Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

HOBBS OCD

SUBMIT IN TRIPLICATE - Other instructions on page 2

SEP 04 2019

RECEIVED

5. Lease Serial No.
NMNM96256

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
ARENA ROJA FED UNIT 15-10 4H

2. Name of Operator
DEVON ENERGY PRODUCTION COM LP
Contact: REBECCA DEAL
E-Mail: Rebecca.Deal@dvn.com

9. API Well No.
30-025-45736-00-X1

3a. Address
P O BOX 250
ARTESIA, NM 88201

3b. Phone No. (include area code)
Ph: 405-228-8429

10. Field and Pool or Exploratory Area
WOLFCAMP

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 15 T26S R35E NESE 2090FSL 690FEL
32.041756 N Lat, 103.349060 W Lon

11. County or Parish, State
LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Devon Energy respectfully requests a change to the bottom hole location of the Arena Roja 15-10 Fed Unit 4H as follows:

BHL move from 20 FNL & 360 FEL to 20 FNL & 1650 FEL, both 10-26S-35E.

Please see attached revised C-102, Drilling & Directional Plan

Carlsbad Field Office
OCD Hobbs

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #480948 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION COM LP, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 08/29/2019 (19PP2981SE)

Name *(Printed/Typed)* REBECCA DEAL — Title REGULATORY COMPLIANCE PROFESSI

Signature (Electronic Submission) — Date 08/29/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By LONG VO — Title PETROLEUM ENGINEER — Date 08/29/2019

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Hobbs

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company LP**
LEASE NO.:	**NMNM96256**
WELL NAME & NO.:	Arena Roja Fed Unit 15-10 4H
SURFACE HOLE FOOTAGE:	2090'/S & 690'/E
BOTTOM HOLE FOOTAGE	20'/N & 1650'/E
LOCATION:	Section 15, T.26 S., R.35 E., NMPM
COUNTY:	Lea County, New Mexico

COA

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

All Previous COAs Still Apply

A. CASING

Primary Casing Design:

1. The **10-3/4** inch surface casing shall be set at approximately **1043 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

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

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

Option 2:

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

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

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.

Operator has proposed to pump down 10-3/4" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM.

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

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Alternate Casing Design:

4. The **13-3/8** inch surface casing shall be set at approximately **1043 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

e. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after

completing the cement job.

f. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
g. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
h. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

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

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Cement excess is less than 25%, more cement might be required. (-4.83%)**

Option 2:

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

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

d. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Cement excess is less than 25%, more cement might be required. (-4.83%)

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

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

   - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
     Cement excess is less than 25%, more cement might be required. (-1.11%)

B. PRESSURE CONTROL

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

2.

Option 1:

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

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

C. SPECIAL REQUIREMENT (S)

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.

Commercial Well Determination

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

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

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

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

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

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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

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

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

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

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

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

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not

hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

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

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

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

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

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

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

1. Geologic Formations

TVD of target	12,335'	Pilot hole depth	N/A
MD at TD:	20,116'	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		

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

2. Casing Program

ok

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
14.75"	0	1043'	10.75"	40.5	J-55	STC	1.125	1.25	1.6
9.875"	0	11,773'	7.625"	29.7	P110	BTC	1.125	1.25	1.6
8.75"	11,773'	12,335'	7.625"	29.7	P110	Flushmax III	1.125	1.25	1.6
6.75"	0	20,116'	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) ok

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	1043'	13.375"	48	H-40	STC	1.125	1.25	1.6
10..625"	0	5000'	8.625"	~~29.7~~ 32	P110EC	BTC	1.125	1.25	1.6
9.875"	5000'	12,335'	8.625"	~~29.7~~ 32	P110EC	VAM FJL	1.125	1.25	1.6
7.875"	0	20,116'	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 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program (Primary Design)

ok

Casing	# Sks	Wt. lb/ gal	H_2O gal/sk	Yld ft3/ sack	Slurry Description
Surface	560	14.8	6.34	1.34	Tail: Class A 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 A 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 A 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
Producti on	623	14.8	6.32	1.33	Class A 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	% Excess
Surface	50%
Intermediate	30%
Production	25%

Cementing Program (Alternate Design)

ok

Casing	# Sks	Wt. lb/ gal	H_2O gal/sk	Yld ft3/ sack	Slurry Description
Surface	649	14.8	6.34	1.34	Tail: Class A 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 A 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 A Cement + 0.125 lbs/sack Poly-E-Flake

not enough cement for it to surface - 5%)

not enough cement for 200 ft tie-back on the production casing. (-1.11%)

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	% Excess
Surface	50%
Intermediate	30%
Production	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

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*		

100%

Production	13-5/8"	10M	Annular (5M)	X	~~50%~~ of rated working pressure
			Blind Ram	X	10M
			Pipe Ram	X	
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

*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	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 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.
- 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 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.
13-5/8" BOP/BOPE system will have been tested to 10M rating prior to drilling out intermediate casing.

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~~ 10,000 psi WP.

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

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.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1043'	FW Gel	8.6-8.8	28-34	N/C
1043'	12,335'	OBM/Cut Brine	9-10	34-65	N/C - 6
12,335'	20,116'	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 fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

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

7. Drilling Conditions

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

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

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

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

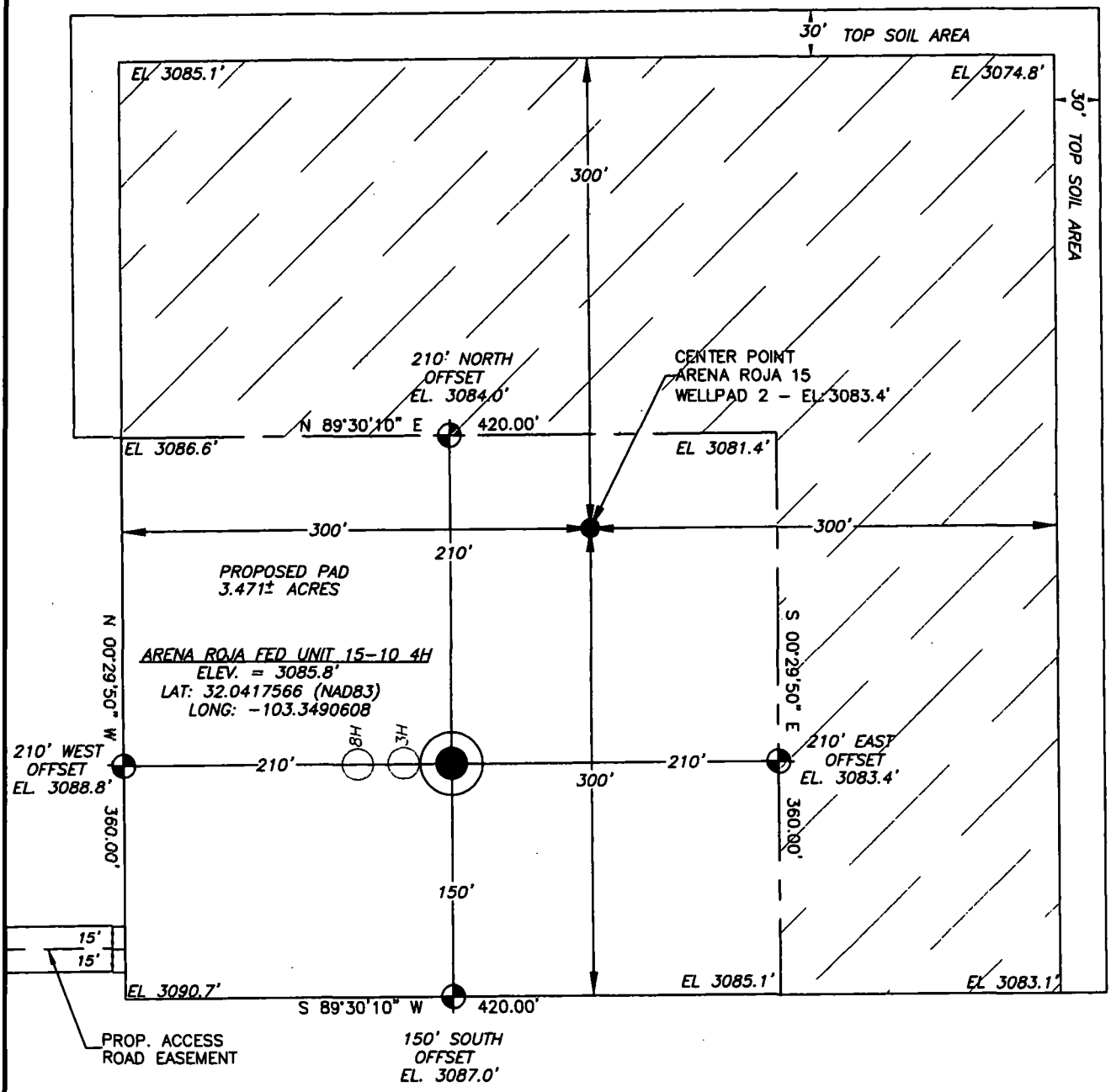
1. Spudder rig will move in and drill surface hole.
    a. Rig will utilize fresh water based mud to drill 14 ¾" surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of 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 nippled up and tested on the wellhead before drilling operations commences on each well.
    a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

_x_ Directional Plan

___ Other, describe

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 4H
LOCATED 2090 FT. FROM THE SOUTH LINE
AND 690 FT. FROM THE EAST LINE OF
SECTION 15, TOWNSHIP 26 SOUTH,
RANGE 35 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

