

OCD Hobbs

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

HOBBS OCD

MAR 08 2019

RECEIVED

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

5. Lease Serial No.  
NMNM096256

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.  
ARENA ROJA FED UNIT 15-10  
5H  
(325134)

9. API Well No.

10. Field and Pool, or Exploratory  
WC-025 G-09 S263504N / WOLF CAMP  
(30-025-45737)  
(9817)

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

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

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

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

At surface SWNW / 2490 FNL / 850 FWL / LAT 32.0436896 / LONG -103.3611418

At proposed prod. zone NENW / 20 FNL / 1660 FWL / LAT 32.0650027 / LONG -103.3585475

11. Sec., T. R. M. or Blk. and Survey or Area  
SEC 15 / T26S / R35E / NMP

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

12. County or Parish  
LEA

13. State  
NM

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

16. No of acres in lease  
640

17. Spacing Unit dedicated to this well  
240

18. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft.  
5883 feet

19. Proposed Depth  
12455 feet / 20313 feet

20. BLM/BIA Bond No. in file  
FED: CO1104

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3140 feet

22. Approximate date work will start\*  
06/01/2019

23. Estimated duration  
45 days

24. Attachments

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

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).

- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification.
- Such other site specific information and/or plans as may be requested by the BLM.

25. Signature  
(Electronic Submission)

Name (Printed/Typed)  
Rebecca Deal / Ph: (405)228-8429

Date  
08/23/2018

Title  
Regulatory Compliance Professional

Approved by (Signature)  
(Electronic Submission)

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

Date  
02/22/2019

Title  
Assistant Field Manager Lands & Minerals

Office  
CARLSBAD

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

GC/Rec 03/08/19

Kx 03/14/19

APPROVED WITH CONDITIONS

(Continued on page 2)

\*(Instructions on page 2)

Approval Date: 02/22/2019

Double  
checked

## 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 1:** 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 well, 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 directionally 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 well 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 will 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 collects this information to allow 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 Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

## Additional Operator Remarks

### Location of Well

1. SHL: SWNW / 2490 FNL / 850 FWL / TWSP: 26S / RANGE: 35E / SECTION: 15 / LAT: 32.0436896 / LONG: -103.3611418 ( TVD: 0 feet, MD: 0 feet )  
PPP: SENW / 2543 FNL / 1660 FWL / TWSP: 26S / RANGE: 35E / SECTION: 15 / LAT: 32.0435435 / LONG: -103.3585277 ( TVD: 12317 feet, MD: 12418 feet )  
BHL: NENW / 20 FNL / 1660 FWL / TWSP: 26S / RANGE: 35E / SECTION: 10 / LAT: 32.0650027 / LONG: -103.3585475 ( TVD: 12455 feet, MD: 20313 feet )

### BLM Point of Contact

Name: Priscilla Perez

Title: Legal Instruments Examiner

Phone: 5752345934

Email: pperez@blm.gov

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## **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.

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## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>Devon Energy Production Company, L.P.</b>
<b>LEASE NO.:</b>	<b>NMMN-096256</b>
<b>WELL NAME &amp; NO.:</b>	<b>Arena Roja Fed Unit 15-10 5H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>2490' FNL &amp; 0850' FWL</b>
<b>BOTTOM HOLE FOOTAGE</b>	<b>0020' FNL &amp; 1660' FWL Sec. 10, T. 26 S., R 35 E.</b>
<b>LOCATION:</b>	<b>Section 15, T. 26 S., R 35 E., NMPM</b>
<b>COUNTY:</b>	<b>County, New Mexico</b>

### **Commercial Well Determination**

A commercial well determination shall be submitted after production has been established for at least six months.

### **Unit Wells**

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

### **A. DRILLING OPERATIONS 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)

☐ **Lea County**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,  
(575) 3933612

1. **Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**
2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**

3. **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 wells.**
4. Option – Setting surface casing with Spudder Rig
  - a. Notify the BLM when removing the Spudder Rig.
  - b. Notify the BLM when moving in the H&P Flex Rig. Rig to be moved in within 60 days of notification that the Spudder Rig has left the location. Failure to notify or have rig on location within 60 days will result in an Incident of Non-Compliance.
  - c. Once the H&P Flex Rig is on location, it shall not be removed from over the hole without prior approval unless the production casing has been run and cemented or the well has been properly plugged. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
  - d. BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as H&P Flex Rig is rigged up on well. CIT for the surface casing shall be performed and results recorded on subsequent sundry – pressure to be 1200 psi.
5. 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 is located, this does not include the dog house or stairway area.
6. **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.**

## **B. CASING**

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

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

### **Wait on cement (WOC) for Water Basin:**

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

**Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.**

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

**Possible water flows in the Castile and Salado**

**Possible lost circulation in the Rustler, Red Beds, and Delaware.**

**Abnormal pressures may be encountered within the 3rd Bone Spring and Wolfcamp Formations.**

1. The 10-3/4 inch surface casing shall be set at approximately 1100 feet (in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Formation below the 10-3/4" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

2. The minimum required fill of cement behind the 7-5/8 inch intermediate casing is:

- ☐ Cement as proposed by operator. If cement does not circulate see B.1.a, c-d above.

**Formation below the 7-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.**

**Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.**

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
  - ☐ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. \_
4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

#### **ALTERNATE CASING DESIGN:**

1. The **13-3/8** inch surface casing shall be set at approximately **1100** feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface. **Excess calculates to -4% - Additional cement will be required.**
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

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

- ☐ Cement as proposed by operator. If cement does not circulate see B.1.a, c-d above.

**Formation below the 8-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.**

**Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.**

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

- ☐ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to -41% - Additional cement will be required.**

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

#### **C. 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 53.
2. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. **Operator has proposed a multi-bowl wellhead assembly.**
  - 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. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
  - 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.**
4. **Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi. 5M 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.**
5. **Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be psi. 10M 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.**
6. **The appropriate BLM office shall be notified a minimum of 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).

- a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
- b. 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.
- c. The results of the test shall be reported to the appropriate BLM office.
- d. 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.**
- e. 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.
- f. 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.

#### **D. 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.



**E. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**F. 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.

**JAM 012919**

# PECOS DISTRICT SURFACE USE CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION COMPANY LP.
LEASE NO.:	NMNM096256
WELL NAME & NO.:	5H- ARENA ROJO FED UNIT 15-10
SURFACE HOLE FOOTAGE:	2490'/N & 850'/W
BOTTOM HOLE FOOTAGE:	20'/N & 1660'/W
LOCATION:	Section. 15., T26S., R.35E., NMP
COUNTY:	LEA County, New Mexico

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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.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Build as you go Sub pad only No grading big pad**
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
  - Power Line Avian Protection
  - Escape Ramps
  - Range
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

## **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 Sub pad only, No grading big pad just sub 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 line Avian Protection**

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.

**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.

#### **Fence 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 fence(s).

#### **Livestock Watering Requirement**

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator 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.

The operator must contact the allotment holder prior to construction to identify the location of the pipeline. The operator must take measures to protect the pipeline from compression or other damages. If the pipeline is damaged or compromised in any way near the proposed project as a result of oil and gas activity, the operator is responsible for repairing the pipeline immediately. The operator 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

#### **Cattle Guard Requirement**

Where entry is granted across a fence line for an access road, 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 with an appropriately sized cattle guard sufficient to carry out the project. Any new or existing cattle guards on the access 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. Once the road is abandoned, the fence would 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.

During construction, the proponent shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. The proponent 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.

## **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.

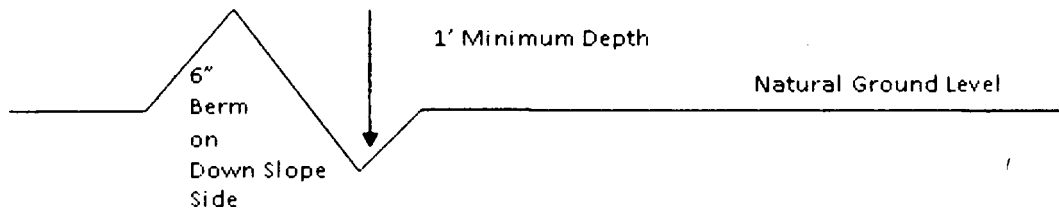
**Drainage**



Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill out sloping 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:

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

#### **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.

#### **Livestock Watering Requirement**

Structures that provide water to livestock, such as windmills, pipelines, drinking troughs, and earthen reservoirs, will be avoided by moving the proposed action.

**-OR-**

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator 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.

**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

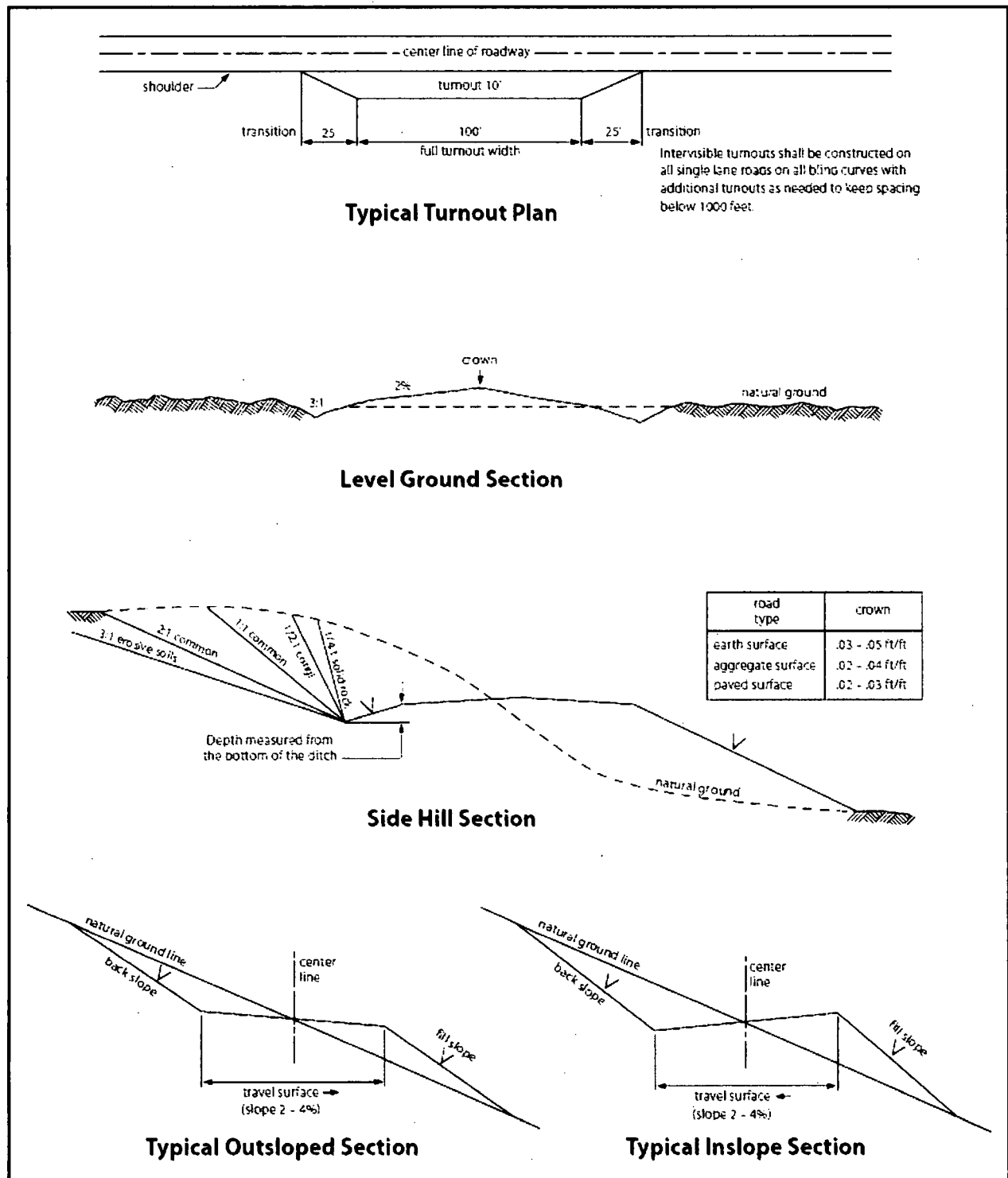


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## **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).

### **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.

- |  |  |
|--|--|
| <input type="checkbox"/> seed mixture 1                | <input type="checkbox"/> seed mixture 3          |
| <input type="checkbox"/> seed mixture 2                | <input type="checkbox"/> seed mixture 4          |
| <input checked="" type="checkbox"/> seed mixture 2/LPC | <input type="checkbox"/> 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:

- c. 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.
- d. 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.

**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.

## **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).

Below 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:

<u>Species</u>	<u>lb/acre</u>
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



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

## Operator Certification Data Report

02/25/2019

*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: Rebecca Deal

Signed on: 08/23/2018

Title: Regulatory Compliance Professional

Street Address: 333 West Sheridan Avenue

City: Oklahoma City

State: OK

Zip: 73102

Phone: (405)228-8429

Email address: Rebecca.Deal@dvn.com

Representative Name: Travis Phibbs

Street Address: 333 W SHERIDAN AVE

City: OKC

State: OK

Zip: 73102

Phone: (575)748-9929

Email address: travis.phibbs@dvn.com



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

## Application Data Report

02/25/2019

APD ID: 10400032905

Submission Date: 08/23/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Well Type: OIL WELL

Well Work Type: Drill



[Show Final Text](#)

APD ID: 10400032905

Tie to previous NOS?

Submission Date: 08/23/2018

BLM Office: CARLSBAD

User: Rebecca Deal

Title: Regulatory Compliance  
Professional

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM096256

Lease Acres: 640

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 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:

Well in Master Development Plan? NO

Mater Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WC-025 G-09  
S263504N

Pool Name: WOLFCAMP

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Is the proposed well in an area containing other mineral resources? USEABLE WATER

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: ARENA Number: 1

ROJA 15 WELLPAD

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: APPRAISAL

Describe sub-type:

Distance to town:

Distance to nearest well: 5883 FT

Distance to lease line: 850 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_C\_102\_RDS\_20180823113711.pdf

Well work start Date: 06/01/2019

Duration: 45 DAYS

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

	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	249 0	FNL	850	FWL	26S	35E	15	Aliquot SWN W	32.04368 96	- 103.3611 418	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 096256	314 0	0	0
KOP Leg #1	279 0	FNL	166 0	FWL	26S	35E	15	Aliquot SENW	32.04284 5	- 103.3585 37	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 096256	- 874 2	119 25	118 82
PPP Leg #1	254 3	FNL	166 0	FWL	26S	35E	15	Aliquot SENW	32.04354 35	- 103.3585 277	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 096256	- 917 7	124 18	123 17



Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

	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	20	FNL	166 0	FWL	26S	35E	10	Aliquot NENW	32.06500 27	- 103.3585 475	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 112944	- 931 5	203 13	124 55
BHL Leg #1	20	FNL	166 0	FWL	26S	35E	10	Aliquot NENW	32.06500 27	- 103.3585 475	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 112944	- 931 5	203 13	124 55

**DISTRICT I**  
1688 N. FRENCH DR., HOBBS, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720

**DISTRICT II**  
811 S. FIRST ST., ARTESIA, NM 88210  
Phone: (575) 748-1883 Fax: (575) 748-9770

**DISTRICT III**  
1000 RIO BRAZOS RD., AZTEC, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

**DISTRICT IV**  
1820 S. ST. FRANCIS DR., SANTA FE, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
1220 SOUTH ST. FRANCIS DR.  
Santa Fe, New Mexico 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

API Number	Pool Code 98117	Pool Name WC-025 G-09 S263504N;WOLFCAMP
Property Code	Property Name ARENA ROJA FED UNIT 15-10	Well Number 5H
OGRID No. 6137	Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	Elevation 3139.8'

**Surface Location**

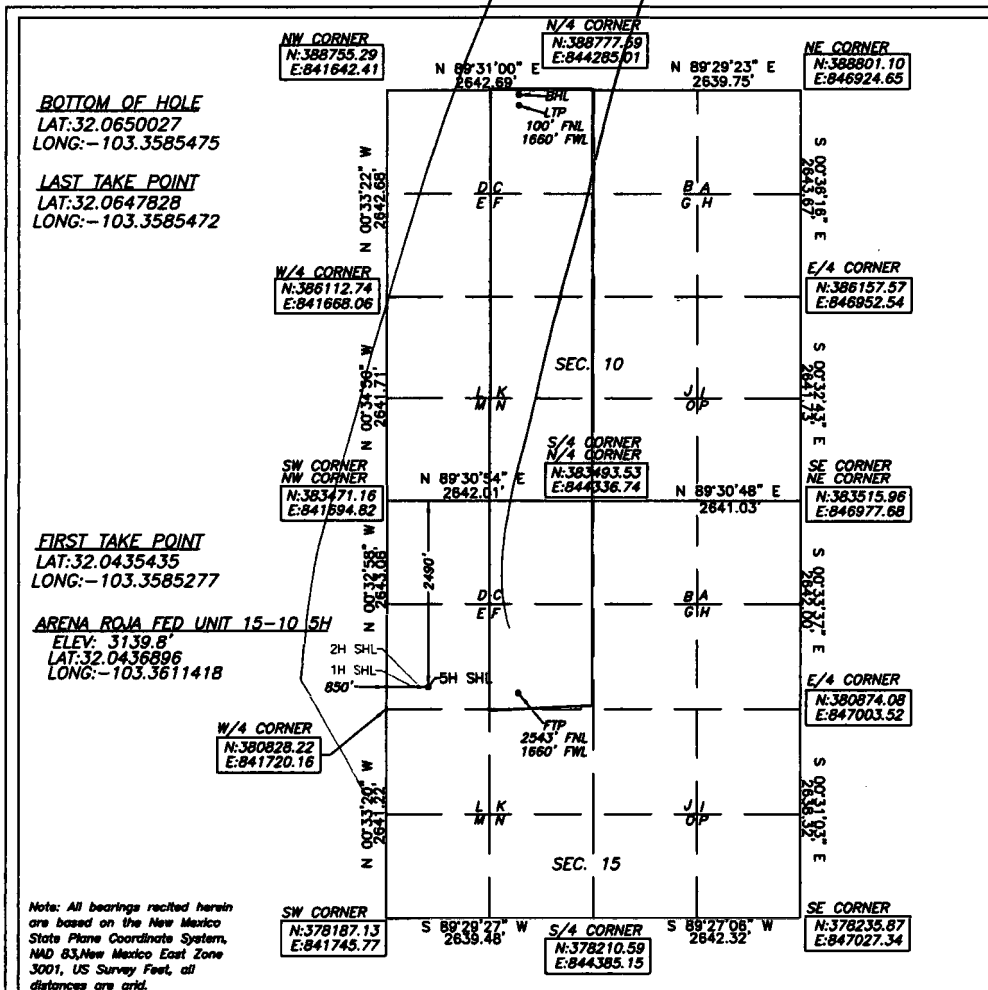
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	15	26-S	35-E		2490	NORTH	850	WEST	LEA

**Bottom Hole Location If Different From Surface**

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	10	26-S	35-E		20	NORTH	1660	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
240			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



**OPERATOR CERTIFICATION**

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

8/20/2018

Signature Date

Rebecca Deal, Regulatory Analyst

Printed Name

rebecca.deal@dm.com

E-mail Address

**SURVEYOR CERTIFICATION**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

07/2018

Date of Survey

Signature & Seal of Professional Surveyor

**B. L. LAMAN**  
NEW MEXICO  
22404  
PROFESSIONAL SURVEYOR

07/30/18

Certificate No. 22404 B.L. LAMAN  
W.O. # DRAWN BY: CM

Intent ☒ As Drilled ☐

API # <b>70-029-45737</b>			
Operator Name: <b>DEVON ENERGY PRODUCTION COMPANY, LP.</b>		Property Name: <b>ARENA ROJA FED UNIT 15-10</b>	Well Number <b>5H</b>

Kick Off Point (KOP)

UL	Section 15	Township 26S	Range 35E	Lot	Feet 2790	From N/S FNL	Feet 1660	From E/W FWL	County LEA
Latitude 32.042845					Longitude -103.358537			NAD 83	

First Take Point (FTP)

UL F	Section 15	Township 26	Range 35	Lot	Feet 2543	From N/S NORTH	Feet 1660	From E/W WEST	County LEA
Latitude 32.0435435					Longitude 103.3585277			NAD 83	

Last Take Point (LTP)

UL C	Section 10	Township 26	Range 35	Lot	Feet 100	From N/S NORTH	Feet 1660	From E/W WEST	County LEA
Latitude 32.0647828					Longitude 103.3585472			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☒ YES

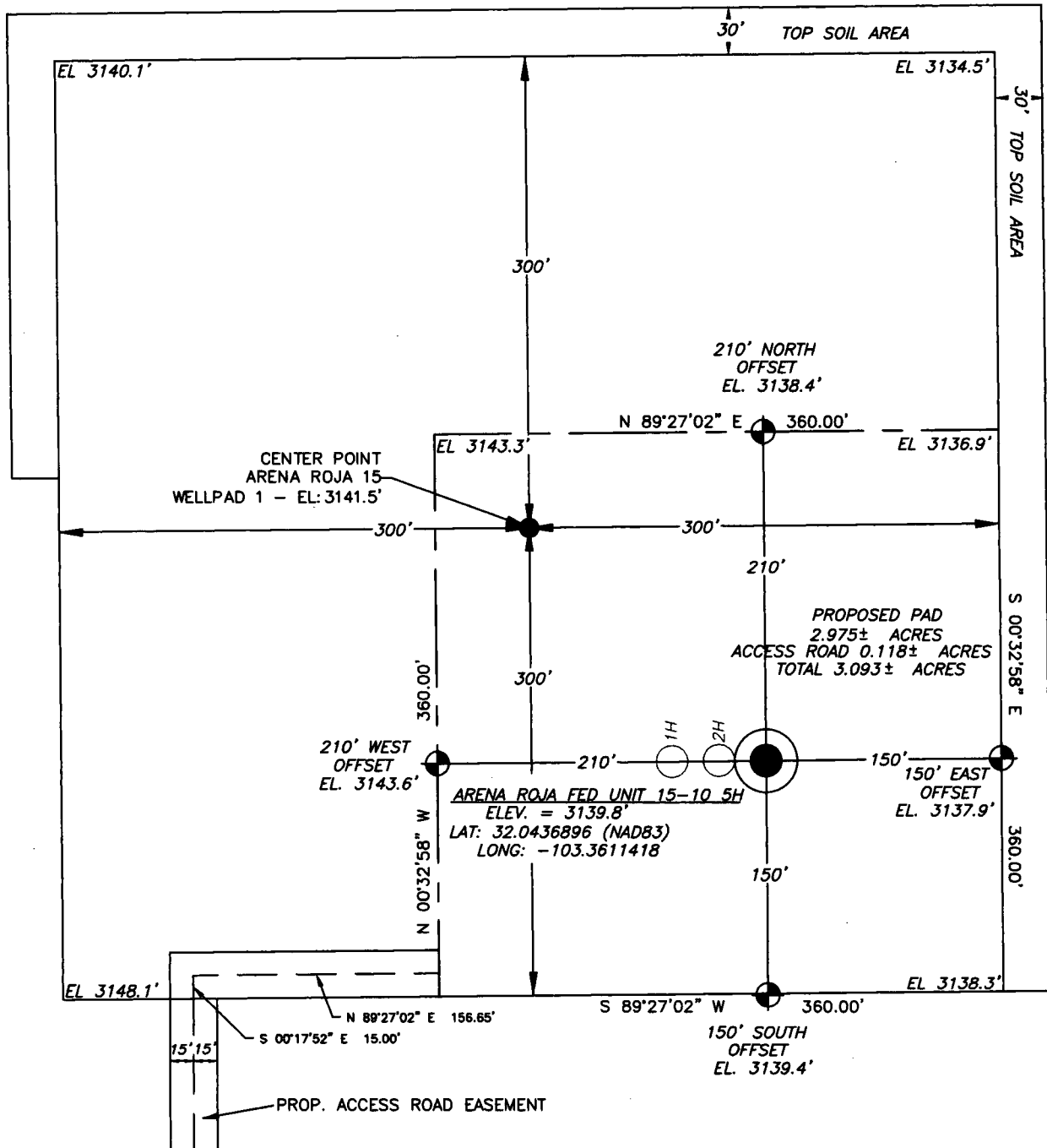
Is this well an infill well? ☐ NO

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

API #			
Operator Name:		Property Name:	Well Number

KZ 06/29/2018

SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
SITE MAP



Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

DEVON ENERGY PRODUCTION COMPANY, L.P.  
ARENA ROJA FED UNIT 15-10.5H  
LOCATED 2490 FT. FROM THE NORTH LINE  
AND 850 FT. FROM THE WEST LINE OF  
SECTION 15, TOWNSHIP 26 SOUTH,  
RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF J-3 (FRYING PAN ROAD) AND ANTHONY ROAD, HEAD SOUTH ON FRYING PAN ROAD FOR 2.93 MILES. TURN RIGHT ONTO BECKHAM ROAD AND HEAD WEST FOR 5.37 MILES. TURN RIGHT AND CONTINUE NORTH ON AN EXISTING LEASE ROAD FOR 0.97 MILES. TURN RIGHT ONTO AN EXISTING ACCESS ROAD AND HEAD NORTH FOR 1.27 MILES. TURN LEFT AND HEAD WEST OFF OF THE EXISTING ACCESS ROAD ON THE PROPOSED ACCESS ROAD FOR 0.26 MILES. TURN RIGHT AND HEAD NORTHWEST FOR 0.14 MILES TO THE SOUTHWEST CORNER OF THE PROPOSED ARENA ROJA 15 WELLPAD 1.

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

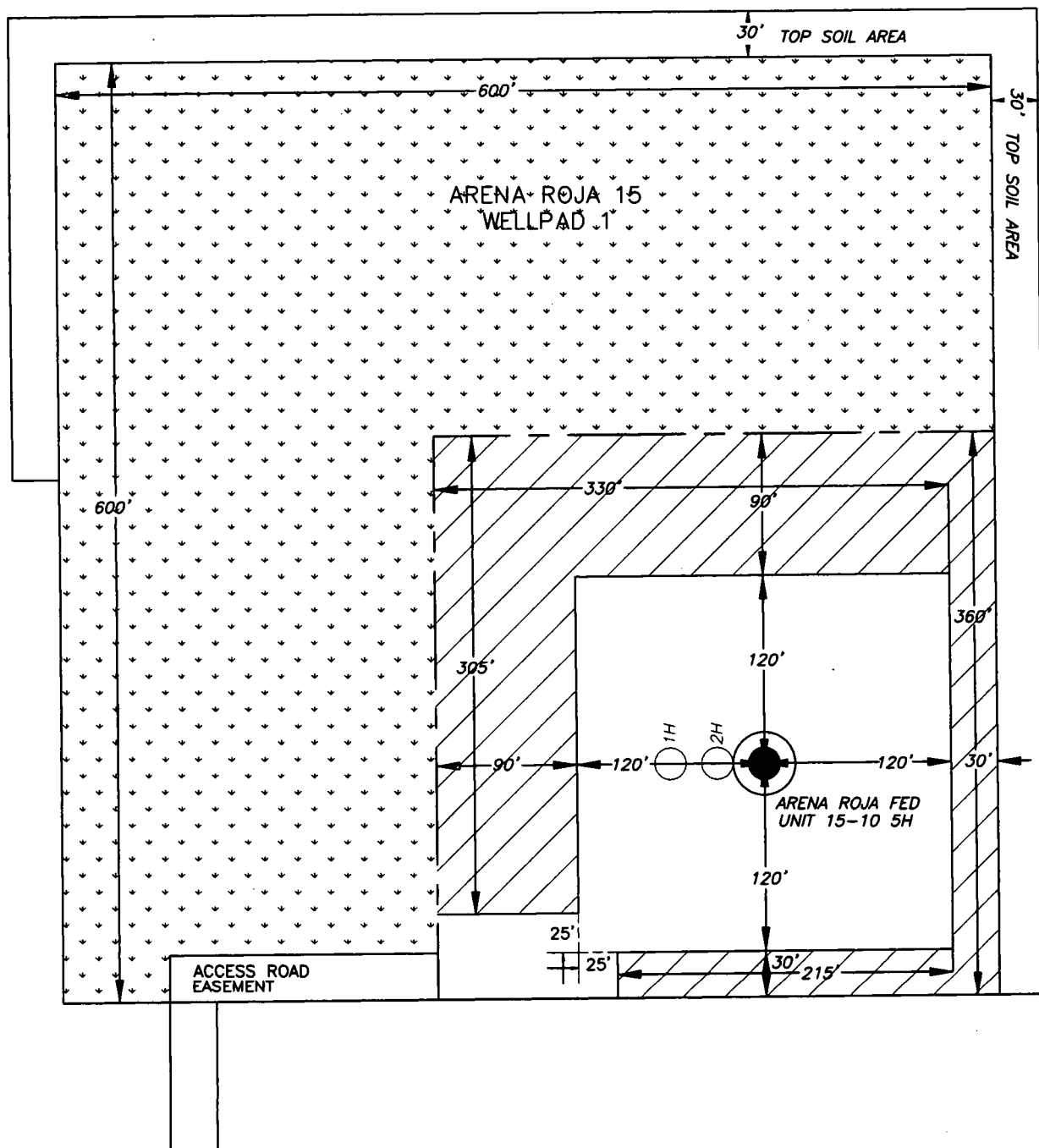
Drawn by:  
CHRIS MAAS

Date: 07/24/2018  
Rev. Date: 8/6/18

Drawn for:

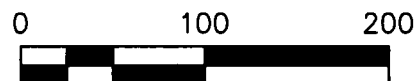
devon

SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
INTERIM SITE BUILD PLAN



-  DENOTES INTERIM PAD RECLAMATION AREA  
 DENOTES GRADING SITE RECLAMATION AREA

1.523± ACRES INTERIM PAD RECLAMATION AREA  
 5.171± ACRES GRADING SITE RECLAMATION AREA  
 1.570± ACRES NON-RECLAIMED AREA  
 8.264± ACRES GRADING SITE RECLAMATION AREA



DEVON ENERGY PRODUCTION COMPANY, L.P.  
 ARENA ROJA FED UNIT 15-10 5H  
 LOCATED 2490 FT. FROM THE NORTH LINE  
 AND 850 FT. FROM THE WEST LINE OF  
 SECTION 15, TOWNSHIP 26 SOUTH,  
 RANGE 35 EAST, N.M.P.M.  
 LEA COUNTY, STATE OF NEW MEXICO

HORIZON ROW LLC

Drawn for:

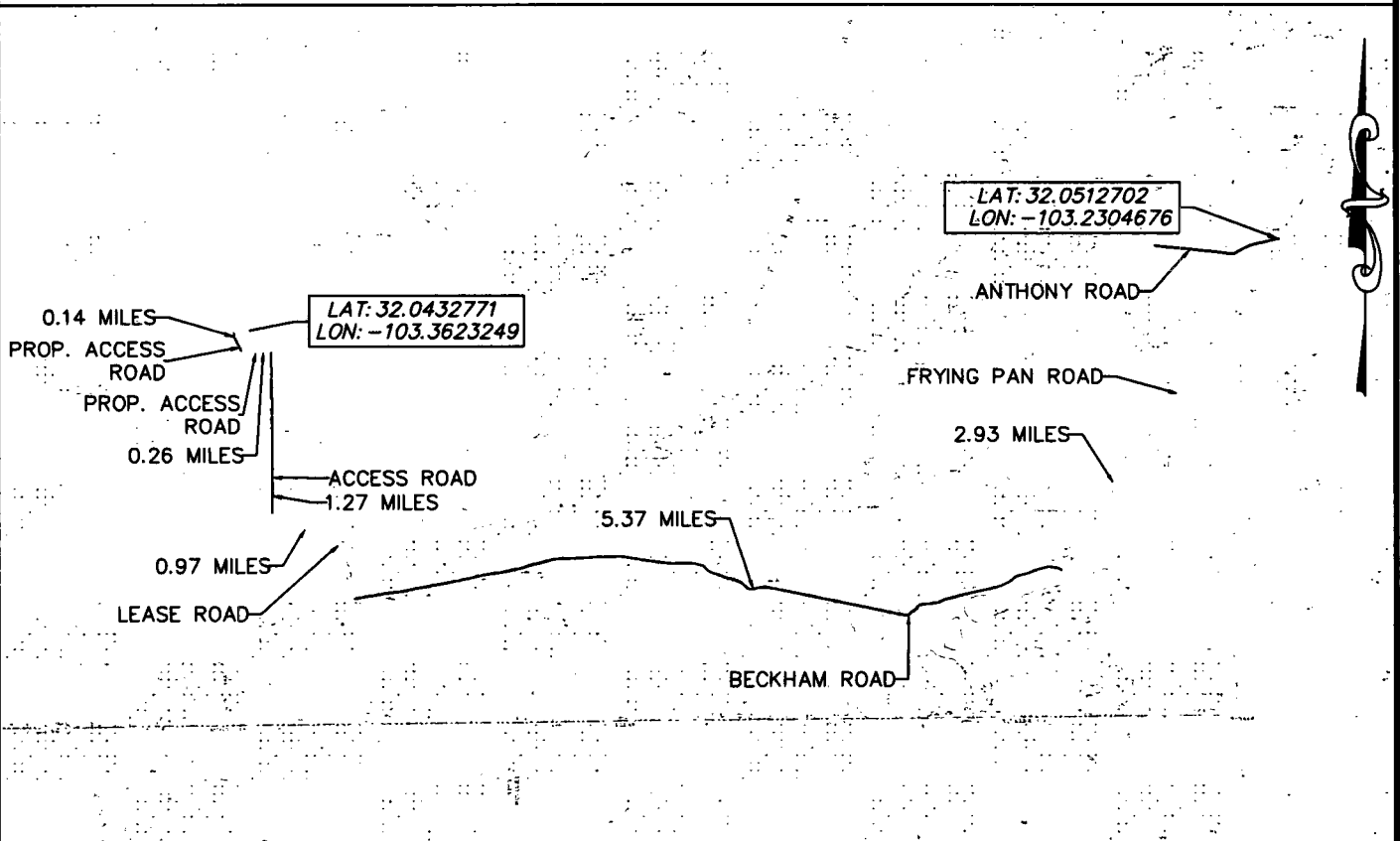
DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
 CHRIS MAAS

Date: 05/29/2018  
 Rev. Date: 08/6/2018

  
**devon**

SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
VICINITY MAP



DEVON ENERGY PRODUCTION COMPANY, L.P.  
ARENA ROJA FED UNIT 15-10 5H  
LOCATED 2490 FT. FROM THE NORTH LINE  
AND 850 FT. FROM THE WEST LINE OF  
SECTION 15, TOWNSHIP 26 SOUTH,  
RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF J-3 (FRYING PAN ROAD) AND ANTHONY ROAD, HEAD SOUTH ON FRYING PAN ROAD FOR 2.93 MILES. TURN RIGHT ONTO BECKHAM ROAD AND HEAD WEST FOR 5.37 MILES. TURN RIGHT AND CONTINUE NORTH ON AN EXISTING LEASE ROAD FOR 0.97 MILES. TURN RIGHT ONTO AN EXISTING ACCESS ROAD AND HEAD NORTH FOR 1.27 MILES. TURN LEFT AND HEAD WEST OFF OF THE EXISTING ACCESS ROAD ON THE PROPOSED ACCESS ROAD FOR 0.26 MILES. TURN RIGHT AND HEAD NORTHWEST FOR 0.14 MILES TO THE SOUTHWEST CORNER OF THE PROPOSED ARENA ROJA 15 WELLPAD 1.

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

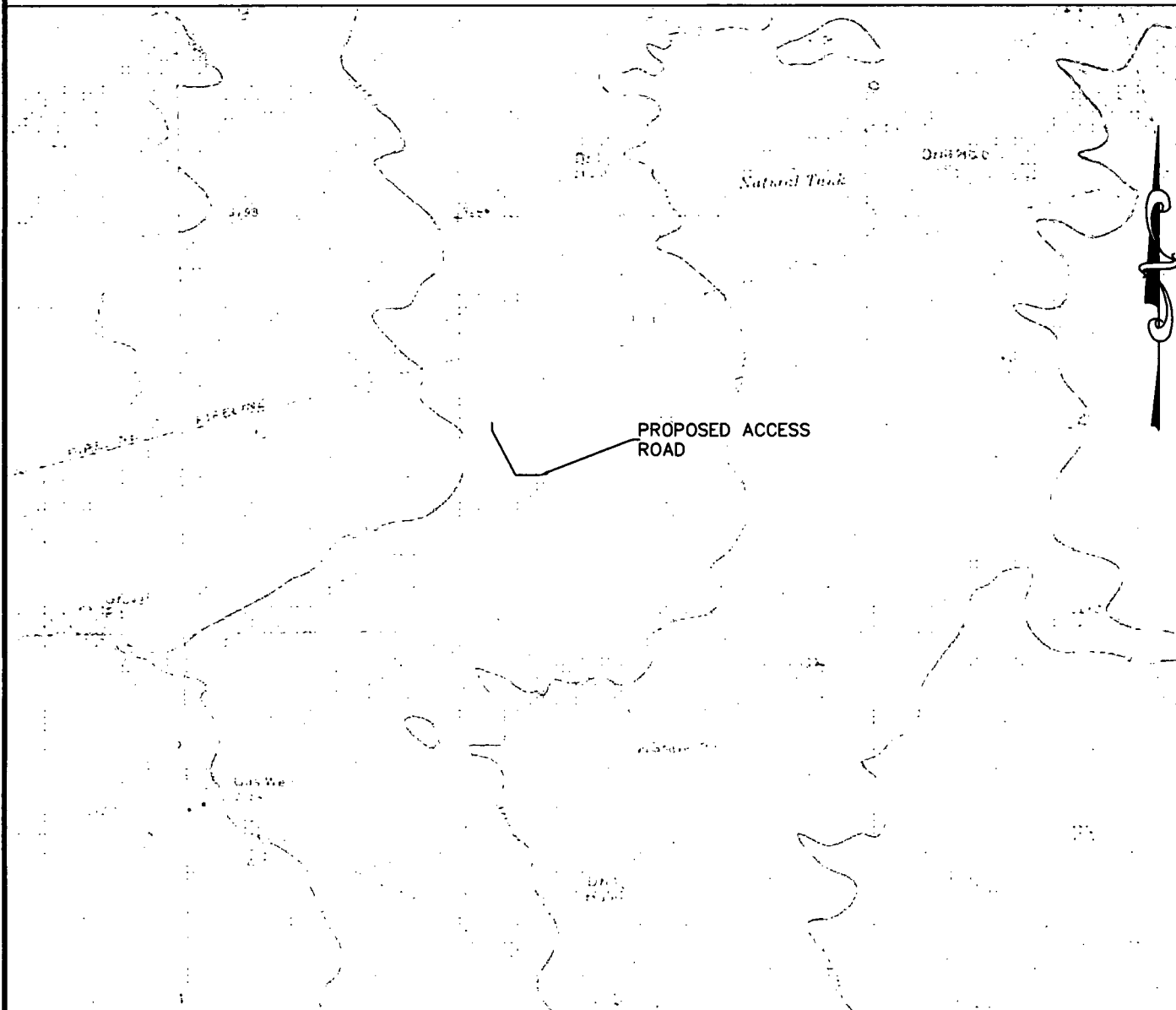
Drawn by:  
CHRIS MAAS

Rev. Date: 7/24/18

Drawn for:

**devon**

SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
LOCATION VERIFICATION MAP



USGS QUAD MAP

DEVON ENERGY PRODUCTION COMPANY, L.P.  
ARENA ROJA FED UNIT 15-10 5H  
LOCATED 2490 FT. FROM THE NORTH LINE  
AND 850 FT. FROM THE WEST LINE OF  
SECTION 15, TOWNSHIP 26 SOUTH,  
RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

0 2000 4000



HORIZON ROW LLC

Drawn for:

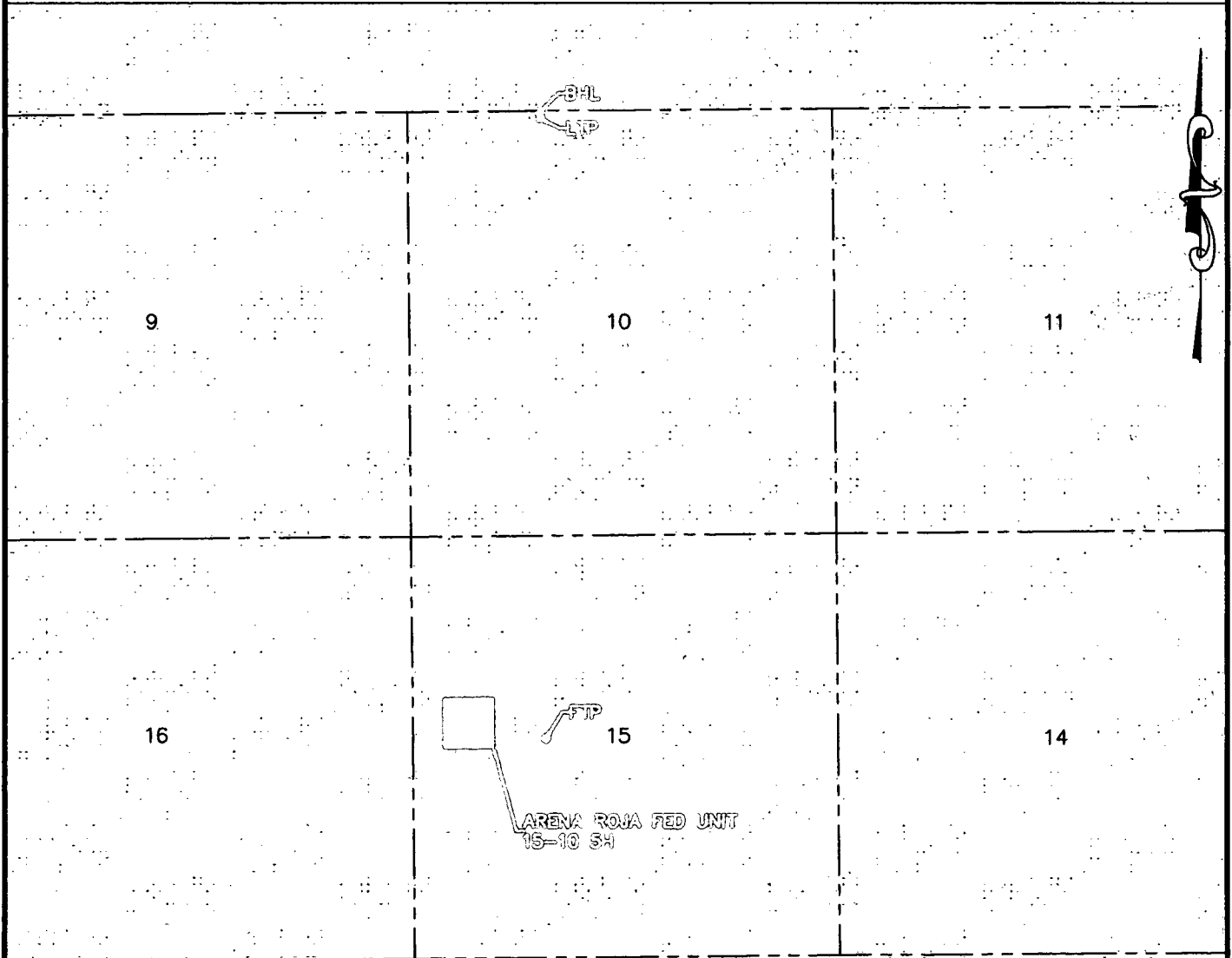
DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
CHRIS MAAS

Rev. Date: 7/24/18

**devon**

SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
AERIAL PHOTO



DEVON ENERGY PRODUCTION COMPANY, L.P.  
ARENA ROJA FED UNIT 15-10 5H  
LOCATED 2490 FT. FROM THE NORTH LINE  
AND 850 FT. FROM THE WEST LINE OF  
SECTION 15, TOWNSHIP 26 SOUTH,  
RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO



**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
CHRIS MAAS

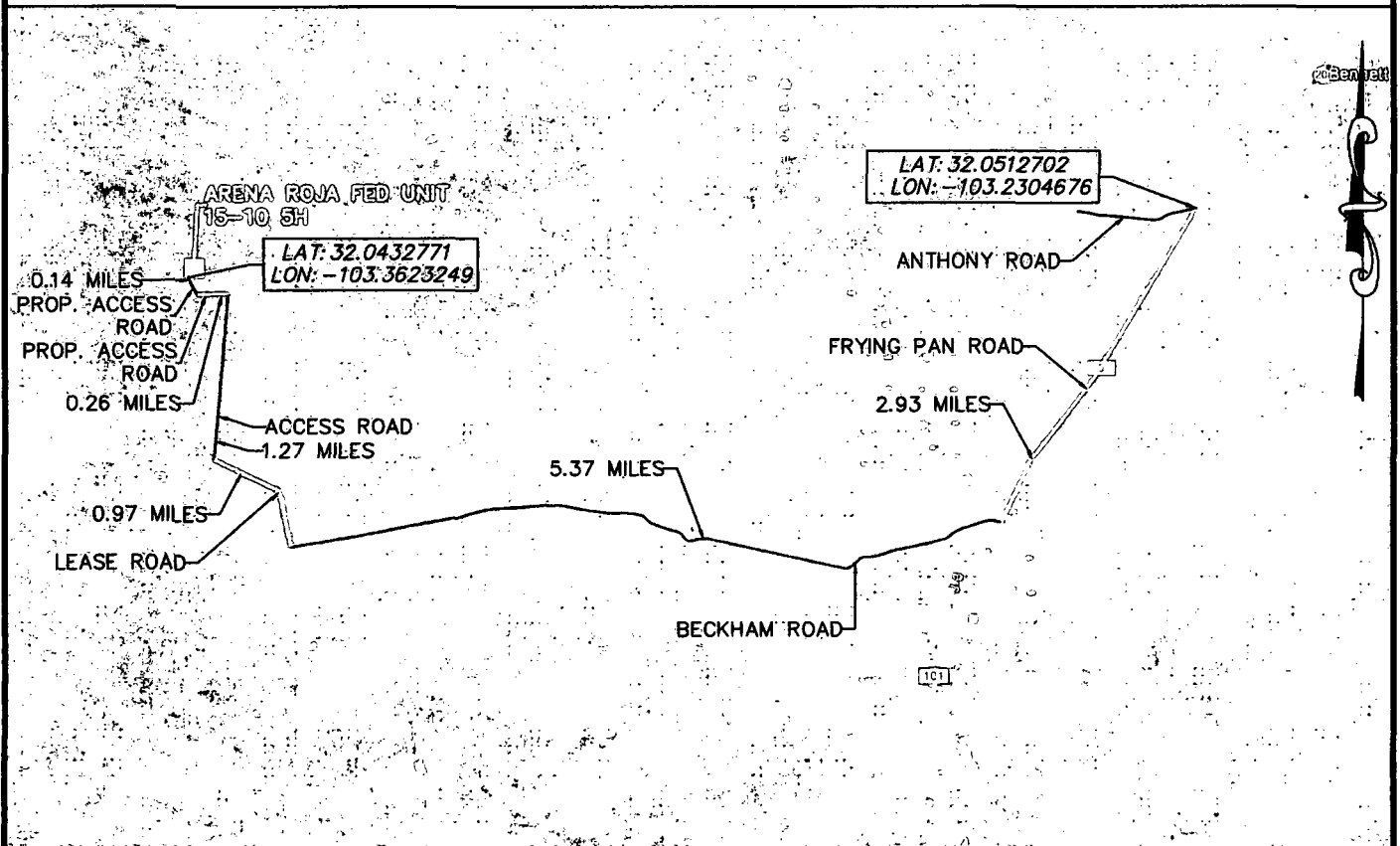
Rev. Date: 7/24/18

Drawn for:

**devon**



SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
AERIAL ACCESS ROUTE MAP



DEVON ENERGY PRODUCTION COMPANY, L.P.  
ARENA ROJA FED UNIT 15-10 5H  
LOCATED 2490 FT. FROM THE NORTH LINE  
AND 850 FT. FROM THE WEST LINE OF  
SECTION 15, TOWNSHIP 26 SOUTH,  
RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

NOT TO SCALE

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

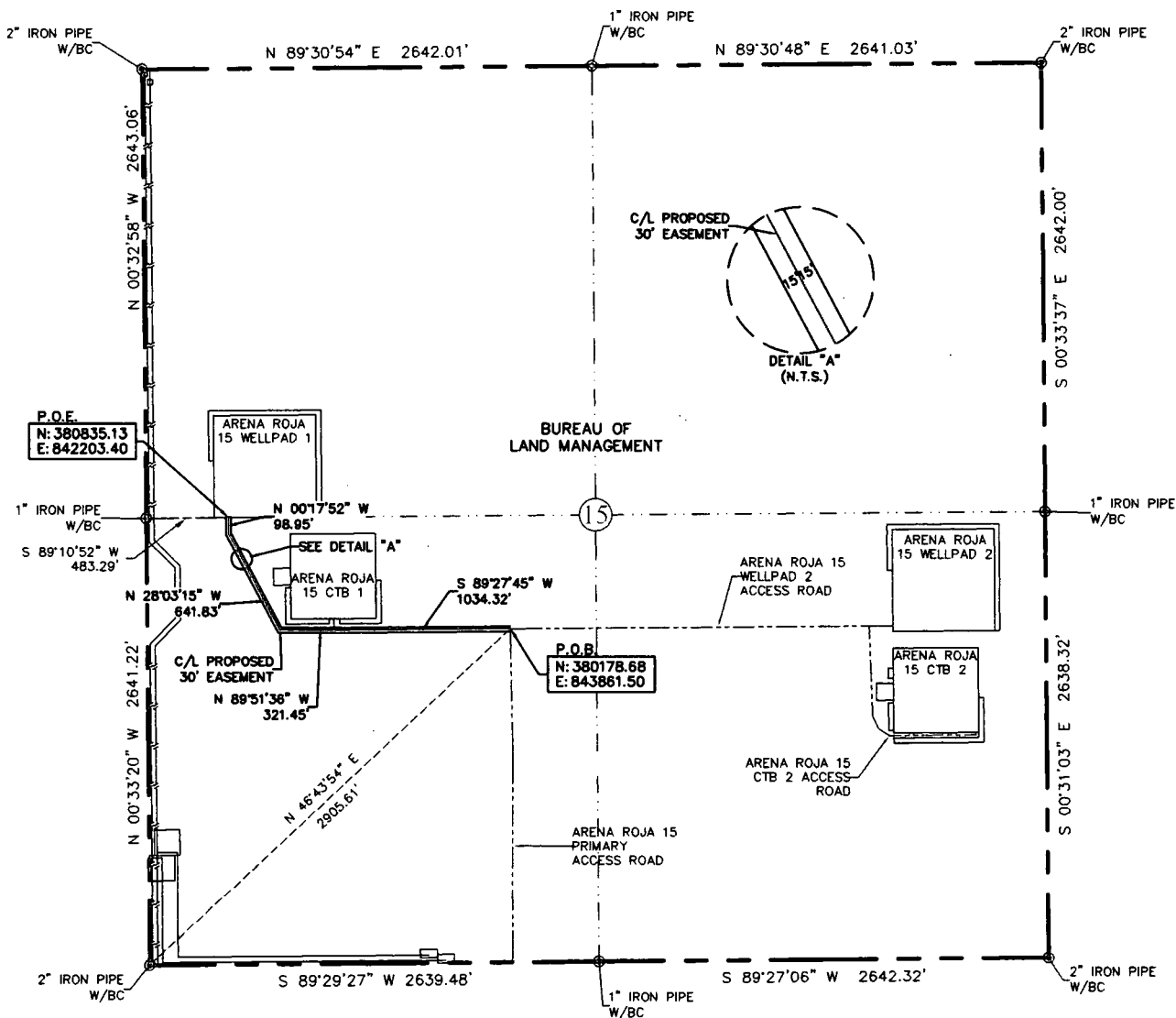
Drawn by:  
CHRIS MAAS

Rev. Date: 7/24/18

Drawn for:

**devon**

EXHIBIT "A"  
PAGE 9 of 12  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 1.444 ACRE(S)  
2096.55 FEET OR 127.06 RODS

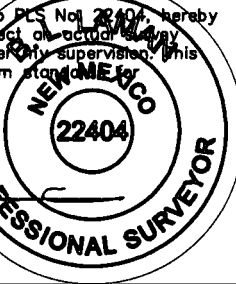
0+00.0 P.O.B./ARENA ROJA 15 PRIMARY ACCESS ROAD  
7+15.3 P.O.E./ARENA ROJA 15 CTB 1 ELECTRIC LINE  
10+34.3 ARENA ROJA 15 CTB 1 ACCESS ROAD  
20+96.5 P.O.E./ARENA ROJA 15 WELLPAD 1

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS #22404  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/22/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
WELLPAD 1 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7840127R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/3/18 CMAAS

DATE OF SURVEY:  
5/19/2018

0 1000 2000



SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO

ACCESS ROAD PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 46°43'54" E a distance of 2905.61' to the **Point of Beginning** of this easement having coordinates of Northing=380178.68, Easting=843861.50 feet and continuing the following courses;

Thence S 89°27'45" W a distance of 1034.32' to an angle point;

Thence N 89°51'36" W a distance of 321.45' to an angle point;

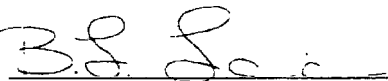
Thence N 28°03'15" W a distance of 641.83' to an angle point;

Thence N 00°17'52" W a distance of 98.95' to the **Point of Ending** having coordinates of Northing=380835.13, Easting=842203.40 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears S 89°10'52" W a distance of 483.29', covering 2096.55' or 127.06 rods and having an area of 1.444 acres.

NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

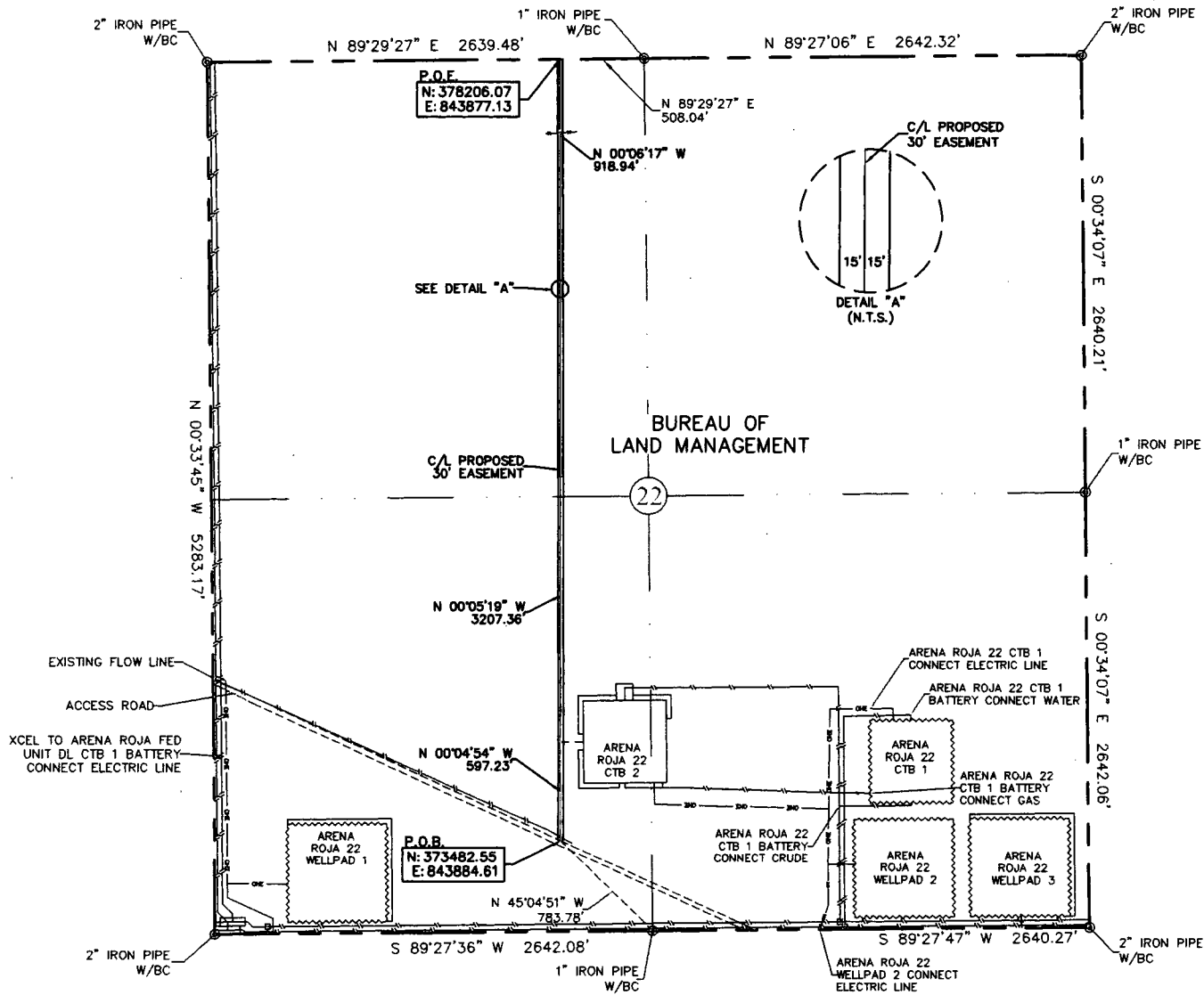
I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

  
B.L. Laman PLS 22404

Date Signed: 08/05/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 1 of 6  
ACCESS ROAD PLAT  
SECTION 22, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



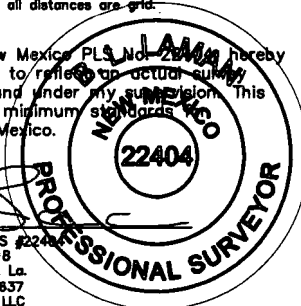
30' EASEMENT AREA = 3.253 ACRE(S)  
4723.53 FEET OR 286.27 RODS

0+00.0 P.O.B./EXISTING ROAD  
42+78.9 FENCE/GATE  
47+23.5 SECTION LINE

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico Professional Surveyor No. 22404 hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC

HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 PRIMARY  
ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 22, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640126R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/4/18

DATE OF SURVEY  
5/19/18

0 1000 2000



**SECTION 22, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 22, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the south quarter corner of Section 22, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 45°04'51" W a distance of 783.78' to the **Point of Beginning** of this easement having coordinates of Northing=373482.55 feet, Easting=843884.61 feet, and continuing the following courses;

Thence N 00°04'54" W a distance of 597.23' to an angle point;

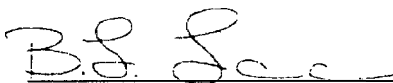
Thence N 00°05'19" W a distance of 3207.36' to an angle point;

Thence N 00°06'17" W a distance of 918.94' to the **Point of Ending** in the north line of Section 22, having coordinates of Northing=378206.07 feet, Easting=843877.13 feet, from said point a 1" iron pipe w/BC for the north quarter corner of Section 22, T26S-R35E bears N 89°29'27" E a distance of 508.04', covering **4723.53' or 286.27 rods** and having an area of **3.253 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

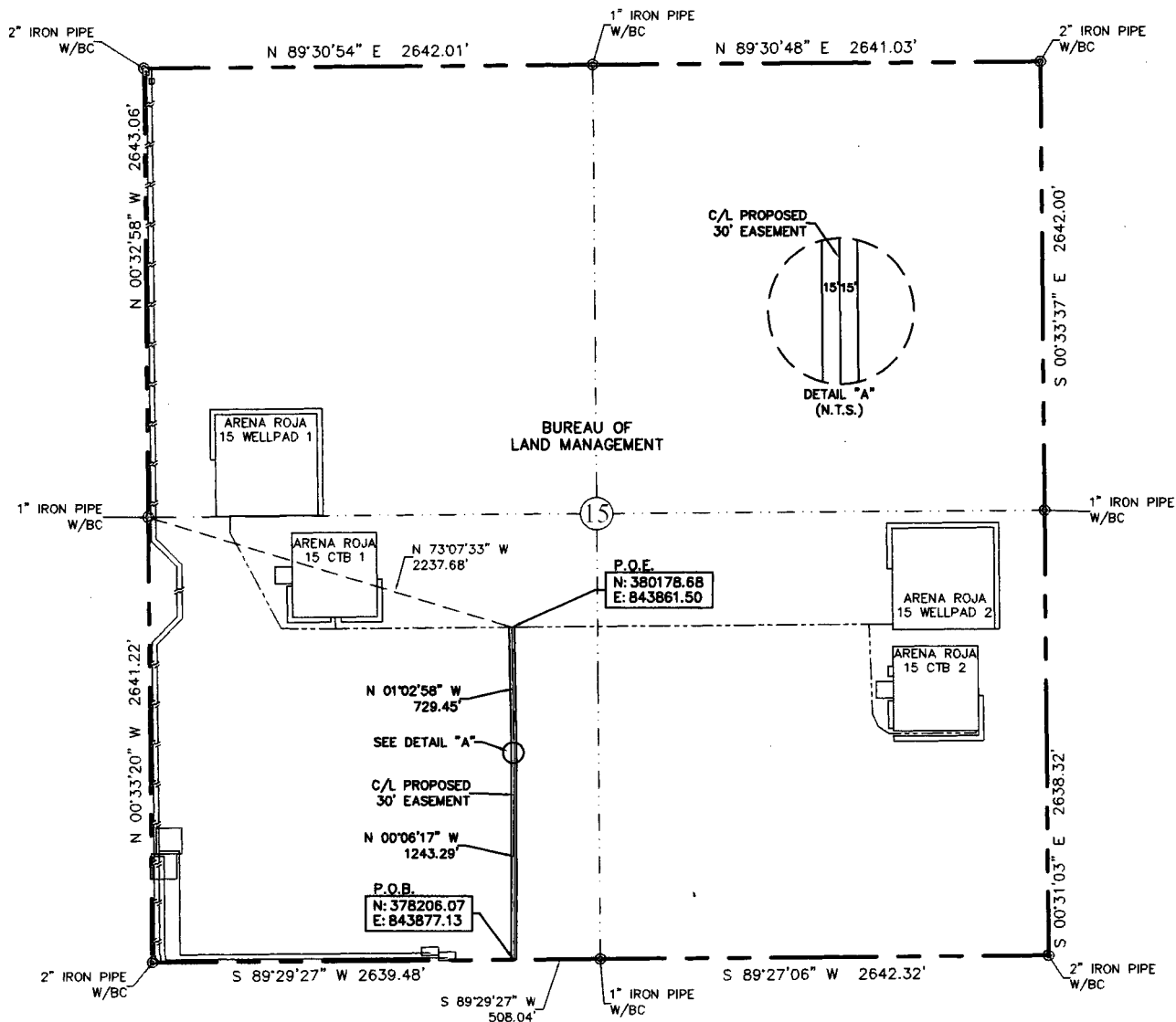
P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 3 of 6  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 1.359 ACRE(S)  
1972.74 FEET OR 119.56 RODS

47+23.5 SECTION LINE  
66+96.3 P.O.E./ARENA ROJA 15 WELLPAD 1 & 2 ACCESS ROAD

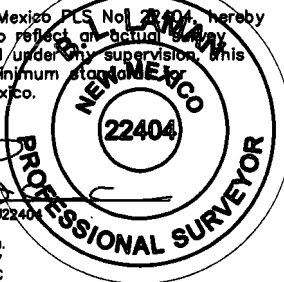
SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

0 1000 2000

B.L. Laman PLS #22404  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 PRIMARY  
ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640128R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/4/18 CMAAS  
DATE OF SURVEY  
5/19/18

**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the south quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 89°29'27" W a distance of 508.04' to the **Point of Beginning** of this easement in the south line of Section 15, having coordinates of Northing=378206.07, Easting=843877.13 feet and continuing the following courses;

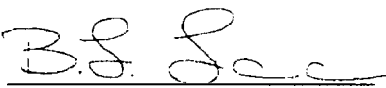
Thence N 00°06'17" W a distance of 1243.29' to an angle point;

Thence N 01°02'58" W a distance of 729.45' to the **Point of Ending** having coordinates of Northing=380178.68, Easting=843861.50 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears N 73°07'33" W a distance of 2237.68', covering **1972.74' or 119.56 rods** and having an area of **1.359 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC

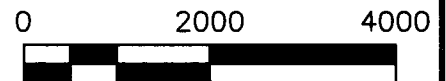


EXHIBIT "A"  
PAGE 5 of 6



QUAD MAP

SECTION 22, T26S-R35E, N.M.P.M.;  
SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO



**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
CHRIS MAAS

Date: 08/04/2018

Drawn for:

**devon**

LINE NUMBER:  
7640126R

WBS NUMBER:

SCALE:  
1" = 2000'

REVISIONS:

DATE OF SURVEY:  
05/19/18



EXHIBIT "A"  
PAGE 6 of 6

9

10

11



BUREAU OF LAND  
MANAGEMENT

15

16

14

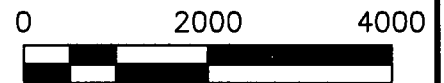
ARENA ROJA 15  
PRIMARY ACCESS ROAD

22

BUREAU OF LAND  
MANAGEMENT

AERIAL MAP

SECTION 22, T26S-R35E, N.M.P.M.;  
SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO



**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
CHRIS MAAS

Date: 08/04/2018

Drawn for:



LINE NUMBER:  
7640126R

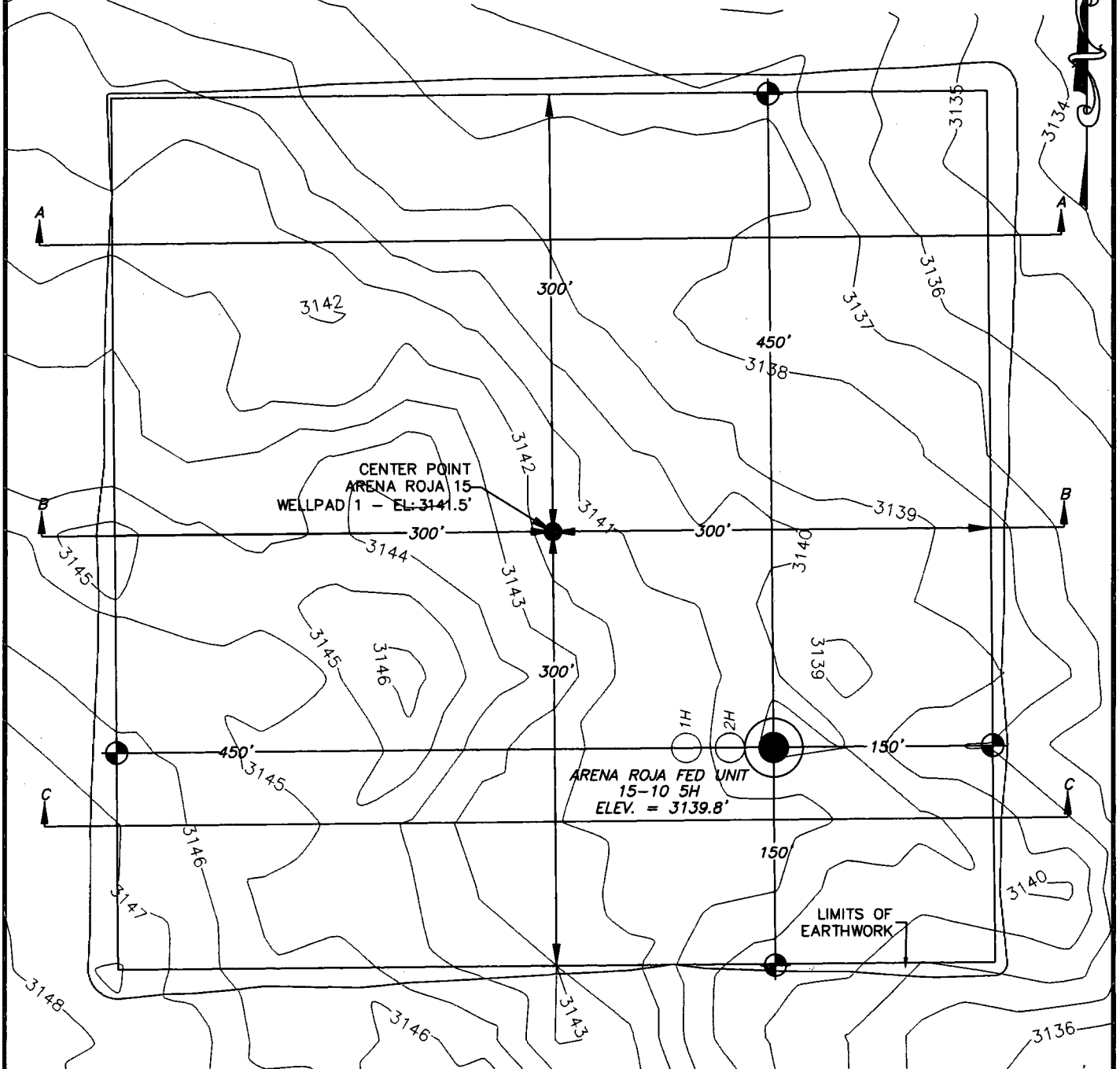
WBS NUMBER:

SCALE:  
1" = 2000'

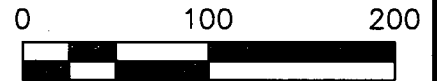
REVISIONS:

DATE OF SURVEY:  
05/19/18

SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.  
ARENA ROJA FED UNIT 15-10 5H  
LOCATED 2490 FT. FROM THE NORTH LINE  
AND 850 FT. FROM THE WEST LINE OF  
SECTION 15, TOWNSHIP 26 SOUTH,  
RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO



EARTHWORK QUANTITIES FOR  
ARENA ROJA 15 WELLPAD 1

CUT	FILL	NET
16,393 CY	16,398 CY	5 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

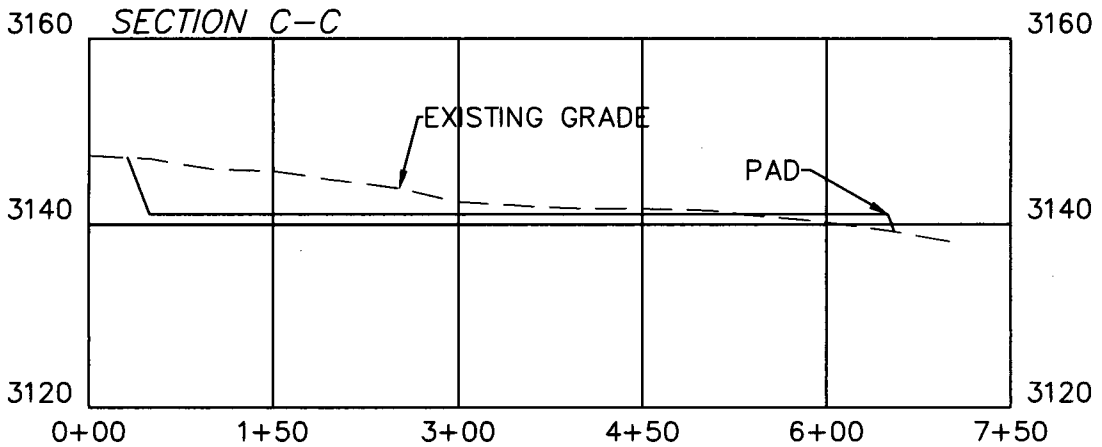
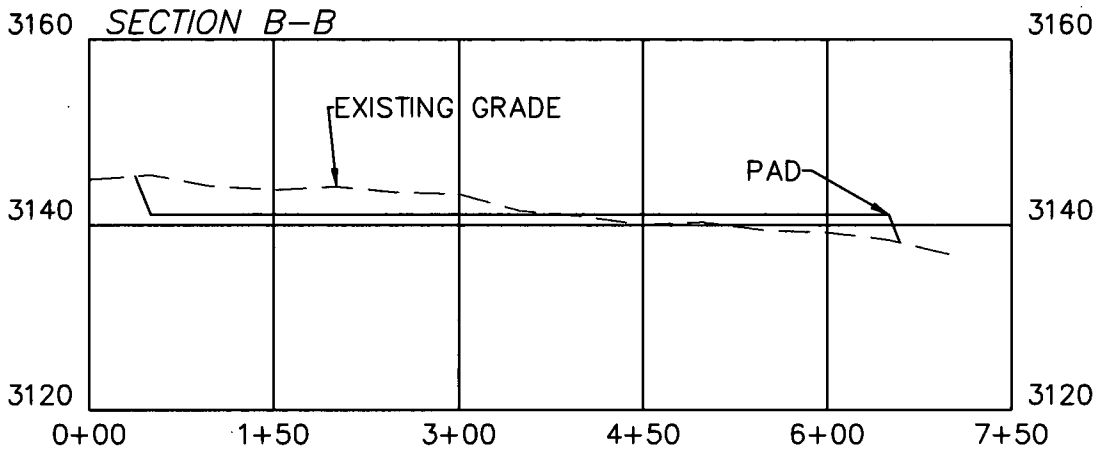
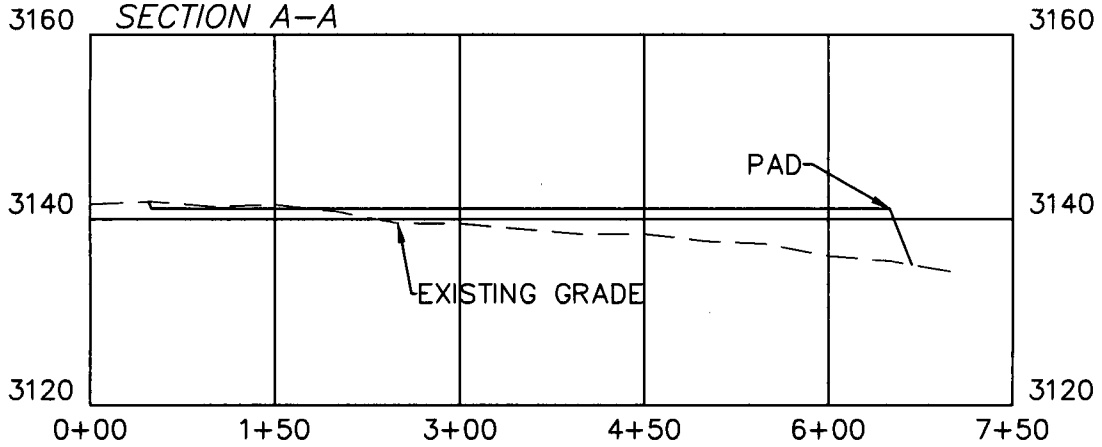
Drawn by:  
CHRIS MAAS

Date: 07/24/2018

Drawn for:



SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.  
ARENA ROJA FED UNIT 15-10 5H  
LOCATED 2490 FT. FROM THE NORTH LINE  
AND 850 FT. FROM THE WEST LINE OF  
SECTION 15, TOWNSHIP 26 SOUTH,  
RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

SCALE 1" = 150' HORIZONTAL  
SCALE 1" = 20' VERTICAL

EARTHWORK QUANTITIES FOR  
ARENA ROJA 15 WELLPAD 1

CUT	FILL	NET
16,393 CY	16,398 CY	5 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
CHRIS MAAS

Rev. Date: 7/24/18

Drawn for:





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

## Drilling Plan Data Report

02/25/2019

APD ID: 10400032905

Submission Date: 08/23/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data  
refers to the most  
recent changes.

