.447	Alert
7,950.00	7,934.01	7,937.91	7,937.91	28.11	160.22	107.72	-608.82	176.47	646.52	458.19	188.33	3.433	Alert
8,000.00	7,983.80	7,987.70	7,987.70	28.29	161.22	108.11	-608.82	176.47	647.96	458.45	189.51	3.419	Alert
8,050.00	8,033.58	8,037.48	8,037.48	28.47	162.23	108.50	-608.82	176.47	649.43	458.73	190.70	3.405	Alert
8,100.00	8,083.36	8,087.26	8,087.26	28.66	163.23	108.88	-608.82	176.47	650.93	459.05	191.89	3.392	Alert
8,150.00	8,133.14	8,137.04	8,137.04	28.84	164.24	109.27	-608.82	176.47	652.46	459.39	193.07	3.379	Alert
8,200.00	8,182.92	8,186.82	8,186.82	29.02	165.25	109.65	-608.82	176.47	654.02	459.76	194.26	3.367	Alert
8,250.00	8,232.71	8,236.61	8,236.61	29.20	166.25	110.04	-608.82	176.47	655.61	460.17	195.45	3.354	Alert
8,300.00	8,282.49	8,286.39	8,286.39	29.38	167.26	110.42	-608.82	176.47	657.23	460.60	196.63	3.342	Alert
8,350.00	8,332.27	8,336.17	8,336.17	29.56	168.26	110.80	-608.82	176.47	658.88	461.06	197.82	3.331	Alert
8,400.00	8,382.05	8,385.95	8,385.95	29.74	169.27	111.17	-608.82	176.47	660.56	461.55	199.01	3.319	Alert
8,450.00	8,431.83	8,435.73	8,435.73	29.92	170.28	111.55	-608.82	176.47	662.26	462.07	200.19	3.308	Alert
8,500.00	8,481.61	8,485.51	8,485.51	30.10	171.28	111.92	-608.82	176.47	664.00	462.62	201.38	3.297	Alert
8,550.00	8,531.40	8,535.30	8,535.30	30.28	172.29	112.29	-608.82	176.47	665.76	463.20	202.56	3.287	Alert
8,600.00	8,581.18	8,585.08	8,585.08	30.46	173.30	112.66	-608.82	176.47	667.55	463.80	203.75	3.276	Alert
8,650.00	8,630.96	8,634.86	8,634.86	30.64	174.30	113.03	-608.82	176.47	669.37	464.43	204.94	3.266	Alert
8,700.00	8,680.74	8,684.64	8,684.64	30.82	175.31	113.39	-608.82	176.47	671.21	465.09	206.12	3.256	Alert
8,750.00	8,730.52	8,734.42	8,734.42	31.01	176.31	113.76	-608.82	176.47	673.09	465.78	207.31	3.247	Alert
8,800.00	8,780.31	8,784.21	8,784.21	31.19	177.32	114.12	-608.82	176.47	674.99	466.49	208.50	3.237	Alert
8,850.00	8,830.09	8,833.99	8,833.99	31.37	178.33	114.48	-608.82	176.47	676.91	467.23	209.68	3.228	Alert
8,900.00	8,879.87	8,883.77	8,883.77	31.55	179.33	114.83	-608.82	176.47	678.87	468.00	210.87	3.219	Alert
8,950.00	8,929.65	8,933.55	8,933.55	31.73	180.34	115.19	-608.82	176.47	680.85	468.79	212.06	3.211	Alert
9,000.00	8,979.43	8,983.33	8,983.33	31.91	181.34	115.54	-608.82	176.47	682.85	469.61	213.24	3.202	Alert
9,050.00	9,029.22	9,033.12	9,033.12	32.09	182.35	115.89	-608.82	176.47	684.88	470.45	214.43	3.194	Alert
9,100.00	9,079.00	9,082.90	9,082.90	32.27	183.36	116.24	-608.82	176.47	686.94	471.32	215.62	3.186	Alert
9,150.00	9,128.78	9,132.68	9,132.68	32.45	184.36	116.59	-608.82	176.47	689.02	472.22	216.80	3.178	Alert
9,200.00	9,178.56	9,182.46	9,182.46	32.64	185.37	116.93	-608.82	176.47	691.13	473.14	217.99	3.170	Alert
9,250.00	9,228.34	9,232.24	9,232.24	32.82	186.37	117.28	-608.82	176.47	693.26	474.09	219.18	3.163	Alert
9,300.00	9,278.13	9,282.03	9,282.03	33.00	187.38	117.62	-608.82	176.47	695.42	475.06	220.36	3.156	Alert
9,350.00	9,327.91	9,331.81	9,331.81	33.18	188.39	117.95	-608.82	176.47	697.60	476.05	221.55	3.149	Alert
9,400.00	9,377.69	9,381.59	9,381.59	33.36	189.39	118.29	-608.82	176.47	699.81	477.07	222.74	3.142	Alert
9,450.00	9,427.47	9,431.37	9,431.37	33.54	190.40	118.63	-608.82	176.47	702.04	478.12	223.92	3.135	Alert
9,500.00	9,477.27	9,481.17	9,481.17	33.72	191.40	118.97	-608.82	176.47	704.21	479.10	225.11	3.128	Alert
9,550.00	9,527.12	9,531.02	9,531.02	33.90	192.41	119.26	-608.82	176.47	706.09	479.80	226.30	3.120	Alert
9,600.00	9,577.02	9,580.92	9,580.92	34.08	193.42	119.51	-608.82	176.47	707.67	480.18	227.49	3.111	Alert
9,650.00	9,626.95	9,630.85	9,630.85	34.26	194.43	119.71	-608.82	176.47	708.93	480.26	228.67	3.100	Alert
9,700.00	9,676.91	9,680.81	9,680.81	34.44	195.44	119.85	-608.82	176.47	709.87	480.01	229.86	3.088	Alert
9,750.00	9,726.90	9,730.80	9,730.80	34.62	196.45	119.95	-608.82	176.47	710.50	479.45	231.05	3.075	Alert
9,800.00	9,776.89	9,780.79	9,780.79	34.79	197.46	119.99	-608.82	176.47	710.79	478.55	232.24	3.061	Alert
9,850.00	9,826.89	9,830.79	9,830.79	34.97	198.47	-152.38	-608.82	176.47	710.82	477.40	233.42	3.045	Alert
9,900.00	9,876.89	9,880.79	9,880.79	35.14	199.48	-152.38	-608.82	176.47	710.82	476.21	234.61	3.030	Alert
9,950.00	9,926.89	9,930.79	9,930.79	35.32	200.49	-152.38	-608.82	176.47	710.82	475.02	235.79	3.015	Alert
10,000.00	9,976.89	9,980.79	9,980.79	35.49	201.50	-152.38	-608.82	176.47	710.82	473.84	236.98	3.000	Alert
10,050.00	10,026.89	10,030.79	10,030.79	35.67	202.51	-152.38	-608.82	176.47	710.82	472.65	238.16	2.985	Alert
10,100.00	10,076.89	10,080.79	10,080.79	35.84	203.52	-152.38	-608.82	176.47	710.82	471.47	239.35	2.970	Alert
10,150.00	10,126.89	10,130.79	10,130.79	36.02	204.53	-152.38	-608.82	176.47	710.82	470.28	240.53	2.955	Alert
10,200.00	10,176.88	10,180.78	10,180.78	36.19	205.54	23.67	-608.82	176.47	710.10	468.39	241.72	2.938	Alert
10,250.00	10,226.64	10,230.54	10,230.54	36.36	206.55	24.01	-608.82	176.47	705.73	462.85	242.88	2.906	Alert
10,275.37	10,251.67	10,255.57	10,255.57	36.44	207.05	24.30	-608.82	176.47	702.00	458.53	243.47	2.883	Alert, SF