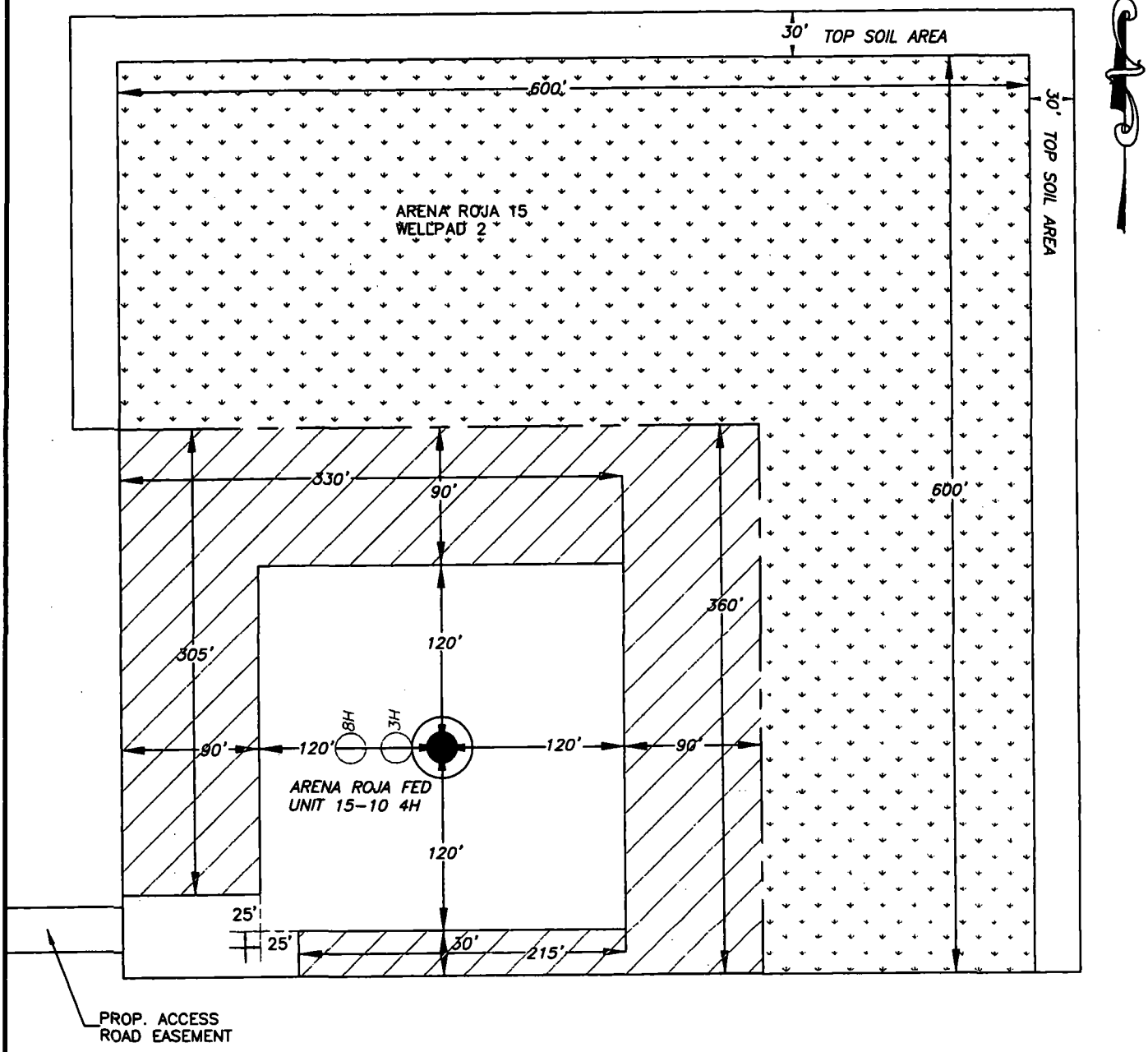
0 100 200

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 0.42 MILES TO THE SOUTHWEST CORNER OF THE PROPOSED ARENA ROJA 15 WELLPAD 2.

HORIZON ROW LLC		Drawn for: devon
DEVON ENERGY PRODUCTION CO., L.P.		
Drawn by: CHRIS MAAS	Date: 05/30/2018 Rev. Date: 8/7/18	

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

2.020± ACRES INTERIM PAD RECLAMATION AREA
4.791± ACRES GRADING SITE RECLAMATION AREA
1.453± ACRES NON-RECLAIMED AREA
8.264± ACRES GRADING SITE RECLAMATION AREA

0 100 200

DEVON ENERGY PRODUCTION COMPANY, L.P.
ARENA ROJA FED UNIT 15-10 3H
LOCATED 2090 FT. FROM THE SOUTH LINE
AND 720 FT. FROM THE EAST 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.

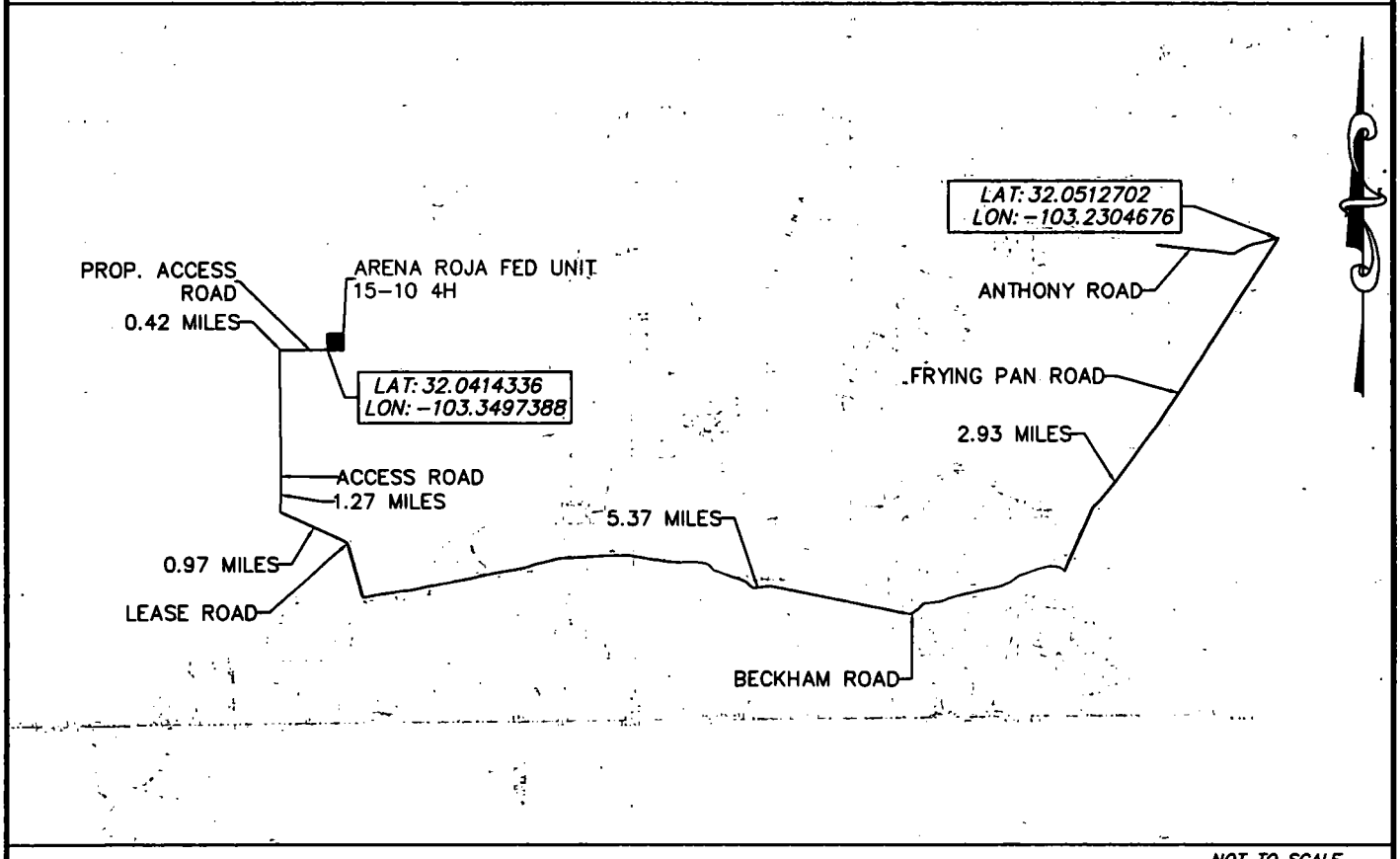
Drawn by: CHRIS MAAS

Date: 05/30/2018
Rev. Date: 8/7/18

Drawn for:

devon

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



NOT TO SCALE

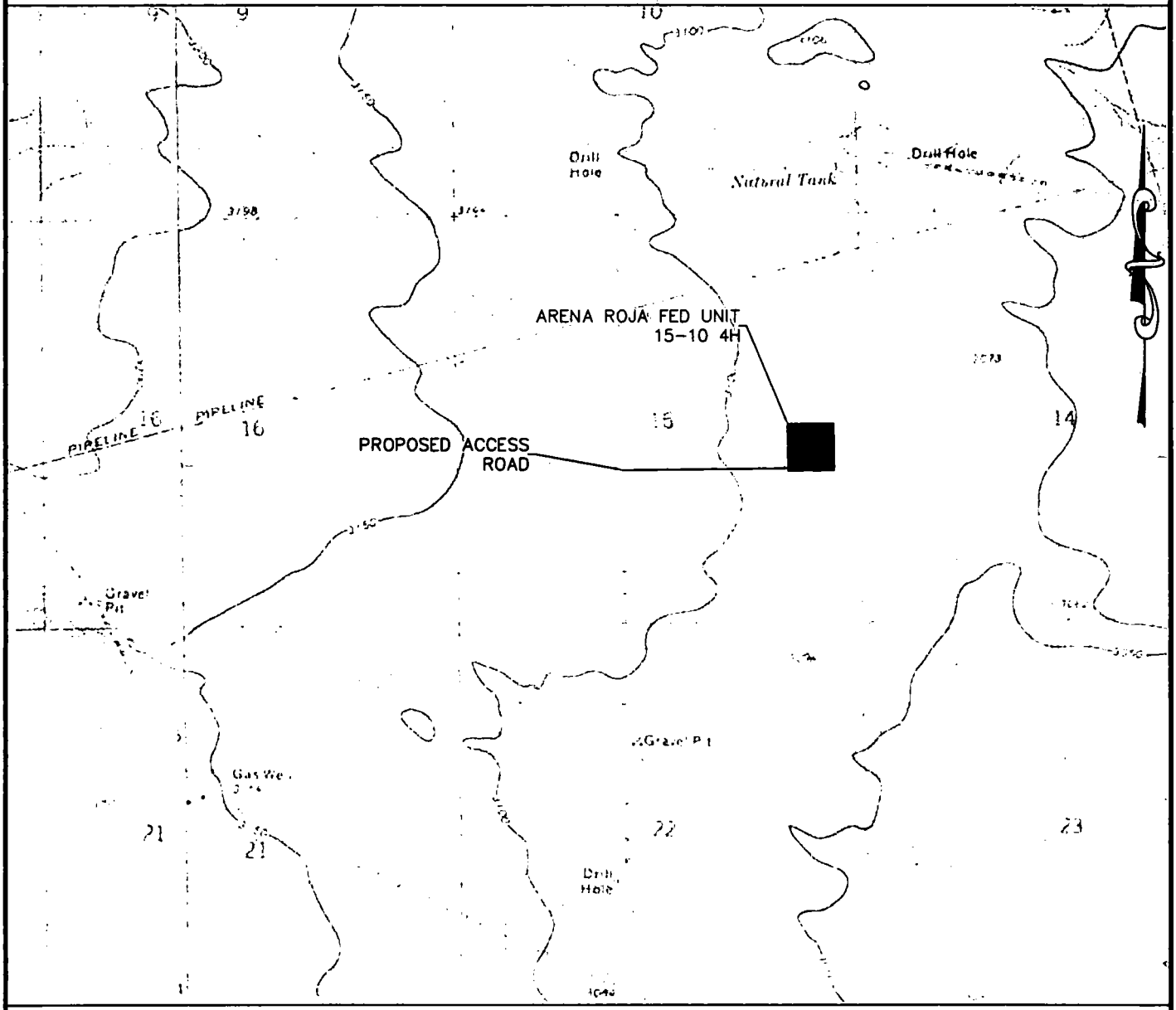
DEVON ENERGY PRODUCTION COMPANY, L.P.
ARENA ROJA FED UNIT 15-10 4H
LOCATED 2090 FT. FROM THE SOUTH LINE
AND 690 FT. FROM THE EAST LINE OF
SECTION 15, TOWNSHIP 26 SOUTH,
RANGE 35 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

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 TURN RIGHT AND HEAD EAST OFF OF THE EXISTING ACCESS ROAD ON THE PROPOSED ACCESS ROAD FOR 0.42 MILES TO THE SOUTHWEST CORNER OF THE PROPOSED ARENA ROJA 15 WELLPAD 2.