[Show Final Text](#)

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	---	3140	0	0	OTHER : Surface	NONE	No
2	RUSTLER	2250	1065	1065	SANDSTONE	NONE	No
3	TOP SALT	1730	1585	1585	SALT	NONE	No
4	BASE OF SALT	-1675	4990	4990	LIMESTONE	NONE	No
5	BELL CANYON	-2030	5345	5345	SANDSTONE	NATURAL GAS,OIL	No
6	CHERRY CANYON	-2995	6310	6310	SANDSTONE	NATURAL GAS,OIL	No
7	BRUSHY CANYON	-4605	7920	7920	SANDSTONE	NATURAL GAS,OIL	No
8	BONE SPRING	-6085	9225	9225	SHALE	NATURAL GAS,OIL	No
9	BONE SPRING 1ST	-7295	10435	10435	SANDSTONE	NATURAL GAS,OIL	No
10	BONE SPRING 2ND	-7715	10855	10855	SANDSTONE	NATURAL GAS,OIL	No
11	BONE SPRING 3RD	-8990	12130	12130	SANDSTONE	NATURAL GAS,OIL	No
12	WOLFCAMP	-9305	12445	12445	SHALE	NATURAL GAS,OIL	Yes
13	STRAWN	-11105	14245	14245	LIMESTONE	NATURAL GAS,OIL	No

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Pressure Rating (PSI): 10M

Rating Depth: 12455

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below 7-5/8" intermediate casing, a 13-5/8" BOP/BOPE system with a minimum rating of 10M 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:**

10M\_BOPE\_CHK\_20180823115134.pdf

**BOP Diagram Attachment:**

10M\_BOPE\_CHK\_20180823115144.pdf

---

Pressure Rating (PSI): 5M

Rating Depth: 12411

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below 10-3/4" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 5M 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\_20180823115324.pdf

**BOP Diagram Attachment:**

5M\_BOPE\_CK\_20180823115333.pdf

---

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	14.75	10.75	NEW	API	N	0	1043	0	900			1043	J-55	40.5	STC	1.125	1.25	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	11924	0	11882			11924	P-110	29.7	OTHER - BTC	1.125	1.25	BUOY	1.6	BUOY	1.6
3	INTERMEDIATE	8.75	7.625	NEW	API	N	11924	12453	11882	12411			529	P-110	29.7	OTHER - FLUSHMAX	1.125	1.25	BUOY	1.6	BUOY	1.6
4	PRODUCTION	6.75	5.5	NEW	API	N	0	20321	0	12455			20321	P-110	20	OTHER - VAM SG	1.125	1.25	BUOY	1.6	BUOY	1.6

#### Casing Attachments

Casing ID: 1 String Type: SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Surf\_Csg\_Assumpt\_20180823115432.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

#### Casing Attachments

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Int\_Csg\_Assumpt\_20180823115539.pdf

---

**Casing ID:** 3      **String Type:**INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Int\_Csg\_Assumpt\_20180823115631.pdf

---

**Casing ID:** 4      **String Type:**PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Prod\_Csg\_Assumpt\_20180823115705.pdf

---

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Lead		0	0	0	0	0	0		SEE DRLG PLAN	N/A

SURFACE	Lead		0	1043	649	1.34	14.8	870	50	CLASS C	1% Calcium Chloride
---------	------	--	---	------	-----	------	------	-----	----	---------	---------------------

INTERMEDIATE	Lead		0	8453	721	3.27	9	2358	30	TUNED	Tuned Light
INTERMEDIATE	Tail		8453	12453	648	1.6	13.2	1037	30	CLASS H	Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
PRODUCTION	Lead		12253	20321	632.77	1.33	13.2	842	25	Class H	0.125 lbs/sack Poly-E-Flake

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



Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1043	SPUD MUD	8.33	9				2			
1043	1245 3	SALT SATURATED	9	10				2			
1043	1245 3	SALT SATURATED	9	10				2			
1245 3	2032 1	OIL-BASED MUD	10	12				12			

**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

Anticipated Bottom Hole Pressure: 7000

Anticipated Surface Pressure: 4259.89

Anticipated Bottom Hole Temperature(F): 180

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

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

Hydrogen Sulfide drilling operations plan required? YES

**Hydrogen sulfide drilling operations plan:**

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_H2S\_Plan\_20180823120051.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

**Proposed horizontal/directional/multi-lateral plan submission:**

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_DIR\_SVY\_20180823120104.pdf

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_Plot\_20180823120105.pdf

**Other proposed operations facets description:**

MULTI-BOWL VERBIAGE

MULTI-BOWL WELLHEAD - 2 VARIATIONS OF 10M

10M ANNULAR VARIANCE DOC & SCHEMATIC

CLOSED LOOP DESIGN PLAN

DRILLING PLAN

AC REPORT

CO-FLEX HOSE

SPUDDER RIG REQUEST

GCP FORM

SPEC SHEETS - 3

**Other proposed operations facets attachment:**

5.5\_x\_20\_P110\_EC\_VAMSG\_20180823120158.PDF

7.625\_29.70\_P110\_Flushmax\_20180823120159.pdf

8.625\_32\_P110EC\_VAM\_FJL\_NA\_7.875\_SD\_20180823120159.PDF

Annular\_Preventer\_Summary\_20180823120200.pdf

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_AC\_Report\_20180823120202.pdf

Clsd\_Loop\_20180823120203.pdf

MB\_Wellhd\_5M\_WC\_20180823120205.pdf

MB\_Wellhd\_10M\_20180823120206.pdf

Spudder\_Rig\_Info\_20180823120206.pdf

MB\_Wellhd\_10M\_2\_20180823120321.PDF

Arena\_Roja\_15\_10\_GCP\_Form\_20180823151512.pdf

8.625\_32\_P110EC\_7.875\_SD\_20181210104258.pdf

MB\_Verb\_10M\_R\_20181220094230.pdf

MB\_Verb\_5M\_R\_20181220094231.pdf

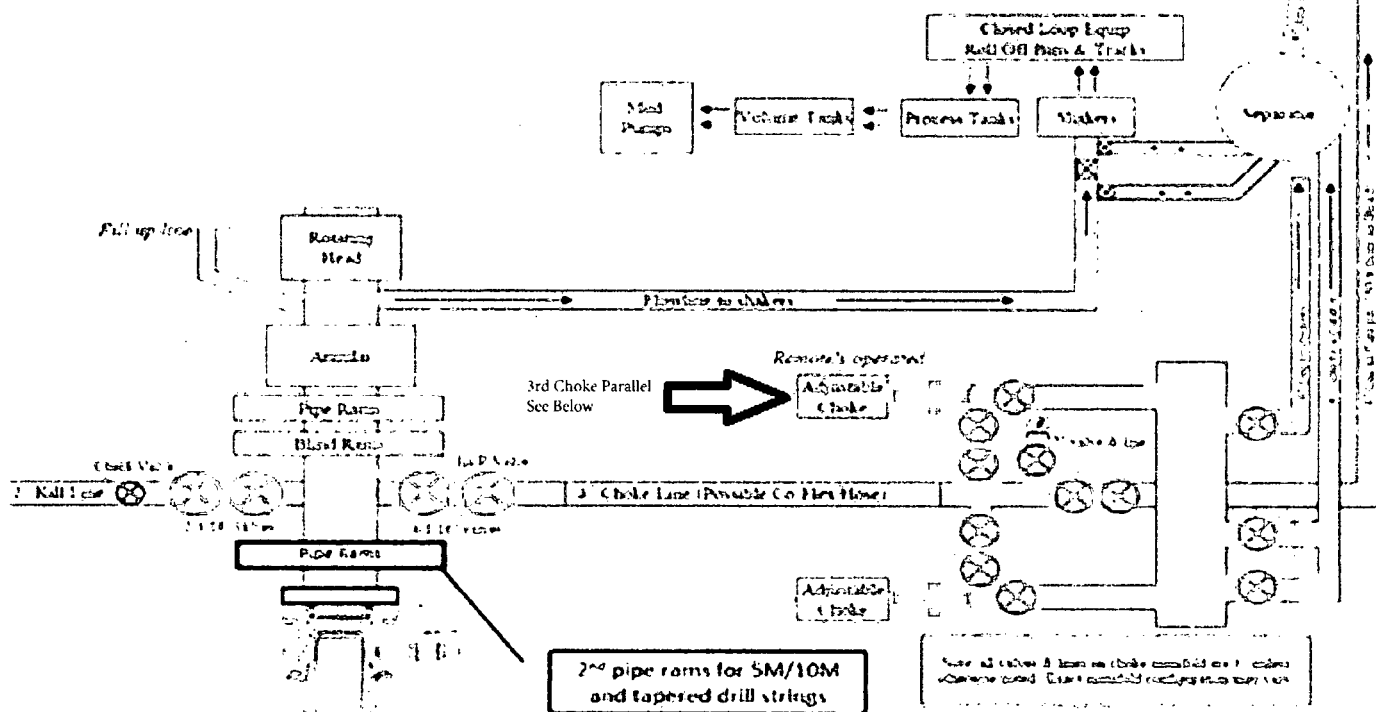
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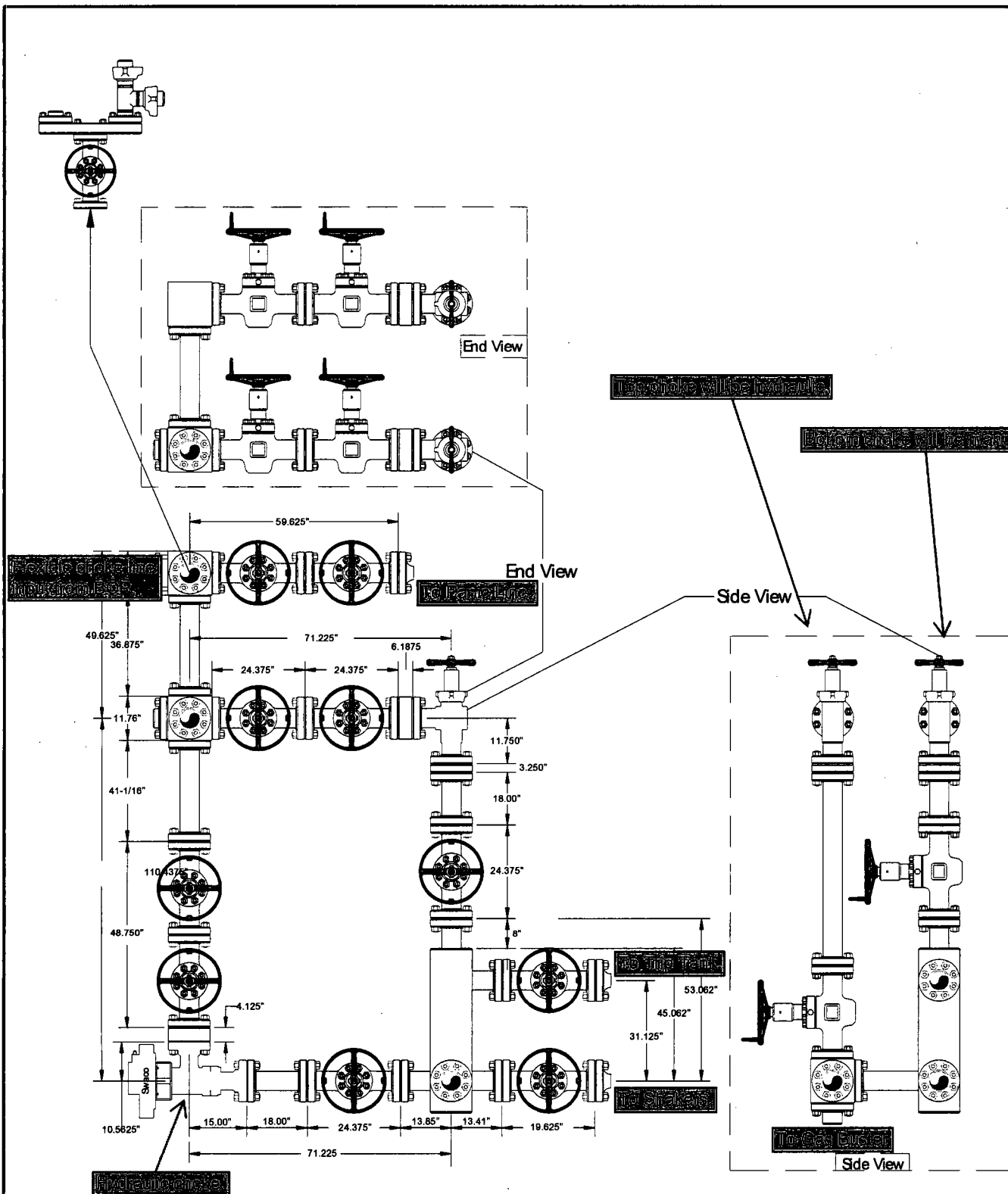
10M\_BOPE\_DR\_and\_CLS\_Sch\_RKL\_20181220094308.pdf

**Other Variance attachment:**

Co\_flex\_20180823120220.pdf

## 10M BOPE & Closed Loop Equipment Schematic



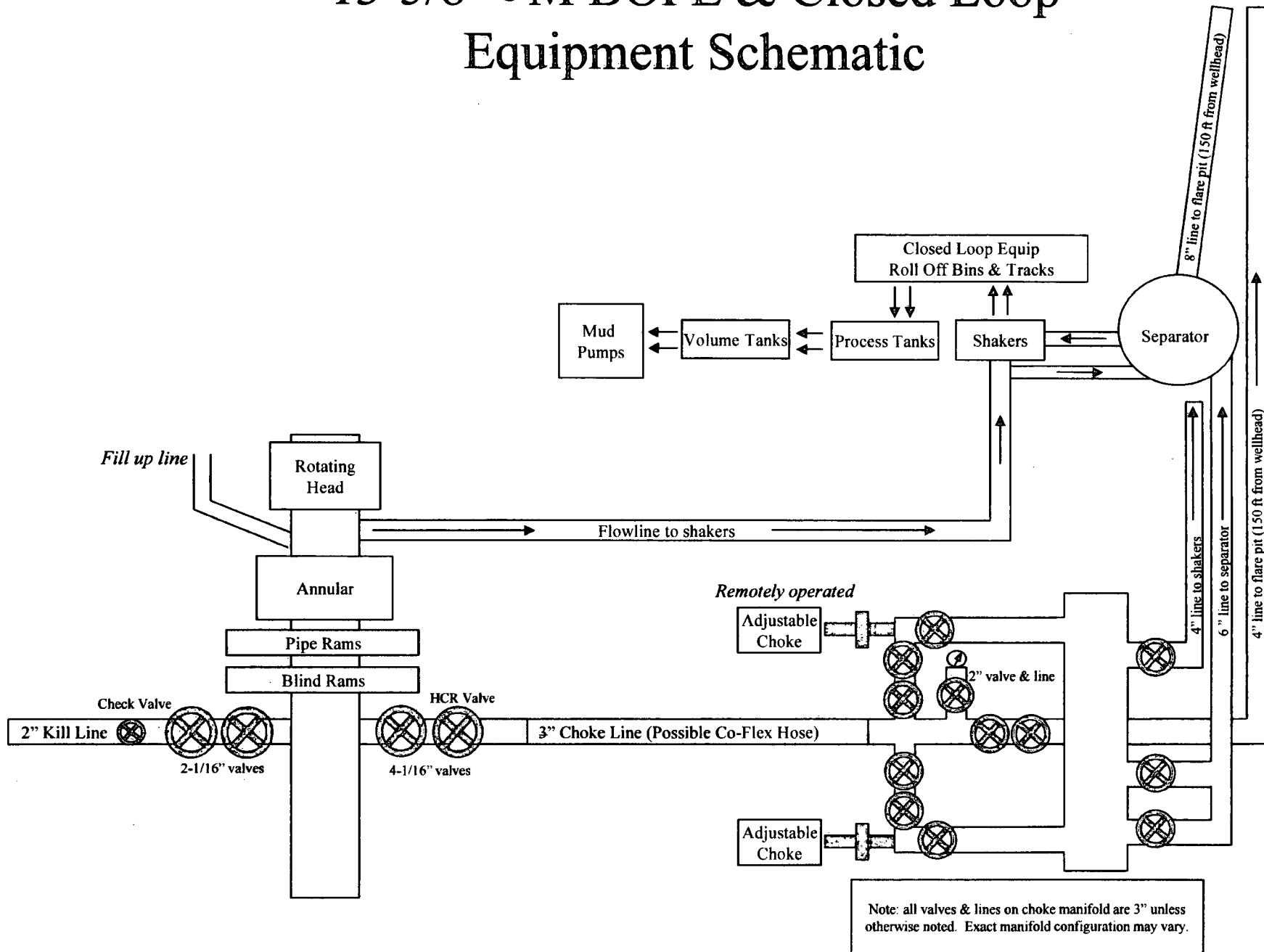


Helmerich & Payne  
Flex 3 Rig w/ 3 Chokes

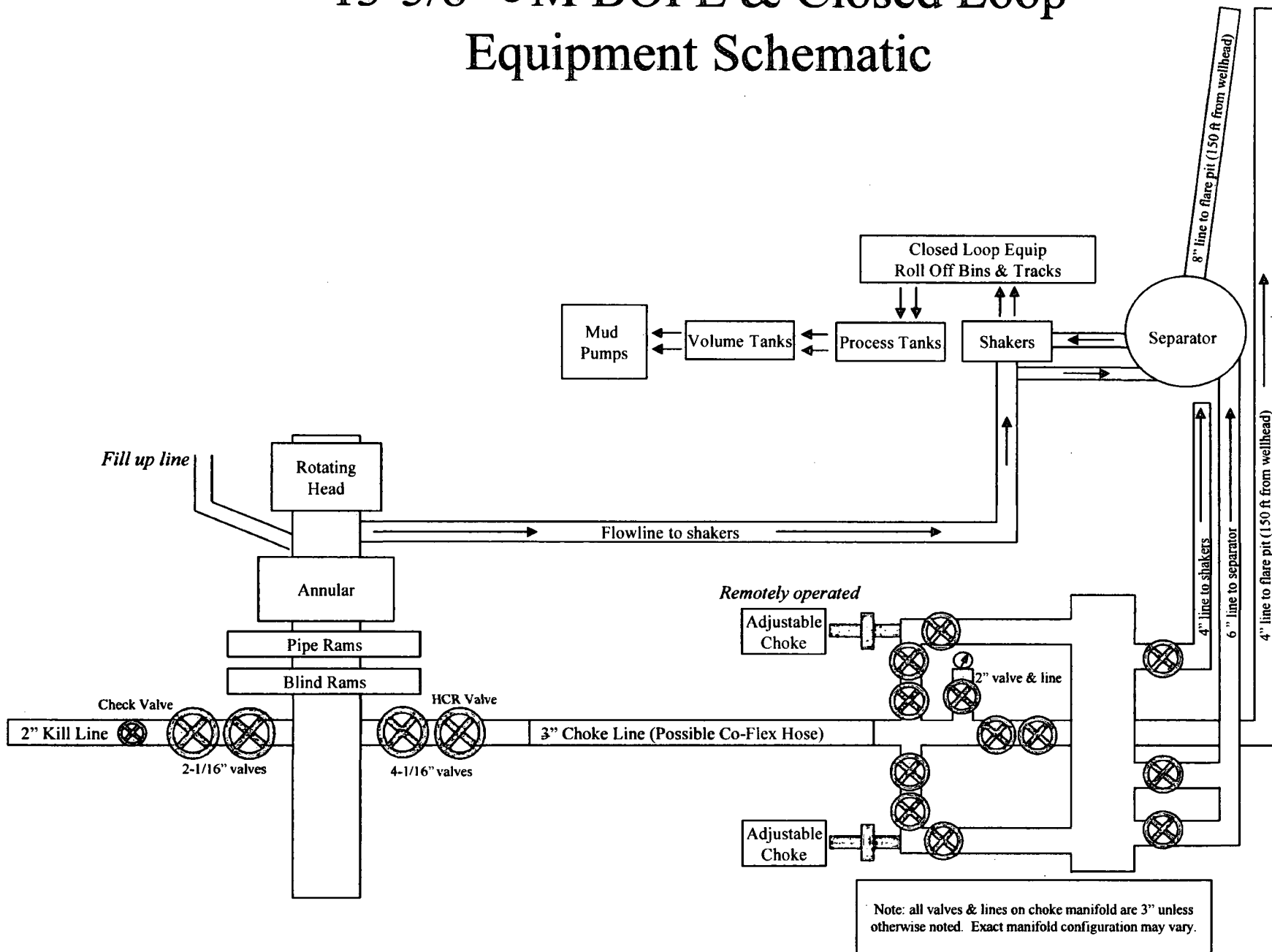
**devon**

Name: Mike Potts	Date: 6-23-2010	Working Pressure: 10M	J5132-E
------------------	-----------------	-----------------------	---------

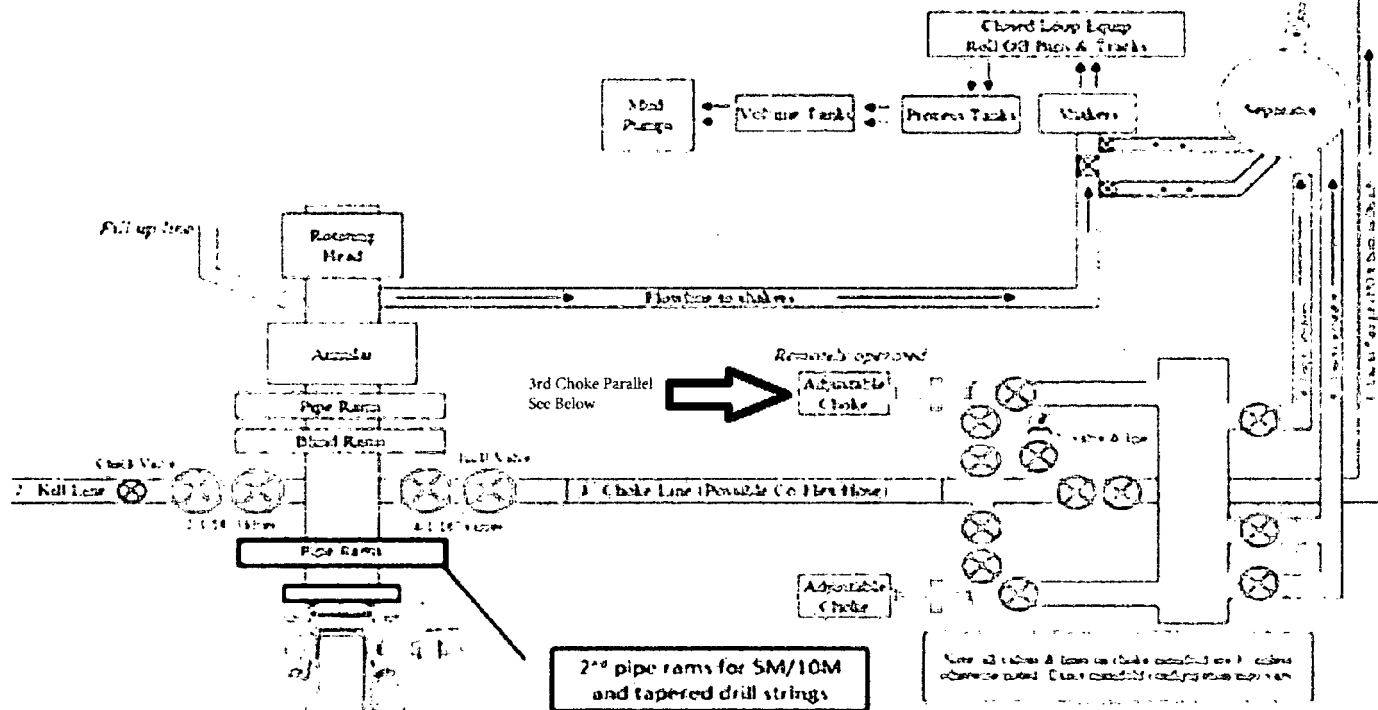
# 13-5/8" 5M BOPE & Closed Loop Equipment Schematic

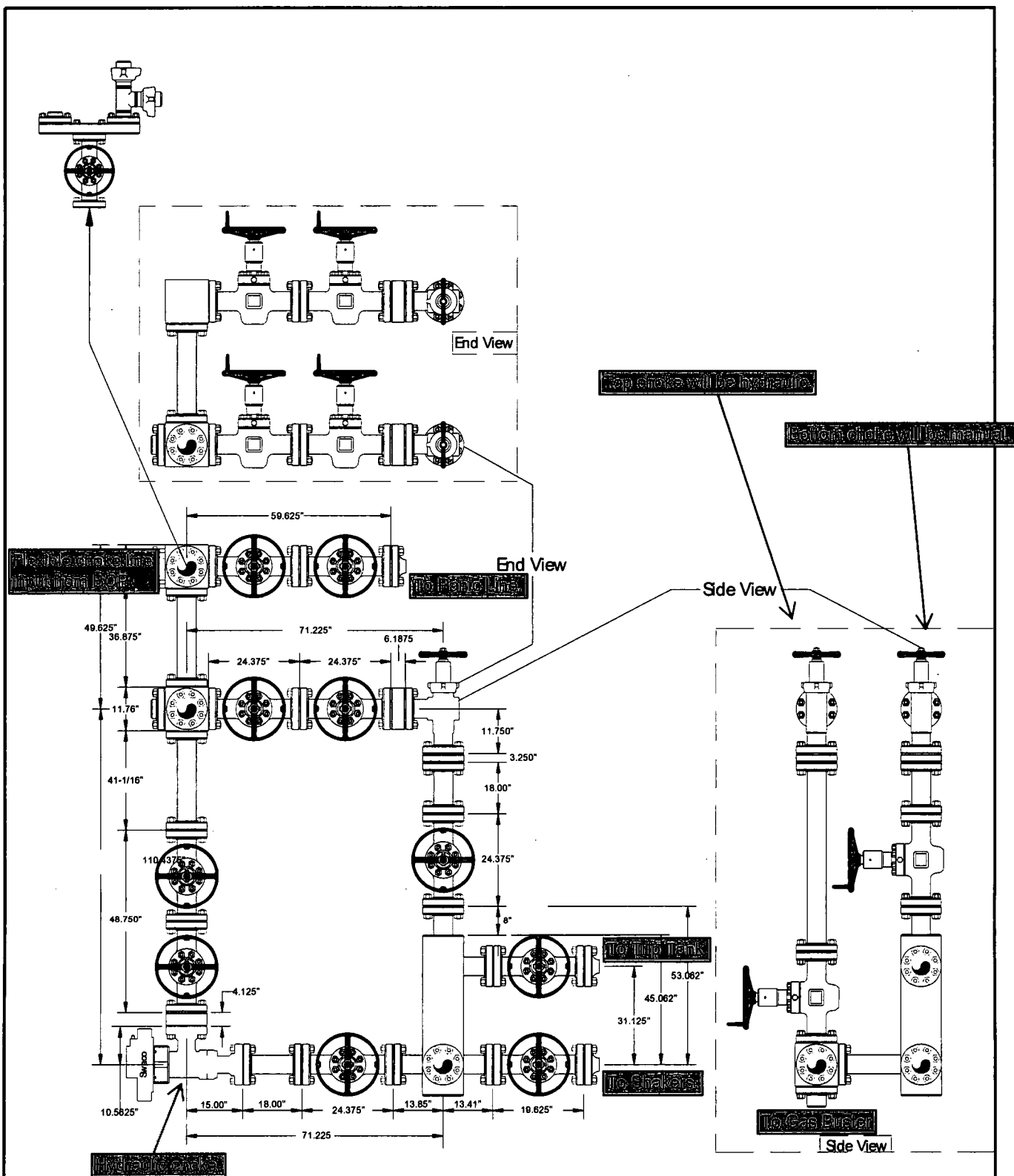


# 13-5/8" 5M BOPE & Closed Loop Equipment Schematic



## 10M BOPE & Closed Loop Equipment Schematic





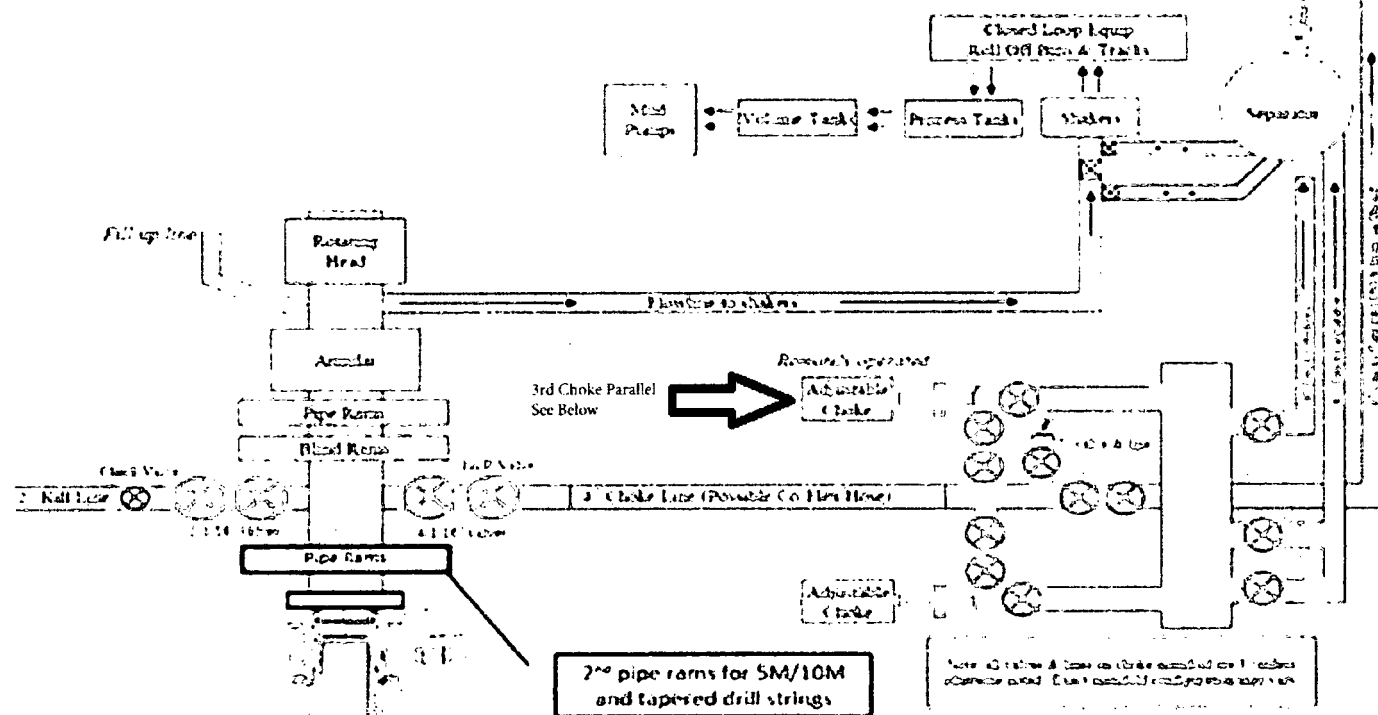
Helmerich & Payne  
Flex 3 Rig w/ 3 Chokes

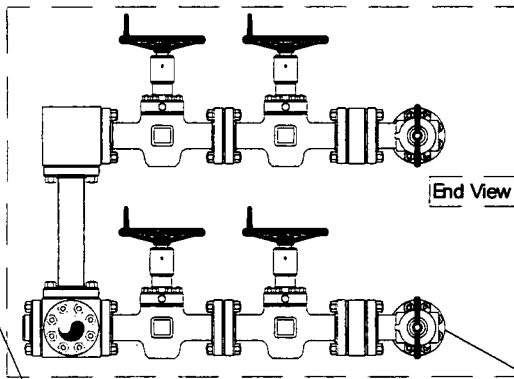
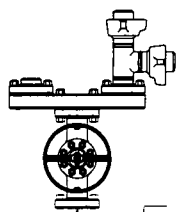
**devon**

Mike Potts	6-23-2010	10M	J-5132-E
Name:	Date:	Working Pressure:	



## 10M BOPE & Closed Loop Equipment Schematic





End View

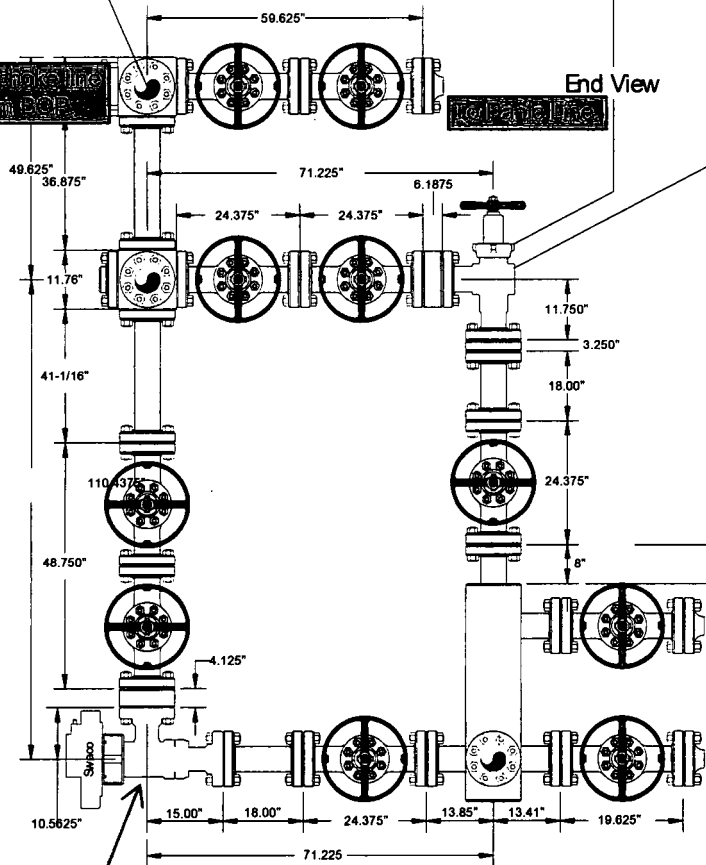
Top choke will be hydraulic

Bottom choke will be manual

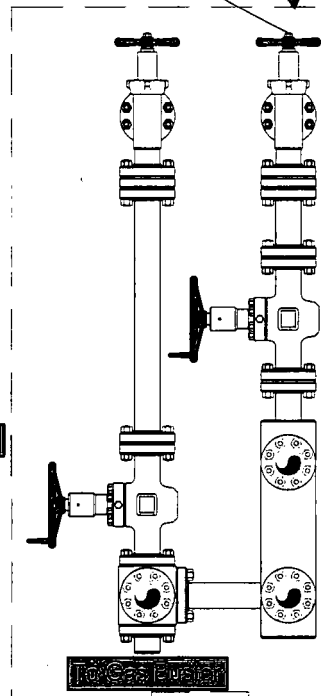
Flex 3 choke line input from BOP

End View

Side View



Hydraulic choke



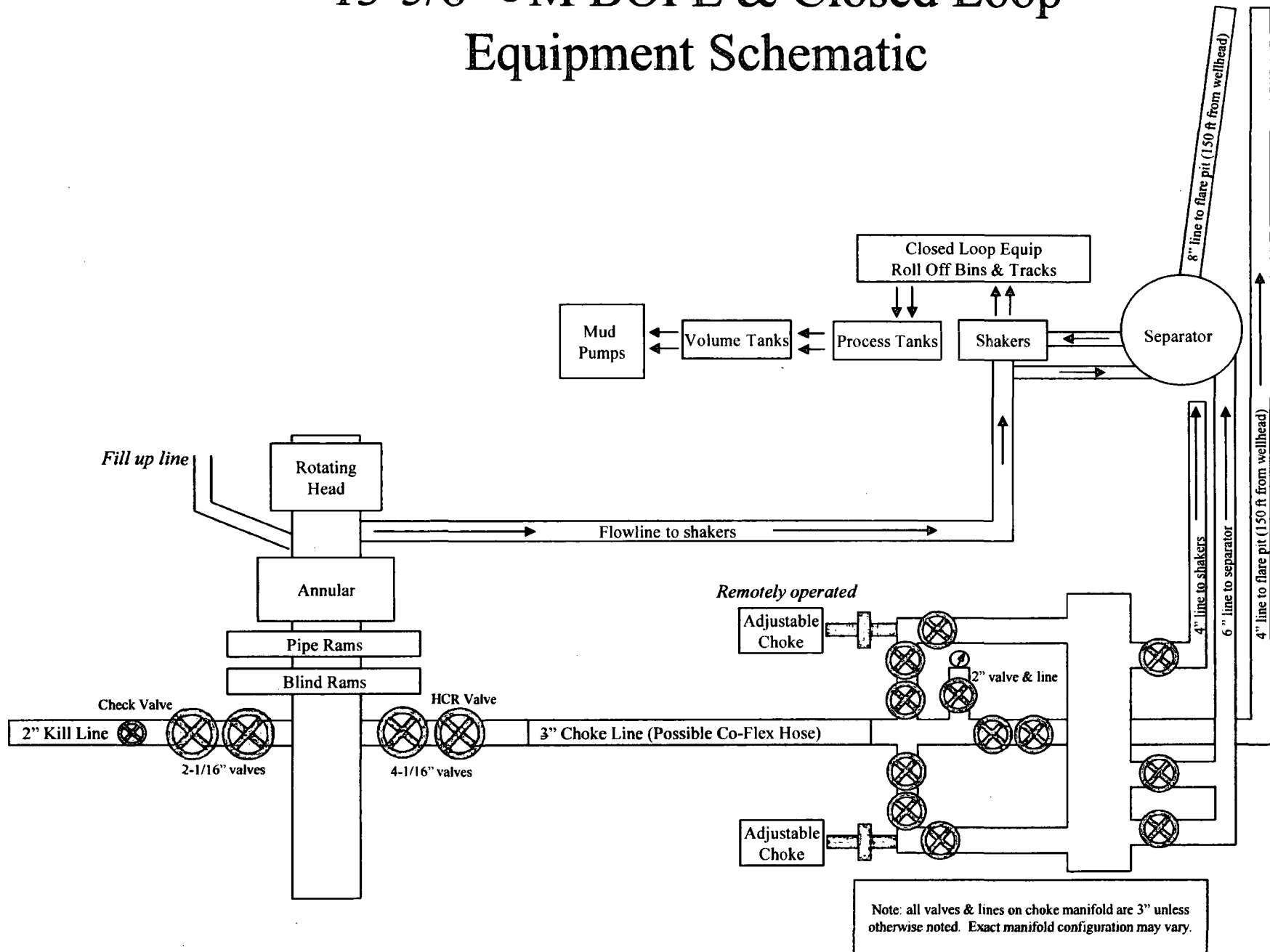
Side View

Helmerich & Payne  
Flex 3 Rig w/ 3 Chokes

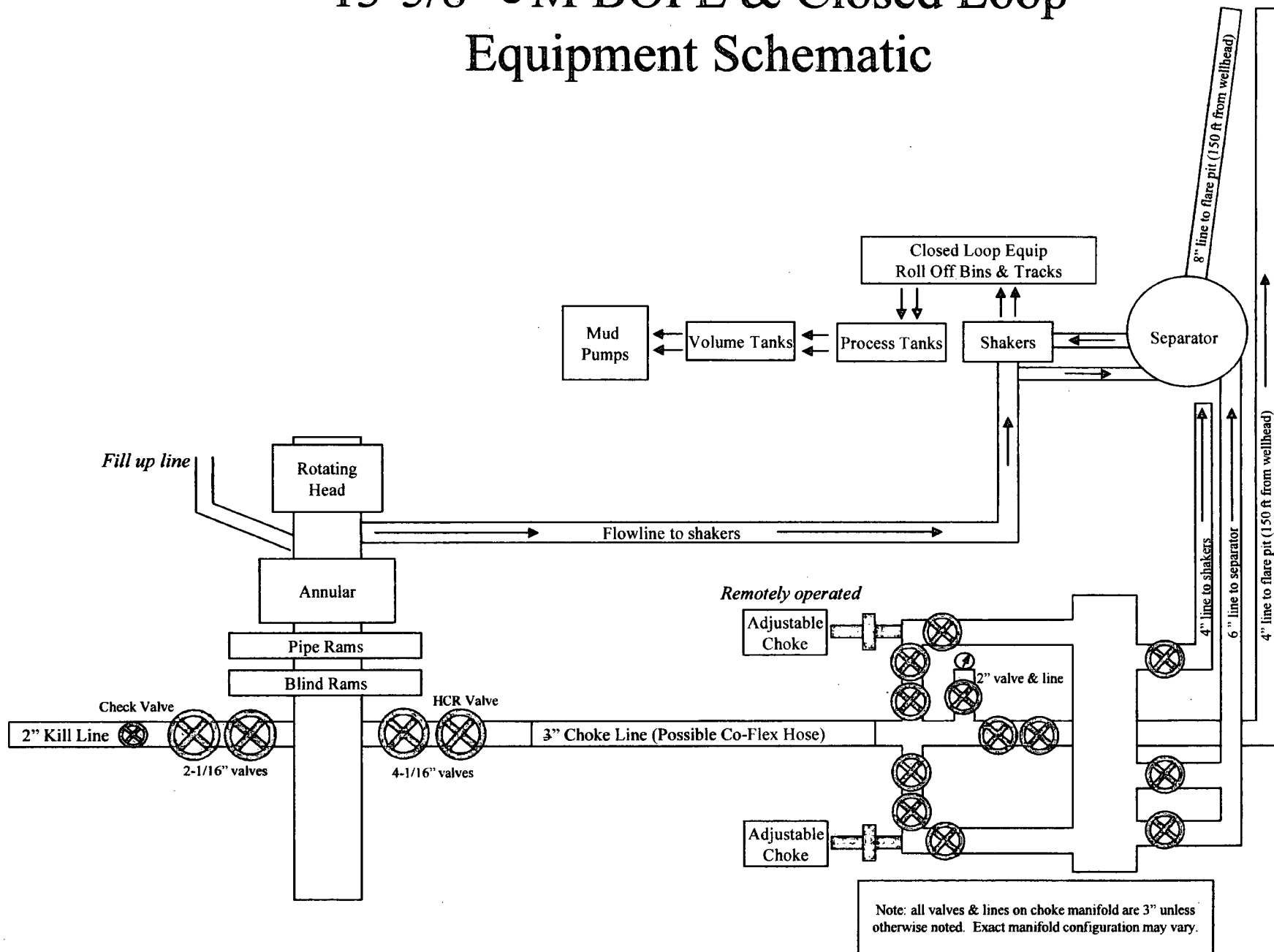


Name: Mike Potts	Date: 6-23-2010	Working Hours: 10M	J-5132-E
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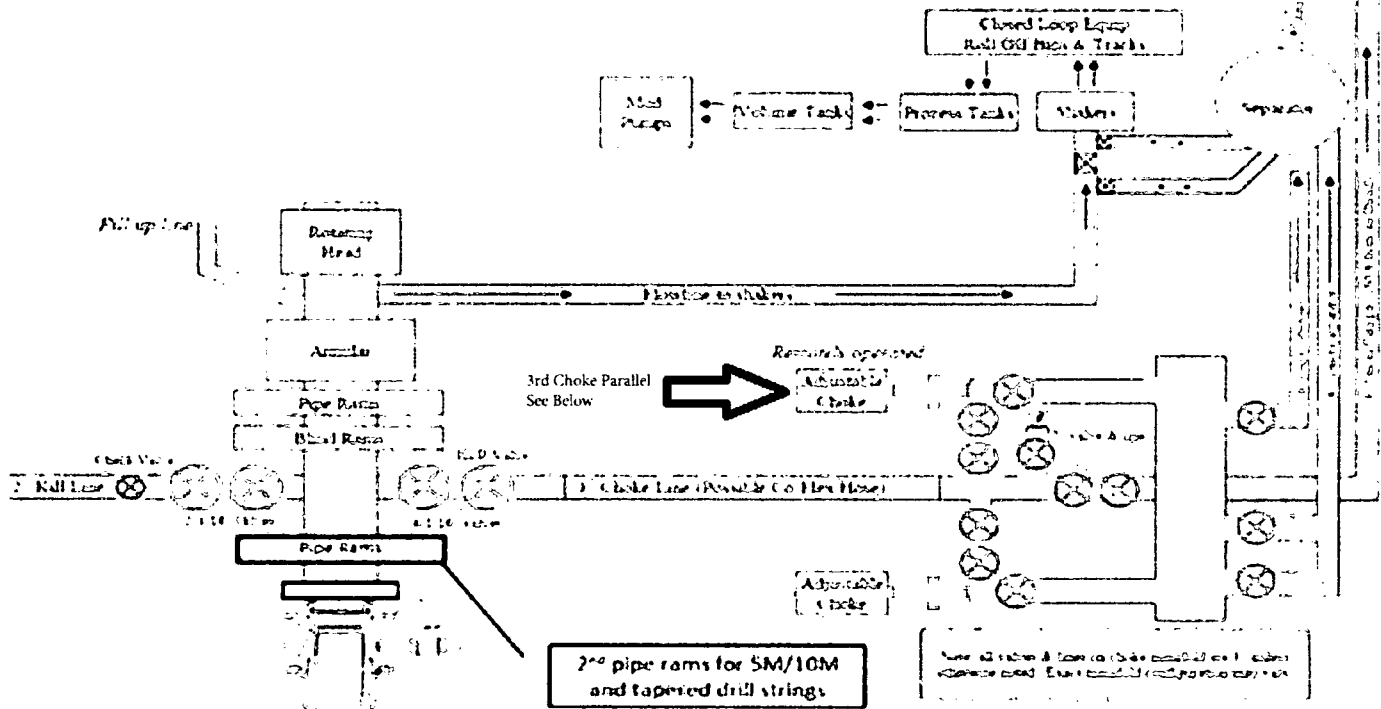
# 13-5/8" 5M BOPE & Closed Loop Equipment Schematic

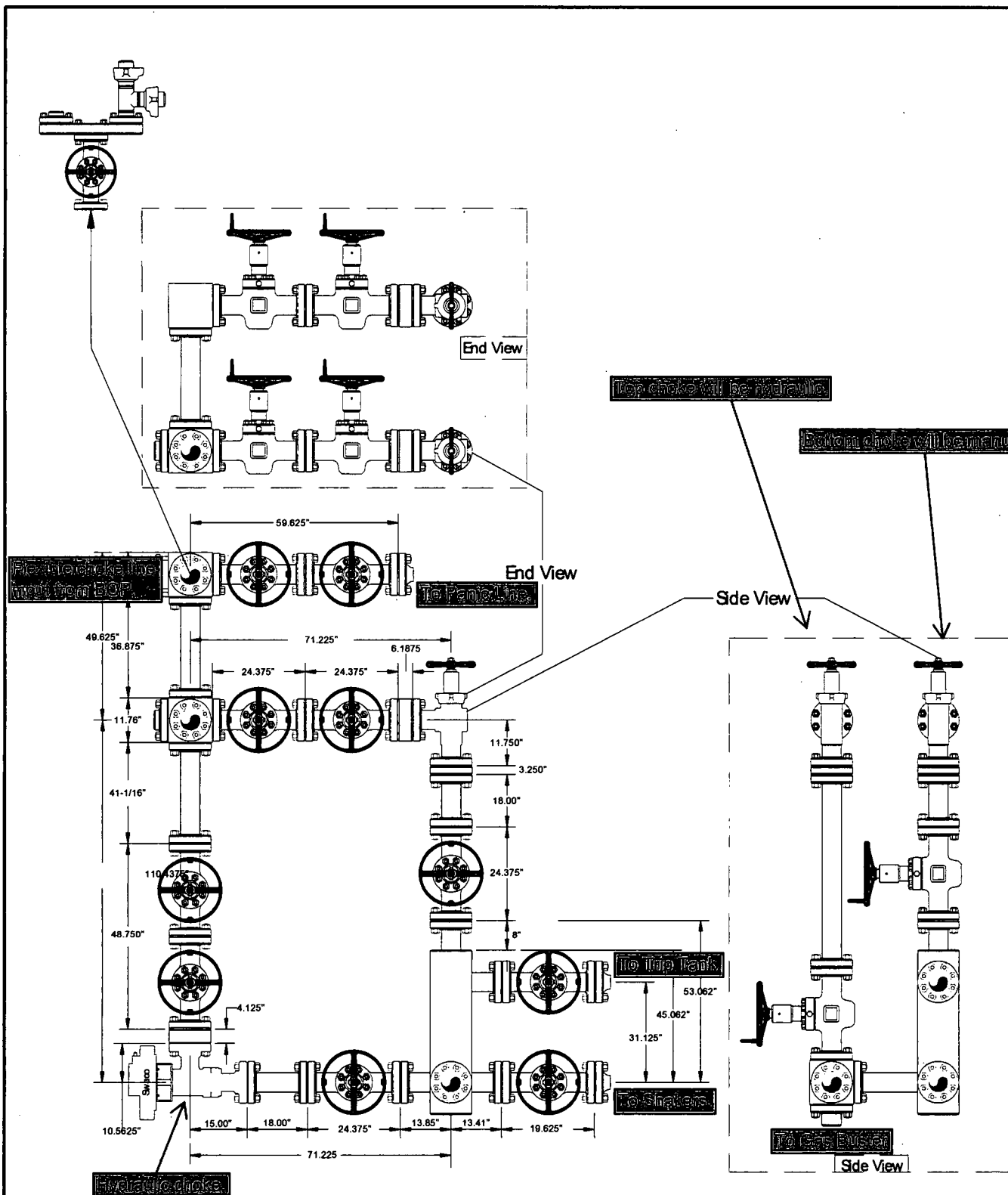


# 13-5/8" 5M BOPE & Closed Loop Equipment Schematic



## 10M BOPE & Closed Loop Equipment Schematic





Helmerich & Payne  
Flex 3 Rig w/ 3 Chokes

**devon**

Name: Mike Potts	Date: 6-23-2010	Working Pressure: 10M	J5132-E
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## 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

### 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



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

# Hydrogen Sulfide ( $H_2S$ ) Contingency Plan

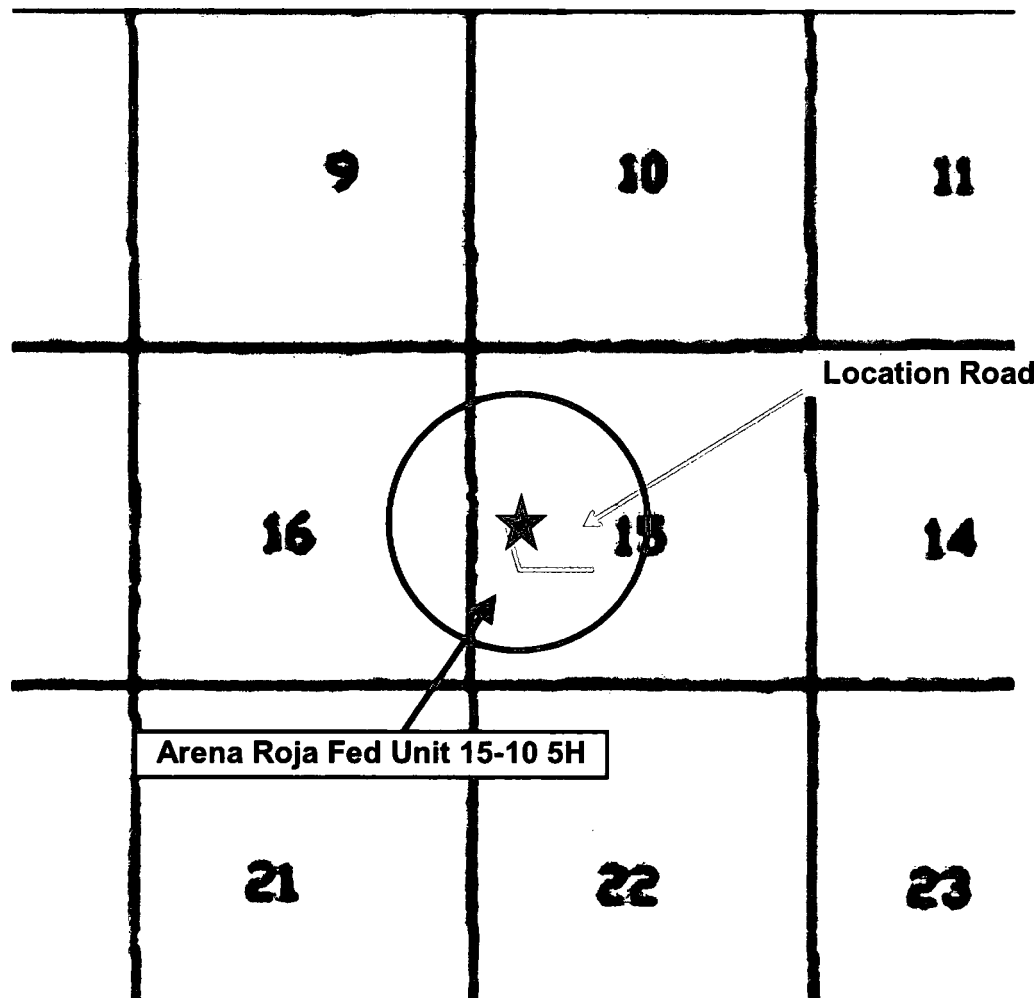
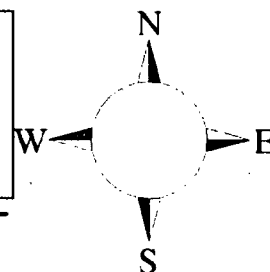
**For**

Arena Roja Fed Unit 15-10 5H

**Sec-15 T-26S R-35E**  
**2490' FNL & 850 FWL**  
**LAT. = 32.0436896' N (NAD83)**  
**LONG = 103.3611418' W**

Lea County NM

**Arena Roja Fed Unit 15-10 5H**  
 This is an open drilling site. H<sub>2</sub>S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H<sub>2</sub>S, including warning signs, wind indicators and H<sub>2</sub>S monitor.



**Assumed 100 ppm ROE = 3000' (Radius of Exposure)**  
 100 ppm H<sub>2</sub>S 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<sub>2</sub>S concentration shall trigger activation of this plan.**

### **Emergency Procedures**

**In the event of a release of gas containing H<sub>2</sub>S, 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<sub>2</sub>S 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<sub>2</sub>S, 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<sub>2</sub>). Intentional ignition must be coordinated with the NMOC 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<sub>2</sub>S and SO<sub>2</sub>**

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	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<sub>2</sub>S) 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<sub>2</sub>S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H<sub>2</sub>S 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<sub>2</sub>S 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<sub>2</sub>S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan.

### **II. HYDROGEN SULFIDE TRAINING**

Note: All H<sub>2</sub>S 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<sub>2</sub>S.

## **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<sub>2</sub>S detection and monitoring equipment:**

Portable H<sub>2</sub>S monitors positioned on location for best coverage and response. These units have warning lights which activate when H<sub>2</sub>S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

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

### **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<sub>2</sub>S circulated to surface. Proper mud weight, safe drilling practices and the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S 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<sub>2</sub>S trim.
- B. All elastomers used for packing and seals shall be H<sub>2</sub>S 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<sub>2</sub>S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.



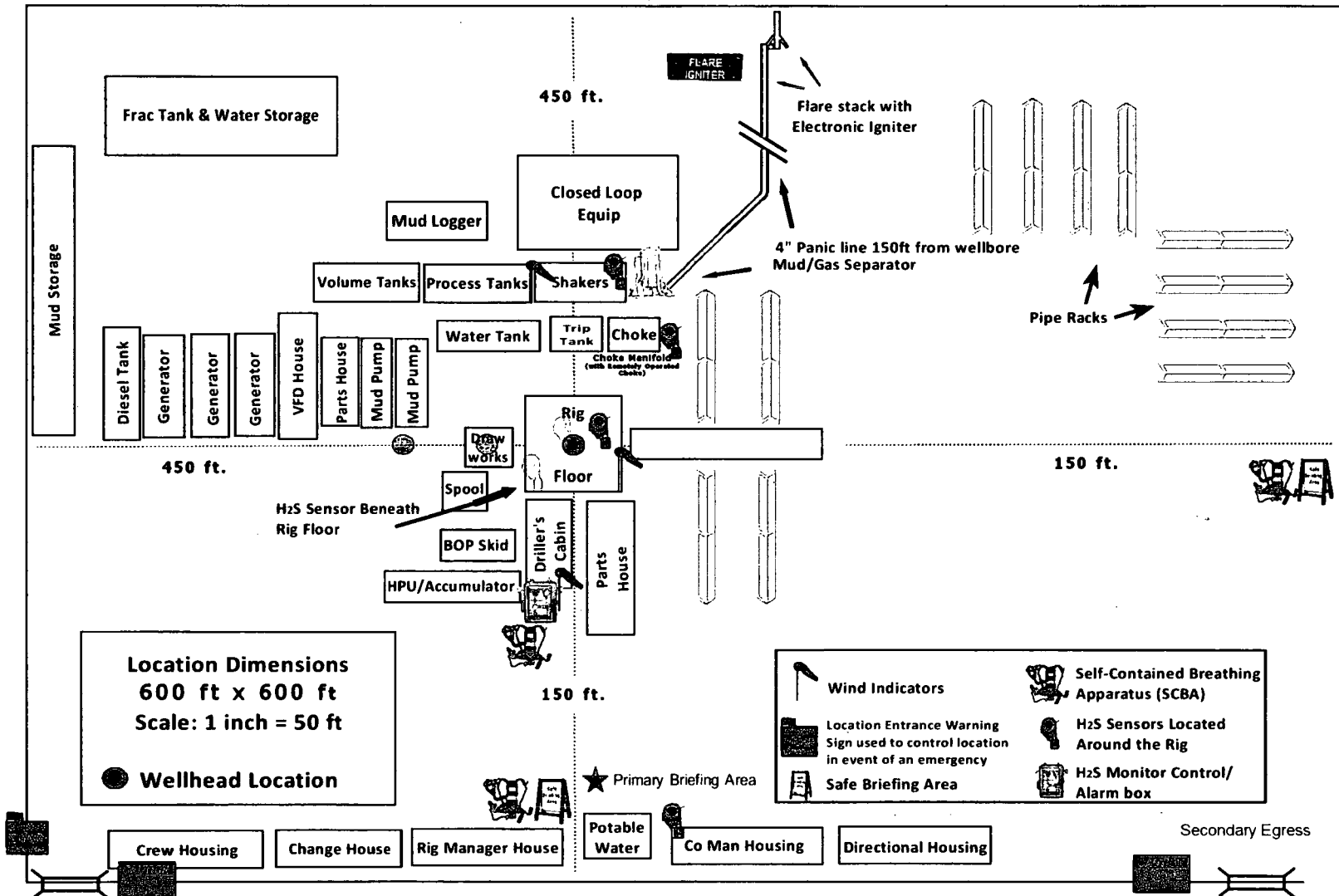
<b><u>Devon Energy Corp. Company Call List</u></b>		
Drilling Supervisor – Basin – Jonathan Fisher		405-228-8976
Randy Gladden – Day 575-748-1805 Cell 575-513-9463		
EHS Professional – Jason Robison		405-541-2841
<b><u>Agency Call List</u></b>		
<b><u>Lea County (575)</u></b>	<b>Hobbs</b>	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	<b>Ambulance</b>	<b>911</b>
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
<b><u>Eddy County (575)</u></b>	<b>Carlsbad</b>	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	<b>Ambulance</b>	<b>911</b>
	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
	<b>Emergency Services</b>	
	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
<b><u>Give GPS position:</u></b>	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 - <a href="http://www.nhc.noaa.gov">www.nhc.noaa.gov</a>	

Prepared in conjunction with  
Dave Small





# Devon Energy - Well Pad Rig Location Layout Safety Equipment Location





# **WCDSC Permian NM**

**Lea County (NAD83 New Mexico East)**

**Sec 15-T26S-R35E**

**Arena Roja Fed Unit 15-10 5H**

**Wellbore #1**

**Plan: Permit Plan 1**

## **Standard Planning Report - Geographic**

**02 August, 2018**

# Planning Report - Geographic

<b>Database:</b>	EDM r5000.141_Prod US	<b>Local Co-ordinate Reference:</b>	Well Arena Roja Fed Unit 15-10 5H
<b>Company:</b>	WCDSC Permian NM	<b>TVD Reference:</b>	RKB @ 3164.80ft
<b>Project:</b>	Lea County (NAD83 New Mexico East)	<b>MD Reference:</b>	RKB @ 3164.80ft
<b>Site:</b>	Sec 15-T26S-R35E	<b>North Reference:</b>	Grid
<b>Well:</b>	Arena Roja Fed Unit 15-10 5H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Permit Plan 1		

<b>Project</b>	Lea County (NAD83 New Mexico East)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	Sec 15-T26S-R35E			
<b>Site Position:</b>		<b>Northing:</b>	383,471.16 usft	<b>Latitude:</b> 32.050535
<b>From:</b>	None	<b>Easting:</b>	841,694.82 usft	<b>Longitude:</b> -103.363890
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.51 °

<b>Well</b>	Arena Roja Fed Unit 15-10 5H			
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	380,988.48 usft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	842,568.65 usft
<b>Position Uncertainty</b>		0.50 ft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 3,139.80 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	8/2/2018	6.72	59.92	47,739.26581472

<b>Design</b>	Permit Plan 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	5.40

<b>Plan Survey Tool Program</b>	<b>Date</b>	8/2/2018		
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	20,312.80 Permit Plan 1 (Wellbore #1)	MWD+HDGM	
			OWSG MWD + HDGM	

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,958.22	5.73	110.32	2,957.46	-7.95	21.46	1.25	1.25	0.00	110.32	
11,192.66	5.73	110.32	11,150.78	-293.38	792.12	0.00	0.00	0.00	0.00	
11,574.51	0.00	0.00	11,532.00	-300.00	810.00	1.50	-1.50	0.00	180.00	
11,924.55	0.00	0.00	11,882.04	-300.00	810.00	0.00	0.00	0.00	0.00	
12,824.55	90.00	359.46	12,455.00	272.93	804.59	10.00	10.00	0.00	359.46	PBHL - Arena Roja Fed Unit 15-10 5H
20,312.80	90.00	359.46	12,455.00	7,760.85	733.86	0.00	0.00	0.00	0.00	PBHL - Arena Roja Fed Unit 15-10 5H

# Planning Report - Geographic

**Database:** EDM r5000.141\_Prod US  
**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Site:** Sec 15-T26S-R35E  
**Well:** Arena Roja Fed Unit 15-10 5H  
**Wellbore:** Wellbore #1  
**Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

## 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	380,988.48	842,568.65	32.043690	-103.361142
100.00	0.00	0.00	100.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
200.00	0.00	0.00	200.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
300.00	0.00	0.00	300.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
400.00	0.00	0.00	400.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
500.00	0.00	0.00	500.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
600.00	0.00	0.00	600.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
700.00	0.00	0.00	700.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
800.00	0.00	0.00	800.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
900.00	0.00	0.00	900.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
1,000.00	0.00	0.00	1,000.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
1,100.00	0.00	0.00	1,100.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
1,200.00	0.00	0.00	1,200.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
1,300.00	0.00	0.00	1,300.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
1,400.00	0.00	0.00	1,400.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
1,500.00	0.00	0.00	1,500.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
1,600.00	0.00	0.00	1,600.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
1,700.00	0.00	0.00	1,700.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
1,800.00	0.00	0.00	1,800.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
1,900.00	0.00	0.00	1,900.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
2,000.00	0.00	0.00	2,000.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
2,100.00	0.00	0.00	2,100.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
2,200.00	0.00	0.00	2,200.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
2,300.00	0.00	0.00	2,300.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
2,400.00	0.00	0.00	2,400.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
2,500.00	0.00	0.00	2,500.00	0.00	0.00	380,988.48	842,568.65	32.043690	-103.361142
2,600.00	1.25	110.32	2,599.99	-0.38	1.02	380,988.10	842,569.67	32.043689	-103.361139
2,700.00	2.50	110.32	2,699.94	-1.52	4.09	380,986.96	842,572.74	32.043685	-103.361129
2,800.00	3.75	110.32	2,799.79	-3.41	9.20	380,985.07	842,577.85	32.043680	-103.361112
2,900.00	5.00	110.32	2,899.49	-6.06	16.36	380,982.42	842,585.00	32.043673	-103.361089
2,958.22	5.73	110.32	2,957.46	-7.95	21.46	380,980.53	842,590.11	32.043667	-103.361073
3,000.00	5.73	110.32	2,999.03	-9.40	25.37	380,979.08	842,594.02	32.043663	-103.361060
3,100.00	5.73	110.32	3,098.53	-12.86	34.73	380,975.62	842,603.38	32.043653	-103.361030
3,200.00	5.73	110.32	3,198.03	-16.33	44.09	380,972.15	842,612.74	32.043644	-103.361000
3,300.00	5.73	110.32	3,297.53	-19.80	53.45	380,968.68	842,622.09	32.043634	-103.360970
3,400.00	5.73	110.32	3,397.03	-23.26	62.81	380,965.22	842,631.45	32.043624	-103.360940
3,500.00	5.73	110.32	3,496.53	-26.73	72.16	380,961.75	842,640.81	32.043614	-103.360910
3,600.00	5.73	110.32	3,596.03	-30.19	81.52	380,958.29	842,650.17	32.043605	-103.360880
3,700.00	5.73	110.32	3,695.53	-33.66	90.88	380,954.82	842,659.53	32.043595	-103.360850
3,800.00	5.73	110.32	3,795.03	-37.13	100.24	380,951.35	842,668.89	32.043585	-103.360820
3,900.00	5.73	110.32	3,894.54	-40.59	109.60	380,947.89	842,678.25	32.043575	-103.360790
4,000.00	5.73	110.32	3,994.04	-44.06	118.96	380,944.42	842,687.61	32.043566	-103.360759
4,100.00	5.73	110.32	4,093.54	-47.53	128.32	380,940.95	842,696.97	32.043556	-103.360729
4,200.00	5.73	110.32	4,193.04	-50.99	137.68	380,937.49	842,706.33	32.043546	-103.360699
4,300.00	5.73	110.32	4,292.54	-54.46	147.04	380,934.02	842,715.68	32.043536	-103.360669
4,400.00	5.73	110.32	4,392.04	-57.92	156.40	380,930.56	842,725.04	32.043527	-103.360639
4,500.00	5.73	110.32	4,491.54	-61.39	165.75	380,927.09	842,734.40	32.043517	-103.360609
4,600.00	5.73	110.32	4,591.04	-64.86	175.11	380,923.62	842,743.76	32.043507	-103.360579
4,700.00	5.73	110.32	4,690.54	-68.32	184.47	380,920.16	842,753.12	32.043497	-103.360549
4,800.00	5.73	110.32	4,790.04	-71.79	193.83	380,916.69	842,762.48	32.043488	-103.360519
4,900.00	5.73	110.32	4,889.54	-75.26	203.19	380,913.22	842,771.84	32.043478	-103.360489
5,000.00	5.73	110.32	4,989.04	-78.72	212.55	380,909.76	842,781.20	32.043468	-103.360458
5,100.00	5.73	110.32	5,088.54	-82.19	221.91	380,906.29	842,790.56	32.043458	-103.360428
5,200.00	5.73	110.32	5,188.04	-85.65	231.27	380,902.83	842,799.91	32.043449	-103.360398
5,300.00	5.73	110.32	5,287.55	-89.12	240.63	380,899.36	842,809.27	32.043439	-103.360368

# Planning Report - Geographic

Database: EDM r5000.141\_Prod US  
 Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Site: Sec 15-T26S-R35E  
 Well: Arena Roja Fed Unit 15-10 5H  
 Wellbore: Wellbore #1  
 Design: Permit Plan 1

Local Co-ordinate Reference: Well Arena Roja Fed Unit 15-10 5H  
 TVD Reference: RKB @ 3164.80ft  
 MD Reference: RKB @ 3164.80ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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	5.73	110.32	5,387.05	-92.59	249.98	380,895.89	842,818.63	32.043429	-103.360338
5,500.00	5.73	110.32	5,486.55	-96.05	259.34	380,892.43	842,827.99	32.043419	-103.360308
5,600.00	5.73	110.32	5,586.05	-99.52	268.70	380,888.96	842,837.35	32.043409	-103.360278
5,700.00	5.73	110.32	5,685.55	-102.99	278.06	380,885.49	842,846.71	32.043400	-103.360248
5,800.00	5.73	110.32	5,785.05	-106.45	287.42	380,882.03	842,856.07	32.043390	-103.360218
5,900.00	5.73	110.32	5,884.55	-109.92	296.78	380,878.56	842,865.43	32.043380	-103.360188
6,000.00	5.73	110.32	5,984.05	-113.38	306.14	380,875.10	842,874.79	32.043370	-103.360157
6,100.00	5.73	110.32	6,083.55	-116.85	315.50	380,871.63	842,884.14	32.043361	-103.360127
6,200.00	5.73	110.32	6,183.05	-120.32	324.86	380,868.16	842,893.50	32.043351	-103.360097
6,300.00	5.73	110.32	6,282.55	-123.78	334.22	380,864.70	842,902.86	32.043341	-103.360067
6,400.00	5.73	110.32	6,382.05	-127.25	343.57	380,861.23	842,912.22	32.043331	-103.360037
6,500.00	5.73	110.32	6,481.55	-130.72	352.93	380,857.76	842,921.58	32.043322	-103.360007
6,600.00	5.73	110.32	6,581.05	-134.18	362.29	380,854.30	842,930.94	32.043312	-103.359977
6,700.00	5.73	110.32	6,680.56	-137.65	371.65	380,850.83	842,940.30	32.043302	-103.359947
6,800.00	5.73	110.32	6,780.06	-141.11	381.01	380,847.36	842,949.66	32.043292	-103.359917
6,900.00	5.73	110.32	6,879.56	-144.58	390.37	380,843.90	842,959.02	32.043283	-103.359887
7,000.00	5.73	110.32	6,979.06	-148.05	399.73	380,840.43	842,968.38	32.043273	-103.359856
7,100.00	5.73	110.32	7,078.56	-151.51	409.09	380,836.97	842,977.73	32.043263	-103.359826
7,200.00	5.73	110.32	7,178.06	-154.98	418.45	380,833.50	842,987.09	32.043253	-103.359796
7,300.00	5.73	110.32	7,277.56	-158.45	427.80	380,830.03	842,996.45	32.043244	-103.359766
7,400.00	5.73	110.32	7,377.06	-161.91	437.16	380,826.57	843,005.81	32.043234	-103.359736
7,500.00	5.73	110.32	7,476.56	-165.38	446.52	380,823.10	843,015.17	32.043224	-103.359706
7,600.00	5.73	110.32	7,576.06	-168.85	455.88	380,819.63	843,024.53	32.043214	-103.359676
7,700.00	5.73	110.32	7,675.56	-172.31	465.24	380,816.17	843,033.89	32.043205	-103.359646
7,800.00	5.73	110.32	7,775.06	-175.78	474.60	380,812.70	843,043.25	32.043195	-103.359616
7,900.00	5.73	110.32	7,874.56	-179.24	483.96	380,809.24	843,052.61	32.043185	-103.359586
8,000.00	5.73	110.32	7,974.07	-182.71	493.32	380,805.77	843,061.96	32.043175	-103.359555
8,100.00	5.73	110.32	8,073.57	-186.18	502.68	380,802.30	843,071.32	32.043166	-103.359525
8,200.00	5.73	110.32	8,173.07	-189.64	512.04	380,798.84	843,080.68	32.043156	-103.359495
8,300.00	5.73	110.32	8,272.57	-193.11	521.39	380,795.37	843,090.04	32.043146	-103.359465
8,400.00	5.73	110.32	8,372.07	-196.58	530.75	380,791.90	843,099.40	32.043136	-103.359435
8,500.00	5.73	110.32	8,471.57	-200.04	540.11	380,788.44	843,108.76	32.043126	-103.359405
8,600.00	5.73	110.32	8,571.07	-203.51	549.47	380,784.97	843,118.12	32.043117	-103.359375
8,700.00	5.73	110.32	8,670.57	-206.97	558.83	380,781.51	843,127.48	32.043107	-103.359345
8,800.00	5.73	110.32	8,770.07	-210.44	568.19	380,778.04	843,136.84	32.043097	-103.359315
8,900.00	5.73	110.32	8,869.57	-213.91	577.55	380,774.57	843,146.19	32.043087	-103.359285
9,000.00	5.73	110.32	8,969.07	-217.37	586.91	380,771.11	843,155.55	32.043078	-103.359254
9,100.00	5.73	110.32	9,068.57	-220.84	596.27	380,767.64	843,164.91	32.043068	-103.359224
9,200.00	5.73	110.32	9,168.07	-224.31	605.62	380,764.17	843,174.27	32.043058	-103.359194
9,300.00	5.73	110.32	9,267.57	-227.77	614.98	380,760.71	843,183.63	32.043048	-103.359164
9,400.00	5.73	110.32	9,367.08	-231.24	624.34	380,757.24	843,192.99	32.043039	-103.359134
9,500.00	5.73	110.32	9,466.58	-234.70	633.70	380,753.78	843,202.35	32.043029	-103.359104
9,600.00	5.73	110.32	9,566.08	-238.17	643.06	380,750.31	843,211.71	32.043019	-103.359074
9,700.00	5.73	110.32	9,665.58	-241.64	652.42	380,746.84	843,221.07	32.043009	-103.359044
9,800.00	5.73	110.32	9,765.08	-245.10	661.78	380,743.38	843,230.43	32.043000	-103.359014
9,900.00	5.73	110.32	9,864.58	-248.57	671.14	380,739.91	843,239.78	32.042990	-103.358984
10,000.00	5.73	110.32	9,964.08	-252.04	680.50	380,736.44	843,249.14	32.042980	-103.358953
10,100.00	5.73	110.32	10,063.58	-255.50	689.86	380,732.98	843,258.50	32.042970	-103.358923
10,200.00	5.73	110.32	10,163.08	-258.97	699.21	380,729.51	843,267.86	32.042961	-103.358893
10,300.00	5.73	110.32	10,262.58	-262.43	708.57	380,726.05	843,277.22	32.042951	-103.358863
10,400.00	5.73	110.32	10,362.08	-265.90	717.93	380,722.58	843,286.58	32.042941	-103.358833
10,500.00	5.73	110.32	10,461.58	-269.37	727.29	380,719.11	843,295.94	32.042931	-103.358803
10,600.00	5.73	110.32	10,561.08	-272.83	736.65	380,715.65	843,305.30	32.042922	-103.358773
10,700.00	5.73	110.32	10,660.58	-276.30	746.01	380,712.18	843,314.66	32.042912	-103.358743
10,800.00	5.73	110.32	10,760.09	-279.77	755.37	380,708.71	843,324.01	32.042902	-103.358713

# Planning Report - Geographic

**Database:** EDM r5000.141\_Prod US  
**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Site:** Sec 15-T26S-R35E  
**Well:** Arena Roja Fed Unit 15-10 5H  
**Wellbore:** Wellbore #1  
**Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,900.00	5.73	110.32	10,859.59	-283.23	764.73	380,705.25	843,333.37	32.042892	-103.358683
11,000.00	5.73	110.32	10,959.09	-286.70	774.09	380,701.78	843,342.73	32.042882	-103.358652
11,100.00	5.73	110.32	11,058.59	-290.16	783.44	380,698.32	843,352.09	32.042873	-103.358622
11,192.66	5.73	110.32	11,150.78	-293.38	792.12	380,695.10	843,360.76	32.042864	-103.358594
11,200.00	5.62	110.32	11,158.09	-293.63	792.80	380,694.85	843,361.44	32.042863	-103.358592
11,300.00	4.12	110.32	11,257.73	-296.58	800.75	380,691.90	843,369.40	32.042855	-103.358567
11,400.00	2.62	110.32	11,357.55	-298.62	806.26	380,689.86	843,374.91	32.042849	-103.358549
11,500.00	1.12	110.32	11,457.49	-299.75	809.32	380,688.73	843,377.97	32.042846	-103.358539
11,574.51	0.00	0.00	11,532.00	-300.00	810.00	380,688.48	843,378.65	32.042845	-103.358537
11,600.00	0.00	0.00	11,557.49	-300.00	810.00	380,688.48	843,378.65	32.042845	-103.358537
11,700.00	0.00	0.00	11,657.49	-300.00	810.00	380,688.48	843,378.65	32.042845	-103.358537
11,800.00	0.00	0.00	11,757.49	-300.00	810.00	380,688.48	843,378.65	32.042845	-103.358537
11,900.00	0.00	0.00	11,857.49	-300.00	810.00	380,688.48	843,378.65	32.042845	-103.358537
11,924.55	0.00	0.00	11,882.04	-300.00	810.00	380,688.48	843,378.65	32.042845	-103.358537
<b>KOP @ 11925' MD, 2790' FNL, 1660' FWL</b>									
12,000.00	7.54	359.46	11,957.27	-295.04	809.95	380,693.44	843,378.60	32.042859	-103.358537
12,100.00	17.54	359.46	12,054.76	-273.35	809.75	380,715.13	843,378.39	32.042918	-103.358537
12,200.00	27.54	359.46	12,147.00	-235.06	809.39	380,753.42	843,378.03	32.043024	-103.358537
12,300.00	37.54	359.46	12,231.19	-181.33	808.88	380,807.15	843,377.53	32.043171	-103.358537
12,400.00	47.54	359.46	12,304.77	-113.80	808.24	380,874.68	843,376.89	32.043357	-103.358537
12,418.49	49.39	359.46	12,317.03	-99.96	808.11	380,888.52	843,376.76	32.043395	-103.358537
<b>First Take Point @ 12418' MD, 2590' FNL, 1660' FWL</b>									
12,500.00	57.54	359.46	12,365.51	-34.53	807.49	380,953.95	843,376.14	32.043575	-103.358537
12,600.00	67.54	359.46	12,411.56	54.10	806.66	381,042.57	843,375.30	32.043818	-103.358537
12,700.00	77.54	359.46	12,441.51	149.37	805.76	381,137.84	843,374.40	32.044080	-103.358538
12,800.00	87.54	359.46	12,454.47	248.39	804.82	381,236.87	843,373.47	32.044352	-103.358538
12,824.55	90.00	359.46	12,455.00	272.93	804.59	381,261.41	843,373.23	32.044420	-103.358538
12,900.00	90.00	359.46	12,455.00	348.38	803.88	381,336.86	843,372.52	32.044627	-103.358538
13,000.00	90.00	359.46	12,455.00	448.37	802.93	381,436.85	843,371.58	32.044902	-103.358538
13,100.00	90.00	359.46	12,455.00	548.37	801.99	381,536.85	843,370.63	32.045177	-103.358538
13,200.00	90.00	359.46	12,455.00	648.36	801.04	381,636.84	843,369.69	32.045452	-103.358538
13,300.00	90.00	359.46	12,455.00	748.36	800.10	381,736.84	843,368.74	32.045727	-103.358538
13,400.00	90.00	359.46	12,455.00	848.36	799.15	381,836.83	843,367.80	32.046002	-103.358538
13,500.00	90.00	359.46	12,455.00	948.35	798.21	381,936.83	843,366.85	32.046277	-103.358539
13,600.00	90.00	359.46	12,455.00	1,048.35	797.26	382,036.82	843,365.91	32.046551	-103.358539
13,700.00	90.00	359.46	12,455.00	1,148.34	796.32	382,136.82	843,364.97	32.046826	-103.358539
13,800.00	90.00	359.46	12,455.00	1,248.34	795.37	382,236.81	843,364.02	32.047101	-103.358539
13,900.00	90.00	359.46	12,455.00	1,348.33	794.43	382,336.81	843,363.08	32.047376	-103.358539
14,000.00	90.00	359.46	12,455.00	1,448.33	793.49	382,436.81	843,362.13	32.047651	-103.358539
14,100.00	90.00	359.46	12,455.00	1,548.32	792.54	382,536.80	843,361.19	32.047926	-103.358539
14,200.00	90.00	359.46	12,455.00	1,648.32	791.60	382,636.80	843,360.24	32.048201	-103.358540
14,300.00	90.00	359.46	12,455.00	1,748.32	790.65	382,736.79	843,359.30	32.048475	-103.358540
14,400.00	90.00	359.46	12,455.00	1,848.31	789.71	382,836.79	843,358.35	32.048750	-103.358540
14,500.00	90.00	359.46	12,455.00	1,948.31	788.76	382,936.78	843,357.41	32.049025	-103.358540
14,600.00	90.00	359.46	12,455.00	2,048.30	787.82	383,036.78	843,356.46	32.049300	-103.358540
14,700.00	90.00	359.46	12,455.00	2,148.30	786.87	383,136.77	843,355.52	32.049575	-103.358540
14,800.00	90.00	359.46	12,455.00	2,248.29	785.93	383,236.77	843,354.58	32.049850	-103.358540
14,900.00	90.00	359.46	12,455.00	2,348.29	784.98	383,336.76	843,353.63	32.050125	-103.358541
15,000.00	90.00	359.46	12,455.00	2,448.28	784.04	383,436.76	843,352.69	32.050400	-103.358541
15,100.00	90.00	359.46	12,455.00	2,548.28	783.09	383,536.75	843,351.74	32.050674	-103.358541
15,200.00	90.00	359.46	12,455.00	2,648.27	782.15	383,636.75	843,350.80	32.050949	-103.358541
15,300.00	90.00	359.46	12,455.00	2,748.27	781.21	383,736.74	843,349.85	32.051224	-103.358541
15,400.00	90.00	359.46	12,455.00	2,848.27	780.26	383,836.74	843,348.91	32.051499	-103.358541
15,500.00	90.00	359.46	12,455.00	2,948.26	779.32	383,936.74	843,347.96	32.051774	-103.358541