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

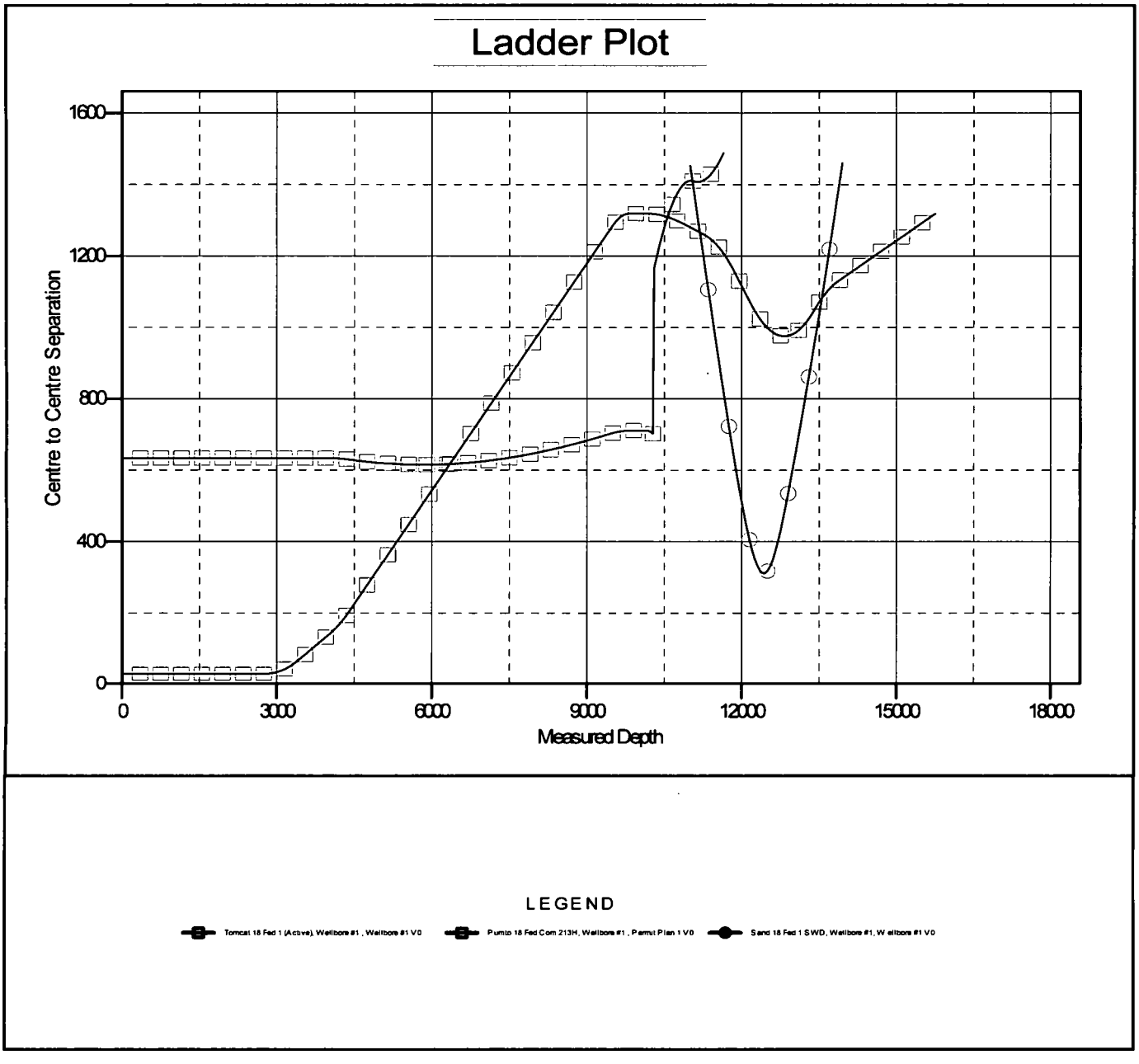
Offset Design Sec 18-T23S-R32E - Tomcat 18 Fed 1 (Active) - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 ft

Survey Program: 10-INC-ONLY — **Offset Well Error:** 0.50 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,300.00	10,275.79	9,350.00	9,345.73	36.52	188.75	18.93	-608.82	176.47	1,165.61	1,023.11	142.50	8.180	
10,350.00	10,323.95	9,350.00	9,345.73	36.67	188.75	17.63	-608.82	176.47	1,197.56	1,060.11	137.44	8.713	
10,400.00	10,370.78	9,350.00	9,345.73	36.82	188.75	16.53	-608.82	176.47	1,227.52	1,095.26	132.26	9.281	
10,450.00	10,415.90	9,350.00	9,345.73	36.96	188.75	15.60	-608.82	176.47	1,255.43	1,128.46	126.96	9.888	
10,500.00	10,458.97	9,350.00	9,345.73	37.09	188.75	14.81	-608.82	176.47	1,281.21	1,159.61	121.60	10.536	
10,550.00	10,499.67	9,350.00	9,345.73	37.20	188.75	14.14	-608.82	176.47	1,304.80	1,188.60	116.19	11.230	
10,600.00	10,537.69	9,350.00	9,345.73	37.31	188.75	13.58	-608.82	176.47	1,326.13	1,215.35	110.78	11.971	
10,650.00	10,572.73	9,350.00	9,345.73	37.40	188.75	13.10	-608.82	176.47	1,345.17	1,239.76	105.41	12.761	
10,700.00	10,604.54	9,350.00	9,345.73	37.49	188.75	12.71	-608.82	176.47	1,361.86	1,261.73	100.13	13.600	
10,750.00	10,632.86	9,350.00	9,345.73	37.56	188.75	12.38	-608.82	176.47	1,376.16	1,281.15	95.01	14.484	
10,800.00	10,657.48	9,350.00	9,345.73	37.65	188.75	12.12	-608.82	176.47	1,388.04	1,297.93	90.11	15.403	
10,850.00	10,678.22	9,350.00	9,345.73	37.74	188.75	11.92	-608.82	176.47	1,397.48	1,311.95	85.53	16.339	
10,900.00	10,694.92	9,350.00	9,345.73	37.83	188.75	11.78	-608.82	176.47	1,404.44	1,323.08	81.36	17.262	
10,950.00	10,707.45	9,350.00	9,345.73	37.92	188.75	11.69	-608.82	176.47	1,408.92	1,331.19	77.73	18.127	
11,000.00	10,715.71	9,350.00	9,345.73	38.00	188.75	11.65	-608.82	176.47	1,410.90	1,336.15	74.75	18.874	
11,050.00	10,719.64	9,350.00	9,345.73	38.07	188.75	11.66	-608.82	176.47	1,410.38	1,337.81	72.57	19.436	
11,100.00	10,720.00	9,350.00	9,345.73	38.13	188.75	11.68	-608.82	176.47	1,408.12	1,336.86	71.26	19.760	
11,148.46	10,720.00	9,350.00	9,345.73	38.20	188.75	11.68	-608.82	176.47	1,407.28	1,336.42	70.86	19.860	
11,150.00	10,720.00	9,350.00	9,345.73	38.20	188.75	11.68	-608.82	176.47	1,407.28	1,336.42	70.86	19.860	
11,200.00	10,720.00	9,350.00	9,345.73	38.28	188.75	11.68	-608.82	176.47	1,408.23	1,336.86	71.37	19.731	
11,250.00	10,720.00	9,350.00	9,345.73	38.36	188.75	11.68	-608.82	176.47	1,410.94	1,338.17	72.77	19.388	
11,300.00	10,720.00	9,350.00	9,345.73	38.44	188.75	11.73	-608.82	176.47	1,415.39	1,340.42	74.97	18.880	
11,350.00	10,720.00	9,350.00	9,345.73	38.54	188.75	11.85	-608.82	176.47	1,421.41	1,343.62	77.80	18.271	
11,400.00	10,720.00	9,350.00	9,345.73	38.63	188.75	12.00	-608.82	176.47	1,428.99	1,347.86	81.12	17.615	
11,450.00	10,720.00	9,350.00	9,345.73	38.74	188.75	12.18	-608.82	176.47	1,438.08	1,353.23	84.85	16.948	
11,500.00	10,720.00	9,350.00	9,345.73	38.84	188.75	12.39	-608.82	176.47	1,448.67	1,359.78	88.89	16.298	
11,550.00	10,720.00	9,350.00	9,345.73	38.95	188.75	12.64	-608.82	176.47	1,460.71	1,367.57	93.13	15.684	
11,600.00	10,720.00	9,350.00	9,345.73	39.06	188.75	12.91	-608.82	176.47	1,474.16	1,376.65	97.52	15.117	
11,650.00	10,720.00	9,350.00	9,345.73	39.18	188.75	13.21	-608.82	176.47	1,488.99	1,387.02	101.98	14.601	

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

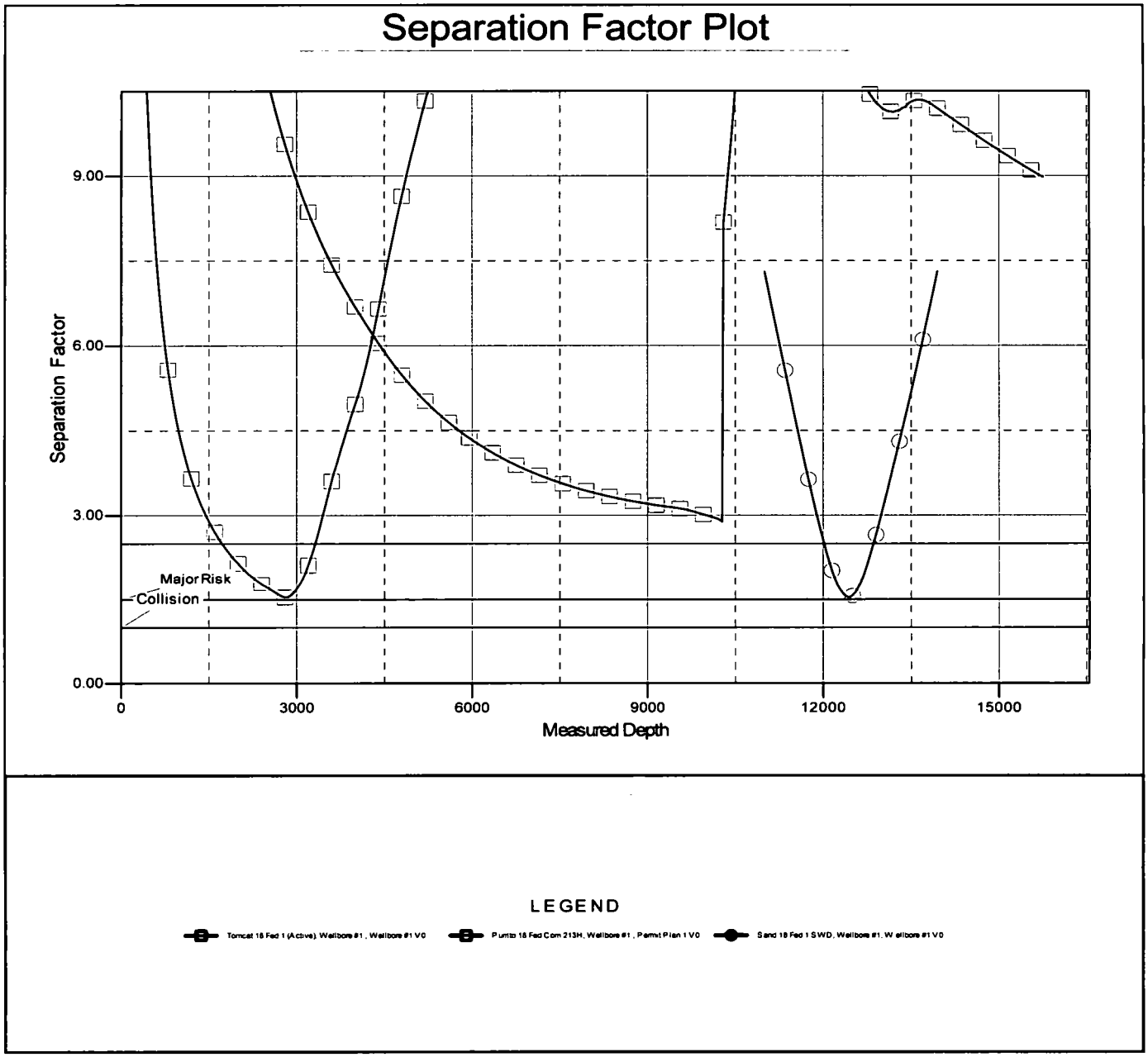
Reference Depths are relative to RKB @ 3596.10ft	Coordinates are relative to: Purrito 18 Fed Com 214H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is -104.333334	Grid Convergence at Surface is: 0.33°



CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WCDSC Permian NM	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Project:	Lea County (NAD83 New Mexico East)	**TVD Reference:**	RKB @ 3596.10ft
Reference Site:	Sec 18-T23S-R32E	**MD Reference:**	RKB @ 3596.10ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.50 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3596.10ft	Coordinates are relative to: Purrito 18 Fed Com 214H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is -104.333334	Grid Convergence at Surface is: 0.33°



WCDSC Permian NM

Lea County (NAD83 New Mexico East)
Sec 18-T23S-R32E
Purrito 18 Fed Com 214H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

01 April, 2019

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3596.10ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3596.10ft
Site:	Sec 18-T23S-R32E	**North Reference:**	Grid
Well:	Purrito 18 Fed Com 214H	**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 18-T23S-R32E				
Site Position:		**Northing:**	477,663.17 usft	**Latitude:**	32.311693
From:	Map	**Easting:**	729,904.77 usft	**Longitude:**	-103.722960
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.33 °

Well	Purrito 18 Fed Com 214H				
Well Position	**+N/-S**	0.00 ft	**Northing:**	477,640.62 usft	**Latitude:**	32.311563
	+E/-W	0.00 ft	**Easting:**	734,219.33 usft	**Longitude:**	-103.708995
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,571.10 ft

Wellbore	Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	11/1/2018	6.88	60.10	47,833.04495996

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	174.05

Plan Survey Tool Program **Date** 4/1/2019

	Depth From (ft)	**Depth To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Remarks**
1	0.00	15,756.93	Permit Plan 1 (Wellbore #1)	MWD+IFR1 OWSG MWD + IFR1	

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3596.10ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3596.10ft
Site:	Sec 18-T23S-R32E	**North Reference:**	Grid
Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

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	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,428.30	5.35	87.62	4,427.68	0.83	19.98	1.25	1.25	0.00	87.62	
9,463.19	5.35	87.62	9,440.60	20.31	489.35	0.00	0.00	0.00	0.00	
9,820.11	0.00	0.00	9,797.00	21.00	506.00	1.50	-1.50	0.00	180.00	
10,170.15	0.00	0.00	10,147.04	21.00	506.00	0.00	0.00	0.00	0.00	
11,070.15	90.00	184.00	10,720.00	-550.56	466.03	10.00	10.00	0.00	184.00	
11,269.05	90.00	184.00	10,720.00	-748.98	452.16	0.00	0.00	0.00	0.00	
11,869.05	90.00	196.00	10,720.00	-1,338.79	348.16	2.00	0.00	2.00	90.00	
12,169.05	90.00	196.00	10,720.00	-1,627.16	265.47	0.00	0.00	0.00	0.00	
13,409.05	90.00	165.00	10,720.00	-2,852.05	254.78	2.50	0.00	-2.50	-90.00	
13,759.05	90.00	172.00	10,720.00	-3,194.81	324.51	2.00	0.00	2.00	90.00	
13,851.60	90.00	173.85	10,720.00	-3,286.65	335.91	2.00	0.00	2.00	90.00	PBHL - Purrito 18 Fec
15,756.93	90.00	173.85	10,720.00	-5,181.02	540.00	0.00	0.00	0.00	0.00	PBHL - Purrito 18 Fec

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3596.10ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3596.10ft
Site:	Sec 18-T23S-R32E	**North Reference:**	Grid
Well:	Purrito 18 Fed Com 214H	**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	477,640.62	734,219.33	32.311563	-103.708995
100.00	0.00	0.00	100.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
200.00	0.00	0.00	200.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
300.00	0.00	0.00	300.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
400.00	0.00	0.00	400.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
500.00	0.00	0.00	500.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
600.00	0.00	0.00	600.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
700.00	0.00	0.00	700.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
800.00	0.00	0.00	800.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
900.00	0.00	0.00	900.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
1,000.00	0.00	0.00	1,000.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
1,100.00	0.00	0.00	1,100.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
1,200.00	0.00	0.00	1,200.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
1,300.00	0.00	0.00	1,300.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
1,400.00	0.00	0.00	1,400.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
1,500.00	0.00	0.00	1,500.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
1,600.00	0.00	0.00	1,600.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
1,700.00	0.00	0.00	1,700.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
1,800.00	0.00	0.00	1,800.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
1,900.00	0.00	0.00	1,900.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
2,000.00	0.00	0.00	2,000.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
2,100.00	0.00	0.00	2,100.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
2,200.00	0.00	0.00	2,200.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
2,300.00	0.00	0.00	2,300.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
2,400.00	0.00	0.00	2,400.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
2,500.00	0.00	0.00	2,500.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
2,600.00	0.00	0.00	2,600.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
2,700.00	0.00	0.00	2,700.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
2,800.00	0.00	0.00	2,800.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
2,900.00	0.00	0.00	2,900.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
3,000.00	0.00	0.00	3,000.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
3,100.00	0.00	0.00	3,100.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
3,200.00	0.00	0.00	3,200.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
3,300.00	0.00	0.00	3,300.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
3,400.00	0.00	0.00	3,400.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
3,500.00	0.00	0.00	3,500.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
3,600.00	0.00	0.00	3,600.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
3,700.00	0.00	0.00	3,700.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
3,800.00	0.00	0.00	3,800.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
3,900.00	0.00	0.00	3,900.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
4,000.00	0.00	0.00	4,000.00	0.00	0.00	477,640.62	734,219.33	32.311563	-103.708995
4,100.00	1.25	87.62	4,099.99	0.05	1.09	477,640.67	734,220.42	32.311563	-103.708992
4,200.00	2.50	87.62	4,199.94	0.18	4.36	477,640.80	734,223.69	32.311563	-103.708981
4,300.00	3.75	87.62	4,299.79	0.41	9.81	477,641.03	734,229.13	32.311564	-103.708963
4,400.00	5.00	87.62	4,399.49	0.72	17.43	477,641.34	734,236.75	32.311564	-103.708939
4,428.30	5.35	87.62	4,427.68	0.83	19.98	477,641.45	734,239.30	32.311565	-103.708930
4,500.00	5.35	87.62	4,499.06	1.11	26.66	477,641.73	734,245.99	32.311565	-103.708909
4,600.00	5.35	87.62	4,598.63	1.49	35.99	477,642.11	734,255.31	32.311566	-103.708879
4,700.00	5.35	87.62	4,698.19	1.88	45.31	477,642.50	734,264.63	32.311567	-103.708848
4,800.00	5.35	87.62	4,797.76	2.27	54.63	477,642.89	734,273.96	32.311568	-103.708818
4,900.00	5.35	87.62	4,897.32	2.65	63.95	477,643.27	734,283.28	32.311569	-103.708788
5,000.00	5.35	87.62	4,996.88	3.04	73.27	477,643.66	734,292.60	32.311570	-103.708758
5,100.00	5.35	87.62	5,096.45	3.43	82.60	477,644.05	734,301.92	32.311571	-103.708728
5,200.00	5.35	87.62	5,196.01	3.81	91.92	477,644.44	734,311.25	32.311572	-103.708697
5,300.00	5.35	87.62	5,295.57	4.20	101.24	477,644.82	734,320.57	32.311573	-103.708667