HORIZON ROW LLC		Drawn for: devon
DEVON ENERGY PRODUCTION CO., L.P.		
Drawn by: CHRIS MAAS	Date: 05/30/2018 Rev. Date: 7/28/18	

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



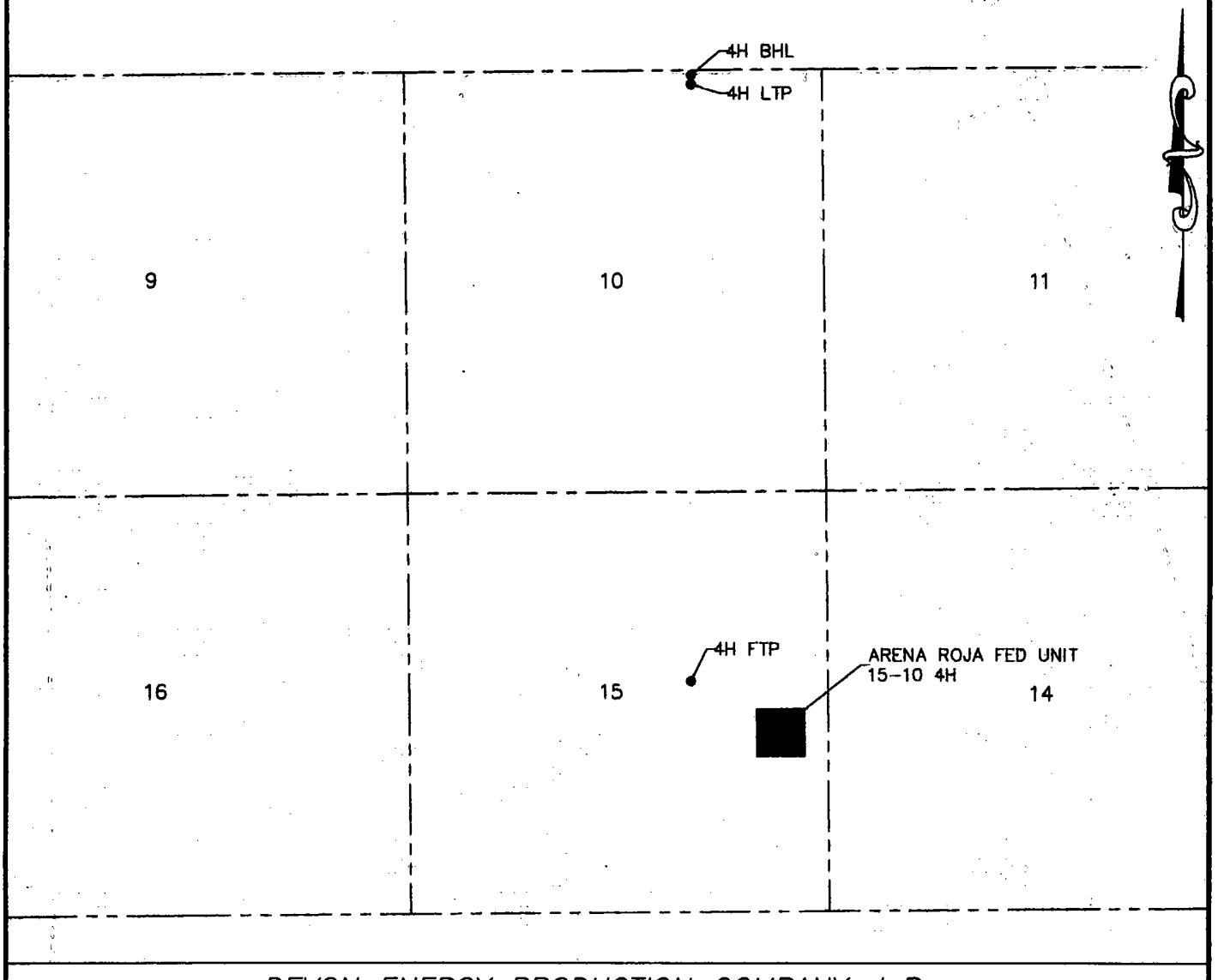
USGS QUAD MAP

DEVON ENERGY PRODUCTION COMPANY, L.P.
ARENA ROJA FED UNIT 15-10 4H
LOCATED 2090 FT. FROM THE SOUTH LINE
AND 690 FT. FROM THE EAST 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
DEVON ENERGY PRODUCTION CO., L.P.		
Drawn by: CHRIS MAAS	Date: 05/30/2018 Rev. Date: 7/28/18	

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 4H
LOCATED 2390 FT. FROM THE SOUTH LINE
AND 750 FT. FROM THE EAST 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

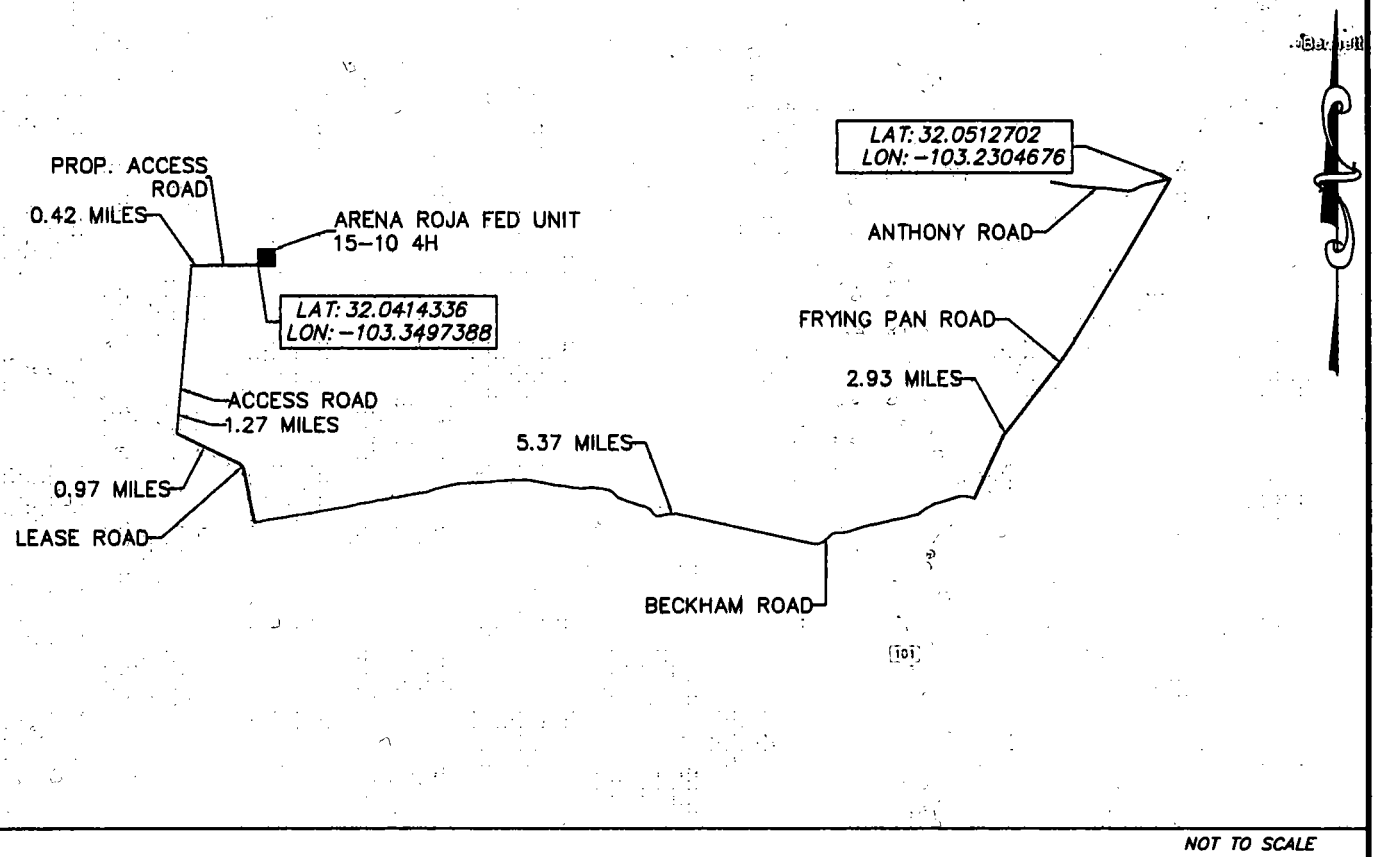
DEVON ENERGY PRODUCTION CO., L.P.

Drawn by: CHRIS MAAS

Date: 05/31/2018
REV. Date: 08/27/2019

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

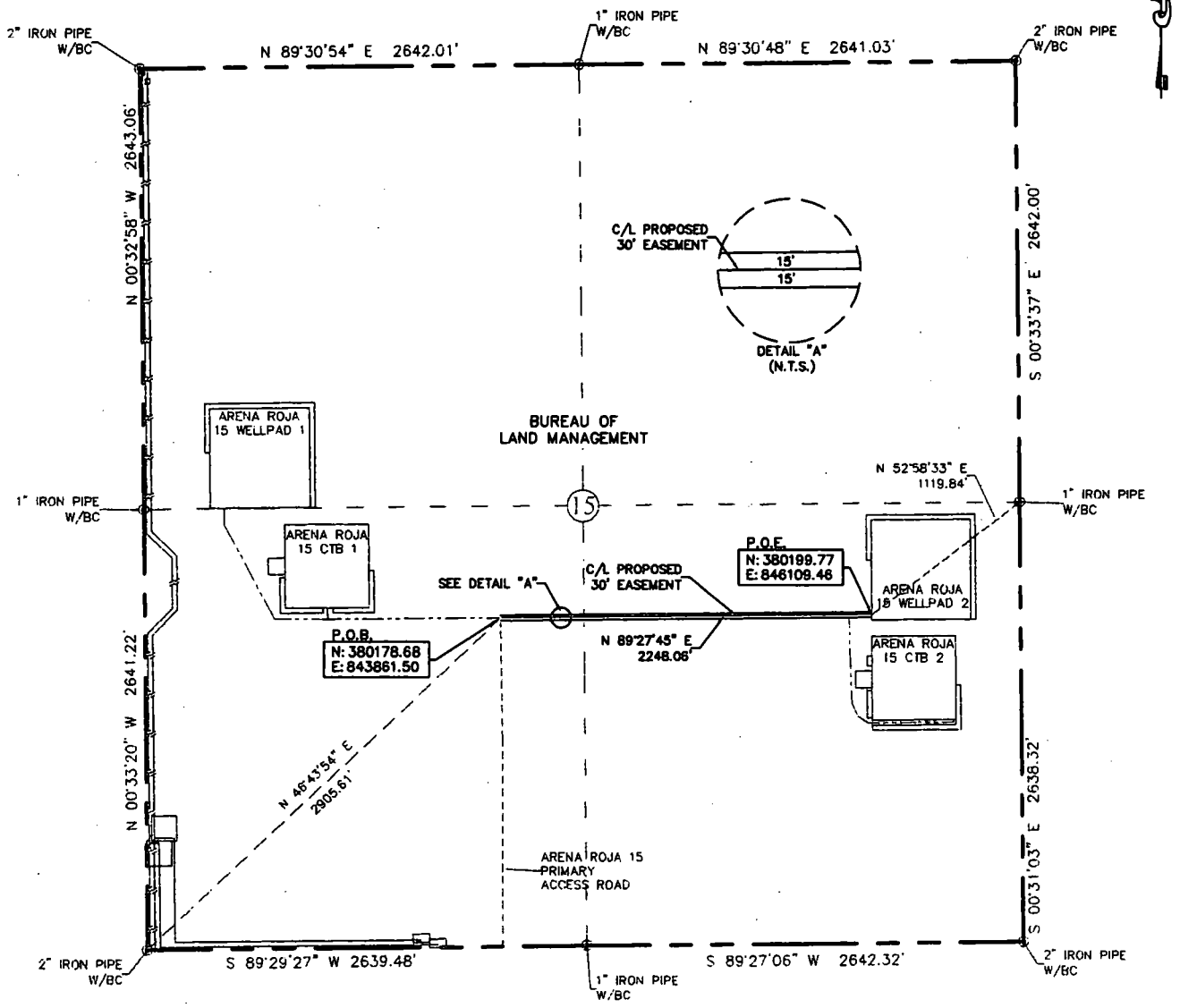


NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
ARENA ROJA FED UNIT 15-10 4H
LOCATED 2090 FT. FROM THE SOUTH LINE
AND 690 FT. FROM THE EAST 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
DEVON ENERGY PRODUCTION CO., L.P.		
Drawn by: CHRIS MAAS	Date: 05/30/2018 Rev. Date: 7/28/18	

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



30' EASEMENT AREA = 1.548 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.