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**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,600.00	90.00	359.46	12,455.00	3,048.26	778.37	384,036.73	843,347.02	32.052049	-103.358541
15,700.00	90.00	359.46	12,455.00	3,148.25	777.43	384,136.73	843,346.07	32.052324	-103.358542
15,800.00	90.00	359.46	12,455.00	3,248.25	776.48	384,236.72	843,345.13	32.052599	-103.358542
15,900.00	90.00	359.46	12,455.00	3,348.24	775.54	384,336.72	843,344.18	32.052873	-103.358542
16,000.00	90.00	359.46	12,455.00	3,448.24	774.59	384,436.71	843,343.24	32.053148	-103.358542
16,100.00	90.00	359.46	12,455.00	3,548.23	773.65	384,536.71	843,342.30	32.053423	-103.358542
16,200.00	90.00	359.46	12,455.00	3,648.23	772.70	384,636.70	843,341.35	32.053698	-103.358542
16,300.00	90.00	359.46	12,455.00	3,748.23	771.76	384,736.70	843,340.41	32.053973	-103.358542
16,400.00	90.00	359.46	12,455.00	3,848.22	770.82	384,836.69	843,339.46	32.054248	-103.358543
16,500.00	90.00	359.46	12,455.00	3,948.22	769.87	384,936.69	843,338.52	32.054523	-103.358543
16,600.00	90.00	359.46	12,455.00	4,048.21	768.93	385,036.68	843,337.57	32.054797	-103.358543
16,700.00	90.00	359.46	12,455.00	4,148.21	767.98	385,136.68	843,336.63	32.055072	-103.358543
16,800.00	90.00	359.46	12,455.00	4,248.20	767.04	385,236.67	843,335.68	32.055347	-103.358543
16,900.00	90.00	359.46	12,455.00	4,348.20	766.09	385,336.67	843,334.74	32.055622	-103.358543
17,000.00	90.00	359.46	12,455.00	4,448.19	765.15	385,436.67	843,333.79	32.055897	-103.358543
17,100.00	90.00	359.46	12,455.00	4,548.19	764.20	385,536.66	843,332.85	32.056172	-103.358543
17,200.00	90.00	359.46	12,455.00	4,648.19	763.26	385,636.66	843,331.91	32.056447	-103.358544
17,300.00	90.00	359.46	12,455.00	4,748.18	762.31	385,736.65	843,330.96	32.056722	-103.358544
17,400.00	90.00	359.46	12,455.00	4,848.18	761.37	385,836.65	843,330.02	32.056996	-103.358544
17,500.00	90.00	359.46	12,455.00	4,948.17	760.43	385,936.64	843,329.07	32.057271	-103.358544
17,600.00	90.00	359.46	12,455.00	5,048.17	759.48	386,036.64	843,328.13	32.057546	-103.358544
17,700.00	90.00	359.46	12,455.00	5,148.16	758.54	386,136.63	843,327.18	32.057821	-103.358544
17,800.00	90.00	359.46	12,455.00	5,248.16	757.59	386,236.63	843,326.24	32.058096	-103.358544
17,900.00	90.00	359.46	12,455.00	5,348.15	756.65	386,336.62	843,325.29	32.058371	-103.358545
18,000.00	90.00	359.46	12,455.00	5,448.15	755.70	386,436.62	843,324.35	32.058646	-103.358545
18,100.00	90.00	359.46	12,455.00	5,548.15	754.76	386,536.61	843,323.40	32.058920	-103.358545
18,200.00	90.00	359.46	12,455.00	5,648.14	753.81	386,636.61	843,322.46	32.059195	-103.358545
18,300.00	90.00	359.46	12,455.00	5,748.14	752.87	386,736.60	843,321.52	32.059470	-103.358545
18,400.00	90.00	359.46	12,455.00	5,848.13	751.92	386,836.60	843,320.57	32.059745	-103.358545
18,500.00	90.00	359.46	12,455.00	5,948.13	750.98	386,936.60	843,319.63	32.060020	-103.358545
18,600.00	90.00	359.46	12,455.00	6,048.12	750.04	387,036.59	843,318.68	32.060295	-103.358545
18,700.00	90.00	359.46	12,455.00	6,148.12	749.09	387,136.59	843,317.74	32.060570	-103.358546
18,800.00	90.00	359.46	12,455.00	6,248.11	748.15	387,236.58	843,316.79	32.060845	-103.358546
18,900.00	90.00	359.46	12,455.00	6,348.11	747.20	387,336.58	843,315.85	32.061119	-103.358546
19,000.00	90.00	359.46	12,455.00	6,448.11	746.26	387,436.57	843,314.90	32.061394	-103.358546
19,100.00	90.00	359.46	12,455.00	6,548.10	745.31	387,536.57	843,313.96	32.061669	-103.358546
19,200.00	90.00	359.46	12,455.00	6,648.10	744.37	387,636.56	843,313.01	32.061944	-103.358546
19,300.00	90.00	359.46	12,455.00	6,748.09	743.42	387,736.56	843,312.07	32.062219	-103.358546
19,400.00	90.00	359.46	12,455.00	6,848.09	742.48	387,836.55	843,311.13	32.062494	-103.358547
19,500.00	90.00	359.46	12,455.00	6,948.08	741.53	387,936.55	843,310.18	32.062769	-103.358547
19,600.00	90.00	359.46	12,455.00	7,048.08	740.59	388,036.54	843,309.24	32.063044	-103.358547
19,700.00	90.00	359.46	12,455.00	7,148.07	739.64	388,136.54	843,308.29	32.063318	-103.358547
19,800.00	90.00	359.46	12,455.00	7,248.07	738.70	388,236.53	843,307.35	32.063593	-103.358547
19,900.00	90.00	359.46	12,455.00	7,348.07	737.76	388,336.53	843,306.40	32.063868	-103.358547
20,000.00	90.00	359.46	12,455.00	7,448.06	736.81	388,436.53	843,305.46	32.064143	-103.358547
20,100.00	90.00	359.46	12,455.00	7,548.06	735.87	388,536.52	843,304.51	32.064418	-103.358547
20,200.00	90.00	359.46	12,455.00	7,648.05	734.92	388,636.52	843,303.57	32.064693	-103.358548
20,252.85	90.00	359.46	12,455.00	7,700.90	734.42	388,689.36	843,303.07	32.064838	-103.358548
<b>Last Take Point @ 20253' MD, 100' FNL, 1660' FWL</b>									
20,300.00	90.00	359.46	12,455.00	7,748.05	733.98	388,736.51	843,302.62	32.064968	-103.358548
20,312.80	90.00	359.46	12,455.00	7,760.85	733.86	388,749.31	843,302.50	32.065003	-103.358548
<b>PBHL; 20' FNL, 1660' FWL</b>									

# Planning Report - Geographic

**Database:** EDM r5000.141\_Prod US  
**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Site:** Sec 15-T26S-R35E  
**Well:** Arena Roja Fed Unit 15-10 5H  
**Wellbore:** Wellbore #1  
**Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

## Design Targets

### Target Name

- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
PBHL - Arena Roja Fed	0.00	0.00	0.00	7,760.85	733.86	388,749.31	843,302.50	32.065003	-103.358548
- plan misses target center by 7795.47ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									

## Plan Annotations

Measured	Vertical	Local Coordinates		Comment
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	
11,924.55	11,882.04	-300.00	810.00	KOP @ 11925' MD, 2790' FNL, 1660' FWL
12,418.49	12,317.03	-99.96	808.11	First Take Point @ 12418' MD, 2590' FNL, 1660' FWL
20,252.85	12,455.00	7,700.90	734.42	Last Take Point @ 20253' MD, 100' FNL, 1660' FWL
20,312.80	12,455.00	7,760.85	733.86	PBHL; 20' FNL, 1660' FWL

# WCDSC Permian NM

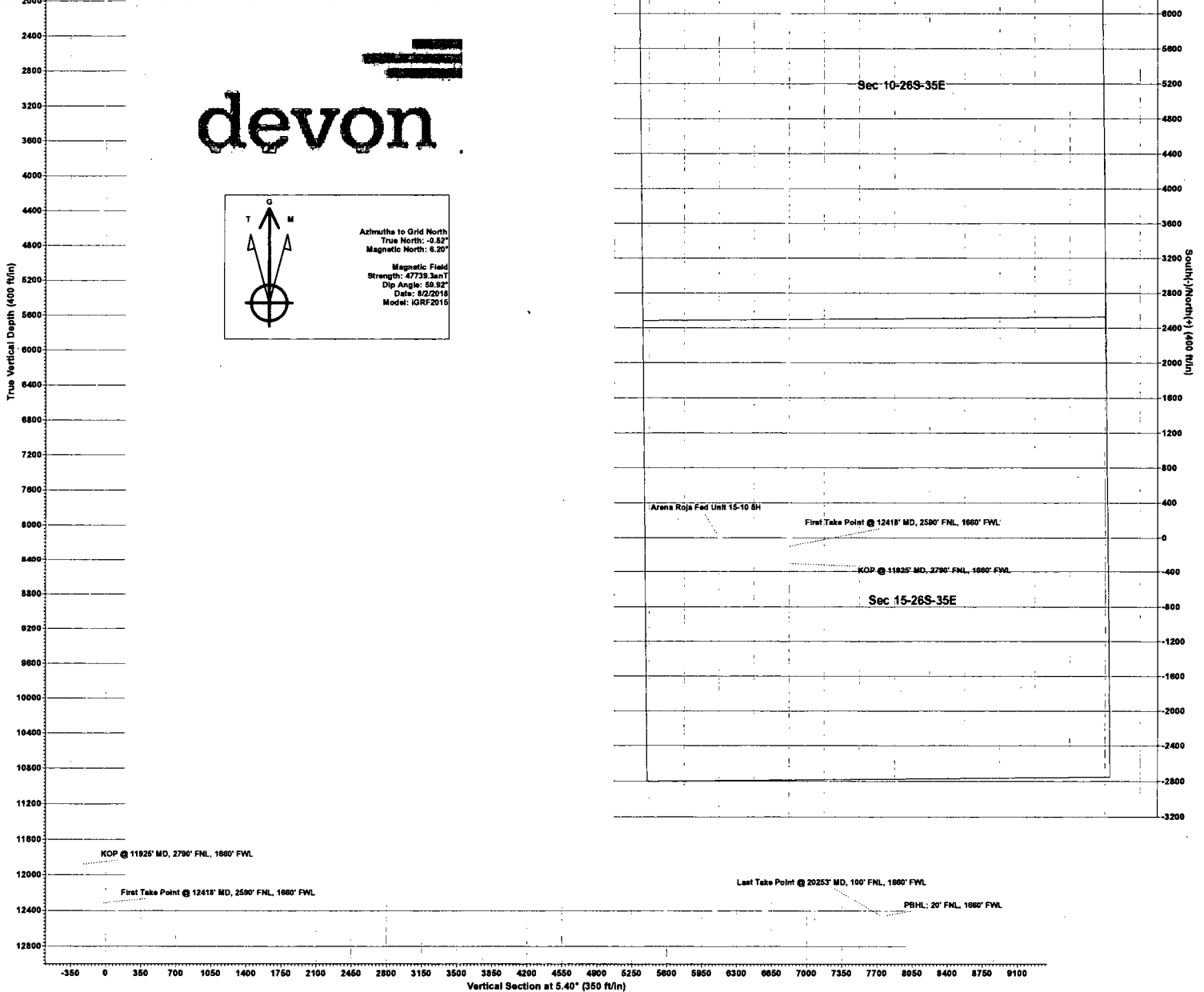
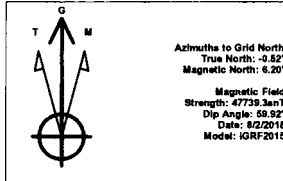
WELL DETAILS: Arena Roja Fed Unit 15-10 5H

RKB @ 3164.80ft  
3139.80  
Northing 380988.48 Easting 842568.65 Latitude 32.043690 Longitude -103.361142

## SECTION DETAILS Permit Plan 1

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dip	V/Sect	Annotation
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	
	2958.22	5.73	110.32	2957.46	-7.95	21.46	1.25	-5.89	
	11192.66	5.73	110.32	11150.78	-293.38	792.12	0.00	-217.50	
5	11574.51	0.00	0.00	11532.00	-300.00	810.00	1.50	-222.42	
6	11924.55	0.00	0.00	11882.04	-300.00	810.00	0.00	-222.42	KOP @ 11925' MD, 2790' FNL, 1660' FWL
7	12824.55	90.00	359.46	12455.00	272.93	804.59	10.00	347.46	
8	20312.80	90.00	359.46	12455.00	7760.85	733.86	0.00	7795.47	PBHL: 20' FNL, 1660' FWL

devon



Metal One Corp.  <i>Metal One</i>	<b>Connection Data Sheet</b>	Page	44-O
		Date	25-Jan-17
		Rev.	N - 1

### Geometry

Imperial

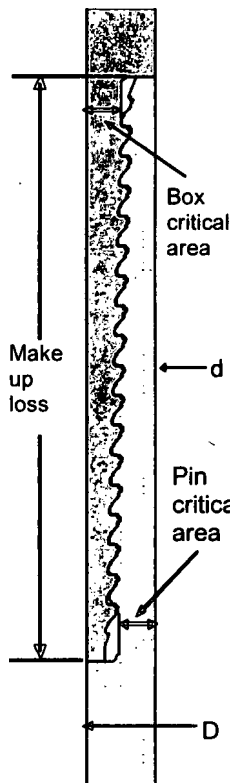
S.I.

#### Pipe Body

Grade	P110		P110	
Pipe OD ( D )	7 5/8	in	193.68	mm
Weight	29.70	lb/ft	44.20	kg/m
Actual weight	29.04		43.21	kg/m
Wall Thickness (t)	0.375	in	9.53	mm
Pipe ID ( d )	6.875	in	174.63	mm
Pipe body cross section	8.537	in <sup>2</sup>	5.503	mm <sup>2</sup>
Drift Dia.	6.750	in	171.45	mm

#### Connection

Box OD ( W )	7.625	in	193.68	mm
PIN ID	6.875	in	174.63	mm
Makeup Loss	3.040	in	77.22	mm
Box Critical Area	4.424	in <sup>2</sup>	2854	mm <sup>2</sup>
Joint load efficiency	60	%	60	%
Thread Taper	1 / 16 ( 3/4" per ft )			
Number of Threads	6 TPI			



### Performance

#### Performance Properties for Pipe Body

S.M.Y.S.	929	kips	4,177	MPa
M.I.Y.P.	9,470	psi	65.31	MPa
Collapse Strength	5,350	psi	36.90	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body  
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

#### Performance Properties for Connection

Tensile Yield Load	563 kips ( 60% of S.M.Y.S. )
Min. Compression Yield	563 kips ( 60% of S.M.Y.S. )
Internal Pressure	7,500 psi ( 80% of M.I.Y.P. )
External Pressure	100% of Collapse Strength
Max. DLS ( deg./100in )	25

#### Recommended Torque

Min.	15,500	ft-lb	21,000	N-m
Opti.	17,200	ft-lb	23,300	N-m
Max.	18,900	ft-lb	25,600	N-m
Operational Max.	23,600	ft-lb	32,000	N-m

Note : Operational Max. torque can be applied for high torque application

#### Legal Notice

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The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to [http://www.mfo.co.jp/mo-con/images/top/WebsiteTerms\\_Active\\_20333287\\_1.pdf](http://www.mfo.co.jp/mo-con/images/top/WebsiteTerms_Active_20333287_1.pdf) the contents of which are incorporated by reference into this Connection Data Sheet.

## Devon Energy Annular Preventer Summary

### 1. Component and Preventer Compatibility Table

The table below, which covers the drilling and casing of the 10M MASP portion of the well, outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

6-3/4" Production hole section, 10M requirement

Component	OD	Preventer	RWP
Drillpipe	4.5"	Fixed lower 4.5" Upper 4.5-7" VBR	10M
HWDP	4.5"	Fixed lower 4.5" Upper 4.5-7" VBR	10M
Drill collars and MWD tools	4.75"	Upper 4.5-7" VBR	10M
Mud Motor	4.75"	Upper 4.5-7" VBR	10M
Production casing	5.5"	Upper 4.5-7" VBR	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

VBR = Variable Bore Ram. Compatible range listed in chart.

### 2. Well Control Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. The pressure at which control is swapped from the annular to another compatible ram is variable, but the operator will document in the submission their operating pressure limit. The operator may chose an operating pressure less than or equal to RWP, but in no case will it exceed the RWP of the annular preventer.

#### General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in Well (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

## **Devon Energy Annular Preventer Summary**

### **General Procedure While Tripping**

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out drill string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

### **General Procedure While Running Casing**

1. Sound alarm (alert crew)
2. Stab crossover and full opening safety valve and close
3. Space out string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to compatible pipe ram.

### **General Procedure With No Pipe In Hole (Open Hole)**

1. Sound alarm (alert crew)
2. Shut-in with blind rams or BSR. (HCR and choke will already be in the closed position.)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
  - a. SICP
  - b. Pit gain
  - c. Time
6. Regroup and identify forward plan

## **Devon Energy Annular Preventer Summary**

### General Procedures While Pulling BHA thru Stack

1. PRIOR to pulling last joint of drillpipe thru the stack.
  - a. Perform flowcheck, if flowing:
  - b. Sound alarm (alert crew)
  - c. Stab full opening safety valve and close
  - d. Space out drill string with tool joint just beneath the upper pipe ram.
  - e. Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
  - f. Confirm shut-in
  - g. Notify toolpusher/company representative
  - h. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - i. Regroup and identify forward plan
2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
  - a. Sound alarm (alert crew)
  - b. Stab crossover and full opening safety valve and close
  - c. Space out drill string with upset just beneath the compatible pipe ram.
  - d. Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
  - e. Confirm shut-in
  - f. Notify toolpusher/company representative
  - g. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - h. Regroup and identify forward plan
3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
  - a. Sound alarm (alert crew)
  - b. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.
  - c. If impossible to pick up high enough to pull the string clear of the stack:
  - d. Stab crossover, make up one joint/stand of drillpipe, and full opening safety valve and close
  - e. Space out drill string with tooljoint just beneath the upper pipe ram.
  - f. Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
  - g. Confirm shut-in
  - h. Notify toolpusher/company representative
  - i. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - j. Regroup and identify forward plan

# **WCDSC Permian NM**

**Lea County (NAD83 New Mexico East)**

**Sec 15-T26S-R35E**

**Arena Roja Fed Unit 15-10 5H**

**Wellbore #1**

**Permit Plan 1**

## **Anticollision Report**

**02 August, 2018**



# Offset Design Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 1H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
3,600.00	3,596.03	3,602.77	3,597.23	12.57	12.70	171.49	-0.50	-59.99	144.67	119.47	25.20	5.741		
3,650.00	3,645.78	3,646.98	3,646.98	12.75	12.86	171.77	-0.50	-59.99	149.61	124.08	25.53	5.860		
3,700.00	3,695.52	3,703.28	3,696.72	12.93	13.06	172.04	-0.50	-59.99	154.56	128.65	25.91	5.966		
3,750.00	3,745.27	3,746.47	3,746.47	13.11	13.22	172.29	-0.50	-59.99	159.51	133.27	26.24	6.080		
3,800.00	3,795.02	3,803.78	3,796.22	13.29	13.42	172.52	-0.50	-59.99	164.46	137.85	26.62	6.179		
3,850.00	3,844.77	3,845.97	3,845.97	13.47	13.57	172.74	-0.50	-59.99	169.42	142.48	26.94	6.288		
3,900.00	3,894.52	3,904.28	3,895.72	13.65	13.78	172.95	-0.50	-59.99	174.38	147.05	27.32	6.382		
3,950.00	3,944.27	3,945.47	3,945.47	13.83	13.93	173.14	-0.50	-59.99	179.34	151.69	27.65	6.487		
4,000.00	3,994.02	4,004.78	3,995.22	14.01	14.14	173.33	-0.50	-59.99	184.30	156.26	28.03	6.574		
4,050.00	4,043.77	4,044.97	4,044.97	14.20	14.28	173.50	-0.50	-59.99	189.26	160.91	28.35	6.675		
4,100.00	4,093.52	4,105.28	4,094.72	14.38	14.50	173.67	-0.50	-59.99	194.23	165.48	28.74	6.757		
4,150.00	4,143.27	4,144.47	4,144.47	14.56	14.64	173.83	-0.50	-59.99	199.19	170.13	29.06	6.855		
4,200.00	4,193.02	4,205.78	4,194.22	14.74	14.86	173.98	-0.50	-59.99	204.16	174.71	29.45	6.931		
4,250.00	4,242.77	4,243.97	4,243.97	14.93	15.00	174.12	-0.50	-59.99	209.13	179.36	29.77	7.026		
4,300.00	4,292.52	4,306.28	4,293.72	15.11	15.22	174.26	-0.50	-59.99	214.10	183.94	30.17	7.097		
4,350.00	4,342.27	4,343.47	4,343.47	15.29	15.35	174.39	-0.50	-59.99	219.07	188.60	30.48	7.189		
4,400.00	4,392.02	4,406.78	4,393.22	15.48	15.58	174.52	-0.50	-59.99	224.05	193.17	30.88	7.256		
4,450.00	4,441.77	4,442.97	4,442.97	15.66	15.71	174.63	-0.50	-59.99	229.02	197.84	31.18	7.344		
4,500.00	4,491.52	4,507.28	4,492.72	15.84	15.94	174.75	-0.50	-59.99	234.00	202.41	31.59	7.407		
4,550.00	4,541.27	4,542.47	4,542.47	16.03	16.07	174.86	-0.50	-59.99	238.97	207.08	31.89	7.493		
4,600.00	4,591.02	4,607.78	4,592.22	16.21	16.30	174.96	-0.50	-59.99	243.95	211.64	32.30	7.552		
4,650.00	4,640.77	4,641.97	4,641.97	16.40	16.42	175.07	-0.50	-59.99	248.93	216.32	32.60	7.635		
4,700.00	4,690.52	4,708.28	4,691.72	16.58	16.66	175.16	-0.50	-59.99	253.90	220.89	33.02	7.690		
4,750.00	4,740.27	4,741.47	4,741.47	16.77	16.78	175.26	-0.50	-59.99	258.88	225.57	33.31	7.771		
4,800.00	4,790.02	4,808.78	4,791.22	16.95	17.02	175.34	-0.50	-59.99	263.86	230.13	33.73	7.822		
4,850.00	4,839.77	4,840.97	4,840.97	17.14	17.14	175.43	-0.50	-59.99	268.84	234.82	34.02	7.902		
4,900.00	4,889.52	4,909.28	4,890.72	17.32	17.38	175.51	-0.50	-59.99	273.82	239.38	34.45	7.949		
4,950.00	4,939.27	4,940.47	4,940.47	17.51	17.49	175.59	-0.50	-59.99	278.80	244.07	34.74	8.027		
5,000.00	4,989.02	4,990.22	4,990.22	17.69	17.67	175.67	-0.50	-59.99	283.79	248.70	35.09	8.087		
5,050.00	5,038.77	5,038.44	5,038.44	17.88	17.84	175.72	-0.60	-60.12	288.87	253.44	35.43	8.153		
5,100.00	5,088.52	5,086.23	5,086.23	18.07	18.00	175.69	-0.97	-60.65	294.28	258.51	35.77	8.228		
5,150.00	5,138.27	5,133.95	5,133.93	18.25	18.16	175.59	-1.62	-61.58	300.02	263.92	36.10	8.311		
5,200.00	5,188.02	5,181.58	5,181.53	18.44	18.32	175.42	-2.56	-62.94	306.08	269.66	36.42	8.403		
5,250.00	5,237.77	5,229.11	5,229.02	18.63	18.48	175.18	-3.78	-64.68	312.47	275.73	36.75	8.503		
5,300.00	5,287.52	5,276.54	5,276.37	18.81	18.64	174.89	-5.28	-66.83	319.20	282.13	37.07	8.611		
5,350.00	5,337.27	5,323.85	5,323.58	19.00	18.79	174.54	-7.05	-69.37	326.27	288.88	37.39	8.726		
5,400.00	5,387.02	5,371.04	5,370.64	19.19	18.95	174.15	-9.09	-72.30	333.68	295.97	37.71	8.849		
5,450.00	5,436.77	5,419.75	5,419.18	19.37	19.11	173.71	-11.41	-75.63	341.36	303.31	38.04	8.973		
5,500.00	5,486.52	5,469.09	5,468.34	19.56	19.28	173.28	-13.78	-79.02	349.06	310.88	38.38	9.094		
5,550.00	5,536.27	5,518.42	5,517.50	19.75	19.44	172.87	-16.14	-82.40	356.79	318.06	38.73	9.213		
5,600.00	5,586.02	5,567.76	5,566.67	19.93	19.61	172.48	-18.51	-85.79	364.53	325.46	39.07	9.331		
5,650.00	5,635.77	5,617.10	5,615.83	20.12	19.78	172.10	-20.87	-89.18	372.29	332.88	39.41	9.446		
5,700.00	5,685.52	5,666.43	5,664.99	20.31	19.94	171.74	-23.23	-92.57	380.06	340.31	39.75	9.560		
5,750.00	5,735.26	5,715.77	5,714.15	20.50	20.11	171.39	-25.60	-95.96	387.85	347.75	40.10	9.673		
5,800.00	5,785.01	5,765.11	5,763.32	20.68	20.28	171.06	-27.96	-99.35	395.65	355.21	40.44	9.783		
5,850.00	5,834.76	5,814.44	5,812.48	20.87	20.44	170.74	-30.32	-102.73	403.47	362.68	40.79	9.892		
5,900.00	5,884.51	5,863.78	5,861.64	21.06	20.61	170.43	-32.69	-106.12	411.29	370.16	41.13	10.000		
5,950.00	5,934.26	5,913.11	5,910.81	21.25	20.78	170.14	-35.05	-109.51	419.13	377.65	41.48	10.105		
6,000.00	5,984.01	5,962.45	5,959.97	21.43	20.95	169.85	-37.42	-112.90	426.98	385.15	41.82	10.210		
6,050.00	6,033.76	6,011.79	6,009.13	21.62	21.12	169.58	-39.78	-116.29	434.83	392.67	42.17	10.312		
6,100.00	6,083.51	6,061.12	6,058.30	21.81	21.29	169.31	-42.14	-119.67	442.70	400.19	42.51	10.413		
6,150.00	6,133.26	6,110.46	6,107.46	22.00	21.46	169.06	-44.51	-123.06	450.57	407.71	42.86	10.513		

# Anticollision Report

Company: WCDSC Permian NM  
 Project: Lea County (NAD83 New Mexico East)  
 Reference Site: Sec 15-T26S-R35E  
 Site Error: 0.00 ft  
 Reference Well: Arena Roja Fed Unit 15-10 5H  
 Well Error: 0.50 ft  
 Reference Wellbore: Wellbore #1  
 Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Arena Roja Fed Unit 15-10 5H  
 TVD Reference: RKB @ 3164.80ft  
 MD Reference: RKB @ 3164.80ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Output errors are at 2.00 sigma  
 Database: EDM r5000.141\_Prod US  
 Offset TVD Reference: Offset Datum

Offset Design Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 1H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
6,200.00	6,183.01	6,159.80	6,156.62	22.19	21.63	168.81	-46.87	-126.45	458.46	415.25	43.21	10.611	
6,250.00	6,232.76	6,209.13	6,205.79	22.37	21.80	168.57	-49.24	-129.84	466.35	422.80	43.55	10.707	
6,300.00	6,282.51	6,258.47	6,254.95	22.56	21.97	168.34	-51.60	-133.23	474.25	430.35	43.90	10.803	
6,350.00	6,332.26	6,307.81	6,304.11	22.75	22.14	168.11	-53.96	-136.61	482.16	437.91	44.25	10.896	
6,400.00	6,382.01	6,357.14	6,353.28	22.94	22.31	167.90	-56.33	-140.00	490.07	445.47	44.60	10.989	
6,450.00	6,431.76	6,406.48	6,402.44	23.13	22.48	167.69	-58.69	-143.39	497.99	453.05	44.95	11.080	
6,500.00	6,481.51	6,455.82	6,451.80	23.32	22.65	167.49	-61.05	-146.78	505.92	460.62	45.29	11.170	
6,550.00	6,531.26	6,505.15	6,500.77	23.51	22.82	167.29	-63.42	-150.17	513.85	468.21	45.64	11.258	
6,600.00	6,581.01	6,554.49	6,549.93	23.69	22.99	167.10	-65.78	-153.55	521.79	475.80	45.99	11.345	
6,650.00	6,630.76	6,603.82	6,599.09	23.88	23.16	166.91	-68.15	-156.94	529.73	483.39	46.34	11.431	
6,700.00	6,680.51	6,653.16	6,648.26	24.07	23.34	166.73	-70.51	-160.33	537.68	490.99	46.69	11.515	
6,750.00	6,730.26	6,702.50	6,697.42	24.26	23.51	166.56	-72.87	-163.72	545.64	498.60	47.04	11.599	
6,800.00	6,780.01	6,751.83	6,746.58	24.45	23.68	166.39	-75.24	-167.11	553.60	506.20	47.39	11.681	
6,850.00	6,829.76	6,801.17	6,795.74	24.64	23.85	166.23	-77.60	-170.50	561.56	513.82	47.74	11.762	
6,900.00	6,879.51	6,850.51	6,844.91	24.83	24.03	166.07	-79.96	-173.88	569.53	521.43	48.09	11.842	
6,950.00	6,929.26	6,900.16	6,894.07	25.02	24.20	165.91	-82.33	-177.27	577.50	529.05	48.45	11.920	
7,000.00	6,979.01	6,949.18	6,943.23	25.21	24.37	165.76	-84.69	-180.66	585.48	536.68	48.80	11.998	
7,050.00	7,028.76	7,001.48	6,992.40	25.40	24.56	165.61	-87.06	-184.05	593.46	544.30	49.16	12.072	
7,100.00	7,078.51	7,047.85	7,041.56	25.59	24.72	165.47	-89.42	-187.44	601.44	551.94	49.50	12.150	
7,150.00	7,128.26	7,102.81	7,090.72	25.77	24.92	165.33	-91.78	-190.82	609.43	559.56	49.87	12.220	
7,200.00	7,178.01	7,146.53	7,139.89	25.96	25.07	165.20	-94.15	-194.21	617.42	567.22	50.20	12.298	
7,250.00	7,227.76	7,204.14	7,189.05	26.15	25.27	165.06	-96.51	-197.60	625.41	574.83	50.58	12.364	
7,300.00	7,277.51	7,245.20	7,238.21	26.34	25.42	164.93	-98.87	-200.99	633.41	582.50	50.91	12.442	
7,350.00	7,327.26	7,305.47	7,287.38	26.53	25.63	164.81	-101.24	-204.38	641.41	590.11	51.30	12.503	
7,400.00	7,377.01	7,343.87	7,336.54	26.72	25.77	164.69	-103.60	-207.76	649.41	597.80	51.61	12.582	
7,450.00	7,426.76	7,406.79	7,385.70	26.91	25.99	164.57	-105.97	-211.15	657.42	605.41	52.01	12.639	
7,500.00	7,476.51	7,442.54	7,434.87	27.10	26.12	164.45	-108.33	-214.54	665.43	613.11	52.32	12.718	
7,550.00	7,526.26	7,508.12	7,484.03	27.29	26.35	164.33	-110.69	-217.93	673.44	620.71	52.73	12.771	
7,600.00	7,576.01	7,541.22	7,533.19	27.48	26.47	164.22	-113.06	-221.32	681.45	628.43	53.03	12.851	
7,650.00	7,625.76	7,590.55	7,582.36	27.67	26.64	164.11	-115.42	-224.70	689.47	636.09	53.38	12.916	
7,700.00	7,675.51	7,639.89	7,631.52	27.86	26.82	164.01	-117.78	-228.09	697.49	643.75	53.74	12.980	
7,750.00	7,725.26	7,689.23	7,680.68	28.05	27.00	163.90	-120.15	-231.48	705.51	651.42	54.09	13.043	
7,800.00	7,775.01	7,738.56	7,729.84	28.24	27.17	163.80	-122.51	-234.87	713.53	659.09	54.44	13.106	
7,850.00	7,824.75	7,787.90	7,779.01	28.43	27.35	163.70	-124.88	-238.26	721.56	666.76	54.80	13.168	
7,900.00	7,874.50	7,837.24	7,828.17	28.62	27.52	163.61	-127.24	-241.64	729.59	674.44	55.15	13.229	
7,950.00	7,924.25	7,886.57	7,877.33	28.81	27.70	163.51	-129.60	-245.03	737.62	682.11	55.51	13.289	
8,000.00	7,974.00	7,935.91	7,926.50	29.00	27.88	163.42	-131.97	-248.42	745.65	689.79	55.86	13.348	
8,050.00	8,023.75	7,985.25	7,975.66	29.19	28.05	163.33	-134.33	-251.81	753.68	697.46	56.22	13.407	
8,100.00	8,073.50	8,034.58	8,024.82	29.38	28.23	163.24	-136.70	-255.20	761.72	705.14	56.57	13.464	
8,150.00	8,123.25	8,083.92	8,073.99	29.57	28.41	163.15	-139.06	-258.59	769.75	712.83	56.93	13.522	
8,200.00	8,173.00	8,133.25	8,123.15	29.76	28.59	163.07	-141.42	-261.97	777.79	720.51	57.28	13.578	
8,250.00	8,222.75	8,182.59	8,172.31	29.95	28.76	162.98	-143.79	-265.36	785.83	728.19	57.64	13.634	
8,300.00	8,272.50	8,231.93	8,221.48	30.14	28.94	162.90	-146.15	-268.75	793.87	735.88	57.99	13.689	
8,350.00	8,322.25	8,281.26	8,270.64	30.33	29.12	162.82	-148.51	-272.14	801.92	743.57	58.35	13.743	
8,400.00	8,372.00	8,330.60	8,319.80	30.52	29.29	162.74	-150.88	-275.53	809.96	751.26	58.71	13.797	
8,450.00	8,421.75	8,379.94	8,368.97	30.71	29.47	162.66	-153.24	-278.91	818.01	758.95	59.06	13.850	
8,500.00	8,471.50	8,429.27	8,418.13	30.90	29.65	162.59	-155.61	-282.30	826.06	766.64	59.42	13.902	
8,550.00	8,521.25	8,478.61	8,467.29	31.09	29.83	162.51	-157.97	-285.69	834.11	774.33	59.77	13.954	
8,600.00	8,571.00	8,527.95	8,516.46	31.28	30.01	162.44	-160.33	-289.08	842.16	782.03	60.13	14.005	
8,650.00	8,620.75	8,577.28	8,565.62	31.47	30.18	162.37	-162.70	-292.47	850.21	789.72	60.49	14.056	
8,700.00	8,670.50	8,626.62	8,614.78	31.66	30.36	162.30	-165.06	-295.85	858.26	797.42	60.84	14.106	
8,750.00	8,720.25	8,675.96	8,663.95	31.85	30.54	162.23	-167.42	-299.24	866.32	805.11	61.20	14.155	

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

## Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 1H - Wellbore #1 - Permit Plan 1														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (")	Offset Wellbore Centre		Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
8,800.00	8,770.00	8,725.29	8,713.11	32.04	30.72	162.16	-169.79	-302.63	874.37	812.81	61.56	14.204			
8,850.00	8,819.75	8,774.63	8,762.27	32.23	30.90	162.10	-172.15	-306.02	882.43	820.51	61.92	14.252			
8,900.00	8,869.50	8,823.96	8,811.43	32.42	31.08	162.03	-174.52	-309.41	890.49	828.21	62.27	14.300			
8,950.00	8,919.25	8,873.30	8,860.60	32.62	31.25	161.97	-176.88	-312.79	898.55	835.92	62.63	14.347			
9,000.00	8,969.00	8,922.64	8,909.76	32.81	31.43	161.91	-179.24	-316.18	906.61	843.62	62.99	14.393			
9,050.00	9,018.75	8,971.97	8,958.92	33.00	31.61	161.84	-181.61	-319.57	914.67	851.32	63.34	14.439			
9,100.00	9,068.50	9,021.31	9,008.09	33.19	31.79	161.78	-183.97	-322.96	922.73	859.03	63.70	14.485			
9,150.00	9,118.25	9,070.65	9,057.25	33.38	31.97	161.72	-186.33	-326.35	930.79	866.73	64.06	14.530			
9,200.00	9,168.00	9,119.98	9,106.41	33.57	32.15	161.66	-188.70	-329.74	938.86	874.44	64.42	14.574			
9,250.00	9,217.75	9,169.32	9,155.58	33.76	32.33	161.61	-191.06	-333.12	946.92	882.14	64.78	14.618			
9,300.00	9,267.50	9,218.66	9,204.74	33.95	32.51	161.55	-193.43	-336.51	954.99	889.85	65.13	14.662			
9,350.00	9,317.25	9,267.99	9,253.90	34.14	32.69	161.50	-195.79	-339.90	963.05	897.56	65.49	14.705			
9,400.00	9,367.00	9,317.33	9,303.07	34.33	32.87	161.44	-198.15	-343.29	971.12	905.27	65.85	14.747			
9,450.00	9,416.75	9,366.67	9,352.23	34.52	33.05	161.39	-200.52	-346.68	979.19	912.98	66.21	14.789			
9,500.00	9,466.50	9,416.00	9,401.39	34.71	33.23	161.33	-202.88	-350.06	987.26	920.69	66.57	14.831			
9,550.00	9,516.25	9,465.34	9,450.56	34.90	33.40	161.28	-205.24	-353.45	995.33	928.40	66.93	14.872			
9,600.00	9,566.00	9,514.67	9,499.72	35.09	33.58	161.23	-207.61	-356.84	1,003.40	936.12	67.28	14.913			
9,650.00	9,615.75	9,564.01	9,548.88	35.28	33.76	161.18	-209.97	-360.23	1,011.47	943.83	67.64	14.953			
9,700.00	9,665.50	9,613.35	9,598.05	35.48	33.94	161.13	-212.34	-363.62	1,019.54	951.54	68.00	14.993			
9,750.00	9,715.25	9,662.68	9,647.21	35.67	34.12	161.08	-214.70	-367.00	1,027.62	959.26	68.36	15.032			
9,800.00	9,765.00	9,712.02	9,696.37	35.86	34.30	161.03	-217.06	-370.39	1,035.69	966.97	68.72	15.071			
9,850.00	9,814.75	9,761.36	9,745.53	36.05	34.48	160.99	-219.43	-373.78	1,043.76	974.69	69.08	15.110			
9,900.00	9,864.49	9,810.69	9,794.70	36.24	34.66	160.94	-221.79	-377.17	1,051.84	982.40	69.44	15.148			
9,950.00	9,914.24	9,860.03	9,843.86	36.43	34.84	160.89	-224.16	-380.56	1,059.92	990.12	69.80	15.186			
10,000.00	9,963.99	9,909.37	9,893.02	36.62	35.02	160.85	-226.52	-383.94	1,067.99	997.84	70.16	15.223			
10,050.00	10,013.74	9,958.70	9,942.19	36.81	35.21	160.80	-228.88	-387.33	1,076.07	1,005.55	70.51	15.260			
10,100.00	10,063.49	10,008.04	9,991.35	37.00	35.39	160.76	-231.25	-390.72	1,084.15	1,013.27	70.87	15.297			
10,150.00	10,113.24	10,057.38	10,040.51	37.19	35.57	160.72	-233.61	-394.11	1,092.23	1,020.99	71.23	15.333			
10,200.00	10,162.99	10,106.71	10,089.68	37.38	35.75	160.67	-235.97	-397.50	1,100.30	1,028.71	71.59	15.369			
10,250.00	10,212.74	10,156.05	10,138.84	37.58	35.93	160.63	-238.34	-400.89	1,108.38	1,036.43	71.95	15.404			
10,300.00	10,262.49	10,205.38	10,188.00	37.77	36.11	160.59	-240.70	-404.27	1,116.46	1,044.15	72.31	15.439			
10,350.00	10,312.24	10,254.72	10,237.17	37.96	36.29	160.55	-243.07	-407.66	1,124.54	1,051.87	72.67	15.474			
10,400.00	10,361.99	10,304.06	10,286.33	38.15	36.47	160.51	-245.43	-411.05	1,132.63	1,059.59	73.03	15.509			
10,450.00	10,411.74	10,353.39	10,335.49	38.34	36.65	160.47	-247.79	-414.44	1,140.71	1,067.32	73.39	15.543			
10,500.00	10,461.49	10,402.73	10,384.66	38.53	36.83	160.43	-250.16	-417.83	1,148.79	1,075.04	73.75	15.576			
10,550.00	10,511.24	10,452.07	10,433.82	38.72	37.01	160.39	-252.52	-421.21	1,156.87	1,082.76	74.11	15.610			
10,600.00	10,560.99	10,501.40	10,482.98	38.91	37.19	160.36	-254.88	-424.60	1,164.96	1,090.48	74.47	15.643			
10,650.00	10,610.74	10,550.74	10,532.15	39.10	37.37	160.32	-257.25	-427.99	1,173.04	1,098.21	74.83	15.676			
10,700.00	10,660.49	10,600.08	10,581.31	39.30	37.56	160.28	-259.61	-431.38	1,181.12	1,105.93	75.19	15.708			
10,750.00	10,710.24	10,649.41	10,630.47	39.49	37.74	160.24	-261.98	-434.77	1,189.21	1,113.66	75.55	15.740			
10,800.00	10,759.99	10,701.25	10,679.64	39.68	37.93	160.21	-264.34	-438.15	1,197.29	1,121.37	75.92	15.770			
10,850.00	10,809.74	10,748.09	10,728.80	39.87	38.10	160.17	-266.70	-441.54	1,205.38	1,129.11	76.27	15.803			
10,900.00	10,859.49	10,802.58	10,777.96	40.06	38.30	160.14	-269.07	-444.93	1,213.47	1,136.81	76.65	15.831			
10,950.00	10,909.24	10,846.76	10,823.12	40.25	38.46	160.10	-271.43	-448.32	1,221.55	1,144.56	76.99	15.865			
11,000.00	10,958.99	10,903.91	10,876.29	40.44	38.67	160.07	-273.79	-451.71	1,229.64	1,152.26	77.38	15.890			
11,050.00	11,008.74	10,945.43	10,925.45	40.63	38.82	160.04	-276.16	-455.09	1,237.73	1,160.01	77.72	15.926			
11,100.00	11,058.49	11,005.23	10,974.61	40.83	39.04	160.00	-278.52	-458.48	1,245.82	1,167.70	78.11	15.949			
11,150.00	11,108.24	11,044.10	11,023.78	41.02	39.19	159.97	-280.89	-461.87	1,253.90	1,175.47	78.44	15.986			
11,200.00	11,157.99	11,106.55	11,072.95	41.21	39.42	159.95	-283.25	-465.26	1,261.95	1,183.11	78.85	16.005			
11,250.00	11,207.80	11,142.86	11,122.19	41.40	39.55	159.95	-285.62	-468.65	1,269.52	1,190.36	79.16	16.038			
11,300.00	11,257.65	11,207.64	11,171.51	41.58	39.79	159.94	-287.99	-472.05	1,276.49	1,196.91	79.57	16.041			
11,350.00	11,307.55	11,241.94	11,220.92	41.77	39.92	159.91	-290.36	-475.46	1,282.84	1,202.96	79.88	16.060			

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

# Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design      Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 1H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program:    O-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
11,400.00	11,357.49	11,291.58	11,270.39	41.95	40.10	159.87	-292.74	-478.87	1,288.59	1,208.35	80.24	16.060		
11,450.00	11,407.46	11,359.68	11,338.29	42.12	40.35	159.80	-295.68	-483.07	1,293.38	1,212.66	80.72	16.023		
11,500.00	11,457.44	11,428.73	11,407.23	42.30	40.60	159.74	-297.95	-486.32	1,296.83	1,215.63	81.20	15.971		
11,550.00	11,507.44	11,497.96	11,476.40	42.47	40.85	159.70	-299.50	-488.55	1,298.93	1,217.27	81.66	15.907		
11,600.00	11,557.44	11,567.30	11,545.72	42.64	41.09	-90.02	-300.34	-489.76	1,299.82	1,217.72	82.10	15.832		
11,650.00	11,607.44	11,630.22	11,608.64	42.80	41.31	-90.02	-300.50	-489.99	1,299.99	1,217.49	82.50	15.757		
11,700.00	11,657.44	11,680.22	11,658.64	42.97	41.48	-90.02	-300.50	-489.99	1,299.99	1,217.15	82.84	15.693		
11,750.00	11,707.44	11,730.22	11,708.64	43.13	41.65	-90.02	-300.50	-489.99	1,299.99	1,216.81	83.18	15.628		
11,800.00	11,757.44	11,780.22	11,758.64	43.30	41.82	-90.02	-300.50	-489.99	1,299.99	1,216.47	83.52	15.564		
11,850.00	11,807.44	11,830.22	11,808.64	43.46	42.00	-90.02	-300.50	-489.99	1,299.99	1,216.13	83.86	15.501		
11,900.00	11,857.44	11,880.22	11,858.64	43.63	42.17	-90.02	-300.50	-489.99	1,299.99	1,215.78	84.21	15.438		
11,950.00	11,907.42	11,930.19	11,908.62	43.79	42.34	-89.53	-300.50	-489.99	1,299.98	1,215.43	84.55	15.376		
12,000.00	11,957.12	11,979.74	11,958.16	43.95	42.51	-89.75	-300.28	-489.99	1,299.95	1,215.07	84.88	15.315		
12,046.58	12,002.86	12,025.76	12,004.06	44.09	42.66	-90.00	-297.14	-490.02	1,299.94	1,214.75	85.18	15.260		
12,050.00	12,006.18	12,029.15	12,007.43	44.10	42.67	-90.02	-296.76	-490.02	1,299.94	1,214.73	85.21	15.256		
12,100.00	12,054.22	12,079.08	12,056.72	44.25	42.84	-90.28	-288.91	-490.10	1,299.95	1,214.43	85.52	15.200		
12,150.00	12,100.87	12,129.55	12,105.66	44.38	42.99	-90.55	-276.65	-490.22	1,300.00	1,214.17	85.83	15.147		
12,200.00	12,145.78	12,180.57	12,153.85	44.50	43.14	-90.81	-259.92	-490.37	1,300.07	1,213.95	86.12	15.096		
12,250.00	12,188.61	12,232.16	12,200.86	44.61	43.28	-91.07	-238.72	-490.57	1,300.17	1,213.77	86.40	15.049		
12,300.00	12,229.03	12,284.32	12,246.26	44.70	43.41	-91.32	-213.07	-490.82	1,300.29	1,213.63	86.66	15.004		
12,350.00	12,266.73	12,337.05	12,289.59	44.78	43.52	-91.56	-183.06	-491.10	1,300.43	1,213.52	86.91	14.963		
12,400.00	12,301.43	12,390.34	12,330.39	44.85	43.62	-91.80	-148.81	-491.42	1,300.58	1,213.43	87.15	14.923		
12,450.00	12,332.85	12,444.18	12,368.21	44.90	43.71	-92.01	-110.52	-491.79	1,300.75	1,213.37	87.38	14.887		
12,500.00	12,360.78	12,498.55	12,402.58	44.94	43.78	-92.22	-68.42	-492.18	1,300.92	1,213.33	87.59	14.852		
12,550.00	12,384.98	12,553.41	12,433.06	44.96	43.85	-92.40	-22.83	-492.61	1,301.09	1,213.29	87.80	14.819		
12,600.00	12,405.28	12,608.74	12,459.24	44.98	43.90	-92.57	25.89	-493.07	1,301.25	1,213.26	88.00	14.788		
12,650.00	12,421.52	12,664.48	12,480.74	44.98	43.95	-92.71	77.29	-493.56	1,301.40	1,213.22	88.19	14.757		
12,700.00	12,433.58	12,720.59	12,497.24	44.97	44.01	-92.84	130.89	-494.07	1,301.54	1,213.16	88.37	14.728		
12,750.00	12,441.36	12,777.00	12,508.46	44.96	44.08	-92.93	186.14	-494.59	1,301.65	1,213.09	88.56	14.698		
12,800.00	12,444.81	12,833.65	12,514.22	44.95	44.17	-93.01	242.48	-495.12	1,301.73	1,213.00	88.74	14.669		
12,850.00	12,445.00	12,887.23	12,515.00	44.94	44.26	-93.03	296.04	-495.63	1,301.76	1,212.84	88.92	14.640		
12,900.00	12,445.00	12,937.23	12,515.00	44.97	44.36	-93.03	346.04	-496.10	1,301.76	1,212.65	89.11	14.608		
12,950.00	12,445.00	12,987.23	12,515.00	45.04	44.47	-93.03	396.04	-496.57	1,301.76	1,212.43	89.33	14.573		
13,000.00	12,445.00	13,037.23	12,515.00	45.15	44.60	-93.03	446.04	-497.05	1,301.76	1,212.20	89.56	14.534		
13,050.00	12,445.00	13,087.23	12,515.00	45.29	44.73	-93.03	496.03	-497.52	1,301.76	1,211.93	89.83	14.492		
13,100.00	12,445.00	13,137.23	12,515.00	45.44	44.88	-93.03	546.03	-497.99	1,301.76	1,211.65	90.11	14.447		
13,150.00	12,445.00	13,187.23	12,515.00	45.61	45.03	-93.03	596.03	-498.46	1,301.76	1,211.34	90.42	14.397		
13,200.00	12,445.00	13,237.23	12,515.00	45.78	45.20	-93.03	646.03	-498.94	1,301.76	1,211.02	90.74	14.346		
13,250.00	12,445.00	13,287.23	12,515.00	45.97	45.38	-93.03	696.02	-499.41	1,301.76	1,210.67	91.09	14.290		
13,300.00	12,445.00	13,337.23	12,515.00	46.16	45.57	-93.03	746.02	-499.88	1,301.76	1,210.30	91.46	14.233		
13,350.00	12,445.00	13,387.23	12,515.00	46.37	45.77	-93.03	796.02	-500.35	1,301.76	1,209.90	91.86	14.171		
13,400.00	12,445.00	13,437.23	12,515.00	46.58	45.98	-93.03	846.02	-500.83	1,301.76	1,209.49	92.27	14.108		
13,450.00	12,445.00	13,487.23	12,515.00	46.81	46.20	-93.03	896.01	-501.30	1,301.76	1,209.05	92.71	14.041		
13,500.00	12,445.00	13,537.23	12,515.00	47.05	46.43	-93.03	946.01	-501.77	1,301.76	1,208.60	93.16	13.973		
13,550.00	12,445.00	13,587.23	12,515.00	47.29	46.67	-93.03	996.01	-502.25	1,301.76	1,208.12	93.64	13.902		
13,600.00	12,445.00	13,637.23	12,515.00	47.54	46.93	-93.03	1,046.01	-502.72	1,301.76	1,207.63	94.14	13.829		
13,650.00	12,445.00	13,687.23	12,515.00	47.81	47.18	-93.03	1,096.01	-503.19	1,301.77	1,207.11	94.65	13.753		
13,700.00	12,445.00	13,737.23	12,515.00	48.08	47.46	-93.03	1,146.00	-503.66	1,301.77	1,206.58	95.19	13.676		
13,750.00	12,445.00	13,787.23	12,515.00	48.37	47.73	-93.03	1,196.00	-504.14	1,301.77	1,206.02	95.74	13.596		
13,800.00	12,445.00	13,837.23	12,515.00	48.65	48.02	-93.03	1,246.00	-504.61	1,301.77	1,205.45	96.31	13.516		
13,850.00	12,445.00	13,887.23	12,515.00	48.96	48.32	-93.03	1,296.00	-505.08	1,301.77	1,204.86	96.91	13.433		
13,900.00	12,445.00	13,937.23	12,515.00	49.26	48.63	-93.03	1,345.99	-505.55	1,301.77	1,204.25	97.51	13.349		

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

## Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 1H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,950.00	12,445.00	13,987.23	12,515.00	49.58	48.94	-93.03	1,395.99	-506.03	1,301.77	1,203.62	98.14	13.264		
14,000.00	12,445.00	14,037.23	12,515.00	49.90	49.27	-93.03	1,445.99	-506.50	1,301.77	1,202.98	98.79	13.178		
14,050.00	12,445.00	14,087.23	12,515.00	50.24	49.60	-93.03	1,495.99	-506.97	1,301.77	1,202.32	99.45	13.090		
14,100.00	12,445.00	14,137.23	12,515.00	50.58	49.94	-93.03	1,545.99	-507.44	1,301.77	1,201.64	100.13	13.001		
14,150.00	12,445.00	14,187.23	12,515.00	50.93	50.29	-93.03	1,595.98	-507.92	1,301.77	1,200.95	100.82	12.911		
14,200.00	12,445.00	14,237.23	12,515.00	51.28	50.65	-93.03	1,645.98	-508.39	1,301.77	1,200.24	101.53	12.821		
14,250.00	12,445.00	14,287.23	12,515.00	51.65	51.01	-93.03	1,695.98	-508.86	1,301.77	1,199.51	102.26	12.730		
14,300.00	12,445.00	14,337.23	12,515.00	52.02	51.38	-93.03	1,745.98	-509.33	1,301.77	1,198.77	103.00	12.639		
14,350.00	12,445.00	14,387.23	12,515.00	52.40	51.76	-93.03	1,795.97	-509.81	1,301.77	1,198.01	103.76	12.546		
14,400.00	12,445.00	14,437.23	12,515.00	52.78	52.15	-93.03	1,845.97	-510.28	1,301.77	1,197.24	104.53	12.454		
14,450.00	12,445.00	14,487.23	12,515.00	53.18	52.54	-93.03	1,895.97	-510.75	1,301.77	1,196.46	105.31	12.361		
14,500.00	12,445.00	14,537.23	12,515.00	53.58	52.95	-93.03	1,945.97	-511.23	1,301.77	1,195.66	106.11	12.268		
14,550.00	12,445.00	14,587.23	12,515.00	53.99	53.35	-93.03	1,995.97	-511.70	1,301.77	1,194.84	106.93	12.174		
14,600.00	12,445.00	14,637.23	12,515.00	54.40	53.77	-93.03	2,045.96	-512.17	1,301.77	1,194.02	107.75	12.081		
14,650.00	12,445.00	14,687.23	12,515.00	54.82	54.19	-93.03	2,095.96	-512.64	1,301.77	1,193.18	108.60	11.987		
14,700.00	12,445.00	14,737.23	12,515.00	55.24	54.62	-93.03	2,145.96	-513.12	1,301.77	1,192.33	109.45	11.894		
14,750.00	12,445.00	14,787.23	12,515.00	55.68	55.05	-93.03	2,195.96	-513.59	1,301.77	1,191.46	110.31	11.801		
14,800.00	12,445.00	14,837.23	12,515.00	56.11	55.49	-93.03	2,245.95	-514.06	1,301.77	1,190.58	111.19	11.708		
14,850.00	12,445.00	14,887.23	12,515.00	56.56	55.94	-93.03	2,295.95	-514.53	1,301.77	1,189.69	112.08	11.615		
14,900.00	12,445.00	14,937.23	12,515.00	57.01	56.39	-93.03	2,345.95	-515.01	1,301.77	1,188.79	112.98	11.522		
14,950.00	12,445.00	14,987.23	12,515.00	57.47	56.85	-93.03	2,395.95	-515.48	1,301.77	1,187.88	113.90	11.430		
15,000.00	12,445.00	15,037.23	12,515.00	57.92	57.31	-93.03	2,445.95	-515.95	1,301.77	1,186.96	114.82	11.338		
15,050.00	12,445.00	15,087.23	12,515.00	58.39	57.78	-93.03	2,495.94	-516.42	1,301.77	1,186.02	115.75	11.246		
15,100.00	12,445.00	15,137.23	12,515.00	58.86	58.25	-93.03	2,545.94	-516.90	1,301.77	1,185.08	116.70	11.155		
15,150.00	12,445.00	15,187.23	12,515.00	59.34	58.73	-93.03	2,595.94	-517.37	1,301.78	1,184.12	117.65	11.064		
15,200.00	12,445.00	15,237.23	12,515.00	59.82	59.21	-93.03	2,645.94	-517.84	1,301.78	1,183.16	118.62	10.974		
15,250.00	12,445.00	15,287.23	12,515.00	60.31	59.70	-93.03	2,695.93	-518.31	1,301.78	1,182.18	119.60	10.885		
15,300.00	12,445.00	15,337.23	12,515.00	60.80	60.20	-93.03	2,745.93	-518.79	1,301.78	1,181.20	120.58	10.796		
15,350.00	12,445.00	15,387.23	12,515.00	61.29	60.69	-93.03	2,795.93	-519.26	1,301.78	1,180.20	121.57	10.708		
15,400.00	12,445.00	15,437.23	12,515.00	61.79	61.20	-93.03	2,845.93	-519.73	1,301.78	1,179.20	122.58	10.620		
15,450.00	12,445.00	15,487.23	12,515.00	62.30	61.70	-93.03	2,895.93	-520.20	1,301.78	1,178.19	123.59	10.533		
15,500.00	12,445.00	15,537.23	12,515.00	62.81	62.22	-93.03	2,945.92	-520.68	1,301.78	1,177.17	124.61	10.447		
15,550.00	12,445.00	15,587.23	12,515.00	63.32	62.73	-93.03	2,995.92	-521.15	1,301.78	1,176.14	125.64	10.361		
15,600.00	12,445.00	15,637.23	12,515.00	63.84	63.25	-93.03	3,045.92	-521.62	1,301.78	1,175.10	126.68	10.276		
15,650.00	12,445.00	15,687.23	12,515.00	64.36	63.78	-93.03	3,095.92	-522.10	1,301.78	1,174.05	127.73	10.192		
15,700.00	12,445.00	15,737.23	12,515.00	64.88	64.30	-93.03	3,145.91	-522.57	1,301.78	1,173.00	128.78	10.109		
15,750.00	12,445.00	15,787.23	12,515.00	65.41	64.84	-93.03	3,195.91	-523.04	1,301.78	1,171.94	129.84	10.026		
15,800.00	12,445.00	15,837.23	12,515.00	65.94	65.37	-93.03	3,245.91	-523.51	1,301.78	1,170.87	130.91	9.944		
15,850.00	12,445.00	15,887.23	12,515.00	66.48	65.91	-93.03	3,295.91	-523.99	1,301.78	1,169.79	131.99	9.863		
15,900.00	12,445.00	15,937.23	12,515.00	67.02	66.45	-93.03	3,345.91	-524.46	1,301.78	1,168.71	133.07	9.783		
15,950.00	12,445.00	15,987.23	12,515.00	67.57	67.00	-93.03	3,395.90	-524.93	1,301.78	1,167.62	134.16	9.703		
16,000.00	12,445.00	16,037.23	12,515.00	68.11	67.55	-93.03	3,445.90	-525.40	1,301.78	1,166.52	135.26	9.624		
16,050.00	12,445.00	16,087.23	12,515.00	68.66	68.10	-93.03	3,495.90	-525.88	1,301.78	1,165.42	136.36	9.546		
16,100.00	12,445.00	16,137.23	12,515.00	69.21	68.66	-93.03	3,545.90	-526.35	1,301.78	1,164.31	137.47	9.469		
16,150.00	12,445.00	16,187.23	12,515.00	69.77	69.22	-93.03	3,595.89	-526.82	1,301.78	1,163.19	138.59	9.393		
16,200.00	12,445.00	16,237.23	12,515.00	70.33	69.78	-93.03	3,645.89	-527.29	1,301.78	1,162.07	139.71	9.318		
16,250.00	12,445.00	16,287.23	12,515.00	70.89	70.35	-93.03	3,695.89	-527.77	1,301.78	1,160.94	140.84	9.243		
16,300.00	12,445.00	16,337.23	12,515.00	71.46	70.91	-93.03	3,745.89	-528.24	1,301.78	1,159.81	141.98	9.169		
16,350.00	12,445.00	16,387.23	12,515.00	72.03	71.49	-93.03	3,795.89	-528.71	1,301.78	1,158.67	143.12	9.096		
16,400.00	12,445.00	16,437.23	12,515.00	72.60	72.06	-93.03	3,845.88	-529.18	1,301.78	1,157.52	144.26	9.024		
16,450.00	12,445.00	16,487.23	12,515.00	73.17	72.64	-93.03	3,895.88	-529.66	1,301.78	1,156.37	145.42	8.952		
16,500.00	12,445.00	16,537.23	12,515.00	73.75	73.22	-93.03	3,945.88	-530.13	1,301.78	1,155.21	146.57	8.882		

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

# Anticollision Report

<b>Company:</b>	WCDSC Permian NM	<b>Local Co-ordinate Reference:</b>	Well Arena Roja Fed Unit 15-10 5H
<b>Project:</b>	Lea County (NAD83 New Mexico East)	<b>TVD Reference:</b>	RKB @ 3164.80ft
<b>Reference Site:</b>	Sec 15-T26S-R35E	<b>MD Reference:</b>	RKB @ 3164.80ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Arena Roja Fed Unit 15-10 5H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.50 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM r5000.141_Prod US
<b>Reference Design:</b>	Permit Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design      Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 1H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program:    0-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tootface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
16,550.00	12,445.00	16,587.23	12,515.00	74.33	73.80	-93.03	3,995.88	-530.60	1,301.78	1,154.05	147.73	8.812	
16,600.00	12,445.00	16,637.23	12,515.00	74.91	74.38	-93.03	4,045.87	-531.08	1,301.79	1,152.88	148.90	8.743	
16,650.00	12,445.00	16,687.23	12,515.00	75.50	74.97	-93.03	4,095.87	-531.55	1,301.79	1,151.71	150.07	8.674	
16,700.00	12,445.00	16,737.23	12,515.00	76.08	75.56	-93.03	4,145.87	-532.02	1,301.79	1,150.53	151.25	8.607	
16,750.00	12,445.00	16,787.23	12,515.00	76.67	76.15	-93.03	4,195.87	-532.49	1,301.79	1,149.35	152.43	8.540	
16,800.00	12,445.00	16,837.23	12,515.00	77.26	76.75	-93.03	4,245.87	-532.97	1,301.79	1,148.17	153.62	8.474	
16,850.00	12,445.00	16,887.23	12,515.00	77.86	77.34	-93.03	4,295.86	-533.44	1,301.79	1,146.98	154.81	8.409	
16,900.00	12,445.00	16,937.23	12,515.00	78.45	77.94	-93.03	4,345.86	-533.91	1,301.79	1,145.78	156.01	8.344	
16,950.00	12,445.00	16,987.23	12,515.00	79.05	78.54	-93.03	4,395.86	-534.38	1,301.79	1,144.58	157.21	8.281	
17,000.00	12,445.00	17,037.23	12,515.00	79.65	79.14	-93.03	4,445.86	-534.86	1,301.79	1,143.38	158.41	8.218	
17,050.00	12,445.00	17,087.23	12,515.00	80.25	79.75	-93.03	4,495.85	-535.33	1,301.79	1,142.17	159.62	8.156	
17,100.00	12,445.00	17,137.23	12,515.00	80.86	80.36	-93.03	4,545.85	-535.80	1,301.79	1,140.96	160.83	8.094	
17,150.00	12,445.00	17,187.23	12,515.00	81.47	80.97	-93.03	4,595.85	-536.27	1,301.79	1,139.74	162.05	8.033	
17,200.00	12,445.00	17,237.23	12,515.00	82.07	81.58	-93.03	4,645.85	-536.75	1,301.79	1,138.52	163.27	7.973	
17,250.00	12,445.00	17,287.23	12,515.00	82.68	82.19	-93.03	4,695.85	-537.22	1,301.79	1,137.30	164.49	7.914	
17,300.00	12,445.00	17,337.23	12,515.00	83.30	82.80	-93.03	4,745.84	-537.69	1,301.79	1,136.07	165.72	7.855	
17,350.00	12,445.00	17,387.23	12,515.00	83.91	83.42	-93.03	4,795.84	-538.16	1,301.79	1,134.84	166.95	7.798	
17,400.00	12,445.00	17,437.23	12,515.00	84.53	84.04	-93.03	4,845.84	-538.64	1,301.79	1,133.61	168.18	7.740	
17,450.00	12,445.00	17,487.23	12,515.00	85.14	84.66	-93.03	4,895.84	-539.11	1,301.79	1,132.37	169.42	7.684	
17,500.00	12,445.00	17,537.23	12,515.00	85.76	85.28	-93.03	4,945.83	-539.58	1,301.79	1,131.13	170.66	7.628	
17,550.00	12,445.00	17,587.23	12,515.00	86.38	85.90	-93.03	4,995.83	-540.05	1,301.79	1,129.88	171.91	7.573	
17,600.00	12,445.00	17,637.23	12,515.00	87.01	86.53	-93.03	5,045.83	-540.53	1,301.79	1,128.64	173.16	7.518	
17,650.00	12,445.00	17,687.23	12,515.00	87.63	87.15	-93.03	5,095.83	-541.00	1,301.79	1,127.38	174.41	7.464	
17,700.00	12,445.00	17,737.23	12,515.00	88.26	87.78	-93.03	5,145.83	-541.47	1,301.79	1,126.13	175.66	7.411	
17,750.00	12,445.00	17,787.23	12,515.00	88.88	88.41	-93.03	5,195.82	-541.95	1,301.79	1,124.87	176.92	7.358	
17,800.00	12,445.00	17,837.23	12,515.00	89.51	89.04	-93.03	5,245.82	-542.42	1,301.79	1,123.61	178.18	7.306	
17,850.00	12,445.00	17,887.23	12,515.00	90.14	89.68	-93.03	5,295.82	-542.89	1,301.79	1,122.35	179.44	7.255	
17,900.00	12,445.00	17,937.23	12,515.00	90.77	90.31	-93.03	5,345.82	-543.36	1,301.79	1,121.09	180.71	7.204	
17,950.00	12,445.00	17,987.23	12,515.00	91.41	90.94	-93.03	5,395.81	-543.84	1,301.79	1,119.82	181.98	7.154	
18,000.00	12,445.00	18,037.23	12,515.00	92.04	91.58	-93.03	5,445.81	-544.31	1,301.79	1,118.55	183.25	7.104	
18,050.00	12,445.00	18,087.23	12,515.00	92.68	92.22	-93.03	5,495.81	-544.78	1,301.79	1,117.27	184.52	7.055	
18,100.00	12,445.00	18,137.23	12,515.00	93.31	92.86	-93.03	5,545.81	-545.25	1,301.80	1,116.00	185.80	7.006	
18,150.00	12,445.00	18,187.23	12,515.00	93.95	93.50	-93.03	5,595.81	-545.73	1,301.80	1,114.72	187.08	6.959	
18,200.00	12,445.00	18,237.23	12,515.00	94.59	94.14	-93.03	5,645.80	-546.20	1,301.80	1,113.44	188.36	6.911	
18,250.00	12,445.00	18,287.23	12,515.00	95.23	94.78	-93.03	5,695.80	-546.67	1,301.80	1,112.15	189.65	6.864	
18,300.00	12,445.00	18,337.23	12,515.00	95.87	95.43	-93.03	5,745.80	-547.14	1,301.80	1,110.86	190.93	6.818	
18,350.00	12,445.00	18,387.23	12,515.00	96.52	96.07	-93.03	5,795.80	-547.62	1,301.80	1,109.58	192.22	6.772	
18,400.00	12,445.00	18,437.23	12,515.00	97.16	96.72	-93.03	5,845.79	-548.09	1,301.80	1,108.29	193.51	6.727	
18,450.00	12,445.00	18,487.23	12,515.00	97.81	97.37	-93.03	5,895.79	-548.56	1,301.80	1,106.99	194.81	6.683	
18,500.00	12,445.00	18,537.23	12,515.00	98.45	98.02	-93.03	5,945.79	-549.03	1,301.80	1,105.70	196.10	6.638	
18,550.00	12,445.00	18,587.23	12,515.00	99.10	98.67	-93.03	5,995.79	-549.51	1,301.80	1,104.40	197.40	6.595	
18,600.00	12,445.00	18,637.23	12,515.00	99.75	99.32	-93.03	6,045.78	-549.98	1,301.80	1,103.10	198.70	6.552	
18,650.00	12,445.00	18,687.23	12,515.00	100.40	99.97	-93.03	6,095.78	-550.45	1,301.80	1,101.80	200.00	6.509	
18,700.00	12,445.00	18,737.23	12,515.00	101.05	100.62	-93.03	6,145.78	-550.93	1,301.80	1,100.49	201.31	6.467	
18,750.00	12,445.00	18,787.23	12,515.00	101.71	101.28	-93.03	6,195.78	-551.40	1,301.80	1,099.19	202.61	6.425	
18,800.00	12,445.00	18,837.23	12,515.00	102.36	101.93	-93.03	6,245.78	-551.87	1,301.80	1,097.88	203.92	6.384	
18,850.00	12,445.00	18,887.23	12,515.00	103.01	102.59	-93.03	6,295.77	-552.34	1,301.80	1,096.57	205.23	6.343	
18,900.00	12,445.00	18,937.23	12,515.00	103.67	103.24	-93.03	6,345.77	-552.82	1,301.80	1,095.26	206.54	6.303	
18,950.00	12,445.00	18,987.23	12,515.00	104.32	103.90	-93.03	6,395.77	-553.29	1,301.80	1,093.94	207.86	6.263	
19,000.00	12,445.00	19,037.23	12,515.00	104.98	104.56	-93.03	6,445.77	-553.76	1,301.80	1,092.63	209.17	6.224	
19,050.00	12,445.00	19,087.23	12,515.00	105.64	105.22	-93.03	6,495.76	-554.23	1,301.80	1,091.31	210.49	6.185	
19,100.00	12,445.00	19,137.23	12,515.00	106.30	105.88	-93.03	6,545.76	-554.71	1,301.80	1,089.99	211.81	6.146	

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

# Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 1H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toothface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
19,150.00	12,445.00	19,187.23	12,515.00	106.96	106.54	-93.03	6,595.76	-555.18	1,301.80	1,088.67	213.13	6.108		
19,200.00	12,445.00	19,237.23	12,515.00	107.62	107.20	-93.03	6,645.76	-555.65	1,301.80	1,087.35	214.45	6.070		
19,250.00	12,445.00	19,287.23	12,515.00	108.28	107.87	-93.03	6,695.76	-556.12	1,301.80	1,086.02	215.78	6.033		
19,300.00	12,445.00	19,337.23	12,515.00	108.94	108.53	-93.03	6,745.75	-556.60	1,301.80	1,084.70	217.11	5.996		
19,350.00	12,445.00	19,387.23	12,515.00	109.60	109.20	-93.03	6,795.75	-557.07	1,301.80	1,083.37	218.43	5.960		
19,400.00	12,445.00	19,437.23	12,515.00	110.27	109.86	-93.03	6,845.75	-557.54	1,301.80	1,082.04	219.76	5.924		
19,450.00	12,445.00	19,487.23	12,515.00	110.93	110.53	-93.03	6,895.75	-558.01	1,301.80	1,080.71	221.09	5.888		
19,500.00	12,445.00	19,537.23	12,515.00	111.60	111.20	-93.03	6,945.74	-558.49	1,301.80	1,079.38	222.43	5.853		
19,550.00	12,445.00	19,587.23	12,515.00	112.26	111.86	-93.03	6,995.74	-558.96	1,301.80	1,078.05	223.76	5.818		
19,600.00	12,445.00	19,637.23	12,515.00	112.93	112.53	-93.03	7,045.74	-559.43	1,301.81	1,076.71	225.09	5.783		
19,650.00	12,445.00	19,687.23	12,515.00	113.60	113.20	-93.03	7,095.74	-559.90	1,301.81	1,075.37	226.43	5.749		
19,700.00	12,445.00	19,737.23	12,515.00	114.27	113.87	-93.03	7,145.74	-560.38	1,301.81	1,074.04	227.77	5.715		
19,750.00	12,445.00	19,787.23	12,515.00	114.94	114.54	-93.03	7,195.73	-560.85	1,301.81	1,072.70	229.11	5.682		
19,800.00	12,445.00	19,837.23	12,515.00	115.60	115.21	-93.03	7,245.73	-561.32	1,301.81	1,071.36	230.45	5.649		
19,850.00	12,445.00	19,887.23	12,515.00	116.28	115.88	-93.03	7,295.73	-561.80	1,301.81	1,070.01	231.79	5.616		
19,900.00	12,445.00	19,937.23	12,515.00	116.95	116.56	-93.03	7,345.73	-562.27	1,301.81	1,068.67	233.14	5.584		
19,950.00	12,445.00	19,987.23	12,515.00	117.62	117.23	-93.03	7,395.72	-562.74	1,301.81	1,067.33	234.48	5.552		
20,000.00	12,445.00	20,037.23	12,515.00	118.29	117.90	-93.03	7,445.72	-563.21	1,301.81	1,065.98	235.83	5.520		
20,050.00	12,445.00	20,087.23	12,515.00	118.96	118.58	-93.03	7,495.72	-563.69	1,301.81	1,064.63	237.17	5.489		
20,100.00	12,445.00	20,137.23	12,515.00	119.64	119.25	-93.03	7,545.72	-564.16	1,301.81	1,063.29	238.52	5.458		
20,150.00	12,445.00	20,187.23	12,515.00	120.31	119.93	-93.03	7,595.72	-564.63	1,301.81	1,061.94	239.87	5.427		
20,200.00	12,445.00	20,237.23	12,515.00	120.99	120.61	-93.03	7,645.71	-565.10	1,301.81	1,060.59	241.22	5.397		
20,250.00	12,445.00	20,287.23	12,515.00	121.66	121.28	-93.03	7,695.71	-565.58	1,301.81	1,059.23	242.58	5.367		
20,300.00	12,445.00	20,337.23	12,515.00	122.34	121.96	-93.03	7,745.71	-566.05	1,301.81	1,057.88	243.93	5.337		
20,302.85	12,445.00	20,340.08	12,515.00	122.38	122.00	-93.03	7,748.56	-566.08	1,301.81	1,057.80	244.01	5.335		

# Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 2H - Wellbore #1 - Permit Plan 1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
0.00	0.00	1.20	1.20	0.50	0.50	-90.52	-0.27	-29.99	30.00				
50.00	50.00	51.20	51.20	0.50	0.50	-90.52	-0.27	-29.99	30.00	28.99	1.01	29.796	
100.00	100.00	101.20	101.20	0.52	0.52	-90.52	-0.27	-29.99	30.00	28.96	1.04	28.935	
150.00	150.00	151.20	151.20	0.59	0.59	-90.52	-0.27	-29.99	30.00	28.81	1.18	25.360	
200.00	200.00	201.20	201.20	0.70	0.71	-90.52	-0.27	-29.99	30.00	28.59	1.41	21.315	
250.00	250.00	251.20	251.20	0.84	0.84	-90.52	-0.27	-29.99	30.00	28.32	1.68	17.867	
300.00	300.00	301.20	301.20	0.99	0.99	-90.52	-0.27	-29.99	30.00	28.02	1.98	15.162	
350.00	350.00	351.20	351.20	1.15	1.15	-90.52	-0.27	-29.99	30.00	27.70	2.29	13.071	
400.00	400.00	401.20	401.20	1.31	1.31	-90.52	-0.27	-29.99	30.00	27.37	2.62	11.439	
450.00	450.00	451.20	451.20	1.48	1.48	-90.52	-0.27	-29.99	30.00	27.04	2.96	10.145	
500.00	500.00	501.20	501.20	1.65	1.65	-90.52	-0.27	-29.99	30.00	26.70	3.30	9.100	
550.00	550.00	551.20	551.20	1.82	1.82	-90.52	-0.27	-29.99	30.00	26.36	3.64	8.242	
600.00	600.00	601.20	601.20	1.99	1.99	-90.52	-0.27	-29.99	30.00	26.01	3.99	7.526	
650.00	650.00	651.20	651.20	2.16	2.17	-90.52	-0.27	-29.99	30.00	25.66	4.33	6.922	
700.00	700.00	701.20	701.20	2.34	2.34	-90.52	-0.27	-29.99	30.00	25.31	4.68	6.405	
750.00	750.00	751.20	751.20	2.51	2.52	-90.52	-0.27	-29.99	30.00	24.96	5.03	5.959	
800.00	800.00	801.20	801.20	2.69	2.69	-90.52	-0.27	-29.99	30.00	24.61	5.39	5.570	
850.00	850.00	851.20	851.20	2.87	2.87	-90.52	-0.27	-29.99	30.00	24.26	5.74	5.228	
900.00	900.00	901.20	901.20	3.04	3.05	-90.52	-0.27	-29.99	30.00	23.90	6.09	4.924 Alert	
950.00	950.00	951.20	951.20	3.22	3.22	-90.52	-0.27	-29.99	30.00	23.55	6.45	4.654 Alert	
1,000.00	1,000.00	1,001.20	1,001.20	3.40	3.40	-90.52	-0.27	-29.99	30.00	23.20	6.80	4.411 Alert	
1,050.00	1,050.00	1,051.20	1,051.20	3.58	3.58	-90.52	-0.27	-29.99	30.00	22.84	7.15	4.193 Alert	
1,100.00	1,100.00	1,101.20	1,101.20	3.75	3.76	-90.52	-0.27	-29.99	30.00	22.49	7.51	3.994 Alert	
1,150.00	1,150.00	1,151.20	1,151.20	3.93	3.93	-90.52	-0.27	-29.99	30.00	22.13	7.86	3.814 Alert	
1,200.00	1,200.00	1,201.20	1,201.20	4.11	4.11	-90.52	-0.27	-29.99	30.00	21.78	8.22	3.649 Alert	
1,250.00	1,250.00	1,251.20	1,251.20	4.29	4.29	-90.52	-0.27	-29.99	30.00	21.42	8.58	3.497 Alert	
1,300.00	1,300.00	1,301.20	1,301.20	4.46	4.47	-90.52	-0.27	-29.99	30.00	21.06	8.93	3.358 Alert	
1,350.00	1,350.00	1,351.20	1,351.20	4.64	4.65	-90.52	-0.27	-29.99	30.00	20.71	9.29	3.229 Alert	
1,400.00	1,400.00	1,401.20	1,401.20	4.82	4.82	-90.52	-0.27	-29.99	30.00	20.35	9.65	3.110 Alert	
1,450.00	1,450.00	1,451.20	1,451.20	5.00	5.00	-90.52	-0.27	-29.99	30.00	19.99	10.00	2.999 Alert	
1,500.00	1,500.00	1,501.20	1,501.20	5.18	5.18	-90.52	-0.27	-29.99	30.00	19.64	10.36	2.896 Alert	
1,550.00	1,550.00	1,551.20	1,551.20	5.36	5.36	-90.52	-0.27	-29.99	30.00	19.28	10.72	2.799 Alert	
1,600.00	1,600.00	1,601.20	1,601.20	5.53	5.54	-90.52	-0.27	-29.99	30.00	18.92	11.07	2.709 Alert	
1,650.00	1,650.00	1,651.20	1,651.20	5.71	5.72	-90.52	-0.27	-29.99	30.00	18.57	11.43	2.624 Alert	
1,700.00	1,700.00	1,701.20	1,701.20	5.89	5.90	-90.52	-0.27	-29.99	30.00	18.21	11.79	2.545 Alert	
1,750.00	1,750.00	1,751.20	1,751.20	6.07	6.07	-90.52	-0.27	-29.99	30.00	17.85	12.14	2.470 Minor Risk	
1,800.00	1,800.00	1,801.20	1,801.20	6.25	6.25	-90.52	-0.27	-29.99	30.00	17.49	12.50	2.399 Minor Risk	
1,850.00	1,850.00	1,851.20	1,851.20	6.43	6.43	-90.52	-0.27	-29.99	30.00	17.14	12.86	2.333 Minor Risk	
1,900.00	1,900.00	1,901.20	1,901.20	6.61	6.61	-90.52	-0.27	-29.99	30.00	16.78	13.22	2.270 Minor Risk	
1,950.00	1,950.00	1,951.20	1,951.20	6.78	6.79	-90.52	-0.27	-29.99	30.00	16.42	13.57	2.210 Minor Risk	
2,000.00	2,000.00	2,001.20	2,001.20	6.96	6.97	-90.52	-0.27	-29.99	30.00	16.06	13.93	2.153 Minor Risk	
2,050.00	2,050.00	2,051.20	2,051.20	7.14	7.15	-90.52	-0.27	-29.99	30.00	15.71	14.29	2.099 Minor Risk	
2,100.00	2,100.00	2,101.20	2,101.20	7.32	7.33	-90.52	-0.27	-29.99	30.00	15.35	14.65	2.048 Minor Risk	
2,150.00	2,150.00	2,151.20	2,151.20	7.50	7.50	-90.52	-0.27	-29.99	30.00	14.99	15.00	1.999 Minor Risk	
2,200.00	2,200.00	2,201.20	2,201.20	7.68	7.68	-90.52	-0.27	-29.99	30.00	14.63	15.36	1.953 Minor Risk	
2,250.00	2,250.00	2,251.20	2,251.20	7.86	7.86	-90.52	-0.27	-29.99	30.00	14.28	15.72	1.908 Minor Risk	
2,300.00	2,300.00	2,301.20	2,301.20	8.04	8.04	-90.52	-0.27	-29.99	30.00	13.92	16.08	1.866 Minor Risk	
2,350.00	2,350.00	2,351.20	2,351.20	8.22	8.22	-90.52	-0.27	-29.99	30.00	13.56	16.43	1.825 Minor Risk	
2,400.00	2,400.00	2,401.20	2,401.20	8.39	8.40	-90.52	-0.27	-29.99	30.00	13.20	16.79	1.786 Minor Risk	
2,450.00	2,450.00	2,451.20	2,451.20	8.57	8.58	-90.52	-0.27	-29.99	30.00	12.85	17.15	1.749 Minor Risk	
2,500.00	2,500.00	2,501.20	2,501.20	8.75	8.76	-90.52	-0.27	-29.99	30.00	12.49	17.51	1.713 Minor Risk, CC	
2,550.00	2,550.00	2,551.20	2,551.20	8.92	8.94	159.34	-0.27	-29.99	30.25	12.39	17.86	1.694 Minor Risk, ES, SF	

CC - Min centre to center distance or convergent point. SF - min separation factor ES - min ellipse separation



# Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design      Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 2H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program:    0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toothface (')	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
2,600.00	2,599.99	2,601.19	2,601.19	9.10	9.11	159.87	-0.27	-29.99	31.02	12.81	18.21	1.703 Minor Risk		
2,650.00	2,649.97	2,651.17	2,651.17	9.27	9.29	160.70	-0.27	-29.99	32.30	13.74	18.56	1.741 Minor Risk		
2,700.00	2,699.94	2,701.14	2,701.14	9.43	9.47	161.75	-0.27	-29.99	34.11	15.20	18.90	1.804 Minor Risk		
2,750.00	2,749.88	2,751.08	2,751.08	9.60	9.65	162.95	-0.27	-29.99	36.45	17.20	19.25	1.893 Minor Risk		
2,800.00	2,799.79	2,800.99	2,800.99	9.77	9.83	164.22	-0.27	-29.99	39.32	19.73	19.60	2.006 Minor Risk		
2,850.00	2,849.66	2,851.09	2,851.09	9.94	10.00	165.27	-0.46	-29.87	42.60	22.67	19.94	2.137 Minor Risk		
2,900.00	2,899.49	2,901.21	2,901.20	10.11	10.17	165.90	-1.03	-29.52	46.15	25.87	20.28	2.276 Minor Risk		
2,950.00	2,949.28	2,951.32	2,951.31	10.28	10.33	166.20	-1.96	-28.93	49.96	29.35	20.61	2.424 Minor Risk		
3,000.00	2,999.03	3,001.46	3,001.42	10.46	10.50	166.19	-3.26	-28.10	53.84	32.90	20.94	2.571 Alert		
3,050.00	3,048.78	3,051.55	3,051.47	10.63	10.66	165.85	-4.92	-27.05	57.46	36.19	21.27	2.702 Alert		
3,100.00	3,098.53	3,101.43	3,101.30	10.80	10.83	165.47	-6.68	-25.93	61.01	39.41	21.60	2.824 Alert		
3,150.00	3,148.28	3,151.30	3,151.13	10.98	10.99	165.12	-8.44	-24.82	64.57	42.63	21.94	2.943 Alert		
3,200.00	3,198.03	3,201.17	3,200.96	11.15	11.16	164.82	-10.20	-23.71	68.12	45.85	22.28	3.058 Alert		
3,250.00	3,247.78	3,251.04	3,250.79	11.33	11.32	164.54	-11.96	-22.59	71.68	49.07	22.61	3.170 Alert		
3,300.00	3,297.53	3,300.91	3,300.62	11.50	11.49	164.29	-13.71	-21.48	75.24	52.29	22.95	3.278 Alert		
3,350.00	3,347.28	3,350.79	3,350.45	11.68	11.65	164.06	-15.47	-20.37	78.80	55.51	23.29	3.384 Alert		
3,400.00	3,397.03	3,400.66	3,400.27	11.86	11.82	163.85	-17.23	-19.25	82.36	58.73	23.63	3.486 Alert		
3,450.00	3,446.78	3,450.53	3,450.10	12.04	11.99	163.66	-18.99	-18.14	85.92	61.95	23.97	3.585 Alert		
3,500.00	3,496.53	3,500.40	3,499.93	12.21	12.16	163.49	-20.75	-17.03	89.48	65.17	24.31	3.681 Alert		
3,550.00	3,546.28	3,550.28	3,549.76	12.39	12.32	163.33	-22.50	-15.91	93.04	68.40	24.65	3.775 Alert		
3,600.00	3,596.03	3,600.15	3,599.59	12.57	12.49	163.18	-24.26	-14.80	96.61	71.62	24.99	3.866 Alert		
3,650.00	3,645.78	3,650.02	3,649.42	12.75	12.66	163.04	-26.02	-13.69	100.17	74.84	25.33	3.954 Alert		
3,700.00	3,695.52	3,700.11	3,699.25	12.93	12.83	162.91	-27.78	-12.57	103.74	78.06	25.68	4.040 Alert		
3,750.00	3,745.27	3,749.76	3,749.08	13.11	13.00	162.78	-29.54	-11.46	107.30	81.28	26.02	4.124 Alert		
3,800.00	3,795.02	3,800.36	3,798.90	13.29	13.17	162.67	-31.29	-10.35	110.87	84.50	26.37	4.205 Alert		
3,850.00	3,844.77	3,849.51	3,848.73	13.47	13.34	162.56	-33.05	-9.23	114.44	87.73	26.71	4.284 Alert		
3,900.00	3,894.52	3,900.62	3,898.56	13.65	13.51	162.46	-34.81	-8.12	118.00	90.94	27.06	4.361 Alert		
3,950.00	3,844.27	3,949.25	3,948.39	13.83	13.68	162.37	-36.57	-7.01	121.57	94.17	27.40	4.437 Alert		
4,000.00	3,994.02	4,000.87	3,998.22	14.01	13.86	162.28	-38.33	-5.89	125.14	97.38	27.75	4.509 Alert		
4,050.00	4,043.77	4,049.00	4,048.05	14.20	14.02	162.20	-40.09	-4.78	128.71	100.61	28.10	4.581 Alert		
4,100.00	4,093.52	4,101.13	4,097.88	14.38	14.20	162.12	-41.84	-3.66	132.27	103.82	28.45	4.649 Alert		
4,150.00	4,143.27	4,148.74	4,147.71	14.56	14.37	162.04	-43.60	-2.55	135.84	107.05	28.79	4.718 Alert		
4,200.00	4,193.02	4,201.39	4,197.53	14.74	14.55	161.97	-45.36	-1.44	139.41	110.26	29.15	4.783 Alert		
4,250.00	4,242.77	4,248.49	4,247.36	14.93	14.71	161.90	-47.12	-0.32	142.98	113.49	29.49	4.849 Alert		
4,300.00	4,292.52	4,301.64	4,297.19	15.11	14.89	161.84	-48.88	0.79	146.55	116.70	29.85	4.910 Alert		
4,350.00	4,342.27	4,348.23	4,347.02	15.29	15.06	161.78	-50.63	1.90	150.12	119.93	30.19	4.973 Alert		
4,400.00	4,392.02	4,401.90	4,396.85	15.48	15.24	161.72	-52.39	3.02	153.69	123.14	30.55	5.031		
4,450.00	4,441.77	4,447.98	4,446.68	15.66	15.40	161.66	-54.15	4.13	157.26	126.37	30.89	5.091		
4,500.00	4,491.52	4,502.15	4,496.51	15.84	15.59	161.61	-55.91	5.24	160.83	129.57	31.25	5.146		
4,550.00	4,541.27	4,547.72	4,546.34	16.03	15.75	161.56	-57.67	6.36	164.40	132.81	31.59	5.204		
4,600.00	4,591.02	4,602.41	4,596.16	16.21	15.94	161.51	-59.42	7.47	167.97	136.01	31.96	5.256		
4,650.00	4,640.77	4,647.46	4,645.99	16.40	16.09	161.46	-61.18	8.58	171.54	139.24	32.29	5.312		
4,700.00	4,690.52	4,702.66	4,695.82	16.58	16.29	161.42	-62.94	9.70	175.11	142.44	32.66	5.361		
4,750.00	4,740.27	4,747.21	4,745.65	16.77	16.44	161.38	-64.70	10.81	178.68	145.68	32.99	5.415		
4,800.00	4,790.02	4,802.92	4,795.48	16.95	16.64	161.33	-66.46	11.92	182.25	148.88	33.37	5.462		
4,850.00	4,839.77	4,846.95	4,845.31	17.14	16.79	161.29	-68.22	13.04	185.82	152.12	33.70	5.514		
4,900.00	4,889.52	4,903.18	4,895.14	17.32	16.99	161.26	-69.97	14.15	189.39	155.31	34.07	5.558		
4,950.00	4,939.27	4,946.70	4,944.97	17.51	17.14	161.22	-71.73	15.26	192.96	158.55	34.41	5.608		
5,000.00	4,989.02	5,003.43	4,994.79	17.69	17.34	161.18	-73.49	16.38	196.53	161.74	34.78	5.650		
5,050.00	5,038.77	5,046.44	5,044.62	17.88	17.49	161.15	-75.25	17.49	200.10	164.99	35.11	5.699		
5,100.00	5,088.52	5,103.69	5,094.45	18.07	17.69	161.12	-77.01	18.60	203.67	168.18	35.49	5.738		
5,150.00	5,138.27	5,146.19	5,144.28	18.25	17.84	161.08	-78.76	19.72	207.24	171.42	35.82	5.785		

CC - Min centre to center distance or convergent point SE - min separation factor ES - min ellipse separation

# Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 2H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
5,200.00	5,188.02	5,203.94	5,194.11	18.44	18.04	161.05	-80.52	20.83	210.81	174.61		36.20	5.823	
5,250.00	5,237.77	5,245.93	5,243.94	18.63	18.19	161.02	-82.28	21.95	214.38	177.85		36.53	5.869	
5,300.00	5,287.52	5,304.20	5,293.77	18.81	18.40	160.99	-84.04	23.06	217.95	181.04		36.91	5.904	
5,350.00	5,337.27	5,345.67	5,343.60	19.00	18.54	160.97	-85.80	24.17	221.52	184.28		37.24	5.949	
5,400.00	5,387.02	5,404.45	5,393.43	19.19	18.75	160.94	-87.55	25.29	225.09	187.47		37.63	5.982	
5,450.00	5,436.77	5,445.42	5,443.25	19.37	18.89	160.91	-89.31	26.40	228.67	190.72		37.95	6.025	
5,500.00	5,486.52	5,504.71	5,493.08	19.56	19.10	160.89	-91.07	27.51	232.24	193.90		38.34	6.057	
5,550.00	5,536.27	5,545.16	5,542.91	19.75	19.25	160.86	-92.83	28.63	235.81	197.15		38.66	6.099	
5,600.00	5,586.02	5,604.96	5,592.74	19.93	19.46	160.84	-94.59	29.74	239.38	200.33		39.05	6.130	
5,650.00	5,635.77	5,644.91	5,642.57	20.12	19.60	160.82	-96.34	30.85	242.95	203.58		39.37	6.170	
5,700.00	5,685.52	5,705.22	5,692.40	20.31	19.81	160.79	-98.10	31.97	246.52	206.76		39.77	6.199	
5,750.00	5,735.26	5,744.65	5,742.23	20.50	19.95	160.77	-99.86	33.08	250.09	210.01		40.09	6.239	
5,800.00	5,785.01	5,805.48	5,792.06	20.68	20.17	160.75	-101.62	34.19	253.66	213.18		40.48	6.266	
5,850.00	5,834.76	5,844.40	5,841.88	20.87	20.31	160.73	-103.38	35.31	257.24	216.44		40.80	6.305	
5,900.00	5,884.51	5,905.73	5,891.71	21.06	20.52	160.71	-105.14	36.42	260.81	219.61		41.20	6.331	
5,950.00	5,934.26	5,944.14	5,941.54	21.25	20.66	160.69	-106.89	37.53	264.38	222.87		41.51	6.368	
6,000.00	5,984.01	6,005.99	5,991.37	21.43	20.88	160.67	-108.65	38.65	267.95	226.04		41.91	6.393	
6,050.00	6,033.76	6,043.89	6,041.20	21.62	21.01	160.65	-110.41	39.76	271.52	229.29		42.23	6.430	
6,100.00	6,083.51	6,106.24	6,091.03	21.81	21.24	160.63	-112.17	40.87	275.09	232.46		42.63	6.453	
6,150.00	6,133.26	6,143.63	6,140.86	22.00	21.37	160.62	-113.93	41.99	278.67	235.72		42.94	6.489	
6,200.00	6,183.01	6,206.50	6,190.69	22.19	21.59	160.60	-115.68	43.10	282.24	238.89		43.35	6.511	
6,250.00	6,232.76	6,243.37	6,240.51	22.37	21.72	160.58	-117.44	44.21	285.81	242.15		43.66	6.546	
6,300.00	6,282.51	6,306.75	6,290.34	22.56	21.95	160.57	-119.20	45.33	289.38	245.32		44.06	6.567	
6,350.00	6,332.26	6,343.12	6,340.17	22.75	22.08	160.55	-120.96	46.44	292.95	248.58		44.37	6.602	
6,400.00	6,382.01	6,407.01	6,390.00	22.94	22.30	160.53	-122.72	47.55	296.52	251.74		44.78	6.621	
6,450.00	6,431.76	6,442.86	6,439.83	23.13	22.43	160.52	-124.47	48.67	300.10	255.00		45.09	6.655	
6,500.00	6,481.51	6,507.26	6,489.66	23.32	22.66	160.50	-126.23	49.78	303.67	258.17		45.50	6.674	
6,550.00	6,531.26	6,542.61	6,539.49	23.51	22.79	160.49	-127.99	50.90	307.24	261.43		45.81	6.707	
6,600.00	6,581.01	6,607.52	6,589.32	23.69	23.02	160.48	-129.75	52.01	310.81	264.59		46.22	6.725	
6,650.00	6,630.76	6,642.35	6,639.14	23.88	23.14	160.46	-131.51	53.12	314.38	267.86		46.53	6.757	
6,700.00	6,680.51	6,707.78	6,688.97	24.07	23.38	160.45	-133.27	54.24	317.95	271.01		46.94	6.774	
6,750.00	6,730.26	6,742.10	6,738.80	24.26	23.50	160.44	-135.02	55.35	321.53	274.28		47.24	6.806	
6,800.00	6,780.01	6,808.03	6,788.63	24.45	23.73	160.42	-136.78	56.46	325.10	277.44		47.66	6.821	
6,850.00	6,829.76	6,841.84	6,838.46	24.64	23.86	160.41	-138.54	57.58	328.67	280.71		47.96	6.853	
6,900.00	6,879.51	6,891.71	6,888.29	24.83	24.03	160.40	-140.30	58.69	332.24	283.92		48.32	6.876	
6,950.00	6,929.26	6,941.59	6,938.12	25.02	24.21	160.39	-142.06	59.80	335.81	287.13		48.68	6.898	
7,000.00	6,979.01	7,008.54	6,987.95	25.21	24.45	160.37	-143.81	60.92	339.39	290.29		49.10	6.912	
7,050.00	7,028.76	7,041.33	7,037.77	25.40	24.57	160.36	-145.57	62.03	342.96	293.56		49.40	6.943	
7,100.00	7,078.51	7,091.20	7,087.60	25.59	24.75	160.35	-147.33	63.14	346.53	296.77		49.76	6.984	
7,150.00	7,128.26	7,141.07	7,137.43	25.77	24.92	160.34	-149.09	64.26	350.10	299.98		50.12	6.986	
7,200.00	7,178.01	7,209.05	7,187.26	25.96	25.17	160.33	-150.85	65.37	353.67	303.13		50.54	6.998	
7,250.00	7,227.76	7,240.82	7,237.09	26.15	25.28	160.32	-152.60	66.48	357.25	306.41		50.84	7.027	
7,300.00	7,277.51	7,309.31	7,286.92	26.34	25.53	160.31	-154.36	67.60	360.82	309.55		51.26	7.038	
7,350.00	7,327.26	7,340.56	7,336.75	26.53	25.64	160.30	-156.12	68.71	364.39	312.83		51.56	7.068	
7,400.00	7,377.01	7,409.57	7,386.58	26.72	25.89	160.29	-157.88	69.82	367.96	315.98		51.99	7.078	
7,450.00	7,426.76	7,440.31	7,436.40	26.91	26.00	160.28	-159.64	70.94	371.53	319.26		52.28	7.107	
7,500.00	7,476.51	7,509.82	7,486.23	27.10	26.24	160.27	-161.39	72.05	375.11	322.40		52.71	7.117	
7,550.00	7,526.26	7,540.05	7,536.06	27.29	26.35	160.26	-163.15	73.16	378.68	325.68		53.00	7.145	
7,600.00	7,576.01	7,589.92	7,585.89	27.48	26.53	160.25	-164.91	74.28	382.25	328.89		53.36	7.164	
7,650.00	7,625.76	7,639.80	7,635.72	27.67	26.71	160.24	-166.67	75.39	385.82	332.10		53.72	7.182	
7,700.00	7,675.51	7,689.67	7,685.55	27.86	26.89	160.23	-168.43	76.50	389.39	335.31		54.08	7.200	
7,750.00	7,725.26	7,739.54	7,735.38	28.05	27.07	160.22	-170.19	77.62	392.97	338.53		54.44	7.218	

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

# Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 2H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
7,800.00	7,775.01	7,789.41	7,785.21	28.24	27.25	160.21	-171.94	78.73	396.54	341.74		54.80	7.236	
7,850.00	7,824.75	7,839.28	7,835.03	28.43	27.43	160.20	-173.70	79.85	400.11	344.95		55.16	7.253	
7,900.00	7,874.50	7,889.16	7,884.86	28.62	27.60	160.20	-175.46	80.96	403.68	348.16		55.52	7.271	
7,950.00	7,924.25	7,939.03	7,934.69	28.81	27.78	160.19	-177.22	82.07	407.25	351.37		55.88	7.288	
8,000.00	7,974.00	7,988.90	7,984.52	29.00	27.96	160.18	-178.98	83.19	410.83	354.58		56.24	7.304	
8,050.00	8,023.75	8,038.77	8,034.35	29.19	28.14	160.17	-180.73	84.30	414.40	357.79		56.60	7.321	
8,100.00	8,073.50	8,088.65	8,084.18	29.38	28.32	160.16	-182.49	85.41	417.97	361.01		56.97	7.337	
8,150.00	8,123.25	8,138.52	8,134.01	29.57	28.50	160.16	-184.25	86.53	421.54	364.22		57.33	7.353	
8,200.00	8,173.00	8,188.39	8,183.84	29.76	28.68	160.15	-186.01	87.64	425.12	367.43		57.69	7.369	
8,250.00	8,222.75	8,238.26	8,233.66	29.95	28.86	160.14	-187.77	88.75	428.69	370.64		58.05	7.385	
8,300.00	8,272.50	8,288.13	8,283.49	30.14	29.04	160.13	-189.52	89.87	432.26	373.85		58.41	7.400	
8,350.00	8,322.25	8,338.01	8,333.32	30.33	29.22	160.13	-191.28	90.98	435.83	377.06		58.77	7.416	
8,400.00	8,372.00	8,387.88	8,383.15	30.52	29.40	160.12	-193.04	92.09	439.40	380.27		59.13	7.431	
8,450.00	8,421.75	8,437.75	8,432.98	30.71	29.58	160.11	-194.80	93.21	442.98	383.48		59.49	7.446	
8,500.00	8,471.50	8,487.62	8,482.81	30.90	29.75	160.11	-196.56	94.32	446.55	386.69		59.86	7.460	
8,550.00	8,521.25	8,537.50	8,532.64	31.09	29.93	160.10	-198.32	95.43	450.12	389.90		60.22	7.475	
8,600.00	8,571.00	8,587.37	8,582.47	31.28	30.11	160.09	-200.07	96.55	453.69	393.12		60.58	7.489	
8,650.00	8,620.75	8,637.24	8,632.29	31.47	30.29	160.09	-201.83	97.66	457.27	396.33		60.94	7.504	
8,700.00	8,670.50	8,687.11	8,682.12	31.66	30.47	160.08	-203.59	98.77	460.84	399.54		61.30	7.518	
8,750.00	8,720.25	8,736.98	8,731.95	31.85	30.65	160.07	-205.35	99.89	464.41	402.75		61.66	7.531	
8,800.00	8,770.00	8,786.86	8,781.78	32.04	30.83	160.07	-207.11	101.00	467.98	405.96		62.02	7.545	
8,850.00	8,819.75	8,836.73	8,831.61	32.23	31.01	160.06	-208.86	102.11	471.55	409.17		62.39	7.559	
8,900.00	8,869.50	8,886.60	8,881.44	32.42	31.19	160.06	-210.62	103.23	475.13	412.38		62.75	7.572	
8,950.00	8,919.25	8,936.47	8,931.27	32.62	31.37	160.05	-212.38	104.34	478.70	415.59		63.11	7.585	
9,000.00	8,969.00	8,986.35	8,981.10	32.81	31.55	160.04	-214.14	105.46	482.27	418.80		63.47	7.598	
9,050.00	9,018.75	9,036.22	9,030.92	33.00	31.73	160.04	-215.90	106.57	485.84	422.01		63.83	7.611	
9,100.00	9,068.50	9,086.09	9,080.75	33.19	31.91	160.03	-217.65	107.68	489.42	425.22		64.20	7.624	
9,150.00	9,118.25	9,135.96	9,130.58	33.38	32.09	160.03	-219.41	108.80	492.99	428.43		64.56	7.636	
9,200.00	9,168.00	9,185.83	9,180.41	33.57	32.27	160.02	-221.17	109.91	496.56	431.64		64.92	7.649	
9,250.00	9,217.75	9,235.71	9,230.24	33.76	32.45	160.02	-222.93	111.02	500.13	434.85		65.28	7.661	
9,300.00	9,267.50	9,285.58	9,280.07	33.95	32.63	160.01	-224.69	112.14	503.71	438.06		65.64	7.673	
9,350.00	9,317.25	9,335.45	9,329.90	34.14	32.81	160.00	-226.44	113.25	507.28	441.27		66.01	7.685	
9,400.00	9,367.00	9,385.32	9,379.73	34.33	32.99	160.00	-228.20	114.36	510.85	444.48		66.37	7.697	
9,450.00	9,416.75	9,435.20	9,429.56	34.52	33.17	159.99	-229.96	115.48	514.42	447.69		66.73	7.709	
9,500.00	9,466.50	9,485.07	9,479.38	34.71	33.35	159.99	-231.72	116.59	517.99	450.90		67.09	7.721	
9,550.00	9,516.25	9,534.94	9,529.21	34.90	33.53	159.98	-233.48	117.70	521.57	454.11		67.46	7.732	
9,600.00	9,566.00	9,584.81	9,579.04	35.09	33.71	159.98	-235.24	118.82	525.14	457.32		67.82	7.743	
9,650.00	9,615.75	9,634.68	9,628.87	35.28	33.89	159.97	-236.99	119.93	528.71	460.53		68.18	7.755	
9,700.00	9,665.50	9,684.56	9,678.70	35.48	34.07	159.97	-238.75	121.04	532.28	463.74		68.54	7.766	
9,750.00	9,715.25	9,734.43	9,728.53	35.67	34.24	159.97	-240.51	122.16	535.86	466.95		68.90	7.777	
9,800.00	9,765.00	9,784.30	9,778.36	35.86	34.42	159.96	-242.27	123.27	539.43	470.16		69.27	7.788	
9,850.00	9,814.75	9,834.17	9,828.19	36.05	34.60	159.96	-244.03	124.38	543.00	473.37		69.63	7.798	
9,900.00	9,864.49	9,884.05	9,878.01	36.24	34.78	159.95	-245.78	125.50	546.57	476.58		69.99	7.809	
9,950.00	9,914.24	9,933.92	9,927.84	36.43	34.96	159.95	-247.54	126.61	550.15	479.79		70.35	7.820	
10,000.00	9,963.99	9,983.79	9,977.67	36.62	35.14	159.94	-249.30	127.72	553.72	483.00		70.72	7.830	
10,050.00	10,013.74	10,033.66	10,027.50	36.81	35.32	159.94	-251.06	128.84	557.29	486.21		71.08	7.840	
10,100.00	10,063.49	10,083.53	10,077.33	37.00	35.50	159.93	-252.82	129.95	560.86	489.42		71.44	7.851	
10,150.00	10,113.24	10,133.41	10,127.16	37.19	35.68	159.93	-254.57	131.06	564.44	492.63		71.81	7.861	
10,200.00	10,162.99	10,183.28	10,176.99	37.38	35.86	159.93	-256.33	132.18	568.01	495.84		72.17	7.871	
10,250.00	10,212.74	10,233.15	10,226.82	37.58	36.04	159.92	-258.09	133.29	571.58	499.05		72.53	7.881	
10,300.00	10,262.49	10,283.02	10,276.64	37.77	36.22	159.92	-259.85	134.41	575.15	502.26		72.89	7.890	
10,350.00	10,312.24	10,332.89	10,326.47	37.96	36.40	159.91	-261.61	135.52	578.72	505.47		73.26	7.900	

CC - min centre to center distance or bore gen point SF - min separation factor ES - min ellipse separation

# Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 2H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Tooface (")	Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
10,400.00	10,361.99	10,382.77	10,376.30	38.15	38.58	159.91	-263.37	136.63	582.30	508.68	7.910		
10,450.00	10,411.74	10,432.64	10,426.13	38.34	36.76	159.90	-265.12	137.75	585.87	511.89	7.919		
10,500.00	10,461.49	10,482.51	10,475.96	38.53	36.94	159.90	-266.88	138.86	589.44	515.10	7.929		
10,550.00	10,511.24	10,532.38	10,525.79	38.72	37.12	159.90	-268.64	139.97	593.01	518.31	7.938		
10,600.00	10,560.99	10,582.26	10,575.62	38.91	37.30	159.89	-270.40	141.09	596.59	521.52	7.947		
10,650.00	10,610.74	10,632.13	10,625.45	39.10	37.49	159.89	-272.16	142.20	600.16	524.73	7.956		
10,700.00	10,660.49	10,682.00	10,675.27	39.30	37.67	159.89	-273.91	143.31	603.73	527.93	7.965		
10,750.00	10,710.24	10,731.87	10,725.10	39.49	37.85	159.88	-275.67	144.43	607.30	531.14	7.974		
10,800.00	10,759.99	10,781.74	10,774.93	39.68	38.03	159.88	-277.43	145.54	610.88	534.35	7.983		
10,850.00	10,809.74	10,831.62	10,824.76	39.87	38.21	159.87	-279.19	146.65	614.45	537.56	7.992		
10,900.00	10,859.49	10,881.49	10,874.59	40.06	38.39	159.87	-280.95	147.77	618.02	540.77	8.000		
10,950.00	10,909.24	10,931.36	10,924.42	40.25	38.57	159.87	-282.70	148.88	621.59	543.98	8.009		
11,000.00	10,958.99	10,981.23	10,974.25	40.44	38.75	159.86	-284.46	149.99	625.17	547.19	8.018		
11,050.00	11,008.74	11,031.11	11,024.08	40.63	38.93	159.86	-286.22	151.11	628.74	550.40	8.026		
11,100.00	11,058.49	11,080.98	11,073.90	40.83	39.11	159.86	-287.98	152.22	632.31	553.61	8.034		
11,150.00	11,108.24	11,130.85	11,123.73	41.02	39.29	159.85	-289.74	153.33	635.88	556.82	8.043		
11,200.00	11,157.99	11,180.73	11,173.56	41.21	39.47	159.86	-291.49	154.45	639.42	559.99	8.050		
11,250.00	11,207.80	11,230.63	11,223.43	41.40	39.65	159.85	-293.25	155.56	642.46	562.67	8.052		
11,300.00	11,257.65	11,280.57	11,273.32	41.58	39.83	159.82	-295.01	156.68	644.90	564.75	8.046		
11,350.00	11,307.55	11,330.53	11,323.24	41.77	40.01	159.77	-296.78	157.79	646.72	566.21	8.051		
11,400.00	11,357.49	11,377.96	11,370.63	41.95	40.18	159.71	-298.36	158.80	647.99	567.13	8.013		
11,450.00	11,407.46	11,423.78	11,416.44	42.12	40.34	159.67	-299.46	159.49	648.94	567.75	8.119		
11,500.00	11,457.44	11,469.61	11,462.26	42.30	40.50	159.65	-300.10	159.89	649.60	568.08	8.152		
11,550.00	11,507.44	11,515.99	11,508.64	42.47	40.66	159.65	-300.27	160.01	649.97	568.13	8.184		
11,600.00	11,557.44	11,565.99	11,558.64	42.64	40.83	-90.02	-300.27	160.01	649.99	567.82	82.18		
11,650.00	11,607.44	11,615.99	11,608.64	42.80	41.00	-90.02	-300.27	160.01	649.99	567.48	82.51		
11,700.00	11,657.44	11,665.99	11,658.64	42.97	41.17	-90.02	-300.27	160.01	649.99	567.14	82.85		
11,750.00	11,707.44	11,715.99	11,708.64	43.13	41.33	-90.02	-300.27	160.01	649.99	566.81	83.19		
11,800.00	11,757.44	11,765.99	11,758.64	43.30	41.50	-90.02	-300.27	160.01	649.99	566.47	83.52		
11,850.00	11,807.44	11,815.99	11,808.64	43.46	41.67	-90.02	-300.27	160.01	649.99	566.13	83.86		
11,855.81	11,813.25	11,821.80	11,814.45	43.48	41.69	-90.02	-300.27	160.01	649.99	566.09	83.90		
11,900.00	11,857.44	11,865.93	11,858.57	43.63	41.84	-90.02	-300.23	160.01	649.99	565.80	84.20		
11,950.00	11,907.42	11,915.33	11,907.88	43.79	42.00	-89.34	-297.54	159.98	650.01	565.49	84.52		
12,000.00	11,957.12	11,964.57	11,956.63	43.95	42.16	-89.18	-290.64	159.91	650.03	565.20	84.84		
12,050.00	12,006.18	12,013.67	12,004.46	44.10	42.31	-89.03	-279.63	159.81	650.06	564.92	85.14		
12,100.00	12,054.22	12,062.64	12,051.05	44.25	42.46	-88.89	-264.60	159.67	650.09	564.66	85.43		
12,150.00	12,100.87	12,111.48	12,096.07	44.38	42.60	-88.76	-245.71	159.49	650.12	564.42	85.71		
12,200.00	12,145.78	12,160.20	12,139.21	44.50	42.73	-88.63	-223.11	159.28	650.15	564.19	85.97		
12,250.00	12,188.61	12,208.81	12,180.20	44.61	42.85	-88.52	-196.99	159.03	650.19	563.97	86.22		
12,300.00	12,229.03	12,257.33	12,218.74	44.70	42.97	-88.42	-167.56	158.75	650.22	563.76	86.46		
12,350.00	12,266.73	12,305.75	12,254.60	44.78	43.08	-88.33	-135.03	158.44	650.25	563.56	86.68		
12,400.00	12,301.43	12,354.11	12,287.53	44.85	43.19	-88.25	-99.65	158.11	650.27	563.37	86.90		
12,450.00	12,332.85	12,402.40	12,317.33	44.90	43.29	-88.19	-61.67	157.75	650.30	563.19	87.11		
12,500.00	12,360.78	12,450.63	12,343.80	44.94	43.39	-88.13	-21.36	157.37	650.31	563.01	87.31		
12,550.00	12,384.98	12,498.83	12,366.76	44.96	43.49	-88.10	21.00	156.97	650.33	562.83	87.50		
12,600.00	12,405.28	12,547.00	12,386.08	44.98	43.59	-88.07	65.11	156.55	650.34	562.65	87.69		
12,650.00	12,421.52	12,595.16	12,401.62	44.98	43.68	-88.06	110.67	156.12	650.34	562.46	87.88		
12,700.00	12,433.58	12,643.31	12,413.28	44.97	43.78	-88.07	157.37	155.68	650.34	562.28	88.06		
12,750.00	12,441.36	12,691.47	12,420.98	44.96	43.87	-88.08	204.90	155.23	650.33	562.09	88.24		
12,800.00	12,444.81	12,739.66	12,424.66	44.95	43.96	-88.12	252.93	154.78	650.32	561.90	88.42		
12,847.75	12,445.45	12,786.67	12,425.00	44.94	44.05	-88.09	299.93	154.33	650.33	561.74	88.60		
12,850.00	12,445.00	12,788.92	12,425.00	44.94	44.06	-88.13	302.19	154.31	650.32	561.71	88.61		

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

# Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 2H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
12,900.00	12,445.00	12,838.92	12,425.00	44.97	44.17	-88.13	352.19	153.84	650.32	561.51	88.81	7.323		
12,950.00	12,445.00	12,888.92	12,425.00	45.04	44.29	-88.13	402.18	153.37	650.32	561.28	89.04	7.304		
13,000.00	12,445.00	12,938.92	12,425.00	45.15	44.42	-88.13	452.18	152.90	650.32	561.04	89.28	7.284		
13,050.00	12,445.00	12,988.92	12,425.00	45.29	44.56	-88.13	502.18	152.42	650.32	560.76	89.55	7.262		
13,100.00	12,445.00	13,038.92	12,425.00	45.44	44.72	-88.13	552.18	151.95	650.32	560.47	89.84	7.238		
13,150.00	12,445.00	13,088.92	12,425.00	45.61	44.88	-88.13	602.17	151.48	650.32	560.15	90.16	7.213		
13,200.00	12,445.00	13,138.92	12,425.00	45.78	45.06	-88.13	652.17	151.01	650.32	559.82	90.50	7.186		
13,250.00	12,445.00	13,188.92	12,425.00	45.97	45.24	-88.13	702.17	150.53	650.32	559.46	90.86	7.157		
13,300.00	12,445.00	13,238.92	12,425.00	46.16	45.44	-88.13	752.17	150.06	650.32	559.08	91.24	7.128		
13,350.00	12,445.00	13,288.92	12,425.00	46.37	45.65	-88.13	802.17	149.59	650.32	558.67	91.64	7.096		
13,400.00	12,445.00	13,338.92	12,425.00	46.58	45.87	-88.13	852.16	149.12	650.32	558.25	92.07	7.064		
13,450.00	12,445.00	13,388.92	12,425.00	46.81	46.10	-88.13	902.16	148.64	650.32	557.80	92.51	7.029		
13,500.00	12,445.00	13,438.92	12,425.00	47.05	46.34	-88.13	952.16	148.17	650.32	557.34	92.98	6.994		
13,550.00	12,445.00	13,488.92	12,425.00	47.29	46.59	-88.13	1,002.16	147.70	650.32	556.85	93.47	6.958		
13,600.00	12,445.00	13,538.92	12,425.00	47.54	46.85	-88.13	1,052.15	147.23	650.32	556.35	93.97	6.921		
13,650.00	12,445.00	13,588.92	12,425.00	47.81	47.12	-88.13	1,102.15	146.75	650.32	555.82	94.50	6.882		
13,700.00	12,445.00	13,638.92	12,425.00	48.08	47.40	-88.13	1,152.15	146.28	650.32	555.28	95.04	6.843		
13,750.00	12,445.00	13,688.92	12,425.00	48.37	47.69	-88.13	1,202.15	145.81	650.32	554.71	95.60	6.802		
13,800.00	12,445.00	13,738.92	12,425.00	48.65	47.99	-88.13	1,252.15	145.34	650.32	554.13	96.19	6.761		
13,850.00	12,445.00	13,788.92	12,425.00	48.96	48.29	-88.13	1,302.14	144.86	650.32	553.53	96.79	6.719		
13,900.00	12,445.00	13,838.92	12,425.00	49.26	48.61	-88.13	1,352.14	144.39	650.32	552.91	97.40	6.676		
13,950.00	12,445.00	13,888.92	12,425.00	49.58	48.94	-88.13	1,402.14	143.92	650.32	552.28	98.04	6.633		
14,000.00	12,445.00	13,938.92	12,425.00	49.90	49.27	-88.13	1,452.14	143.45	650.32	551.63	98.69	6.589		
14,050.00	12,445.00	13,988.92	12,425.00	50.24	49.61	-88.13	1,502.13	142.97	650.32	550.95	99.37	6.545		
14,100.00	12,445.00	14,038.92	12,425.00	50.58	49.96	-88.13	1,552.13	142.50	650.32	550.27	100.05	6.500		
14,150.00	12,445.00	14,088.92	12,425.00	50.93	50.32	-88.13	1,602.13	142.03	650.32	549.56	100.76	6.454		
14,200.00	12,445.00	14,138.92	12,425.00	51.28	50.69	-88.13	1,652.13	141.56	650.32	548.85	101.47	6.409		
14,250.00	12,445.00	14,188.92	12,425.00	51.65	51.06	-88.13	1,702.13	141.08	650.32	548.11	102.21	6.362		
14,300.00	12,445.00	14,238.92	12,425.00	52.02	51.44	-88.13	1,752.12	140.61	650.32	547.36	102.96	6.316		
14,350.00	12,445.00	14,288.92	12,425.00	52.40	51.83	-88.13	1,802.12	140.14	650.32	546.59	103.73	6.270		
14,400.00	12,445.00	14,338.92	12,425.00	52.78	52.23	-88.13	1,852.12	139.67	650.32	545.82	104.51	6.223		
14,450.00	12,445.00	14,388.92	12,425.00	53.18	52.63	-88.13	1,902.12	139.19	650.32	545.02	105.30	6.176		
14,500.00	12,445.00	14,438.92	12,425.00	53.58	53.04	-88.13	1,952.11	138.72	650.32	544.21	106.11	6.129		
14,550.00	12,445.00	14,488.92	12,425.00	53.99	53.46	-88.13	2,002.11	138.25	650.32	543.39	106.93	6.082		
14,600.00	12,445.00	14,538.92	12,425.00	54.40	53.88	-88.13	2,052.11	137.78	650.32	542.56	107.76	6.035		
14,650.00	12,445.00	14,588.92	12,425.00	54.82	54.31	-88.13	2,102.11	137.30	650.32	541.71	108.61	5.988		
14,700.00	12,445.00	14,638.92	12,425.00	55.24	54.75	-88.13	2,152.11	136.83	650.32	540.85	109.47	5.941		
14,750.00	12,445.00	14,688.92	12,425.00	55.68	55.19	-88.13	2,202.10	136.36	650.32	539.98	110.35	5.893		
14,800.00	12,445.00	14,738.92	12,425.00	56.11	55.64	-88.13	2,252.10	135.89	650.32	539.09	111.23	5.847		
14,850.00	12,445.00	14,788.92	12,425.00	56.56	56.09	-88.13	2,302.10	135.41	650.32	538.19	112.13	5.800		
14,900.00	12,445.00	14,838.92	12,425.00	57.01	56.55	-88.13	2,352.10	134.94	650.32	537.29	113.04	5.753		
14,950.00	12,445.00	14,888.92	12,425.00	57.47	57.01	-88.13	2,402.09	134.47	650.32	536.37	113.96	5.707		
15,000.00	12,445.00	14,938.92	12,425.00	57.92	57.49	-88.13	2,452.09	134.00	650.32	535.44	114.89	5.661		
15,050.00	12,445.00	14,988.92	12,425.00	58.39	57.96	-88.13	2,502.09	133.52	650.32	534.49	115.83	5.614		
15,100.00	12,445.00	15,038.92	12,425.00	58.86	58.44	-88.13	2,552.09	133.05	650.32	533.54	116.78	5.569		
15,150.00	12,445.00	15,088.92	12,425.00	59.34	58.93	-88.13	2,602.09	132.58	650.32	532.58	117.74	5.523		
15,200.00	12,445.00	15,138.92	12,425.00	59.82	59.42	-88.13	2,652.08	132.11	650.32	531.61	118.72	5.478		
15,250.00	12,445.00	15,188.92	12,425.00	60.31	59.91	-88.13	2,702.08	131.63	650.32	530.62	119.70	5.433		
15,300.00	12,445.00	15,238.92	12,425.00	60.80	60.42	-88.13	2,752.08	131.16	650.32	529.63	120.69	5.388		
15,350.00	12,445.00	15,288.92	12,425.00	61.29	60.92	-88.13	2,802.08	130.69	650.32	528.63	121.69	5.344		
15,400.00	12,445.00	15,338.92	12,425.00	61.79	61.43	-88.13	2,852.07	130.22	650.32	527.62	122.70	5.300		
15,450.00	12,445.00	15,388.92	12,425.00	62.30	61.94	-88.13	2,902.07	129.74	650.32	526.60	123.72	5.256		

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

# Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 2H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
15,500.00	12,445.00	15,438.92	12,425.00	62.81	62.46	-88.13	2,952.07	129.27	650.32	525.58	124.75	5.213	
15,550.00	12,445.00	15,488.92	12,425.00	63.32	62.98	-88.13	3,002.07	128.80	650.33	524.54	125.78	5.170	
15,600.00	12,445.00	15,538.92	12,425.00	63.84	63.51	-88.13	3,052.07	128.33	650.33	523.50	126.83	5.128	
15,650.00	12,445.00	15,588.92	12,425.00	64.36	64.04	-88.13	3,102.06	127.86	650.33	522.45	127.88	5.085	
15,700.00	12,445.00	15,638.92	12,425.00	64.88	64.58	-88.13	3,152.06	127.38	650.33	521.39	128.94	5.044	
15,750.00	12,445.00	15,688.92	12,425.00	65.41	65.11	-88.13	3,202.06	126.91	650.33	520.32	130.01	5.002	
15,800.00	12,445.00	15,738.92	12,425.00	65.94	65.65	-88.13	3,252.06	126.44	650.33	519.25	131.08	4.961	Alert
15,850.00	12,445.00	15,788.92	12,425.00	66.48	66.20	-88.13	3,302.05	125.97	650.33	518.16	132.16	4.921	Alert
15,900.00	12,445.00	15,838.92	12,425.00	67.02	66.75	-88.13	3,352.05	125.49	650.33	517.07	133.25	4.880	Alert
15,950.00	12,445.00	15,888.92	12,425.00	67.57	67.30	-88.13	3,402.05	125.02	650.33	515.98	134.35	4.841	Alert
16,000.00	12,445.00	15,938.92	12,425.00	68.11	67.85	-88.13	3,452.05	124.55	650.33	514.88	135.45	4.801	Alert
16,050.00	12,445.00	15,988.92	12,425.00	68.66	68.41	-88.13	3,502.04	124.08	650.33	513.77	136.56	4.762	Alert
16,100.00	12,445.00	16,038.92	12,425.00	69.21	68.97	-88.13	3,552.04	123.60	650.33	512.65	137.68	4.724	Alert
16,150.00	12,445.00	16,088.92	12,425.00	69.77	69.54	-88.13	3,602.04	123.13	650.33	511.53	138.80	4.685	Alert
16,200.00	12,445.00	16,138.92	12,425.00	70.33	70.11	-88.13	3,652.04	122.66	650.33	510.40	139.92	4.648	Alert
16,250.00	12,445.00	16,188.92	12,425.00	70.89	70.67	-88.13	3,702.04	122.19	650.33	509.27	141.06	4.610	Alert
16,300.00	12,445.00	16,238.92	12,425.00	71.46	71.25	-88.13	3,752.03	121.71	650.33	508.13	142.20	4.573	Alert
16,350.00	12,445.00	16,288.92	12,425.00	72.03	71.82	-88.13	3,802.03	121.24	650.33	506.98	143.34	4.537	Alert
16,400.00	12,445.00	16,338.92	12,425.00	72.60	72.40	-88.13	3,852.03	120.77	650.33	505.83	144.49	4.501	Alert
16,450.00	12,445.00	16,388.92	12,425.00	73.17	72.98	-88.13	3,902.03	120.30	650.33	504.68	145.65	4.465	Alert
16,500.00	12,445.00	16,438.92	12,425.00	73.75	73.57	-88.13	3,952.02	119.82	650.33	503.52	146.81	4.430	Alert
16,550.00	12,445.00	16,488.92	12,425.00	74.33	74.15	-88.13	4,002.02	119.35	650.33	502.35	147.98	4.395	Alert
16,600.00	12,445.00	16,538.92	12,425.00	74.91	74.74	-88.13	4,052.02	118.88	650.33	501.18	149.15	4.360	Alert
16,650.00	12,445.00	16,588.92	12,425.00	75.50	75.33	-88.13	4,102.02	118.41	650.33	500.00	150.33	4.326	Alert
16,700.00	12,445.00	16,638.92	12,425.00	76.08	75.93	-88.13	4,152.02	117.93	650.33	498.82	151.51	4.292	Alert
16,750.00	12,445.00	16,688.92	12,425.00	76.67	76.52	-88.13	4,202.01	117.46	650.33	497.63	152.70	4.259	Alert
16,800.00	12,445.00	16,738.92	12,425.00	77.26	77.12	-88.13	4,252.01	116.99	650.33	496.44	153.89	4.226	Alert
16,850.00	12,445.00	16,788.92	12,425.00	77.86	77.72	-88.13	4,302.01	116.52	650.33	495.25	155.08	4.193	Alert
16,900.00	12,445.00	16,838.92	12,425.00	78.45	78.33	-88.13	4,352.01	116.04	650.33	494.05	156.28	4.161	Alert
16,950.00	12,445.00	16,888.92	12,425.00	79.05	78.93	-88.13	4,402.00	115.57	650.33	492.84	157.49	4.129	Alert
17,000.00	12,445.00	16,938.92	12,425.00	79.65	79.54	-88.13	4,452.00	115.10	650.33	491.64	158.69	4.098	Alert
17,050.00	12,445.00	16,988.92	12,425.00	80.25	80.15	-88.13	4,502.00	114.63	650.33	490.42	159.91	4.067	Alert
17,100.00	12,445.00	17,038.92	12,425.00	80.86	80.76	-88.13	4,552.00	114.15	650.33	489.21	161.12	4.036	Alert
17,150.00	12,445.00	17,088.92	12,425.00	81.47	81.37	-88.13	4,602.00	113.68	650.33	487.99	162.34	4.006	Alert
17,200.00	12,445.00	17,138.92	12,425.00	82.07	81.98	-88.13	4,651.99	113.21	650.33	486.77	163.57	3.976	Alert
17,250.00	12,445.00	17,188.92	12,425.00	82.68	82.60	-88.13	4,701.99	112.74	650.33	485.54	164.79	3.946	Alert
17,300.00	12,445.00	17,238.92	12,425.00	83.30	83.22	-88.13	4,751.99	112.26	650.33	484.31	166.02	3.917	Alert
17,350.00	12,445.00	17,288.92	12,425.00	83.91	83.84	-88.13	4,801.99	111.79	650.33	483.07	167.26	3.888	Alert
17,400.00	12,445.00	17,338.92	12,425.00	84.53	84.46	-88.13	4,851.98	111.32	650.33	481.83	168.50	3.860	Alert
17,450.00	12,445.00	17,388.92	12,425.00	85.14	85.08	-88.13	4,901.98	110.85	650.33	480.59	169.74	3.831	Alert
17,500.00	12,445.00	17,438.92	12,425.00	85.76	85.71	-88.13	4,951.98	110.37	650.33	479.35	170.98	3.803	Alert
17,550.00	12,445.00	17,488.92	12,425.00	86.38	86.33	-88.13	5,001.98	109.90	650.33	478.10	172.23	3.776	Alert
17,600.00	12,445.00	17,538.92	12,425.00	87.01	86.96	-88.13	5,051.98	109.43	650.33	476.85	173.48	3.749	Alert
17,650.00	12,445.00	17,588.92	12,425.00	87.63	87.59	-88.13	5,101.97	108.96	650.33	475.59	174.74	3.722	Alert
17,700.00	12,445.00	17,638.92	12,425.00	88.26	88.22	-88.13	5,151.97	108.48	650.33	474.34	176.00	3.695	Alert
17,750.00	12,445.00	17,688.92	12,425.00	88.88	88.85	-88.13	5,201.97	108.01	650.33	473.08	177.26	3.669	Alert
17,800.00	12,445.00	17,738.92	12,425.00	89.51	89.49	-88.13	5,251.97	107.54	650.33	471.81	178.52	3.643	Alert
17,850.00	12,445.00	17,788.92	12,425.00	90.14	90.12	-88.13	5,301.96	107.07	650.33	470.55	179.79	3.617	Alert
17,900.00	12,445.00	17,838.92	12,425.00	90.77	90.76	-88.13	5,351.96	106.59	650.33	469.28	181.06	3.592	Alert
17,950.00	12,445.00	17,888.92	12,425.00	91.41	91.40	-88.13	5,401.96	106.12	650.33	468.01	182.33	3.567	Alert
18,000.00	12,445.00	17,938.92	12,425.00	92.04	92.04	-88.13	5,451.96	105.65	650.33	466.73	183.60	3.542	Alert
18,050.00	12,445.00	17,988.92	12,425.00	92.68	92.68	-88.13	5,501.96	105.18	650.33	465.45	184.88	3.518	Alert

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

# Anticollision Report

**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Offset Design Sec 15-T26S-R35E - Arena Roja Fed Unit 15-10 2H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
18,100.00	12,445.00	18,038.92	12,425.00	93.31	93.32	-88.13	5,551.95	104.71	650.33	464.17	186.16	3.493	Alert	
18,150.00	12,445.00	18,088.92	12,425.00	93.95	93.96	-88.13	5,601.95	104.23	650.33	462.89	187.44	3.470	Alert	
18,200.00	12,445.00	18,138.92	12,425.00	94.59	94.61	-88.13	5,651.95	103.76	650.33	461.61	188.73	3.446	Alert	
18,250.00	12,445.00	18,188.92	12,425.00	95.23	95.25	-88.13	5,701.95	103.29	650.33	460.32	190.01	3.423	Alert	
18,300.00	12,445.00	18,238.92	12,425.00	95.87	95.90	-88.13	5,751.94	102.82	650.33	459.03	191.30	3.400	Alert	
18,350.00	12,445.00	18,288.92	12,425.00	96.52	96.55	-88.13	5,801.94	102.34	650.33	457.74	192.60	3.377	Alert	
18,400.00	12,445.00	18,338.92	12,425.00	97.16	97.20	-88.13	5,851.94	101.87	650.33	456.45	193.89	3.354	Alert	
18,450.00	12,445.00	18,388.92	12,425.00	97.81	97.85	-88.13	5,901.94	101.40	650.33	455.15	195.19	3.332	Alert	
18,500.00	12,445.00	18,438.92	12,425.00	98.45	98.50	-88.13	5,951.94	100.93	650.34	453.85	196.48	3.310	Alert	
18,550.00	12,445.00	18,488.92	12,425.00	99.10	99.15	-88.13	6,001.93	100.45	650.34	452.55	197.79	3.288	Alert	
18,600.00	12,445.00	18,538.92	12,425.00	99.75	99.80	-88.13	6,051.93	99.98	650.34	451.25	199.09	3.267	Alert	
18,650.00	12,445.00	18,588.92	12,425.00	100.40	100.46	-88.13	6,101.93	99.51	650.34	449.94	200.39	3.245	Alert	
18,700.00	12,445.00	18,638.92	12,425.00	101.05	101.11	-88.13	6,151.93	99.04	650.34	448.64	201.70	3.224	Alert	
18,750.00	12,445.00	18,688.92	12,425.00	101.71	101.77	-88.13	6,201.92	98.56	650.34	447.33	203.01	3.203	Alert	
18,800.00	12,445.00	18,738.92	12,425.00	102.36	102.43	-88.13	6,251.92	98.09	650.34	446.02	204.32	3.183	Alert	
18,850.00	12,445.00	18,788.92	12,425.00	103.01	103.08	-88.13	6,301.92	97.62	650.34	444.70	205.63	3.163	Alert	
18,900.00	12,445.00	18,838.92	12,425.00	103.67	103.74	-88.13	6,351.92	97.15	650.34	443.39	206.95	3.143	Alert	
18,950.00	12,445.00	18,888.92	12,425.00	104.32	104.40	-88.13	6,401.92	96.67	650.34	442.07	208.26	3.123	Alert	
19,000.00	12,445.00	18,938.92	12,425.00	104.98	105.06	-88.13	6,451.91	96.20	650.34	440.75	209.58	3.103	Alert	
19,050.00	12,445.00	18,988.92	12,425.00	105.64	105.72	-88.13	6,501.91	95.73	650.34	439.43	210.90	3.084	Alert	
19,100.00	12,445.00	19,038.92	12,425.00	106.30	106.39	-88.13	6,551.91	95.26	650.34	438.11	212.22	3.064	Alert	
19,150.00	12,445.00	19,088.92	12,425.00	106.96	107.05	-88.13	6,601.91	94.78	650.34	436.79	213.55	3.045	Alert	
19,200.00	12,445.00	19,138.92	12,425.00	107.62	107.71	-88.13	6,651.90	94.31	650.34	435.46	214.87	3.027	Alert	
19,250.00	12,445.00	19,188.92	12,425.00	108.28	108.38	-88.13	6,701.90	93.84	650.34	434.14	216.20	3.008	Alert	
19,300.00	12,445.00	19,238.92	12,425.00	108.94	109.04	-88.13	6,751.90	93.37	650.34	432.81	217.53	2.990	Alert	
19,350.00	12,445.00	19,288.92	12,425.00	109.60	109.71	-88.13	6,801.90	92.89	650.34	431.48	218.86	2.971	Alert	
19,400.00	12,445.00	19,338.92	12,425.00	110.27	110.38	-88.13	6,851.90	92.42	650.34	430.15	220.19	2.954	Alert	
19,450.00	12,445.00	19,388.92	12,425.00	110.93	111.05	-88.13	6,901.89	91.95	650.34	428.81	221.52	2.936	Alert	
19,500.00	12,445.00	19,438.92	12,425.00	111.60	111.72	-88.13	6,951.89	91.48	650.34	427.48	222.86	2.918	Alert	
19,550.00	12,445.00	19,488.92	12,425.00	112.26	112.38	-88.13	7,001.89	91.00	650.34	426.14	224.19	2.901	Alert	
19,600.00	12,445.00	19,538.92	12,425.00	112.93	113.05	-88.13	7,051.89	90.53	650.34	424.81	225.53	2.884	Alert	
19,650.00	12,445.00	19,588.92	12,425.00	113.60	113.73	-88.13	7,101.88	90.06	650.34	423.47	226.87	2.867	Alert	
19,700.00	12,445.00	19,638.92	12,425.00	114.27	114.40	-88.13	7,151.88	89.59	650.34	422.13	228.21	2.850	Alert	
19,750.00	12,445.00	19,688.92	12,425.00	114.94	115.07	-88.13	7,201.88	89.11	650.34	420.79	229.55	2.833	Alert	
19,800.00	12,445.00	19,738.92	12,425.00	115.60	115.74	-88.13	7,251.88	88.64	650.34	419.44	230.90	2.817	Alert	
19,850.00	12,445.00	19,788.92	12,425.00	116.28	116.42	-88.13	7,301.88	88.17	650.34	418.10	232.24	2.800	Alert	
19,900.00	12,445.00	19,838.92	12,425.00	116.95	117.09	-88.13	7,351.87	87.70	650.34	416.75	233.59	2.784	Alert	
19,950.00	12,445.00	19,888.92	12,425.00	117.62	117.76	-88.13	7,401.87	87.22	650.34	415.41	234.93	2.768	Alert	
20,000.00	12,445.00	19,938.92	12,425.00	118.29	118.44	-88.13	7,451.87	86.75	650.34	414.06	236.28	2.752	Alert	
20,050.00	12,445.00	19,988.92	12,425.00	118.96	119.12	-88.13	7,501.87	86.28	650.34	412.71	237.63	2.737	Alert	
20,100.00	12,445.00	20,038.92	12,425.00	119.64	119.79	-88.13	7,551.86	85.81	650.34	411.36	238.98	2.721	Alert	
20,150.00	12,445.00	20,088.92	12,425.00	120.31	120.47	-88.13	7,601.86	85.33	650.34	410.01	240.33	2.706	Alert	
20,200.00	12,445.00	20,138.92	12,425.00	120.99	121.15	-88.13	7,651.86	84.86	650.34	408.65	241.69	2.691	Alert	
20,250.00	12,445.00	20,188.92	12,425.00	121.66	121.83	-88.13	7,701.86	84.39	650.34	407.30	243.04	2.676	Alert	
20,300.00	12,445.00	20,238.92	12,425.00	122.34	122.50	-88.13	7,751.86	83.92	650.34	405.94	244.40	2.661	Alert	
20,302.85	12,445.00	20,241.77	12,425.00	122.38	122.54	-88.13	7,754.71	83.89	650.34	405.87	244.47	2.660	Alert	

CC - min centre to center distance or convergence point SF - min separation factor ES - min ellipse separation

# Anticollision Report

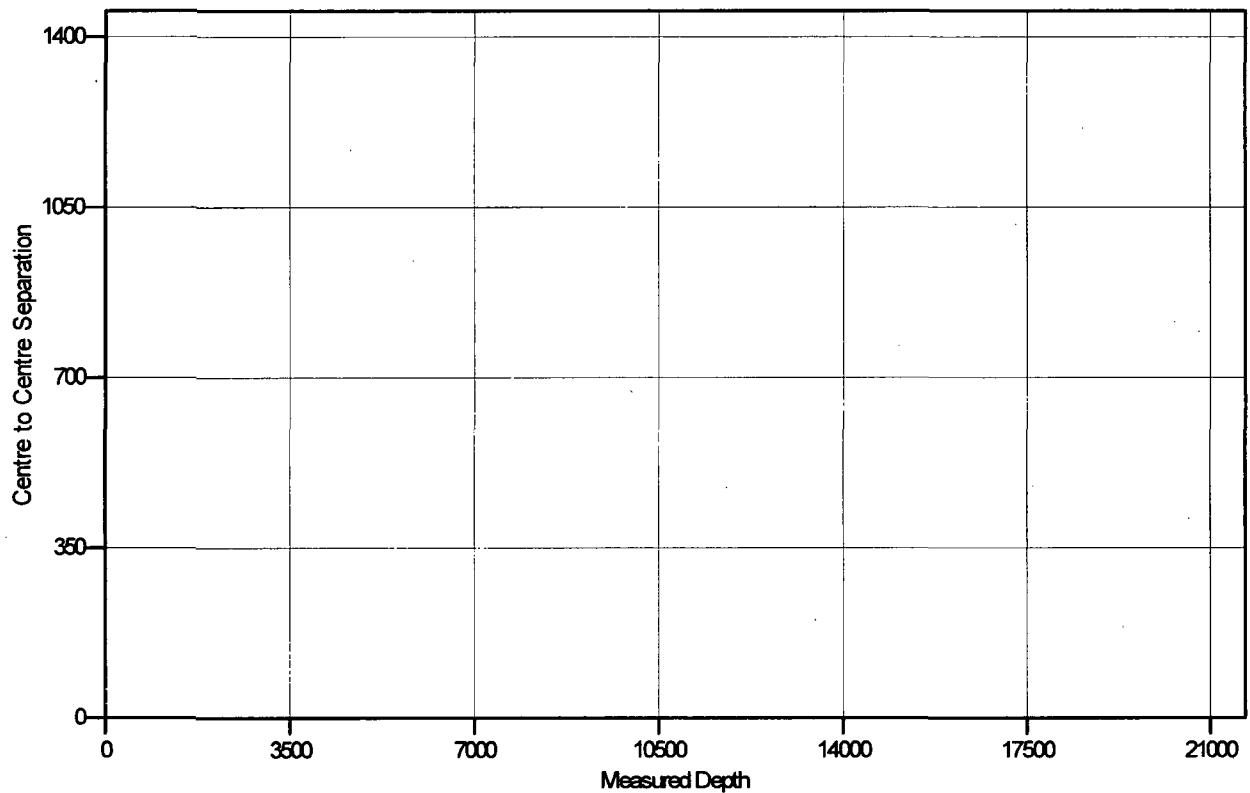
**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM-r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to RKB @ 3164.80ft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -104.333334

Coordinates are relative to: Arena Roja Fed Unit 15-10 5H  
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone  
 Grid Convergence at Surface is: 0.52°

## Ladder Plot



## LEGEND

Arena Roja Fed Unit 15-10 1H, Wellbore #1, Permit Plan 1 V0

Arena Roja Fed Unit 15-10 2H, Wellbore #1, Permit Plan 1 V0



# Anticollision Report

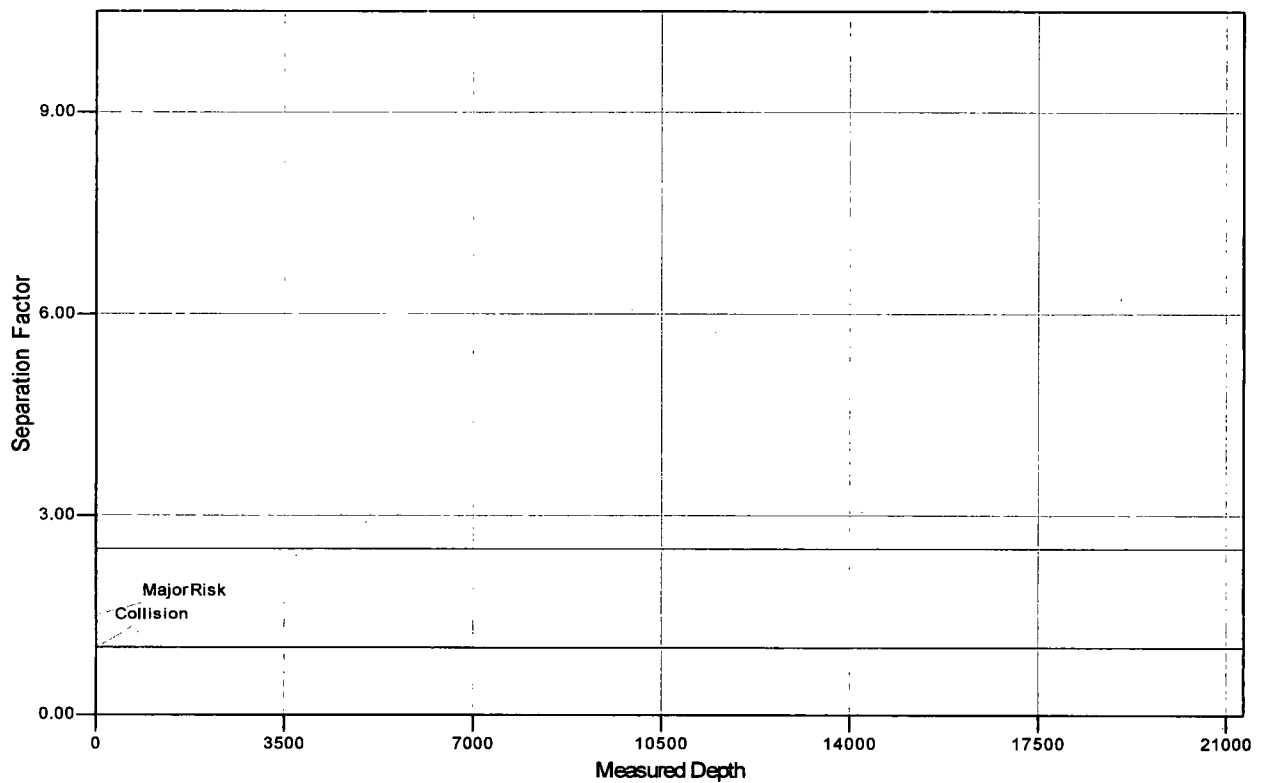
**Company:** WCDSC Permian NM  
**Project:** Lea County (NAD83 New Mexico East)  
**Reference Site:** Sec 15-T26S-R35E  
**Site Error:** 0.00 ft  
**Reference Well:** Arena Roja Fed Unit 15-10 5H  
**Well Error:** 0.50 ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Permit Plan 1

**Local Co-ordinate Reference:** Well Arena Roja Fed Unit 15-10 5H  
**TVD Reference:** RKB @ 3164.80ft  
**MD Reference:** RKB @ 3164.80ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** EDM r5000.141\_Prod US  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to RKB @ 3164.80ft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -104.333334

Coordinates are relative to: Arena Roja Fed Unit 15-10 5H  
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone  
 Grid Convergence at Surface is: 0.52°

## Separation Factor Plot



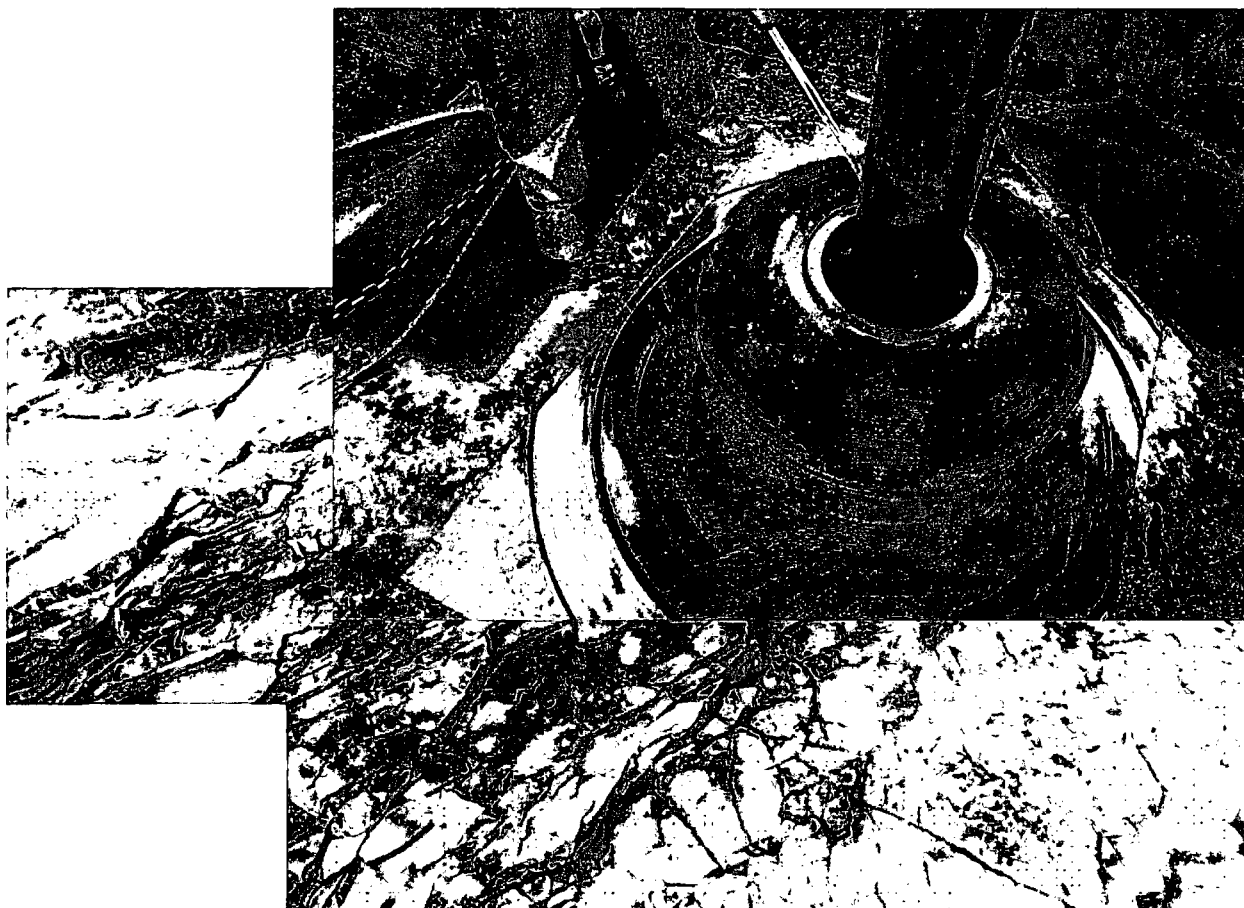
### LEGEND

Arena Roja Fed Unit 15-10 1H, Wellbore #1, Permit Plan 1 V0

Arena Roja Fed Unit 15-10 2H, Wellbore #1, Permit Plan 1 V0



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.

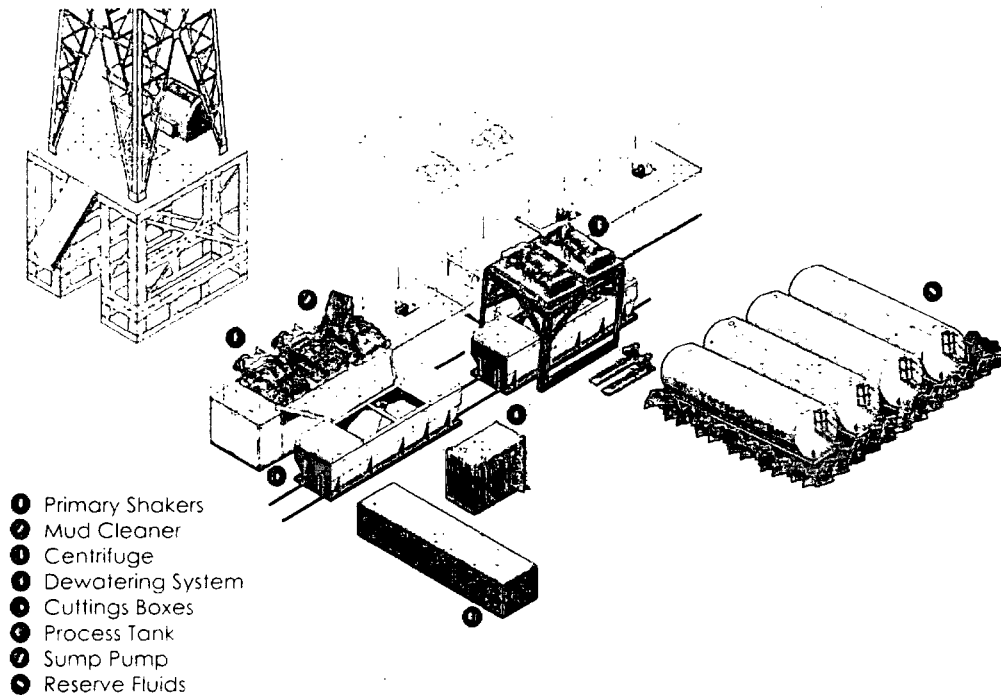
## **II. Operations and Maintenance Plan**

*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.



Closed Loop Schematic



**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

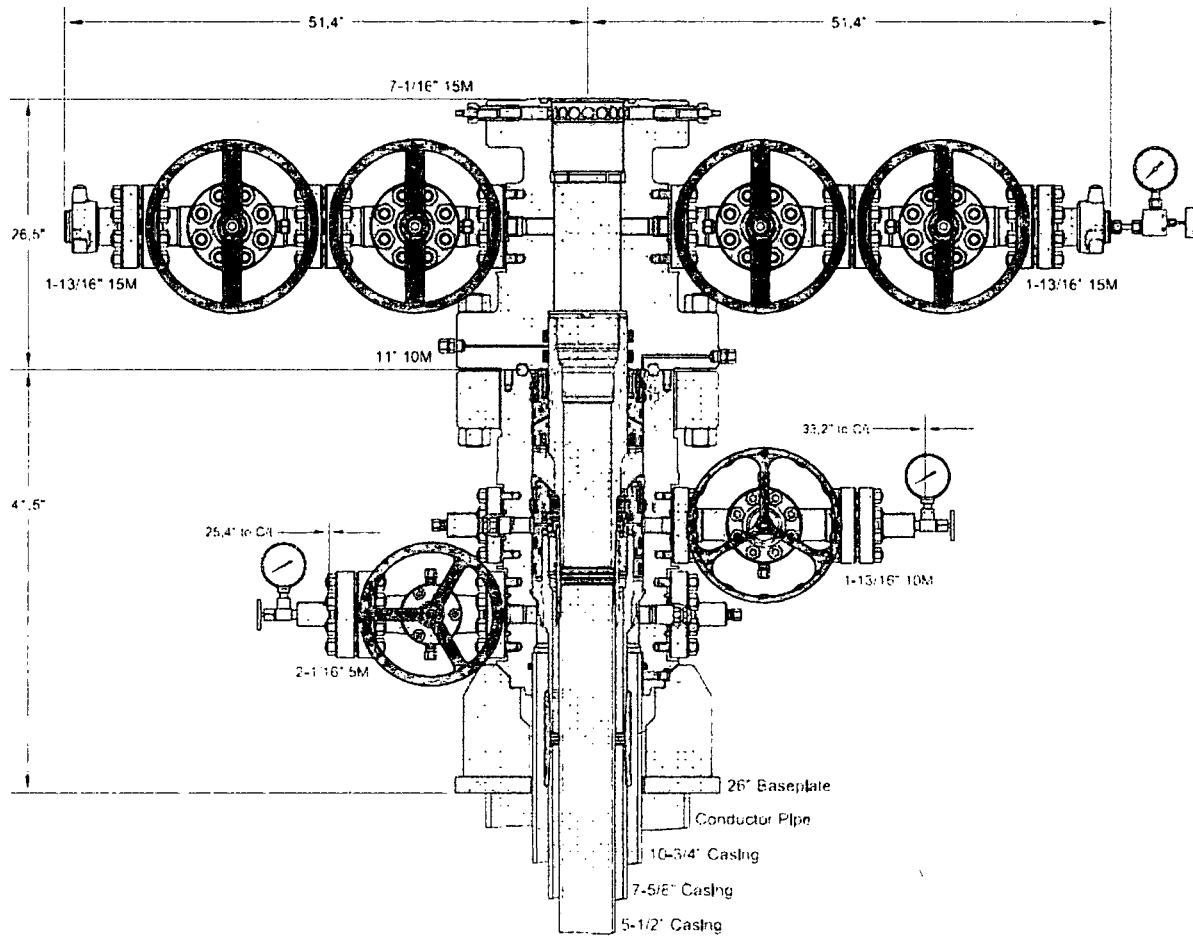
dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

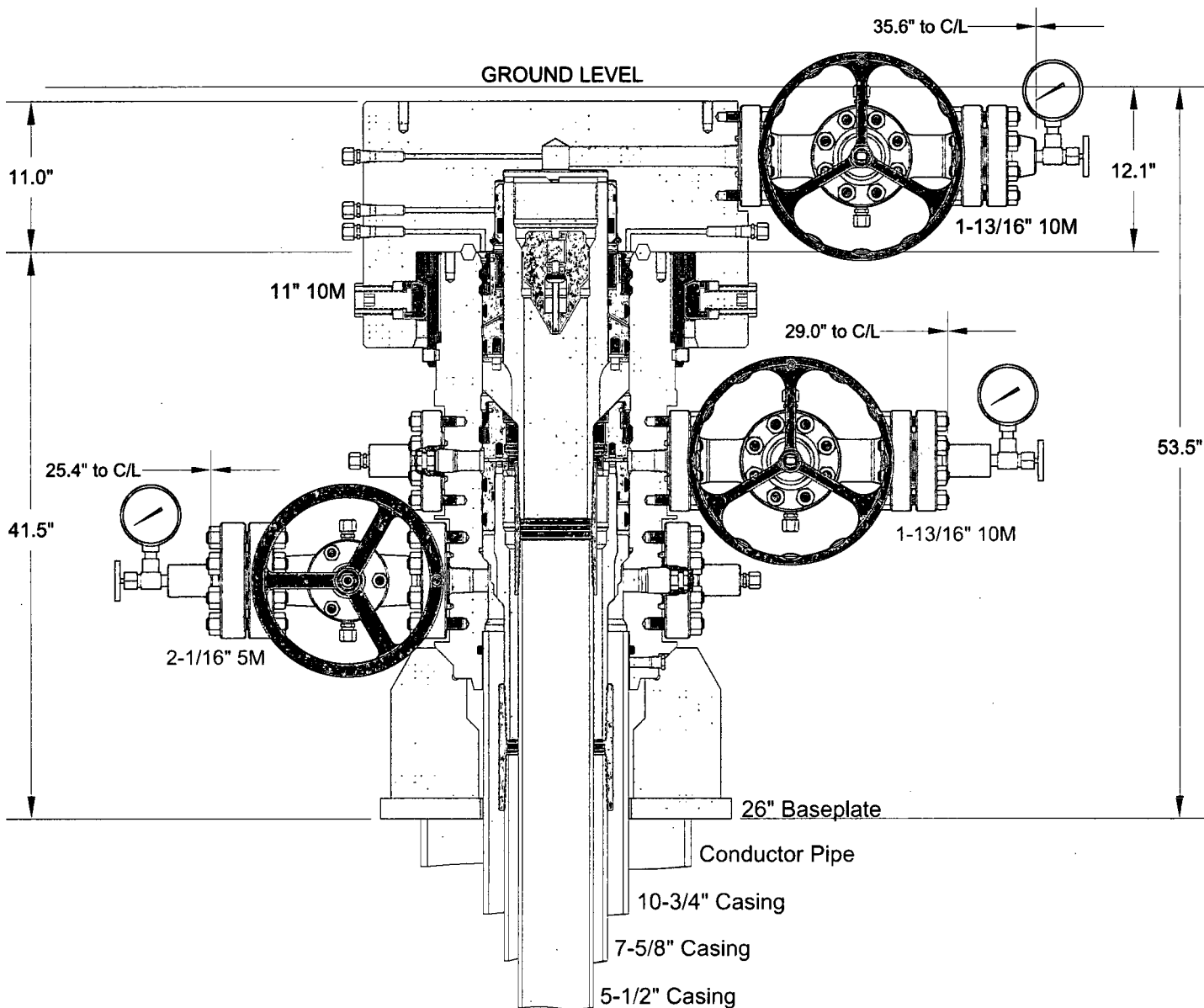
These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

### **III. Closure Plan**

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.