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3596.10ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3596.10ft
Site:	Sec 18-T23S-R32E	**North Reference:**	Grid
Well:	Purrito 18 Fed Com 214H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	5.35	87.62	5,395.14	4.59	110.56	477,645.21	734,329.89	32.311574	-103.708637
5,500.00	5.35	87.62	5,494.70	4.98	119.89	477,645.60	734,339.21	32.311575	-103.708607
5,600.00	5.35	87.62	5,594.27	5.36	129.21	477,645.98	734,348.54	32.311575	-103.708577
5,700.00	5.35	87.62	5,693.83	5.75	138.53	477,646.37	734,357.86	32.311576	-103.708547
5,800.00	5.35	87.62	5,793.39	6.14	147.85	477,646.76	734,367.18	32.311577	-103.708516
5,900.00	5.35	87.62	5,892.96	6.52	157.18	477,647.14	734,376.50	32.311578	-103.708486
6,000.00	5.35	87.62	5,992.52	6.91	166.50	477,647.53	734,385.82	32.311579	-103.708456
6,100.00	5.35	87.62	6,092.08	7.30	175.82	477,647.92	734,395.15	32.311580	-103.708426
6,200.00	5.35	87.62	6,191.65	7.68	185.14	477,648.30	734,404.47	32.311581	-103.708396
6,300.00	5.35	87.62	6,291.21	8.07	194.47	477,648.69	734,413.79	32.311582	-103.708365
6,400.00	5.35	87.62	6,390.78	8.46	203.79	477,649.08	734,423.11	32.311583	-103.708335
6,500.00	5.35	87.62	6,490.34	8.84	213.11	477,649.47	734,432.44	32.311584	-103.708305
6,600.00	5.35	87.62	6,589.90	9.23	222.43	477,649.85	734,441.76	32.311585	-103.708275
6,700.00	5.35	87.62	6,689.47	9.62	231.76	477,650.24	734,451.08	32.311585	-103.708245
6,800.00	5.35	87.62	6,789.03	10.01	241.08	477,650.63	734,460.40	32.311586	-103.708215
6,900.00	5.35	87.62	6,888.59	10.39	250.40	477,651.01	734,469.73	32.311587	-103.708184
7,000.00	5.35	87.62	6,988.16	10.78	259.72	477,651.40	734,479.05	32.311588	-103.708154
7,100.00	5.35	87.62	7,087.72	11.17	269.05	477,651.79	734,488.37	32.311589	-103.708124
7,200.00	5.35	87.62	7,187.29	11.55	278.37	477,652.17	734,497.69	32.311590	-103.708094
7,300.00	5.35	87.62	7,286.85	11.94	287.69	477,652.56	734,507.02	32.311591	-103.708064
7,400.00	5.35	87.62	7,386.41	12.33	297.01	477,652.95	734,516.34	32.311592	-103.708033
7,500.00	5.35	87.62	7,485.98	12.71	306.33	477,653.33	734,525.66	32.311593	-103.708003
7,600.00	5.35	87.62	7,585.54	13.10	315.66	477,653.72	734,534.98	32.311594	-103.707973
7,700.00	5.35	87.62	7,685.10	13.49	324.98	477,654.11	734,544.31	32.311595	-103.707943
7,800.00	5.35	87.62	7,784.67	13.87	334.30	477,654.49	734,553.63	32.311596	-103.707913
7,900.00	5.35	87.62	7,884.23	14.26	343.62	477,654.88	734,562.95	32.311596	-103.707883
8,000.00	5.35	87.62	7,983.80	14.65	352.95	477,655.27	734,572.27	32.311597	-103.707852
8,100.00	5.35	87.62	8,083.36	15.03	362.27	477,655.66	734,581.59	32.311598	-103.707822
8,200.00	5.35	87.62	8,182.92	15.42	371.59	477,656.04	734,590.92	32.311599	-103.707792
8,300.00	5.35	87.62	8,282.49	15.81	380.91	477,656.43	734,600.24	32.311600	-103.707762
8,400.00	5.35	87.62	8,382.05	16.20	390.24	477,656.82	734,609.56	32.311601	-103.707732
8,500.00	5.35	87.62	8,481.61	16.58	399.56	477,657.20	734,618.88	32.311602	-103.707701
8,600.00	5.35	87.62	8,581.18	16.97	408.88	477,657.59	734,628.21	32.311603	-103.707671
8,700.00	5.35	87.62	8,680.74	17.36	418.20	477,657.98	734,637.53	32.311604	-103.707641
8,800.00	5.35	87.62	8,780.31	17.74	427.53	477,658.36	734,646.85	32.311605	-103.707611
8,900.00	5.35	87.62	8,879.87	18.13	436.85	477,658.75	734,656.17	32.311606	-103.707581
9,000.00	5.35	87.62	8,979.43	18.52	446.17	477,659.14	734,665.50	32.311607	-103.707551
9,100.00	5.35	87.62	9,079.00	18.90	455.49	477,659.52	734,674.82	32.311607	-103.707520
9,200.00	5.35	87.62	9,178.56	19.29	464.82	477,659.91	734,684.14	32.311608	-103.707490
9,300.00	5.35	87.62	9,278.13	19.68	474.14	477,660.30	734,693.46	32.311609	-103.707460
9,400.00	5.35	87.62	9,377.69	20.06	483.46	477,660.69	734,702.79	32.311610	-103.707430
9,463.19	5.35	87.62	9,440.60	20.31	489.35	477,660.93	734,708.68	32.311611	-103.707411
9,500.00	4.80	87.62	9,477.27	20.44	492.61	477,661.06	734,711.93	32.311611	-103.707400
9,600.00	3.30	87.62	9,577.02	20.74	499.67	477,661.36	734,718.99	32.311612	-103.707377
9,700.00	1.80	87.62	9,676.91	20.92	504.11	477,661.54	734,723.44	32.311612	-103.707363
9,800.00	0.30	87.62	9,776.89	21.00	505.95	477,661.62	734,725.27	32.311612	-103.707357
9,820.11	0.00	0.00	9,797.00	21.00	506.00	477,661.62	734,725.33	32.311612	-103.707357
9,900.00	0.00	0.00	9,876.89	21.00	506.00	477,661.62	734,725.33	32.311612	-103.707357
10,000.00	0.00	0.00	9,976.89	21.00	506.00	477,661.62	734,725.33	32.311612	-103.707357
10,100.00	0.00	0.00	10,076.89	21.00	506.00	477,661.62	734,725.33	32.311612	-103.707357
10,170.15	0.00	0.00	10,147.04	21.00	506.00	477,661.62	734,725.33	32.311612	-103.707357
KOP @ 10170' MD, 50' FNL, 660' FEL									
10,200.00	2.99	184.00	10,176.88	20.22	505.95	477,660.84	734,725.27	32.311610	-103.707357
10,300.00	12.99	184.00	10,275.79	6.38	504.98	477,647.00	734,724.30	32.311572	-103.707360

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3596.10ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3596.10ft
Site:	Sec 18-T23S-R32E	**North Reference:**	Grid
Well:	Purrito 18 Fed Com 214H	**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
10,400.00	22.99	184.00	10,370.78	-24.38	502.83	477,616.24	734,722.15	32.311488	-103.707368
10,411.59	24.14	184.00	10,381.40	-29.00	502.50	477,611.62	734,721.83	32.311475	-103.707369
FTP @ 10412' MD, 100' FNL, 660' FEL									
10,500.00	32.99	184.00	10,458.97	-71.13	499.56	477,569.49	734,718.88	32.311359	-103.707379
10,600.00	42.99	184.00	10,537.69	-132.45	495.27	477,508.17	734,714.60	32.311191	-103.707395
10,700.00	52.99	184.00	10,604.54	-206.47	490.09	477,434.15	734,709.42	32.310987	-103.707413
10,800.00	62.99	184.00	10,657.48	-290.95	484.19	477,349.67	734,703.51	32.310755	-103.707433
10,900.00	72.99	184.00	10,694.92	-383.31	477.73	477,257.31	734,697.05	32.310501	-103.707456
11,000.00	82.99	184.00	10,715.71	-480.76	470.91	477,159.86	734,690.24	32.310234	-103.707480
11,070.15	90.00	184.00	10,720.00	-550.56	466.03	477,090.06	734,685.36	32.310042	-103.707497
11,100.00	90.00	184.00	10,720.00	-580.34	463.95	477,060.28	734,683.28	32.309960	-103.707504
11,200.00	90.00	184.00	10,720.00	-680.10	456.97	476,960.52	734,676.30	32.309686	-103.707529
11,269.05	90.00	184.00	10,720.00	-748.98	452.16	476,891.64	734,671.48	32.309497	-103.707546
11,300.00	90.00	184.62	10,720.00	-779.84	449.83	476,860.78	734,669.16	32.309412	-103.707554
11,400.00	90.00	186.62	10,720.00	-879.36	440.04	476,761.26	734,659.37	32.309139	-103.707587
11,500.00	90.00	188.62	10,720.00	-978.47	426.78	476,662.15	734,646.11	32.308866	-103.707632
11,600.00	90.00	190.62	10,720.00	-1,077.06	410.07	476,563.56	734,629.40	32.308596	-103.707688
11,700.00	90.00	192.62	10,720.00	-1,175.00	389.94	476,465.62	734,609.26	32.308327	-103.707755
11,800.00	90.00	194.62	10,720.00	-1,272.19	366.39	476,368.44	734,585.72	32.308060	-103.707833
11,869.05	90.00	196.00	10,720.00	-1,338.79	348.16	476,301.84	734,567.48	32.307877	-103.707893
11,900.00	90.00	196.00	10,720.00	-1,368.54	339.63	476,272.09	734,558.95	32.307796	-103.707922
12,000.00	90.00	196.00	10,720.00	-1,464.66	312.06	476,175.96	734,531.39	32.307532	-103.708013
12,100.00	90.00	196.00	10,720.00	-1,560.79	284.50	476,079.83	734,503.83	32.307268	-103.708104
12,169.05	90.00	196.00	10,720.00	-1,627.16	265.47	476,013.46	734,484.79	32.307086	-103.708167
12,200.00	90.00	195.23	10,720.00	-1,656.97	257.14	475,983.65	734,476.46	32.307004	-103.708194
12,300.00	90.00	192.73	10,720.00	-1,754.00	232.99	475,886.62	734,452.31	32.306738	-103.708274
12,400.00	90.00	190.23	10,720.00	-1,852.00	213.09	475,788.63	734,432.42	32.306469	-103.708340
12,500.00	90.00	187.73	10,720.00	-1,950.76	197.49	475,689.86	734,416.82	32.306198	-103.708393
12,600.00	90.00	185.23	10,720.00	-2,050.12	186.21	475,590.51	734,405.54	32.305925	-103.708431
12,700.00	90.00	182.73	10,720.00	-2,149.87	179.28	475,490.76	734,398.61	32.305651	-103.708455
12,800.00	90.00	180.23	10,720.00	-2,249.83	176.70	475,390.80	734,396.03	32.305376	-103.708466
12,900.00	90.00	177.73	10,720.00	-2,349.80	178.49	475,290.82	734,397.82	32.305101	-103.708462
13,000.00	90.00	175.23	10,720.00	-2,449.61	184.64	475,191.02	734,403.96	32.304827	-103.708444
13,100.00	90.00	172.73	10,720.00	-2,549.05	195.13	475,091.58	734,414.46	32.304553	-103.708412
13,200.00	90.00	170.23	10,720.00	-2,647.94	209.95	474,992.69	734,429.28	32.304281	-103.708365
13,300.00	90.00	167.73	10,720.00	-2,746.08	229.07	474,894.54	734,448.40	32.304011	-103.708305
13,400.00	90.00	165.23	10,720.00	-2,843.30	252.45	474,797.32	734,471.78	32.303743	-103.708232
13,409.05	90.00	165.00	10,720.00	-2,852.05	254.78	474,788.58	734,474.10	32.303719	-103.708224
13,500.00	90.00	166.82	10,720.00	-2,940.26	276.92	474,700.37	734,496.25	32.303476	-103.708154
13,600.00	90.00	168.82	10,720.00	-3,038.00	298.02	474,602.62	734,517.34	32.303207	-103.708088
13,700.00	90.00	170.82	10,720.00	-3,136.42	315.69	474,504.20	734,535.02	32.302937	-103.708032
13,759.05	90.00	172.00	10,720.00	-3,194.81	324.51	474,445.82	734,543.84	32.302776	-103.708005
13,800.00	90.00	172.82	10,720.00	-3,235.40	329.92	474,405.23	734,549.25	32.302664	-103.707988
13,851.60	90.00	173.85	10,720.00	-3,286.65	335.91	474,353.98	734,555.24	32.302523	-103.707970
13,900.00	90.00	173.85	10,720.00	-3,334.77	341.10	474,305.86	734,560.42	32.302391	-103.707954
14,000.00	90.00	173.85	10,720.00	-3,434.20	351.81	474,206.43	734,571.13	32.302118	-103.707921
14,100.00	90.00	173.85	10,720.00	-3,533.62	362.52	474,107.01	734,581.84	32.301844	-103.707888
14,200.00	90.00	173.85	10,720.00	-3,633.05	373.23	474,007.58	734,592.56	32.301571	-103.707856
14,300.00	90.00	173.85	10,720.00	-3,732.47	383.94	473,908.16	734,603.27	32.301297	-103.707823
14,400.00	90.00	173.85	10,720.00	-3,831.90	394.65	473,808.73	734,613.98	32.301024	-103.707790
14,500.00	90.00	173.85	10,720.00	-3,931.32	405.36	473,709.31	734,624.69	32.300750	-103.707757
14,600.00	90.00	173.85	10,720.00	-4,030.74	416.08	473,609.88	734,635.40	32.300477	-103.707724
14,700.00	90.00	173.85	10,720.00	-4,130.17	426.79	473,510.46	734,646.11	32.300203	-103.707692
14,800.00	90.00	173.85	10,720.00	-4,229.59	437.50	473,411.04	734,656.82	32.299930	-103.707659