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

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.

NEW MEXICO 22404 PROFESSIONAL SURVEYOR

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 1000 2000

HORIZON ROW LLC	DEVON ENERGY PRODUCTION COMPANY, L.P.	LINE NUMBER: 7640128R
Drawn for: devon	ARENA ROJA 15 WELLPAD 2 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'
Drawn by: CHRIS MAAS	Date: 05/25/2018	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**.

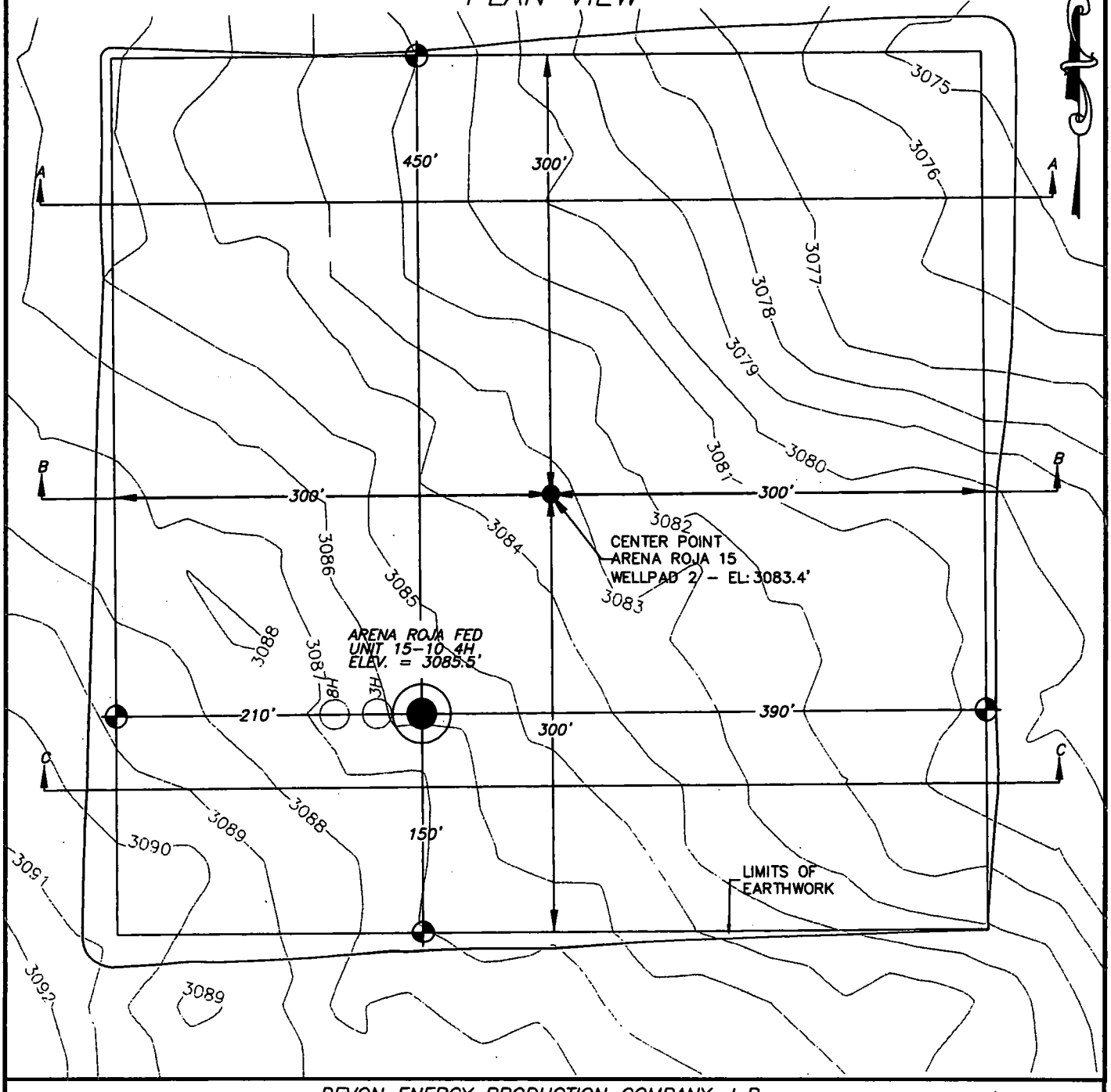
NOTES:

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

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 4H
LOCATED 2090 FT. FROM THE SOUTH LINE
AND 690 FT. FROM THE EAST LINE OF
SECTION 15, TOWNSHIP 26 SOUTH,
RANGE 35 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

0 100 200

EARTHWORK QUANTITIES FOR
ARENA ROJA 15 WELLPAD 2

CUT	FILL	NET
19,935 CY	19,932 CY	3 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

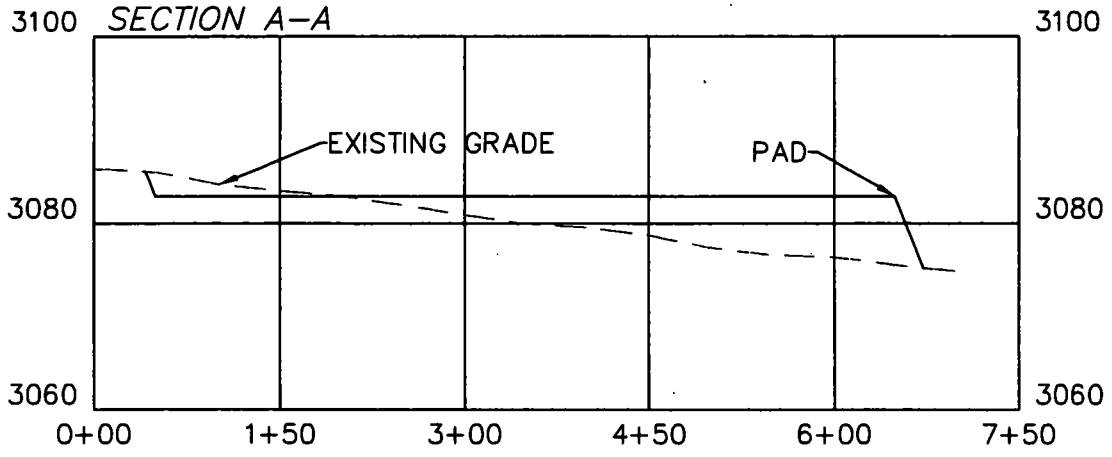
Drawn by: CHRIS MAAS

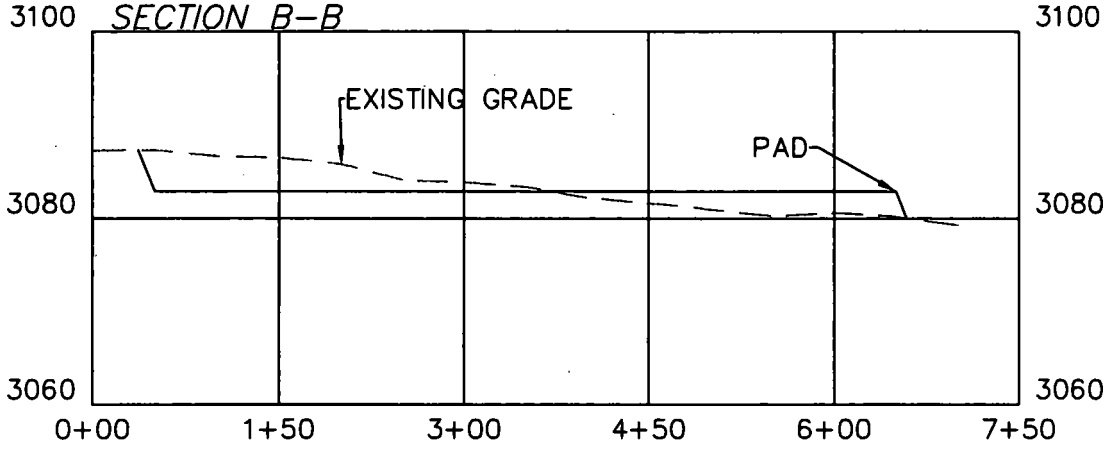
Date: 05/30/2018
Rev. Date: 7/28/18

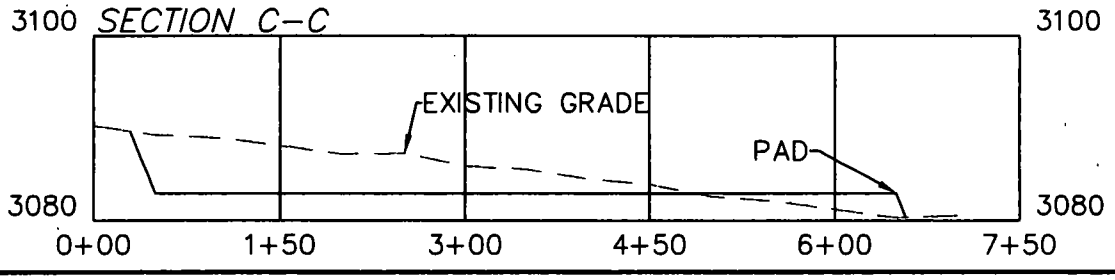
Drawn for:

devon

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 4H
LOCATED 2090 FT. FROM THE SOUTH LINE
AND 690 FT. FROM THE EAST 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 2

CUT	FILL	NET
19,935 CY	19,932 CY	3 CY

EARTHWORK QUANTITIES ARE ESTIMATED

HORIZON ROW LLC

DEVON ENERGY PRODUCTION CO., L.P.

Drawn by: CHRIS MAAS

Date: 05/28/2018
Rev. Date: 7/28/18

Drawn for:

devon

Devon Energy

Project: Lea County, NM (NAD83)
Site: Arena Roja Fed Unit 15-10
Well: Arena Roja Fed Unit 15-10 4H
Wellbore: OH
Design: Plan #3

3085.8' GE + 25' KB @ 3110.80usft

Azimuths to Grid North
True North: -0.52°
Magnetic North: 6.10°

Magnetic Field
Strength: 47651.4nT
Dip Angle: 59.90°
Date: 6/12/2019
Model: IGRF2015

PROJECT DETAILS: Lea County, NM (NAD83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

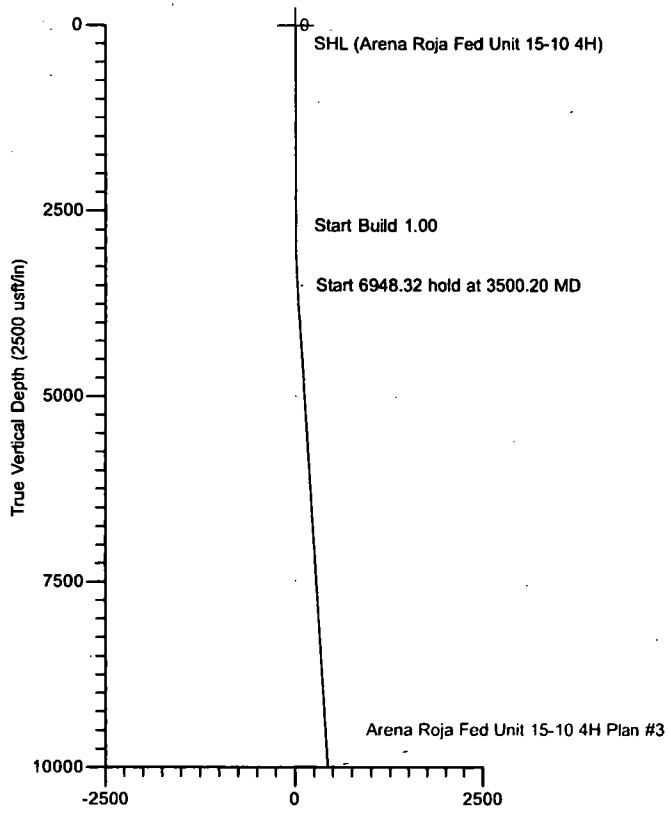
devon

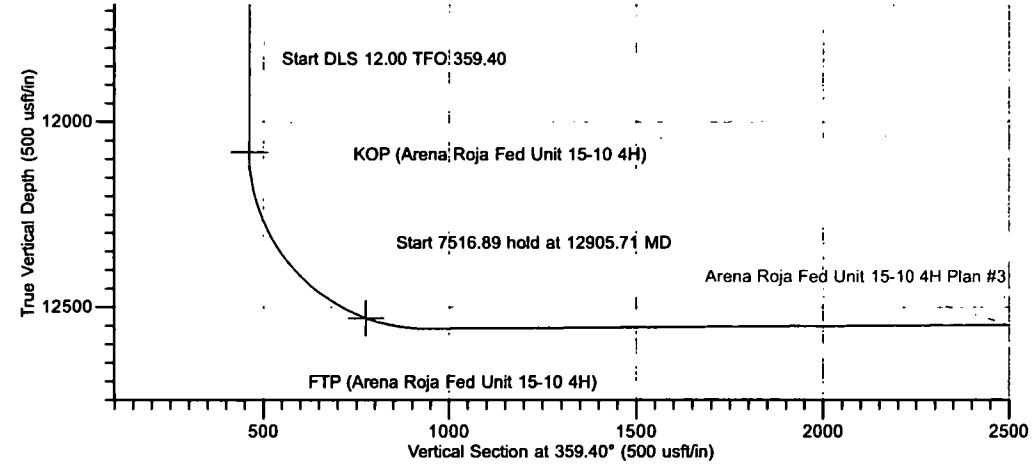
SECTION DETAILS

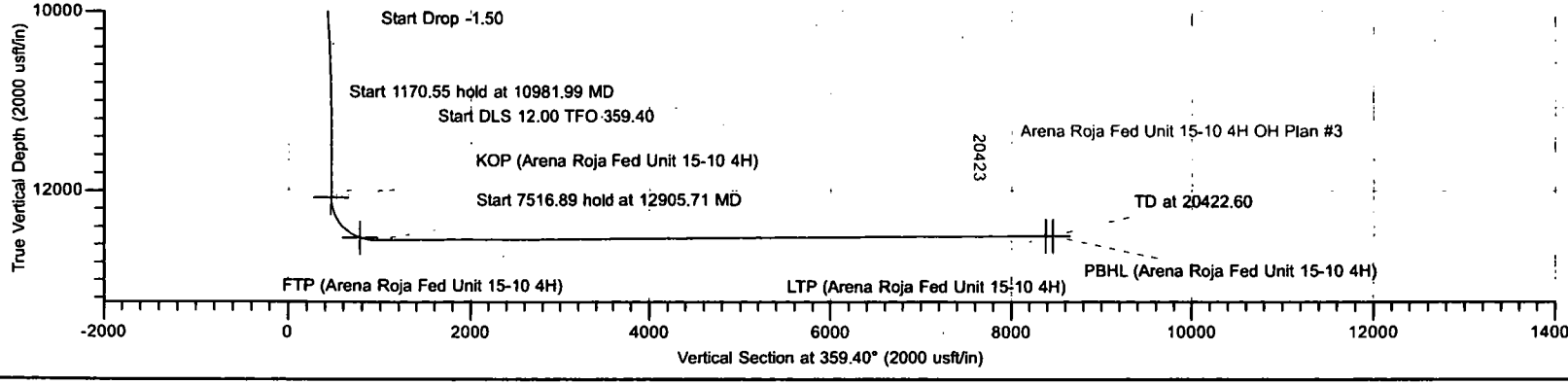
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.00
3500.20	8.00	295.11	3497.60	23.68	-50.51	1.00	295.11	24.21	Start 6948.32 hold at 3500.20 MD
10448.52	8.00	295.11	10378.27	434.21	-926.32	0.00	0.00	443.89	Start Drop -1.50
10981.99	0.00	0.00	10910.00	450.00	-960.00	1.50	180.00	460.03	Start 1170.55 hold at 10981.99 MD
12152.54	0.00	0.00	12080.55	450.00	-960.00	0.00	0.00	460.03	Start DLS 12.00 TFO 359.40
12905.71	90.38	359.40	12558.00	930.61	-965.02	12.00	359.40	940.67	Start 7516.89 hold at 12905.71 MD
20422.60	90.38	359.40	12508.00	8446.93	-1043.59	0.00	0.00	8457.40	TD at 20422.60

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
FTP	12529.22	764.15	-963.28	32.043881	-103.352147
KOP	12080.55	450.00	-920.00	32.043016	-103.352016
LTP	12508.53	8366.93	-1042.75	32.064780	-103.352180
PBHL	12508.00	8446.93	-1043.59	32.065000	-103.352181
SHL	0.00	0.00	0.00	32.041757	-103.349061







TOTAL DIRECTIONAL SERVICES LLC
671 Academy Ct, Windsor, CO 80550
Phone: (970) 460-9402

Plan: Plan #3 (Arena Roja Fed Unit 15-10 4H/OH)
Arena Roja Fed Unit 15-10
Created By: Dustin Ault Date: 15:37, August 26 2019
Date: _____
Approved: _____ Date: _____

Devon Energy

Project: Lea County, NM (NAD83)
Site: Arena Roja Fed Unit 15-10
Well: Arena Roja Fed Unit 15-10 4H
Wellbore: OH
Design: Plan #3

Azimuths to Grid North
True North: -0.52°
Magnetic North: 6.10°

Magnetic Field
Strength: 47651.4nT
Dip Angle: 59.90°
Date: 6/12/2019
Model: IGRF2015

PROJECT DETAILS: Lea County, NM (NAD83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

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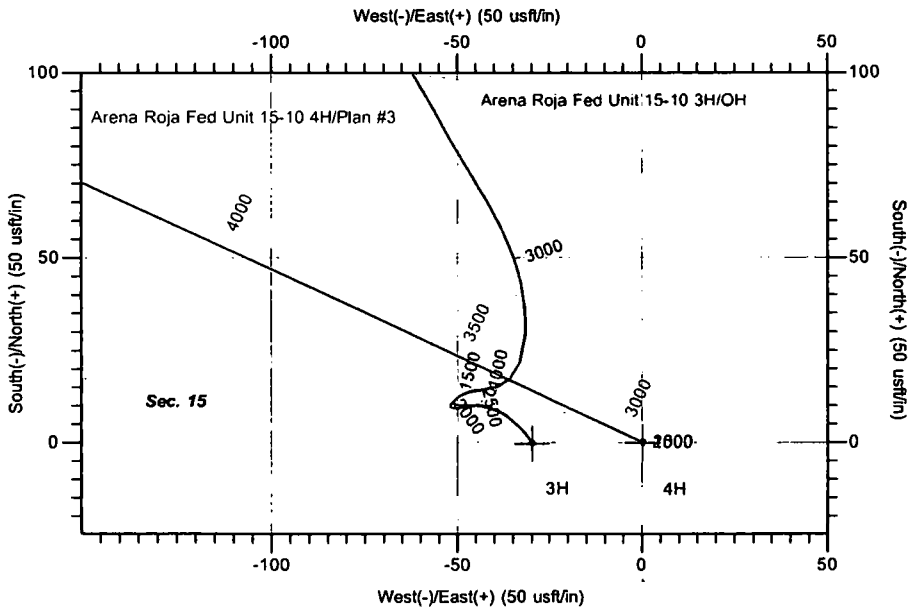
ACTUAL LINE CALLS
FTP: 2422' FNL, 1650' FEL S15
LTP: 100' FNL, 1650' FNL S10
BHL: 20' FNL, 1650' FEL S10

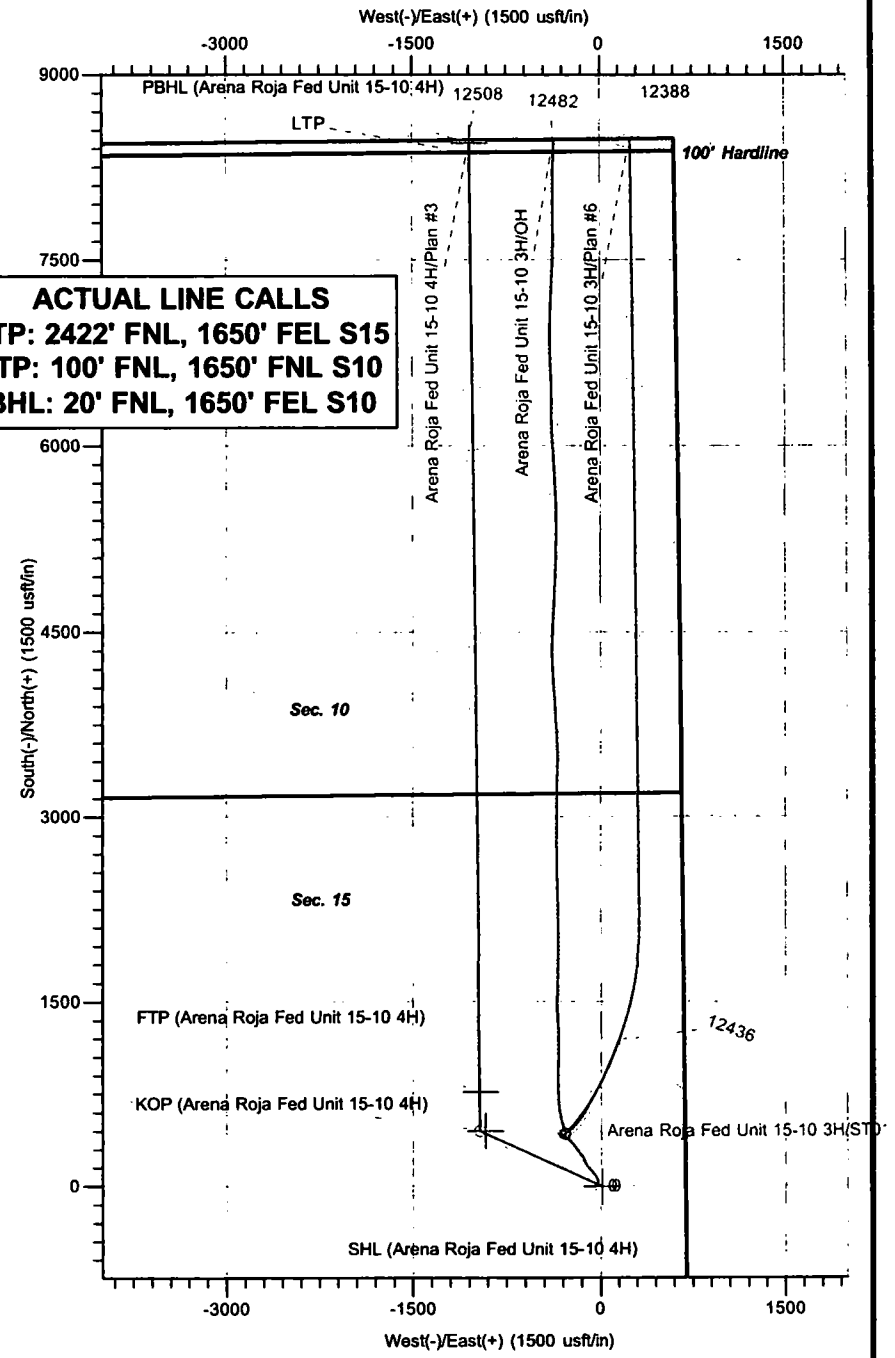
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP	12529.22	764.15	-963.28	381083.33	845355.22	32.043881	-103.352147
KOP	12080.55	450.00	-920.00	380769.18	845398.50	32.043016	-103.352016
LTP	12508.53	8366.93	-1042.75	388686.11	845275.75	32.064780	-103.352180
PBHL	12508.00	8446.93	-1043.59	388766.11	845274.91	32.065000	-103.352181
SHL	0.00	0.00	0.00	380319.18	846318.50	32.041757	-103.349061

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	0.00	Start Build 1.00
3500.20	8.00	295.11	3497.60	23.68	-50.51	1.00	295.11	24.21	Start 6948.32 hold at 3500.20 MD
10448.52	8.00	295.11	10378.27	434.21	-926.32	0.00	0.00	443.89	Start Drop -1.50
10981.99	0.00	0.00	10910.00	450.00	-960.00	1.50	180.00	460.03	Start 1170.55 hold at 10981.99 MD
12152.54	0.00	0.00	12080.55	450.00	-960.00	0.00	0.00	460.03	Start DLS 12.00 TFO 359.40
12905.71	90.38	359.40	12558.00	930.61	-965.02	12.00	359.40	940.67	Start 7516.89 hold at 12905.71 MD
20422.60	90.38	359.40	12508.00	8446.93	-1043.59	0.00	0.00	8457.40	TD at 20422.60





TOTAL DIRECTIONAL SERVICES LLC
671 Academy Ct, Windsor, CO 80550
Phone: (970) 460-9402

Plan: Plan #3 (Arena Roja Fed Unit 15-10 4H/OH)
Arena Roja Fed Unit 15-10
Created By: Dustin Ault Date: 15:38, August 26 2019
Date: _____
Approved: _____ Date: _____

devon

Devon Energy

Lea County, NM (NAD83)
Arena Roja Fed Unit 15-10
Arena Roja Fed Unit 15-10 4H

OH

Plan: Plan #3

Standard Planning Report

26 August, 2019

total

Database:	EDM 5000.15 Single User Db	**Local Co-ordinate Reference:**	Well Arena Roja Fed Unit 15-10 4H
Company:	Devon Energy	**TVD Reference:**	3085.8' GE + 25' KB @ 3110.80usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	3085.8' GE + 25' KB @ 3110.80usft
Site:	Arena Roja Fed Unit 15-10	**North Reference:**	Grid
Well:	Arena Roja Fed Unit 15-10 4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Arena Roja Fed Unit 15-10				
Site Position:		**Northing:**	380,318.90 usft	**Latitude:**	32.041757
From:	Map	**Easting:**	846,288.50 usft	**Longitude:**	-103.349158
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.52 °

Well	Arena Roja Fed Unit 15-10 4H					
Well Position	**+N/-S**	0.28 usft	**Northing:**	380,319.18 usft	**Latitude:**	32.041757
	+E/-W	30.00 usft	**Easting:**	846,318.50 usft	**Longitude:**	-103.349061
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,085.80 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	6/12/2019	6.62	59.90	47,651.37955421

Design	Plan #3				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	359.40	

Plan Survey Tool Program **Date** 8/26/2019

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,422.60	Plan #3 (OH)	OWSG (Rev2) MWD OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,500.20	8.00	295.11	3,497.60	23.68	-50.51	1.00	1.00	0.00	295.11	
10,448.52	8.00	295.11	10,378.27	434.21	-926.32	0.00	0.00	0.00	0.00	
10,981.99	0.00	0.00	10,910.00	450.00	-960.00	1.50	-1.50	0.00	180.00	
12,152.54	0.00	0.00	12,080.55	450.00	-960.00	0.00	0.00	0.00	0.00	
12,905.71	90.38	359.40	12,558.00	930.61	-965.02	12.00	12.00	-0.08	359.40	
20,422.60	90.38	359.40	12,508.00	8,446.93	-1,043.59	0.00	0.00	0.00	0.00	PBHL (Arena Roja Fe

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Well:	Arena Roja Fed Unit 15-10 4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (Arena Roja Fed Unit 15-10 4H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	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
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.00									
2,800.00	1.00	295.11	2,799.99	0.37	-0.79	0.38	1.00	1.00	0.00
2,900.00	2.00	295.11	2,899.96	1.48	-3.16	1.51	1.00	1.00	0.00
3,000.00	3.00	295.11	2,999.86	3.33	-7.11	3.41	1.00	1.00	0.00
3,100.00	4.00	295.11	3,099.68	5.92	-12.64	6.06	1.00	1.00	0.00
3,200.00	5.00	295.11	3,199.37	9.25	-19.74	9.46	1.00	1.00	0.00
3,300.00	6.00	295.11	3,298.90	13.32	-28.42	13.62	1.00	1.00	0.00
3,400.00	7.00	295.11	3,398.26	18.13	-38.67	18.53	1.00	1.00	0.00
3,500.20	8.00	295.11	3,497.60	23.68	-50.51	24.21	1.00	1.00	0.00
Start 6948.32 hold at 3500.20 MD									
3,600.00	8.00	295.11	3,596.43	29.57	-63.09	30.23	0.00	0.00	0.00
3,700.00	8.00	295.11	3,695.46	35.48	-75.70	36.27	0.00	0.00	0.00
3,800.00	8.00	295.11	3,794.48	41.39	-88.30	42.31	0.00	0.00	0.00
3,900.00	8.00	295.11	3,893.51	47.30	-100.91	48.35	0.00	0.00	0.00
4,000.00	8.00	295.11	3,992.53	53.21	-113.51	54.39	0.00	0.00	0.00
4,100.00	8.00	295.11	4,091.56	59.12	-126.12	60.43	0.00	0.00	0.00
4,200.00	8.00	295.11	4,190.59	65.03	-138.72	66.47	0.00	0.00	0.00
4,300.00	8.00	295.11	4,289.61	70.93	-151.33	72.51	0.00	0.00	0.00
4,400.00	8.00	295.11	4,388.64	76.84	-163.93	78.55	0.00	0.00	0.00
4,500.00	8.00	295.11	4,487.67	82.75	-176.53	84.59	0.00	0.00	0.00
4,600.00	8.00	295.11	4,586.69	88.66	-189.14	90.63	0.00	0.00	0.00
4,700.00	8.00	295.11	4,685.72	94.57	-201.74	96.67	0.00	0.00	0.00
4,800.00	8.00	295.11	4,784.75	100.48	-214.35	102.72	0.00	0.00	0.00
4,900.00	8.00	295.11	4,883.77	106.38	-226.95	108.76	0.00	0.00	0.00

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Well:	Arena Roja Fed Unit 15-10 4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,000.00	8.00	295.11	4,982.80	112.29	-239.56	114.80	0.00	0.00	0.00
5,100.00	8.00	295.11	5,081.82	118.20	-252.16	120.84	0.00	0.00	0.00
5,200.00	8.00	295.11	5,180.85	124.11	-264.77	126.88	0.00	0.00	0.00
5,300.00	8.00	295.11	5,279.88	130.02	-277.37	132.92	0.00	0.00	0.00
5,400.00	8.00	295.11	5,378.90	135.93	-289.98	138.96	0.00	0.00	0.00
5,500.00	8.00	295.11	5,477.93	141.83	-302.58	145.00	0.00	0.00	0.00
5,600.00	8.00	295.11	5,576.96	147.74	-315.19	151.04	0.00	0.00	0.00
5,700.00	8.00	295.11	5,675.98	153.65	-327.79	157.08	0.00	0.00	0.00
5,800.00	8.00	295.11	5,775.01	159.56	-340.40	163.12	0.00	0.00	0.00
5,900.00	8.00	295.11	5,874.04	165.47	-353.00	169.16	0.00	0.00	0.00
6,000.00	8.00	295.11	5,973.06	171.38	-365.60	175.20	0.00	0.00	0.00
6,100.00	8.00	295.11	6,072.09	177.29	-378.21	181.24	0.00	0.00	0.00
6,200.00	8.00	295.11	6,171.11	183.19	-390.81	187.28	0.00	0.00	0.00
6,300.00	8.00	295.11	6,270.14	189.10	-403.42	193.32	0.00	0.00	0.00
6,400.00	8.00	295.11	6,369.17	195.01	-416.02	199.36	0.00	0.00	0.00
6,500.00	8.00	295.11	6,468.19	200.92	-428.63	205.40	0.00	0.00	0.00
6,600.00	8.00	295.11	6,567.22	206.83	-441.23	211.44	0.00	0.00	0.00
6,700.00	8.00	295.11	6,666.25	212.74	-453.84	217.48	0.00	0.00	0.00
6,800.00	8.00	295.11	6,765.27	218.64	-466.44	223.52	0.00	0.00	0.00
6,900.00	8.00	295.11	6,864.30	224.55	-479.05	229.56	0.00	0.00	0.00
7,000.00	8.00	295.11	6,963.32	230.46	-491.65	235.60	0.00	0.00	0.00
7,100.00	8.00	295.11	7,062.35	236.37	-504.26	241.64	0.00	0.00	0.00
7,200.00	8.00	295.11	7,161.38	242.28	-516.86	247.68	0.00	0.00	0.00
7,300.00	8.00	295.11	7,260.40	248.19	-529.46	253.72	0.00	0.00	0.00
7,400.00	8.00	295.11	7,359.43	254.10	-542.07	259.76	0.00	0.00	0.00
7,500.00	8.00	295.11	7,458.46	260.00	-554.67	265.80	0.00	0.00	0.00
7,600.00	8.00	295.11	7,557.48	265.91	-567.28	271.84	0.00	0.00	0.00
7,700.00	8.00	295.11	7,656.51	271.82	-579.88	277.88	0.00	0.00	0.00
7,800.00	8.00	295.11	7,755.54	277.73	-592.49	283.92	0.00	0.00	0.00
7,900.00	8.00	295.11	7,854.56	283.64	-605.09	289.96	0.00	0.00	0.00
8,000.00	8.00	295.11	7,953.59	289.55	-617.70	296.00	0.00	0.00	0.00
8,100.00	8.00	295.11	8,052.61	295.45	-630.30	302.04	0.00	0.00	0.00
8,200.00	8.00	295.11	8,151.64	301.36	-642.91	308.08	0.00	0.00	0.00
8,300.00	8.00	295.11	8,250.67	307.27	-655.51	314.12	0.00	0.00	0.00
8,400.00	8.00	295.11	8,349.69	313.18	-668.12	320.16	0.00	0.00	0.00
8,500.00	8.00	295.11	8,448.72	319.09	-680.72	326.20	0.00	0.00	0.00
8,600.00	8.00	295.11	8,547.75	325.00	-693.33	332.24	0.00	0.00	0.00
8,700.00	8.00	295.11	8,646.77	330.90	-705.93	338.28	0.00	0.00	0.00
8,800.00	8.00	295.11	8,745.80	336.81	-718.53	344.32	0.00	0.00	0.00
8,900.00	8.00	295.11	8,844.82	342.72	-731.14	350.36	0.00	0.00	0.00
9,000.00	8.00	295.11	8,943.85	348.63	-743.74	356.40	0.00	0.00	0.00
9,100.00	8.00	295.11	9,042.88	354.54	-756.35	362.44	0.00	0.00	0.00
9,200.00	8.00	295.11	9,141.90	360.45	-768.95	368.48	0.00	0.00	0.00
9,300.00	8.00	295.11	9,240.93	366.36	-781.56	374.52	0.00	0.00	0.00
9,400.00	8.00	295.11	9,339.96	372.26	-794.16	380.56	0.00	0.00	0.00
9,500.00	8.00	295.11	9,438.98	378.17	-806.77	386.60	0.00	0.00	0.00
9,600.00	8.00	295.11	9,538.01	384.08	-819.37	392.64	0.00	0.00	0.00
9,700.00	8.00	295.11	9,637.04	389.99	-831.98	398.68	0.00	0.00	0.00
9,800.00	8.00	295.11	9,736.06	395.90	-844.58	404.72	0.00	0.00	0.00
9,900.00	8.00	295.11	9,835.09	401.81	-857.19	410.76	0.00	0.00	0.00
10,000.00	8.00	295.11	9,934.11	407.71	-869.79	416.80	0.00	0.00	0.00
10,100.00	8.00	295.11	10,033.14	413.62	-882.39	422.84	0.00	0.00	0.00
10,200.00	8.00	295.11	10,132.17	419.53	-895.00	428.88	0.00	0.00	0.00
10,300.00	8.00	295.11	10,231.19	425.44	-907.60	434.92	0.00	0.00	0.00

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Wellbore:	OH		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,400.00	8.00	295.11	10,330.22	431.35	-920.21	440.96	0.00	0.00	0.00
10,448.52	8.00	295.11	10,378.27	434.21	-926.32	443.89	0.00	0.00	0.00
Start Drop -1.50									
10,500.00	7.23	295.11	10,429.29	437.11	-932.50	446.85	1.50	-1.50	0.00
10,600.00	5.73	295.11	10,528.65	441.90	-942.72	451.75	1.50	-1.50	0.00
10,700.00	4.23	295.11	10,628.27	445.58	-950.58	455.51	1.50	-1.50	0.00
10,800.00	2.73	295.11	10,728.08	448.16	-956.08	458.15	1.50	-1.50	0.00
10,900.00	1.23	295.11	10,828.02	449.63	-959.20	459.65	1.50	-1.50	0.00
10,981.99	0.00	0.00	10,910.00	450.00	-960.00	460.03	1.50	-1.50	0.00
Start 1170.55 hold at 10981.99 MD									
11,000.00	0.00	0.00	10,928.01	450.00	-960.00	460.03	0.00	0.00	0.00
11,100.00	0.00	0.00	11,028.01	450.00	-960.00	460.03	0.00	0.00	0.00
11,200.00	0.00	0.00	11,128.01	450.00	-960.00	460.03	0.00	0.00	0.00
11,300.00	0.00	0.00	11,228.01	450.00	-960.00	460.03	0.00	0.00	0.00
11,400.00	0.00	0.00	11,328.01	450.00	-960.00	460.03	0.00	0.00	0.00
11,500.00	0.00	0.00	11,428.01	450.00	-960.00	460.03	0.00	0.00	0.00
11,600.00	0.00	0.00	11,528.01	450.00	-960.00	460.03	0.00	0.00	0.00
11,700.00	0.00	0.00	11,628.01	450.00	-960.00	460.03	0.00	0.00	0.00
11,800.00	0.00	0.00	11,728.01	450.00	-960.00	460.03	0.00	0.00	0.00
11,900.00	0.00	0.00	11,828.01	450.00	-960.00	460.03	0.00	0.00	0.00
12,000.00	0.00	0.00	11,928.01	450.00	-960.00	460.03	0.00	0.00	0.00
12,100.00	0.00	0.00	12,028.01	450.00	-960.00	460.03	0.00	0.00	0.00
12,152.54	0.00	0.00	12,080.55	450.00	-960.00	460.03	0.00	0.00	0.00
Start DLS 12.00 TFO 359.40 - KOP (Arena Roja Fed Unit 15-10 4H)									
12,175.00	2.70	359.40	12,103.01	450.53	-960.01	460.56	12.00	12.00	0.00
12,200.00	5.70	359.40	12,127.94	452.36	-960.02	462.39	12.00	12.00	0.00
12,225.00	8.70	359.40	12,152.74	455.49	-960.06	465.52	12.00	12.00	0.00
12,250.00	11.70	359.40	12,177.34	459.91	-960.10	469.94	12.00	12.00	0.00
12,275.00	14.70	359.40	12,201.68	465.62	-960.16	475.65	12.00	12.00	0.00
12,300.00	17.70	359.40	12,225.68	472.59	-960.24	482.62	12.00	12.00	0.00
12,325.00	20.70	359.40	12,249.29	480.81	-960.32	490.84	12.00	12.00	0.00
12,350.00	23.70	359.40	12,272.43	490.25	-960.42	500.28	12.00	12.00	0.00
12,375.00	26.70	359.40	12,295.05	500.89	-960.53	510.92	12.00	12.00	0.00
12,400.00	29.70	359.40	12,317.08	512.70	-960.66	522.73	12.00	12.00	0.00
12,425.00	32.70	359.40	12,338.47	525.65	-960.79	535.68	12.00	12.00	0.00
12,450.00	35.70	359.40	12,359.14	539.70	-960.94	549.73	12.00	12.00	0.00
12,475.00	38.70	359.40	12,379.05	554.81	-961.10	564.84	12.00	12.00	0.00
12,500.00	41.70	359.40	12,398.15	570.94	-961.26	580.98	12.00	12.00	0.00
12,525.00	44.70	359.40	12,416.37	588.05	-961.44	598.09	12.00	12.00	0.00
12,550.00	47.70	359.40	12,433.67	606.09	-961.63	616.13	12.00	12.00	0.00
12,575.00	50.70	359.40	12,450.01	625.01	-961.83	635.05	12.00	12.00	0.00
12,600.00	53.70	359.40	12,465.33	644.76	-962.04	654.80	12.00	12.00	0.00
12,625.00	56.70	359.40	12,479.60	665.28	-962.25	675.32	12.00	12.00	0.00
12,650.00	59.70	359.40	12,492.77	686.53	-962.47	696.57	12.00	12.00	0.00
12,675.00	62.70	359.40	12,504.82	708.43	-962.70	718.47	12.00	12.00	0.00
12,700.00	65.70	359.40	12,515.70	730.93	-962.94	740.98	12.00	12.00	0.00
12,725.00	68.70	359.40	12,525.39	753.98	-963.18	764.02	12.00	12.00	0.00
12,735.87	70.00	359.40	12,529.22	764.15	-963.28	774.19	12.00	12.00	0.00
FTP (Arena Roja Fed Unit 15-10 4H)									
12,750.00	71.70	359.40	12,533.86	777.49	-963.42	787.54	12.00	12.00	0.00
12,775.00	74.70	359.40	12,541.08	801.42	-963.67	811.47	12.00	12.00	0.00
12,800.00	77.70	359.40	12,547.05	825.70	-963.93	835.74	12.00	12.00	0.00
12,825.00	80.70	359.40	12,551.73	850.25	-964.18	860.30	12.00	12.00	0.00