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## CACTUS WELLHEAD LLC

16" x 11-7/8" x 7-5/8" MBU-T Wellhead Assembly  
With 7-5/8" & 5-1/2" Pin Bottom Mandrel Casing Hangers  
And 11" 10M MBU-T-HPS-F TA Cap

DEVON ENERGY CORPORATION

DRAWN

DLE

29NOV17

APPRV

DRAWING NO.

OKE0001764



**Devon Energy**  
**APD VARIANCE DATA**

**OPERATOR NAME:** Devon Energy

**1. SUMMARY OF Variance:**

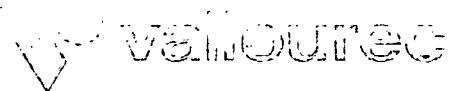
Devon Energy respectfully requests approval for the following additions to the drilling plan:

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 nipped 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.

# CASING PERFORMANCE Data Sheet



Minimum Yield Strength:	125	ksi
Maximum Yield Strength:	140	ksi
Minimum Tensile Strength:	135	ksi

## Geometry

Nominal ID:	7.921	inch
Wall:	0.352	inch
Min. Wall % (API = 87.5%):	87.5	%
API Drift:	7.796	inch
Special Drift*:	7.875	inch

## Performance

Pipe Body Yield Strength:	1,144	kips
Collapse Resistance:	3,470	psi
Internal Yield Pressure ( <i>API Historical</i> ):	8,930	psi

SC Internal Pressure:	8,930	psi
SC Joint Strength:	793	kips
LC Internal Pressure:	8,930	psi
LC Joint Strength:	887	kips
BC Internal Pressure:	8,930	psi
BC Joint Strength:	1,121	kips

minimum: 5,950      optimum: 7,933      maximum: 9,916

minimum: 6,651      optimum: 8,868      maximum: 11,085

\*Special drift must be ordered or API drift will be used for actual drifting of product.

\*\*If above API connections do not suit your needs, VAM® premium connections are available up to 100% of pipe body ratings.

This data sheet is for informational purposes only. While every effort has been made to ensure the accuracy of all data and that the information contained herein is correct, this material is presented as a reference guide only. Vallourec assumes no responsibility for the results obtained through the use of this material.

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. 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 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 intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 10M will be installed 5M annular on 10M system will be tested to 100% of rated working pressure.

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 10,000 psi WP.

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

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 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 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.

## 1. Geologic Formations

TVD of target	12,455'	Pilot hole depth	N/A
MD at TD:	20,312'	Deepest expected fresh water:	1043'

## Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	1043		
Salado	1403		
Base of Salt	5296		
Delaware	5328		
1st BSPG Lime	9212		
1st BSPG Sand	10415		
2nd BSPG Lime	10517		
2nd BSPG Sand	10825		
3rd BSPG Lime	11492		
3rd BSPG Sand	12084		
Wolfcamp	12413		

\*H<sub>2</sub>S, water flows, loss of circulation, abnormal pressures, etc.

## 2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
14.75"	0	1043' (TVD)	10.75"	40.5	J-55	STC	1.125	1.25	1.6
9.875"	0	11,924' (TVD)	7.625"	29.7	P110	BTC	1.125	1.25	1.6
8.75"	11,924'	12,455' (TVD)	7.625"	29.7	P110	Flushmax III	1.125	1.25	1.6
6.75"	0	20,312' (TVD)	5.5"	20	P110	Vam SG	1.125	1.25	1.6

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

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 to wave the centralizer requirement for the 7-5/8" flush casing in the 8-3/4" hole and the 5-1/2" SF/Flush casing in the 6-3/4" hole.

**Casing Program (Alternate Design)**

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1043' (TVD)	13.375"	48	H-40	STC	1.125	1.25	1.6
10.625"	0	5000' (TVD)	8.625"	29.7	P110EC	BTC	1.125	1.25	1.6
9.875"	5000'	12,455' (TVD)	8.625"	29.7	P110EC	VAM FJL	1.125	1.25	1.6
7.875"	0	20,312' (TVD)	5.5"	20	P110	Vam SG	1.125	1.25	1.6

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

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 to wave the centralizer requirement for the 8-5/8" flush casing in the 9-7/8" hole and the 5-1/2" SF/Flush casing in the 7-7/8" hole.

8-5/8" Intermediate casing will be kept fluid filled.

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

Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

### 3. Cementing Program (Primary Design)

Casing	# Sks	Wt. lb/ gal	H <sub>2</sub> O gal/sk	Yld ft <sup>3</sup> / sack	Slurry Description
Surface	560	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
Int	733	9	13.5	3.27	Lead: Tuned Light® Cement
	640	13.2	5.31	1.6	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
Intermediate Two-Stage (Bradenhead)	1000	14.8	6.32	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	640	13.2	5.31	1.6	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
Production	623	14.8	6.32	1.33	Class H Cement + 0.125 lbs/sack Poly-E-Flake

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

Casing String	TOC	% Excess
10-3/4" Surface	0'	50%
7-5/8" Intermediate	0'	30%
5-1/2" Production Casing	200' Tie-Back to intermediate	25%

### Cementing Program (Alternate Design)

Casing	# Sks	Wt. lb/ gal	H <sub>2</sub> O gal/sk	Yld ft <sup>3</sup> / sack	Slurry Description
Surface	649	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
Int	457	9	13.5	3.27	Lead: Tuned Light® Cement
	405	13.2	5.31	1.6	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
Intermediate Two-Stage (Bradenhead)	1000	14.8	6.32	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	405	13.2	5.31	1.6	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
Production	1028	14.8	6.32	1.33	Class H Cement + 0.125 lbs/sack Poly-E-Flake

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

Casing String	TOC	% Excess
13-3/8" Surface	0'	50%
8-5/8" Intermediate	0'	30%
5-1/2" Production Casing	200' Tie-Back to intermediate	25%

#### 4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Intermediate	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram	X	
			Double Ram	X	
			Other*		
Production	13-5/8"	10M	Annular (5M)	X	100% of rated working pressure
			Blind Ram	X	10M
			Pipe Ram	X	
			Double Ram	X	
			Other*		
			Annular		
			Blind Ram		

\*Specify if additional ram is utilized.

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

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



Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	<p>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.</p> <p>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.</p> <ul style="list-style-type: none"> <li>Wellhead will be installed by wellhead representatives.</li> <li>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.</li> <li>Wellhead representative will install the test plug for the initial BOP test.</li> <li>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 3M, 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.</li> <li>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.</li> <li>Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.</li> <li>Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.</li> </ul> <p>After running 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.</p> <p>13-5/8" BOP/BOPE system will have been tested to 10M rating prior to drilling out intermediate casing.</p> <p>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</p>

<p>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.</p> <p>Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron.</p> <p>Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.</p>
---

## 5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surface Casing Shoe	FW Gel	8.6-8.8	28-34	N/C
Surface Casing Shoe	Intermediate Casing Shoe	DBE/Brine	9-10	34-65	N/C - 6
Intermediate Casing Shoe	TD	Oil Based Mud	10-12	45-65	N/C - 6

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

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

## 6. Logging and Testing Procedures

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

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

## 7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7000 psi
Abnormal Temperature	No

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

Hydrogen Sulfide (H<sub>2</sub>S) monitors will be installed prior to drilling out the surface shoe. If H<sub>2</sub>S 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	H <sub>2</sub> S is present
Y	H <sub>2</sub> S Plan attached

## 8. Other facets of operation

Is this a walking operation? Potentially

1. In the event the spudder rig is unable to drill the surface holes the 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 with either OBM or cut brine 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 drill surface hole.
  - a. Rig will utilize fresh water based mud to drill 14 3/4" 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 10-3/4" 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 the drilling rig. At that time an approved BOP stack will be nipped 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.

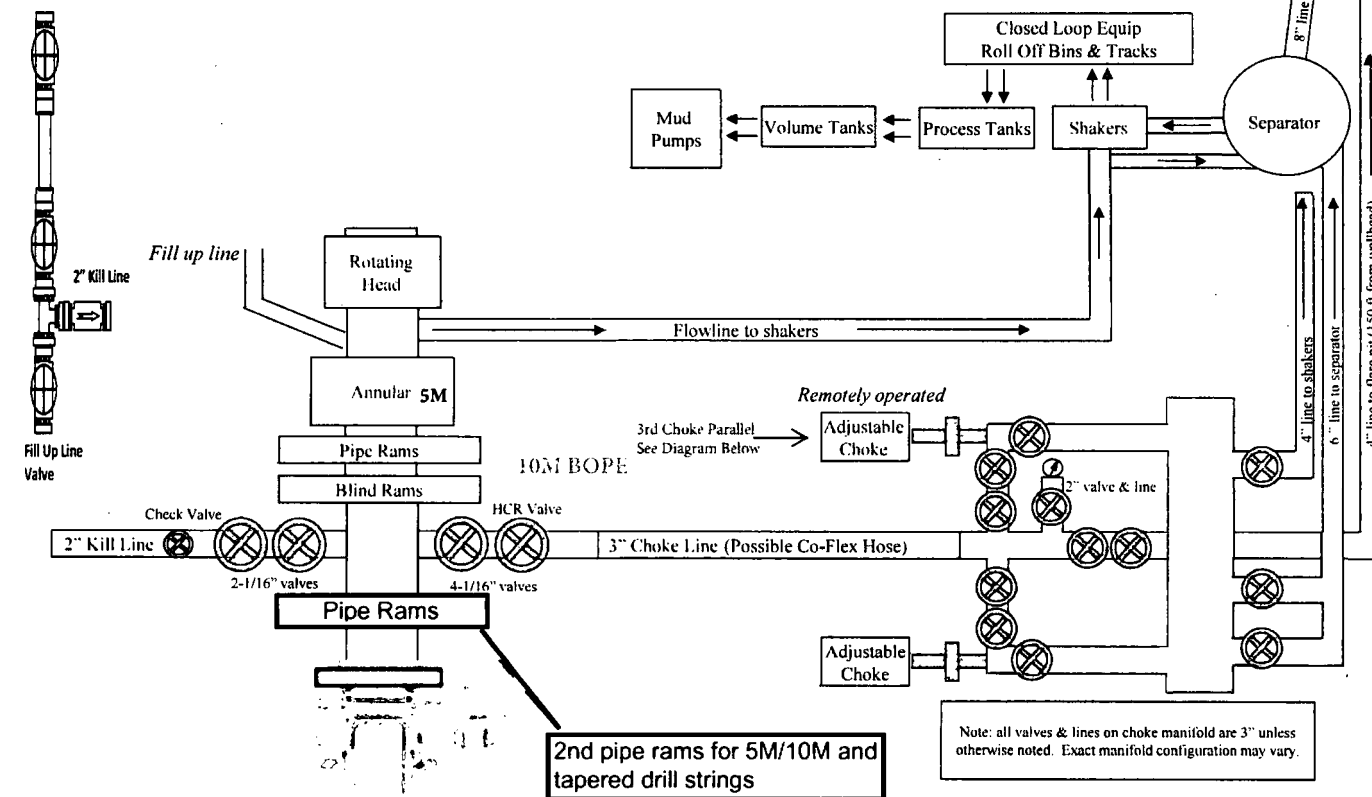
**Attachments**

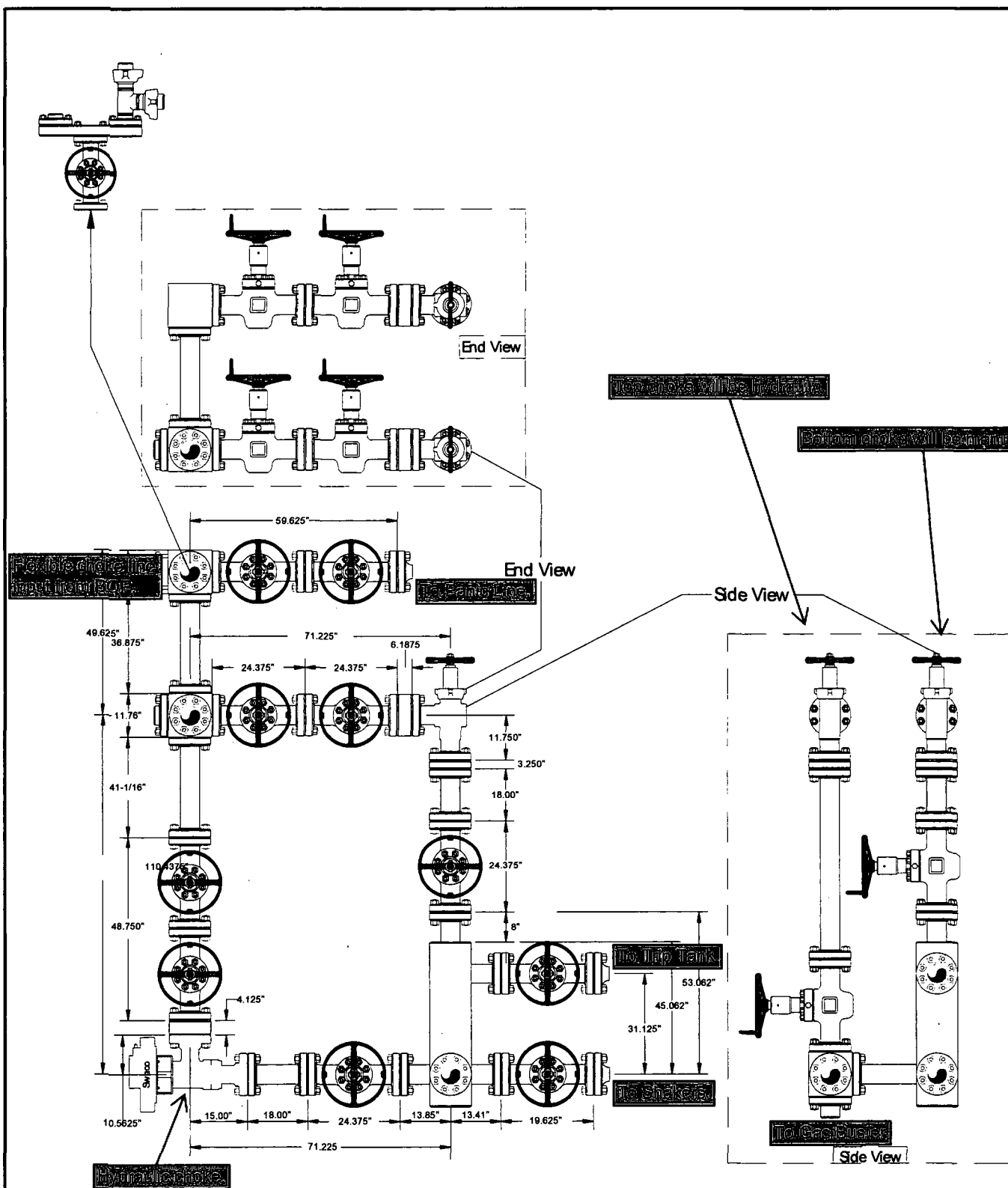
☒ Directional Plan

☐ Other, describe

### 10M Remote Kill Line Schematic

Outside  
Remote Kill  
Line Valve





Helmerich & Payne  
Flex 3 Rig w/ 3 Chokes

**devon**

Name: Mike Potts	Date: 6-23-2010	Working Pressure: 10M	J5132-E
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Fluid Technology

ContiTech Beattie Corp.  
Website: [www.contitechbeattie.com](http://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.

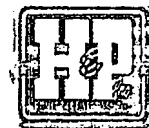
Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

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](http://www.contitechbeattie.com)



RIG 212



## QUALITY DOCUMENT

PHOENIX RUBBER

INDUSTRIAL LTD.

5728 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 28  
Phone: (361) 456-4200 • Fax: (361) 217-2972, 456-4273 • www.tauruserge.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  <div style="text-align: center;">See attachment. (1 page)</div>					
↑ 10 mm = 10 Min. → 10 mm = 25 MPa					
COUPLINGS					
Type	Serial N°		Quality	Heat N°	
3" coupling with 4 1/16" Flange end	720 719		AISI 4130	C7626	
			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 Pressure Test Dept. PHOENIX RUBBER Q.C.		



40920-0-00015

6			
QZ	+0.000	0	14:00
SD	+0.000	0	14:00
SL	+0.000	0	14:00
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SD	+0.000	0	04

**100**  
**PHENIX RUBBER**  
**Industrial Ltd.**  
**Host Inspection and**  
**Certification Dept.**

VERIFIED TRUE CO.  
PHOENIX RUBBER CO.

APD ID: 10400032905

Submission Date: 08/23/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Will existing roads be used? YES

Existing Road Map:

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_Access\_Rd\_20180823122732.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ID:

Do the existing roads need to be improved? YES

Existing Road Improvement Description: Improve road to accommodate Drilling and Completion operations.

Existing Road Improvement Attachment:

Will new roads be needed? YES

**New Road Map:**

ARENA\_ROJA\_15\_ALL\_ROADS\_20180823122753.pdf

New road type: LOCAL

Length: 8793

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: 14

New road access erosion control: Water Drainage Ditch

New road access plan or profile prepared? YES

**New road access plan attachment:**

ARENA\_ROJA\_15\_ALL\_ROADS\_20180823122854.pdf

Access road engineering design? YES

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

**Access road engineering design attachment:**

ARENA\_ROJA\_15\_ALL\_ROADS\_20180823122910.pdf

Access surfacing type: NONE

Access topsoil source: OFFSITE

Access surfacing type description: caliche

Access onsite topsoil source depth:

Offsite topsoil source description: caliche

Onsite topsoil removal process:

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

**Access turnout map:**

New road drainage crossing: OTHER

Drainage Control comments: Water Drainage Ditch

Road Drainage Control Structures (DCS) description: N/A

**Road Drainage Control Structures (DCS) attachment:**

**Additional Attachment(s):**

Existing Wells Map? YES

**Attach Well map:**

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_OneMiMap\_20181220094434.pdf

Existing Wells description:

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: 5 ATTACHMENTS - WELL ON ARENA ROJA WELLPAD 1 & GOING TO CTB 2 - WELLPAD PLAT, MULTIPLE ELECTRIC PLAT ATTACHMENT, MULTIPLE ROAD PLAT ATTACHMENT, CTB PLAT, FLOWLINE PLAT. CONNECTS HANDLED BY THIRD PARTY

**Production Facilities map:**

ARENA\_ROJA\_15\_ALL\_ROADS\_20180823123549.pdf

ARENA\_ROJA\_15\_CTB\_2\_P\_20180823123550.PDF

ARENA\_ROJA\_15\_WP\_1\_TO\_AR\_15\_CTB\_2\_FLOWLINE\_20180823123555.PDF

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

ARENA\_ROJA\_15\_WP\_1\_P\_20180823123551.PDF

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_OneMiMap\_20181210103942.pdf

ARENA\_ROJA\_15\_CTB\_2\_P\_R1\_20181210104410.pdf

ARENA\_ROJA\_15\_ALL\_ELECTRIC\_20181210104617.PDF

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_WP\_Plat\_20181210104637.pdf

Water source use type: STIMULATION

Water source type: RECYCLED

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: FEDERAL

Water source volume (barrels): 350000

Source volume (acre-feet): 45.112583

Source volume (gal): 14700000

**Water source and transportation map:**

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_Water\_Map\_20180823124830.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

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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

**State appropriation permit:**

**Additional information attachment:**

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

**Construction Materials source location attachment:**

Arena\_Roja\_WP1\_Caliche\_Map\_20180823151628.pdf

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: PRODUCED WATER

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

Amount of waste: 1200 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

**Safe containmant attachment:**

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

Disposal type description:

Disposal location description: Produced water will be primarily disposed of at our Rattlesnake 16 SWD. At certain times during the year, some of the water will be recycled and used for stimulations (recycle facility is at the same location as the SWD). Surplus produced water will be sent to third party suppliers for disposal.

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Waste type: FLOWBACK

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

Amount of waste: 4000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

**Safe containmant attachment:**

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

Disposal type description:

Disposal location description: Produced water will be primarily disposed of at our Rattlesnake 16 SWD. At certain times during the year, some of the water will be recycled and used for stimulations (recycle facility is at the same location as the SWD). Surplus produced water will be sent to third party suppliers for disposal.

Waste type: DRILLING

Waste content description: Water Based and Oil Based Cuttings

Amount of waste: 1740 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 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 being used? NO

Are you storing cuttings on location? NO

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

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

Are you requesting any Ancillary Facilities?: NO

**Ancillary Facilities attachment:**

Comments:

**Well Site Layout Diagram:**

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_Well\_Layout\_20180823133717.pdf

Comments:

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: ARENA ROJA 15 WELLPAD

Multiple Well Pad Number: 1

**Recontouring attachment:**

Arena\_Roja\_Fed\_Unit\_15\_10\_5H\_Interim\_Recl\_20180823133749.pdf

Drainage/Erosion control construction: All areas disturbed shall be reclaimed as early and as nearly as practicable to their original condition or their final land use and shall be maintained to control dust and minimize erosion to the extent practicable. Drainage/Erosion control reclamation: Topsoils and subsoils 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. The disturbed area then shall be reseeded in the first favorable growing season.

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Well pad proposed disturbance (acres): 8.264	Well pad interim reclamation (acres): 6.734	Well pad long term disturbance (acres): 1.53
Road proposed disturbance (acres): 6.056	Road interim reclamation (acres): 0	Road long term disturbance (acres): 6.056
Powerline proposed disturbance (acres): 3.225	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 3.225
Pipeline proposed disturbance (acres): 3.18	Pipeline interim reclamation (acres): 0	Pipeline long term disturbance (acres): 3.18
Other proposed disturbance (acres): 0	Other interim reclamation (acres): 0	Other long term disturbance (acres): 0
Total proposed disturbance: 20.725	Total interim reclamation: 6.734	Total long term disturbance: 13.991

**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:**

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:**



Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Total pounds/Acre:

Seed Type	Pounds/Acre
-----------	-------------

**Seed reclamation attachment:**

First Name: Travis

Last Name: Phibbs

Phone: (575)748-9929

Email: travis.phibbs@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:**

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

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:**

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

USFS Forest/Grassland:

USFS Ranger District:

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:

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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: ARENA ROJA FED UNIT 15-10

Well Number: 5H

USFWS Local Office:

Other Local Office:

**USFS Region:**

USFS Forest/Grassland:

USFS Ranger District:

Right of Way needed? YES

Use APD as ROW? YES

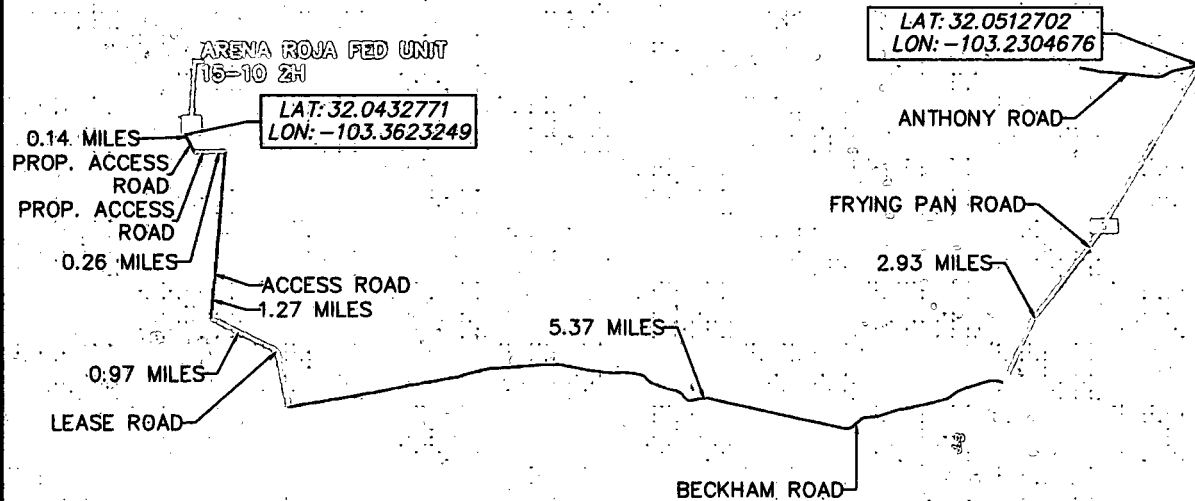
ROW Type(s): 281001 ROW - ROADS,288100 ROW – O&G Pipeline,FLPMA (Powerline),Other

SUPO Additional Information: See Section 4 for 5 Facility & Infrastructure Plats. See C-102 for grading plats.

Use a previously conducted onsite? YES

Previous Onsite information: 5/1/18

SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
AERIAL ACCESS ROUTE MAP



DEVON ENERGY PRODUCTION COMPANY, L.P.  
ARENA ROJA FED UNIT 15-10 2H  
LOCATED 2490 FT. FROM THE NORTH LINE  
AND 820 FT. FROM THE WEST LINE OF  
SECTION 15, TOWNSHIP 26 SOUTH,  
RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO

NOT TO SCALE

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

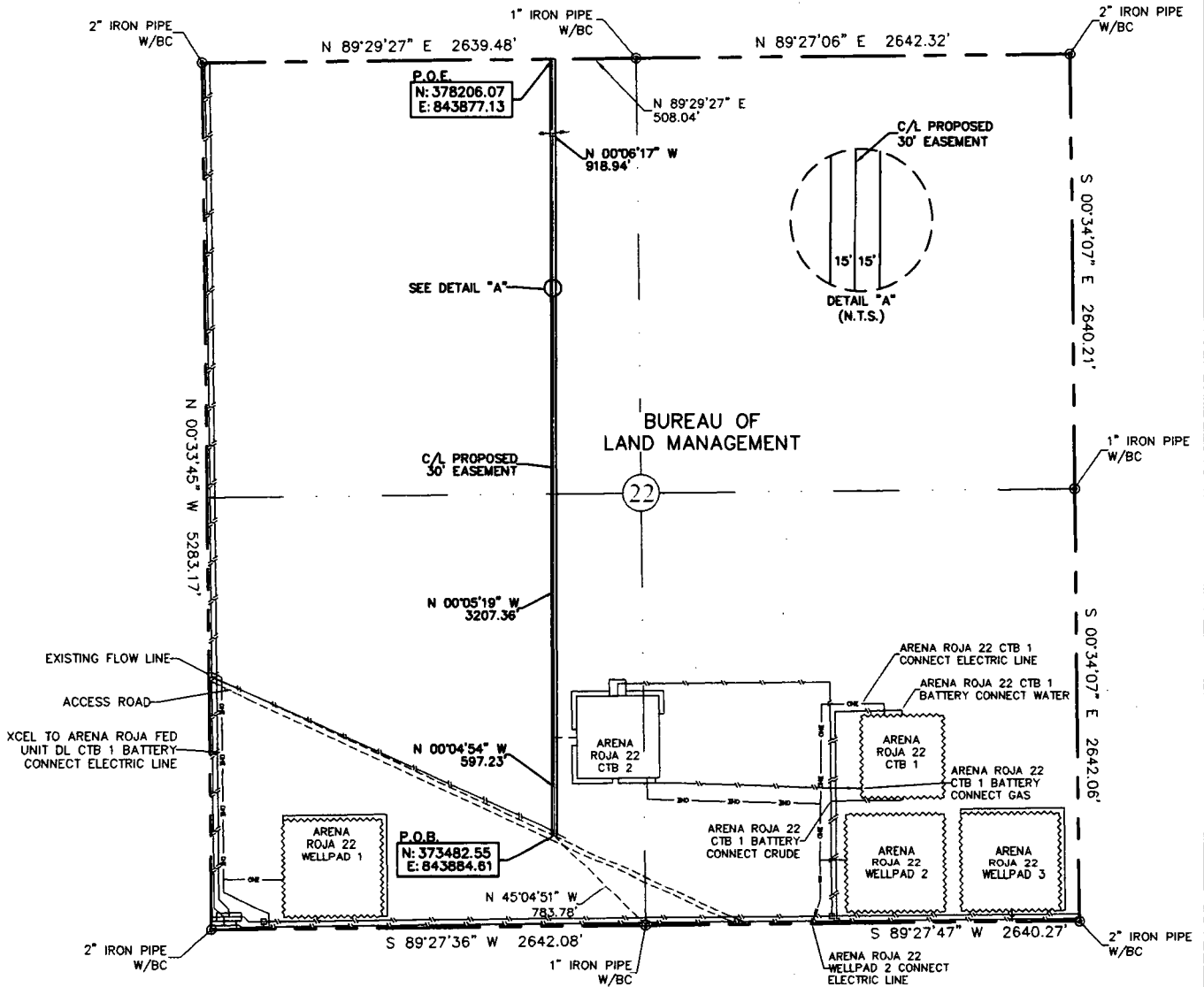
Drawn by:  
CHRIS MAAS

Date: 05/30/2018  
Rev. Date: 7/23/18

Drawn for:

devon

EXHIBIT "A"  
PAGE 1 of 6  
ACCESS ROAD PLAT  
SECTION 22, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 3.253 ACRE(S)  
4723.53 FEET OR 286.27 RODS

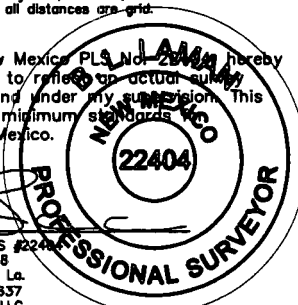
0+00.0 P.O.B./EXISTING ROAD  
42+78.9 FENCE/GATE  
47+23.5 SECTION LINE

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404 hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 PRIMARY  
ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 22, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640126R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/4/18

DATE OF SURVEY  
5/19/18

0 1000 2000



**SECTION 22, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 22, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the south quarter corner of Section 22, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 45°04'51" W a distance of 783.78' to the **Point of Beginning** of this easement having coordinates of Northing=373482.55 feet, Easting=843884.61 feet, and continuing the following courses;

Thence N 00°04'54" W a distance of 597.23' to an angle point;

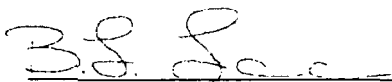
Thence N 00°05'19" W a distance of 3207.36' to an angle point;

Thence N 00°06'17" W a distance of 918.94' to the **Point of Ending** in the north line of Section 22, having coordinates of Northing=378206.07 feet, Easting=843877.13 feet, from said point a 1" iron pipe w/BC for the north quarter corner of Section 22, T26S-R35E bears N 89°29'27" E a distance of 508.04', covering **4723.53' or 286.27 rods** and having an area of **3.253 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

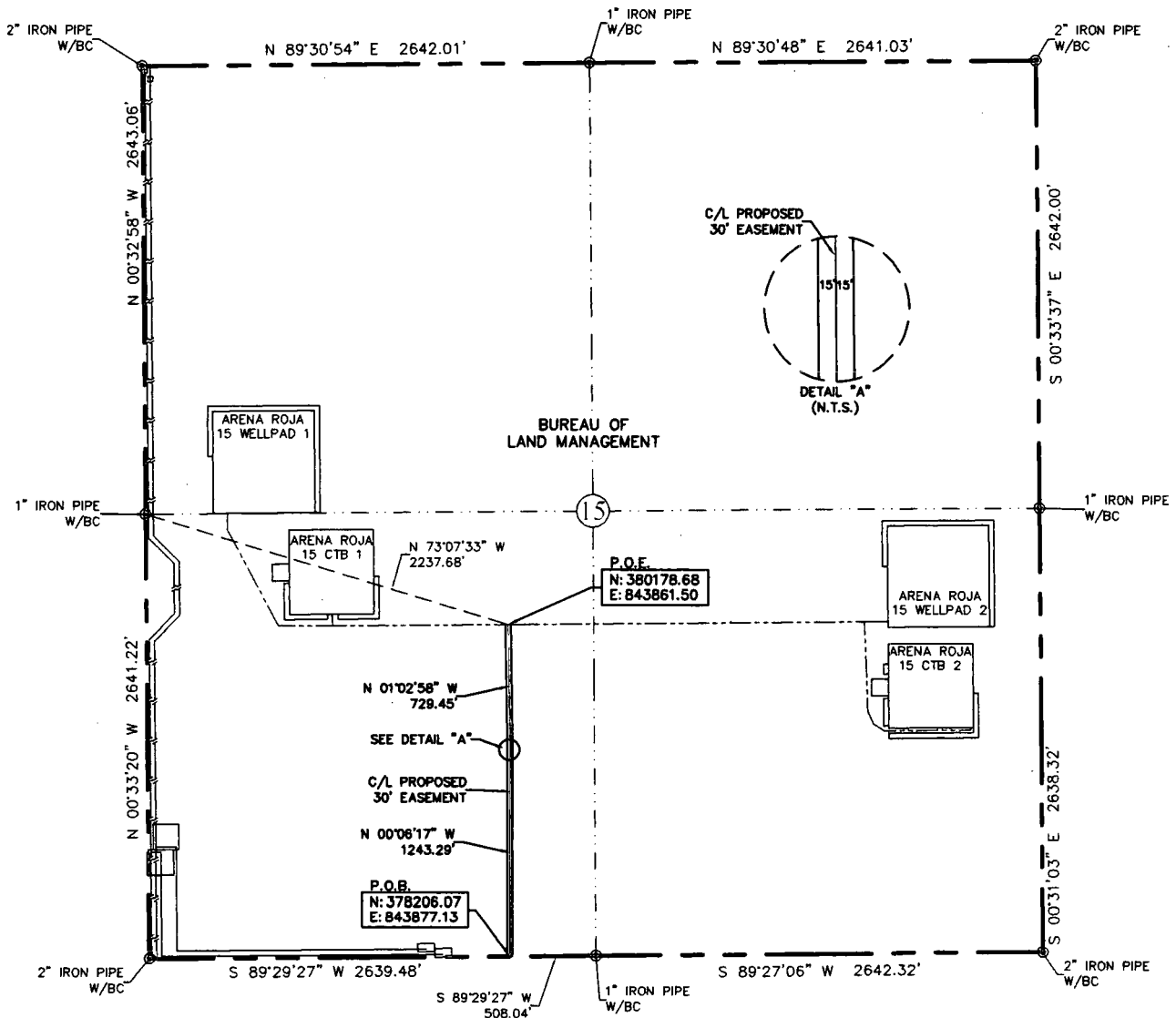
P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 3 of 6  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 1.359 ACRE(S)  
1972.74 FEET OR 119.56 RODS

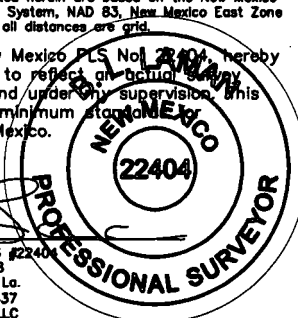
47+23.5 SECTION LINE  
66+96.3 P.O.E./ARENA ROJA 15 WELLPAD 1 & 2 ACCESS ROAD

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS #22404  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 PRIMARY  
ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7840128R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/4/18 CMAAS  
DATE OF SURVEY  
5/19/18

0 1000 2000



**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the south quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 89°29'27" W a distance of 508.04' to the **Point of Beginning** of this easement in the south line of Section 15, having coordinates of Northing=378206.07, Easting=843877.13 feet and continuing the following courses;

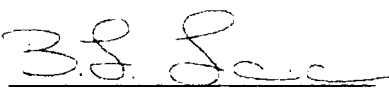
Thence N 00°06'17" W a distance of 1243.29' to an angle point;

Thence N 01°02'58" W a distance of 729.45' to the **Point of Ending** having coordinates of Northing=380178.68, Easting=843861.50 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears N 73°07'33" W a distance of 2237.68', covering **1972.74' or 119.56 rods** and having an area of **1.359 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



## Neutrophil Granules



SECTION 22, T26S-R35E, N.M.P.M.;  
SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

0                      2000                      4000



**Date: 08/04/2018**

Drawn for:



**devon**

DATE OF SURVEY:  
05/19/18

EXHIBIT "A"  
PAGE 6 of 6

9

10

11

BUREAU OF LAND  
MANAGEMENT

15

16

14

ARENA RONA 16  
PRIMARY ACCESS ROAD

22

BUREAU OF LAND  
MANAGEMENT

AERIAL MAP

SECTION 22, T26S-R35E, N.M.P.M.;  
SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

0 2000 4000



**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
CHRIS MAAS

Date: 08/04/2018

Drawn for:

  
**devon**

LINE NUMBER:  
7640126R

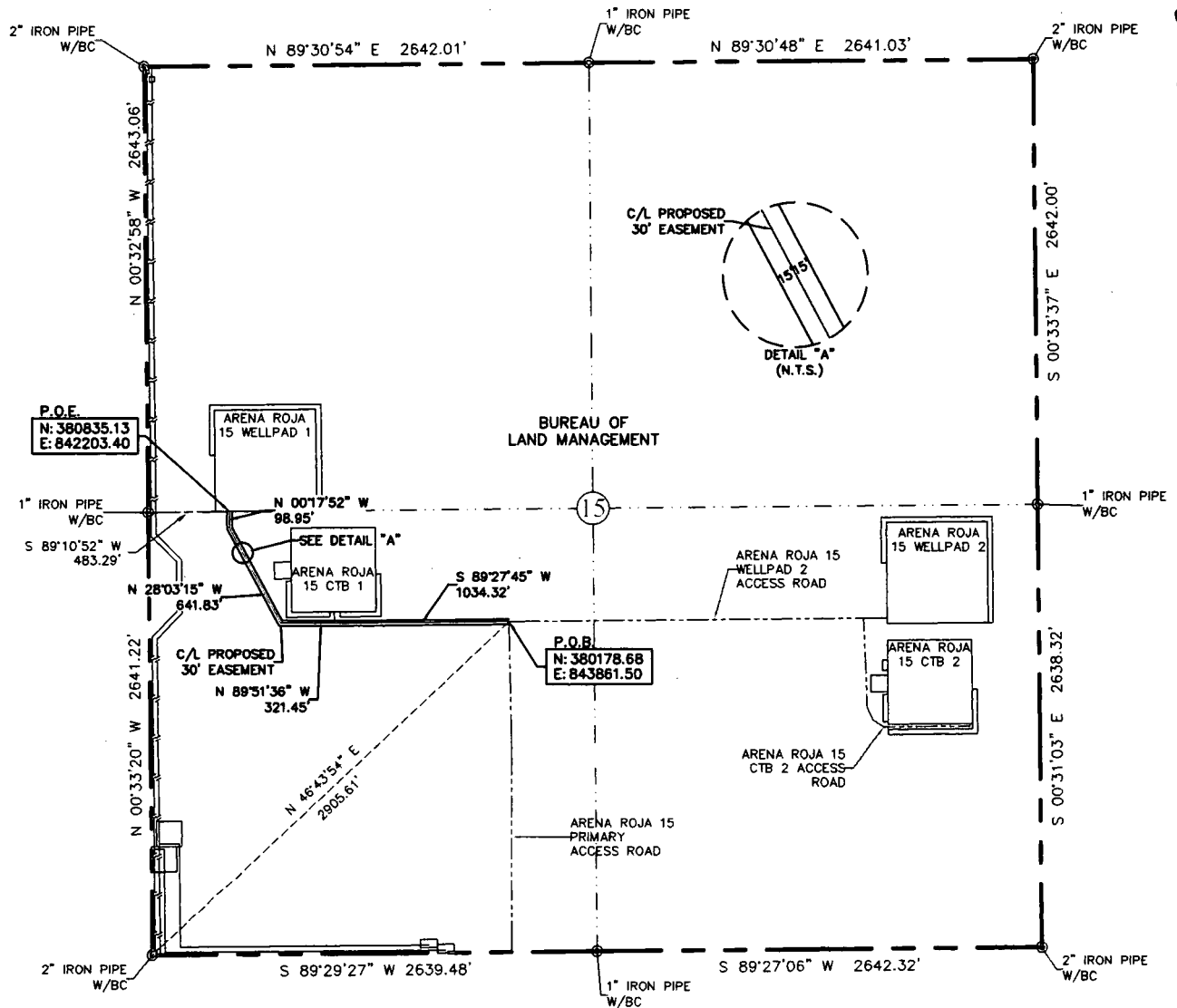
WBS NUMBER:

SCALE:  
1" = 2000'

REVISIONS:

DATE OF SURVEY:  
05/19/18

EXHIBIT "A"  
PAGE 9 of 12  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 1.444 ACRE(S)  
2096.55 FEET OR 127.06 RODS

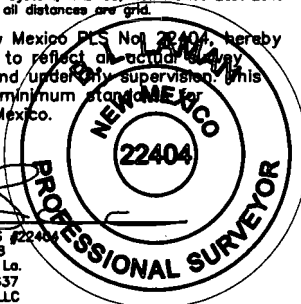
0+00.0 P.O.B./ARENA ROJA 15 PRIMARY ACCESS ROAD  
7+15.3 P.O.E./ARENA ROJA 15 CTB 1 ELECTRIC LINE  
10+34.3 ARENA ROJA 15 CTB 1 ACCESS ROAD  
20+96.5 P.O.E./ARENA ROJA 15 WELLPAD 1

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/22/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
WELLPAD 1 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640127R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/3/18 CMAAS  
DATE OF SURVEY:  
5/19/2018

0 1000 2000



**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 46°43'54" E a distance of 2905.61' to the **Point of Beginning** of this easement having coordinates of Northing=380178.68, Easting=843861.50 feet and continuing the following courses;

Thence S 89°27'45" W a distance of 1034.32' to an angle point;

Thence N 89°51'36" W a distance of 321.45' to an angle point;

Thence N 28°03'15" W a distance of 641.83' to an angle point;

Thence N 00°17'52" W a distance of 98.95' to the **Point of Ending** having coordinates of Northing=380835.13, Easting=842203.40 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears S 89°10'52" W a distance of 483.29', covering **2096.55' or 127.06 rods** and having an area of **1.444 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.


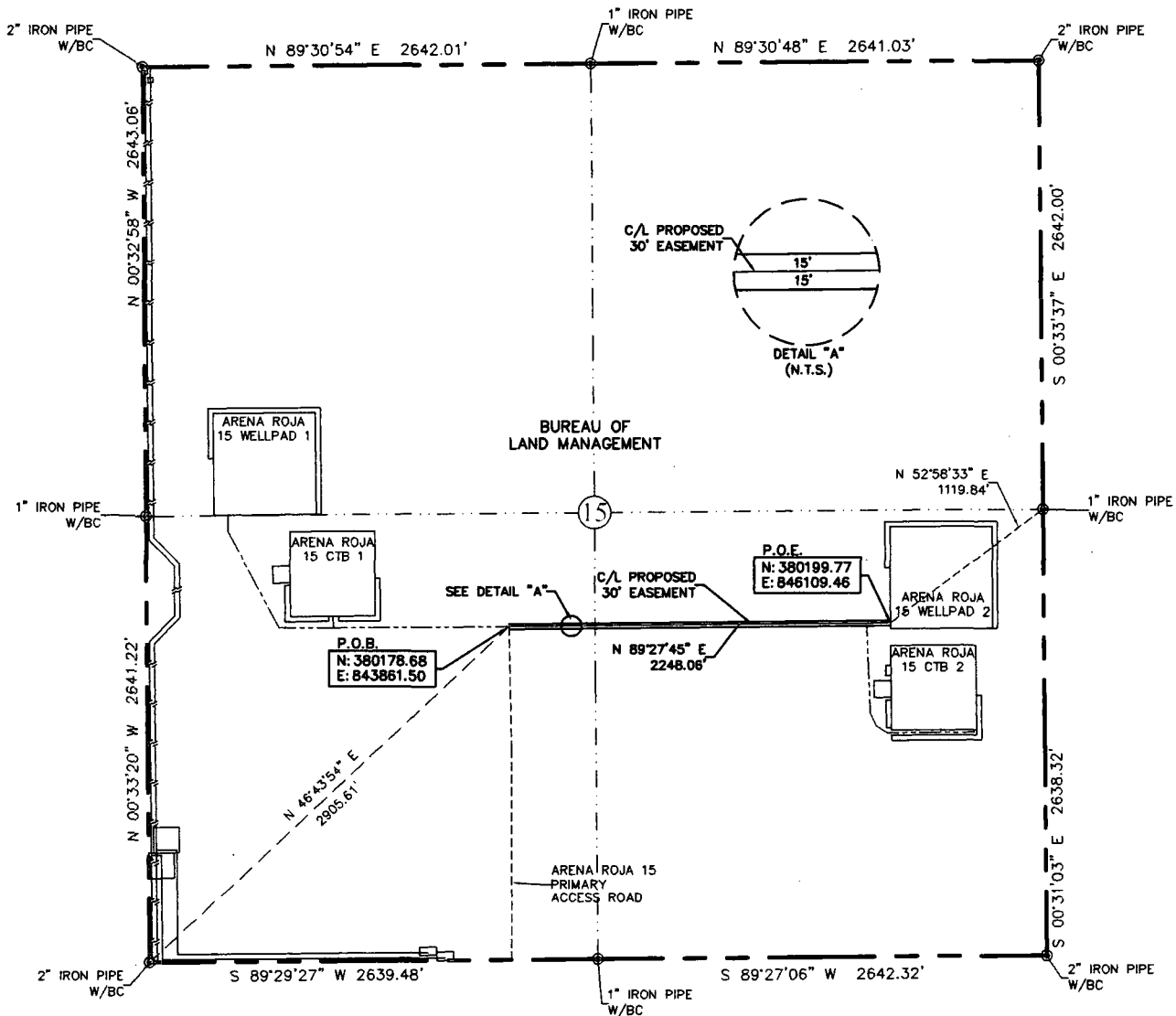
  
B.L. Laman      PLS 22404  
Date Signed: 08/05/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 9 of 12  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



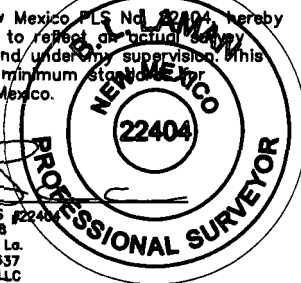
30' EASEMENT AREA = 1.548 ACRE(S)  
2248.06 FEET OR 136.25 RODS

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS #22404  
Date Signed: 08-06-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



0+00.0 P.O.B./ARENA ROJA 15 PRIMARY ACCESS ROAD  
21+08.9 ARENA ROJA 15 CTB 2 ACCESS ROAD  
22+48.1 P.O.E./ARENA ROJA 15 WELLPAD 2

0 1000 2000

HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
WELLPAD 2 ACCESS ROAD

PROPOSED 30' EASEMENT

ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7840128R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/3/18 CMAAS  
DATE OF SURVEY:  
5/19/18

SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO

ACCESS ROAD PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 46°43'54" E a distance of 2905.61' to the **Point of Beginning** of this easement having coordinates of Northing=380178.68, Easting=843861.50 feet and continuing the following courses:

Thence N 89°27'45" E a distance of 2248.06' to the **Point of Ending** having coordinates of Northing=380199.77, Easting=846109.46 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E bears N 52°58'33" E a distance of 1119.84', covering **2248.06' or 136.25 rods** and having an area of **1.548 acres**.

NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

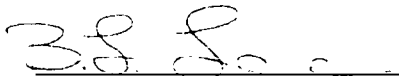
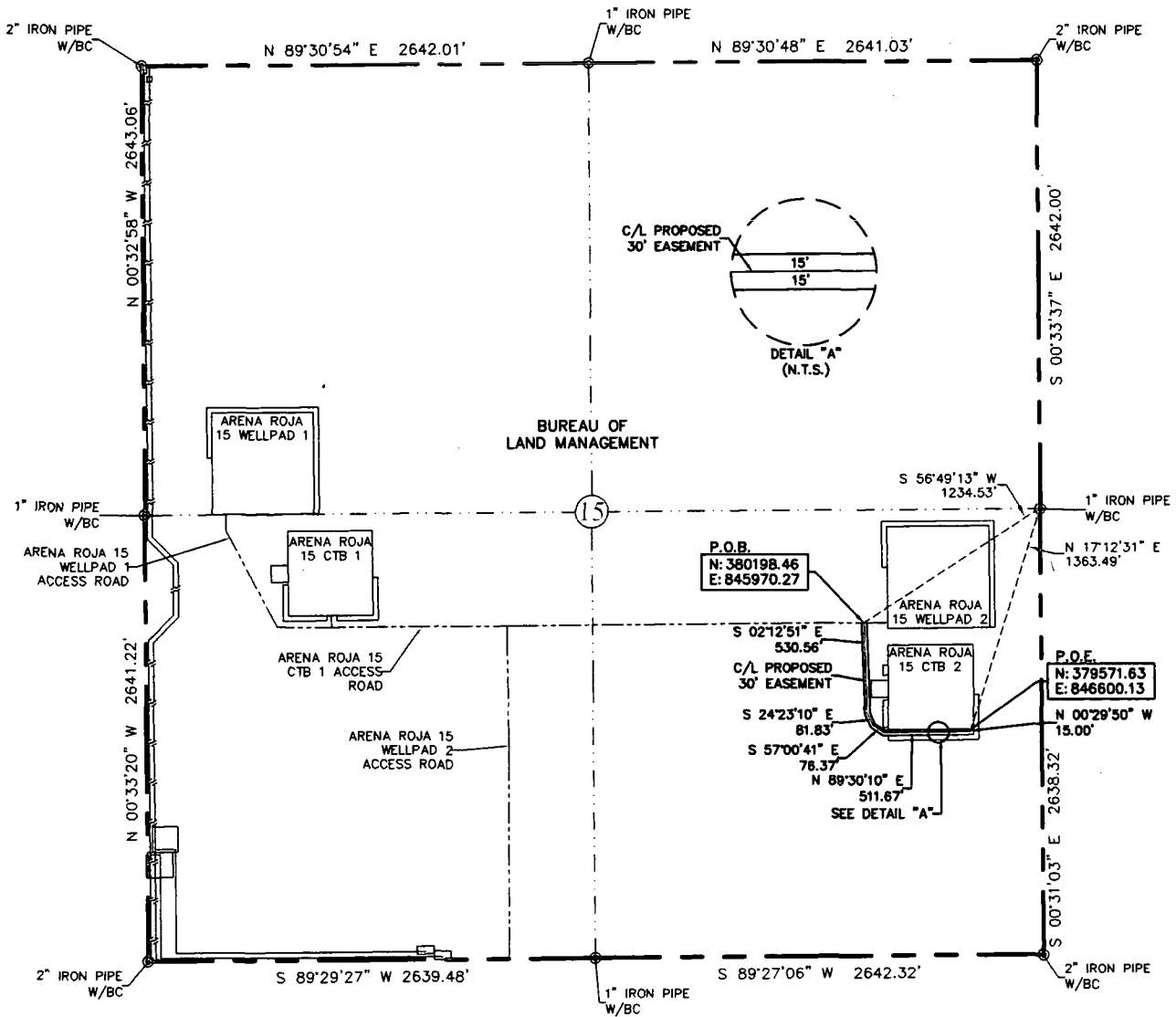
  
B.L. Laman      PLS 22404  
Date Signed: 08/06/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045    70637  
Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 3 of 6  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.837 ACRE(S)  
1215.43 FEET OR 73.66 RODS

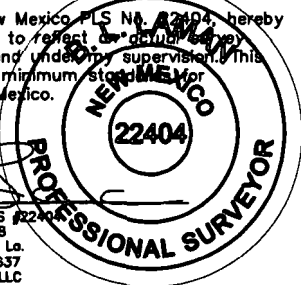
0+00.0 P.O.B./ARENA ROJA 15 WELLPAD 2 ACCESS ROAD  
12+15.4 P.O.E./ARENA ROJA 15 CTB 2

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect a "double check" made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS #22404  
Date Signed: 06-12-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS WAAS

Date: 05/24/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
CTB 2 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640130R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:

SHEET:  
3 OF 6

0 1000 2000



**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 56°49'13" W a distance of 1234.53' to the **Point of Beginning** of this easement having coordinates of Northing=380198.46, Easting=845970.27 feet and continuing the following courses;

Thence S 02°12'51" E a distance of 530.56' to an angle point;

Thence S 24°23'10" E a distance of 81.83' to an angle point;

Thence S 57°00'41" E a distance of 76.37' to an angle point;

Thence N 89°30'10" E a distance of 511.67' to an angle point;

Thence N 00°29'50" W a distance of 15.00' to the **Point of Ending** having coordinates of Northing=379571.63, Easting=846600.13 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E bears N 17°12'31" E a distance of 1363.49', covering **1215.43' or 73.66 rods** and having an area of **0.837 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 06/12/2018

Horizon Row, LLC

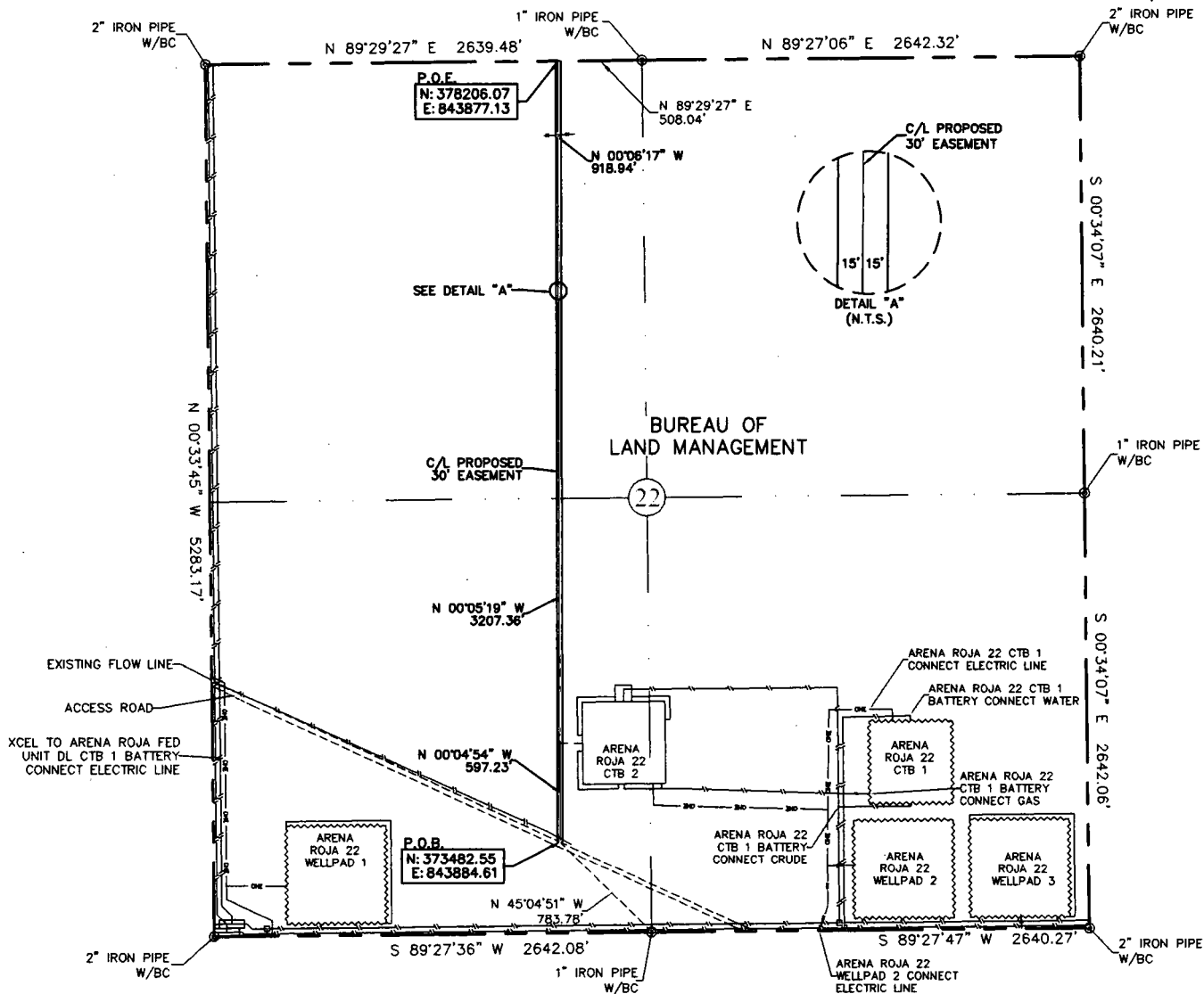
P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 1 of 6  
ACCESS ROAD PLAT  
SECTION 22, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 3.253 ACRE(S)  
4723.53 FEET OR 286.27 RODS

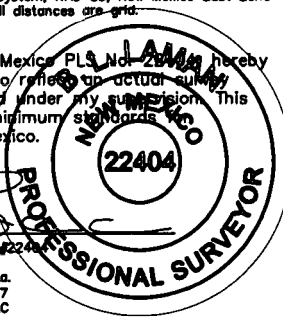
0+00.0 P.O.B./EXISTING ROAD  
42+78.9 FENCE/GATE  
47+23.5 SECTION LINE

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico Professional Surveyor No. 22404 hereby certify this survey to reflect actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



0 1000 2000

HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 PRIMARY  
ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 22, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7840126R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/4/18

DATE OF SURVEY  
5/19/18

**SECTION 22, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 22, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the south quarter corner of Section 22, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 45°04'51" W a distance of 783.78' to the **Point of Beginning** of this easement having coordinates of Northing=373482.55 feet, Easting=843884.61 feet, and continuing the following courses;

Thence N 00°04'54" W a distance of 597.23' to an angle point;

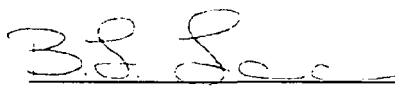
Thence N 00°05'19" W a distance of 3207.36' to an angle point;

Thence N 00°06'17" W a distance of 918.94' to the **Point of Ending** in the north line of Section 22, having coordinates of Northing=378206.07 feet, Easting=843877.13 feet, from said point a 1" iron pipe w/BC for the north quarter corner of Section 22, T26S-R35E bears N 89°29'27" E a distance of 508.04', covering **4723.53' or 286.27 rods** and having an area of **3.253 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

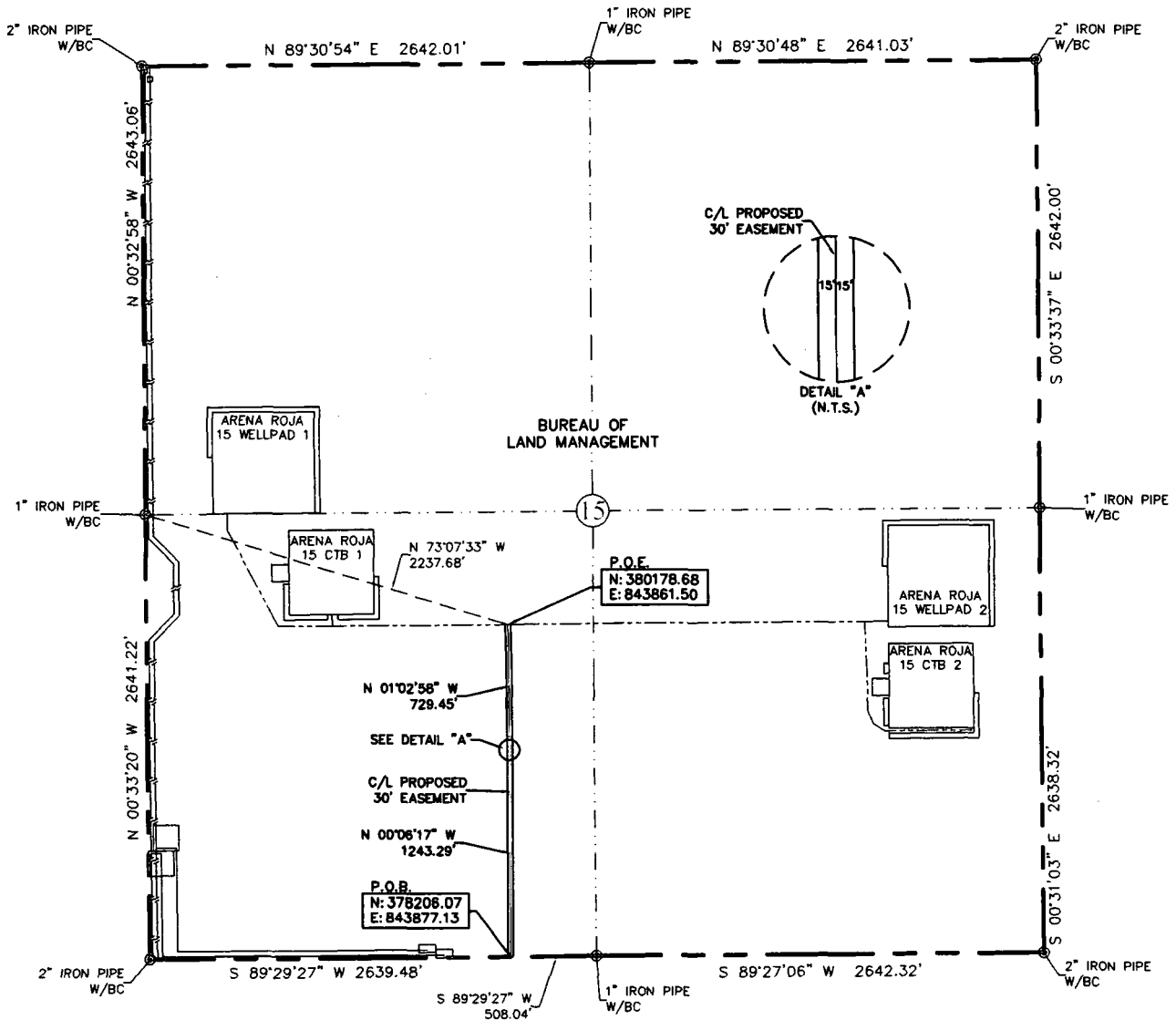
P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 3 of 6  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



47+23.5 SECTION LINE

66+96.3 P.O.E./ARENA ROJA 15 WELLPAD 1 & 2 ACCESS ROAD

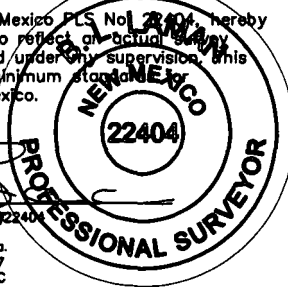
30' EASEMENT AREA = 1.359 ACRE(S)  
1972.74 FEET OR 119.56 RODS

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision, this survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS #22404  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 PRIMARY  
ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7840128R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/4/18 CMAAS  
DATE OF SURVEY  
5/19/18

0 1000 2000

**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the south quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 89°29'27" W a distance of 508.04' to the **Point of Beginning** of this easement in the south line of Section 15, having coordinates of Northing=378206.07, Easting=843877.13 feet and continuing the following courses;

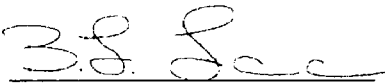
Thence N 00°06'17" W a distance of 1243.29' to an angle point;

Thence N 01°02'58" W a distance of 729.45' to the **Point of Ending** having coordinates of Northing=380178.68, Easting=843861.50 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears N 73°07'33" W a distance of 2237.68', covering **1972.74' or 119.56 rods** and having an area of **1.359 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 5 of 6



QUAD MAP

SECTION 22, T26S-R35E, N.M.P.M.;  
SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO



<b>HORIZON ROW LLC</b>	
DEVON ENERGY PRODUCTION CO., L.P.	
PROPOSED 30' EASEMENT	
Drawn by: CHRIS MAAS	Date: 08/04/2018

Drawn for:

**devon**

LINE NUMBER: 7640126R
WBS NUMBER:
SCALE: 1" = 2000'
REVISIONS:
DATE OF SURVEY: 05/19/18

EXHIBIT "A"  
PAGE 6 of 6

9

10

11

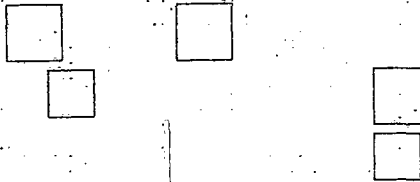


BUREAU OF LAND  
MANAGEMENT

15

16

14



ARENA ROWA 15  
PRIMARY ACCESS ROAD

22

BUREAU OF LAND  
MANAGEMENT

AERIAL MAP

SECTION 22, T26S-R35E, N.M.P.M.;  
SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

0 2000 4000



**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
CHRIS MAAS

Date: 08/04/2018

Drawn for:



LINE NUMBER:  
7640126R

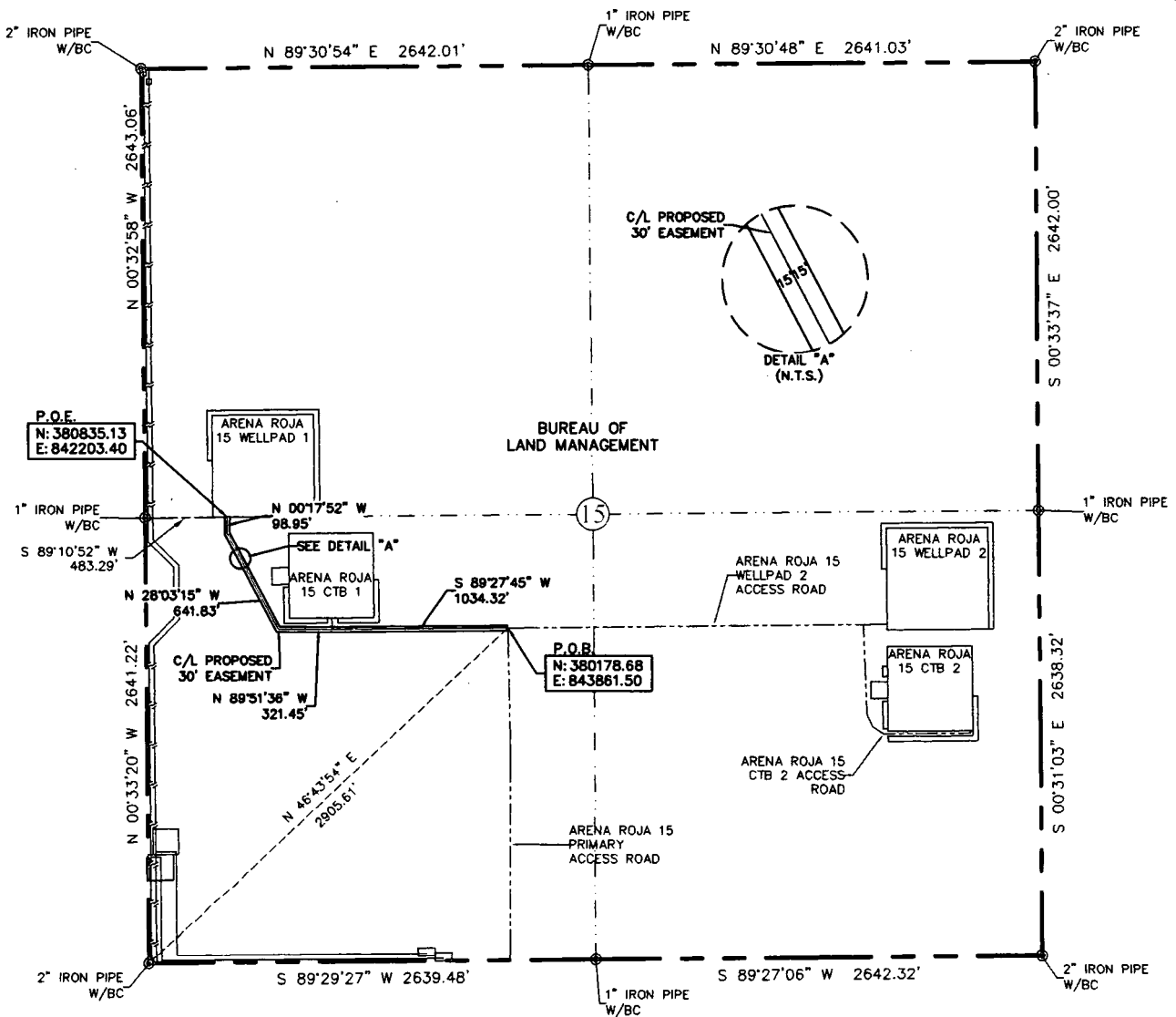
WBS NUMBER:

SCALE:  
1" = 2000'

REVISIONS:

DATE OF SURVEY:  
05/19/18

EXHIBIT "A"  
PAGE 9 of 12  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 1.444 ACRE(S)  
2096.55 FEET OR 127.06 RODS

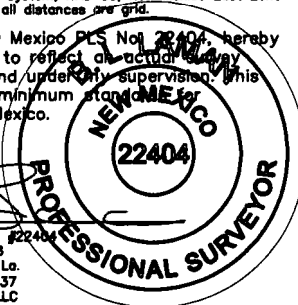
0+00.0 P.O.B./ARENA ROJA 15 PRIMARY ACCESS ROAD  
7+15.3 P.O.E./ARENA ROJA 15 CTB 1 ELECTRIC LINE  
10+34.3 ARENA ROJA 15 CTB 1 ACCESS ROAD  
20+96.5 P.O.E./ARENA ROJA 15 WELLPAD 1

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS #22404  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



**HORIZON ROW LLC**

Drawn for:

**devon**

Drawn by:  
CHRIS MAAS

Date: 05/22/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
WELLPAD 1 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640127R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/3/18 CMAAS  
DATE OF SURVEY:  
5/19/2018

0 1000 2000





**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 46°43'54" E a distance of 2905.61' to the **Point of Beginning** of this easement having coordinates of Northing=380178.68, Easting=843861.50 feet and continuing the following courses;

Thence S 89°27'45" W a distance of 1034.32' to an angle point;

Thence N 89°51'36" W a distance of 321.45' to an angle point;

Thence N 28°03'15" W a distance of 641.83' to an angle point;

Thence N 00°17'52" W a distance of 98.95' to the **Point of Ending** having coordinates of Northing=380835.13, Easting=842203.40 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears S 89°10'52" W a distance of 483.29', covering **2096.55' or 127.06 rods** and having an area of **1.444 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

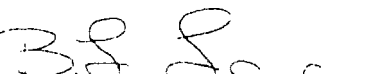
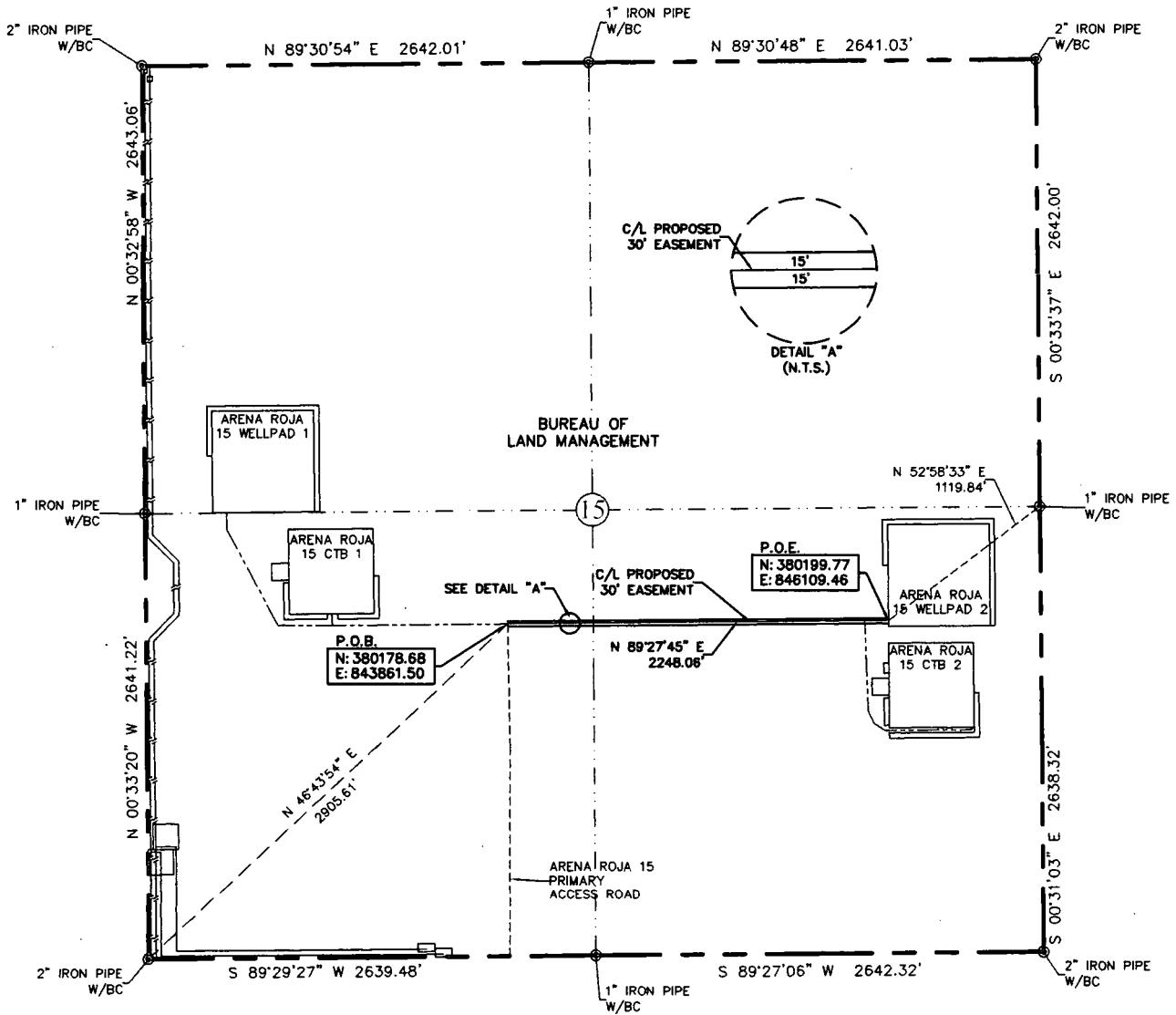
  
B.L. Laman      PLS 22404  
Date Signed: 08/05/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045    70637  
Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 9 of 12  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



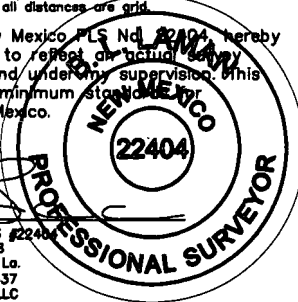
30' EASEMENT AREA = 1.548 ACRE(S)  
2248.06 FEET OR 136.25 RODS

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS #22404  
Date Signed: 08-06-2018  
P.O. Box 548, Dry Creek, La.  
(803) 388-3045 70637  
Employee of Horizonrow, LLC



**HORIZON ROW LLC**

Drawn for:

**devon**

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
WELLPAD 2 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7840128R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/3/18 CMAAS  
DATE OF SURVEY:  
5/19/18

0 1000 2000

SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 46°43'54" E a distance of 2905.61' to the **Point of Beginning** of this easement having coordinates of Northing=380178.68, Easting=843861.50 feet and continuing the following courses;

Thence N 89°27'45" E a distance of 2248.06' to the **Point of Ending** having coordinates of Northing=380199.77, Easting=846109.46 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E bears N 52°58'33" E a distance of 1119.84', covering **2248.06' or 136.25 rods** and having an area of **1.548 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

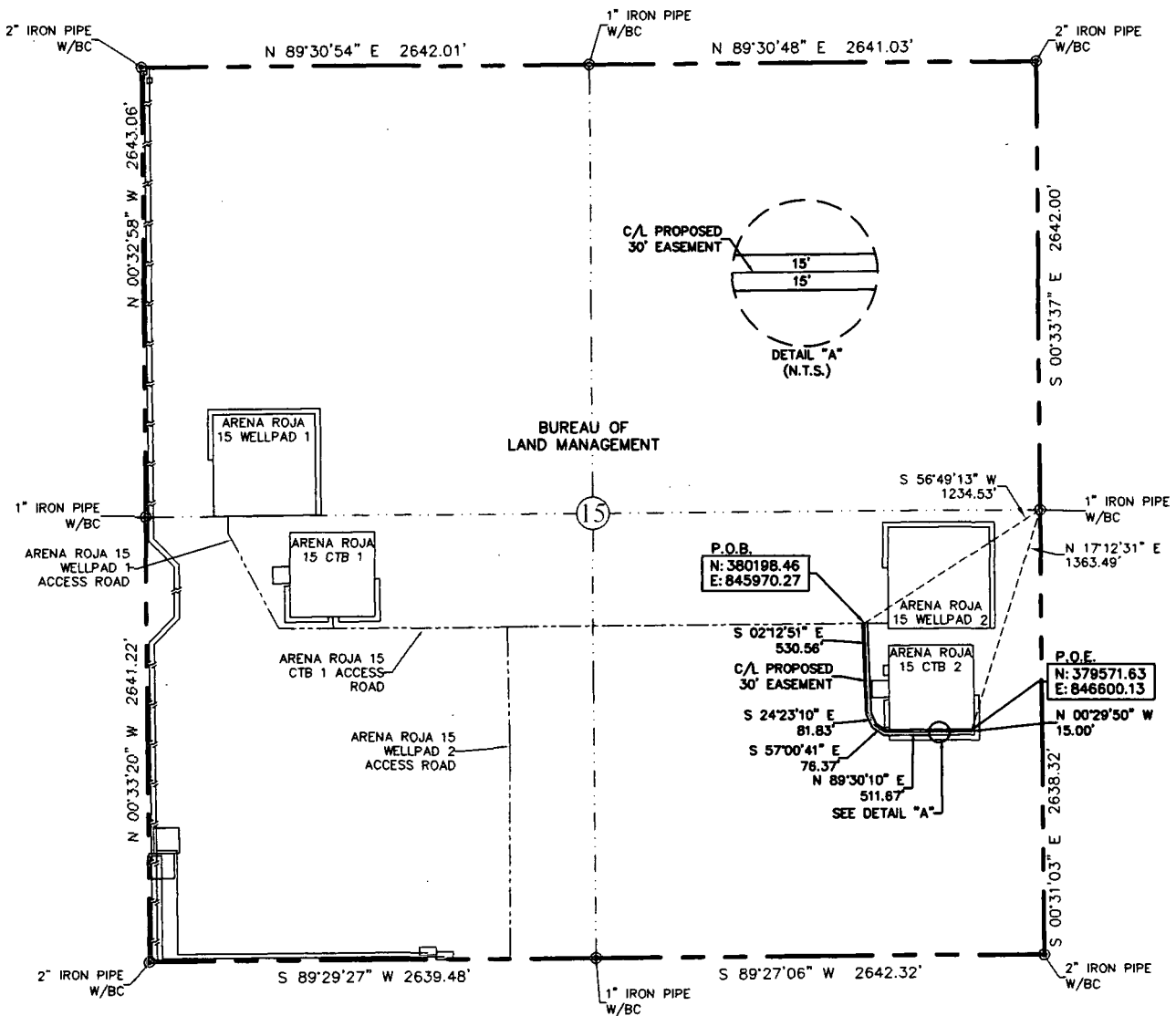
I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404  
Date Signed: 08/06/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 3 of 6  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.837 ACRE(S)  
1215.43 FEET OR 73.66 RODS

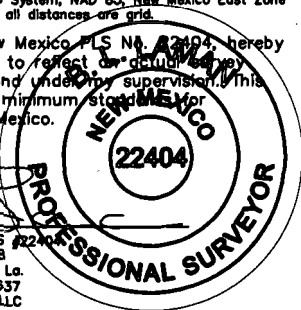
0+00.0 P.O.B./ARENA ROJA 15 WELLPAD 2 ACCESS ROAD  
12+15.4 P.O.E./ARENA ROJA 15 CTB 2

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect a ground survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS No. 22404  
Date Signed: 08-12-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/24/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
CTB 2 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640130R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:

SHEET:  
3 OF 6

0 1000 2000

SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO

ACCESS ROAD PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 56°49'13" W a distance of 1234.53' to the **Point of Beginning** of this easement having coordinates of Northing=380198.46, Easting=845970.27 feet and continuing the following courses;

Thence S 02°12'51" E a distance of 530.56' to an angle point;

Thence S 24°23'10" E a distance of 81.83' to an angle point;

Thence S 57°00'41" E a distance of 76.37' to an angle point;

Thence N 89°30'10" E a distance of 511.67' to an angle point;

Thence N 00°29'50" W a distance of 15.00' to the **Point of Ending** having coordinates of Northing=379571.63, Easting=846600.13 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E bears N 17°12'31" E a distance of 1363.49', covering **1215.43' or 73.66 rods** and having an area of **0.837 acres**.

NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

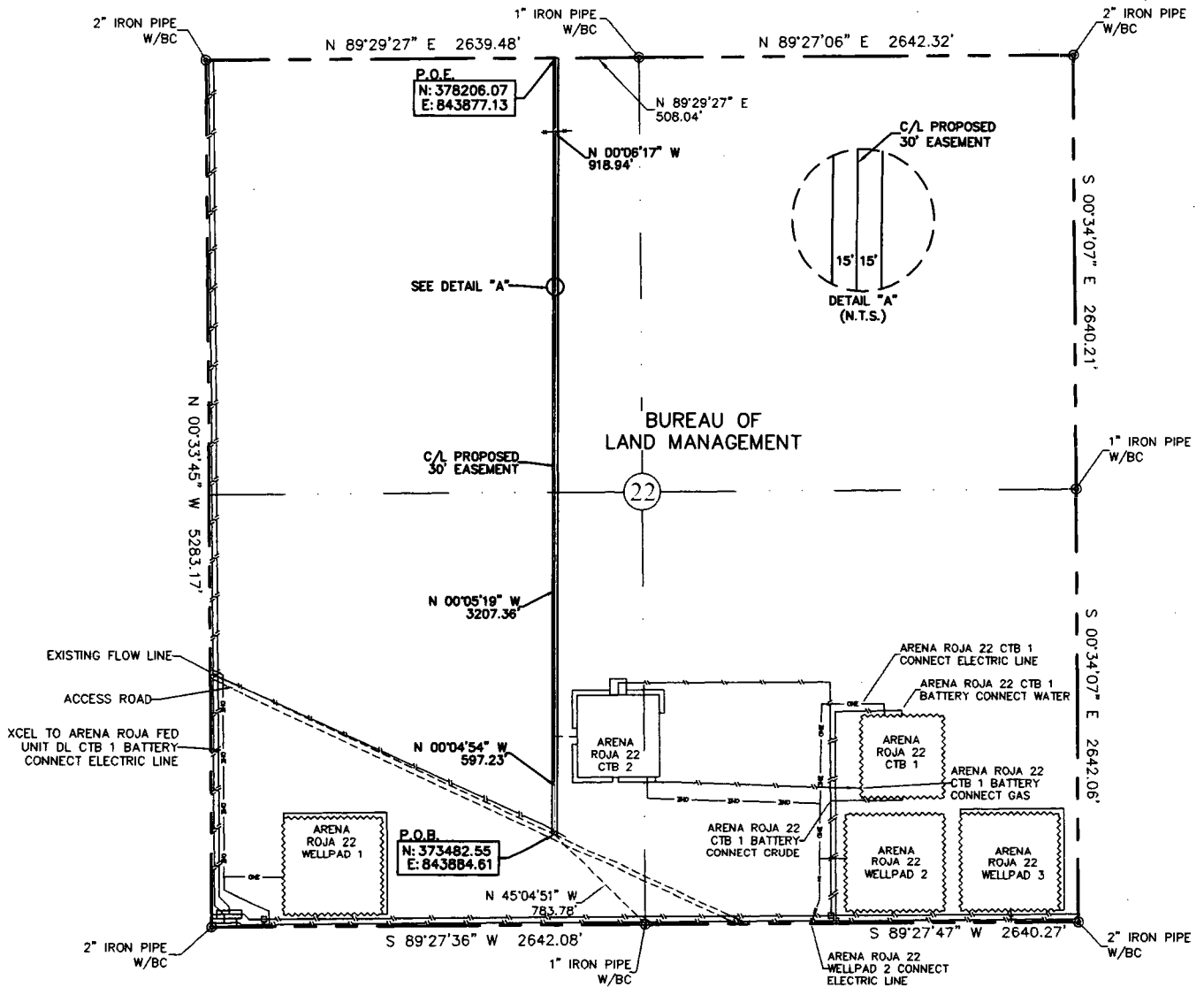
I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404  
Date Signed: 06/12/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 1 of 6  
ACCESS ROAD PLAT  
SECTION 22, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 3.253 ACRE(S)  
4723.53 FEET OR 286.27 RODS

0+00.0 P.O.B./EXISTING ROAD  
42+78.9 FENCE/GATE  
47+23.5 SECTION LINE

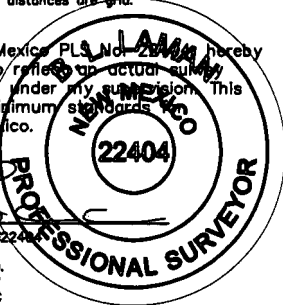
SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico Professional Surveyor No. 22404 hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

0 1000 2000

B.L. Laman  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70837  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 PRIMARY  
ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 22, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640126R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/4/18

DATE OF SURVEY  
5/19/18

**SECTION 22, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 22, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the south quarter corner of Section 22, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 45°04'51" W a distance of 783.78' to the **Point of Beginning** of this easement having coordinates of Northing=373482.55 feet, Easting=843884.61 feet, and continuing the following courses;

Thence N 00°04'54" W a distance of 597.23' to an angle point;


Thence N 00°05'19" W a distance of 3207.36' to an angle point;

Thence N 00°06'17" W a distance of 918.94' to the **Point of Ending** in the north line of Section 22, having coordinates of Northing=378206.07 feet, Easting=843877.13 feet, from said point a 1" iron pipe w/BC for the north quarter corner of Section 22, T26S-R35E bears N 89°29'27" E a distance of 508.04', covering **4723.53' or 286.27 rods** and having an area of **3.253 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

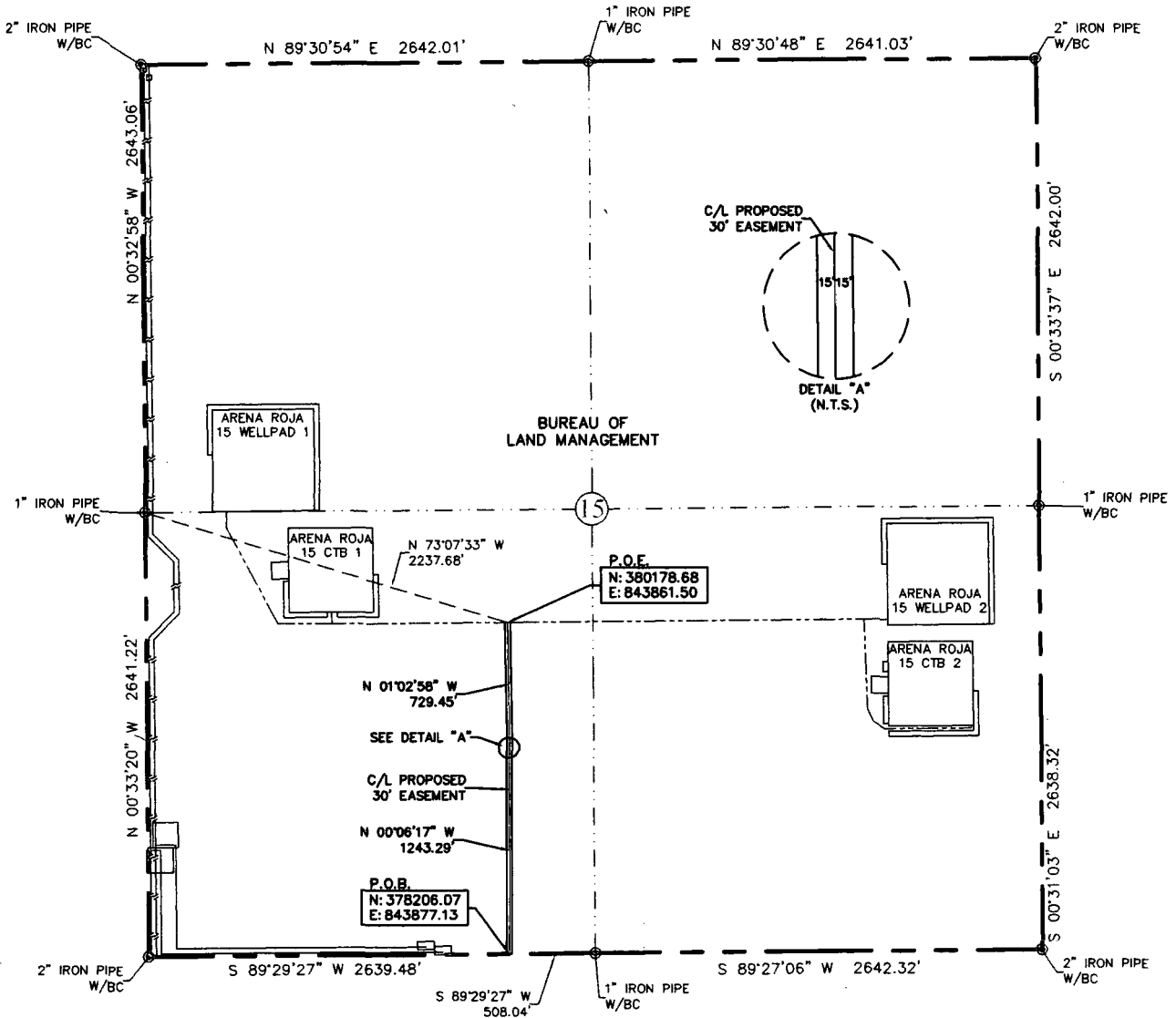
P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



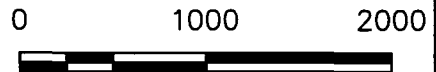
EXHIBIT "A"  
PAGE 3 of 6  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



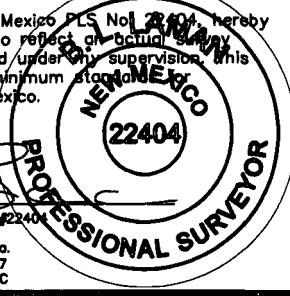
30' EASEMENT AREA = 1.359 ACRE(S)  
1972.74 FEET OR 119.56 RODS

47+23.5 SECTION LINE  
66+96.3 P.O.E./ARENA ROJA 15 WELLPAD 1 & 2 ACCESS ROAD

SEE THE ATTACHED LEGAL DESCRIPTION  
Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.  
I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision, this survey meets the minimum standards for surveying in New Mexico.



B.L. Laman  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



**HORIZON ROW LLC**  
Drawn for:  
**devon**  
Drawn by: CHRIS MAAS  
Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.	LINE NUMBER: 7640128R
ARENA ROJA 15 PRIMARY ACCESS ROAD	WBS NUMBER:
PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 15, T26S-R35E, N.M.P.M.	SCALE: 1" = 1000'
	REVISIONS: 8/4/18 CMAAS
	DATE OF SURVEY 5/19/18



**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the south quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 89°29'27" W a distance of 508.04' to the **Point of Beginning** of this easement in the south line of Section 15, having coordinates of Northing=378206.07, Easting=843877.13 feet and continuing the following courses;

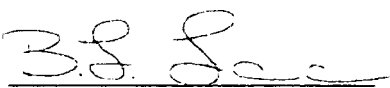
Thence N 00°06'17" W a distance of 1243.29' to an angle point;

Thence N 01°02'58" W a distance of 729.45' to the **Point of Ending** having coordinates of Northing=380178.68, Easting=843861.50 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears N 73°07'33" W a distance of 2237.68', covering **1972.74' or 119.56 rods** and having an area of **1.359 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

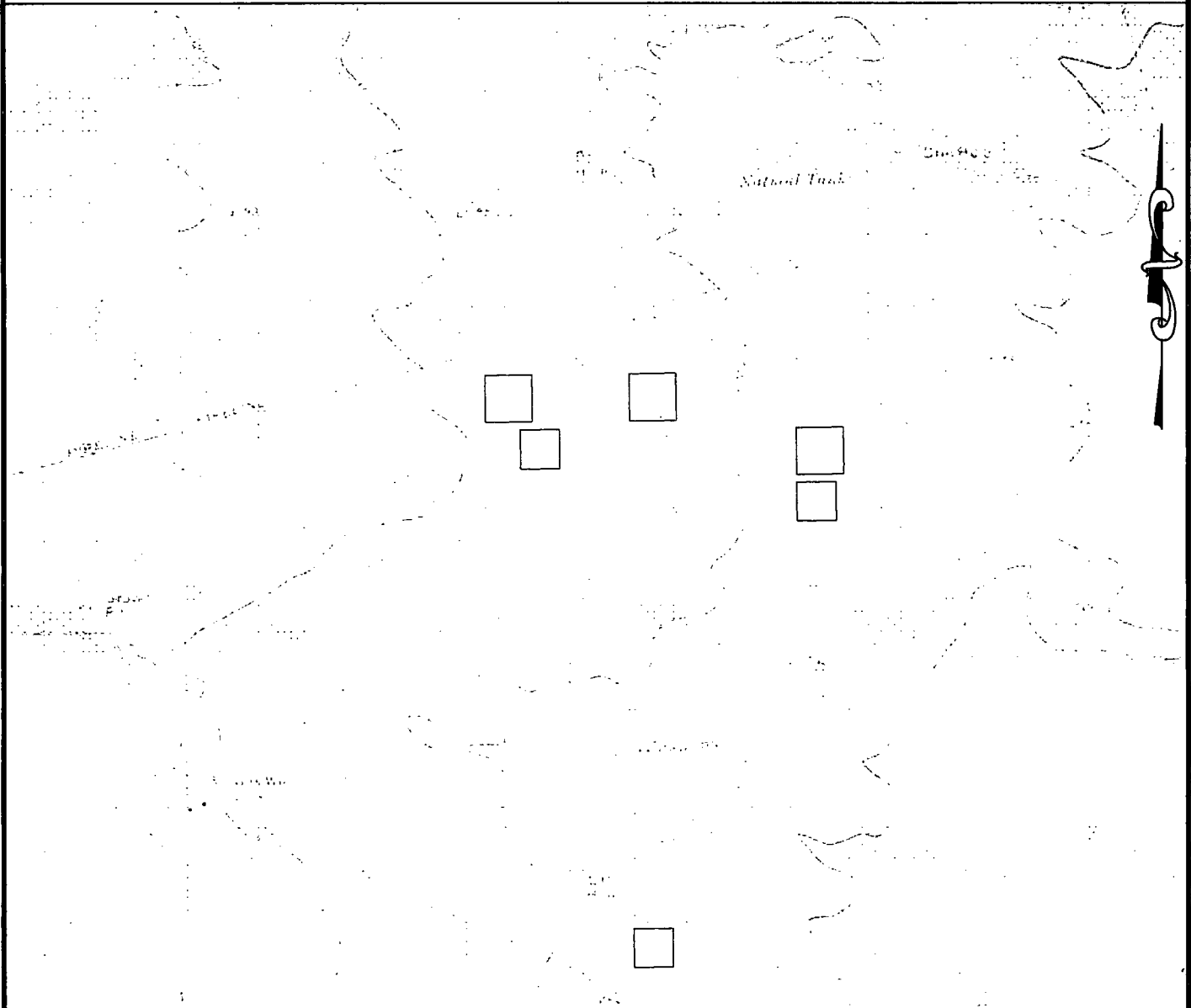
P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC

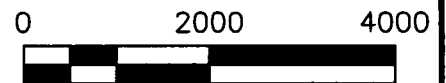


EXHIBIT "A"  
PAGE 5 of 6



QUAD MAP

SECTION 22, T26S-R35E, N.M.P.M.;  
SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO



<b>HORIZON ROW LLC</b>	
DEVON ENERGY PRODUCTION CO., L.P.	
PROPOSED 30' EASEMENT	
Drawn by: CHRIS MAAS	Date: 08/04/2018

Drawn for:

**devon**

LINE NUMBER: 7840126R
WBS NUMBER:
SCALE: 1" = 2000'
REVISIONS:
DATE OF SURVEY: 05/19/18

EXHIBIT "A"  
PAGE 6 of 6

9

10

11

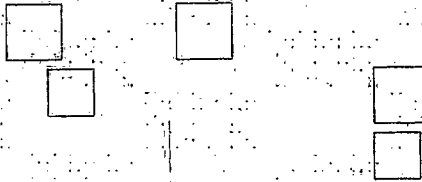


BUREAU OF LAND  
MANAGEMENT

15

16

14



ARENA ROJA 15  
PRIMARY ACCESS ROAD

22

BUREAU OF LAND  
MANAGEMENT

AERIAL MAP

SECTION 22, T26S-R35E, N.M.P.M.;  
SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

0 2000 4000



**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
CHRIS MAAS

Date: 08/04/2018

Drawn for:



LINE NUMBER:  
7640126R

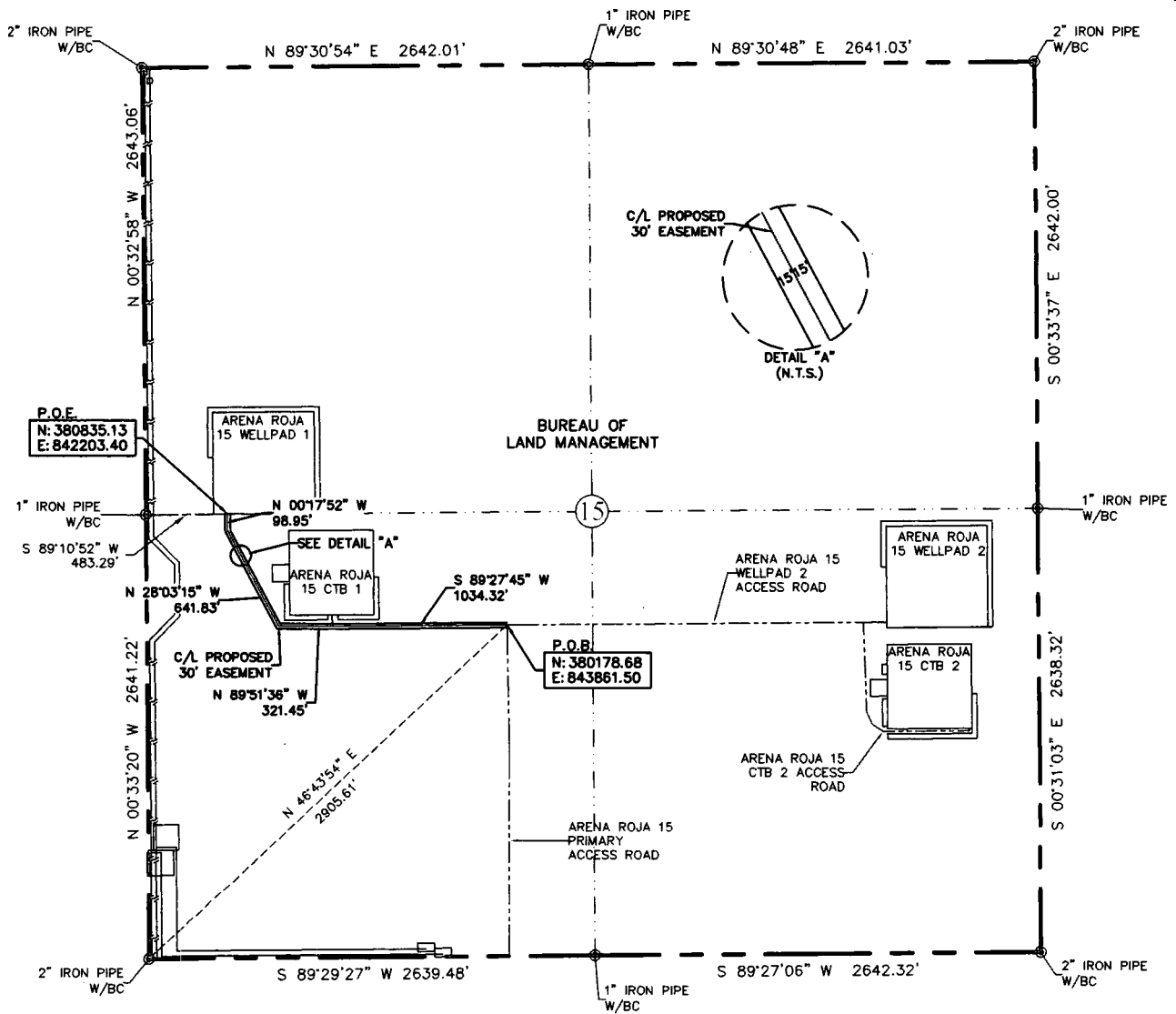
WBS NUMBER:

SCALE:  
1" = 2000'

REVISIONS:

DATE OF SURVEY:  
05/19/18

EXHIBIT "A"  
PAGE 9 of 12  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 1.444 ACRES(S)  
2096.55 FEET OR 127.06 RODS

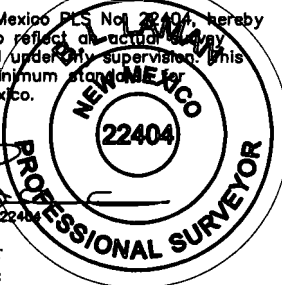
0+00.0 P.O.B./ARENA ROJA 15 PRIMARY ACCESS ROAD  
7+15.3 P.O.E./ARENA ROJA 15 CTB 1 ELECTRIC LINE  
10+34.3 ARENA ROJA 15 CTB 1 ACCESS ROAD  
20+96.5 P.O.E./ARENA ROJA 15 WELLPAD 1

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS #22404  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/22/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
WELLPAD 1 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640127R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/3/18 CMAAS  
DATE OF SURVEY:  
5/19/2018

0 1000 2000

**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 46°43'54" E a distance of 2905.61' to the **Point of Beginning** of this easement having coordinates of Northing=380178.68, Easting=843861.50 feet and continuing the following courses;

Thence S 89°27'45" W a distance of 1034.32' to an angle point;

Thence N 89°51'36" W a distance of 321.45' to an angle point;

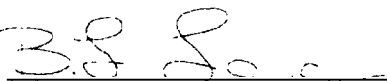
Thence N 28°03'15" W a distance of 641.83' to an angle point;

Thence N 00°17'52" W a distance of 98.95' to the **Point of Ending** having coordinates of Northing=380835.13, Easting=842203.40 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears S 89°10'52" W a distance of 483.29', covering **2096.55' or 127.06 rods** and having an area of **1.444 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

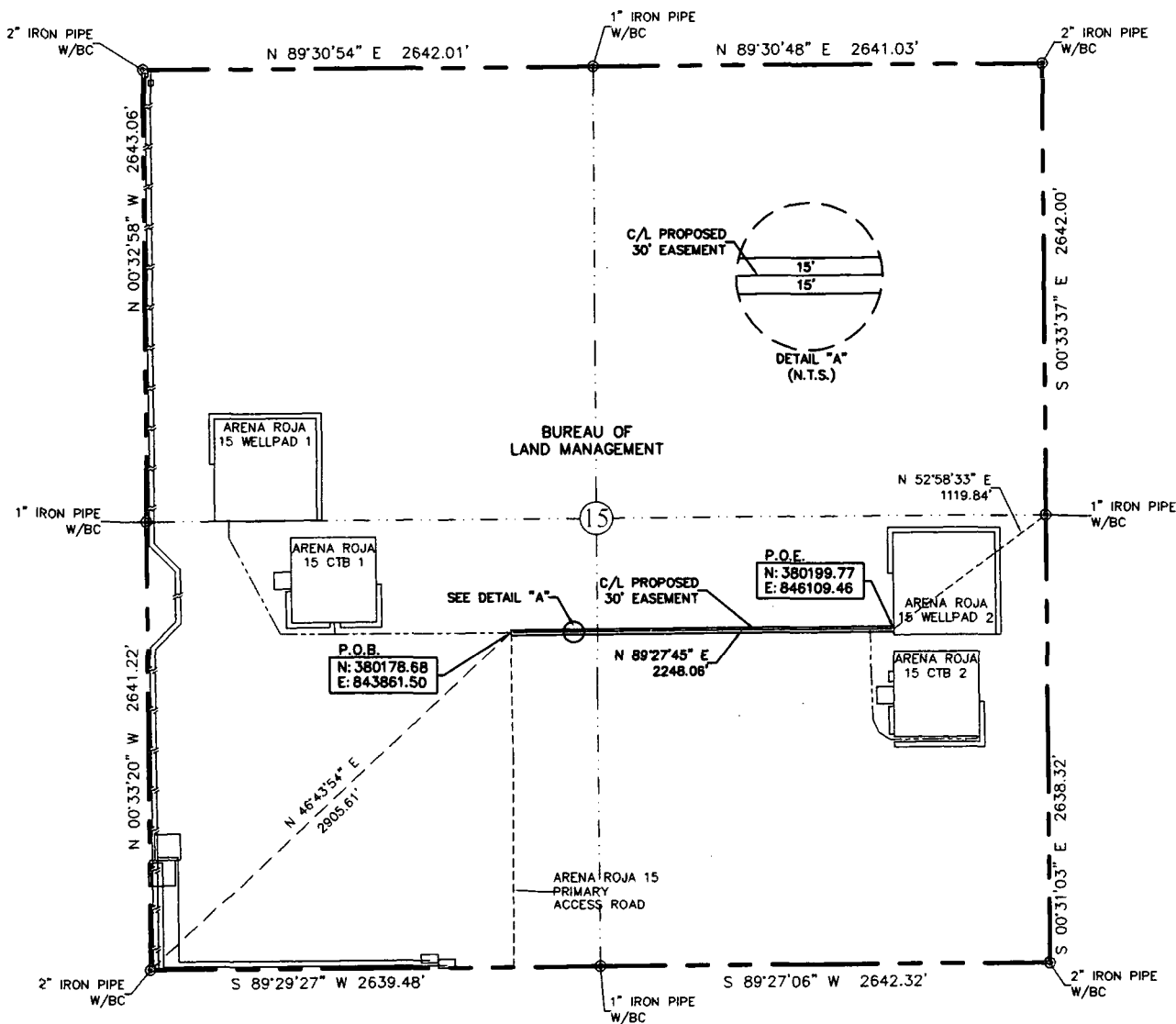
P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 9 of 12  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



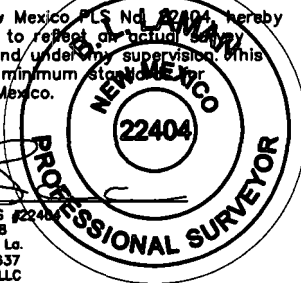
30' EASEMENT AREA = 1.548 ACRE(S)  
2248.06 FEET OR 136.25 RODS

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS #22404  
Date Signed: 08-06-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
WELLPAD 2 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640128R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/3/18 CMAAS

DATE OF SURVEY:  
5/19/18

0 1000 2000



SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO

ACCESS ROAD PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 46°43'54" E a distance of 2905.61' to the **Point of Beginning** of this easement having coordinates of Northing=380178.68, Easting=843861.50 feet and continuing the following courses:

Thence N 89°27'45" E a distance of 2248.06' to the **Point of Ending** having coordinates of Northing=380199.77, Easting=846109.46 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E bears N 52°58'33" E a distance of 1119.84', covering **2248.06' or 136.25 rods** and having an area of **1.548 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

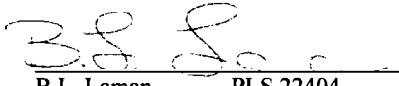
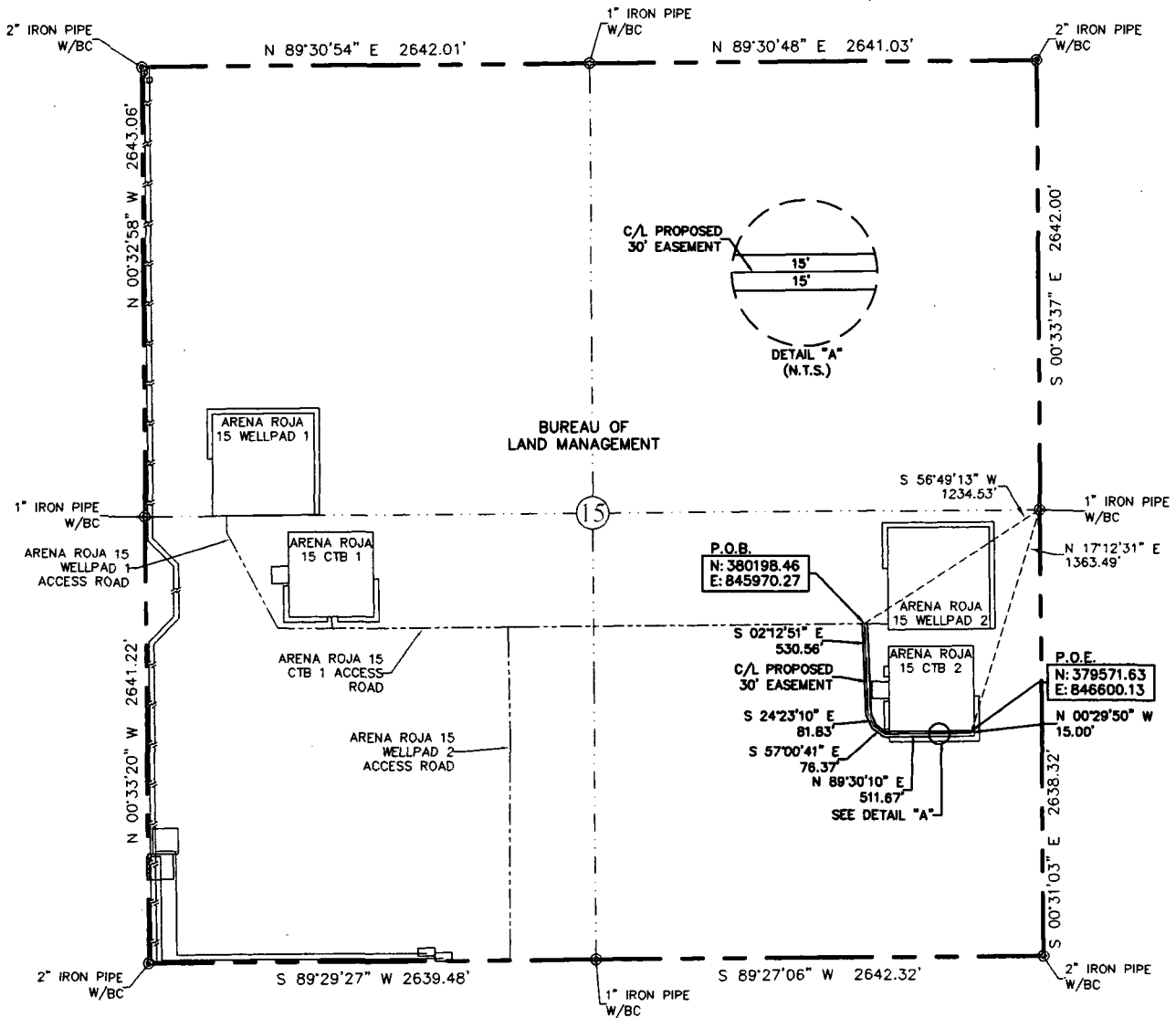
  
B.L. Laman PLS 22404  
Date Signed: 08/06/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 3 of 6  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.837 ACRE(S)  
1215.43 FEET OR 73.66 RODS

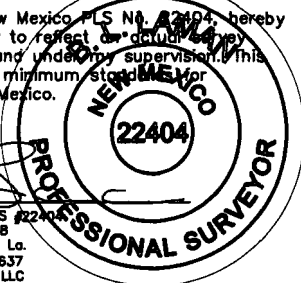
0+00.0 P.O.B./ARENA ROJA 15 WELLPAD 2 ACCESS ROAD  
12+15.4 P.O.E./ARENA ROJA 15 CTB 2

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
Date Signed: 06-12-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/24/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
CTB 2 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640130R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:

SHEET:  
3 OF 6

0 1000 2000





**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 56°49'13" W a distance of 1234.53' to the **Point of Beginning** of this easement having coordinates of Northing=380198.46, Easting=845970.27 feet and continuing the following courses;

Thence S 02°12'51" E a distance of 530.56' to an angle point;

Thence S 24°23'10" E a distance of 81.83' to an angle point;

Thence S 57°00'41" E a distance of 76.37' to an angle point;

Thence N 89°30'10" E a distance of 511.67' to an angle point;

Thence N 00°29'50" W a distance of 15.00' to the **Point of Ending** having coordinates of Northing=379571.63, Easting=846600.13 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E bears N 17°12'31" E a distance of 1363.49', covering **1215.43' or 73.66 rods** and having an area of **0.837 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 06/12/2018

Horizon Row, LLC

P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



PLAT

One Mile Radius Map

devon

This map is for illustrative purposes only and is neither a legally recorded map nor a survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

USA Contiguous Equidistant Conic  
Datum: North American 1983  
Created by: FME Server  
Map is current as of 8/20/2018



0 0.3 Miles  
1 inch = 0.39 miles

**ARENA ROJA FED UNIT 15-10 005H  
WA017392974**

**TATANKA FEDERAL 001H**

Nearest wellbore to SHL: 5883 ft.

**HENNIN FEDERAL 024H**

Nearest wellbore to BHL: 1385 ft.

- Unknown SHL
- Active SHL
- Inactive SHL
- × BHL

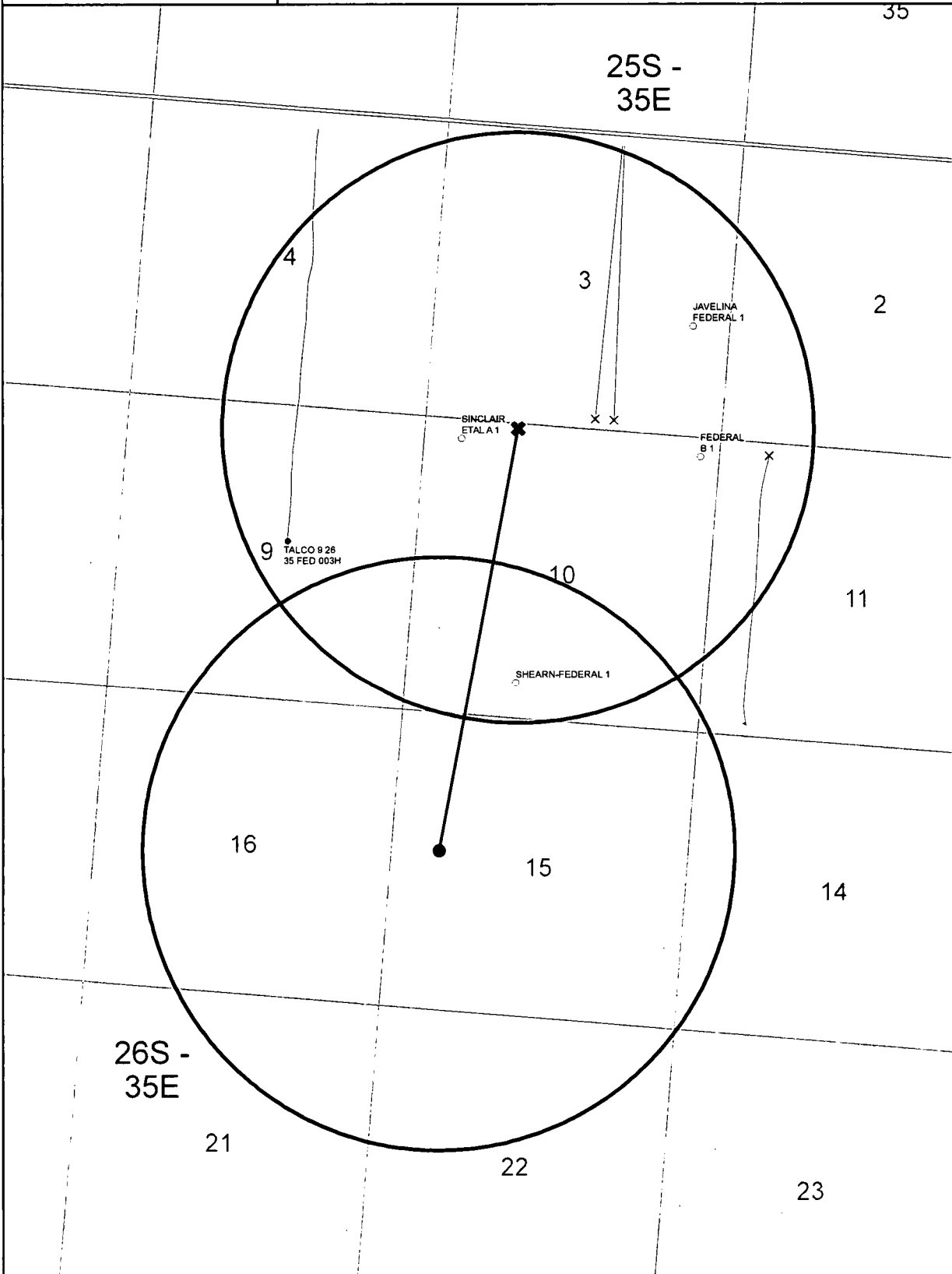
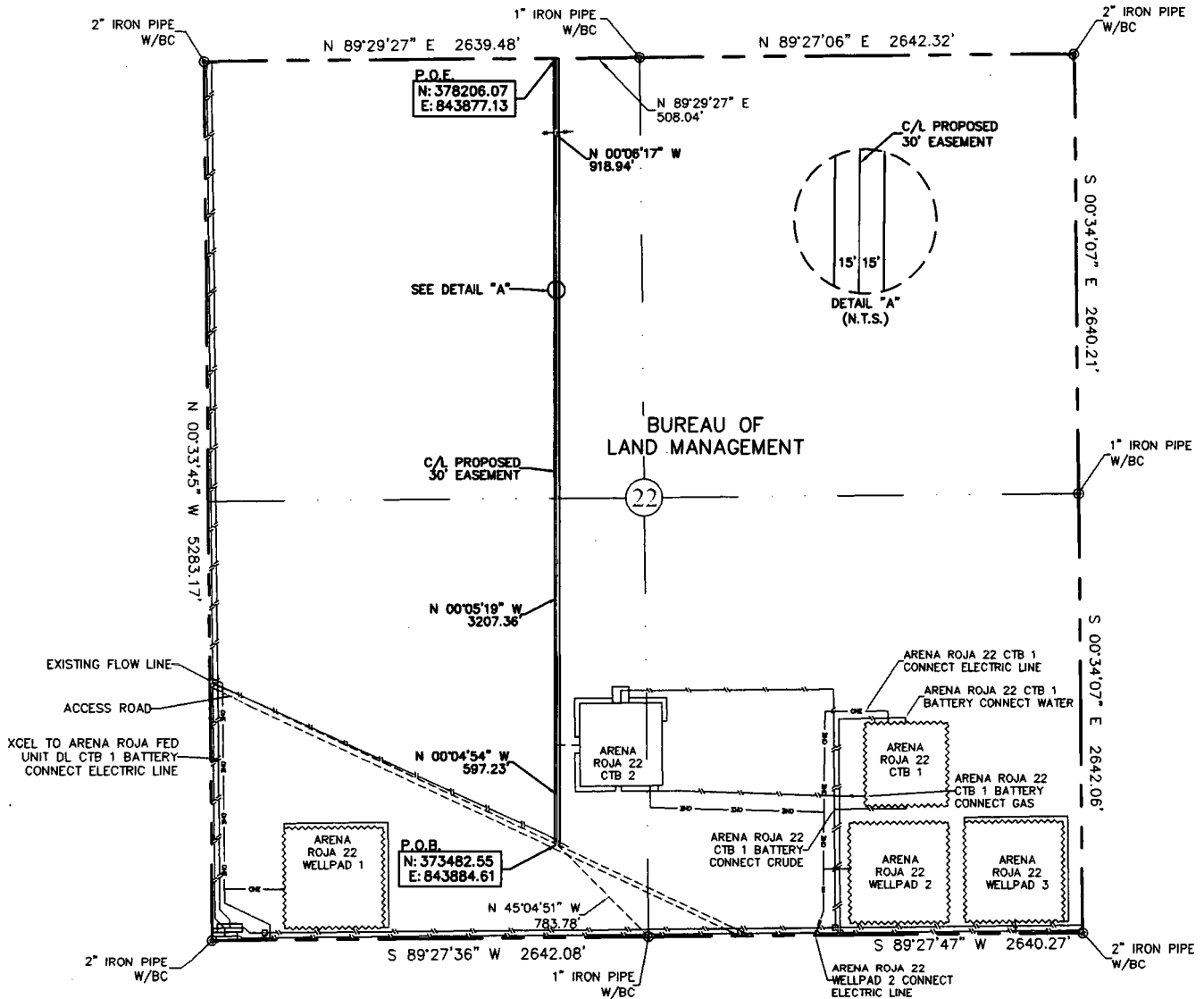


EXHIBIT "A"  
PAGE 1 of 6  
ACCESS ROAD PLAT  
SECTION 22, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 3.253 ACRE(S)  
4723.53 FEET OR 286.27 RODS

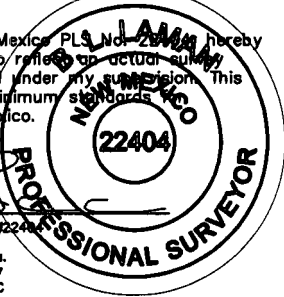
0+00.0 P.O.B./EXISTING ROAD  
42+78.9 FENCE/GATE  
47+23.5 SECTION LINE

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico Professional Surveyor No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



0 1000 2000



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 PRIMARY  
ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 22, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7840126R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/4/18

DATE OF SURVEY  
5/19/18

**SECTION 22, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 22, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the south quarter corner of Section 22, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 45°04'51" W a distance of 783.78' to the **Point of Beginning** of this easement having coordinates of Northing=373482.55 feet, Easting=843884.61 feet, and continuing the following courses;

Thence N 00°04'54" W a distance of 597.23' to an angle point;

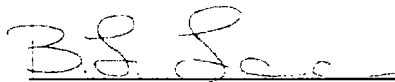
Thence N 00°05'19" W a distance of 3207.36' to an angle point;

Thence N 00°06'17" W a distance of 918.94' to the **Point of Ending** in the north line of Section 22, having coordinates of Northing=378206.07 feet, Easting=843877.13 feet, from said point a 1" iron pipe w/BC for the north quarter corner of Section 22, T26S-R35E bears N 89°29'27" E a distance of 508.04', covering **4723.53' or 286.27 rods** and having an area of **3.253 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

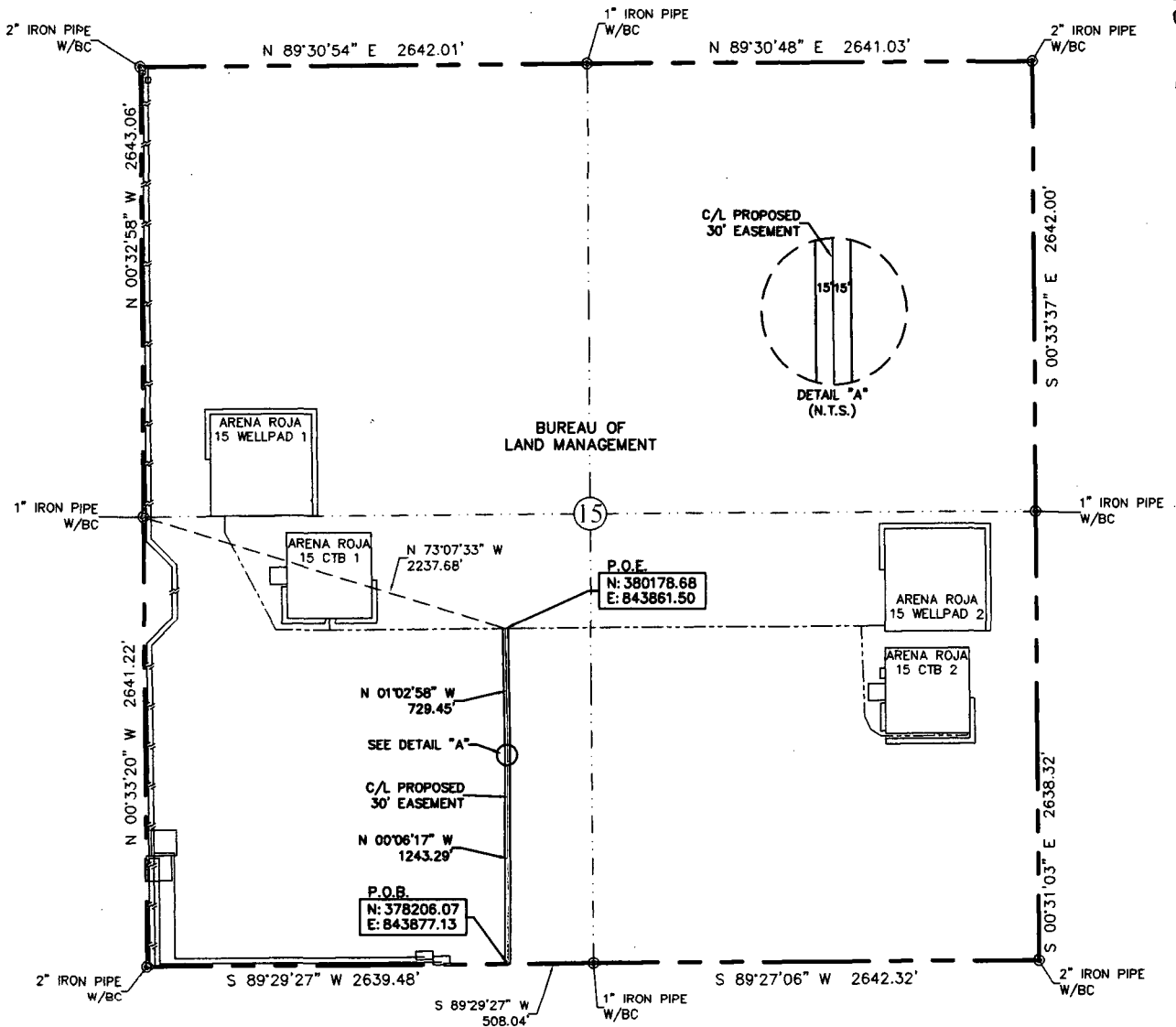
P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 3 of 6  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 1.359 ACRE(S)  
1972.74 FEET OR 119.56 RODS

47+23.5 SECTION LINE

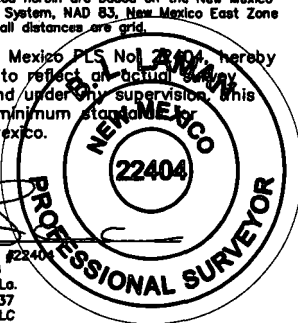
66+96.3 P.O.E./ARENA ROJA 15 WELLPAD 1 & 2 ACCESS ROAD

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS #22404  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 PRIMARY  
ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640128R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/4/18 CMAAS  
DATE OF SURVEY  
5/18/18

0 1000 2000

**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the south quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 89°29'27" W a distance of 508.04' to the **Point of Beginning** of this easement in the south line of Section 15, having coordinates of Northing=378206.07, Easting=843877.13 feet and continuing the following courses;

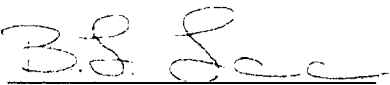
Thence N 00°06'17" W a distance of 1243.29' to an angle point;

Thence N 01°02'58" W a distance of 729.45' to the **Point of Ending** having coordinates of Northing=380178.68, Easting=843861.50 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears N 73°07'33" W a distance of 2237.68', covering **1972.74' or 119.56 rods** and having an area of **1.359 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 08/05/2018

Horizon Row, LLC

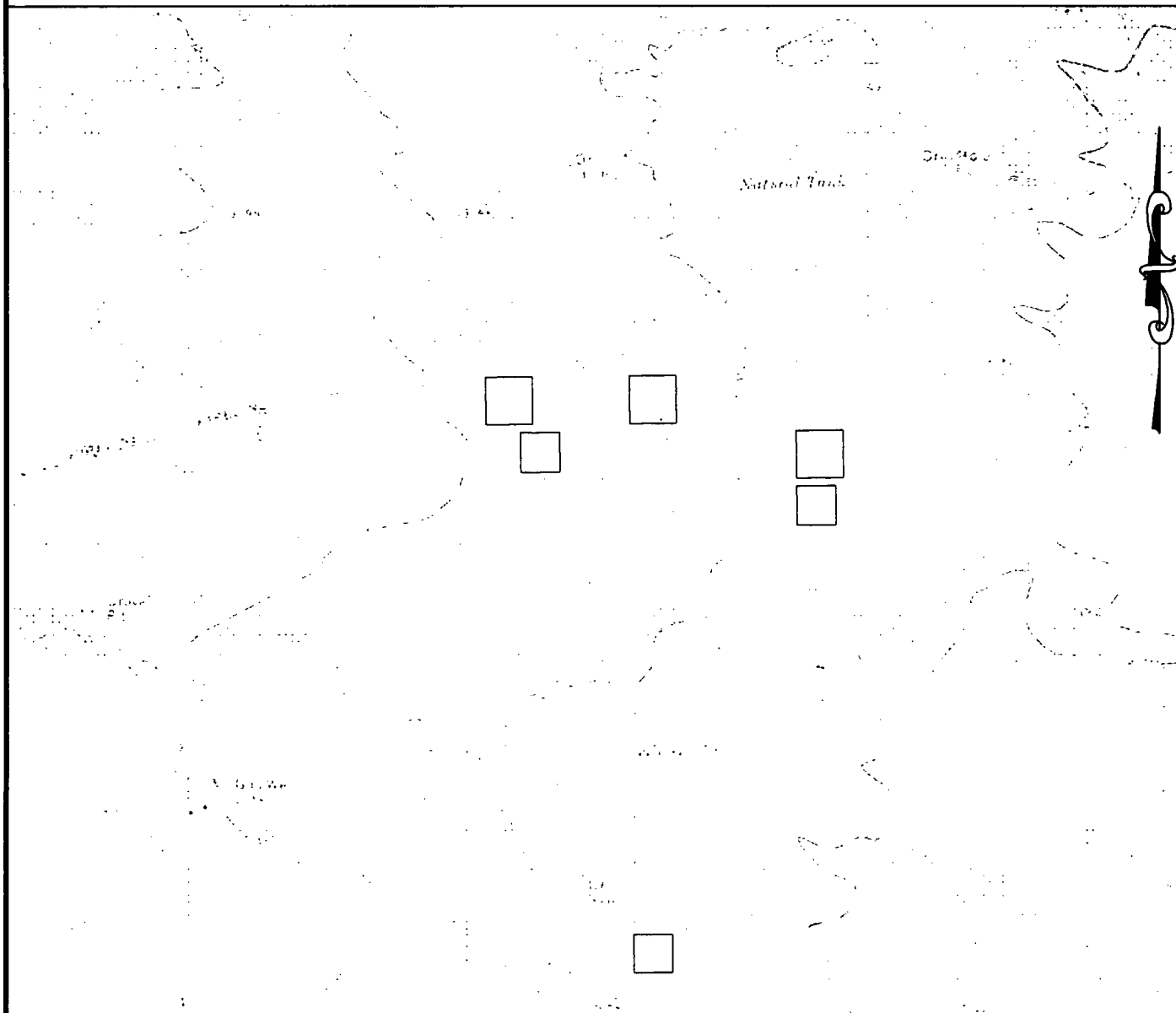
P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC

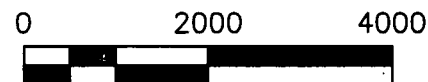


EXHIBIT "A"  
PAGE 5 of 6



QUAD MAP

SECTION 22, T26S-R35E, N.M.P.M.;  
SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO



**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
CHRIS MAAS

Date: 08/04/2018

Drawn for:



LINE NUMBER:  
7840126R

WBS NUMBER:

SCALE:  
1" = 2000'

REVISIONS:

DATE OF SURVEY:  
05/18/18

EXHIBIT "A"  
PAGE 6 of 6

9

10

11

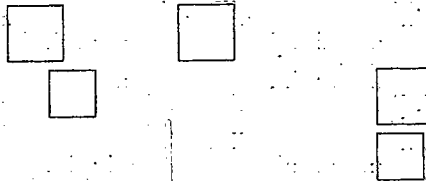


BUREAU OF LAND  
MANAGEMENT

15

16

14



ARENA ROW IS  
PRIVATE ACCESS ROAD

22

BUREAU OF LAND  
MANAGEMENT



AERIAL MAP

SECTION 22, T26S-R35E, N.M.P.M.;  
SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO



**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
CHRIS MAAS

Date: 08/04/2018

Drawn for:



LINE NUMBER:  
7640126R

WBS NUMBER:

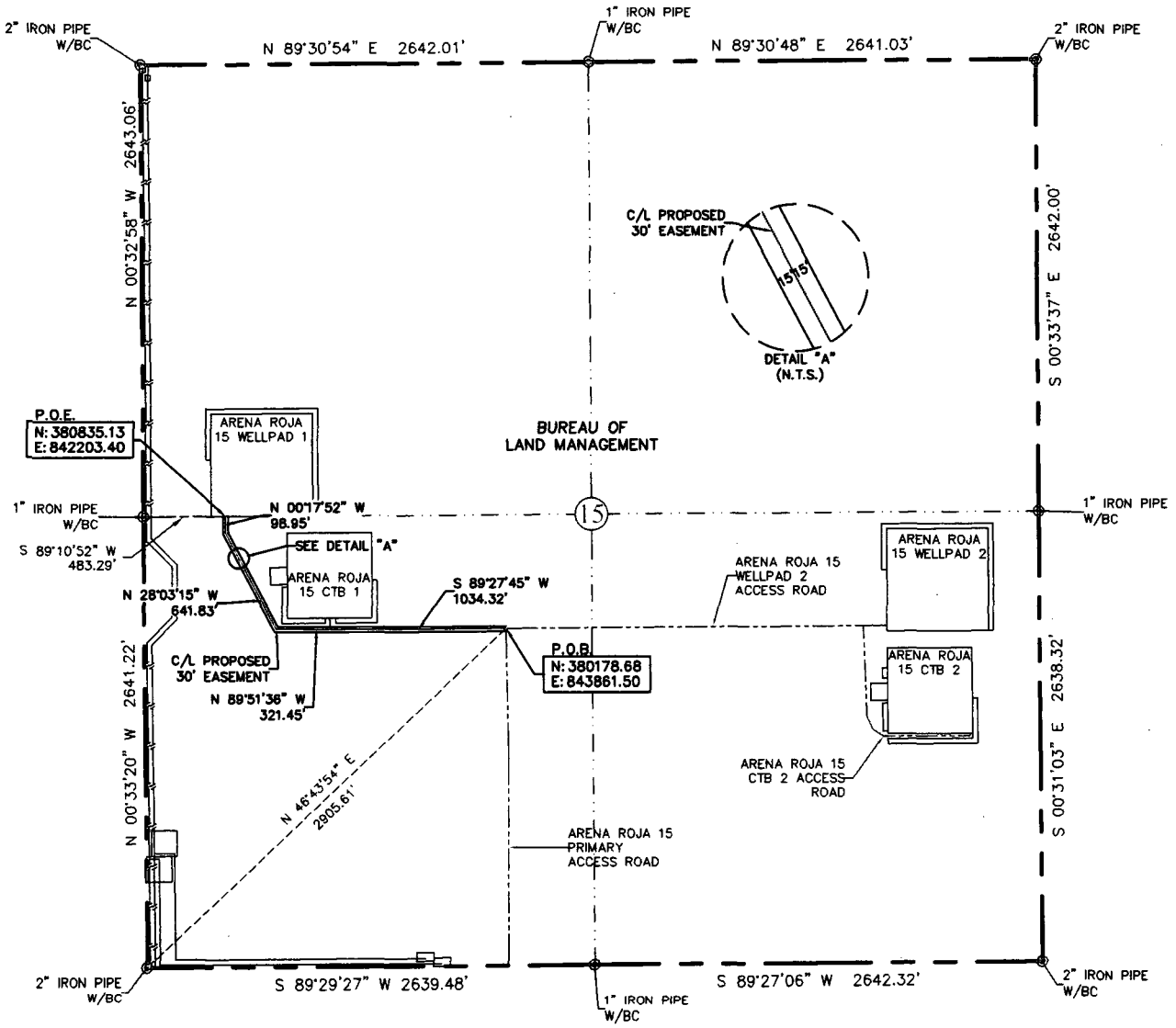
SCALE:  
1" = 2000'

REVISIONS:

DATE OF SURVEY:  
05/19/18



EXHIBIT "A"  
PAGE 9 of 12  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 1.444 ACRE(S)  
2096.55 FEET OR 127.06 RODS

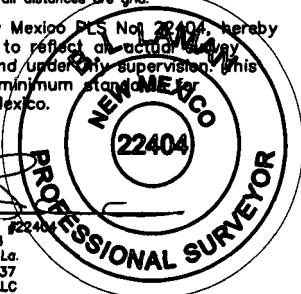
0+00.0 P.O.B./ARENA ROJA 15 PRIMARY ACCESS ROAD  
7+15.3 P.O.E./ARENA ROJA 15 CTB 1 ELECTRIC LINE  
10+34.3 ARENA ROJA 15 CTB 1 ACCESS ROAD  
20+96.5 P.O.E./ARENA ROJA 15 WELLPAD 1

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS 22404  
Date Signed: 08-05-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



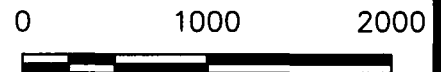
**HORIZON ROW LLC**

Drawn for:

**devon**

Drawn by: CHRIS MAAS Date: 05/22/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.	LINE NUMBER: 7640127R
ARENA ROJA 15 WELLPAD 1 ACCESS ROAD	WBS NUMBER:
PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 15, T26S-R35E, N.M.P.M.	SCALE: 1" = 1000'
	REVISIONS: 8/3/18 CMAAS
	DATE OF SURVEY: 5/18/2018



**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the northwest quarter (NW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 46°43'54" E a distance of 2905.61' to the **Point of Beginning** of this easement having coordinates of Northing=380178.68, Easting=843861.50 feet and continuing the following courses;

Thence S 89°27'45" W a distance of 1034.32' to an angle point;

Thence N 89°51'36" W a distance of 321.45' to an angle point;

Thence N 28°03'15" W a distance of 641.83' to an angle point;

Thence N 00°17'52" W a distance of 98.95' to the **Point of Ending** having coordinates of Northing=380835.13, Easting=842203.40 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears S 89°10'52" W a distance of 483.29', covering **2096.55' or 127.06 rods** and having an area of **1.444 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.


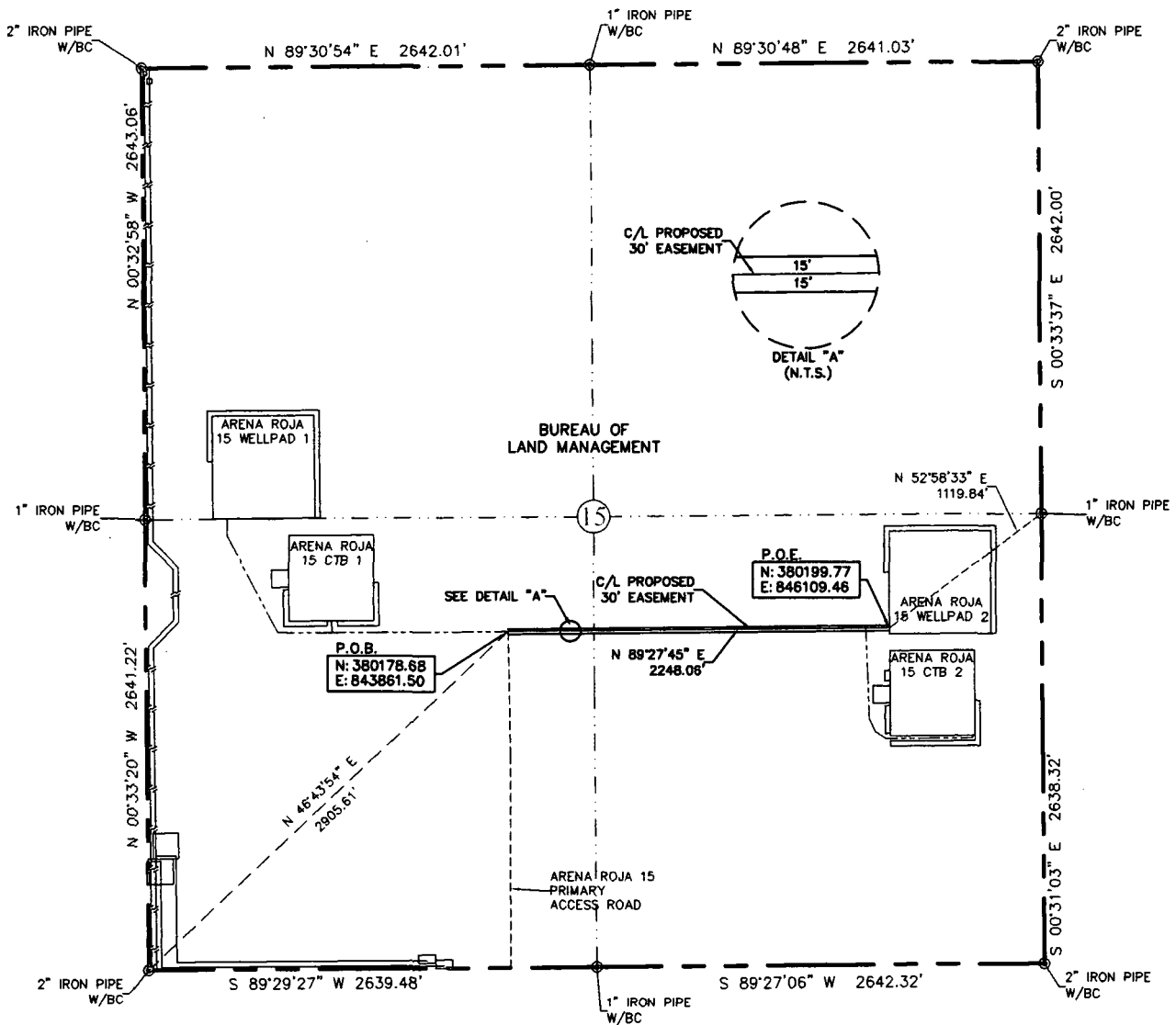
  
B.L. Laman                      PLS 22404  
Date Signed: 08/05/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045    70637  
Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 9 of 12  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



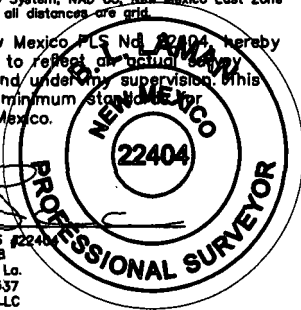
30' EASEMENT AREA = 1.548 ACRE(S)  
2248.06 FEET OR 136.25 RODS

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico, PLS No. 22404, hereby certify this survey to represent an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman PLS No. 22404  
Date Signed: 08-06-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
WELLPAD 2 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7840128R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:  
8/3/18 CMAAS  
DATE OF SURVEY:  
5/19/18

0 1000 2000



SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO

ACCESS ROAD PLAT

LEGAL DESCRIPTION

FOR

DEVON ENERGY PRODUCTION COMPANY, L.P.

BUREAU OF LAND MANAGEMENT

30' EASEMENT DESCRIPTION:

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 46°43'54" E a distance of 2905.61' to the **Point of Beginning** of this easement having coordinates of Northing=380178.68, Easting=843861.50 feet and continuing the following courses:

Thence N 89°27'45" E a distance of 2248.06' to the **Point of Ending** having coordinates of Northing=380199.77, Easting=846109.46 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E bears N 52°58'33" E a distance of 1119.84', covering **2248.06' or 136.25 rods** and having an area of **1.548 acres**.

NOTES:

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.


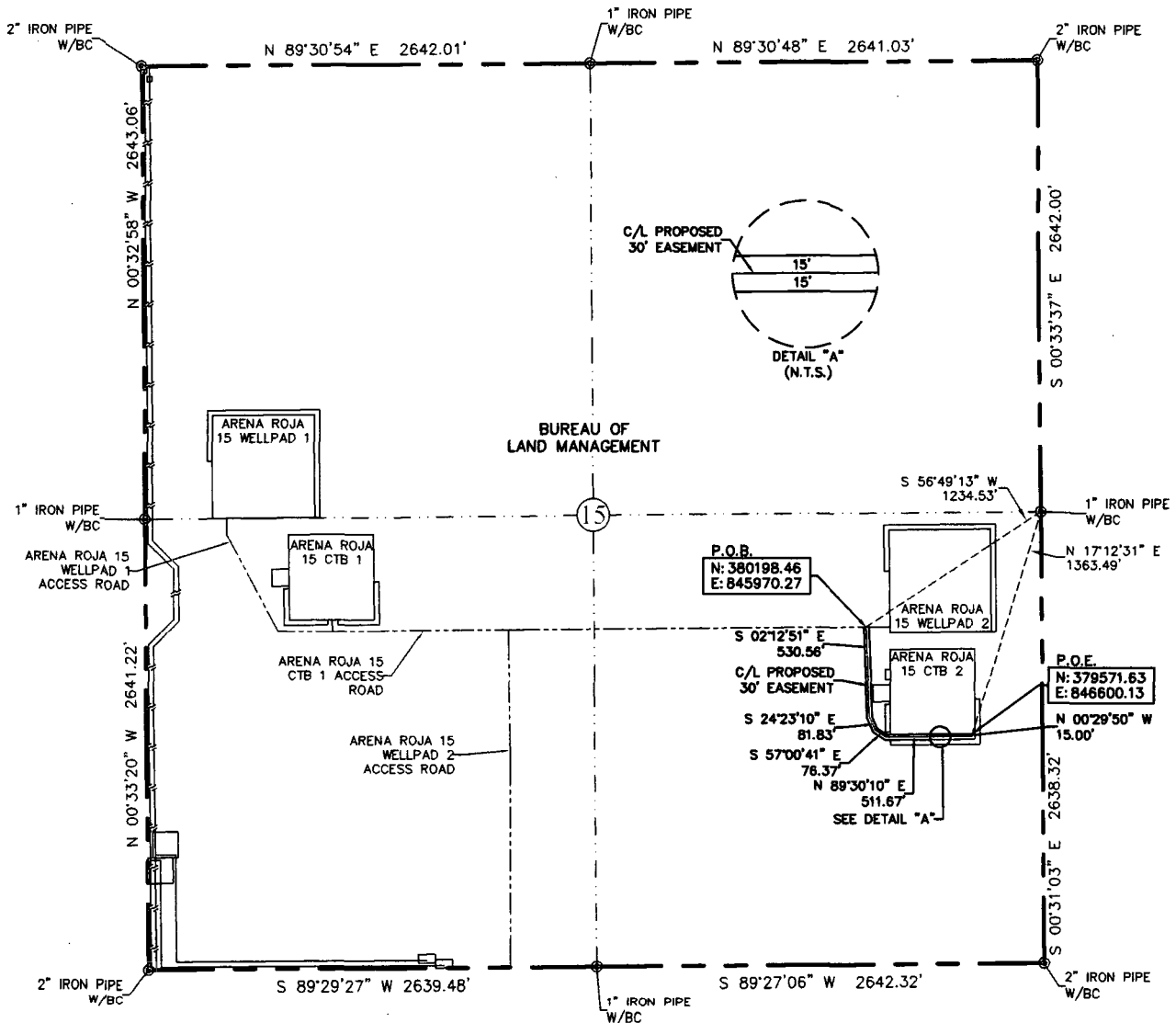
  
B.L. Laman      PLS 22404  
Date Signed: 08/06/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045    70637  
Employee of Horizon Row, LLC



EXHIBIT "A"  
PAGE 3 of 6  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.837 ACRE(S)  
1215.43 FEET OR 73.66 RODS

0+00.0 P.O.B./ARENA ROJA 15 WELLPAD 2 ACCESS ROAD  
12+15.4 P.O.E./ARENA ROJA 15 CTB 2

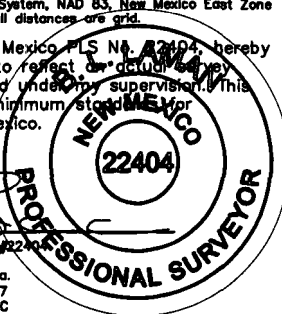
SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

0 1000 2000

B.L. Laman  
Date Signed: 06-12-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/24/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
CTB 2 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640130R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:

SHEET:  
3 OF 6

**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 56°49'13" W a distance of 1234.53' to the **Point of Beginning** of this easement having coordinates of Northing=380198.46, Easting=845970.27 feet and continuing the following courses;

Thence S 02°12'51" E a distance of 530.56' to an angle point;

Thence S 24°23'10" E a distance of 81.83' to an angle point;

Thence S 57°00'41" E a distance of 76.37' to an angle point;

Thence N 89°30'10" E a distance of 511.67' to an angle point;

Thence N 00°29'50" W a distance of 15.00' to the **Point of Ending** having coordinates of Northing=379571.63, Easting=846600.13 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E bears N 17°12'31" E a distance of 1363.49', covering **1215.43' or 73.66 rods** and having an area of **0.837 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman      PLS 22404  
Date Signed: 06/12/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045    70637  
Employee of Horizon Row, LLC



# ARENA ROJA 15 CTB 2

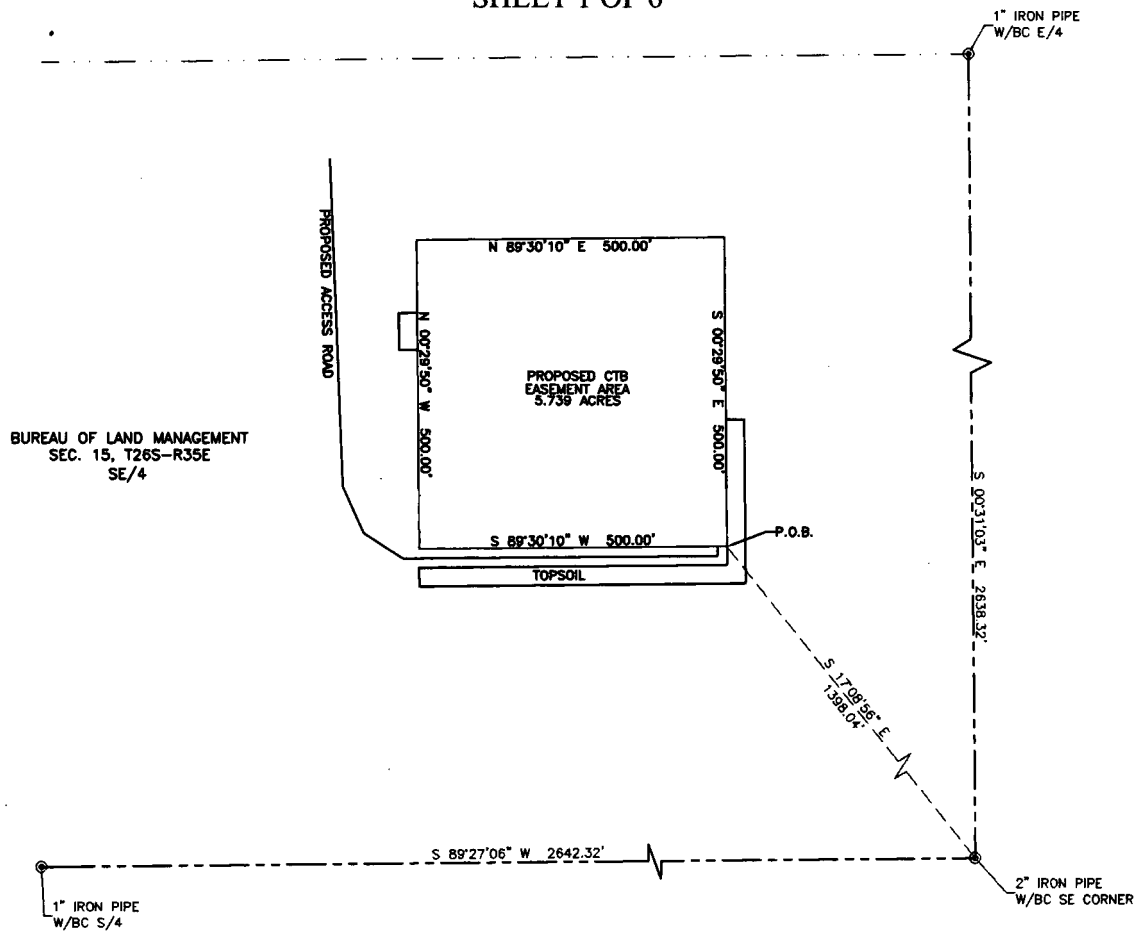
## DEVON ENERGY PRODUCTION COMPANY, L.P.

### IN THE SOUTHEAST QUARTER (SE/4)

#### SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.

#### LEA COUNTY, NEW MEXICO

#### SHEET 1 OF 6



#### DESCRIPTION

BEING A SURFACE SITE EASEMENT LYING IN THE SOUTHEAST QUARTER (SE/4) OF SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST N.M.P.M., LEA COUNTY, NEW MEXICO.

BEGINNING AT THE SOUTHEAST CORNER OF SAID SITE EASEMENT, WHERE A 2" IRON PIPE W/BC FOR THE SOUTHEAST CORNER OF SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST N.M.P.M. BEARS S 17°08'56" E, A DISTANCE 1398.04';

THENCE S 89°30'10" W, A DISTANCE 500.00 FEET TO THE SOUTHWEST CORNER OF THIS EASEMENT;  
 THENCE N 00°29'50" W, A DISTANCE 500.00 FEET TO THE NORTHWEST CORNER OF THIS EASEMENT;  
 THENCE N 89°30'10" E, A DISTANCE 500.00 FEET TO THE NORTHEAST CORNER OF THIS EASEMENT;  
 THENCE S 00°29'50" E, A DISTANCE 500.00 FEET TO THE SOUTHEAST CORNER OF THIS EASEMENT,  
 TO THE POINT OF BEGINNING; CONTAINING 5.739 ACRES.