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference:**	Well Purrito 18 Fed Com 214H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3596.10ft
Project:	Lea County (NAD83 New Mexico East)	**MD Reference:**	RKB @ 3596.10ft
Site:	Sec 18-T23S-R32E	**North Reference:**	Grid
Well:	Purrito 18 Fed Com 214H	**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
14,900.00	90.00	173.85	10,720.00	-4,329.02	448.21	473,311.61	734,667.54	32.299656	-103.707626
15,000.00	90.00	173.85	10,720.00	-4,428.44	458.92	473,212.19	734,678.25	32.299383	-103.707593
15,100.00	90.00	173.85	10,720.00	-4,527.87	469.63	473,112.76	734,688.96	32.299109	-103.707561
15,200.00	90.00	173.85	10,720.00	-4,627.29	480.35	473,013.34	734,699.67	32.298836	-103.707528
15,300.00	90.00	173.85	10,720.00	-4,726.72	491.06	472,913.91	734,710.38	32.298563	-103.707495
15,400.00	90.00	173.85	10,720.00	-4,826.14	501.77	472,814.49	734,721.09	32.298289	-103.707462
15,500.00	90.00	173.85	10,720.00	-4,925.57	512.48	472,715.06	734,731.81	32.298016	-103.707429
15,600.00	90.00	173.85	10,720.00	-5,024.99	523.19	472,615.64	734,742.52	32.297742	-103.707397
15,676.93	90.00	173.85	10,720.00	-5,101.48	531.43	472,539.15	734,750.76	32.297532	-103.707371
LTP @ 15677' MD, 100' FSL, 660' FEL									
15,700.00	90.00	173.85	10,720.00	-5,124.42	533.90	472,516.22	734,753.23	32.297469	-103.707364
15,756.92	90.00	173.85	10,720.00	-5,181.01	540.00	472,459.62	734,759.33	32.297313	-103.707345
PBHL; 20' FSL, 660' FEL									
15,756.93	90.00	173.85	10,720.00	-5,181.02	540.00	472,459.61	734,759.33	32.297313	-103.707345

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 - Purrito 18 Fed C	0.00	0.00	0.00	-5,181.02	540.00	472,459.61	734,759.33	32.297313	-103.707345
- plan misses target center by 5209.09ft 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
10,170.15	10,147.04	21.00	506.00	KOP @ 10170' MD, 50' FNL, 660' FEL
10,411.59	10,381.40	-29.00	502.50	FTP @ 10412' MD, 100' FNL, 660' FEL
15,676.93	10,720.00	-5,101.48	531.43	LTP @ 15677' MD, 100' FSL, 660' FEL
15,756.92	10,720.00	-5,181.01	540.00	PBHL; 20' FSL, 660' FEL