Database:	EDM 5000.15 Single User Db	**Local Co-ordinate Reference:**	Well Arena Roja Fed Unit 15-10 4H
Company:	Devon Energy	**TVD Reference:**	3085.8' GE + 25' KB @ 3110.80usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	3085.8' GE + 25' KB @ 3110.80usft
Site:	Arena Roja Fed Unit 15-10	**North Reference:**	Grid
Well:	Arena Roja Fed Unit 15-10 4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,850.00	83.70	359.40	12,555.13	875.01	-964.44	885.06	12.00	12.00	0.00
12,875.00	86.70	359.40	12,557.22	899.92	-964.70	909.97	12.00	12.00	0.00
12,900.00	89.70	359.40	12,558.01	924.90	-964.96	934.96	12.00	12.00	0.00
12,905.71	90.38	359.40	12,558.00	930.61	-965.02	940.67	12.00	12.00	0.00
Start 7516.89 hold at 12905.71 MD									
13,000.00	90.38	359.40	12,557.38	1,024.90	-966.01	1,034.96	0.00	0.00	0.00
13,100.00	90.38	359.40	12,556.71	1,124.89	-967.05	1,134.95	0.00	0.00	0.00
13,200.00	90.38	359.40	12,556.05	1,224.88	-968.10	1,234.95	0.00	0.00	0.00
13,300.00	90.38	359.40	12,555.38	1,324.87	-969.14	1,334.95	0.00	0.00	0.00
13,400.00	90.38	359.40	12,554.72	1,424.87	-970.19	1,434.95	0.00	0.00	0.00
13,500.00	90.38	359.40	12,554.05	1,524.86	-971.24	1,534.94	0.00	0.00	0.00
13,600.00	90.38	359.40	12,553.39	1,624.85	-972.28	1,634.94	0.00	0.00	0.00
13,700.00	90.38	359.40	12,552.72	1,724.84	-973.33	1,734.94	0.00	0.00	0.00
13,800.00	90.38	359.40	12,552.06	1,824.83	-974.37	1,834.94	0.00	0.00	0.00
13,900.00	90.38	359.40	12,551.39	1,924.83	-975.42	1,934.94	0.00	0.00	0.00
14,000.00	90.38	359.40	12,550.73	2,024.82	-976.46	2,034.93	0.00	0.00	0.00
14,100.00	90.38	359.40	12,550.06	2,124.81	-977.51	2,134.93	0.00	0.00	0.00
14,200.00	90.38	359.40	12,549.39	2,224.80	-978.55	2,234.93	0.00	0.00	0.00
14,300.00	90.38	359.40	12,548.73	2,324.80	-979.60	2,334.93	0.00	0.00	0.00
14,400.00	90.38	359.40	12,548.06	2,424.79	-980.64	2,434.92	0.00	0.00	0.00
14,500.00	90.38	359.40	12,547.40	2,524.78	-981.69	2,534.92	0.00	0.00	0.00
14,600.00	90.38	359.40	12,546.73	2,624.77	-982.73	2,634.92	0.00	0.00	0.00
14,700.00	90.38	359.40	12,546.07	2,724.77	-983.78	2,734.92	0.00	0.00	0.00
14,800.00	90.38	359.40	12,545.40	2,824.76	-984.82	2,834.92	0.00	0.00	0.00
14,900.00	90.38	359.40	12,544.74	2,924.75	-985.87	2,934.91	0.00	0.00	0.00
15,000.00	90.38	359.40	12,544.07	3,024.74	-986.91	3,034.91	0.00	0.00	0.00
15,100.00	90.38	359.40	12,543.41	3,124.73	-987.96	3,134.91	0.00	0.00	0.00
15,200.00	90.38	359.40	12,542.74	3,224.73	-989.00	3,234.91	0.00	0.00	0.00
15,300.00	90.38	359.40	12,542.08	3,324.72	-990.05	3,334.90	0.00	0.00	0.00
15,400.00	90.38	359.40	12,541.41	3,424.71	-991.09	3,434.90	0.00	0.00	0.00
15,500.00	90.38	359.40	12,540.75	3,524.70	-992.14	3,534.90	0.00	0.00	0.00
15,600.00	90.38	359.40	12,540.08	3,624.70	-993.18	3,634.90	0.00	0.00	0.00
15,700.00	90.38	359.40	12,539.42	3,724.69	-994.23	3,734.90	0.00	0.00	0.00
15,800.00	90.38	359.40	12,538.75	3,824.68	-995.27	3,834.89	0.00	0.00	0.00
15,900.00	90.38	359.40	12,538.09	3,924.67	-996.32	3,934.89	0.00	0.00	0.00
16,000.00	90.38	359.40	12,537.42	4,024.67	-997.37	4,034.89	0.00	0.00	0.00
16,100.00	90.38	359.40	12,536.76	4,124.66	-998.41	4,134.89	0.00	0.00	0.00
16,200.00	90.38	359.40	12,536.09	4,224.65	-999.46	4,234.88	0.00	0.00	0.00
16,300.00	90.38	359.40	12,535.42	4,324.64	-1,000.50	4,334.88	0.00	0.00	0.00
16,400.00	90.38	359.40	12,534.76	4,424.64	-1,001.55	4,434.88	0.00	0.00	0.00
16,500.00	90.38	359.40	12,534.09	4,524.63	-1,002.59	4,534.88	0.00	0.00	0.00
16,600.00	90.38	359.40	12,533.43	4,624.62	-1,003.64	4,634.88	0.00	0.00	0.00
16,700.00	90.38	359.40	12,532.76	4,724.61	-1,004.68	4,734.87	0.00	0.00	0.00
16,800.00	90.38	359.40	12,532.10	4,824.60	-1,005.73	4,834.87	0.00	0.00	0.00
16,900.00	90.38	359.40	12,531.43	4,924.60	-1,006.77	4,934.87	0.00	0.00	0.00
17,000.00	90.38	359.40	12,530.77	5,024.59	-1,007.82	5,034.87	0.00	0.00	0.00
17,100.00	90.38	359.40	12,530.10	5,124.58	-1,008.86	5,134.87	0.00	0.00	0.00
17,200.00	90.38	359.40	12,529.44	5,224.57	-1,009.91	5,234.86	0.00	0.00	0.00
17,300.00	90.38	359.40	12,528.77	5,324.57	-1,010.95	5,334.86	0.00	0.00	0.00
17,400.00	90.38	359.40	12,528.11	5,424.56	-1,012.00	5,434.86	0.00	0.00	0.00
17,500.00	90.38	359.40	12,527.44	5,524.55	-1,013.04	5,534.86	0.00	0.00	0.00
17,600.00	90.38	359.40	12,526.78	5,624.54	-1,014.09	5,634.85	0.00	0.00	0.00
17,700.00	90.38	359.40	12,526.11	5,724.54	-1,015.13	5,734.85	0.00	0.00	0.00

Database:	EDM 5000.15 Single User Db	**Local Co-ordinate Reference:**	Well Arena Roja Fed Unit 15-10 4H
Company:	Devon Energy	**TVD Reference:**	3085.8' GE + 25' KB @ 3110.80usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	3085.8' GE + 25' KB @ 3110.80usft
Site:	Arena Roja Fed Unit 15-10	**North Reference:**	Grid
Well:	Arena Roja Fed Unit 15-10 4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,800.00	90.38	359.40	12,525.45	5,824.53	-1,016.18	5,834.85	0.00	0.00	0.00
17,900.00	90.38	359.40	12,524.78	5,924.52	-1,017.22	5,934.85	0.00	0.00	0.00
18,000.00	90.38	359.40	12,524.12	6,024.51	-1,018.27	6,034.85	0.00	0.00	0.00
18,100.00	90.38	359.40	12,523.45	6,124.50	-1,019.31	6,134.84	0.00	0.00	0.00
18,200.00	90.38	359.40	12,522.79	6,224.50	-1,020.36	6,234.84	0.00	0.00	0.00
18,300.00	90.38	359.40	12,522.12	6,324.49	-1,021.40	6,334.84	0.00	0.00	0.00
18,400.00	90.38	359.40	12,521.46	6,424.48	-1,022.45	6,434.84	0.00	0.00	0.00
18,500.00	90.38	359.40	12,520.79	6,524.47	-1,023.50	6,534.83	0.00	0.00	0.00
18,600.00	90.38	359.40	12,520.12	6,624.47	-1,024.54	6,634.83	0.00	0.00	0.00
18,700.00	90.38	359.40	12,519.46	6,724.46	-1,025.59	6,734.83	0.00	0.00	0.00
18,800.00	90.38	359.40	12,518.79	6,824.45	-1,026.63	6,834.83	0.00	0.00	0.00
18,900.00	90.38	359.40	12,518.13	6,924.44	-1,027.68	6,934.83	0.00	0.00	0.00
19,000.00	90.38	359.40	12,517.46	7,024.44	-1,028.72	7,034.82	0.00	0.00	0.00
19,100.00	90.38	359.40	12,516.80	7,124.43	-1,029.77	7,134.82	0.00	0.00	0.00
19,200.00	90.38	359.40	12,516.13	7,224.42	-1,030.81	7,234.82	0.00	0.00	0.00
19,300.00	90.38	359.40	12,515.47	7,324.41	-1,031.86	7,334.82	0.00	0.00	0.00
19,400.00	90.38	359.40	12,514.80	7,424.40	-1,032.90	7,434.81	0.00	0.00	0.00
19,500.00	90.38	359.40	12,514.14	7,524.40	-1,033.95	7,534.81	0.00	0.00	0.00
19,600.00	90.38	359.40	12,513.47	7,624.39	-1,034.99	7,634.81	0.00	0.00	0.00
19,700.00	90.38	359.40	12,512.81	7,724.38	-1,036.04	7,734.81	0.00	0.00	0.00
19,800.00	90.38	359.40	12,512.14	7,824.37	-1,037.08	7,834.81	0.00	0.00	0.00
19,900.00	90.38	359.40	12,511.48	7,924.37	-1,038.13	7,934.80	0.00	0.00	0.00
20,000.00	90.38	359.40	12,510.81	8,024.36	-1,039.17	8,034.80	0.00	0.00	0.00
20,100.00	90.38	359.40	12,510.15	8,124.35	-1,040.22	8,134.80	0.00	0.00	0.00
20,200.00	90.38	359.40	12,509.48	8,224.34	-1,041.26	8,234.80	0.00	0.00	0.00
20,300.00	90.38	359.40	12,508.82	8,324.34	-1,042.31	8,334.79	0.00	0.00	0.00
20,342.60	90.38	359.40	12,508.53	8,366.93	-1,042.75	8,377.39	0.00	0.00	0.00
LTP (Arena Roja Fed Unit 15-10 4H)									
20,400.00	90.38	359.40	12,508.15	8,424.33	-1,043.35	8,434.79	0.00	0.00	0.00
20,422.60	90.38	359.40	12,508.00	8,446.93	-1,043.59	8,457.40	0.00	0.00	0.00
TD at 20422.60 - PBHL (Arena Roja Fed Unit 15-10 4H)									

Database:	EDM 5000.15 Single User Db	**Local Co-ordinate Reference:**	Well Arena Roja Fed Unit 15-10 4H
Company:	Devon Energy	**TVD Reference:**	3085.8' GE + 25' KB @ 3110.80usft
Project:	Lea County, NM (NAD83)	**MD Reference:**	3085.8' GE + 25' KB @ 3110.80usft
Site:	Arena Roja Fed Unit 15-10	**North Reference:**	Grid
Well:	Arena Roja Fed Unit 15-10 4H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (Arena Roja Fed Ur - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	380,319.18	846,318.50	32.041757	-103.349061
KOP (Arena Roja Fed U - plan misses target center by 40.00usft at 12152.54usft MD (12080.55 TVD, 450.00 N, -960.00 E) - Point	0.00	0.00	12,080.55	450.00	-920.00	380,769.18	845,398.50	32.043017	-103.352017
PBHL (Arena Roja Fed U - plan hits target center - Point	0.00	0.00	12,508.00	8,446.93	-1,043.59	388,766.11	845,274.91	32.065000	-103.352181
LTP (Arena Roja Fed Un - plan hits target center - Point	0.00	0.00	12,508.53	8,366.93	-1,042.75	388,686.11	845,275.75	32.064780	-103.352180
FTP (Arena Roja Fed Ur - plan hits target center - Point	0.00	0.01	12,529.22	764.15	-963.28	381,083.33	845,355.22	32.043881	-103.352147

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,700.00	2,700.00	0.00	0.00	Start Build 1.00
3,500.20	3,497.60	23.68	-50.51	Start 6948.32 hold at 3500.20 MD
10,448.52	10,378.27	434.21	-926.32	Start Drop -1.50
10,981.99	10,910.00	450.00	-960.00	Start 1170.55 hold at 10981.99 MD
12,152.54	12,080.55	450.00	-960.00	Start DLS 12.00 TFO 359.40
12,905.71	12,558.00	930.61	-965.02	Start 7516.89 hold at 12905.71 MD
20,422.60	12,508.00	8,446.93	-1,043.59	TD at 20422.60