#### DIRECTIONS TO LOCATION

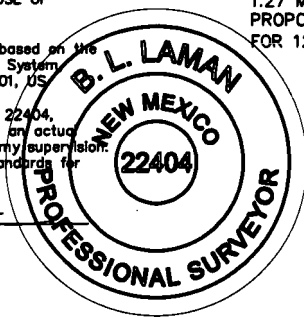
FROM THE INTERSECTION OF J-3 (FRYING PAN ROAD) AND ANTHONY ROAD, HEAD SOUTH ON FRYING PAN ROAD FOR 2.93 MILES. TURN RIGHT ONTO BECKHAM ROAD AND HEAD WEST FOR 5.37 MILES. TURN RIGHT AND CONTINUE NORTH ON AN EXISTING LEASE ROAD FOR 0.97 MILES. TURN RIGHT ONTO AN EXISTING ACCESS ROAD AND HEAD NORTH FOR 1.27 MILES. TURN RIGHT AND HEAD EAST OFF OF THE EXISTING ACCESS ROAD ON THE PROPOSED ACCESS ROAD FOR 0.40 MILES. TURN RIGHT AND HEAD SOUTH AND THEN EAST FOR 1213' DOWN TO THE SOUTHEAST CORNER OF THE PROPOSED ARENA ROJA 15 CTB 2.

#### GENERAL NOTES:

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A CENTRAL BATTERY.

2.) All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, U.S. Survey Feet, all distances are grid.  
 I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
 Horizonrow, LLC  
 Date Signed: 08-12-2018  
 P.O. Box 548, Dry Creek, La.  
 (903) 388-3045 70837  
 Employee of Horizonrow, LLC



**HORIZON ROW LLC**

Drawn for:

**devon**

Drawn by:  
CHRIS MAAS

Date: 05/11/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 CTB 2

SURVEY PLAT SHOWING  
A CTB

ON THE PROPERTY OF THE  
BUREAU OF LAND MANAGEMENT

SITE NUMBER:  
AA000179606

WBS NUMBER:

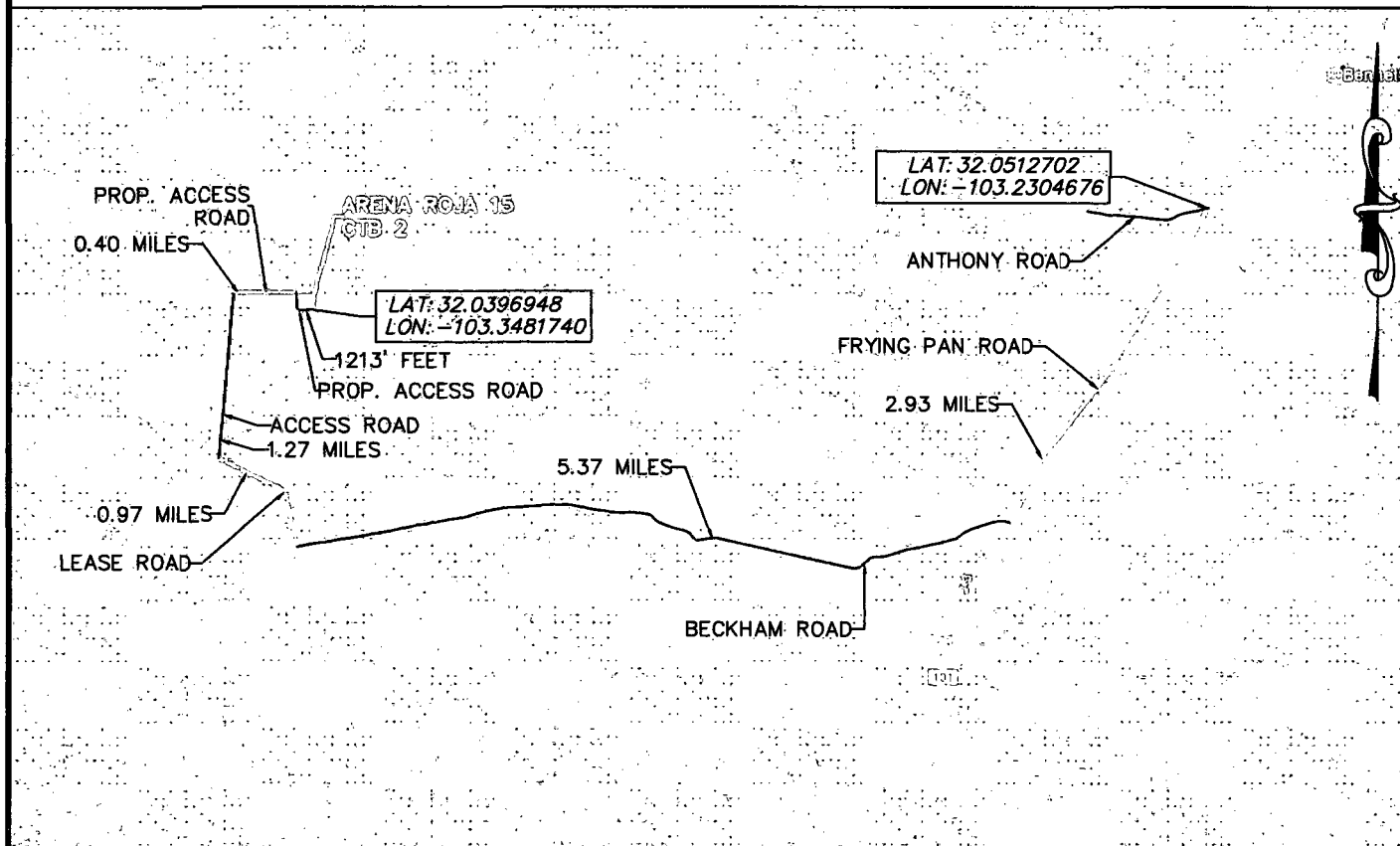
SCALE:  
1" = 300'

REVISIONS:

SHEET:  
1 OF 6



SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
AERIAL ACCESS ROUTE MAP



DIRECTIONS TO LOCATION

NOT TO SCALE

FROM THE INTERSECTION OF J-3 (FRYING PAN ROAD) AND ANTHONY ROAD, HEAD SOUTH ON FRYING PAN ROAD FOR 2.93 MILES. TURN RIGHT ONTO BECKHAM ROAD AND HEAD WEST FOR 5.37 MILES. TURN RIGHT AND CONTINUE NORTH ON AN EXISTING LEASE ROAD FOR 0.97 MILES. TURN RIGHT ONTO AN EXISTING ACCESS ROAD AND HEAD NORTH FOR 1.27 MILES. TURN RIGHT AND HEAD EAST OFF OF THE EXISTING ACCESS ROAD ON THE PROPOSED ACCESS ROAD FOR 0.40 MILES. TURN RIGHT AND HEAD SOUTH AND THEN EAST FOR 1213' DOWN TO THE SOUTHEAST CORNER OF THE PROPOSED ARENA ROJA 15 CTB 2.

SHEET 2 OF 4

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
CHRIS MAAS

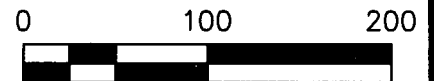
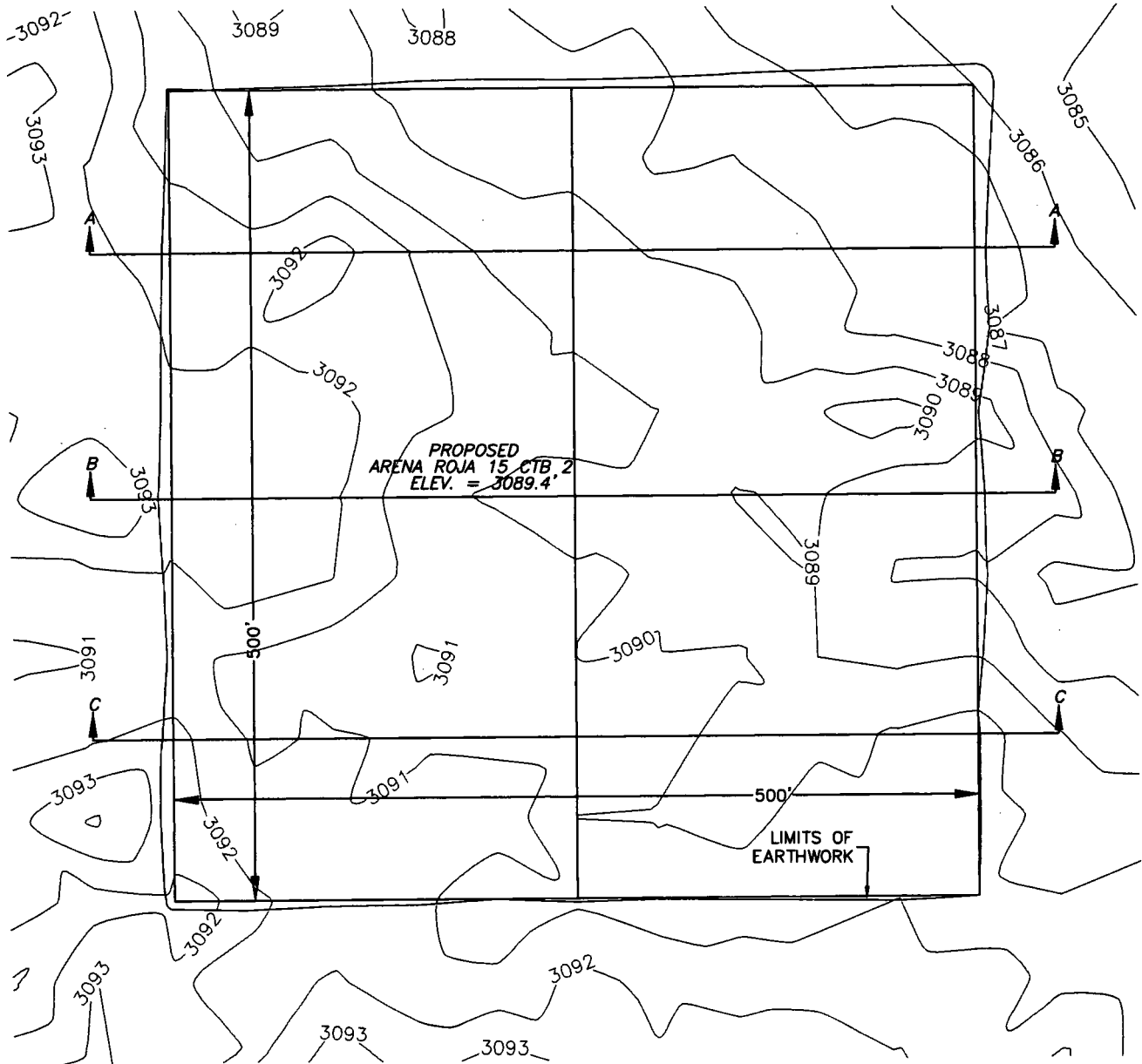
Date: 05/11/2018

Drawn for:

devon



SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
PLAN VIEW



SHEET 5 OF 6

EARTHWORK QUANTITIES FOR  
ARENA ROJA 15 CTB 2

CUT	FILL	NET
5,127 CY	5,118 CY	-9 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

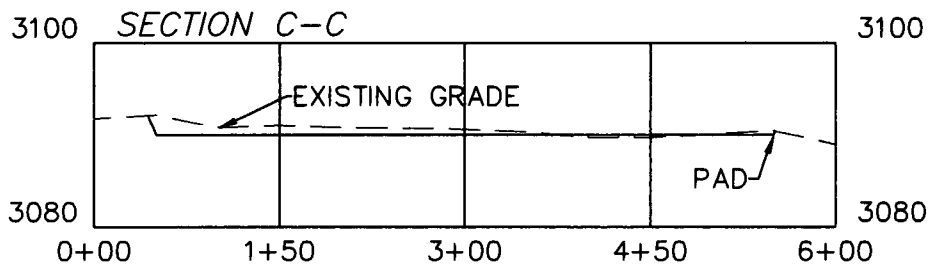
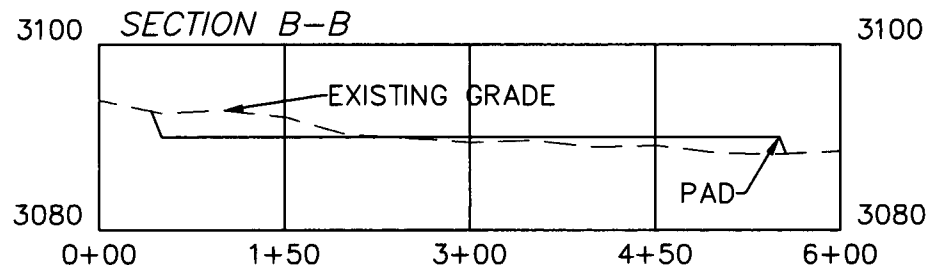
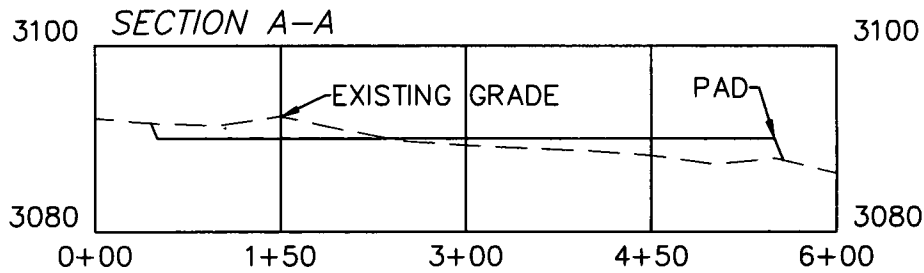
Drawn by:  
CHRIS MAAS

Date: 05/25/2018

Drawn for:



SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
CROSS SECTIONS



EARTHWORK QUANTITIES FOR  
ARENA ROJA 15 CTB 2

CUT	FILL	NET
5,127 CY	5,118 CY	-9 CY

EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 6 OF 6

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
CHRIS MAAS

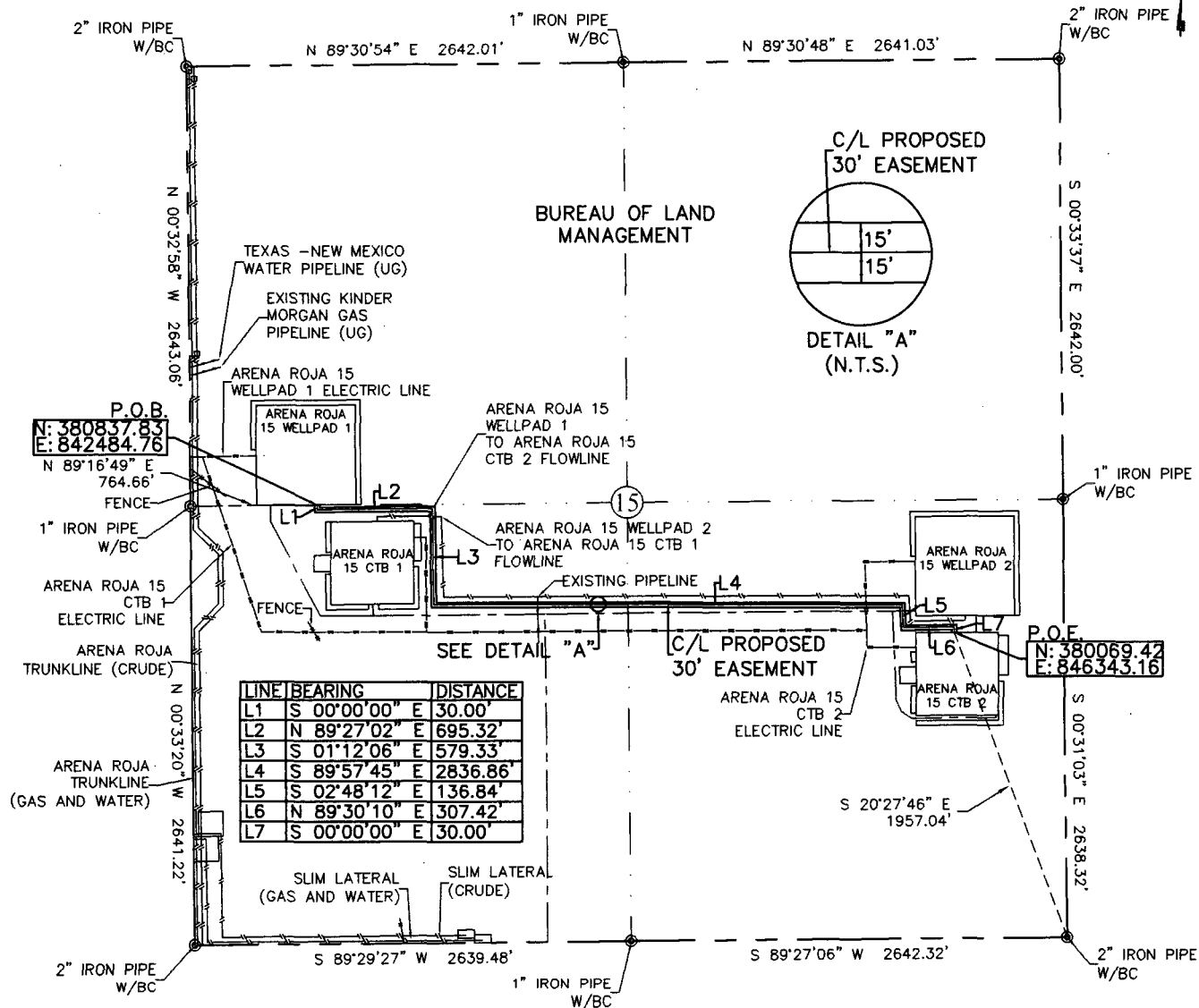
Date: 05/25/2018

SCALE 1" = 150' HORIZONTAL  
SCALE 1" = 20' VERTICAL

Drawn for:



EXHIBIT "A"  
PAGE 1 of 4  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO

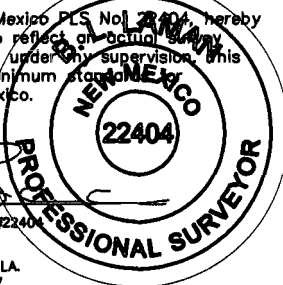


30' EASEMENT AREA = 3.18 ACRE(S)  
4615.77 FEET OR 279.74 RODS

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
Date Signed: 08-16-2018  
Horizonrow, LLC  
P.O. BOX 548, DRY CREEK, LA.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



0+00  
7+72.1

19+31.7  
39+22.1  
41+76.0  
46+15.8

P.O.B./ARENA ROJA 15 WELLPAD 1  
ARENA ROJA 15 WELLPAD 2 TO ARENA ROJA  
15 CTB 1 FLOWLINE  
EXISTING PIPELINE  
ARENA ROJA 15 WELLPAD 2 ELECTRIC LINE  
C/L ROAD  
P.O.E./ARENA ROJA 15 WELLPAD 2

0 1000 2000



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
JEANNIE PERRY

Date: 06/06/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.  
ARENA ROJA 15 WELLPAD 1 TO  
ARENA ROJA 15 CTB 2  
FLOWLINE

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640121F

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:

SHEET:  
1 OF 4

**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the northwest quarter (NW ¼) and southwest quarter (SW ¼) and southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 89°16'49" E a distance of 764.66' to the **Point of Beginning** of this easement having coordinates of Northing=380837.83, Easting=842484.76 feet and continuing the following courses;

Thence S 00°00'00" E a distance of 30.00' to an angle point;

Thence N 89°27'02" E a distance of 695.32' to an angle point;

Thence S 01°12'06" E a distance of 579.33' to an angle point;

Thence S 89°57'45" E a distance of 2836.86' to an angle point;

Thence S 02°48'12" E a distance of 136.84' to an angle point;

Thence N 89°30'10" E a distance of 307.42' to an angle point;

Thence S 00°00'00" E a distance of 30.00' to the **Point of Ending** having coordinates of Northing=380069.42, Easting=846343.16 feet from said point a 2" iron pipe w/BC for the southeast corner of Section 15, T26S-R35E bears S 20°27'46" E a distance of 1957.04', covering **4615.77' or 279.74 rods** and having an area of **3.18 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

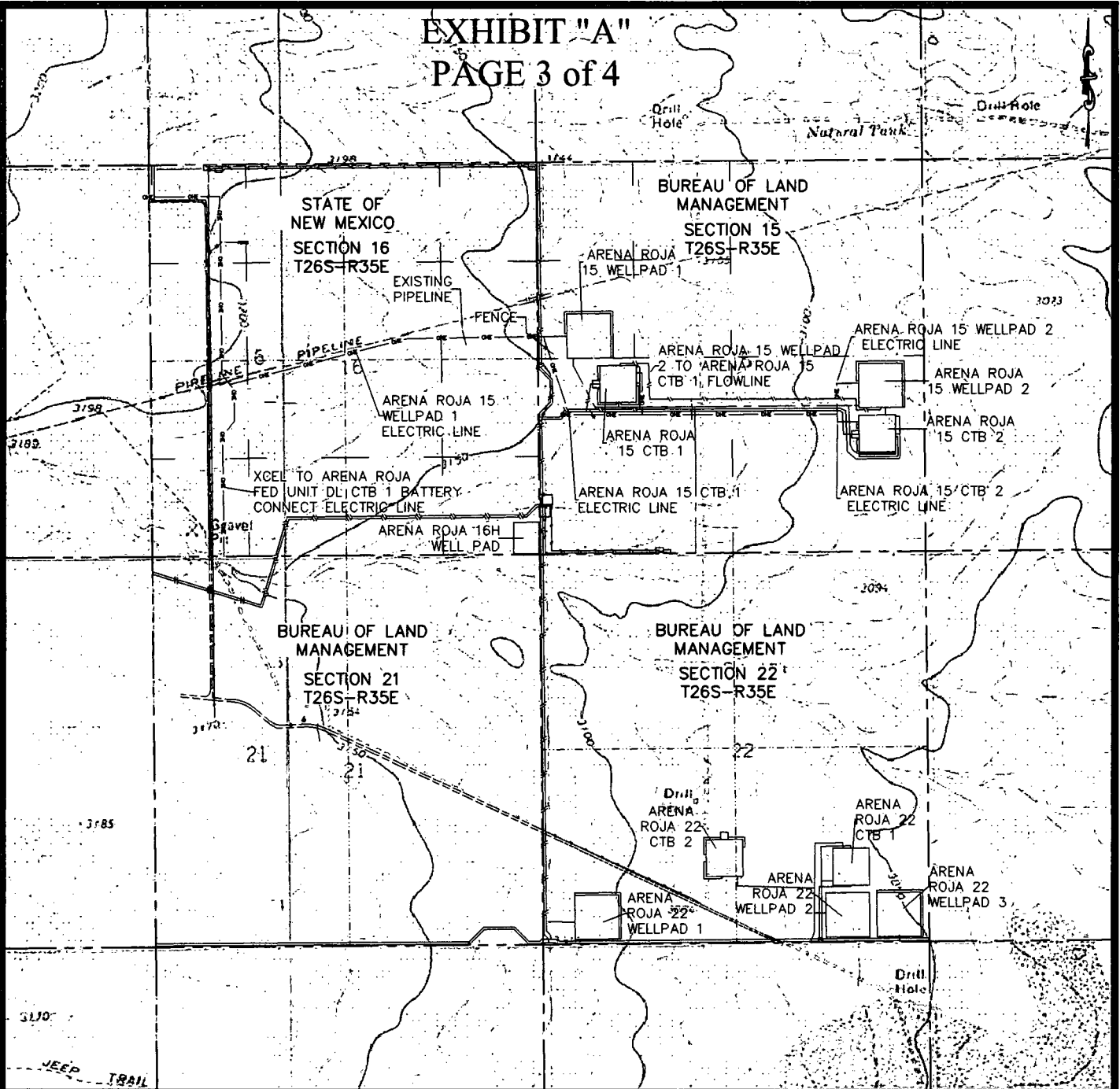


B.L. Laman PLS 22404  
Date Signed: 06/16/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizon Row, LLC



# EXHIBIT "A"

## PAGE 3 of 4



### QUAD MAP

SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
JEANNIE PERRY

Date: 06/06/2018

Drawn for:



LINE NUMBER:

7640121F

WBS NUMBER:

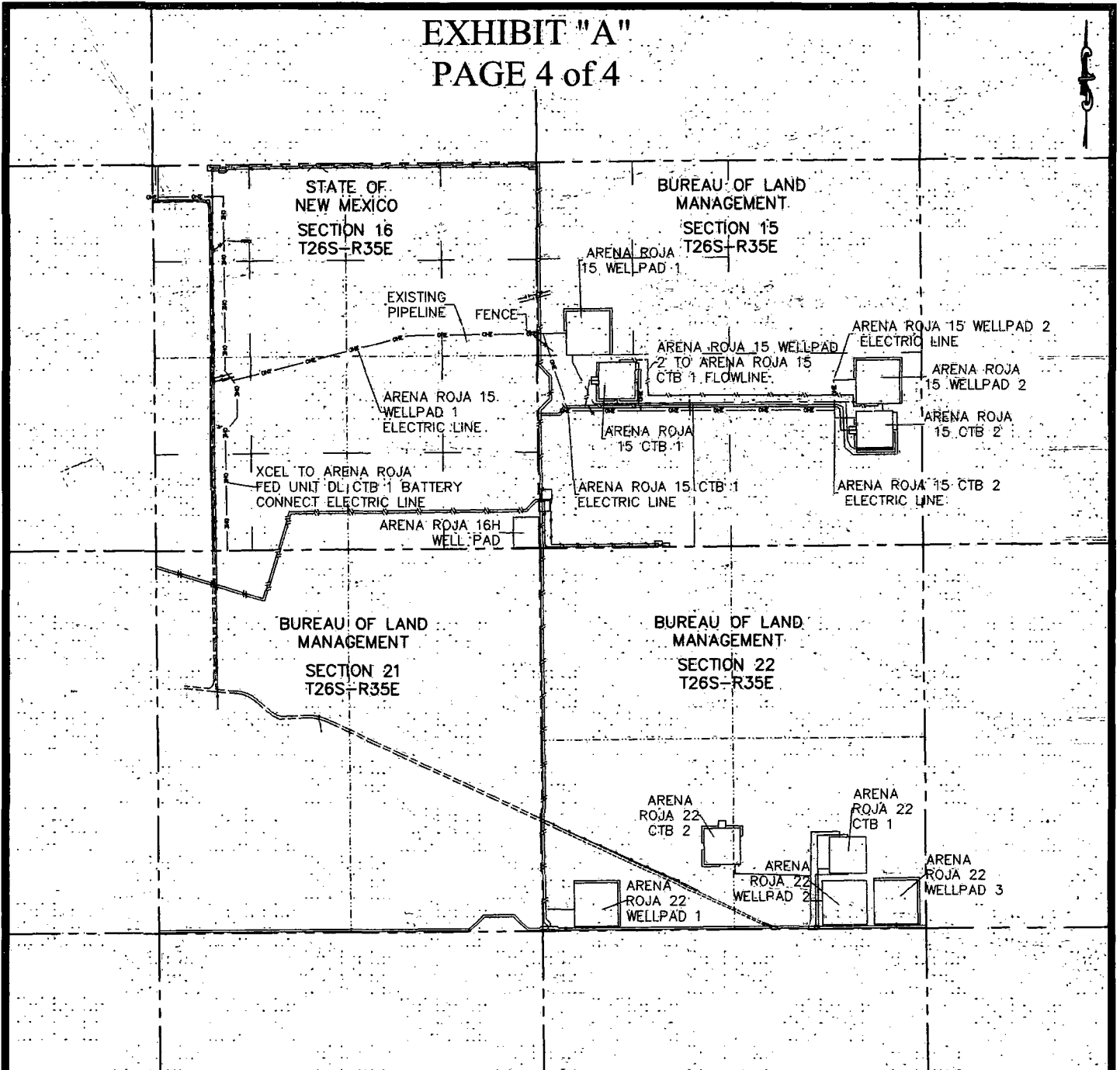
SCALE:

1" = 2000'

REVISIONS:

SHEET:  
3 OF 4

EXHIBIT "A"  
PAGE 4 of 4



AERIAL MAP

SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
JEANNIE PERRY

Date: 06/06/2018

Drawn for:

**devon**

LINE NUMBER:  
7640121F

WBS NUMBER:

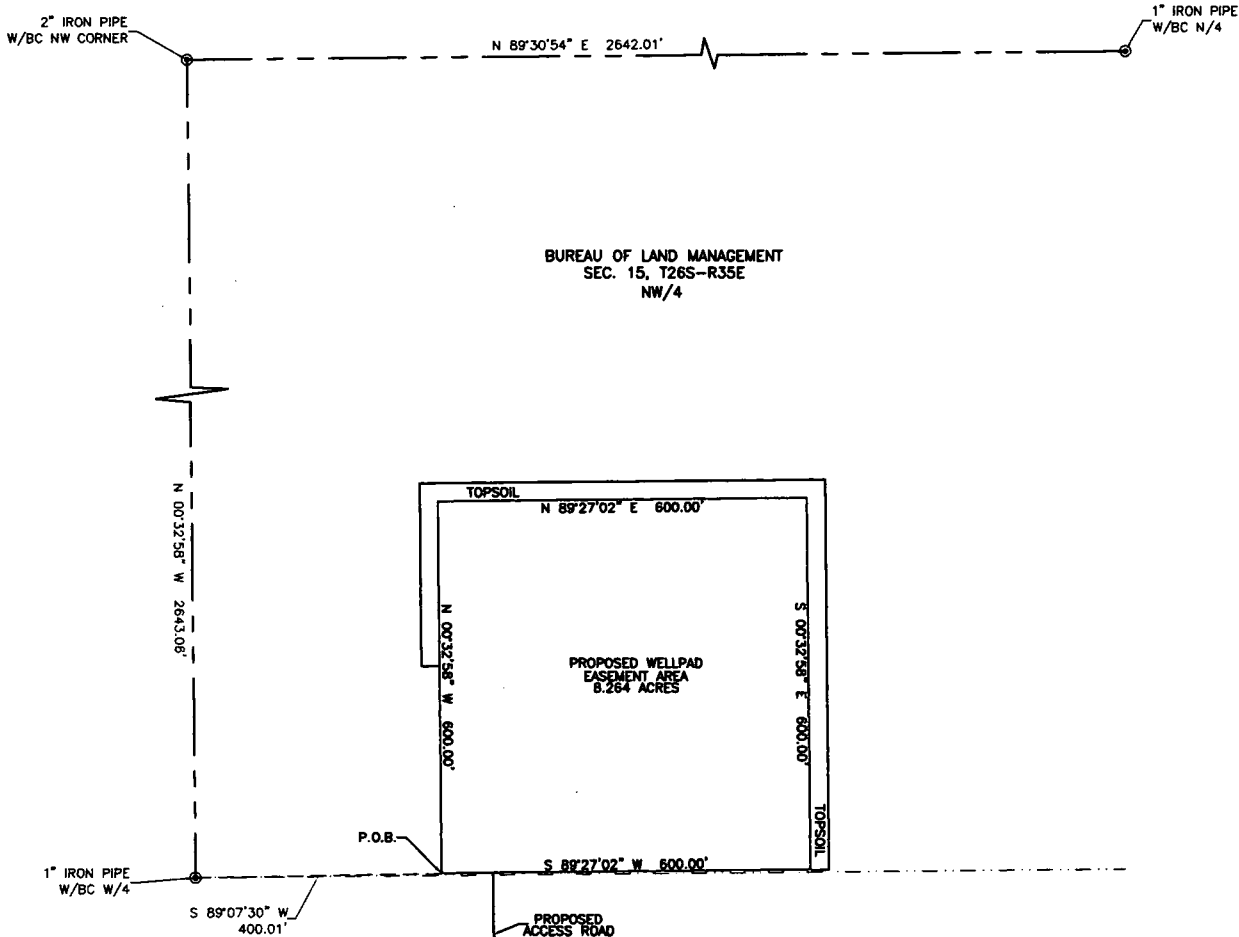
SCALE:  
1" = 2000'

REVISIONS:

SHEET:  
4 OF 4

# ARENA ROJA 15 WELLPAD 1

DEVON ENERGY PRODUCTION COMPANY, L.P.  
IN THE NORTHWEST QUARTER (NW/4)  
SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, NEW MEXICO  
SHEET 1 OF 6



## DESCRIPTION

BEING A SURFACE SITE EASEMENT LYING IN THE NORTHWEST QUARTER (NW/4) OF SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST N.M.P.M., LEA COUNTY, NEW MEXICO.

BEGINNING AT THE SOUTHWEST CORNER OF SAID SITE EASEMENT, WHERE A 1" IRON PIPE W/BC FOR THE WEST QUARTER CORNER OF SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST N.M.P.M. BEARS S 89°07'30" W, A DISTANCE 400.01';

THENCE N 00°32'58" W, A DISTANCE 600.00 FEET TO THE NORTHWEST CORNER OF THIS EASEMENT;  
THENCE N 89°27'02" E, A DISTANCE 600.00 FEET TO THE NORTHEAST CORNER OF THIS EASEMENT;  
THENCE S 00°32'58" E, A DISTANCE 600.00 FEET TO THE SOUTHEAST CORNER OF THIS EASEMENT;  
THENCE S 89°27'02" W, A DISTANCE 600.00 FEET TO THE SOUTHWEST CORNER OF THIS EASEMENT,  
TO THE POINT OF BEGINNING; CONTAINING 8.264 ACRES.

## DIRECTIONS TO LOCATION

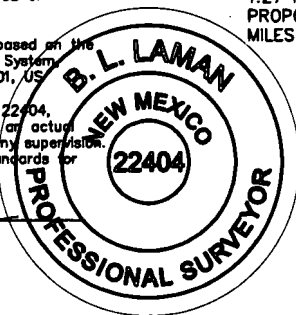
FROM THE INTERSECTION OF J-3 (FRYING PAN ROAD) AND ANTHONY ROAD, HEAD SOUTH ON FRYING PAN ROAD FOR 2.93 MILES. TURN RIGHT ONTO BECKHAM ROAD AND HEAD WEST FOR 5.37 MILES. TURN RIGHT AND CONTINUE NORTH ON AN EXISTING LEASE ROAD FOR 0.97 MILES. TURN RIGHT ONTO AN EXISTING ACCESS ROAD AND HEAD NORTH FOR 1.27 MILES. TURN LEFT AND HEAD WEST OFF OF THE EXISTING ACCESS ROAD ON THE PROPOSED ACCESS ROAD FOR 0.26 MILES. TURN RIGHT AND HEAD NORTHWEST FOR 0.14 MILES TO THE SOUTHWEST CORNER OF THE PROPOSED ARENA ROJA 15 WELLPAD 1.

## GENERAL NOTES:

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A CENTRAL BATTERY.

2.) All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid. I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
Horizonrow, LLC  
Date Signed: 06-12-2018  
P.O. Box 548, Dry Creek, La.  
(803) 368-3045 70637  
Employee of Horizonrow, LLC



**HORIZON ROW LLC**

Drawn for:

**devon**

Drawn by:  
CHRIS MAAS

Date: 05/09/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 WELLPAD 1

SURVEY PLAT SHOWING  
A WELLPAD

ON THE PROPERTY OF THE  
BUREAU OF LAND MANAGEMENT

SITE NUMBER:  
AA000179588

WBS NUMBER:

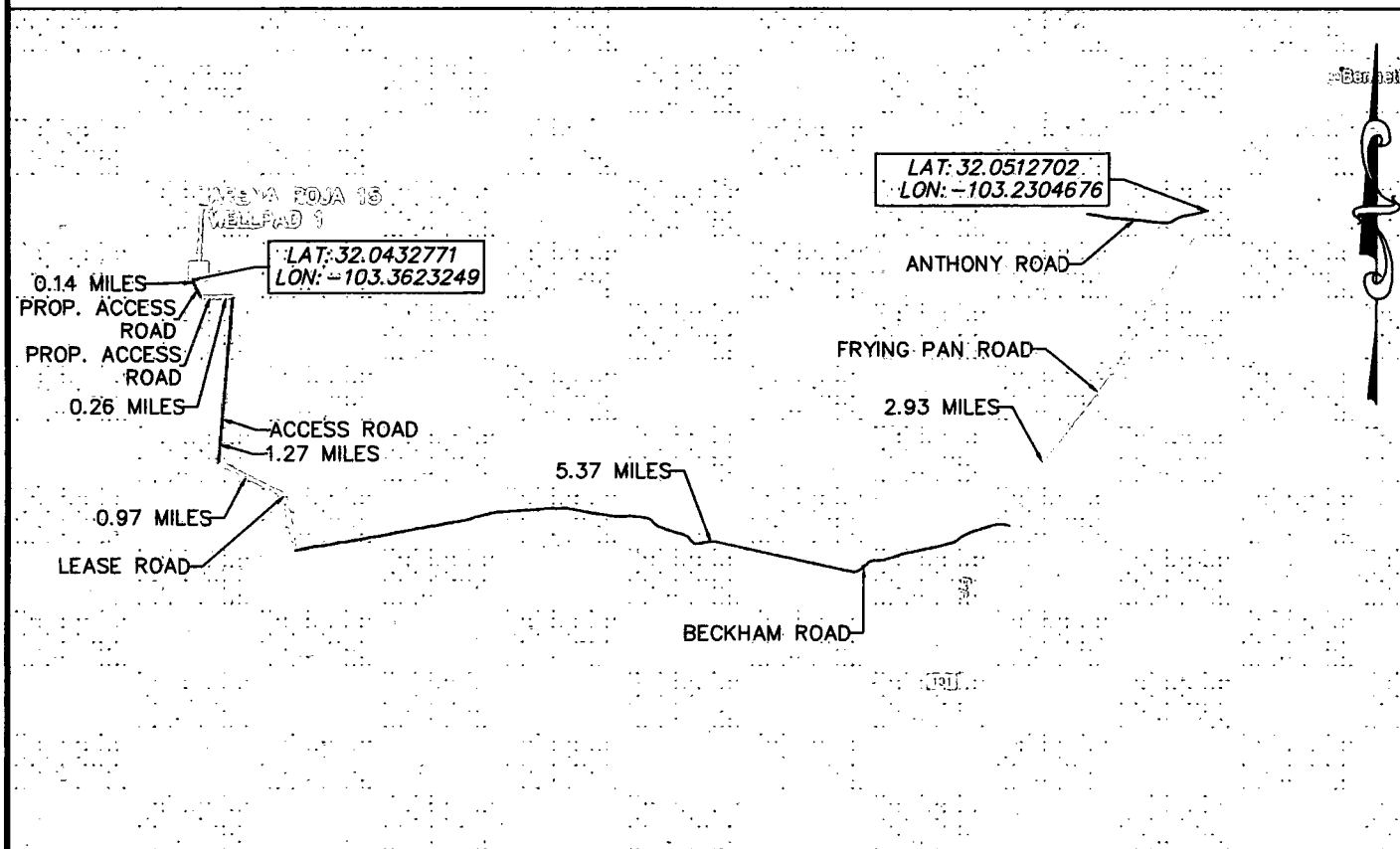
SCALE:  
1" = 300'

REVISIONS:

SHEET:  
1 OF 8



SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
AERIAL ACCESS ROUTE MAP



DIRECTIONS TO LOCATION

NOT TO SCALE

FROM THE INTERSECTION OF J-3 (FRYING PAN ROAD) AND ANTHONY ROAD, HEAD SOUTH ON FRYING PAN ROAD FOR 2.93 MILES. TURN RIGHT ONTO BECKHAM ROAD AND HEAD WEST FOR 5.37 MILES. TURN RIGHT AND CONTINUE NORTH ON AN EXISTING LEASE ROAD FOR 0.97 MILES. TURN RIGHT ONTO AN EXISTING ACCESS ROAD AND HEAD NORTH FOR 1.27 MILES. TURN LEFT AND HEAD WEST OFF OF THE EXISTING ACCESS ROAD ON THE PROPOSED ACCESS ROAD FOR 0.26 MILES. TURN RIGHT AND HEAD NORTHWEST FOR 0.14 MILES TO THE SOUTHWEST CORNER OF THE PROPOSED ARENA ROJA 15 WELLPAD 1.

SHEET 2 OF 6

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
CHRIS MAAS

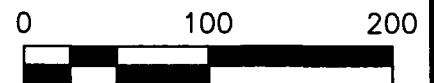
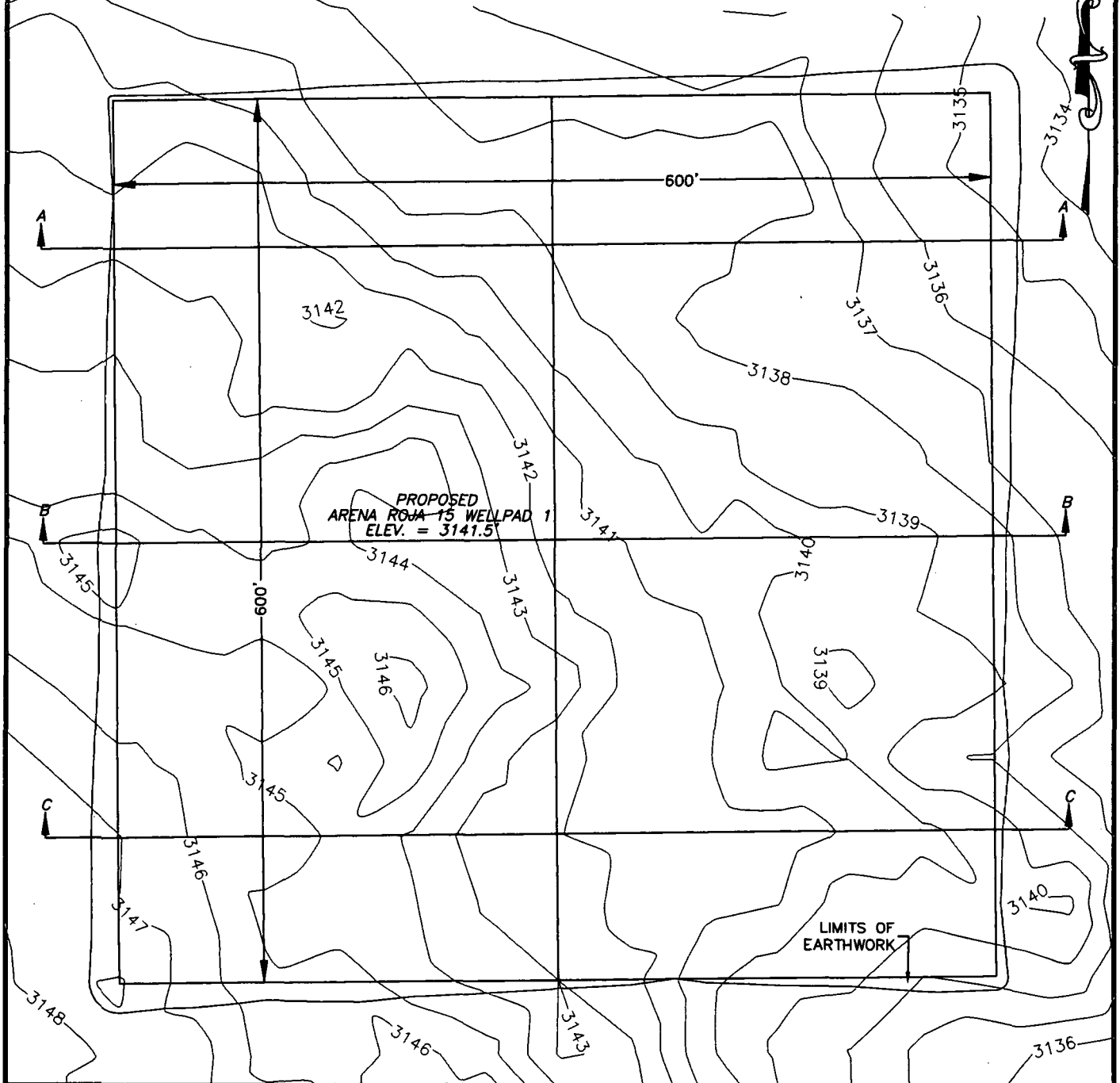
Date: 05/09/2018

Drawn for:

devon



SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
PLAN VIEW



SHEET 5 OF 6

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
CHRIS MAAS

Date: 05/22/2018

Drawn for:

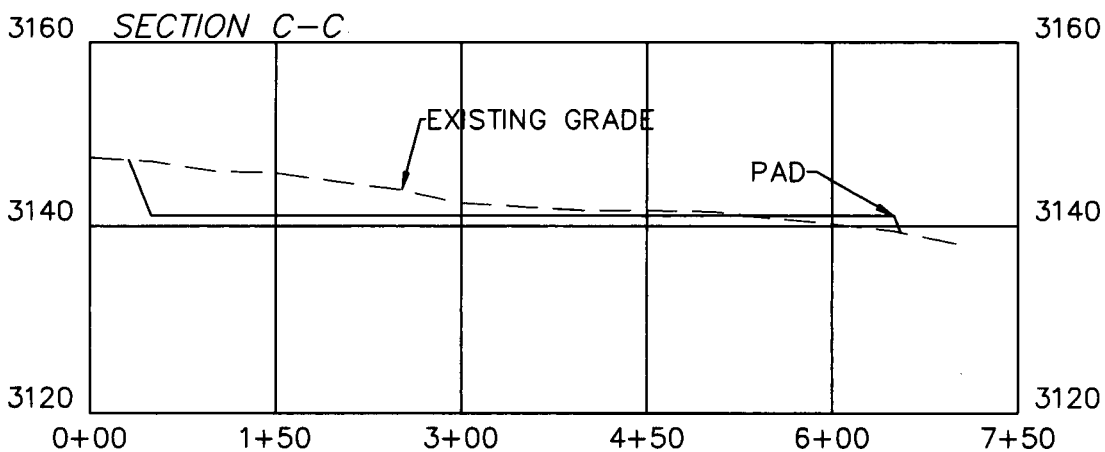
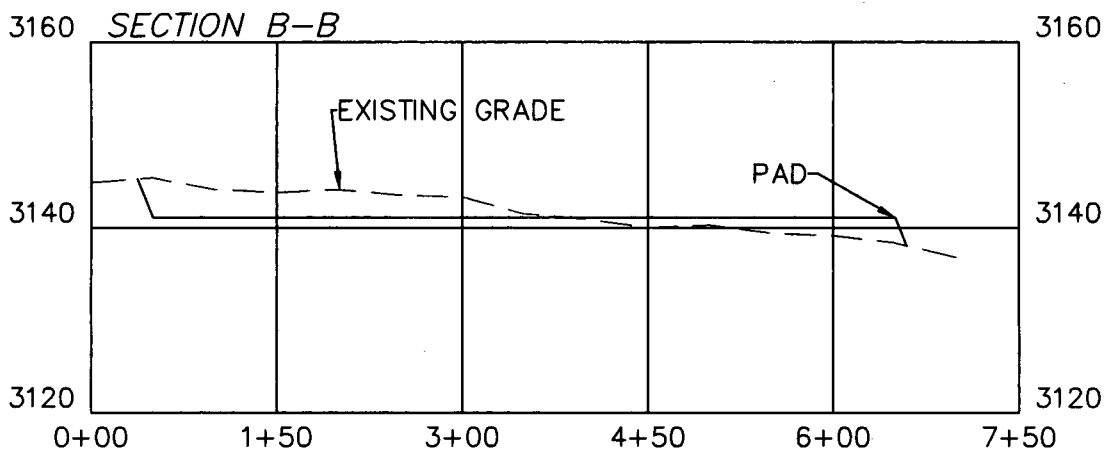
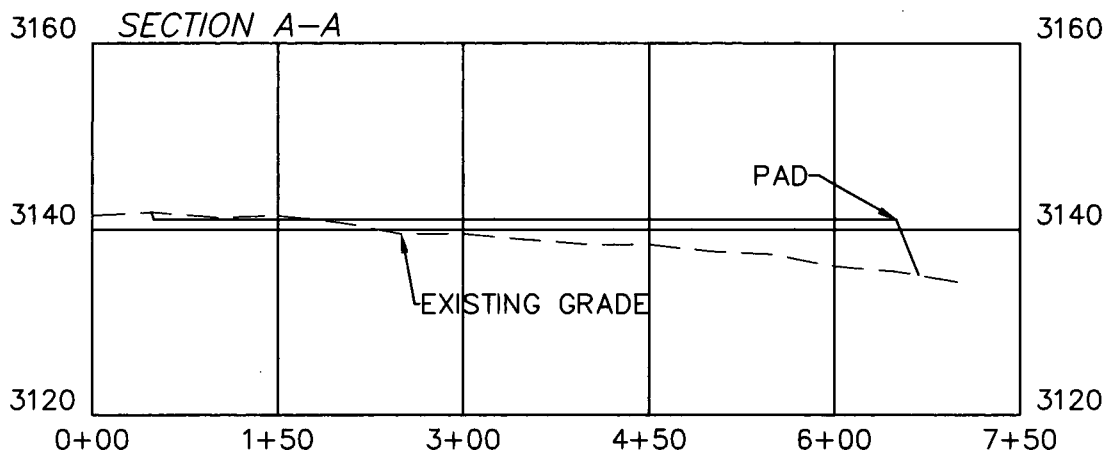


EARTHWORK QUANTITIES FOR  
ARENA ROJA 15 WELLPAD 1

CUT	FILL	NET
16,393 CY	16,398 CY	5 CY

EARTHWORK QUANTITIES ARE ESTIMATED

SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
CROSS SECTIONS



SHEET 6 OF 6

SCALE 1" = 150' HORIZONTAL  
SCALE 1" = 20' VERTICAL

EARTHWORK QUANTITIES FOR  
ARENA ROJA 15 WELLPAD 1

CUT	FILL	NET
16,393 CY	16,398 CY	5 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
CHRIS MAAS

Date: 05/22/2018

Drawn for:



PLAT

One Mile Radius Map

devon

This map is for illustrative purposes only and is neither a legally recorded map nor a survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

USA Contiguous Equidistant Conic  
Datum: North American 1983  
Created by: FME Server  
Map is current as of 8/20/2018



0 0.3 Miles  
1 inch = 0.39 miles

ARENA ROJA FED UNIT 15-10 005H  
WA017392974

TATANKA FEDERAL 001H

Nearest wellbore to SHL:

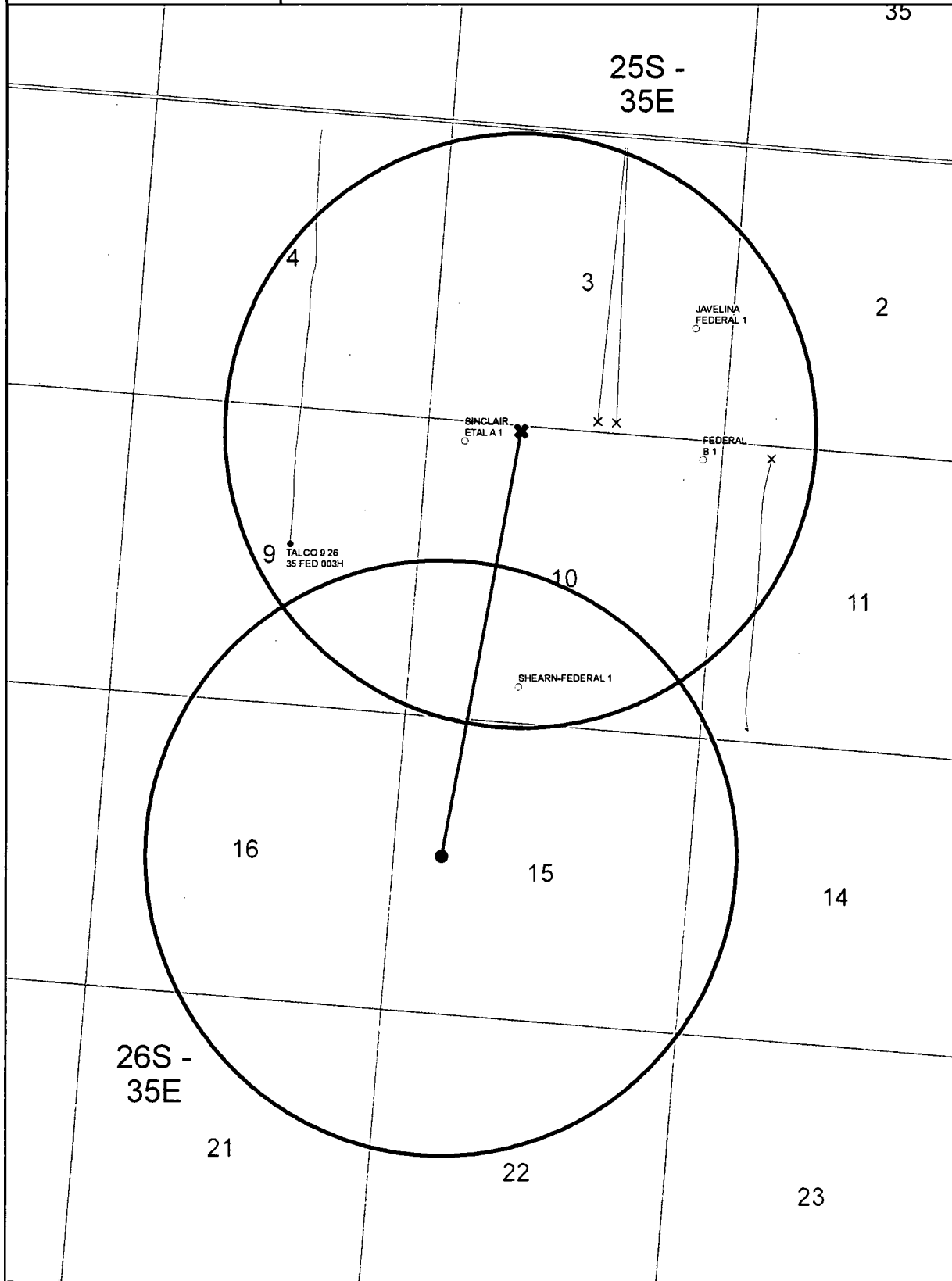
5883 ft.

HENNIN FEDERAL 024H

Nearest wellbore to BHL:

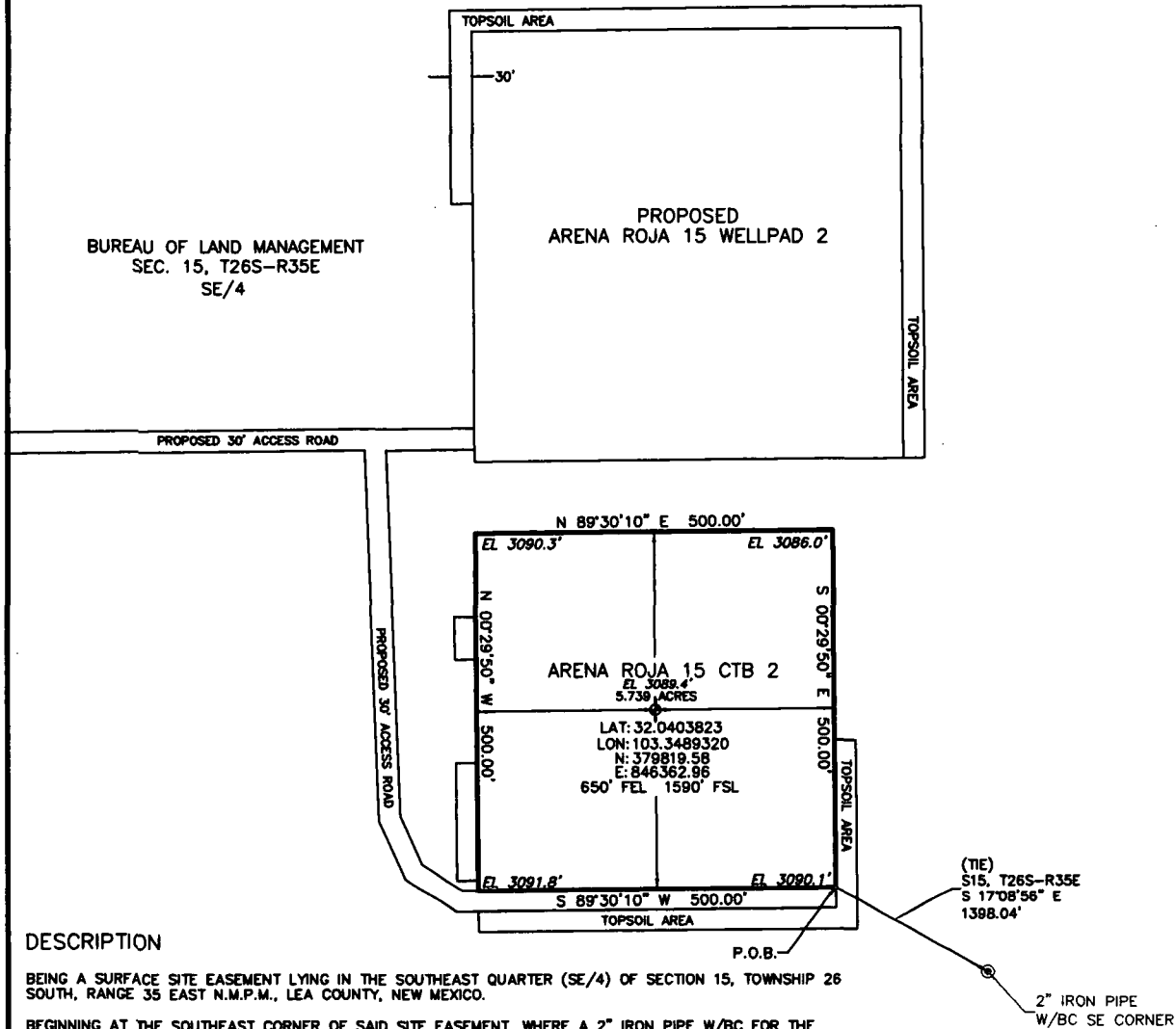
1385 ft.

- Unknown SHL
- Active SHL
- Inactive SHL
- × BHL



# ARENA ROJA 15 CTB 2

DEVON ENERGY PRODUCTION COMPANY, L.P.  
IN THE SOUTHEAST QUARTER (SE/4)  
SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, NEW MEXICO  
SHEET 1 OF 6



## DESCRIPTION

BEING A SURFACE SITE EASEMENT LYING IN THE SOUTHEAST QUARTER (SE/4) OF SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST N.M.P.M., LEA COUNTY, NEW MEXICO.

BEGINNING AT THE SOUTHEAST CORNER OF SAID SITE EASEMENT, WHERE A 2" IRON PIPE W/BC FOR THE SOUTHEAST CORNER OF SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST N.M.P.M. BEARS S 17°08'56" E, A DISTANCE 1398.04';

THENCE S 89°30'10" W, A DISTANCE 500.00 FEET TO THE SOUTHWEST CORNER OF THIS EASEMENT;  
THENCE N 00°29'50" W, A DISTANCE 500.00 FEET TO THE NORTHWEST CORNER OF THIS EASEMENT;  
THENCE N 89°30'10" E, A DISTANCE 500.00 FEET TO THE NORTHEAST CORNER OF THIS EASEMENT;  
THENCE S 00°29'50" E, A DISTANCE 500.00 FEET TO THE SOUTHEAST CORNER OF THIS EASEMENT,  
TO THE POINT OF BEGINNING; CONTAINING 5.739 ACRES.

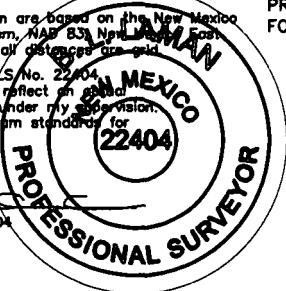
## GENERAL NOTES:

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A CENTRAL BATTERY.

2.) All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are as shown.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect on ground survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
Horizonrow, LLC  
Date Signed: 11-08-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



## DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF J-3 (FRYING PAN ROAD) AND ANTHONY ROAD, HEAD SOUTH ON FRYING PAN ROAD FOR 2.93 MILES. TURN RIGHT ONTO BECKHAM ROAD AND HEAD WEST FOR 5.37 MILES. TURN RIGHT AND CONTINUE NORTH ON AN EXISTING LEASE ROAD FOR 0.97 MILES. TURN RIGHT ONTO AN EXISTING ACCESS ROAD AND HEAD NORTH FOR 1.27 MILES. TURN RIGHT AND HEAD EAST OFF OF THE EXISTING ACCESS ROAD ON THE PROPOSED ACCESS ROAD FOR 0.40 MILES. TURN RIGHT AND HEAD SOUTH AND THEN EAST FOR 1213' DOWN TO THE SOUTHEAST CORNER OF THE PROPOSED ARENA ROJA 15 CTB 2.

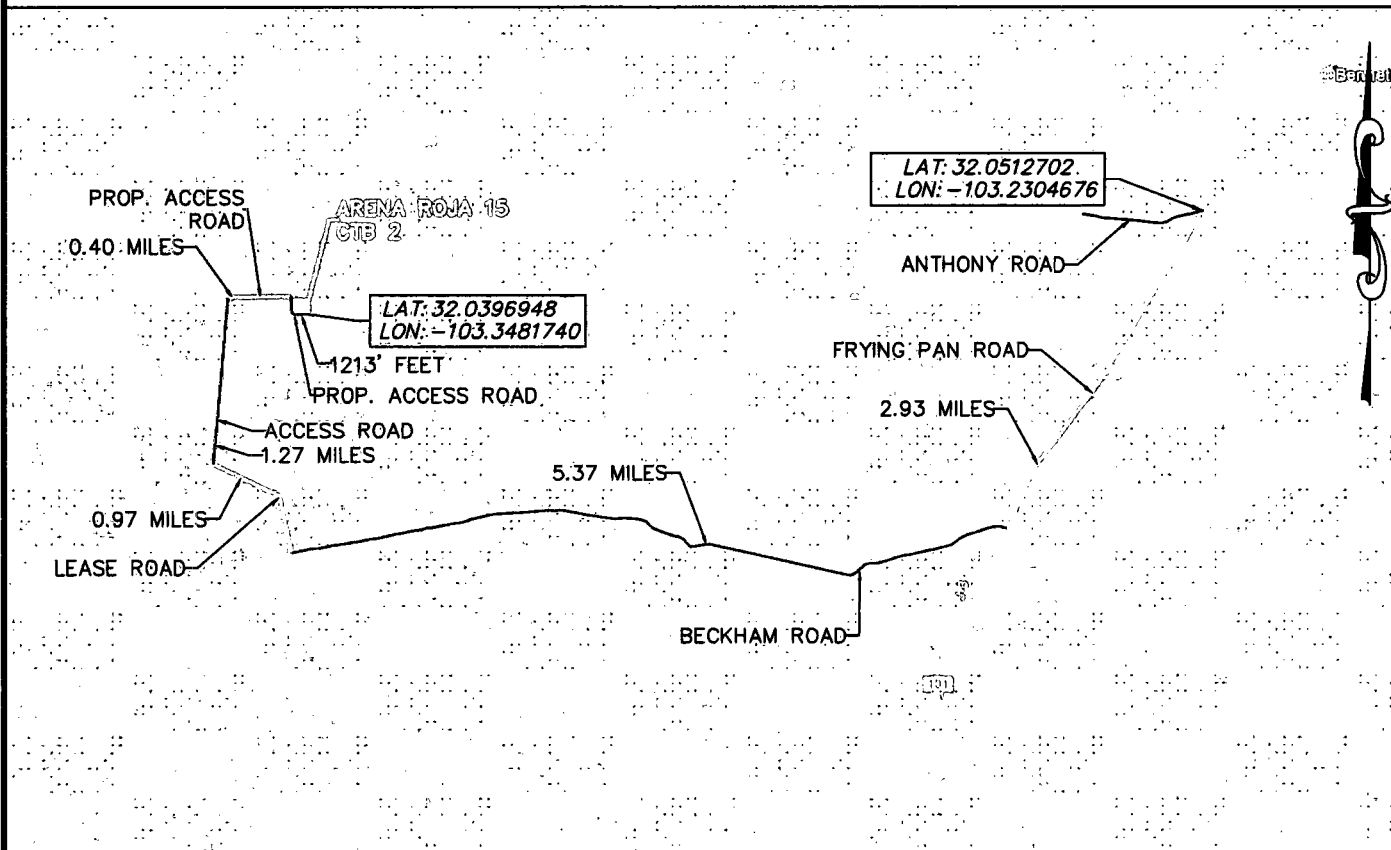
0 250 500



<b>HORIZON ROW LLC</b>	
Drawn for:	
Drawn by:	Date:
CHRIS MAAS	05/11/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.		SITE NUMBER: AADD0179806
ARENA ROJA 15 CTB 2		WBS NUMBER:
SURVEY PLAT SHOWING A WELLPAD		SCALE: 1" = 250'
ON THE PROPERTY OF THE BUREAU OF LAND MANAGEMENT		REVISIONS: 11/5/18 CMAAS
		SHEET: 4-5-18

SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
AERIAL ACCESS ROUTE MAP



DIRECTIONS TO LOCATION

NOT TO SCALE

FROM THE INTERSECTION OF J-3 (FRYING PAN ROAD) AND ANTHONY ROAD, HEAD SOUTH ON FRYING PAN ROAD FOR 2.93 MILES. TURN RIGHT ONTO BECKHAM ROAD AND HEAD WEST FOR 5.37 MILES. TURN RIGHT AND CONTINUE NORTH ON AN EXISTING LEASE ROAD FOR 0.97 MILES. TURN RIGHT ONTO AN EXISTING ACCESS ROAD AND HEAD NORTH FOR 1.27 MILES. TURN RIGHT AND HEAD EAST OFF OF THE EXISTING ACCESS ROAD ON THE PROPOSED ACCESS ROAD FOR 0.40 MILES. TURN RIGHT AND HEAD SOUTH AND THEN EAST FOR 1213' DOWN TO THE SOUTHEAST CORNER OF THE PROPOSED ARENA ROJA 15 CTB 2.

SHEET 2 OF 4

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

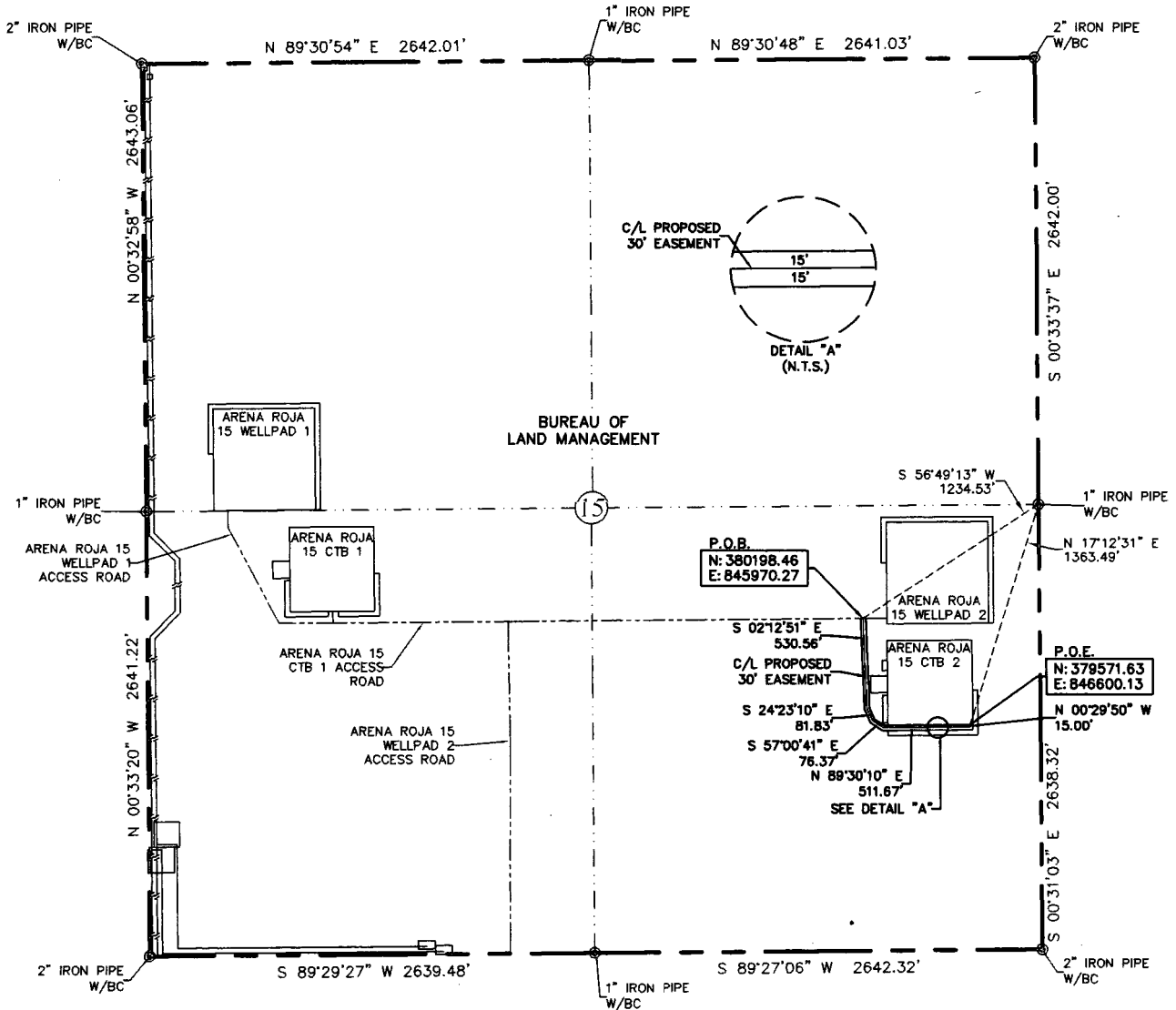
Drawn by:  
CHRIS MAAS

Date: 05/11/2018

Drawn for:

devon

EXHIBIT "A"  
PAGE 3 of 6  
ACCESS ROAD PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.837 ACRE(S)  
1215.43 FEET OR 73.66 RODS

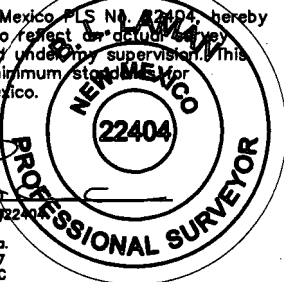
0+00.0 P.O.B./ARENA ROJA 15 WELLPAD 2 ACCESS ROAD  
12+15.4 P.O.E./ARENA ROJA 15 CTB 2

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
Date Signed: 08-12-2018  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
CHRIS MAAS

Date: 05/24/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15  
CTB 2 ACCESS ROAD

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
7640130R

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:

SHEET:  
3 OF 6

0 1000 2000

**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ACCESS ROAD PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 56°49'13" W a distance of 1234.53' to the **Point of Beginning** of this easement having coordinates of Northing=380198.46, Easting=845970.27 feet and continuing the following courses;

Thence S 02°12'51" E a distance of 530.56' to an angle point;

Thence S 24°23'10" E a distance of 81.83' to an angle point;

Thence S 57°00'41" E a distance of 76.37' to an angle point;

Thence N 89°30'10" E a distance of 511.67' to an angle point;

Thence N 00°29'50" W a distance of 15.00' to the **Point of Ending** having coordinates of Northing=379571.63, Easting=846600.13 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E bears N 17°12'31" E a distance of 1363.49', covering **1215.43' or 73.66 rods** and having an area of **0.837 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 06/12/2018

Horizon Row, LLC

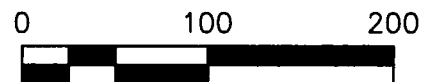
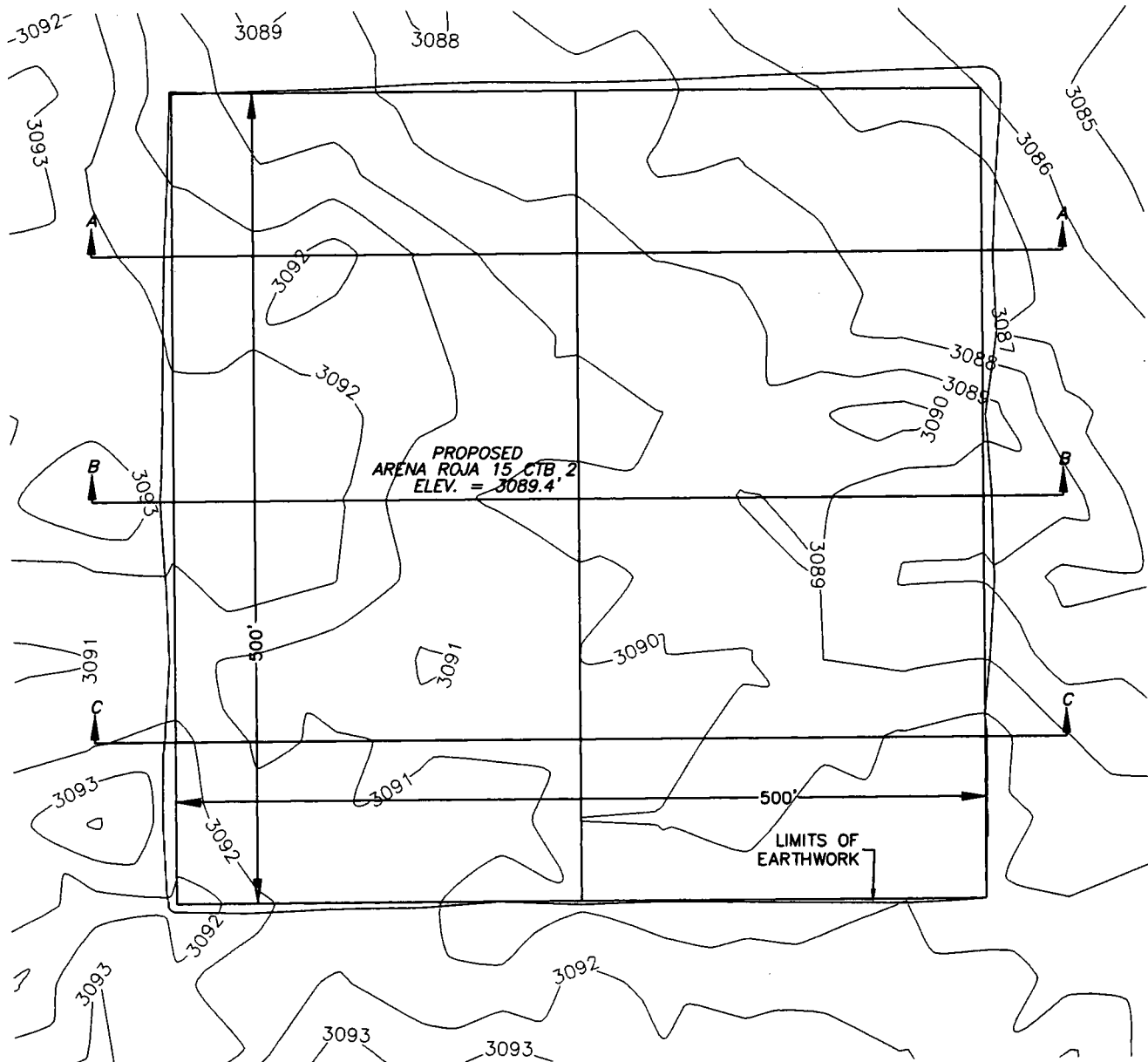
P.O. Box 548, Dry Creek, La.

(903) 388-3045 70637

Employee of Horizon Row, LLC



SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
PLAN VIEW



SHEET 5 OF 6

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
CHRIS MAAS

Date: 05/25/2018

Drawn for:



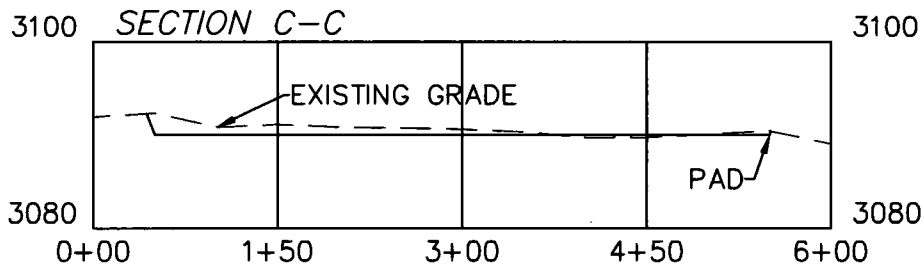
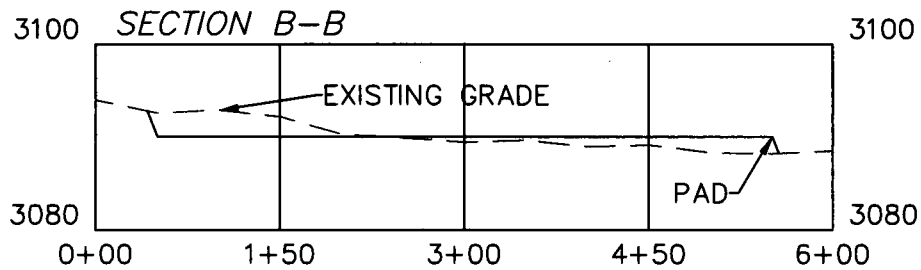
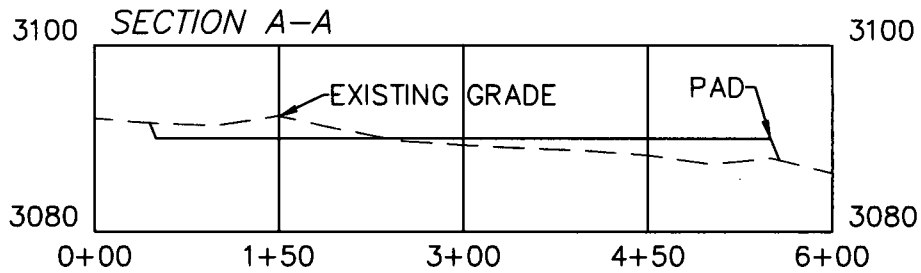
EARTHWORK QUANTITIES FOR  
ARENA ROJA 15 CTB 2

CUT	FILL	NET
5,127 CY	5,118 CY	-9 CY

EARTHWORK QUANTITIES ARE ESTIMATED



SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
CROSS SECTIONS



SCALE 1" = 150' HORIZONTAL  
SCALE 1" = 20' VERTICAL

SHEET 6 OF 6

EARTHWORK QUANTITIES FOR  
ARENA ROJA 15 CTB 2

CUT	FILL	NET
5,127 CY	5,118 CY	-9 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

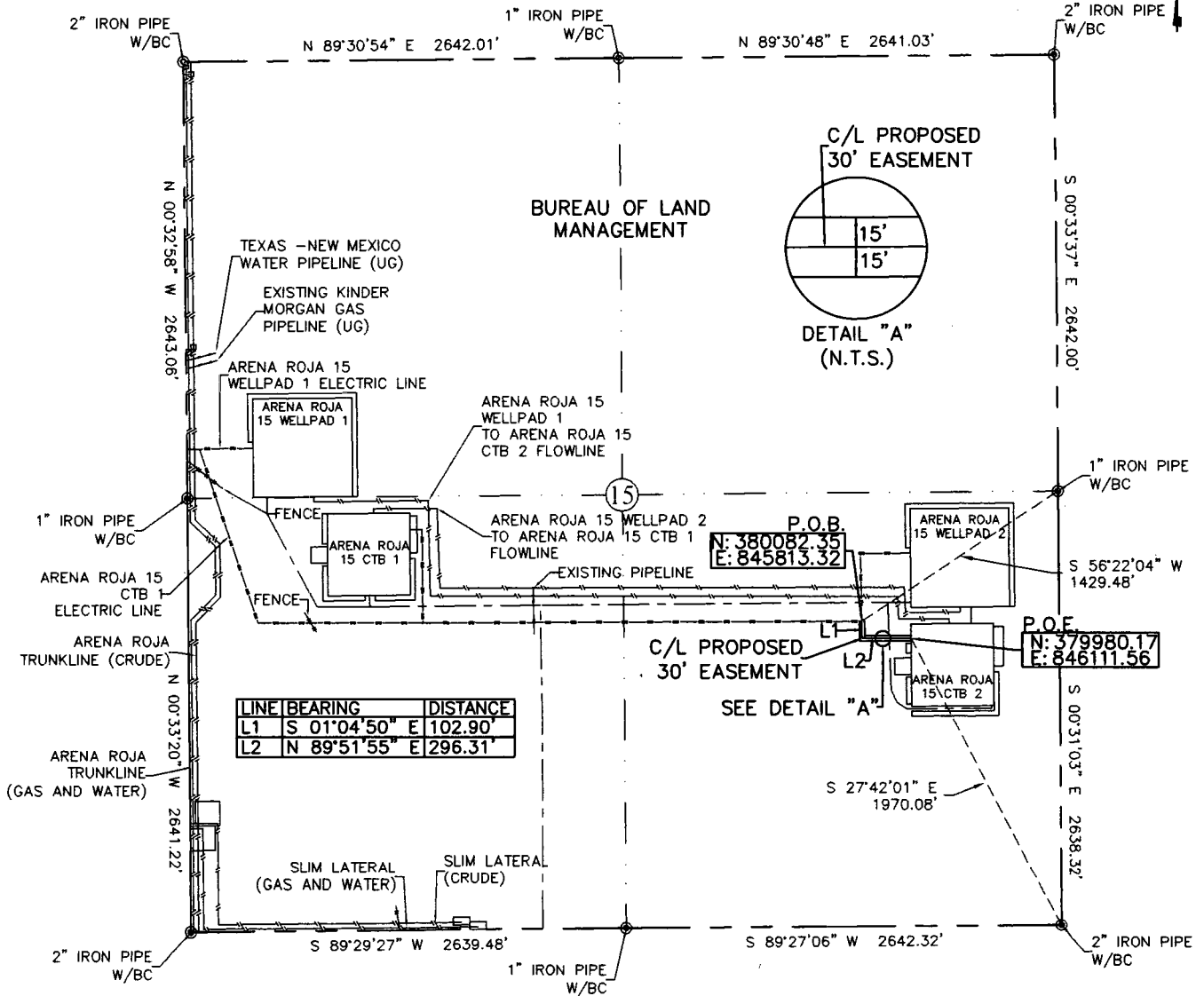
Drawn by:  
CHRIS MAAS

Date: 05/25/2018

Drawn for:



**EXHIBIT "A"**  
**PAGE 1 of 4**  
**ELECTRIC LINE PLAT**  
**SECTION 15, T26S-R35E, N.M.P.M.**  
**LEA COUNTY, NEW MEXICO**



30' EASEMENT AREA = 0.275 ACRE(S)  
 399.21 FEET OR 24.19 RODS

0+00  
 2+66.4  
 3+99.2

P.O.B./ARENA ROJA 15 WELLPAD 2 ELECTRIC LINE  
 C/L PROPOSED ACCESS ROAD  
 P.O.E./ARENA ROJA 15 CTB 2

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico BLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

0 1000 2000

B.L. Laman  
 Date Signed: 06-17-2018  
 Horizonrow, LLC  
 P.O. BOX 548, DRY CREEK, LA.  
 (903) 388-3045 70837  
 Employees of Horizonrow, LLC

**HORIZON ROW LLC**  
 Drawn for:  
**devon**  
 Drawn by: JEANNIE PERRY  
 Date: 06/06/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.  
 ARENA ROJA 15 CTB 2 ELECTRIC LINE  
 PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER: ELB204
WBS NUMBER:
SCALE: 1" = 1000'
REVISIONS:
SHEET: 1 OF 4

**SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ELECTRIC LINE PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 56°22'04" W a distance of 1429.48' to the **Point of Beginning** of this easement having coordinates of Northing=380082.35, Easting=845813.32 feet and continuing the following courses;

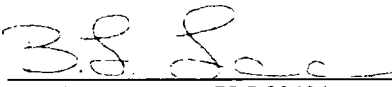
Thence S 01°04'50" E a distance of 102.90' to an angle point;

Thence N 89°51'55" E a distance of 296.31' to the **Point of Ending** having coordinates of Northing=379980.17, Easting=846111.56 feet from said point a 2" iron pipe w/BC for the southeast corner of Section 15, T26S-R35E bears S 27°42'01" E a distance of 1970.08', covering **399.21' or 24.19 rods** and having an area of **0.275 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

  
B.L. Laman      PLS 22404  
Date Signed: 06/17/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045 70637  
Employee of Horizon Row, LLC



[illegible]

SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

Drawn for:

**PROPOSED 30' EASEMENT**

**Date: 08/08/2018**

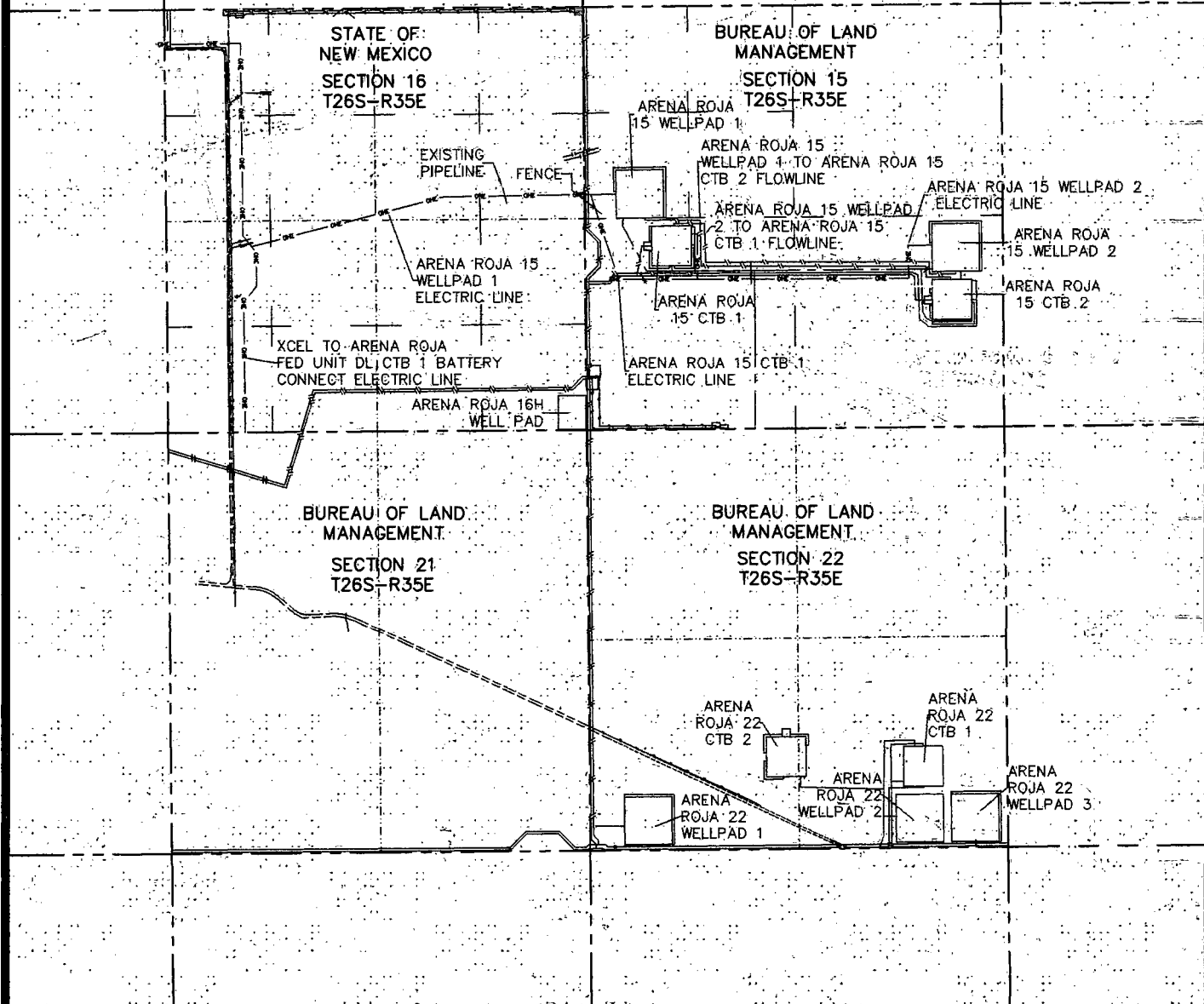


**devon**

**SHEET:**  
**3 OF 4**

# EXHIBIT "A"

## PAGE 4 of 4



### AERIAL MAP

SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
JEANNIE PERRY

Date: 06/06/2018

Drawn for:



LINE NUMBER:  
EL8204

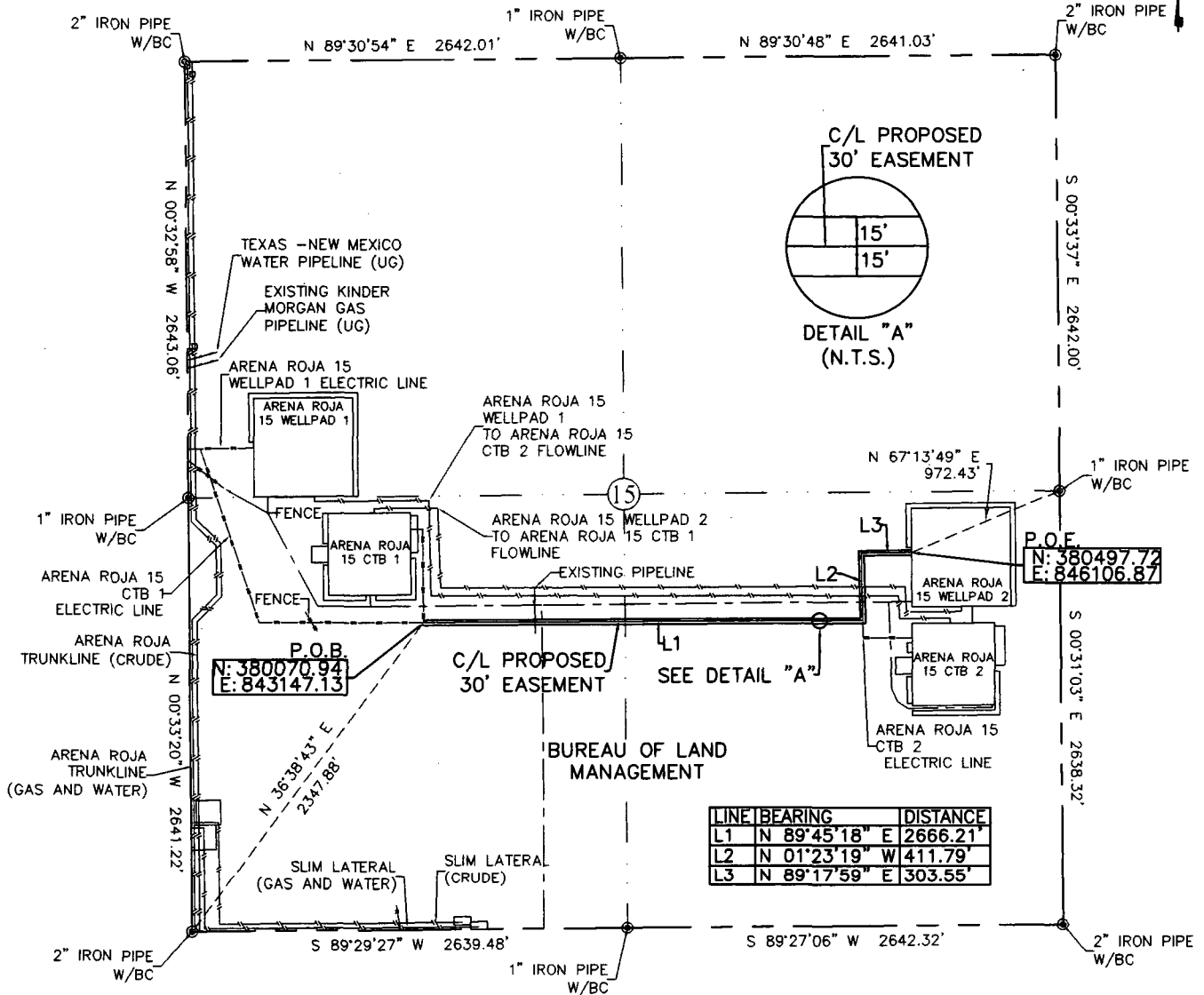
WBS NUMBER:

SCALE:  
1" = 2000'

REVISIONS:

SHEET:  
4 OF 4

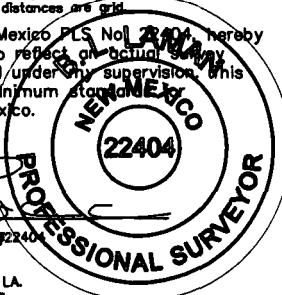
EXHIBIT "A"  
PAGE 1 of 4  
ELECTRIC LINE PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 2.33 ACRE(S)  
3381.55 FEET OR 204.94 RODS

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman  
Date Signed: 06-17-2018  
Horizonrow, LLC  
P.O. BOX 548, DRY CREEK, LA.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC

HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
JEANNIE PERRY

Date: 06/06/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 WELLPAD 2  
ELECTRIC LINE

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
EL8202

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:

SHEET:  
1 OF 4

0 1000 2000

SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO

**ELECTRIC LINE PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the southwest quarter (SW ¼) and the southeast quarter (SE ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 36°38'43" E a distance of 2347.88' to the **Point of Beginning** of this easement having coordinates of Northing=380070.94, Easting=843147.13 feet and continuing the following courses;

Thence N 89°45'18" E a distance of 2666.21' to an angle point;

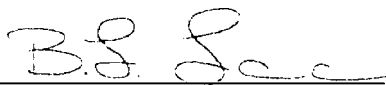
Thence N 01°23'19" W a distance of 411.79' to an angle point;

Thence N 89°17'59" E a distance of 303.55' to the **Point of Ending** having coordinates of Northing=380497.72, Easting=846106.87 feet from said point a 1" iron pipe w/BC for the east quarter corner of Section 15, T26S-R35E bears N 67°13'49" E a distance of 972.43', covering **3381.55' or 204.94 rods** and having an area of **2.33 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman      PLS 22404  
Date Signed: 06/17/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045    70637  
Employee of Horizon Row, LLC



[illegible]

SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

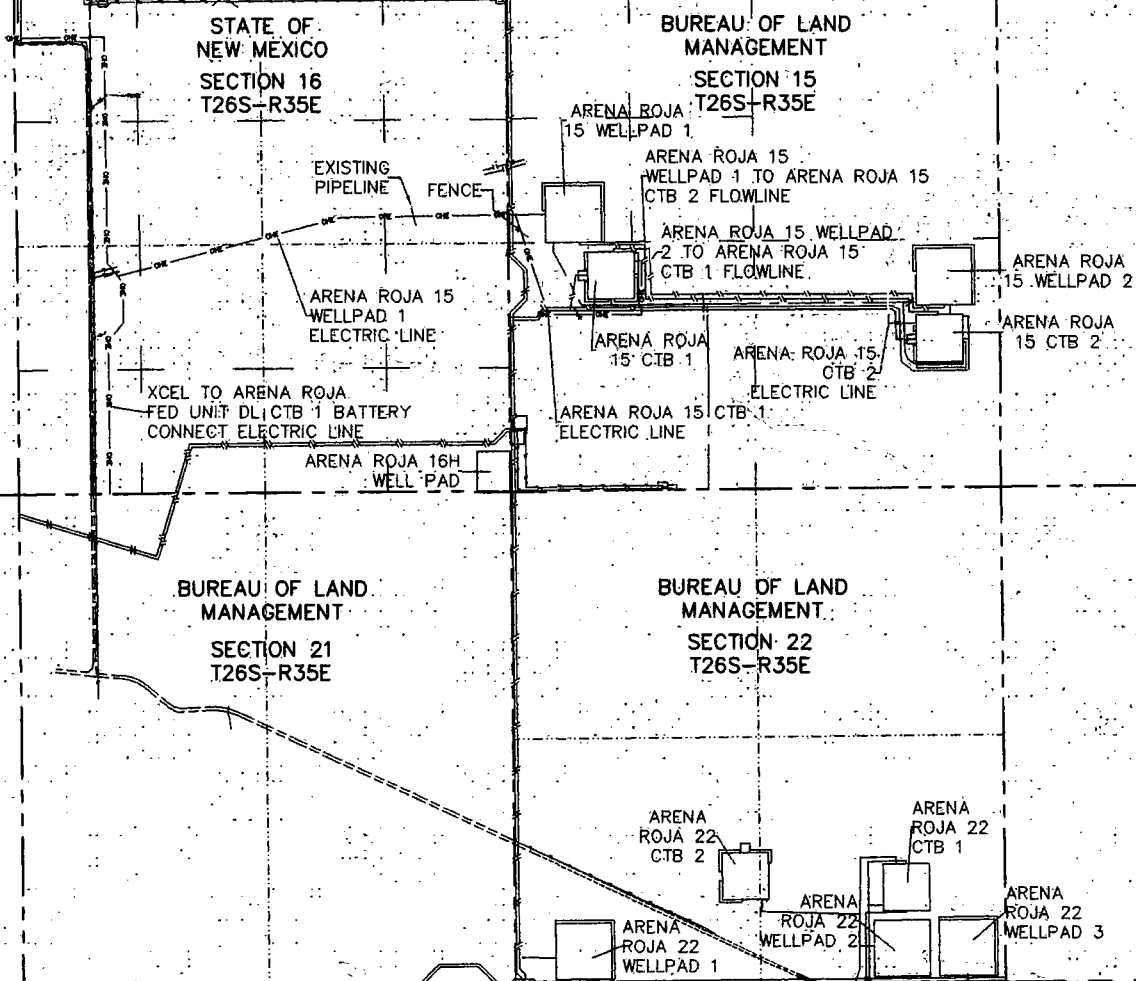
**devon**

**SHEET:**  
**3 OF 4**



# EXHIBIT "A"

## PAGE 4 of 4



### AERIAL MAP

SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
JEANNIE PERRY

Date: 06/06/2018

Drawn for:



LINE NUMBER:  
EL8202

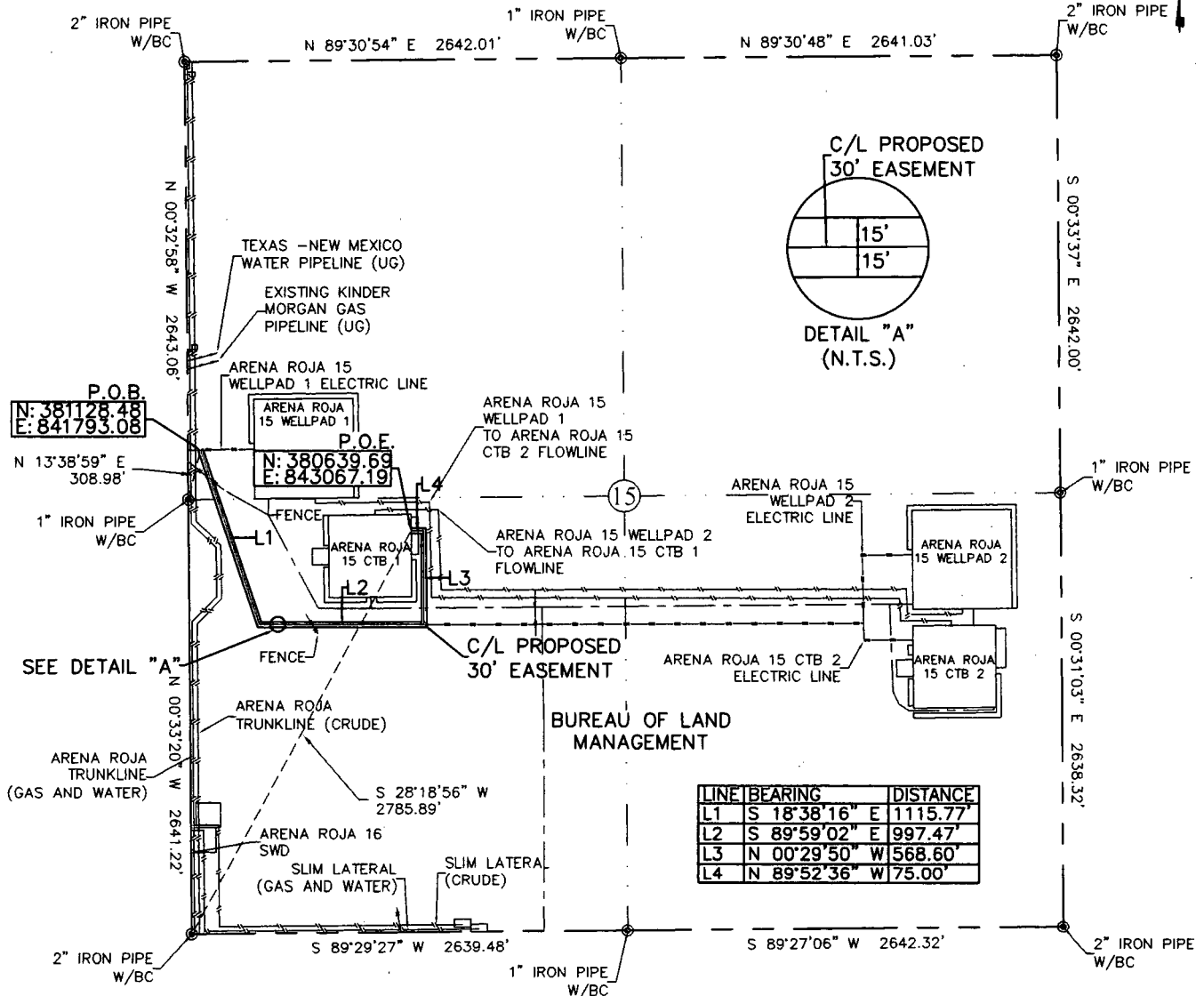
WBS NUMBER:

SCALE:  
1" = 2000'

REVISIONS:

SHEET:  
4 OF 4

EXHIBIT "A"  
PAGE 1 of 4  
ELECTRIC LINE PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO



30' EASEMENT AREA = 1.90 ACRE(S)  
2756.84 FEET OR 167.08 RODS

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

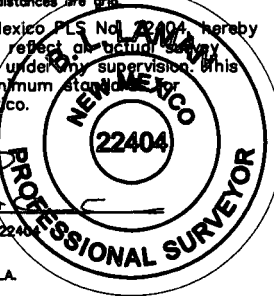
I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

0+00  
1+85.8  
14+34.9  
21+13.2  
22+14.3  
27+56.8

P.O.B./ARENA ROJA 15 WELLPAD 1 ELECTRIC LINE  
FENCE  
FENCE  
ARENA ROJA 15 WELLPAD 2 ELECTRIC LINE  
ACCESS ROAD  
ARENA ROJA 15 CTB 1

0 1000 2000

B.L. Laman PLS #22404  
Date Signed: 06-17-2018  
Horizonrow, LLC  
P.O. BOX 548, DRY CREEK, LA.  
(903) 388-3045 70637  
Employee of Horizonrow, LLC



**HORIZON ROW LLC**  
Drawn for:  
**devon**  
Drawn by: JEANNIE PERRY Date: 06/06/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.	LINE NUMBER: EL8203
ARENA ROJA 15 CTB 1 ELECTRIC LINE	WBS NUMBER:
PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT	SCALE: 1" = 1000'
SECTION 15, T26S-R35E, N.M.P.M.	REVISIONS:
	SHEET: 1 OF 4

SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO

**ELECTRIC LINE PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the northwest quarter (NW ¼) and the southwest quarter (SW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence N 13°38'59" E a distance of 308.98' to the **Point of Beginning** of this easement having coordinates of Northing=381128.48, Easting=841793.08 feet and continuing the following courses;

Thence S 18°38'16" E a distance of 1115.77' to an angle point;

Thence S 89°59'02" E a distance of 997.47' to an angle point;


Thence N 00°29'50" W a distance of 568.60' to an angle point;

Thence N 89°52'36" W a distance of 75.00' to the **Point of Ending** having coordinates of Northing=380639.69, Easting=843067.19 feet from said point a 2" iron pipe w/BC for the southwest corner of Section 15, T26S-R35E bears S 28°18'56" W a distance of 2785.89', covering **2756.84' or 167.08 rods** and having an area of **1.90 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

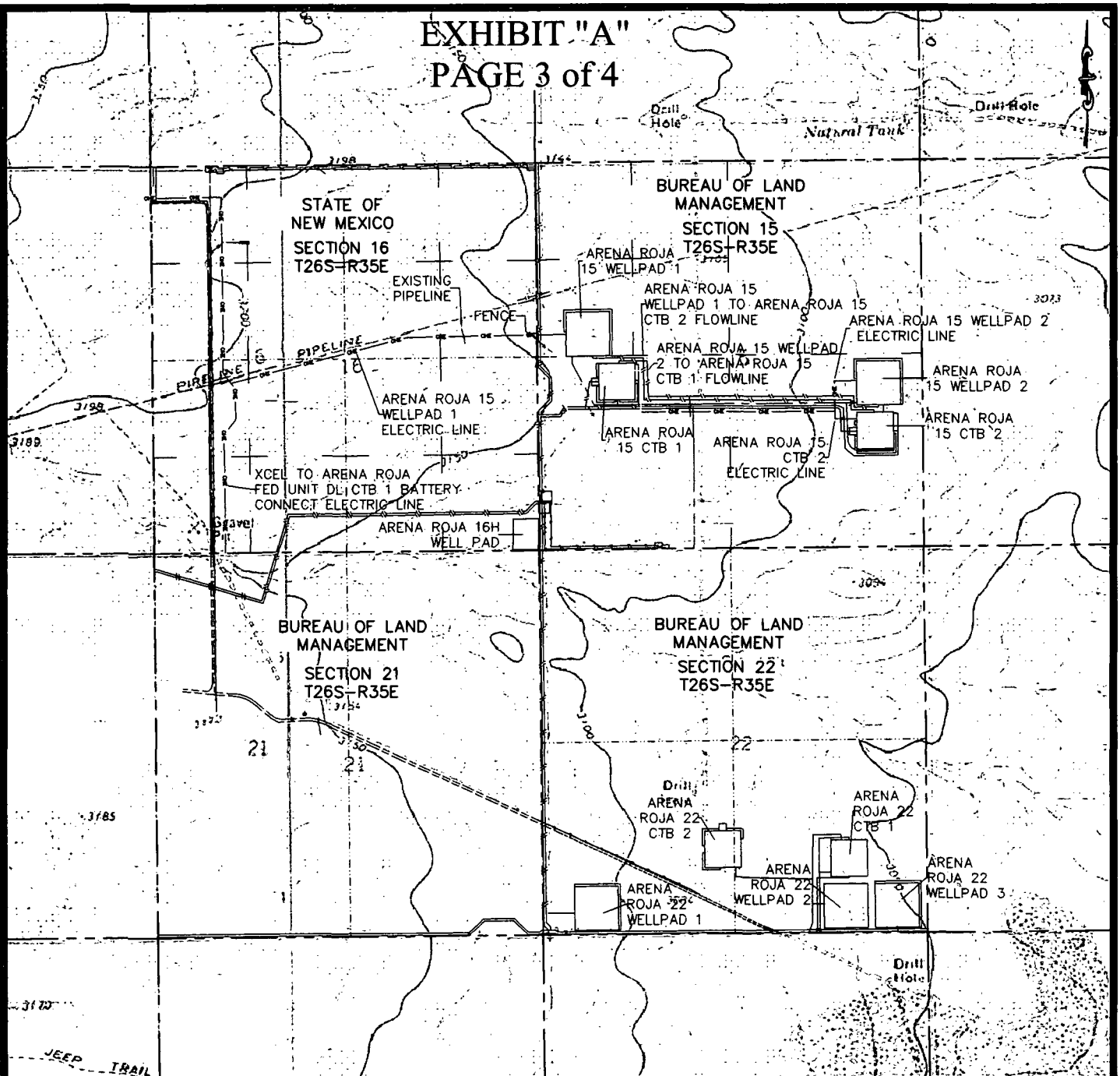
I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

  
B.L. Laman      PLS 22404  
Date Signed: 06/17/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, La.  
(903) 388-3045    70637  
Employee of Horizon Row, LLC



# EXHIBIT "A"

## PAGE 3 of 4



### QUAD MAP

SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
JEANNIE PERRY

Date: 06/06/2018

Drawn for:



LINE NUMBER:  
EL8203

WBS NUMBER:

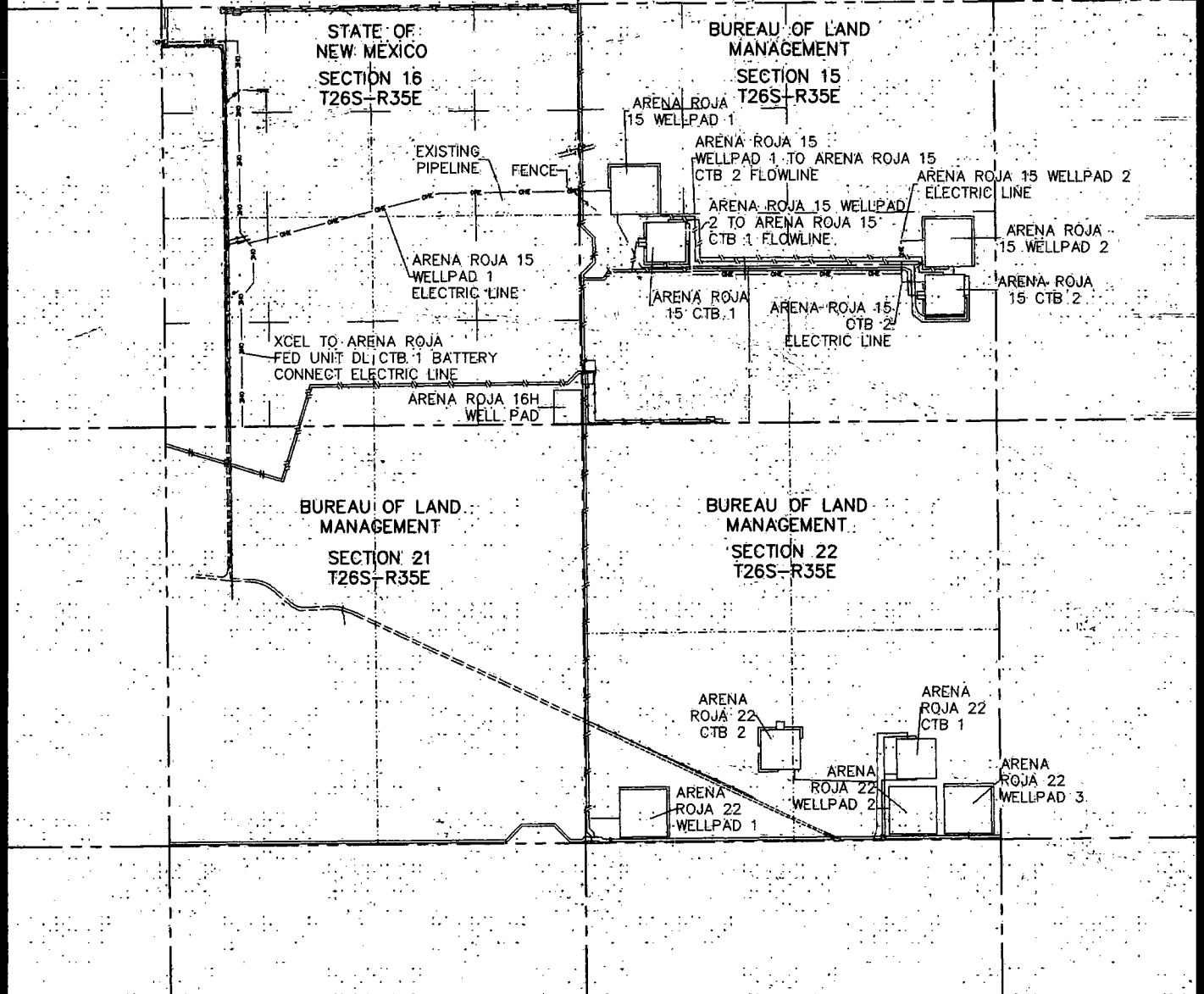
SCALE:  
1" = 2000'

REVISIONS:

SHEET:  
3 OF 4

# EXHIBIT "A"

## PAGE 4 of 4



### AERIAL MAP

SECTION 15, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

PROPOSED 30' EASEMENT

Drawn by:  
JEANNIE PERRY

Date: 06/06/2018

Drawn for:



LINE NUMBER:  
EL8203

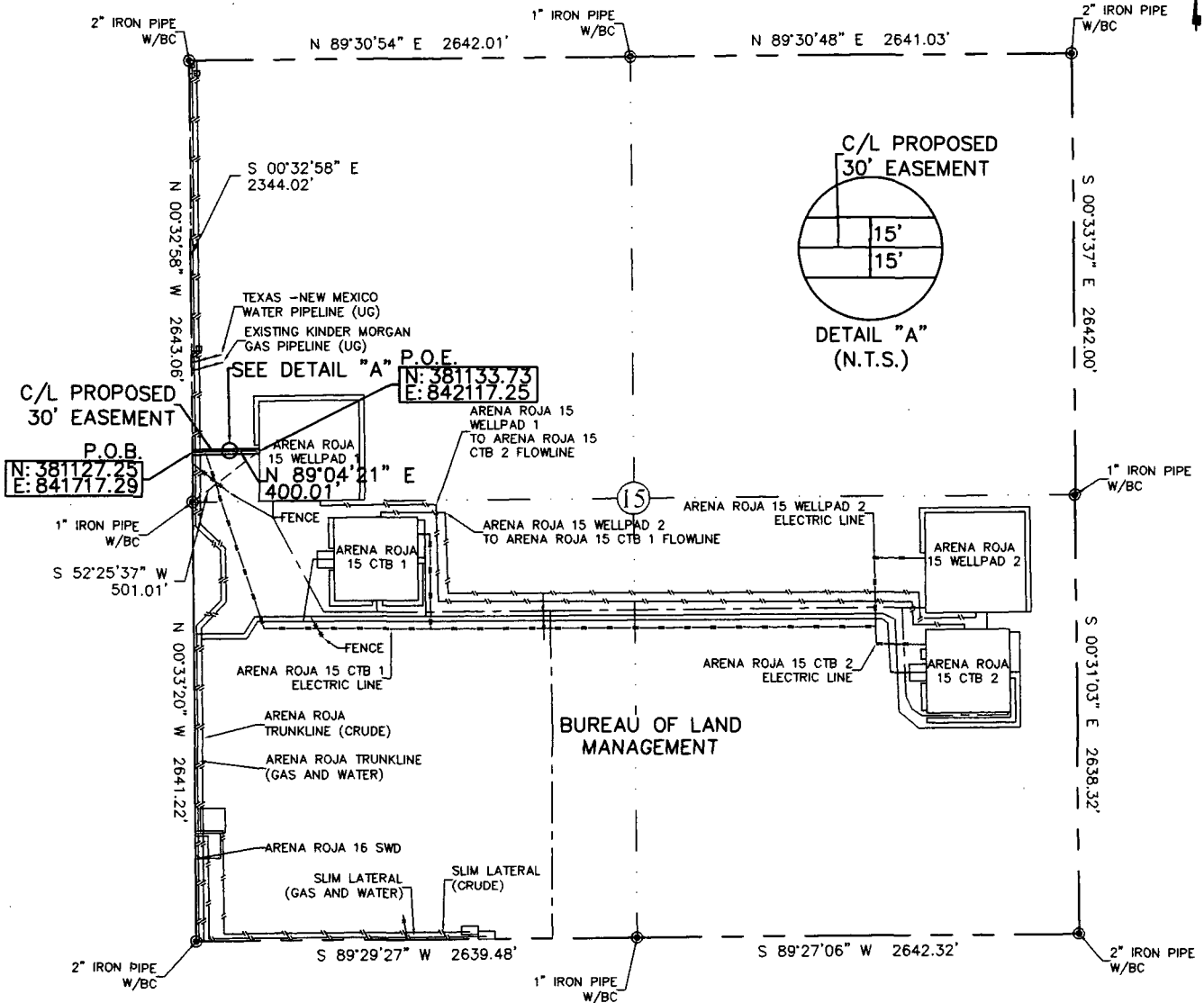
WBS NUMBER:

SCALE:  
1" = 2000'

REVISIONS:

SHEET:  
4 OF 4

EXHIBIT "A"  
PAGE 1 of 4  
ELECTRIC LINE PLAT  
SECTION 15, T26S-R35E, N.M.P.M.  
LEA COUNTY, NEW MEXICO

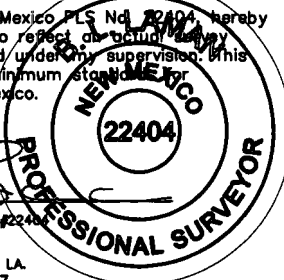


30' EASEMENT AREA = 0.275 ACRE(S)  
400.01 FEET OR 24.24 RODS

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
Date Signed: 08-17-2018  
Horizonrow, LLC  
P.O. BOX 548, DRY CREEK, LA.  
(803) 388-3045 70637  
Employee of Horizonrow, LLC



42+78.1 SECTION LINE  
42+93.7 ARENA ROJA TRUNKLINE (GAS AND WATER)  
43+23.7 ARENA ROJA TRUNKLINE (CRUDE)  
43+53.9 ARENA ROJA 15 CTB 1 ELECTRIC LINE  
46+78.1 P.O.E./ARENA ROJA 15 WELLPAD 1

0 1000 2000



HORIZON ROW LLC

Drawn for:

devon

Drawn by:  
JEANNIE PERRY

Date: 06/06/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

ARENA ROJA 15 WELLPAD 1  
ELECTRIC LINE

PROPOSED 30' EASEMENT  
ON THE PROPERTY OF  
BUREAU OF LAND MANAGEMENT  
SECTION 15, T26S-R35E, N.M.P.M.

LINE NUMBER:  
EL8201

WBS NUMBER:

SCALE:  
1" = 1000'

REVISIONS:

SHEET:  
1 OF 4

SECTION 15, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO

**ELECTRIC LINE PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**BUREAU OF LAND MANAGEMENT**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the northwest quarter (NW ¼) of Section 15, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the Bureau of Land Management. Said centerline of easement being more particularly described as follows:

Commencing from a 2" iron pipe w/BC for the northwest corner of Section 15, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 00°32'58" E a distance of 2344.02' to the **Point of Beginning** of this easement, being in the west line of Section 15 and having coordinates of Northing=381127.25, Easting=841717.29 feet and continuing the following courses;

Thence N 89°04'21" E a distance of 400.01' to the **Point of Ending** having coordinates of Northing=381133.73, Easting=84217.25 feet from said point a 1" iron pipe w/BC for the west quarter corner of Section 15, T26S-R35E bears S 52°25'37" W a distance of 501.01', covering **400.01' or 24.24 rods** and having an area of **0.275 acres**.

**NOTES:**

Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404

Date Signed: 06/17/2018

Horizon Row, LLC

P.O. Box 548, Dry Creek, La.

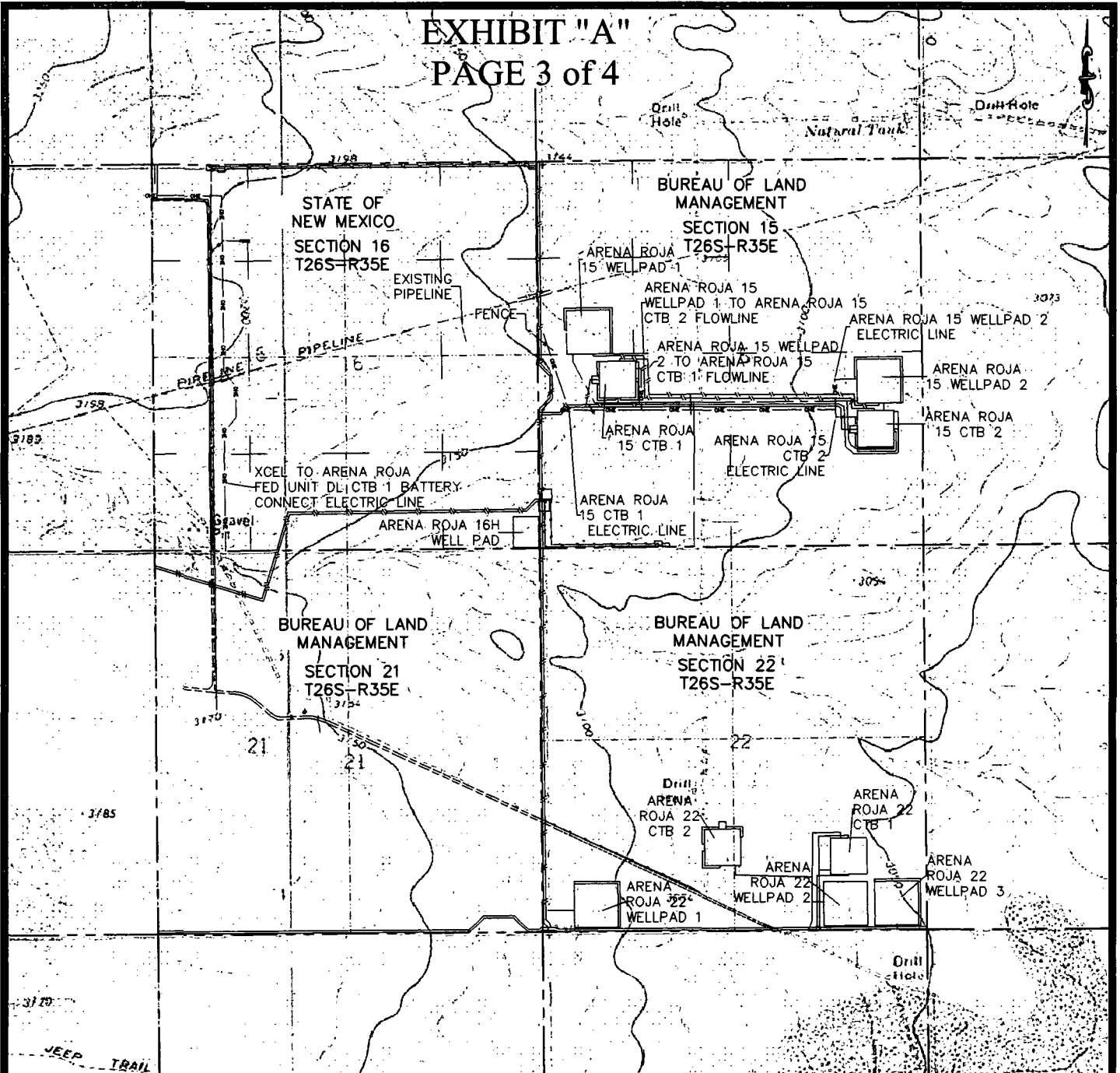
(903) 388-3045 70637

Employee of Horizon Row, LLC



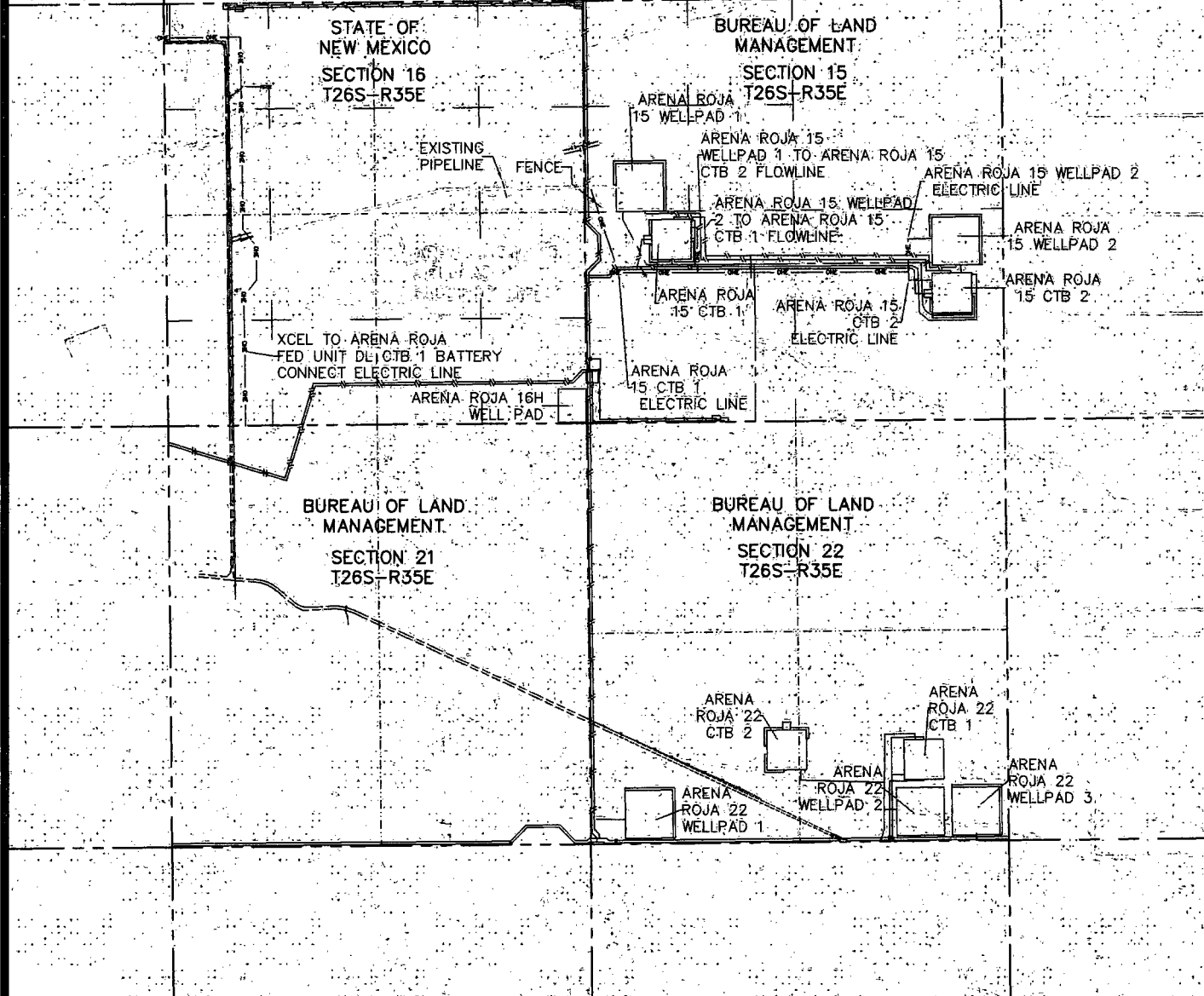
# EXHIBIT "A"

## PAGE 3 of 4





5



## AERIAL MAP

SECTION 15, T26S-R35E, N.M.P.M.;  
SECTION 16, T26S-R35E, N.M.P.M.;  
LEA COUNTY, NEW MEXICO

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

**PROPOSED 30' EASEMENT**

Drawn by:  
JEANNIE PERRY

**Date:** 06/06/2018

Drawn for:



**devon**

LINE NUMBER:  
EL8201

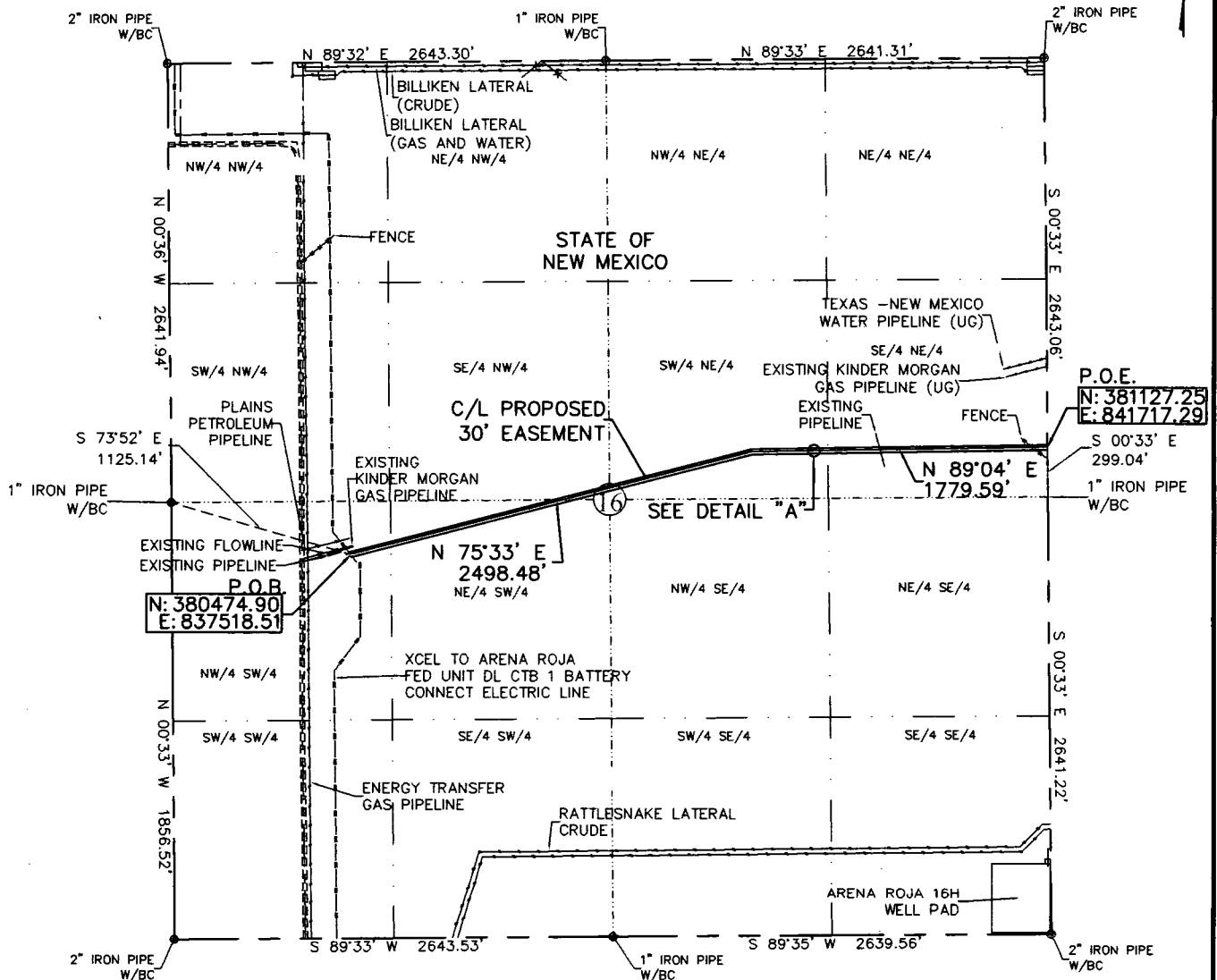
WBS NUMBER:

**SCALE:**  
1" = 2000'

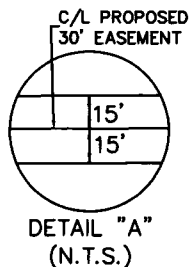
**REVISIONS:**

**SHEET:**  
**4 OF 4**

**EXHIBIT "A"**  
**PAGE 1 of 2**  
**ELECTRIC LINE PLAT**  
**SECTION 16, T26S-R35E, N.M.P.M.**  
**LEA COUNTY, NEW MEXICO**



QUARTER/QUARTER	30' ESMT. AREA	FEET	RODS
NW/4 OF SW/4	0.17 ACRES	250.80	15.20
NE/4 OF SW/4	0.74 ACRES	1075.22	65.16
SE/4 OF NW/4	0.20 ACRES	285.73	17.32
SW/4 OF NE/4	0.93 ACRES	1344.46	81.48
SE/4 OF NE/4	0.91 ACRES	1321.86	80.11
<b>TOTAL:</b>	<b>2.95 ACRES</b>	<b>4278.07</b>	<b>259.27</b>



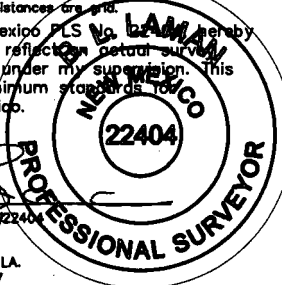
0+00 P.O.B./XCEL TO ARENA ROJA  
 32+70.8 FED UNIT DL CTB 1 BATTERY  
 41+92.3 CONNECT ELECTRIC LINE  
 42+78.1 EXISTING KINDER MORGAN  
 GAS PIPELINE  
 EXISTING FENCE  
 SECTION LINE

SEE THE ATTACHED LEGAL DESCRIPTION

Note: All bearings recited herein are based on the New Mexico State Plane Coordinate System, NAD 83, New Mexico East Zone 3001, US Survey Feet, all distances are as shown.

I, B.L. Laman, New Mexico Professional Surveyor No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

B.L. Laman  
 Date Signed: 06-17-2018  
 Horizonrow, LLC  
 P.O. BOX 548, DRY CREEK, LA.  
 (903) 388-3045 70637  
 Employee of Horizonrow, LLC



**HORIZON ROW LLC**

Drawn for:

**devon**

Drawn by:  
 JEANNIE PERRY

Date: 06/06/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.  
 ARENA ROJA 15 WELLPAD 1  
 ELECTRIC LINE

PROPOSED 30' EASEMENT  
 ON THE PROPERTY OF  
 STATE OF NEW MEXICO  
 SECTION 16, T26S-R35E, N.M.P.M.

LINE NUMBER:  
 ELB201

WBS NUMBER:

SCALE:  
 1" = 1000'

REVISIONS:

SHEET:  
 1 OF 2

**SECTION 16, T26S-R35E, N.M.P.M.,  
LEA COUNTY, NEW MEXICO**

**ELECTRIC LINE PLAT**

**LEGAL DESCRIPTION**

**FOR**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**

**STATE OF NEW MEXICO**

**30' EASEMENT DESCRIPTION:**

**BEING** an easement thirty (30) feet in width lying fifteen (15) feet on the right side and fifteen (15) feet on the left side of the survey centerline described below, being out of the northwest quarter of the southwest quarter (NW  $\frac{1}{4}$  SW  $\frac{1}{4}$ ) and the northeast quarter of the southwest quarter (NE  $\frac{1}{4}$  SW  $\frac{1}{4}$ ) and the southeast quarter of the northwest quarter (SE  $\frac{1}{4}$  NW  $\frac{1}{4}$ ) and the southwest quarter of the northeast quarter (SW  $\frac{1}{4}$  NE  $\frac{1}{4}$ ) and the southeast quarter of the northeast quarter (SE  $\frac{1}{4}$  NE  $\frac{1}{4}$ ) of Section 16, Township 26 South, Range 35 East, N.M.P.M., Lea County, New Mexico, and being out of a parcel of land owned by the State of New Mexico. Said centerline of easement being more particularly described as follows:

Commencing from a 1" iron pipe found for the west quarter corner of Section 16, T26S-R35E, N.M.P.M., Lea County, New Mexico;

Thence S 73°52' E, a distance of 1125.14' to the **Point of Beginning** of this easement having coordinates of Northing=380474.92 feet, Easting=837518.51 feet and continuing the following courses;

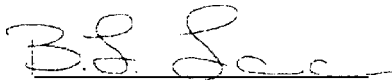
Thence N 75°33' E, a distance of 2498.48' to an angle point;

Thence N 89°04' E, a distance of 1779.59' to the **Point of Ending** having coordinates of Northing=381127.25 feet, Easting=841717.29 feet, in the east line of Section 16, from said point a 1" iron pipe w/BC for the east quarter corner of Section 16, T26S-R35E, N.M.P.M., Lea County, New Mexico bears S 00°33' E a distance of 299.04', covering **4278.07' or 259.27 rods** and having an area of **2.95 acres**.

**NOTES:**

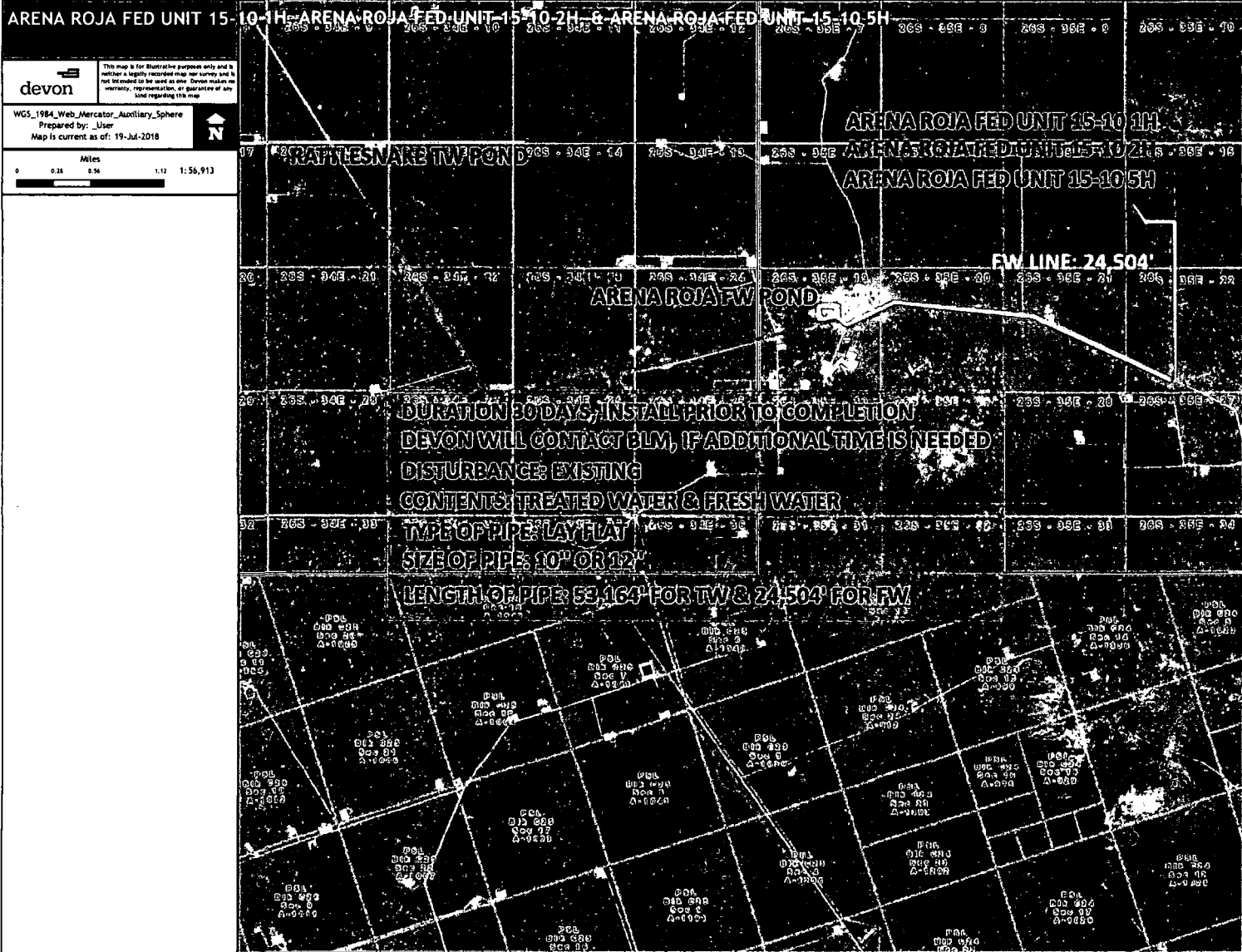
Bearings, distances and coordinates shown herein are based on New Mexico State Plane Coordinate System, NAD 83, East Zone 3001, US Survey Feet, all distances are grid.

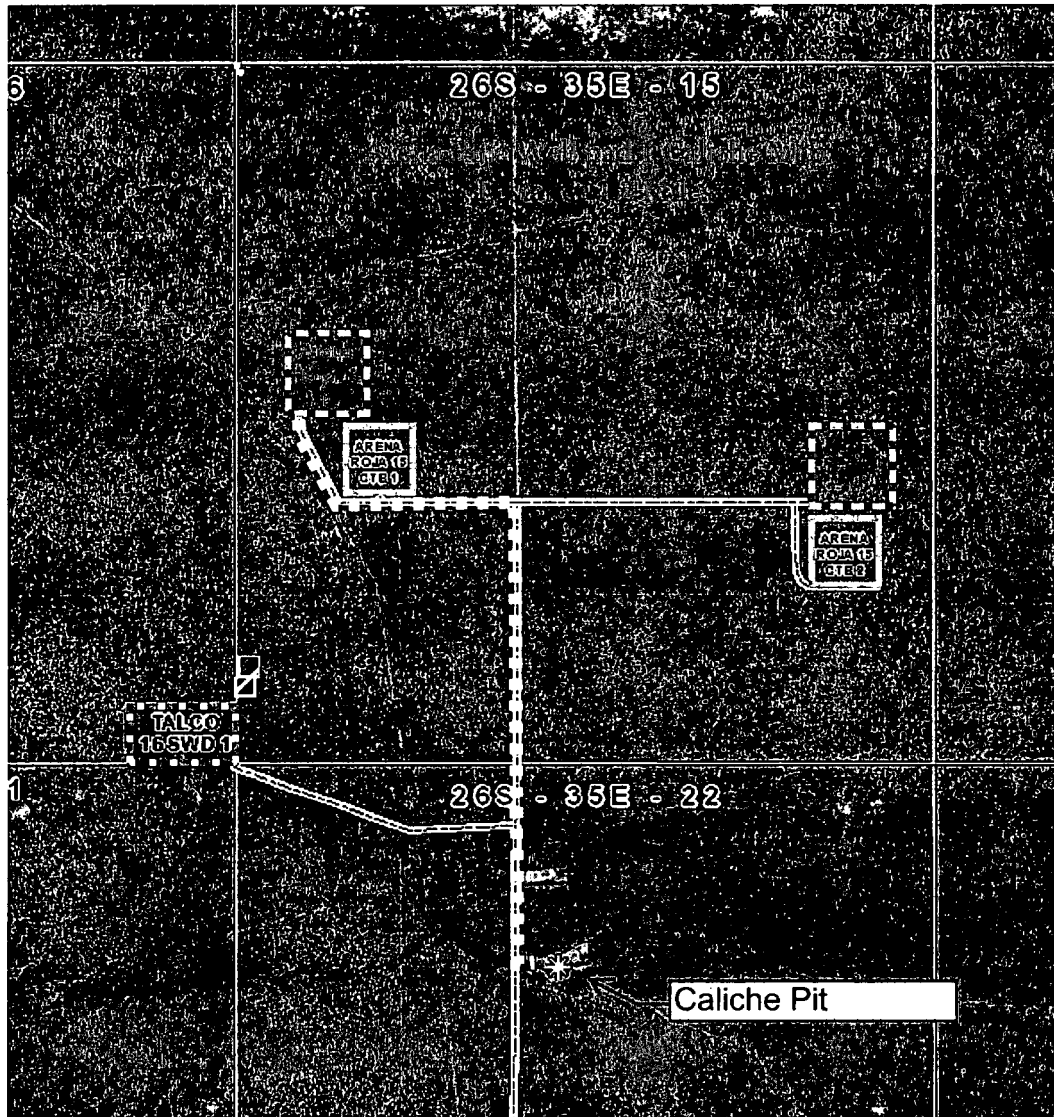
I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.

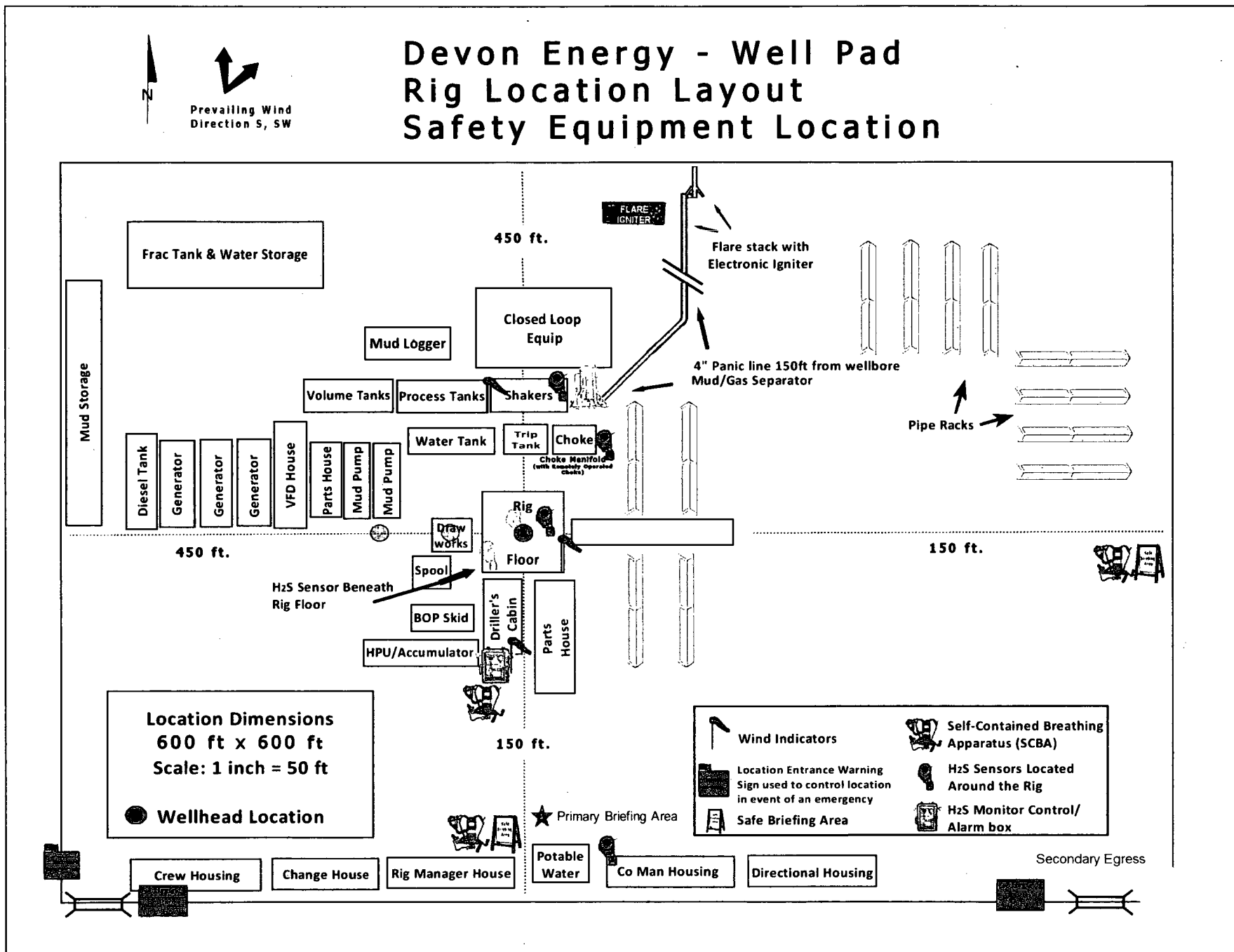
  
B.L. Laman      PLS 22404  
Date Signed: 06/17/2018  
Horizon Row, LLC  
P.O. Box 548, Dry Creek, LA  
(903) 388-3045      70637  
Employee of Horizon Row, LLC



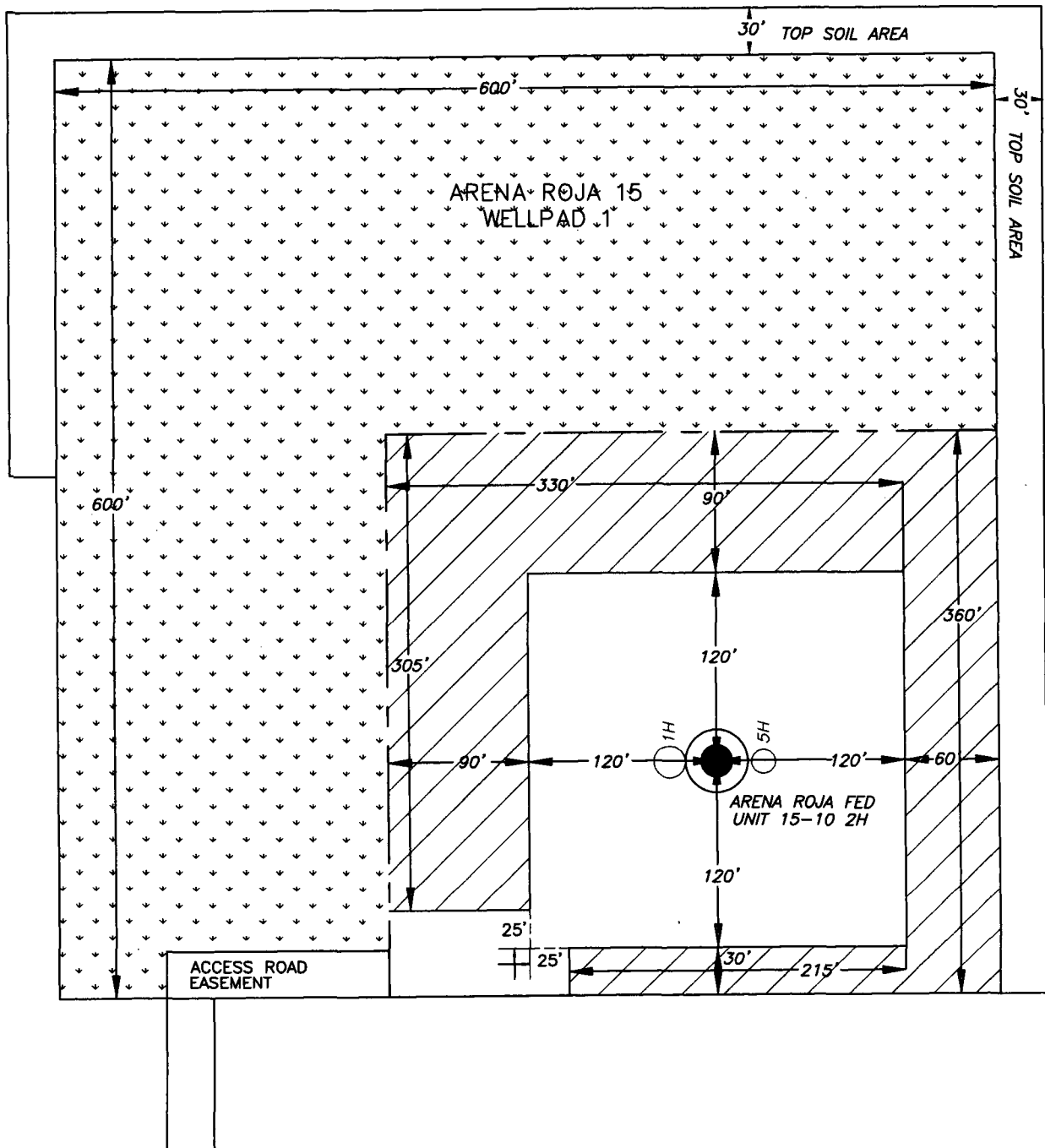






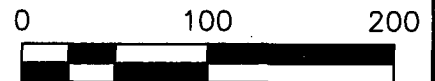


SECTION 15, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.  
LEA COUNTY, STATE OF NEW MEXICO  
INTERIM SITE BUILD PLAN



- DENOTES INTERIM PAD RECLAMATION AREA  
 DENOTES GRADING SITE RECLAMATION AREA

1.769± ACRES INTERIM PAD RECLAMATION AREA  
 4.943± ACRES GRADING SITE RECLAMATION AREA  
 1.552± ACRES NON-RECLAIMED AREA  
 8.264± ACRES GRADING SITE RECLAMATION AREA



DEVON ENERGY PRODUCTION COMPANY, L.P.  
 ARENA ROJA FED UNIT 15-10 2H  
 LOCATED 2490 FT. FROM THE NORTH LINE  
 AND 820 FT. FROM THE WEST LINE OF  
 SECTION 15, TOWNSHIP 26 SOUTH,  
 RANGE 35 EAST, N.M.P.M.  
 LEA COUNTY, STATE OF NEW MEXICO

**HORIZON ROW LLC**

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by:  
 CHRIS MAAS

Date: 05/29/2018  
 Rev. Date: 08/6/2018

Drawn for:

**devon**





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

## PWD Data Report

02/25/2019

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

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:

Describe 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:**

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:

Describe 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:**

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:**

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:**

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:**



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

## Bond Info Data Report

02/25/2019

Federal/Indian APD: FED

BLM Bond number: CO1104

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

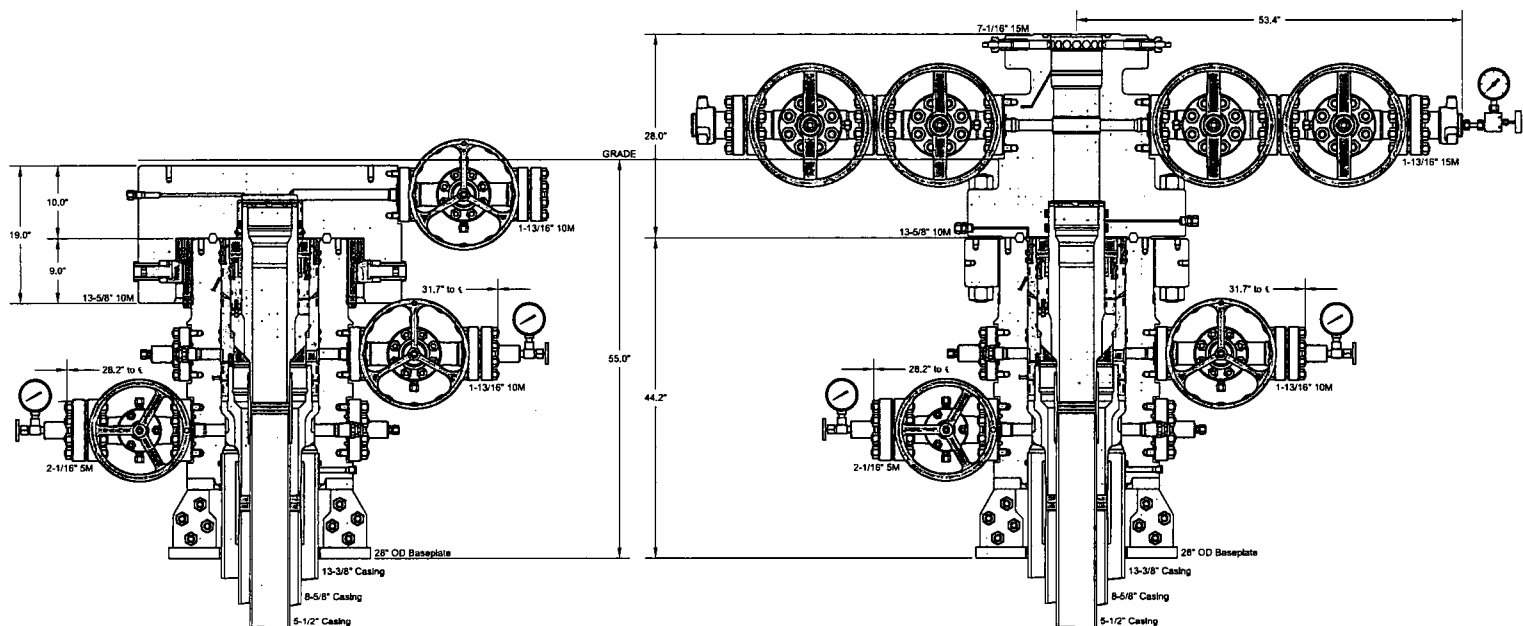
**Forest Service reclamation bond attachment:**

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

**Additional reclamation bond information attachment:**



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## CACTUS WELLHEAD LLC

13-3/8" x 8-5/8" x 5-1/2" 5M MBU-3T Wellhead System  
With 8-5/8" & 5-1/2" Pin Down Rotating Mandrel Hangers  
And 13-5/8" 10M x 7-1/16" 15M CTH-P-DBLHPS Tubing Head

DEVON ENERGY CORPORATION

DRAWN DLE 10MAY18

APPRV

DRAWING NO. ODE0002309