WCDSC Permian NM

WELL DETAILS: Purrito 18 Fed Com 214H

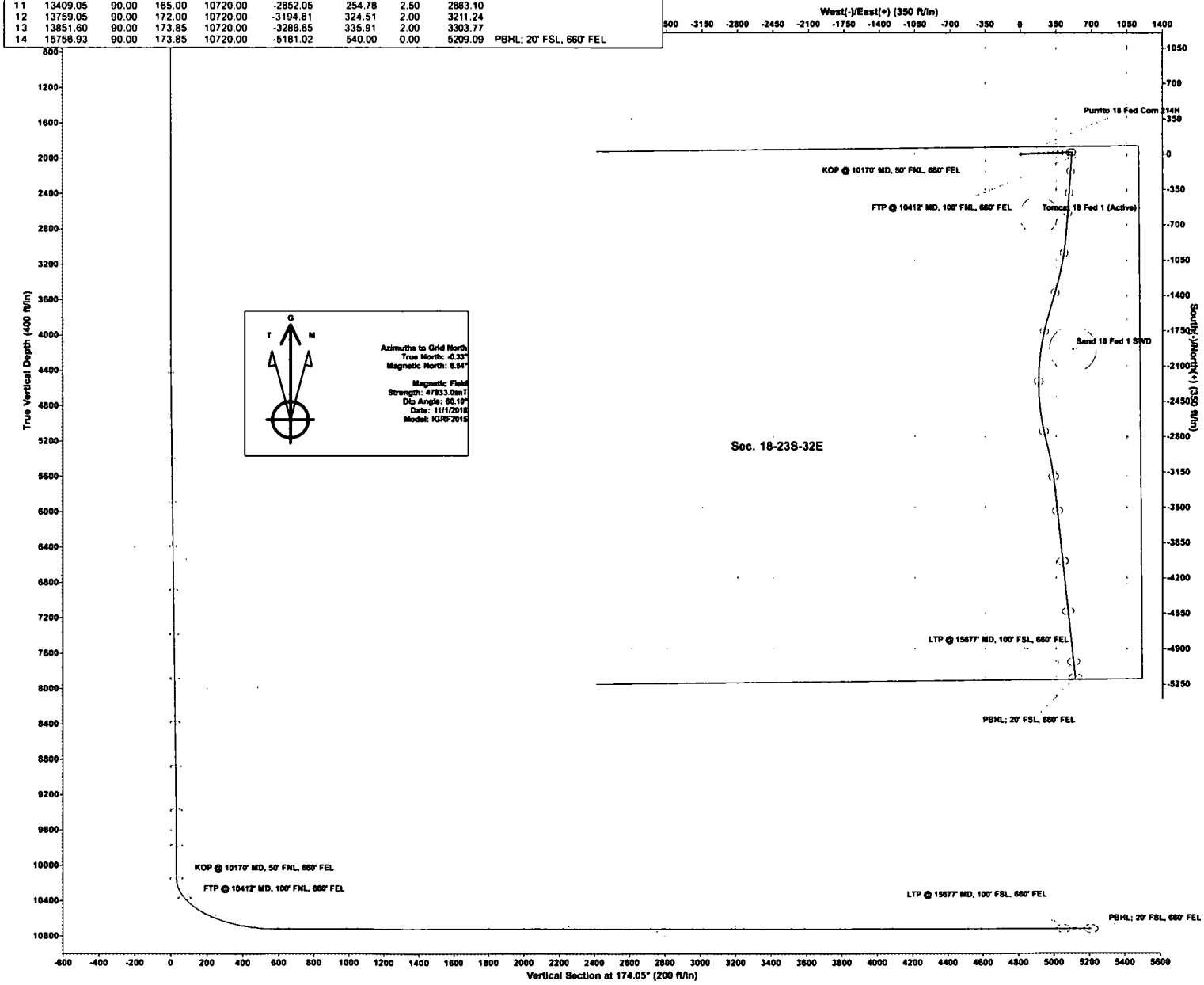
RKB @ 3596.10ft
3571.10

Northing	Easting	Latitude	Longitude
477640.62	734219.33	32.311563	-103.708995

devon

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	
	4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	
	4428.30	5.35	87.62	4427.68	0.83	19.98	1.25	1.25	
	9463.19	5.35	87.62	9440.60	20.31	489.35	0.00	30.53	
5	9820.11	0.00	0.00	9797.00	21.00	506.00	1.50	31.57	
6	10170.15	0.00	0.00	10147.04	21.00	506.00	0.00	31.57	KOP @ 10170' MD, 50' FNL, 660' FEL
7	11070.15	90.00	184.00	10720.00	-550.56	466.03	10.00	595.91	
8	11269.05	90.00	184.00	10720.00	-748.98	452.16	0.00	791.82	
9	11869.05	90.00	196.00	10720.00	-1338.79	348.16	2.00	1367.66	
10	12169.05	90.00	196.00	10720.00	-1627.16	265.47	0.00	1645.92	
11	13409.05	90.00	165.00	10720.00	-2852.05	254.78	2.50	2883.10	
12	13759.05	90.00	172.00	10720.00	-3194.81	324.51	2.00	3211.24	
13	13851.60	90.00	173.85	10720.00	-3286.65	335.91	2.00	3303.77	
14	15756.93	90.00	173.85	10720.00	-5181.02	540.00	0.00	5209.09	PBHL; 20' FSL, 660' FEL



1. Geologic Formations

TVD of target	10720	Pilot hole depth	N/A
MD at TD:	15757	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	954		
Salado	1309		
Base of Salt	4589		
Delaware	4619		
L Brushy Canyon	8214		
Bone Spring	8574		
Leonard 'A'	8664		
Leonard 'B'	9174		
Leonard 'C'	9384		
1st BSPG Sand	9624		
2nd BSPG Sand	10254		

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

2. Casing Program

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	979 TVD	13 3/8	48.0	H40	BTC	1.125	1.25	1.6
12 1/4	0	4619 TVD	9 5/8	40.0	J-55	BTC	1.125	1.25	1.6
8 3/4	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, and flows experienced while drilling. Setting depth with be revised accordingly if needed.
• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.

	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 (3-String Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	747	Surf	13.2	1.4	Lead: Class C Cement + additives
Int	504	Surf	9.0	3.3	Lead: Class C Cement + additives
	154	500' above shoe	13.2	1.4	Tail: Class H / C + additives
Int 1 Two Stage w/ DV @ TVD of Delaware	493	Surf	9.0	3.3	1st stage Lead: Class C Cement + additives
	136	500' above shoe	13.2	1.4	1st stage Tail: Class H / C + additives
	489	Surf	9.0	3.3	2nd stage Lead: Class C Cement + additives
	136	500' above DV	13.2	1.4	2nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	9.0	3.3	Squeeze Lead: Class C Cement + additives
	504	Surf	9.0	3.3	Lead: Class C Cement + additives
	154	500' above shoe	13.2	1.4	Tail: Class H / C + additives
Production	516	500' tieback	9.0	3.3	Lead: Class H /C + additives
	1078	KOP	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	30%
Production	10%

4. Pressure Control Equipment (Three String Design)

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

5. Mud Program (Three String Design)

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

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

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

6. Logging and Testing Procedures

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

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

7. Drilling Conditions

Condition	Specfiy what type and where?
BH pressure at deepest TVD	5017
Abnormal temperature	No

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

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

8. Other facets of operation

Is this a walking operation? Potentially

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

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

Will be pre-setting casing? Potentially

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

Attachments

X_____ Directional Plan
_____ Other, describe

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.

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

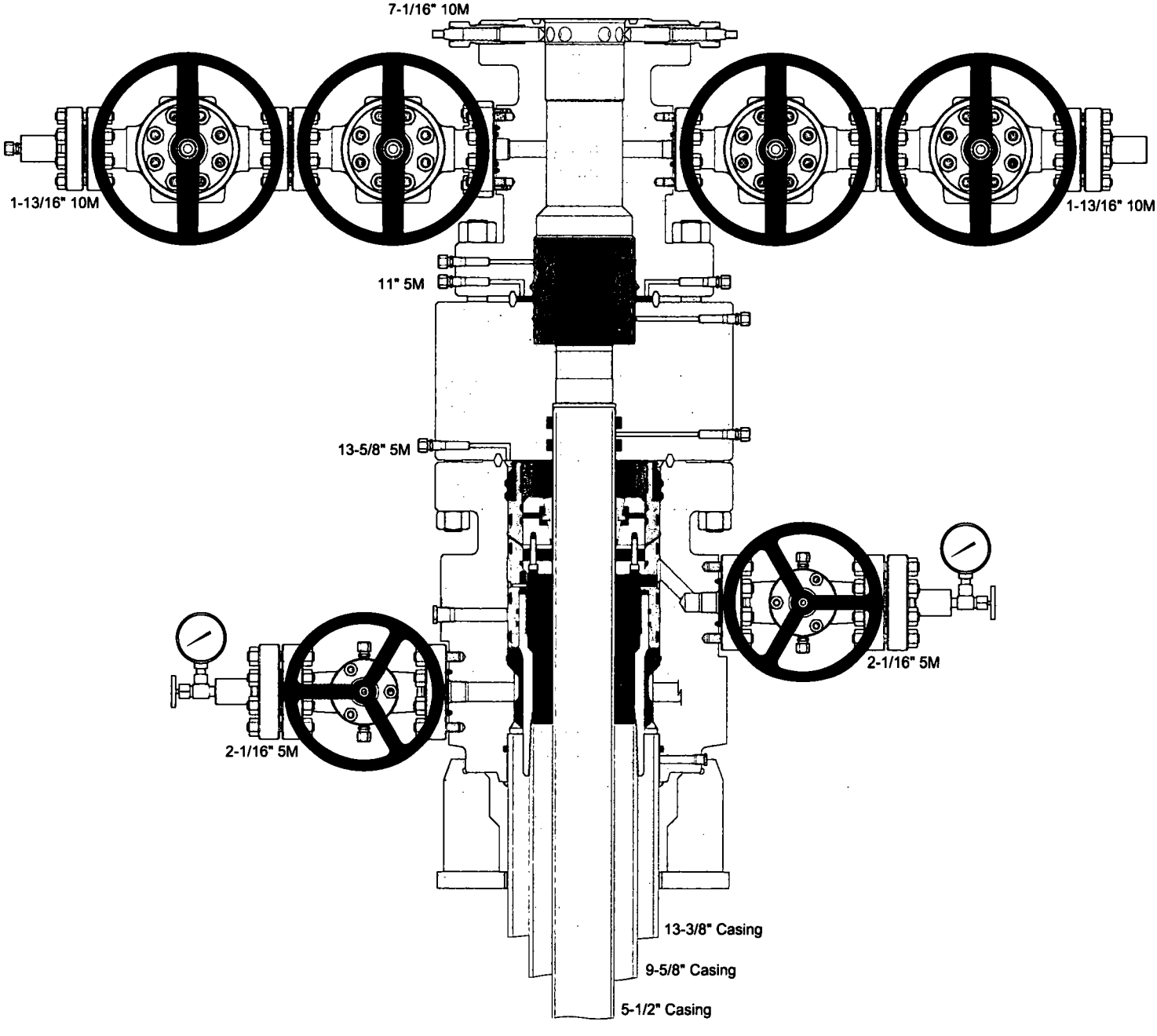
- Wellhead will be installed by wellhead representatives.
- If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- Wellhead representative will install the test plug for the initial BOP test.
- Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 5M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.
- If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.
- Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.
- Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.

After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 5M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.

After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 5M will already be installed on the wellhead.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP.

Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron.


7-1/16" 10M
1-13/16" 10M
1-13/16" 10M
11" 5M
13-5/8" 5M
2-1/16" 5M
2-1/16" 5M
13-3/8" Casing
9-5/8" Casing
5-1/2" Casing

Devon Energy
APD VARIANCE DATA

OPERATOR NAME: Devon Energy

1. SUMMARY OF Variance:

Devon Energy respectfully requests approval for the following additions to the drilling plan:

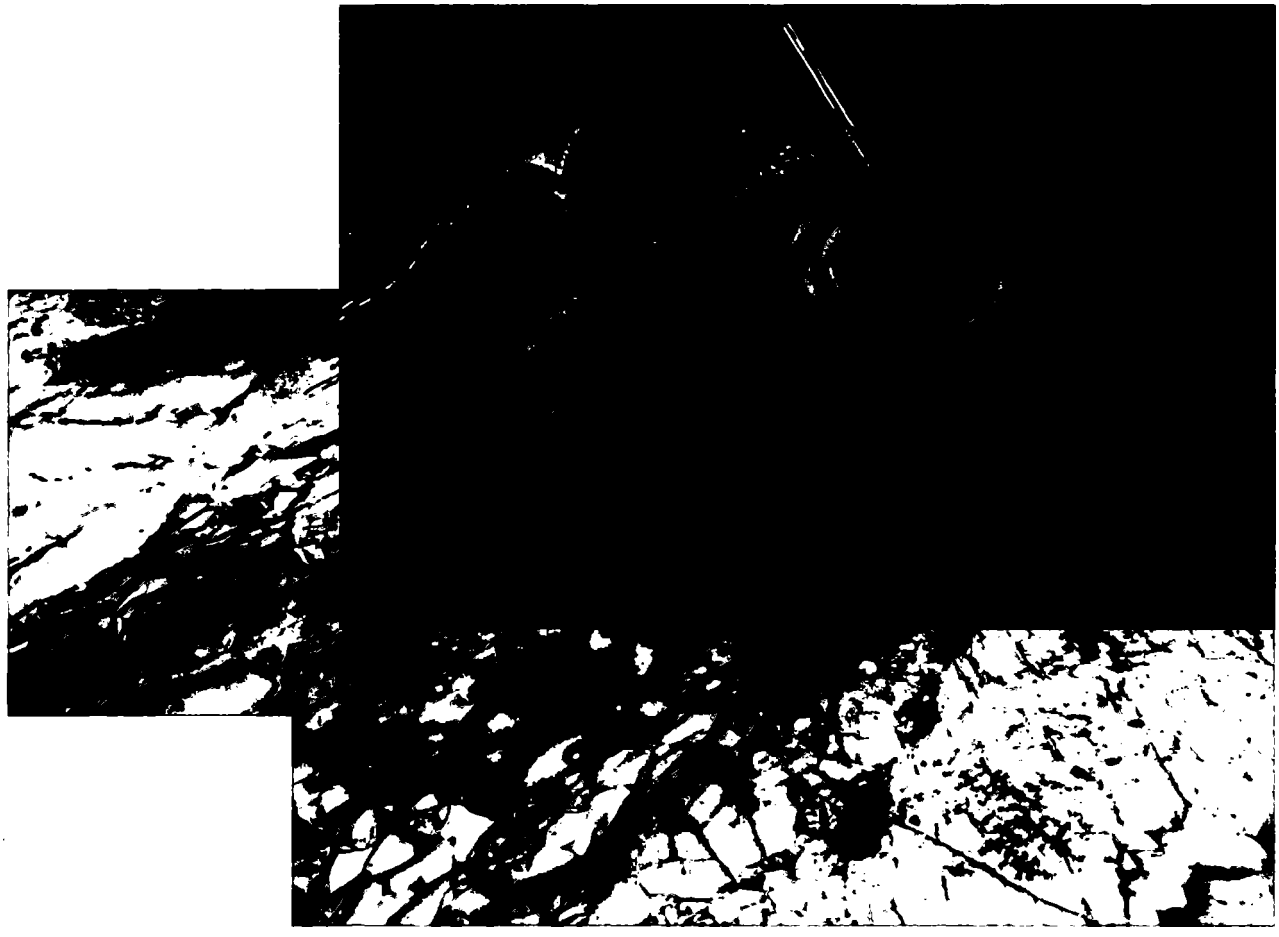
1. Potential utilization of a spudder rig to pre-set surface casing.

2. Description of Operations

1. A spudder rig contractor may move in their rig to drill the surface hole section and pre-set surface casing on this well.
    a. After drilling the surface hole section, the rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
    b. Rig will utilize fresh water based mud to drill surface hole to TD.
2. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
3. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wingvalves.
    a. A means for intervention will be maintained while the drilling rig is not over the well.
4. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
5. Drilling operation will be performed with the big rig. At that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
    a. The BLM will be contacted / notified 24 hours before the big rig moves back on to the pad with the pre-set surface casing.
6. Devon Energy will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
7. Once the rig is removed, Devon Energy will secure the wellhead area by placing a guard rail around the cellar area.

devon

Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

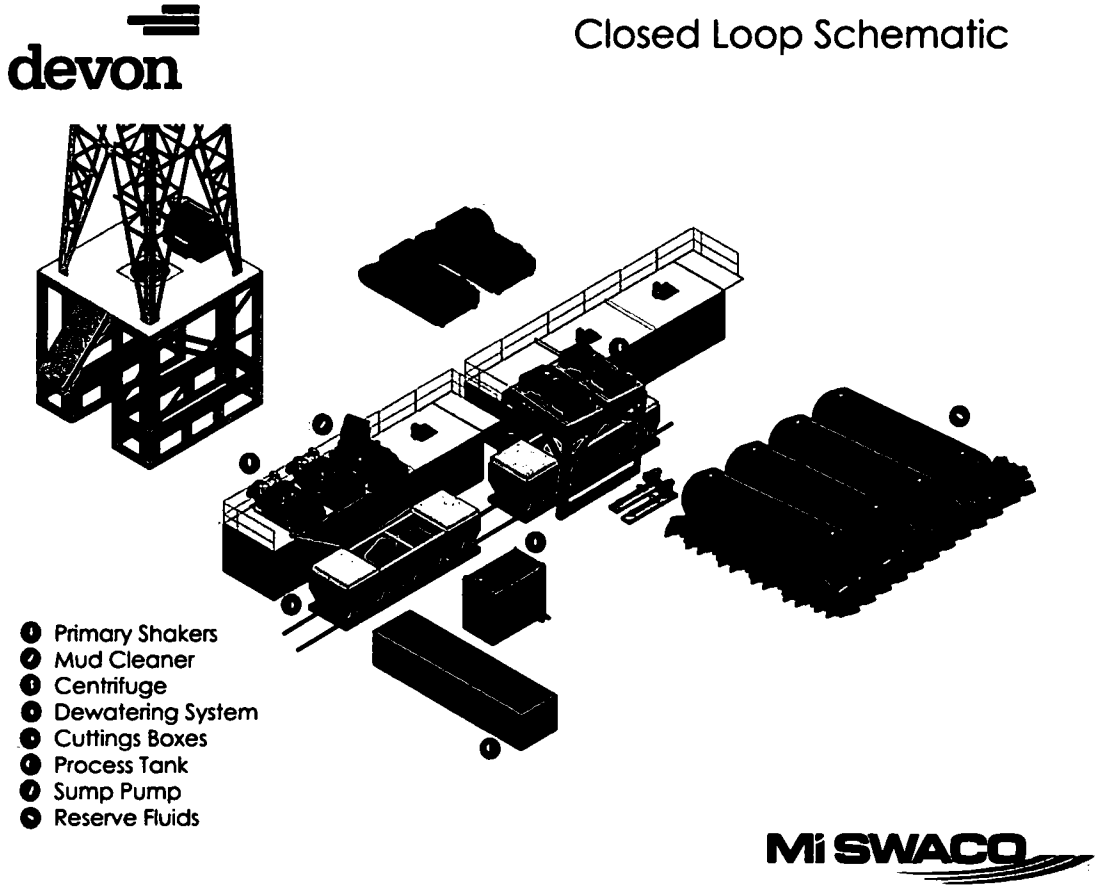
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

- Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

Continental CONTITECH

Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly It is good practice to use lifting & safety equipment but not mandatory

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com

RIG 212

PHOENIX

QUALITY DOCUMENT

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

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

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.
→ 10 mm = 25 MPa

COUPLINGS

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

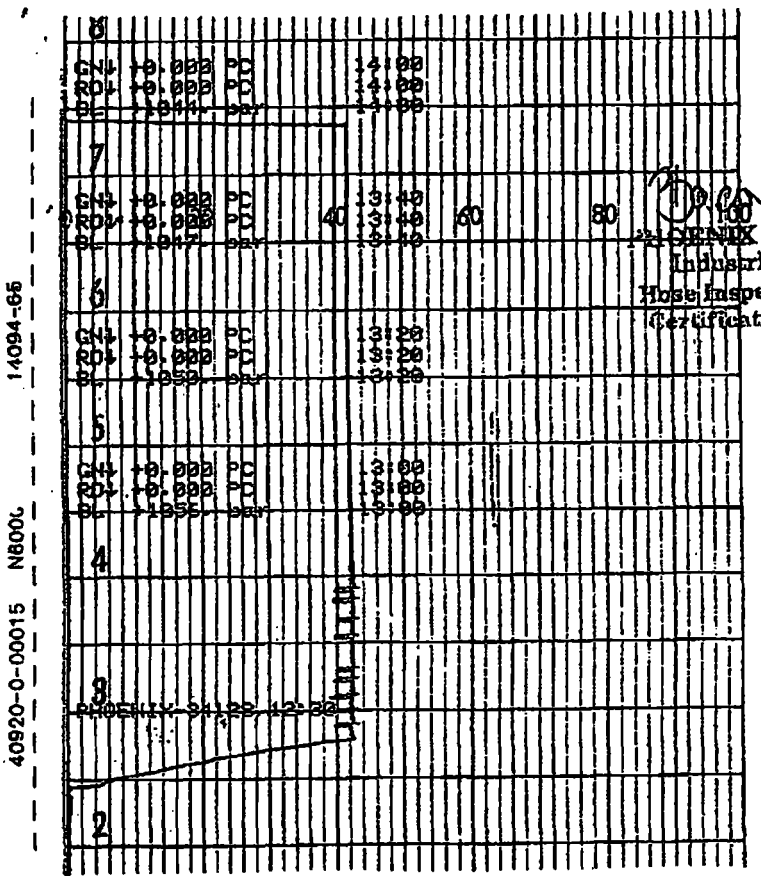
API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

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

Date:	Inspector	Quality Control
29. April. 2002.		PHOENIX RUBBER Industrial Ltd. Hose Inspection and Assembly Dept.

CERTIFIED TRUE COPY
PHOENIX RUBBER Q.C.



PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE COPY
PHOENIX RUBBER I.C.

APD ID: 10400040666 **Submission Date:** 04/10/2019

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

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

[redacted]

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

EX_RD_20190406180913.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

ACCESS_RD_20190406180948.pdf

New road type: COLLECTOR,RESOURCE

Length: 1996 Feet **Width (ft.):** 30

Max slope (%): 6 **Max grade (%):** 4

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 20

New road access erosion control: Water Drainage Ditch

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Access surfacing type: GRAVEL

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: See attached Interim reclamation diagram.

Access other construction information:

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: CULVERT,OTHER

Drainage Control comments: na

Road Drainage Control Structures (DCS) description: na

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

PURRITO_18_FED_COM_214H_OneMileBuffer_WA017459431_20190406181112.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Please refer to CTB plat TODD APACHE MDP2 7-2 CTB

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Water source use type: STIMULATION **Water source type:** OTHER

Describe type:

Source latitude: **Source longitude:**

Source datum:

Water source permit type: OTHER

Source land ownership: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: STATE

Water source volume (barrels): 103500 **Source volume (acre-feet):** 13.340435

Source volume (gal): 4347000

Water source and transportation map:

PURRITO_18_FED_COM_213H_214H_waterxmap_20190410093214.pdf

Water source comments: The attached Water Transfer Map is a proposal only and the final route and documentation will be provided by a Devon contractor prior to installation. When available Devon will always follow existing disturbance.
New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Section 6 - Construction Materials

Construction Materials description: Dirt fill and caliche will be used to construct well pad. Map attached.

Construction Materials source location attachment:

TA_MDP_2_Pad_7_2_Caliche_Map_20190410093228.pdf

Section 7 - Methods for Handling Waste

Waste type: PRODUCED WATER

Waste content description: Average produced BWPD over the first year of production

Amount of waste: 1000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: OFF-LEASE INJECTION **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: Multiple methods for handling waste will be utilized. Via trucking, Dvn owned disposal system and or third party pipeline take away.

Waste type: COMPLETIONS/STIMULATION

Waste content description: Flow back water during completion operations.

Amount of waste: 3000 barrels

Waste disposal frequency : One Time Only

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Various disposal locations in Lea and Eddy counties.

Waste type: FLOWBACK

Waste content description: Average produced BWPD over the flowback period (first 30 days of production).

Amount of waste: 2000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: OFF-LEASE INJECTION **Disposal location ownership:** STATE

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Disposal type description:

Disposal location description: Produced water during flowback will be disposed of at various disposals in Lea and Eddy County.

Waste type: DRILLING

Waste content description: Water Based Cuttings

Amount of waste: 1644 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: All cuttings will disposed of at R360, Sundance, or equivalent.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

RIG_LAY_OUT_20190406181250.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: TODD- APACHE MDP 2 PAD

Multiple Well Pad Number: 7-2

Recontouring attachment:

RECLAMATION_20190406181330.pdf

Drainage/Erosion control construction: N/A

Drainage/Erosion control reclamation: N/A

Well pad proposed disturbance (acres): 3.566
Road proposed disturbance (acres): 1.35
Powerline proposed disturbance (acres): 0.793
Pipeline proposed disturbance (acres): 0.135
Other proposed disturbance (acres): 5.741
Total proposed disturbance: 11.585

Well pad interim reclamation (acres): 1.323
Road interim reclamation (acres): 0
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 1.323

Well pad long term disturbance (acres): 2.243
Road long term disturbance (acres): 1.35
Powerline long term disturbance (acres): 0.793
Pipeline long term disturbance (acres): 0.135
Other long term disturbance (acres): 5.741
Total long term disturbance: 10.262

Disturbance Comments:

Reconstruction method: Operator will use Best Management Practices"BMP" to mechanically recontour to obtain the desired outcome.
Topsoil redistribution: Topsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.
Soil treatment: Topsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.
Existing Vegetation at the well pad: Shinnery, yucca, grasses and mesquite.

Existing Vegetation at the well pad attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Existing Vegetation Community at the road: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Shinnery, yucca, grasses and mesquite.

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Operator Contact/Responsible Official Contact Info

First Name: JACOB **Last Name:** OCHOA

Phone: (575)748-9934 **Email:** JACOB.OCHOA@DVN.COM

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Maintain weeds on an as need basis.

Weed treatment plan attachment:

Monitoring plan description: Monitor as needed.

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: PURRITO 18 FED COM **Well Number:** 214H

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information: ELECTRIC CTB FLOWLINES- ALL ARE BURIED

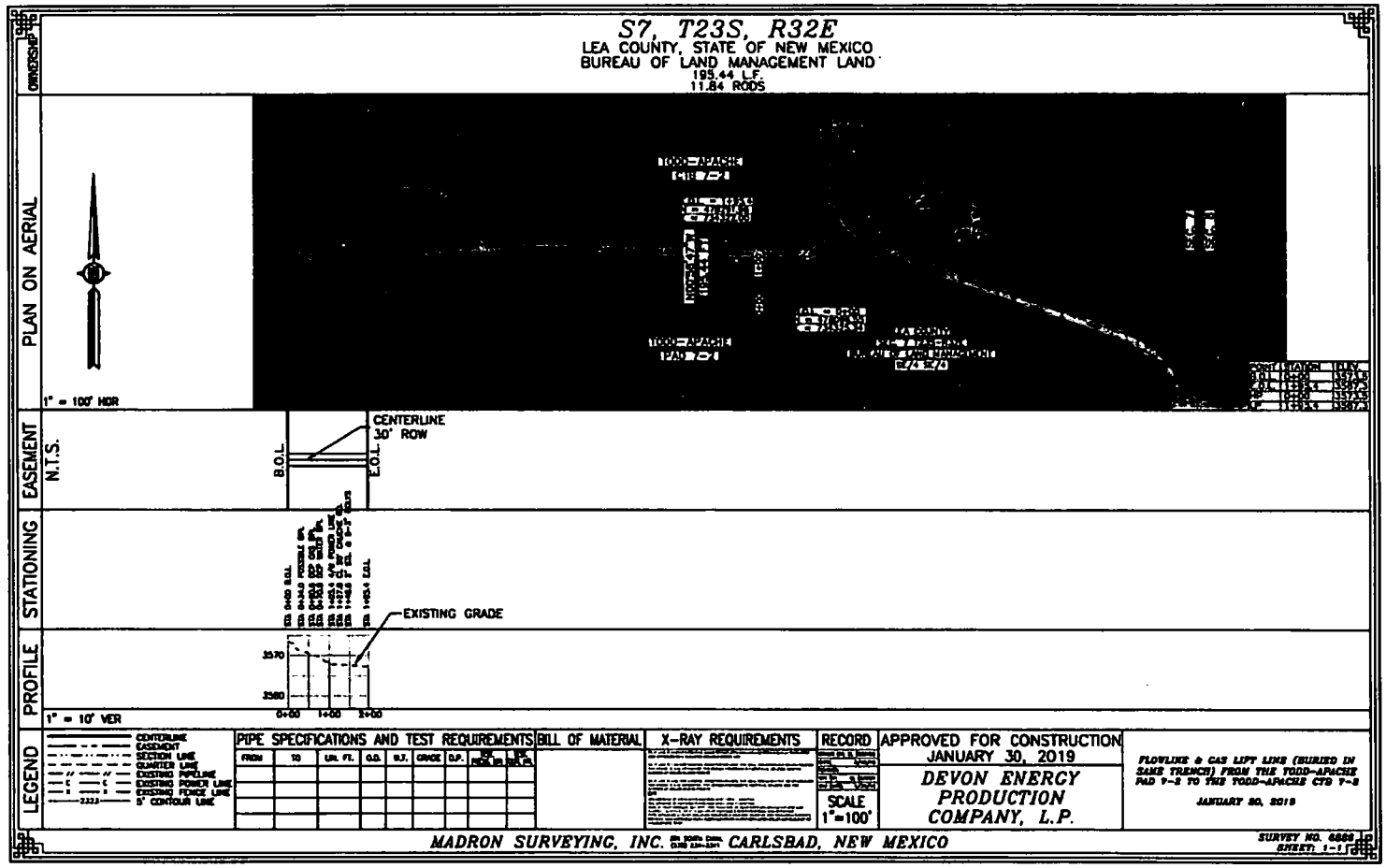
Use a previously conducted onsite? YES

Previous Onsite information: Aug-17 Todd-Apache MDP2 Wellpad 7-2

Other SUPO Attachment

AA000115157_TA_MDP2_CTB_7_2_PAD_P_R1_20190406171936.pdf
EL7954_TODD_APACHE_MDP2_7_2_PAD_EL_P_20190406172006.PDF
EL7951_TODD_APACHE_MDP2_7_2_CTB_EL_P_R1_20190406171958.pdf
AA000230612_TA_PAD_7_2_TO_TA_CTB_7_2_P_BURIED_20190410093542.pdf
Pay.gov___Receipt_213H_214H_20190410093847.pdf

ALL FLOWLINES ARE BURIED



Pay.gov

Receipt

Tracking Information

Pay.gov Tracking ID: 26GKTHEL

Agency Tracking ID: 75720767521

Form Name: Bureau of Land Management (BLM) Application for Permit to Drill (APD) Fee

Application Name: BLM Oil and Gas Online Payment

Payment Information

Payment Type: Bank account (ACH)

Payment Amount: $20,100.00

Transaction Date: 04/08/2019 01:51:50 PM EDT

Payment Date: 04/09/2019

Company: Devon Energy Production Company, L.P.

APD IDs: 10400040665, 10400040666

Lease Numbers: NMNM018848, NMNM018848

Well Numbers: 213H, 214H

Note: You will need your Pay.gov Tracking ID to complete your APD transaction in AFMSS II. Please ensure you write this number down upon completion of payment.

Account Information

Account Holder Name: Devon Energy Production Company, L.P.

Routing Number: 061000052

Account Number: **********9892

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:

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

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?

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):

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

07/15/2019

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000801

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: