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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

JAN 15 2019

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM125635

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.

LUSITANO 27-34 FED COM
533H

9. API Well No.

30-015-45638

10. Field and Pool, or Exploratory
JENNINGS, WEST / BONE SPRING

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 27 / T25S / R31E / NMP

12. County or Parish
EDDY

13. State
NM

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

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP

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 NENW / 385 FNL / 1732 FWL / LAT 32.1074928 / LONG -103.7688938

At proposed prod. zone SESW / 20 FSL / 1650 FWL / LAT 32.0794914 / LONG -103.7692786

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

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

16. No of acres in lease
720

17. Spacing Unit dedicated to this well
320

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.
1205 feet

19. Proposed Depth
9030 feet / 19111 feet

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

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3333 feet

22. Approximate date work will start*
03/05/2020

23. Estimated duration
30 days

24. Attachments

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature
(Electronic Submission)

Name (Printed/Typed)
Linda Good / Ph: (405)552-6558

Date
10/16/2018

Title
Regulatory Compliance Professional

Approved by (Signature)
(Electronic Submission)

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

Date
01/11/2019

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.

APPROVED WITH CONDITIONS
Approval Date: 01/11/2019

Rev 1-16-19.

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 connects this information to a new 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: NENW / 385 FNL / 1732 FWL / TWSP: 25S / RANGE: 31E / SECTION: 27 / LAT: 32.1074928 / LONG: -103.7688938 (TVD: 0 feet, MD: 0 feet)
PPP: NENW / 250 FNL / 1611 FWL / TWSP: 25S / RANGE: 31E / SECTION: 27 / LAT: 32.107866 / LONG: -103.769282 (TVD: 8457 feet, MD: 8462 feet)
BHL: SESW / 20 FSL / 1650 FWL / TWSP: 25S / RANGE: 31E / SECTION: 34 / LAT: 32.0794914 / LONG: -103.7692786 (TVD: 9030 feet, MD: 19111 feet)

BLM Point of Contact

Name: Tenille Ortiz

Title: Legal Instruments Examiner

Phone: 5752342224

Email: tortiz@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

OPERATOR'S NAME:	Devon Energy
LEASE NO.:	NM125635
WELL NAME & NO.:	Lusitano 27-34 FED COM 533H
SURFACE HOLE FOOTAGE:	385' FNL 1732' FWL
BOTTOM HOLE FOOTAGE	20' FSL & 1650' FWL
LOCATION:	Section 27, T. 25 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico

Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☐ Low	☒ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

1. Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The 13 3/8 inch surface casing shall be set at approximately **924** feet (a minimum of 25 feet 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 **9 5/8** inch intermediate casing shall be set at approximately **4,240** feet and cemented to the surface:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess cement calculates to 13% - additional cement may be required. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**
- ❖ In **Medium/High Cave/Karst Areas** if cement does not circulate to surface on the first two casing strings , the cement on the 3rd casing string must come to surface.

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. **Excess calculates to 13% - additional cement may be required. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**
 - ❖ In **Medium/High Cave/Karst Areas** if cement does not circulate to surface on the first two casing strings , the cement on the 3rd casing string must come to surface.
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 cement calculates to negative 13% - additional cement will be required to reach 200 ft into previous casing.**

C. PRESSURE CONTROL

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

2.

Option 1:

- i. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
- ii. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **3000 (3M)** psi.

Option 2:

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 **3,000 (3M)** 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.

JJP 1112019

GENERAL REQUIREMENTS

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

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

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

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

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

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

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

Devon Energy – Lusitano 27-34 Fed Com 533H

1. Geologic Formations

TVD of target	9030	Pilot hole depth	N/A
MD at TD:	19111	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	886		
Salado	1156		
Base of Salt	4241		
Delaware	4281		
L Brushy Canyon	7996		
Bone Spring	8221		
Leonard 'A'	8321		
Leonard 'B'	8726		
Leonard 'C'	8986		
Landing Pt	9030		

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

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (PPF)	Grade	Conn.
	From	To				
17.5"	0	911	13.375"	48	H-40	STC
12.25"	0	4381	9.625"	40	J-55	BTC
8.75"	0	TD	5.5"	17	P-110	BTC
BLM Minimum Safety Factor				Collapse: 1.125	Burst: 1.00	Tension: 1.6 Dry 1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h Must have table for contingency casing
- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
- Variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing. No losses are expected in subsequent hole section.
- Int casing shoe will be selected based on drilling data, gamma, and flows experienced while drilling. Setting depth will be revised accordingly if needed.

- A variance is requested to wave the centralizer requirement for the intermediate and production casing strings if drilling conditions dictate

	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 rd 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 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program (3-String Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	H ₂ O (gal/sk)	Yld (ft ³ /sack)	Slurry Description
Surface	951	Surf	13.2	6.33	1.33	Lead: Class C Cement + additives
Int	681	Surf	9	20.6	1.94	Lead: Class C Cement + additives
	196	500' above shoe	13.2	6.42	1.33	Tail: Class H / C + additives
Production	357	500' tieback	9	20.6	3.27	Lead: Class H / C + additives
	1853	KOP	13.2	5.31	1.2	Tail: Class H / C + additives

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

Casing String	% Excess
Surface	100%
Intermediate	50%
Production	10%

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	3M	Annular	X	50% of rated working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	3M	Annular (5M)	X	50% of rated working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

5. Mud Program

6. Depth		Type	Weight (ppg)	Vis	Water Loss
From	To				
0	911	FW	8.5 – 9.0	28-34	N/C
911	4381	Brine	10 – 10.5	28-34	N/C
4381	TD	WBM	8.5 – 9.0	28-34	N/C

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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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
	Density
X	CBL
X	Mud log
	Production casing
	KOP to TD

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4226 psi
Abnormal Temperature	No

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

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

8. Other facets of operation

Is this a walking operation? Potentially

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

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

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the 10 ¾" 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

PECOS DISTRICT SURFACE USE CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION COMPANY LP
LEASE NO.:	NMNM125635
WELL NAME & NO.:	LUSITANO 27-34 FED COM 533H
SURFACE HOLE FOOTAGE:	385'/N & 1732'/W
BOTTOM HOLE FOOTAGE:	20'/S & 1650'/W
LOCATION:	SECTION 27, T25S, R31E, NMPM
COUNTY:	EDDY

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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,**
- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Lesser Prairie-Chicken Timing Stipulations
 - Below Ground-level Abandoned Well Marker
 - Cave/Karst
 - Range
 - Watershed
- ☐ **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
- 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)

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.

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 below 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.

Temporary Fence Crossing Requirement

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

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.

Livestock Watering Requirement

The operator must contact the allotment holder prior to construction to identify the location of the water pipelines. The operator must take measures to protect the pipelines from compression or other damages. If the water pipelines are 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 water pipelines 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.

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.

As stated above, the applicant through the CCA program contributes funds that are used for habitat restoration projects identified by USFWS and BLM. Although the CCA program may not fully mitigate for impacts to habitat at the project site, it complies with the BLM mitigation rule.

In May 2008, the Pecos District Special Status Species Resource Management Plan Amendment (RMPA) was approved and is being implemented. In addition to the standard practices that minimize impacts, as listed above, the following COA will apply:

- Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken, to minimize noise associated impacts which could disrupt breeding and nesting activities.
- Upon abandonment, a low profile abandoned well marker will be installed to prevent raptor perching.

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.

The presence of short-eared owls is a surprising and scientifically interesting incident. The preparation and construction of CDU 34-34 pad and CTB #1 and CDU 27-27 pad and CTB #1 should be delayed until after September to allow confirmation and documentation of the nesting status.

Construction Mitigation

In order to mitigate the impacts from construction activities on cave and karst resources, the following Conditions of Approval will apply to this APD:

- In the event that any underground voids are encountered during construction activities, construction activities will be halted and the BLM will be notified immediately.
- No Blasting to prevent geologic structure instabilities.
- Pad Berming to minimize effects of any spilled contaminants.

Drilling Mitigation

Federal regulations and standard Conditions of Approval applied to all APDs require that adequate measures are taken to prevent contamination to the environment. Due to the extreme sensitivity of the cave and karst resources in this project area, the following additional Conditions of Approval will be added to this APD.

To prevent cave and karst resource contamination the following will be required.

- Closed Mud System Using Steel Tanks with All Fluids and Cuttings Hauled Off.
- Rotary drilling with fresh water where cave or karst features are expected to prevent contamination of freshwater aquifers.
- Directional Drilling allowed after at least 100 feet below the cave occurrence zone to prevent additional impacts resulting from directional drilling.
- Lost Circulation zones logged and reported in the drilling report so BLM can assess the situation and work with the operator on corrective actions.
- Additional drilling, casing, and cementing procedures to protect cave zones and fresh water aquifers. See Drilling COAs.

Production Mitigation

In order to mitigate the impacts from production activities and due to the nature of karst terrain, the following Conditions of Approval will apply to this APD:

- Tank battery liners and berms to minimize the impact resulting from leaks.
- Leak detection system to provide an early alert to operators when a leak has occurred.
- Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of line failures used in production or drilling.

Residual and Cumulative Mitigation

- Annual pressure monitoring will be performed by the operator. If the test results indicate a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Plugging and Abandonment Mitigation

Abandonment Cementing: Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

- The entire well pads and CTB pads will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad and CTB pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pads shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and CTB and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pads and CTB pads during the life of the wells and CTB's will be corrected within two weeks and proper measures will be taken to prevent future erosion.

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

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

G. ON LEASE ACCESS ROADS**Road Width**

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

Surfacing

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

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

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

Crowning

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

Ditching

Ditching shall be required on both sides of the road.

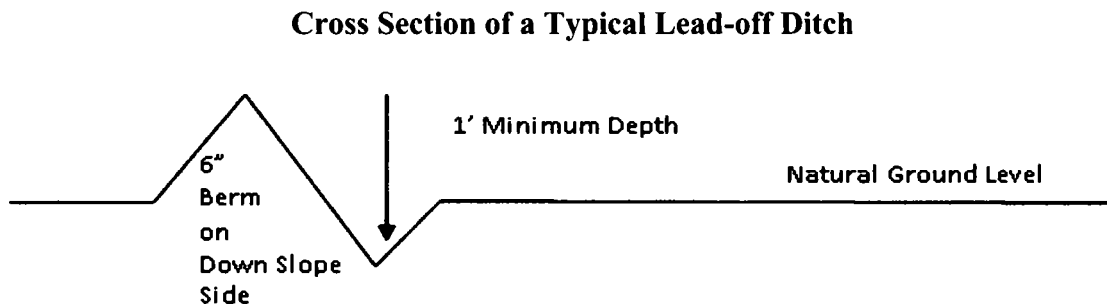
Turnouts

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

Drainage

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

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



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.

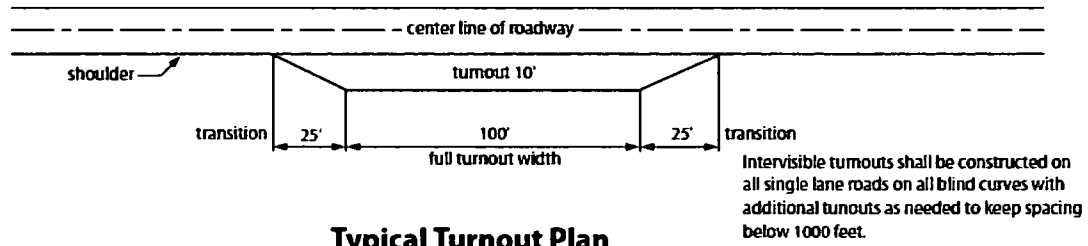
Public Access

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

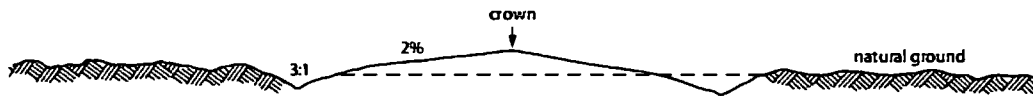
Construction Steps

1. Salvage topsoil
2. Construct road

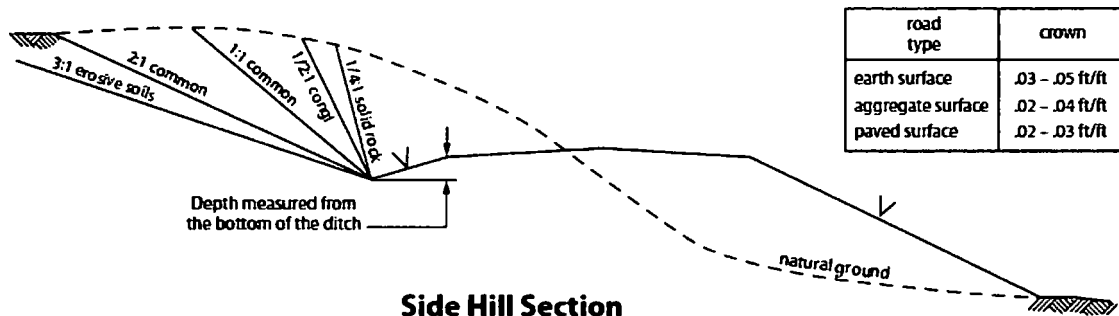
3. Redistribute topsoil
4. Revegetate slopes



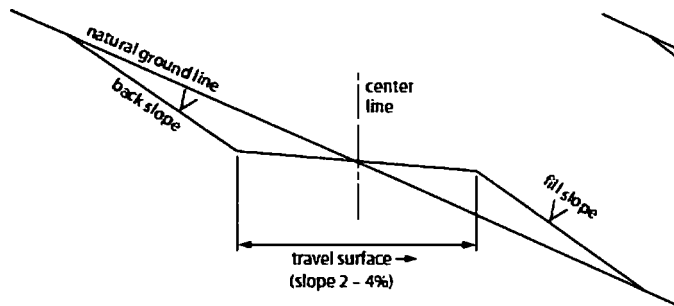
Typical Turnout Plan



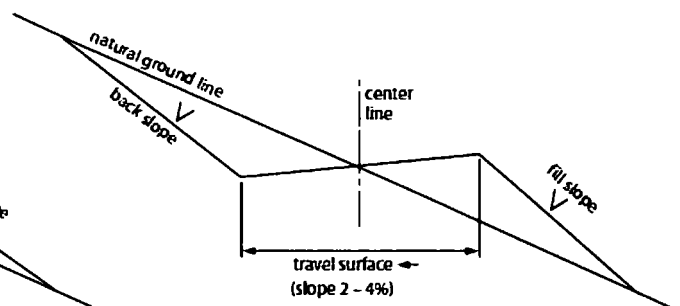
Level Ground Section



Side Hill Section



Typical Outslope Section



Typical Inslope Section

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).

BURIED PIPELINE STIPULATIONS

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

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

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting

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

5. All construction and maintenance activity will be confined to the authorized right-of-way.
6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.
7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:
 - Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
 - Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
 - The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)
8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.
9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

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

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

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

- | | |
|--|--|
| ☐ seed mixture 1 | ☐ seed mixture 3 |
| ☐ seed mixture 2 | ☐ seed mixture 4 |
| ☒ seed mixture 2/LPC | ☐ Aplomado Falcon Mixture |

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

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

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

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

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

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

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

19. Special Stipulations:

Lesser Prairie-Chicken

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

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

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

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

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

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching

deterrence shall be placed on all vertical poles that extend past the cross arms.

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

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

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

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

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

11. Special Stipulations:

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

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be

allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

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

VIII. INTERIM RECLAMATION

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

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

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

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

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

IX. FINAL ABANDONMENT & RECLAMATION

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

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory

revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

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

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

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 below ground level on a plate containing the pertinent information for the plugged well. A GPS point will be given to the BLM.

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

01/14/2019

Operator Certification

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

NAME: Linda Good

Signed on: 10/16/2018

Title: Regulatory Compliance Professional

Street Address: 333 West Sheridan Avenue

City: Oklahoma City

State: OK

Zip: 73102

Phone: (405)552-6558

Email address: Linda.Good@dvn.com

Field Representative

Representative Name: Ray Vaz

Street Address: 333 West Sheridan Ave.

City: Oklahoma City

State: OK

Zip: 73102

Phone: (405)552-4902

Email address: ray.vaz@dvn.com



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

Application Data Report

01/14/2019

APD ID: 10400035209

Submission Date: 10/16/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Well Type: OIL WELL

Well Work Type: Drill

highlighted data
reflects the most
recent changes

[Show Final Text](#)

Section 1 - General

APD ID: 10400035209

Tie to previous NOS?

Submission Date: 10/16/2018

BLM Office: CARLSBAD

User: Linda Good

Title: Regulatory Compliance
Professional

Federal/Indian APD: FED

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

Lease number: NMNM125635

Lease Acres: 720

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: DEVON ENERGY PRODUCTION COMPANY LP

Operator letter of designation:

Operator Info

Operator Organization Name: DEVON ENERGY PRODUCTION COMPANY LP

Operator Address: 333 West Sheridan Avenue

Zip: 73102

Operator PO Box:

Operator City: Oklahoma City State: OK

Operator Phone: (800)583-3866

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? EXISTING

Master Development Plan name: Cotton Draw 1 MDP

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: JENNINGS, WEST Pool Name: BONE SPRING

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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

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:

Number: 3

LUSITANO 27 WELLPAD

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town:

Distance to nearest well: 1205 FT

Distance to lease line: 385 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Lusitano_27_34_Fed_Com_533H_C_102_signed_20181015101511.pdf

Lusitano_27_34_Fed_Com_533H_Additional_points_20181015101521.pdf

Well work start Date: 03/05/2020

Duration: 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 6424A

	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	385	FNL	173 2	FWL	25S	31E	27	Aliquot NENW	32.10749 28	- 103.7688 938	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 125635	333 3	0	0
KOP Leg #1	250	FNL	161 1	FWL	25S	31E	27	Aliquot NENW	32.10786 6	- 103.7692 82	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 125635	- 512 4	846 2	845 7
PPP Leg #1	250	FNL	161 1	FWL	25S	31E	27	Aliquot NENW	32.10786 6	- 103.7692 82	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 125635	- 512 4	846 2	845 7

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

	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	FSL	165 0	FWL	25S	31E	34	Aliquot SESW	32.07949 14	- 103.7692 786	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC0 061672 A	- 569 7	191 11	903 0
BHL Leg #1	20	FSL	165 0	FWL	25S	31E	34	Aliquot SESW	32.07949 14	- 103.7692 786	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC0 061672 A	- 569 7	191 11	903 0

SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

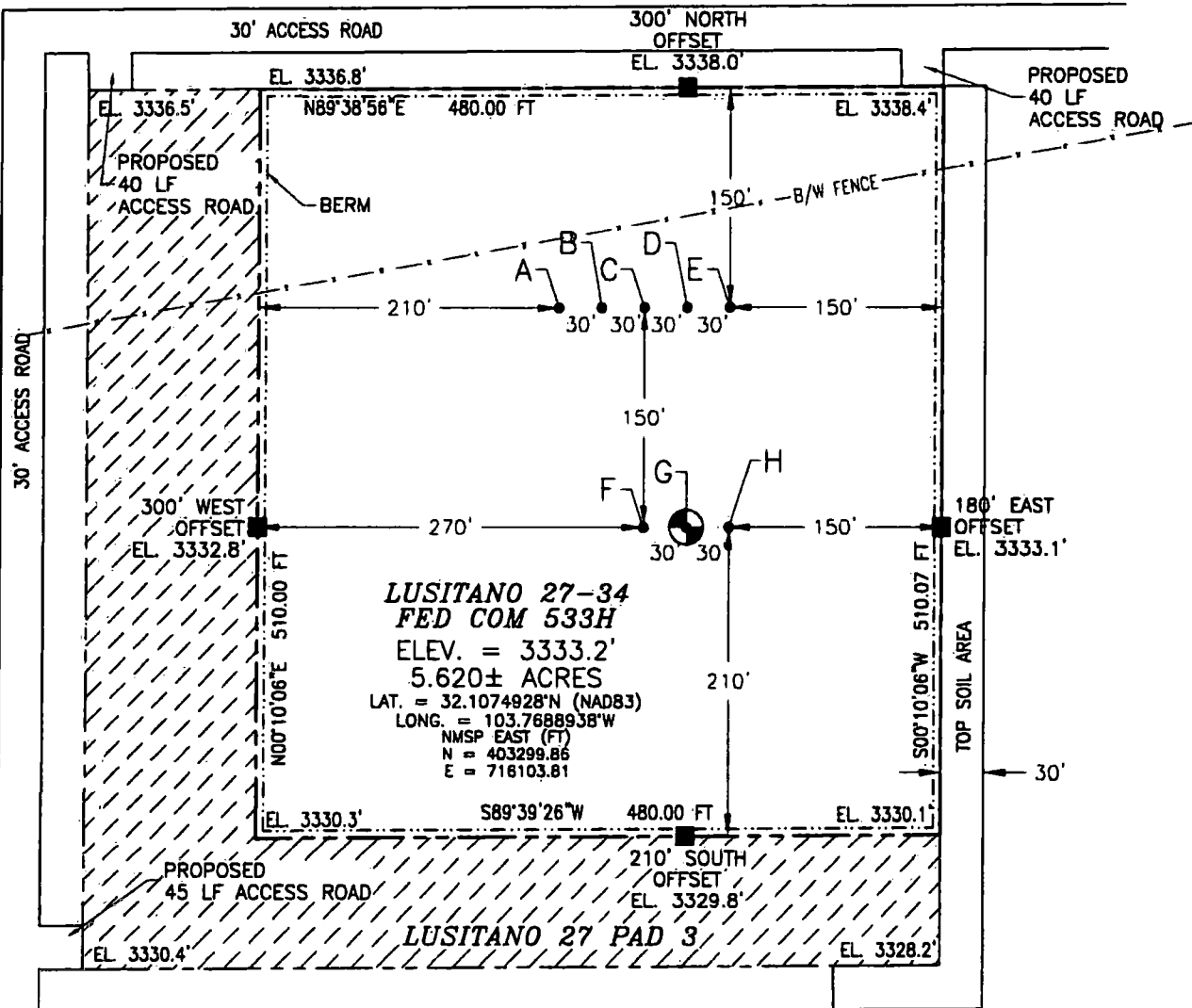
NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD88.

A - LUSITANO 27-22 FED COM 232H
B - LUSITANO 27-34 FED COM 733H
C - LUSITANO 27-34 FED COM 622H
D - LUSITANO 27-34 FED COM 333H
E - LUSITANO 27-34 FED COM 713H

F - LUSITANO 27-34 FED COM 233H
G - LUSITANO 27-34 FED COM 533H
H - LUSITANO 27-34 FED COM 523H

SEC. 22
SEC. 27

SURVEYED ELEC. LINE



012 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM STATE HIGHWAY 128 AND CR 1 (ORLA HIGHWAY) GO SOUTH ON CR 1 6.5 MILES TO MONSANTO ROAD, TURN RIGHT GO WEST 2.1 MILES, TURN RIGHT GO NORTH 0.8 OF A MILE, TURN LEFT GO WEST 2.1 MILES, BEND LEFT GO SOUTHWEST 1.3 MILES, TURN LEFT GO SOUTH 1.0 MILE TO BEGIN ROAD SURVEY, GO WEST 3437' (0.65 MILE), THEN SOUTH 40' TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.
LUSITANO 27-34 FED COM 533H
LOCATED 385 FT. FROM THE NORTH LINE
AND 1732 FT. FROM THE WEST LINE OF
SECTION 27, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

SEPTEMBER 27, 2018

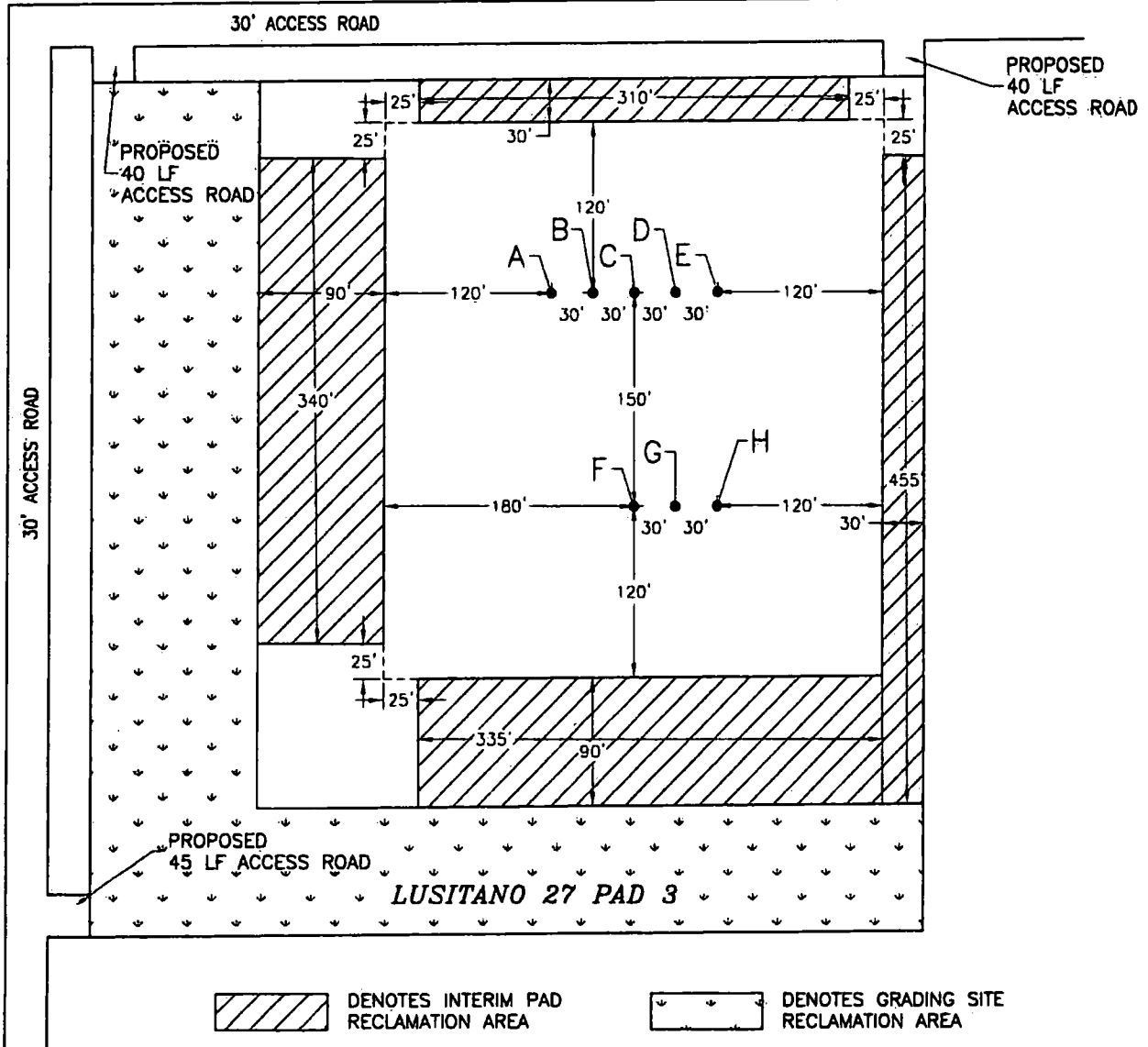
SURVEY NO. 6424A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 INTERIM SITE BUILD PLAN

A - LUSITANO 27-22 FED COM 232H	F - LUSITANO 27-34 FED COM 233H
B - LUSITANO 27-34 FED COM 733H	G - LUSITANO 27-34 FED COM 533H
C - LUSITANO 27-34 FED COM 622H	H - LUSITANO 27-34 FED COM 523H
D - LUSITANO 27-34 FED COM 333H	
E - LUSITANO 27-34 FED COM 713H	

SEC. 22
 SEC. 27



012 60 120 240
 SCALE 1" = 120'

1.921± ACRES INTERIM PAD RECLAMATION AREA
 2.646± ACRES GRADING SITE RECLAMATION AREA
 3.699± ACRES NON-RECLAIMED AREA
 8.266± ACRES LUSITANO 27 PAD 3

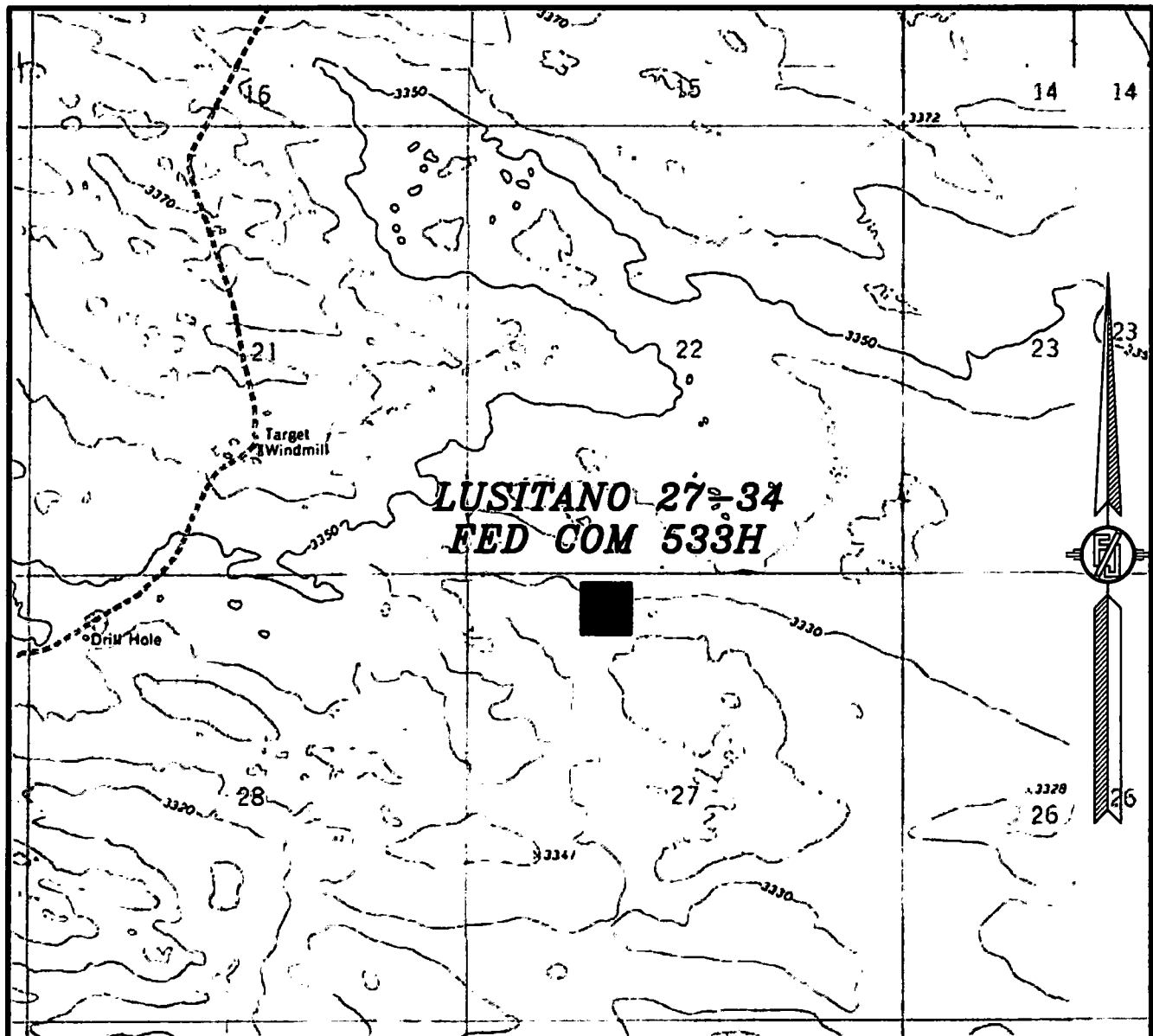
DEVON ENERGY PRODUCTION COMPANY, L.P.
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 LOCATED 385 FT. FROM THE NORTH LINE
 AND 1732 FT. FROM THE WEST LINE OF
 SECTION 27, TOWNSHIP 25 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 LAND STATUS: BLM

SEPTEMBER 27, 2018

SURVEY NO. 6424A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
PHANTOM BANKS

NOT TO SCALE

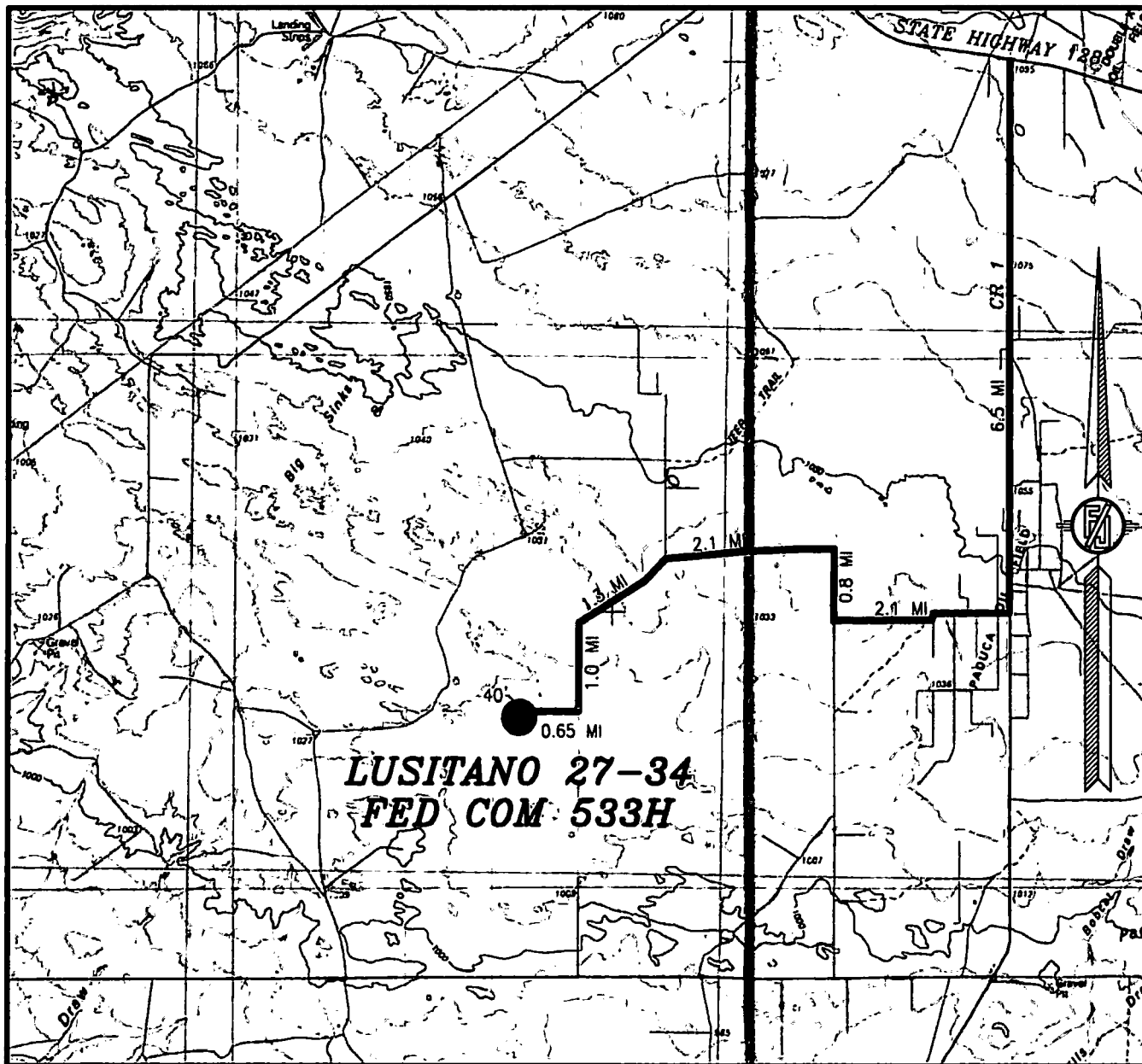
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RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

SEPTEMBER 27, 2018

SURVEY NO. 6424A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

LUSITANO 27-34 FED COM 533H

LOCATED 385 FT. FROM THE NORTH LINE

AND 1732 FT. FROM THE WEST LINE OF

SECTION 27, TOWNSHIP 25 SOUTH,

RANGE 31 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO

LAND STATUS: BLM

DIRECTIONS TO LOCATION

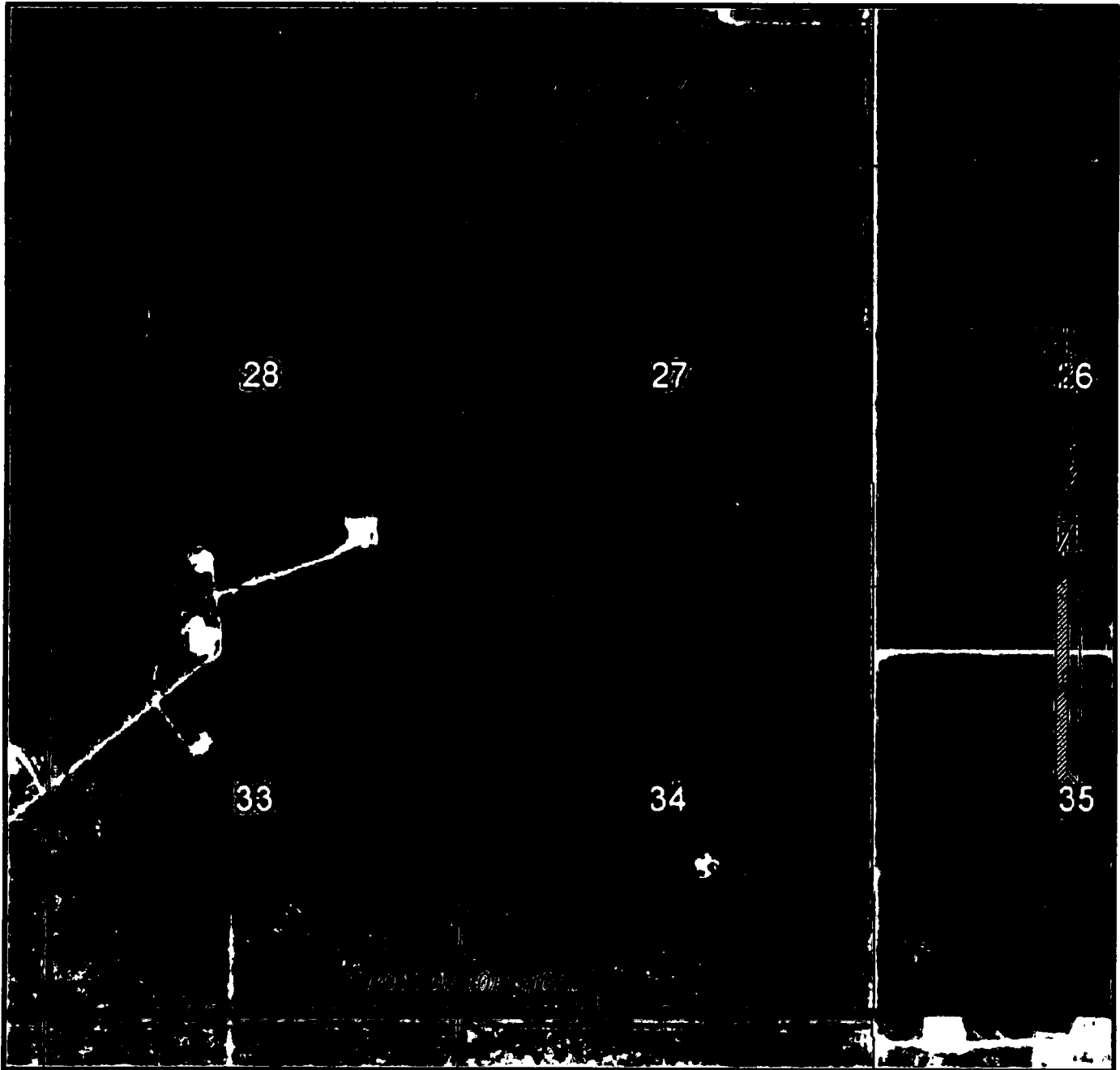
FROM STATE HIGHWAY 128 AND CR 1 (ORLA HIGHWAY) GO SOUTH ON CR 1 6.5 MILES TO MONSANTO ROAD, TURN RIGHT GO WEST 2.1 MILES, TURN RIGHT GO NORTH 0.8 OF A MILE, TURN LEFT GO WEST 2.1 MILES, BEND LEFT GO SOUTHWEST 1.3 MILES, TURN LEFT GO SOUTH 1.0 MILE TO BEGIN ROAD SURVEY, GO WEST 3437' (0.65 MILE), THEN SOUTH 40' TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

SEPTEMBER 27, 2018

SURVEY NO. 6424A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2017

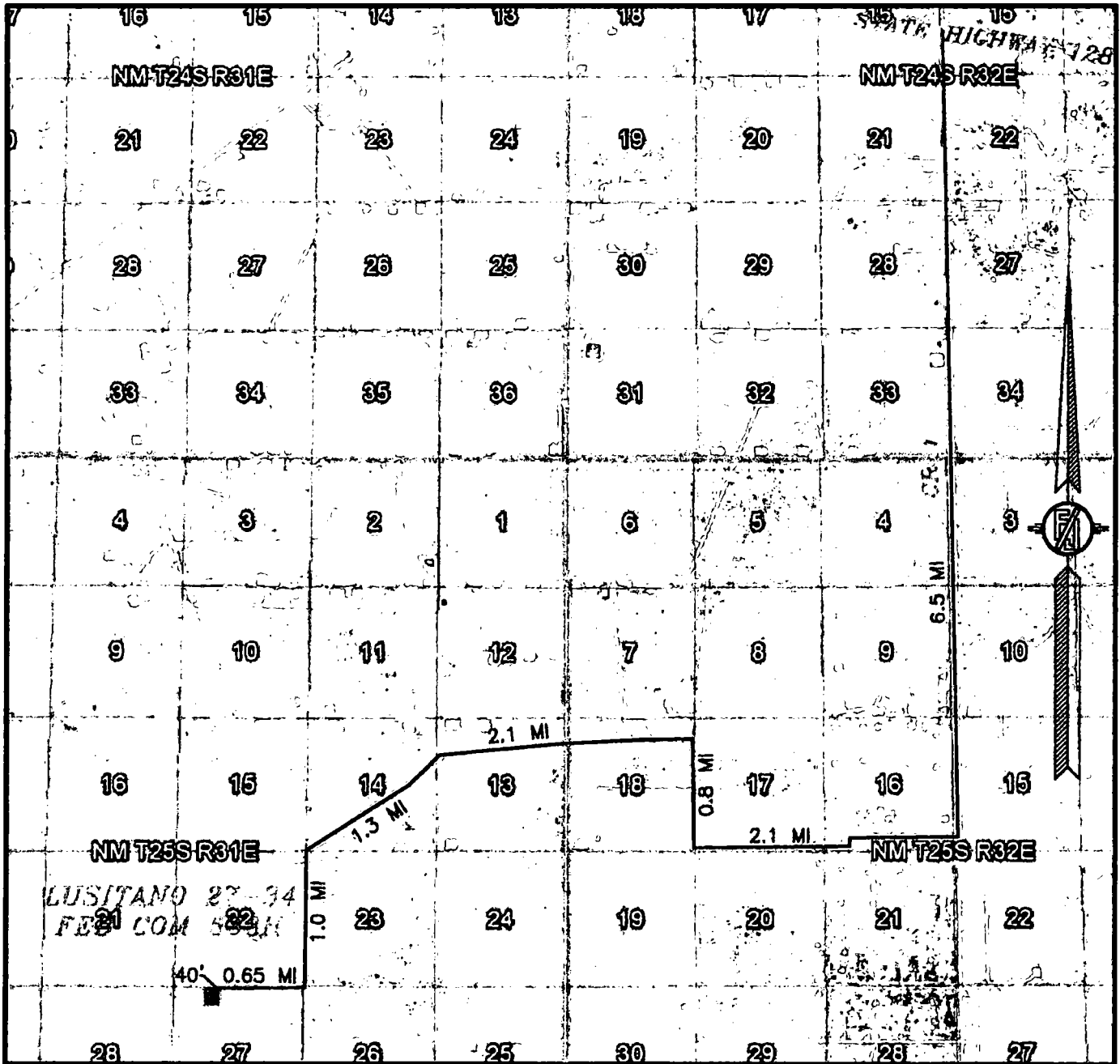
DEVON ENERGY PRODUCTION COMPANY, L.P.
LUSITANO 27-34 FED COM 533H
LOCATED 385 FT. FROM THE NORTH LINE
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SECTION 27, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

SEPTEMBER 27, 2018

SURVEY NO. 6424A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
ACCESS AERIAL ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 NOVEMBER 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
LUSITANO 27-34 FED COM 533H
 LOCATED 385 FT. FROM THE NORTH LINE
 AND 1732 FT. FROM THE WEST LINE OF
 SECTION 27, TOWNSHIP 25 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 LAND STATUS: BLM

SEPTEMBER 27, 2018

SURVEY NO. 6424A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

The site plan for LUSITANO 27 PAD 3 shows a proposed pad area with a center point and a 3:1 slope limit of earthwork. The pad is located within a larger area defined by a 30' access road and a proposed 40 LF access road. The plan includes a table of coordinates for points A through H, a north arrow, and a scale bar.

Point	Location	Range	Agency	Commodity	Quantity
A	LUSITANO	27-22	FED	COM	232H
B	LUSITANO	27-34	FED	COM	733H
C	LUSITANO	27-34	FED	COM	622H
D	LUSITANO	27-34	FED	COM	333H
E	LUSITANO	27-34	FED	COM	713H
F	LUSITANO	27-34	FED	COM	233H
G	LUSITANO	27-34	FED	COM	533H
H	LUSITANO	27-34	FED	COM	523H

0 60 120 240
SCALE 1" = 120'

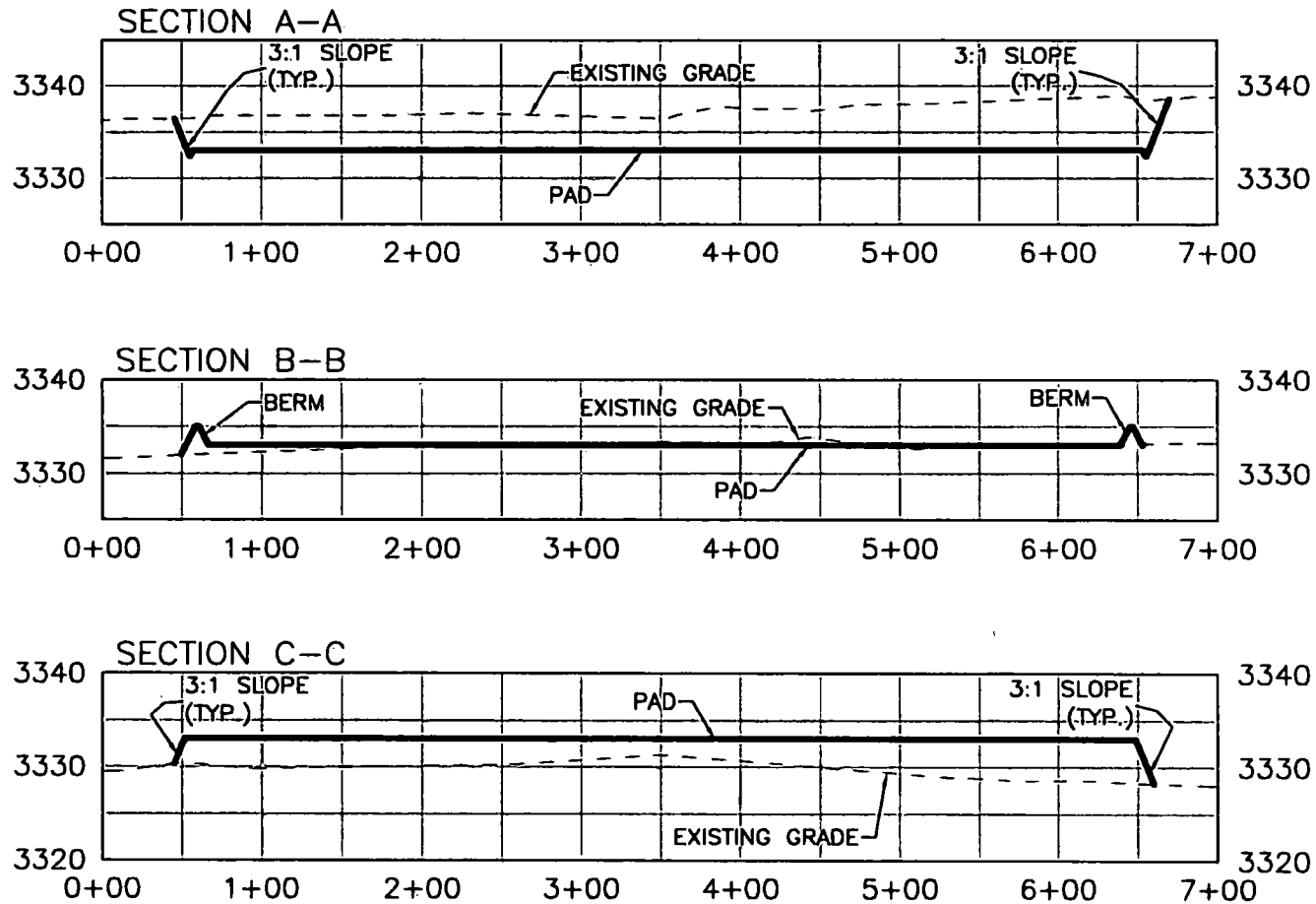
MADRON SURVEYING, INC. 301 SOUTH CANAL
(575) 234-3341 **CARLSBAD, NEW MEXICO**

CUT	FILL	NET
14475 CU. YD	14269 CU. YD	207 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 1-2
SURVEY NO. 6424A ☒

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
 FOR LUSITANO 27-34 FED COM 533H
 SECTION 27, TOWNSHIP 25 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

012 60 120 240
 SCALE 1" = 120' - 1" = 20' VER

CUT	FILL	NET
14475 CU. YD	14269 CU. YD	207 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

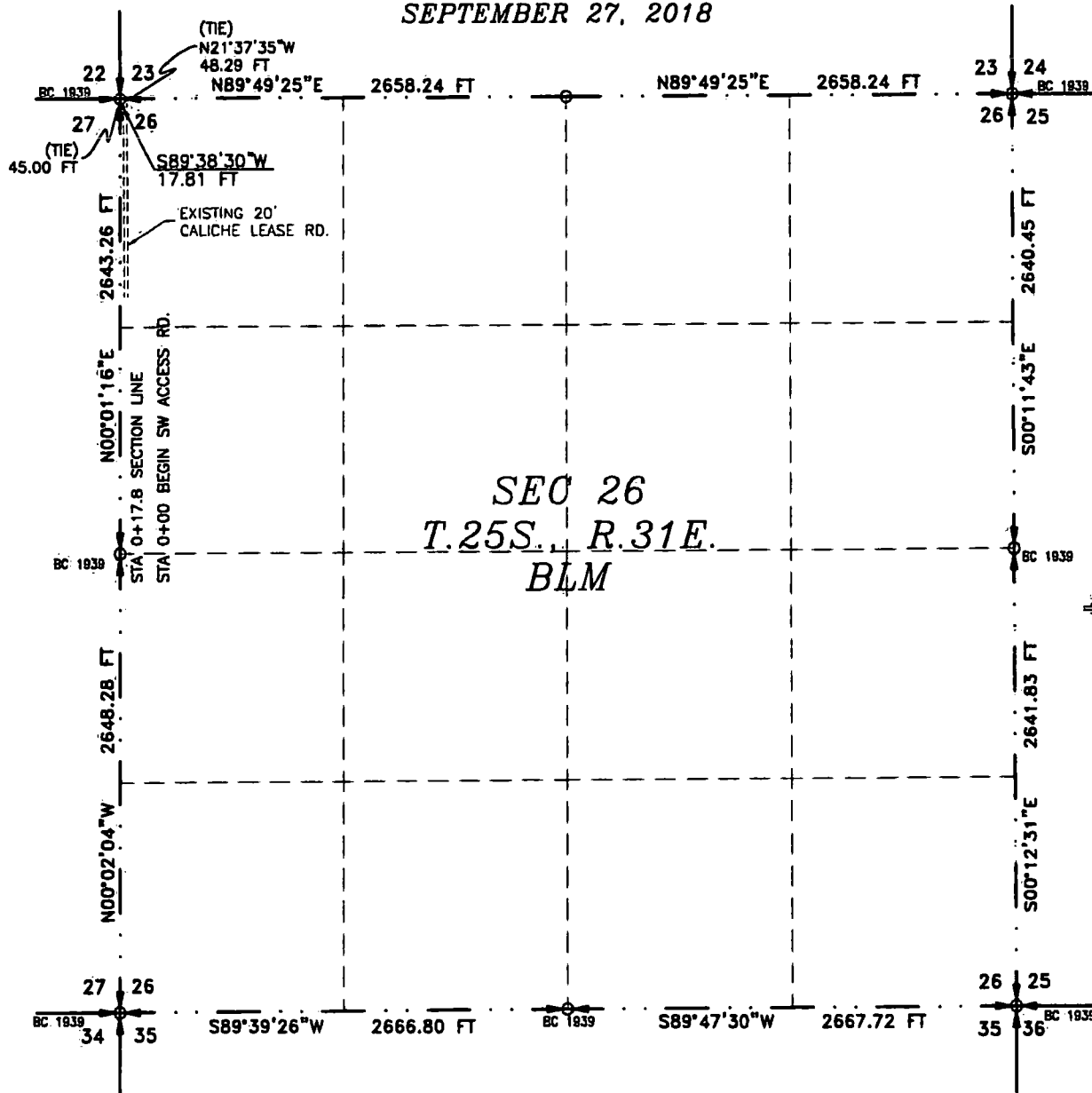
SEPTEMBER 27, 2018
 MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
 (575) 234-3341

SHEET 2-2
 SURVEY NO. 6424A

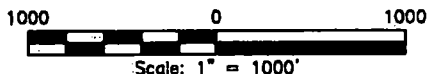
ACCESS ROAD PLAT

ACCESS ROAD TO THE LUSITANO 27 PAD 3 (LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H, 523H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SEPTEMBER 27, 2018



SEE NEXT SHEET (2-4) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-4

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 27 DAY OF SEPTEMBER 2018

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6424A

ACCESS ROAD PLAT

ACCESS ROAD TO THE LUSITANO 27 PAD 3 (LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H, 523H)

**DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SEPTEMBER 27, 2018**

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

SOUTHWEST ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N21°37'35"W, A DISTANCE OF 48.29 FEET;

THENCE S89°38'30"W A DISTANCE OF 17.81 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N00°01'16"E, A DISTANCE OF 45.00 FEET;

SAID STRIP OF LAND BEING 17.81 FEET OR 1.08 RODS IN LENGTH, CONTAINING 0.012 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 17.81 L.F. 1.08 RODS 0.012 ACRES

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 24 DAY OF SEPTEMBER 2018

[Signature]
FILIMON F. JARAMILLO REG. 12797
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

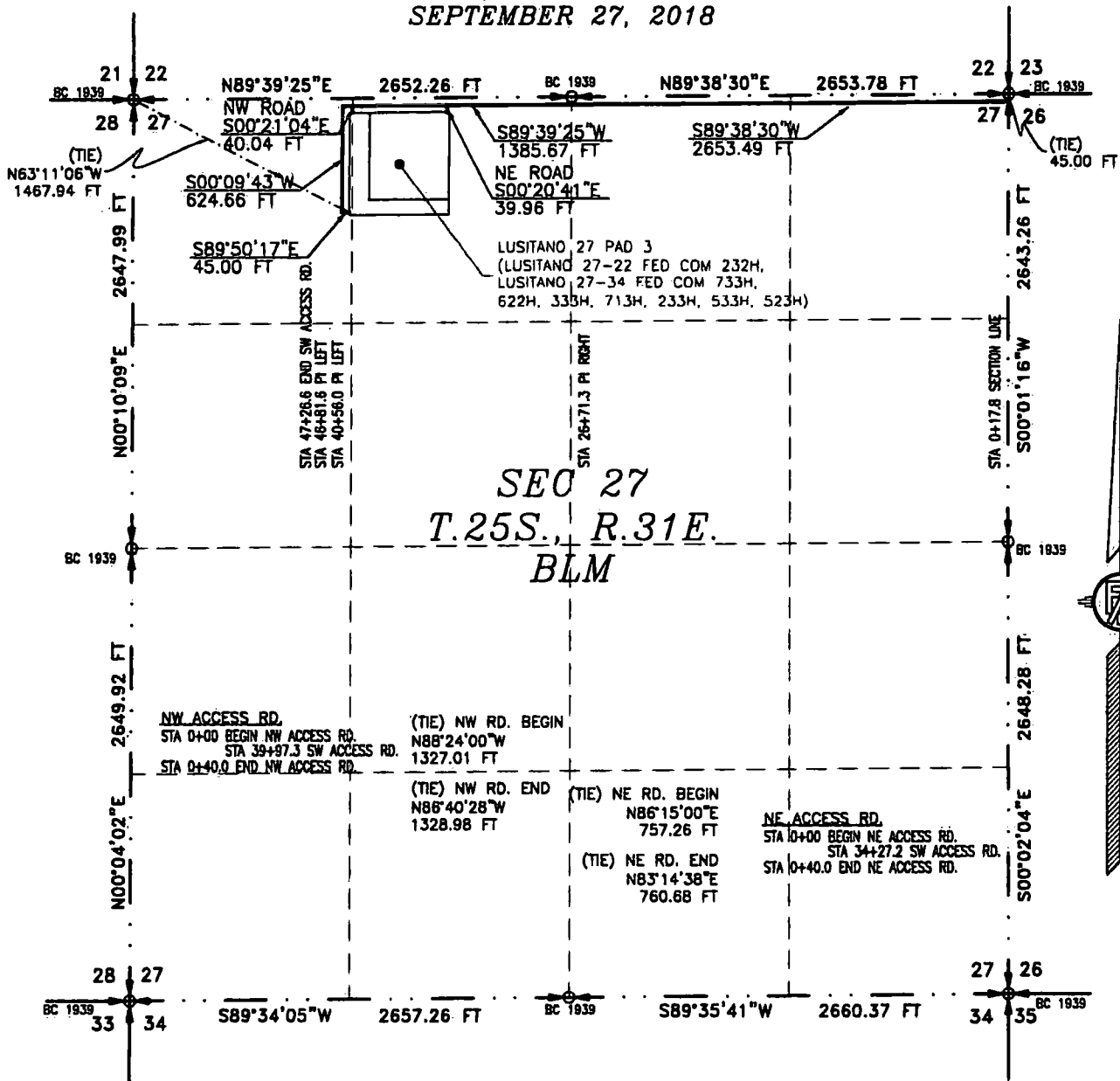
SHEET: 2-4

MADRON SURVEYING, INC. 301 SOUTH CANAL (505) 234-3341 CARLSBAD, NEW MEXICO

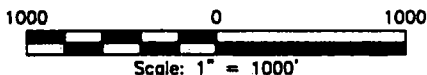
SURVEY NO. 6424A

ACCESS ROAD TO THE LUSITANO 27 PAD 3 (LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H, 523H)

**DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SEPTEMBER 27, 2018**



SEE NEXT SHEET (4-4) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 3-4

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(975) 234-3347

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,
NEW MEXICO, THIS 29 DAY OF SEPTEMBER, 2018

MADRON SURVEYING, INC:
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6424A.

CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD TO THE LUSITANO 27 PAD 3 (LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H, 523H)

**DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SEPTEMBER 27, 2018**

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

SOUTHWEST ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NE/4 NE/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHEAST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N00°01'16"E, A DISTANCE OF 45.00 FEET;

THENCE S89°38'30"W A DISTANCE OF 2653.49 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°39'25"W A DISTANCE OF 1385.67 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S00°09'43"W A DISTANCE OF 624.66 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°50'17"E A DISTANCE OF 45.00 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N63°11'06"W, A DISTANCE OF 1467.94 FEET;

SAID STRIP OF LAND BEING 4708.82 FEET OR 285.38 RODS IN LENGTH, CONTAINING 3.243 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NE/4 1326.91 L.F. 80.42 RODS 0.914 ACRES

NW/4 NE/4 1326.91 L.F. 80.42 RODS 0.914 ACRES

NE/4 NW/4 1326.17 L.F. 80.37 RODS 0.913 ACRES

NW/4 NW/4 728.83 L.F. 44.17 RODS 0.502 ACRES

NORTHEAST ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NE/4 NW/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N86°15'00"E, A DISTANCE OF 757.26 FEET;

THENCE S00°20'41"E A DISTANCE OF 39.96 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N83°14'38"E, A DISTANCE OF 760.68 FEET;

SAID STRIP OF LAND BEING 39.96 FEET OR 2.42 RODS IN LENGTH, CONTAINING 0.028 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NW/4 39.96 L.F. 2.42 RODS 0.028 ACRES

NORTHWEST ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NE/4 NW/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N88°24'00"W, A DISTANCE OF 1327.01 FEET;

THENCE S00°21'04"E A DISTANCE OF 40.04 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N86°40'28"W, A DISTANCE OF 1328.98 FEET;

SAID STRIP OF LAND BEING 40.04 FEET OR 2.43 RODS IN LENGTH, CONTAINING 0.028 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NW/4 40.04 L.F. 2.43 RODS 0.028 ACRES

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 27 DAY OF SEPTEMBER 2018

[Signature]
FILIMON F. JARAMILLO #12797

301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6424A

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 4-4

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO



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

Drilling Plan Data Report

01/14/2019

APD ID: 10400035209

Submission Date: 10/16/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3404	0	0	ALLUVIUM	NONE	No
2	RUSTLER	2518	886	886	LIMESTONE	NONE	No
3	BASE OF SALT	-837	4241	4241	SALT	NONE	No
4	DELAWARE	-877	4281	4281	SANDSTONE	NATURAL GAS,OIL	No
5	BONE SPRING	-5582	8986	8986	LIMESTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M

Rating Depth: 4381

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

Lusitano_27_34_Fed_Com_533H_3M_BOPE_CK_20181015102554.pdf

BOP Diagram Attachment:

Lusitano_27_34_Fed_Com_533H_3M_BOPE_CK_20181015102608.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Pressure Rating (PSI): 3M

Rating Depth: 9030

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

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Choke Diagram Attachment:

Lusitano_27_34_Fed_Com_533H_3M_BOPE_CK_20181015102638.pdf

BOP Diagram Attachment:

Lusitano_27_34_Fed_Com_533H_3M_BOPE_CK_20181015102648.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	911	0	911	-6993	-7781	911	H-40	48	STC	1.125	1	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4381	0	4381	-6993		4381	J-55	40	LTC	1.125	1	BUOY	1.6	BUOY	1.6
3	PRODUCTION	8.75	5.5	NEW	API	N	0	19111	0	9030	-6993	-17388	19111	P-110	17	OTHER - BTC	1.125	1	BUOY	1.6	BUOY	1.6

Casing Attachments

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Lusitano_27_34_Fed_Com_533H_SurfCsg_Ass_20181015102814.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Lusitano_27_34_Fed_Com_533H_Int_Csg_Ass_20181015102859.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Lusitano_27_34_Fed_Com_533H_ProdCasing_Ass_20181015103007.pdf

Section 4 - Cement

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	911	951	1.33	13.2	1265	100	C	Class C + adds

INTERMEDIATE	Lead		0	3881	681	1.94	9	1322	50	C	Class C + adds
INTERMEDIATE	Tail		3881	4381	196	1.33	13.2	261	50	C	Class C + adds
PRODUCTION	Lead		3881	8462	357	3.27	9	1277	10	TUNED	Class C + adds
PRODUCTION	Tail		8462	19000	1853	1.2	13.2	2706	10	H	(50:50) Clas H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

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

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
911	4381	SALT SATURATED	10	10.5							

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

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	911	WATER-BASED MUD	8.5	9							
4381	1911 1	WATER-BASED MUD	8.5	9							

Section 6 - Test, Logging, Coring

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

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

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

CALIPER,CBL,DS,GR,MUDLOG

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4226

Anticipated Surface Pressure: 2239.4

Anticipated Bottom Hole Temperature(F): 144

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:

Lusitano_27_34_Fed_Com_533H_H2S_Plan_20181015103544.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Lusitano_27_34_Fed_Com_533H_Dir_Plan_20181015103614.pdf

Lusitano_27_34_Fed_Com_533H_Survey_20181015103625.pdf

Lusitano_27_34_Fed_Com_533H_Anticollision_20181015103644.pdf

Other proposed operations facets description:

CLOSED LOOP DESIGN

GAS CAPTURE PLAN

DRILLING PLAN

MB VERB

MB WELLHD

Other proposed operations facets attachment:

Lusitano_27_34_Fed_Com_533H_Clsd_Loop_20181015104048.pdf

Lusitano_27_34_Fed_Com_533H_Gas_Capture_Plan_20181015104049.pdf

Lusitano_27_34_Fed_Com_533H_Drilling_Plan_20181015104113.pdf

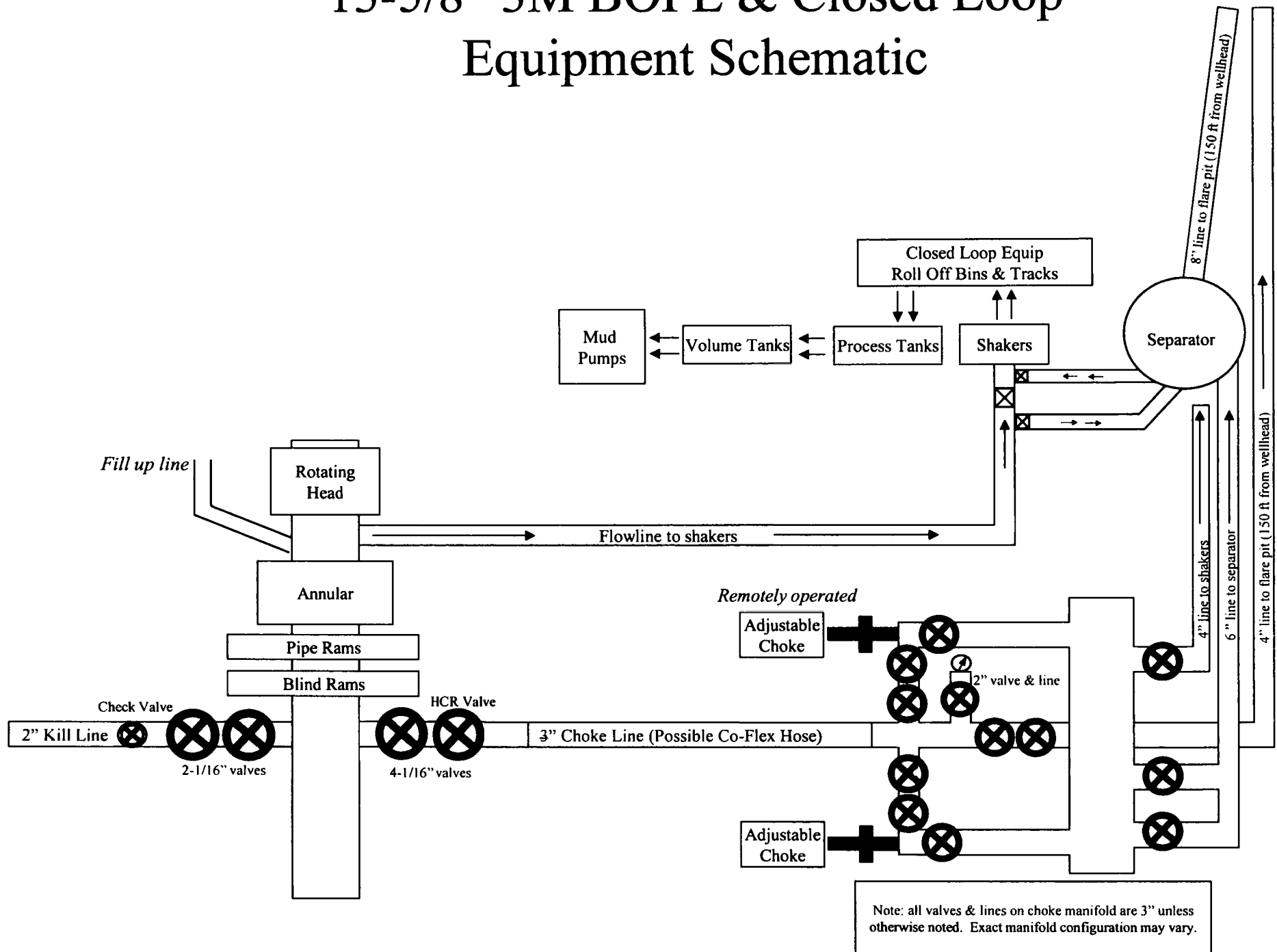
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Lusitano_27_34_Fed_Com_533H_MB_Wellhd_20181015104115.pdf

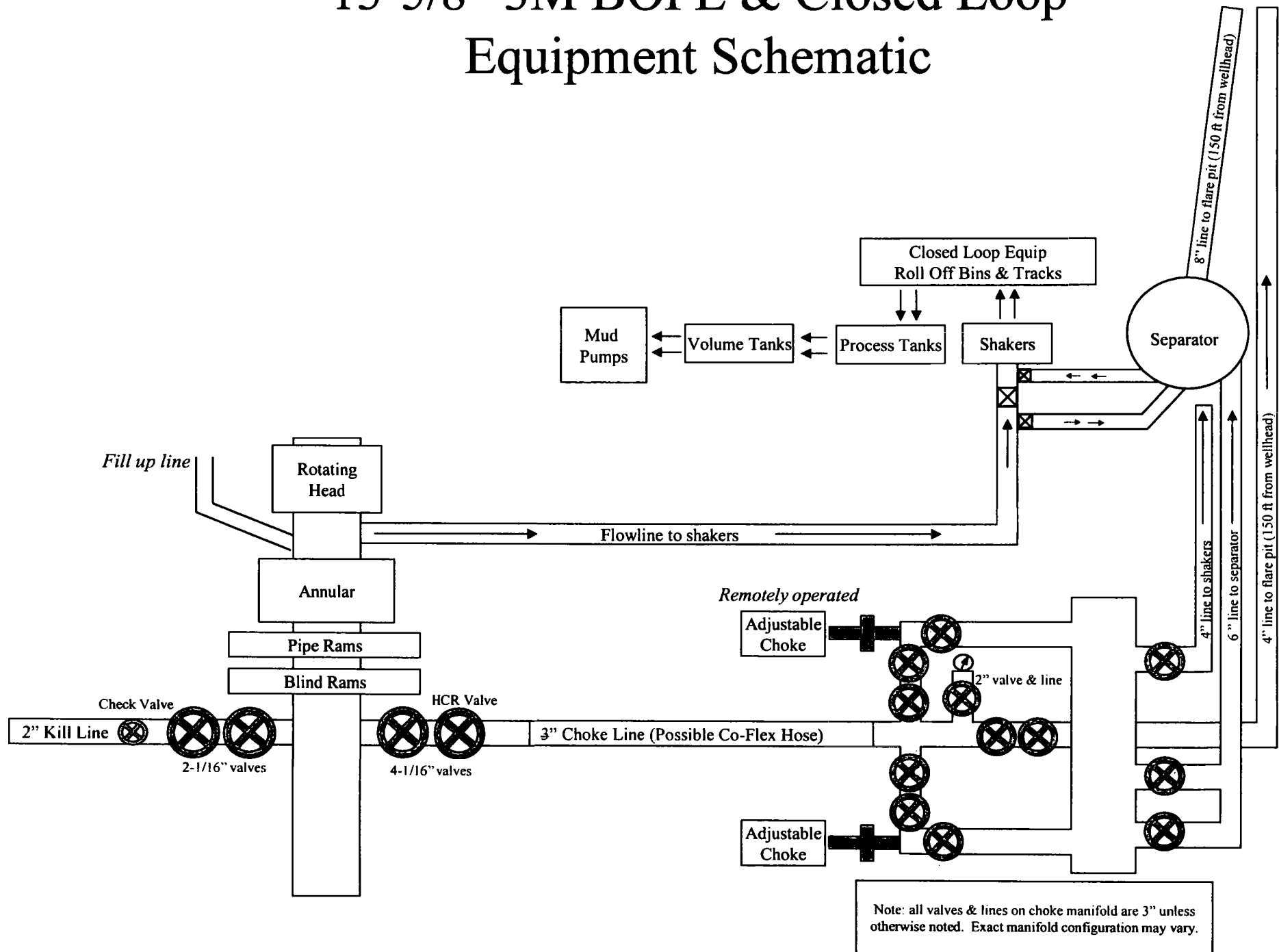
Other Variance attachment:

Lusitano_27_34_Fed_Com_533H_Co_flex_20181015104136.pdf

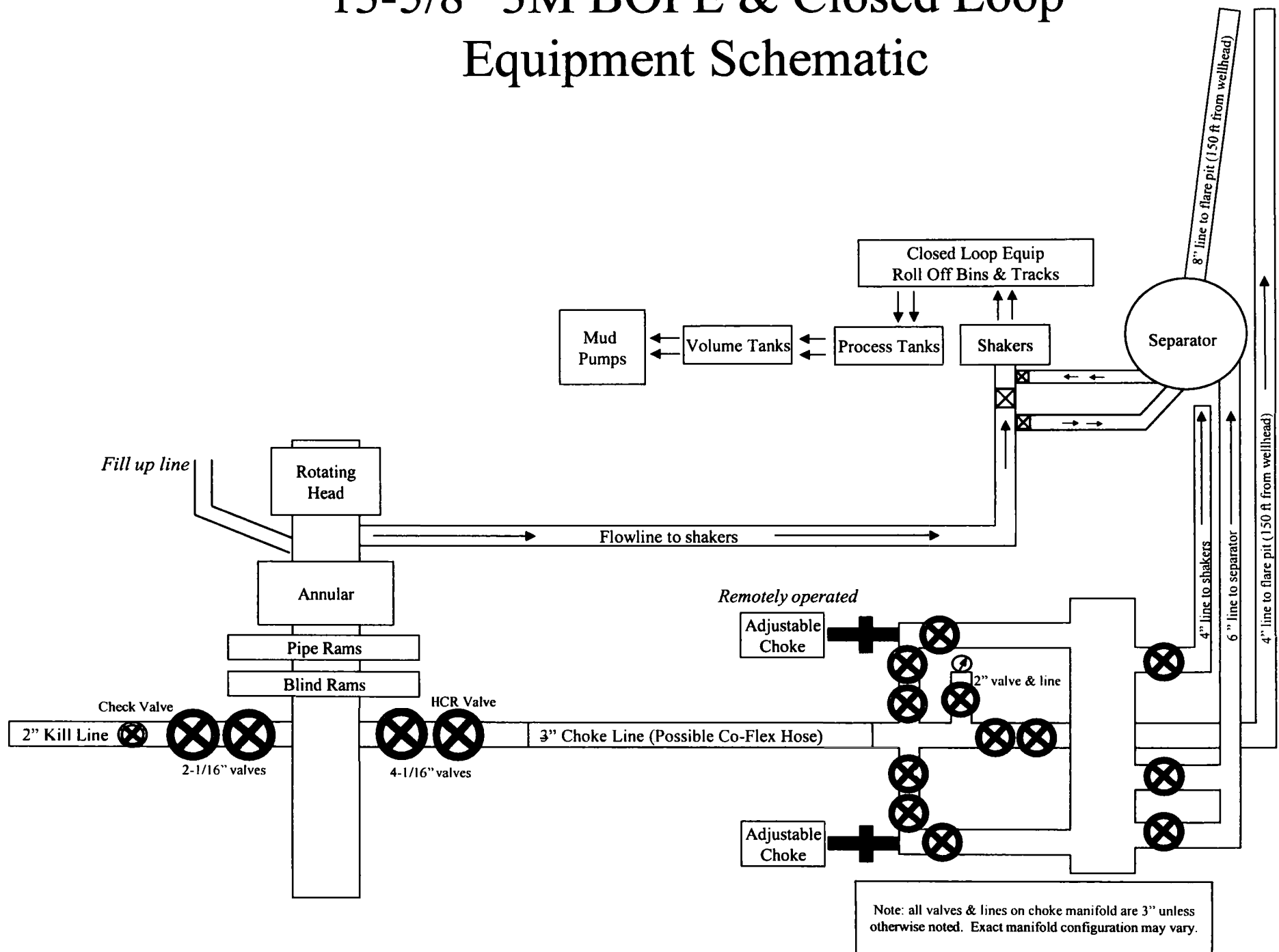
13-5/8" 3M BOPE & Closed Loop Equipment Schematic



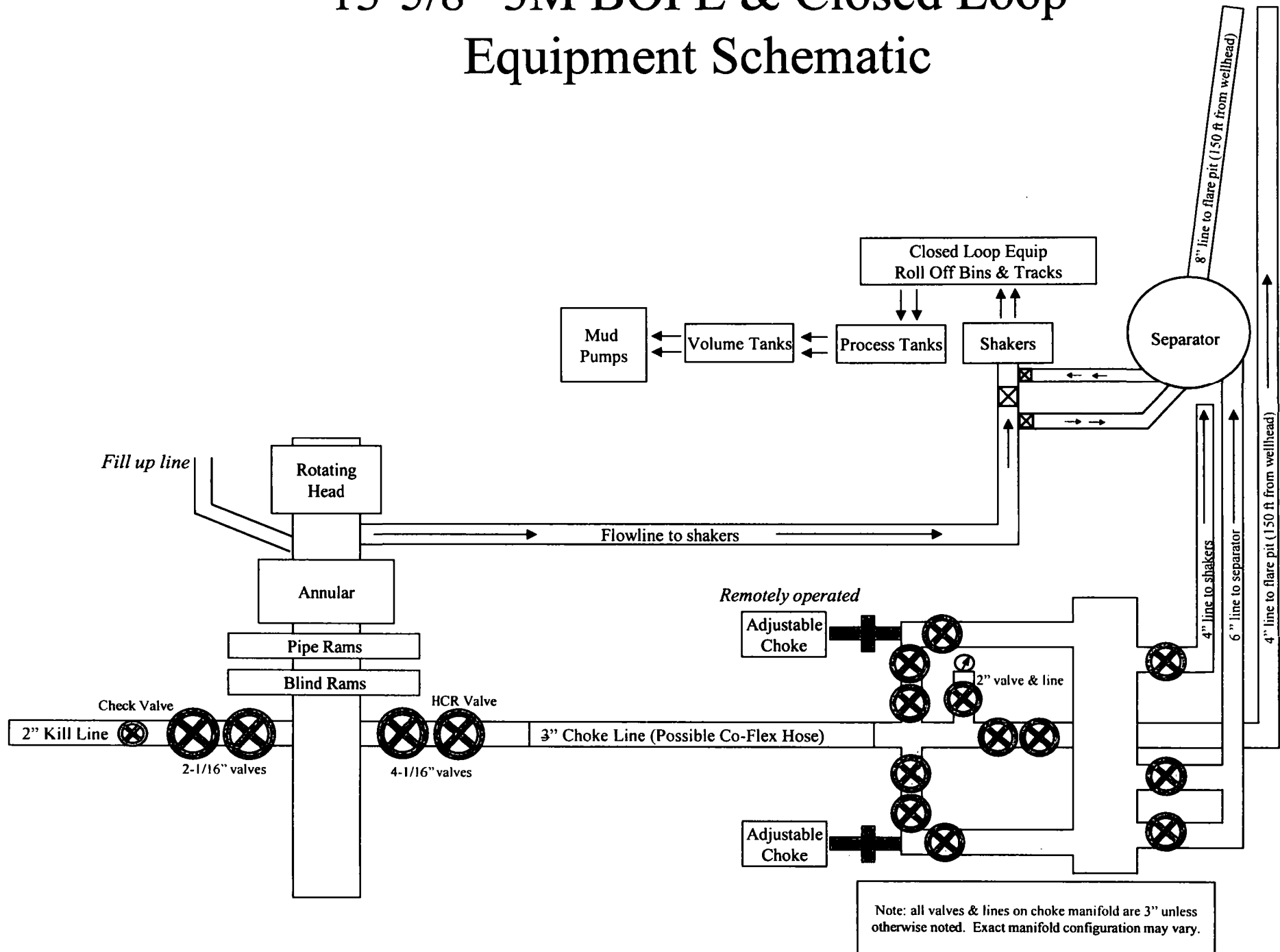
13-5/8" 3M BOPE & Closed Loop Equipment Schematic



13-5/8" 3M BOPE & Closed Loop Equipment Schematic



13-5/8" 3M BOPE & Closed Loop Equipment Schematic



Casing Assumptions and Load Cases

Surface

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

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

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

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

Casing Assumptions and Load Cases

Intermediate

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

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

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

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

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

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

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

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



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

Hydrogen Sulfide (H₂S) Contingency Plan

For

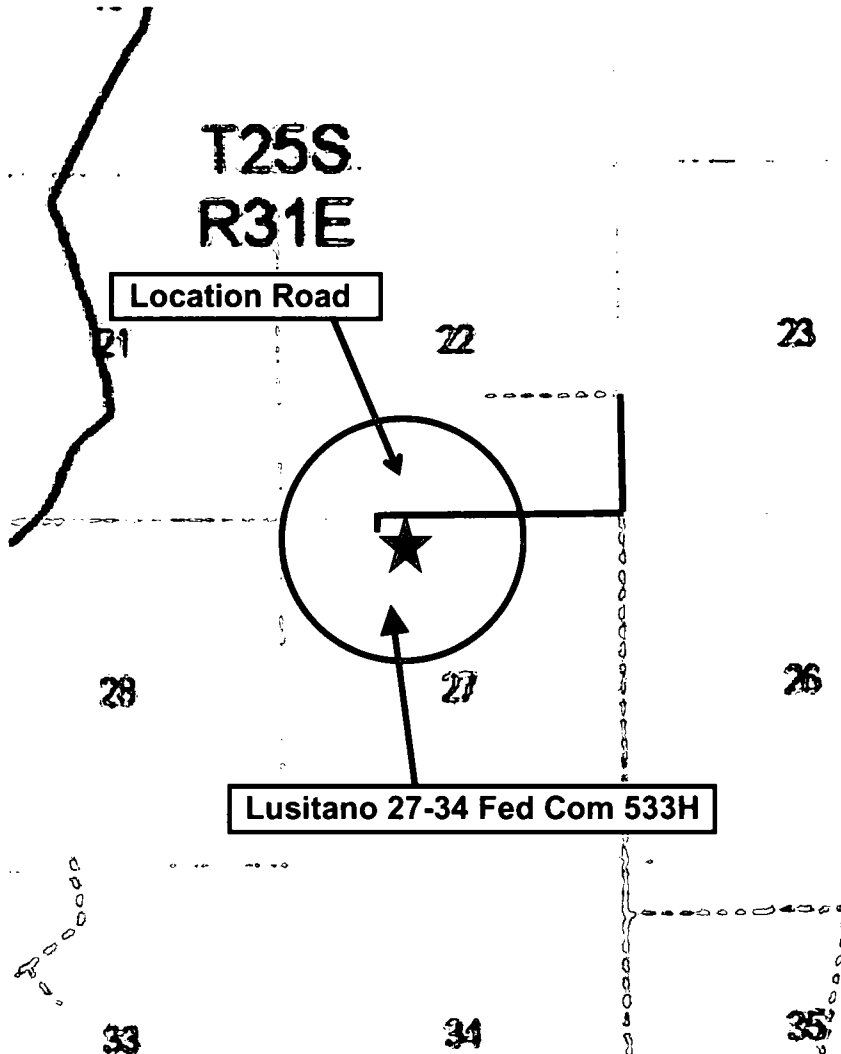
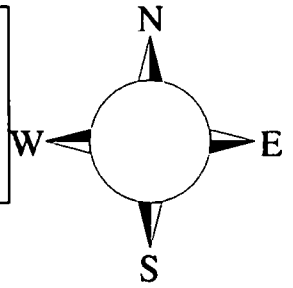
Lusitano 27-34 Fed Com 533H

**Sec-27 T-25S R-31E
385' FNL & 1732' FWL
LAT. = 32.1074928' N (NAD83)
LONG = 103.7688938' W**

Eddy County NM

Lusitano 27-34 Fed Com 533H

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



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

Escape

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

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, 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 H₂S 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 H₂S, 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 (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H₂S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO₂	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 (H₂S) 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 (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S 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 H₂S 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 H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S 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 H₂S.

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. H₂S detection and monitoring equipment:

Portable H₂S monitors positioned on location for best coverage and response. These units have warning lights which activate when H₂S 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 H₂S circulated to surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

5. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
- B. All elastomers used for packing and seals shall be H₂S 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 H₂S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

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

Prepared in conjunction with
Dave Small



Devon Energy

Project: Eddy County, NM (NAD-83)
 Site: Lusitano
 Well: Lusitano 27-34 Fed Com 533H
 Wellbore: OH
 Design: Plan #1



Azimuths to Grid North
 True North: -0.30°
 Magnetic North: 6.47°

Magnetic Field
 Strength: 47866.9snT
 Dip Angle: 59.77°
 Date: 10/10/2018
 Model: HDGM

PROJECT DETAILS: Eddy County, NM (NAD-83)

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 Datum: 3333.2' GE + 23.5' KB @ 3356.70usft

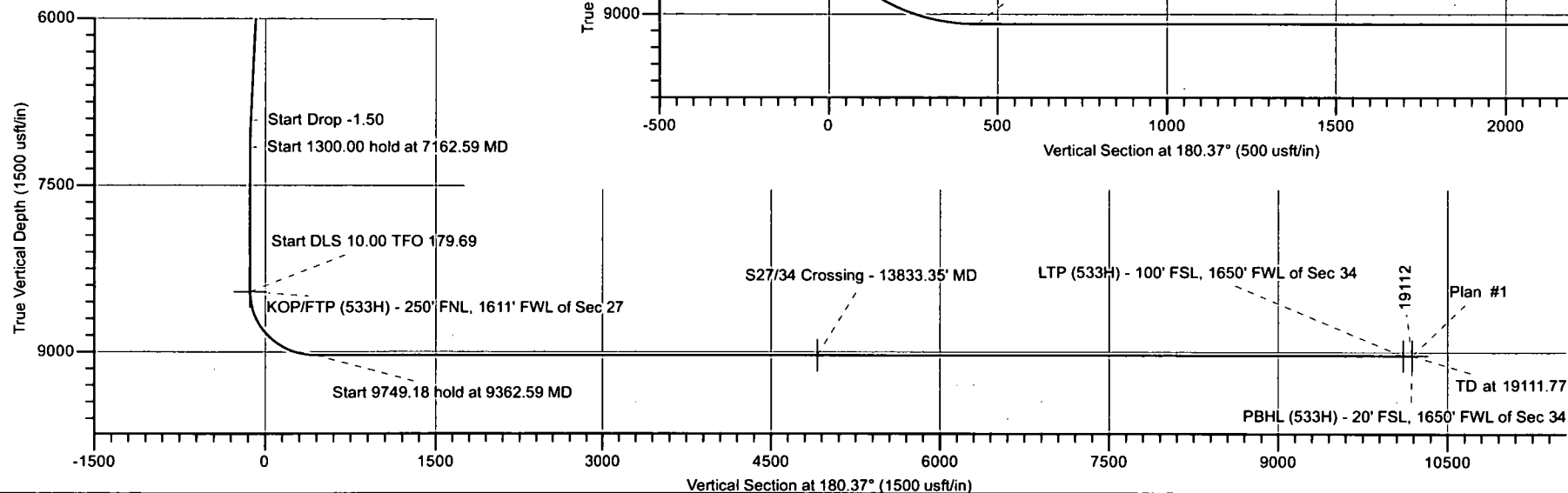
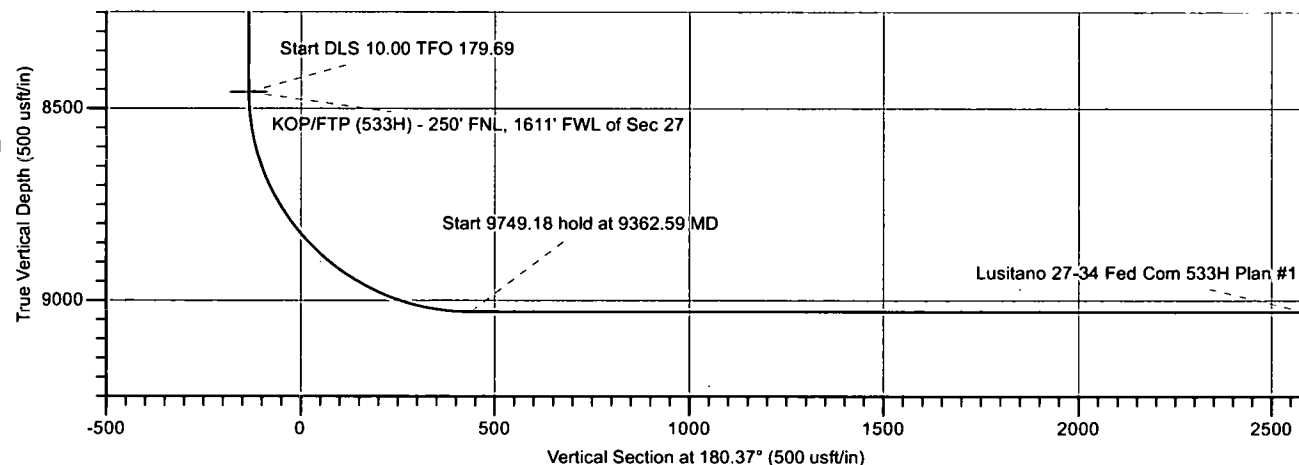
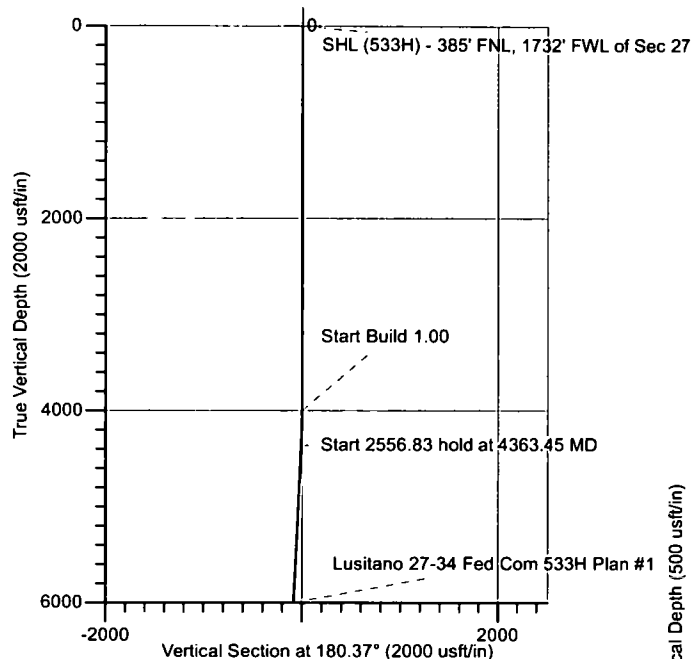


SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00
4363.45	3.63	318.13	4363.21	8.58	-7.69	1.00	318.13	-8.53
6920.29	3.63	318.13	6914.90	129.28	-115.87	0.00	0.00	-128.53
7162.59	0.00	0.00	7157.04	135.00	-121.00	1.50	180.00	-134.21
8462.59	0.00	0.00	8457.04	135.00	-121.00	0.00	0.00	-134.21
9362.59	90.00	179.69	9030.00	-437.95	-117.94	10.00	179.69	438.70
19111.77	90.00	179.69	9030.00	-10186.99	-65.86	0.00	0.00	10187.20

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
KOP/FTP (533H)	8457.04	135.00	-121.00	403434.86	715982.81	32.10786562	-103.76928233
LTP (533H)	9030.00	-10106.99	-66.29	393192.87	716037.52	32.07971134	-103.76927865
PBHL (533H)	9030.00	-10186.99	-65.86	393112.87	716037.95	32.07949143	-103.76927862
S27/34 Crossing	9030.00	-4909.75	-94.05	398390.11	716009.76	32.09399809	-103.76928053
SHL (533H)	0.00	0.00	0.00	403299.86	716103.81	32.10749279	-103.76889383



LEAM DRILLING SERVICES
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7618, Fax: 936/756-7595

Plan: Plan #1 (Lusitano 27-34 Fed Com 533H/OH)
 Lusitano
 Created By: Dustin Ault
 Date: 15:07, October 10 2018
 Approved: _____
 Date: _____

Devon Energy

Project: Eddy County, NM (NAD-83)
 Site: Lusitano
 Well: Lusitano 27-34 Fed Com 533H
 Wellbore: OH
 Design: Plan #1

PROJECT DETAILS: Eddy County, NM (NAD-83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level



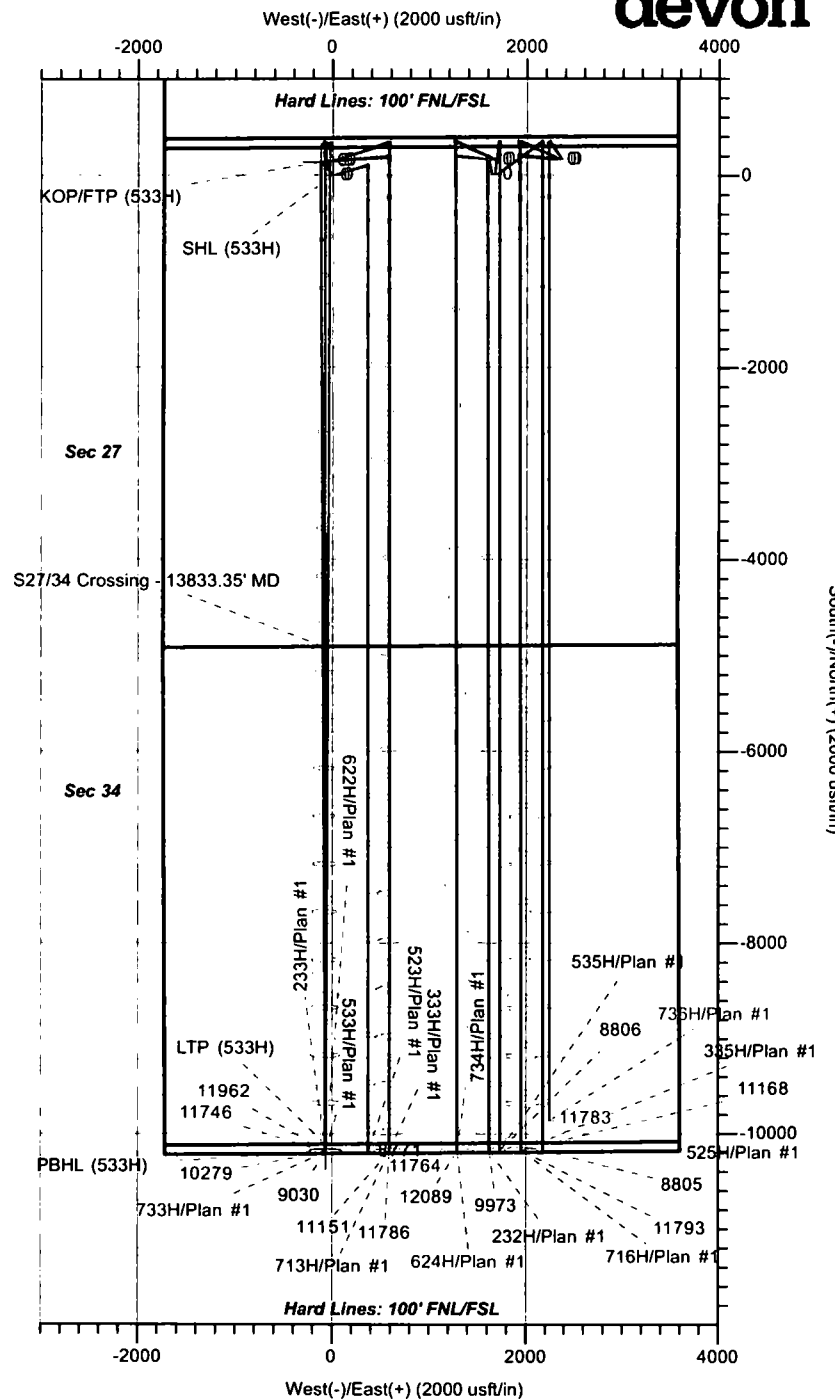
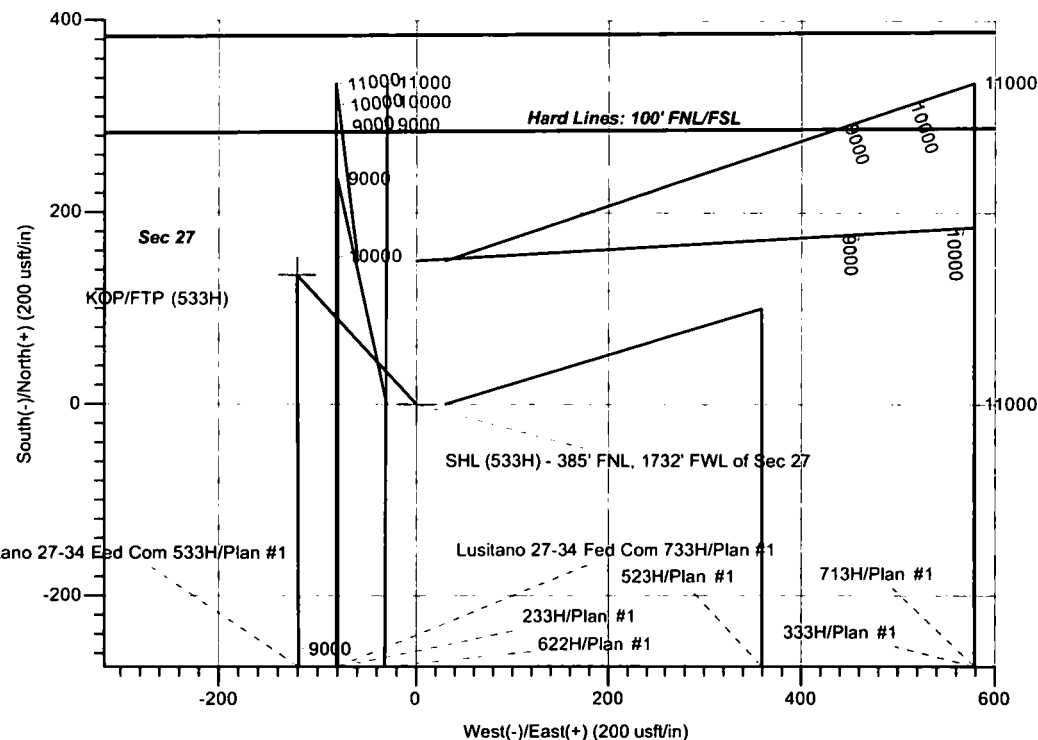
Azimuths to Grid North
 True North: -0.30°
 Magnetic North: 6.47°
 Magnetic Field
 Strength: 47866.9snT
 Dip Angle: 59.77°
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Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
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SHL (533H)	0.00	0.00	0.00	403299.86	716103.81	32.10749279	-103.76889383

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00
4363.45	3.63	318.13	4363.21	8.58	-7.69	1.00	318.13	-8.53
6920.29	3.63	318.13	6914.90	129.28	-115.87	0.00	0.00	-128.53
7162.59	0.00	0.00	7157.04	135.00	-121.00	1.50	180.00	-134.21
8462.59	0.00	0.00	8457.04	135.00	-121.00	0.00	0.00	-134.21
9362.59	90.00	179.69	9030.00	-437.95	-117.94	10.00	179.69	438.70
19111.77	90.00	179.69	9030.00	-10186.99	-65.86	0.00	0.00	10187.20



LEAM DRILLING SYSTEMS LLC
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7618, Fax: 936/756-7595

Plan: Plan #1 (Lusitano 27-34 Fed Com 533H/OH)
 Lusitano
 Created By: Dustin Ault
 Date: 15:09, October 10 2018
 Approved: _____
 Date: _____

Devon Energy

Eddy County, NM (NAD-83)

Lusitano

Lusitano 27-34 Fed Com 533H

OH

Plan: Plan #1

Standard Planning Report - Geographic

10 October, 2018

LEAM Drilling Services

Planning Report - Geographic

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Lusitano
Well: Lusitano 27-34 Fed Com 533H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Lusitano

Site Position: **Northing:** 403,470.13 usft **Latitude:** 32.10791318
From: Map **Easting:** 719,383.01 usft **Longitude:** -103.75830058
Position Uncertainty: 0.00 usft **Slot Radius:** 13-3/16 " **Grid Convergence:** 0.31 °

Well Lusitano 27-34 Fed Com 533H

Well Position **+N/-S** 0.00 usft **Northing:** 403,299.86 usft **Latitude:** 32.10749278
+E/-W 0.00 usft **Easting:** 716,103.81 usft **Longitude:** -103.76889383
Position Uncertainty 0.00 usft **Wellhead Elevation:** 0.00 usft **Ground Level:** 3,333.20 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/10/2018	6.77	59.77	47,867

Design Plan #1

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	180.37

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	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,363.45	3.63	318.13	4,363.21	8.58	-7.69	1.00	1.00	0.00	318.13	
6,920.29	3.63	318.13	6,914.90	129.28	-115.87	0.00	0.00	0.00	0.00	
7,162.59	0.00	0.00	7,157.04	135.00	-121.00	1.50	-1.50	0.00	180.00	
8,462.59	0.00	0.00	8,457.04	135.00	-121.00	0.00	0.00	0.00	0.00	
9,362.59	90.00	179.69	9,030.00	-437.95	-117.94	10.00	10.00	19.97	179.69	
19,111.77	90.00	179.69	9,030.00	-10,186.99	-65.86	0.00	0.00	0.00	0.00	PBHL (533H) - 20' FS

LEAM Drilling Services

Planning Report - Geographic

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Site: Lusitano
 Lusitano 27-34 Fed Com 533H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
 TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
 MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
SHL (533H) - 385' FNL, 1732' FWL of Sec 27									
100.00	0.00	0.00	100.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
200.00	0.00	0.00	200.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
300.00	0.00	0.00	300.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
400.00	0.00	0.00	400.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
500.00	0.00	0.00	500.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
600.00	0.00	0.00	600.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
700.00	0.00	0.00	700.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
800.00	0.00	0.00	800.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
900.00	0.00	0.00	900.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
1,000.00	0.00	0.00	1,000.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
1,100.00	0.00	0.00	1,100.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
1,200.00	0.00	0.00	1,200.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
1,300.00	0.00	0.00	1,300.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
1,400.00	0.00	0.00	1,400.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
1,500.00	0.00	0.00	1,500.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
1,600.00	0.00	0.00	1,600.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
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1,900.00	0.00	0.00	1,900.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
2,000.00	0.00	0.00	2,000.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
2,100.00	0.00	0.00	2,100.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
2,200.00	0.00	0.00	2,200.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
2,300.00	0.00	0.00	2,300.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
2,400.00	0.00	0.00	2,400.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
2,500.00	0.00	0.00	2,500.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
2,600.00	0.00	0.00	2,600.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
2,700.00	0.00	0.00	2,700.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
2,800.00	0.00	0.00	2,800.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
2,900.00	0.00	0.00	2,900.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
3,000.00	0.00	0.00	3,000.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
3,100.00	0.00	0.00	3,100.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
3,200.00	0.00	0.00	3,200.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
3,300.00	0.00	0.00	3,300.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
3,400.00	0.00	0.00	3,400.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
3,500.00	0.00	0.00	3,500.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
3,600.00	0.00	0.00	3,600.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
3,700.00	0.00	0.00	3,700.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
3,800.00	0.00	0.00	3,800.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
3,900.00	0.00	0.00	3,900.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
4,000.00	0.00	0.00	4,000.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
4,100.00	1.00	318.13	4,100.00	0.65	-0.58	403,300.51	716,103.22	32.10749458	-103.76889570
4,200.00	2.00	318.13	4,199.96	2.60	-2.33	403,302.46	716,101.48	32.10749996	-103.76890131
4,300.00	3.00	318.13	4,299.86	5.85	-5.24	403,305.71	716,098.57	32.10750893	-103.76891066
4,363.45	3.63	318.13	4,363.21	8.58	-7.69	403,308.44	716,096.11	32.10751648	-103.76891853
4,400.00	3.63	318.13	4,399.68	10.31	-9.24	403,310.17	716,094.57	32.10752125	-103.76892349
4,500.00	3.63	318.13	4,499.48	15.03	-13.47	403,314.89	716,090.34	32.10753428	-103.76893708
4,600.00	3.63	318.13	4,599.28	19.75	-17.70	403,319.61	716,086.11	32.10754732	-103.76895066
4,700.00	3.63	318.13	4,699.08	24.47	-21.93	403,324.33	716,081.88	32.10756036	-103.76896425
4,800.00	3.63	318.13	4,798.88	29.19	-26.16	403,329.05	716,077.64	32.10757339	-103.76897783
4,900.00	3.63	318.13	4,898.68	33.91	-30.39	403,333.77	716,073.41	32.10758643	-103.76899142
5,000.00	3.63	318.13	4,998.48	38.63	-34.62	403,338.49	716,069.18	32.10759947	-103.76900500
5,100.00	3.63	318.13	5,098.27	43.35	-38.86	403,343.21	716,064.95	32.10761250	-103.76901858

LEAM Drilling Services

Planning Report - Geographic

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Site: Lusitano
 Well: Lusitano 27-34 Fed Com 533H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
 TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
 MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,200.00	3.63	318.13	5,198.07	48.07	-43.09	403,347.93	716,060.72	32.10762554	-103.76903217
5,300.00	3.63	318.13	5,297.87	52.79	-47.32	403,352.65	716,056.49	32.10763858	-103.76904575
5,400.00	3.63	318.13	5,397.67	57.51	-51.55	403,357.37	716,052.26	32.10765161	-103.76905934
5,500.00	3.63	318.13	5,497.47	62.23	-55.78	403,362.09	716,048.03	32.10766465	-103.76907292
5,600.00	3.63	318.13	5,597.27	66.95	-60.01	403,366.81	716,043.80	32.10767769	-103.76908651
5,700.00	3.63	318.13	5,697.07	71.67	-64.24	403,371.53	716,039.56	32.10769073	-103.76910009
5,800.00	3.63	318.13	5,796.87	76.39	-68.47	403,376.25	716,035.33	32.10770376	-103.76911368
5,900.00	3.63	318.13	5,896.67	81.12	-72.70	403,380.97	716,031.10	32.10771680	-103.76912726
6,000.00	3.63	318.13	5,996.46	85.84	-76.93	403,385.70	716,026.87	32.10772984	-103.76914085
6,100.00	3.63	318.13	6,096.26	90.56	-81.17	403,390.42	716,022.64	32.10774287	-103.76915443
6,200.00	3.63	318.13	6,196.06	95.28	-85.40	403,395.14	716,018.41	32.10775591	-103.76916802
6,300.00	3.63	318.13	6,295.86	100.00	-89.63	403,399.86	716,014.18	32.10776895	-103.76918160
6,400.00	3.63	318.13	6,395.66	104.72	-93.86	403,404.58	716,009.95	32.10778198	-103.76919518
6,500.00	3.63	318.13	6,495.46	109.44	-98.09	403,409.30	716,005.72	32.10779502	-103.76920877
6,600.00	3.63	318.13	6,595.26	114.16	-102.32	403,414.02	716,001.49	32.10780806	-103.76922235
6,700.00	3.63	318.13	6,695.06	118.88	-106.55	403,418.74	715,997.25	32.10782109	-103.76923594
6,800.00	3.63	318.13	6,794.86	123.60	-110.78	403,423.46	715,993.02	32.10783413	-103.76924952
6,900.00	3.63	318.13	6,894.65	128.32	-115.01	403,428.18	715,988.79	32.10784717	-103.76926311
6,920.29	3.63	318.13	6,914.90	129.28	-115.87	403,429.14	715,987.93	32.10784981	-103.76926586
7,000.00	2.44	318.13	6,994.50	132.42	-118.69	403,432.28	715,985.12	32.10785850	-103.76927491
7,100.00	0.94	318.13	7,094.45	134.62	-120.66	403,434.48	715,983.15	32.10786456	-103.76928123
7,162.59	0.00	0.00	7,157.04	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
7,200.00	0.00	0.00	7,194.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
7,300.00	0.00	0.00	7,294.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
7,400.00	0.00	0.00	7,394.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
7,500.00	0.00	0.00	7,494.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
7,600.00	0.00	0.00	7,594.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
7,700.00	0.00	0.00	7,694.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
7,800.00	0.00	0.00	7,794.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
7,900.00	0.00	0.00	7,894.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
8,000.00	0.00	0.00	7,994.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
8,100.00	0.00	0.00	8,094.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
8,200.00	0.00	0.00	8,194.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
8,300.00	0.00	0.00	8,294.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
8,400.00	0.00	0.00	8,394.45	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
8,462.59	0.00	0.00	8,457.04	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
KOP/FTP (533H) - 250' FNL, 1611' FWL of Sec 27									
8,500.00	3.74	179.69	8,494.42	133.78	-120.99	403,433.64	715,982.81	32.10786226	-103.76928233
8,550.00	8.74	179.69	8,544.11	128.35	-120.96	403,428.20	715,982.84	32.10784732	-103.76928232
8,600.00	13.74	179.69	8,593.14	118.60	-120.91	403,418.46	715,982.89	32.10782054	-103.76928232
8,650.00	18.74	179.69	8,641.13	104.62	-120.84	403,404.48	715,982.97	32.10778211	-103.76928232
8,700.00	23.74	179.69	8,687.72	86.51	-120.74	403,386.37	715,983.07	32.10773233	-103.76928231
8,750.00	28.74	179.69	8,732.55	64.41	-120.62	403,364.27	715,983.18	32.10767158	-103.76928230
8,800.00	33.74	179.69	8,775.28	38.49	-120.48	403,338.35	715,983.32	32.10760032	-103.76928229
8,850.00	38.74	179.69	8,815.60	8.94	-120.33	403,308.80	715,983.48	32.10751909	-103.76928228
8,900.00	43.74	179.69	8,853.18	-24.01	-120.15	403,275.85	715,983.66	32.10742851	-103.76928227
8,950.00	48.74	179.69	8,887.75	-60.11	-119.96	403,239.75	715,983.85	32.10732927	-103.76928226
9,000.00	53.74	179.69	8,919.05	-99.09	-119.75	403,200.77	715,984.06	32.10722213	-103.76928224
9,050.00	58.74	179.69	8,946.82	-140.64	-119.53	403,159.22	715,984.28	32.10710790	-103.76928223
9,100.00	63.74	179.69	8,970.87	-184.46	-119.29	403,115.40	715,984.51	32.10698745	-103.76928221
9,150.00	68.74	179.69	8,991.01	-230.21	-119.05	403,069.65	715,984.76	32.10686169	-103.76928220
9,200.00	73.74	179.69	9,007.08	-277.54	-118.80	403,022.32	715,985.01	32.10673159	-103.76928218
9,250.00	78.74	179.69	9,018.97	-326.09	-118.54	402,973.77	715,985.27	32.10659813	-103.76928216
9,300.00	83.74	179.69	9,026.58	-375.49	-118.27	402,924.37	715,985.53	32.10646234	-103.76928215

LEAM Drilling Services

Planning Report - Geographic

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Company:	Devon Energy	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Project:	Eddy County, NM (NAD-83)	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site:	Lusitano	North Reference:	Grid
Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,350.00	88.74	179.69	9,029.86	-425.36	-118.01	402,874.50	715,985.80	32.10632523	-103.76928213
9,362.59	90.00	179.69	9,030.00	-437.95	-117.94	402,861.91	715,985.87	32.10629063	-103.76928212
9,400.00	90.00	179.69	9,030.00	-475.36	-117.74	402,824.50	715,986.07	32.10618779	-103.76928211
9,500.00	90.00	179.69	9,030.00	-575.36	-117.21	402,724.50	715,986.60	32.10591291	-103.76928208
9,600.00	90.00	179.69	9,030.00	-675.36	-116.67	402,624.50	715,987.13	32.10563802	-103.76928204
9,700.00	90.00	179.69	9,030.00	-775.36	-116.14	402,524.50	715,987.67	32.10536313	-103.76928201
9,800.00	90.00	179.69	9,030.00	-875.35	-115.60	402,424.50	715,988.20	32.10508825	-103.76928197
9,900.00	90.00	179.69	9,030.00	-975.35	-115.07	402,324.51	715,988.74	32.10481336	-103.76928193
10,000.00	90.00	179.69	9,030.00	-1,075.35	-114.53	402,224.51	715,989.27	32.10453848	-103.76928190
10,100.00	90.00	179.69	9,030.00	-1,175.35	-114.00	402,124.51	715,989.81	32.10426359	-103.76928186
10,200.00	90.00	179.69	9,030.00	-1,275.35	-113.47	402,024.51	715,990.34	32.10398870	-103.76928183
10,300.00	90.00	179.69	9,030.00	-1,375.35	-112.93	401,924.51	715,990.87	32.10371382	-103.76928179
10,400.00	90.00	179.69	9,030.00	-1,475.35	-112.40	401,824.51	715,991.41	32.10343893	-103.76928176
10,500.00	90.00	179.69	9,030.00	-1,575.34	-111.86	401,724.51	715,991.94	32.10316404	-103.76928172
10,600.00	90.00	179.69	9,030.00	-1,675.34	-111.33	401,624.52	715,992.48	32.10288916	-103.76928169
10,700.00	90.00	179.69	9,030.00	-1,775.34	-110.79	401,524.52	715,993.01	32.10261427	-103.76928165
10,800.00	90.00	179.69	9,030.00	-1,875.34	-110.26	401,424.52	715,993.55	32.10233938	-103.76928161
10,900.00	90.00	179.69	9,030.00	-1,975.34	-109.73	401,324.52	715,994.08	32.10206450	-103.76928158
11,000.00	90.00	179.69	9,030.00	-2,075.34	-109.19	401,224.52	715,994.61	32.10178961	-103.76928154
11,100.00	90.00	179.69	9,030.00	-2,175.34	-108.66	401,124.52	715,995.15	32.10151473	-103.76928151
11,200.00	90.00	179.69	9,030.00	-2,275.33	-108.12	401,024.52	715,995.68	32.10123984	-103.76928147
11,300.00	90.00	179.69	9,030.00	-2,375.33	-107.59	400,924.53	715,996.22	32.10096495	-103.76928144
11,400.00	90.00	179.69	9,030.00	-2,475.33	-107.06	400,824.53	715,996.75	32.10069007	-103.76928140
11,500.00	90.00	179.69	9,030.00	-2,575.33	-106.52	400,724.53	715,997.28	32.10041518	-103.76928137
11,600.00	90.00	179.69	9,030.00	-2,675.33	-105.99	400,624.53	715,997.82	32.10014029	-103.76928133
11,700.00	90.00	179.69	9,030.00	-2,775.33	-105.45	400,524.53	715,998.35	32.09986541	-103.76928129
11,800.00	90.00	179.69	9,030.00	-2,875.33	-104.92	400,424.53	715,998.89	32.09959052	-103.76928126
11,900.00	90.00	179.69	9,030.00	-2,975.32	-104.38	400,324.53	715,999.42	32.09931563	-103.76928122
12,000.00	90.00	179.69	9,030.00	-3,075.32	-103.85	400,224.54	715,999.96	32.09904075	-103.76928119
12,100.00	90.00	179.69	9,030.00	-3,175.32	-103.32	400,124.54	716,000.49	32.09876586	-103.76928115
12,200.00	90.00	179.69	9,030.00	-3,275.32	-102.78	400,024.54	716,001.02	32.09849097	-103.76928112
12,300.00	90.00	179.69	9,030.00	-3,375.32	-102.25	399,924.54	716,001.56	32.09821609	-103.76928108
12,400.00	90.00	179.69	9,030.00	-3,475.32	-101.71	399,824.54	716,002.09	32.09794120	-103.76928104
12,500.00	90.00	179.69	9,030.00	-3,575.32	-101.18	399,724.54	716,002.63	32.09766631	-103.76928101
12,600.00	90.00	179.69	9,030.00	-3,675.31	-100.65	399,624.54	716,003.16	32.09739143	-103.76928097
12,700.00	90.00	179.69	9,030.00	-3,775.31	-100.11	399,524.55	716,003.69	32.09711654	-103.76928094
12,800.00	90.00	179.69	9,030.00	-3,875.31	-99.58	399,424.55	716,004.23	32.09684165	-103.76928090
12,900.00	90.00	179.69	9,030.00	-3,975.31	-99.04	399,324.55	716,004.76	32.09656677	-103.76928087
13,000.00	90.00	179.69	9,030.00	-4,075.31	-98.51	399,224.55	716,005.30	32.09629188	-103.76928083
13,100.00	90.00	179.69	9,030.00	-4,175.31	-97.97	399,124.55	716,005.83	32.09601699	-103.76928079
13,200.00	90.00	179.69	9,030.00	-4,275.31	-97.44	399,024.55	716,006.37	32.09574211	-103.76928076
13,300.00	90.00	179.69	9,030.00	-4,375.30	-96.91	398,924.55	716,006.90	32.09546722	-103.76928072
13,400.00	90.00	179.69	9,030.00	-4,475.30	-96.37	398,824.56	716,007.43	32.09519233	-103.76928069
13,500.00	90.00	179.69	9,030.00	-4,575.30	-95.84	398,724.56	716,007.97	32.09491745	-103.76928065
13,600.00	90.00	179.69	9,030.00	-4,675.30	-95.30	398,624.56	716,008.50	32.09464256	-103.76928061
13,700.00	90.00	179.69	9,030.00	-4,775.30	-94.77	398,524.56	716,009.04	32.09436767	-103.76928058
13,800.00	90.00	179.69	9,030.00	-4,875.30	-94.24	398,424.56	716,009.57	32.09409279	-103.76928054
13,834.45	90.00	179.69	9,030.00	-4,909.75	-94.05	398,390.11	716,009.76	32.09399808	-103.76928053
S27/34 Crossing - 13833.35' MD									
13,900.00	90.00	179.69	9,030.00	-4,975.30	-93.70	398,324.56	716,010.11	32.09381790	-103.76928051
14,000.00	90.00	179.69	9,030.00	-5,075.29	-93.17	398,224.56	716,010.64	32.09354301	-103.76928047
14,100.00	90.00	179.69	9,030.00	-5,175.29	-92.63	398,124.57	716,011.17	32.09326813	-103.76928043
14,200.00	90.00	179.69	9,030.00	-5,275.29	-92.10	398,024.57	716,011.71	32.09299324	-103.76928040
14,300.00	90.00	179.69	9,030.00	-5,375.29	-91.56	397,924.57	716,012.24	32.09271835	-103.76928036

LEAM Drilling Services

Planning Report - Geographic

Database: EDM 5000.1 Multi User Db
 Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Site: Lusitano
 Well: Lusitano 27-34 Fed Com 533H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
 TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
 MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,400.00	90.00	179.69	9,030.00	-5,475.29	-91.03	397,824.57	716,012.78	32.09244347	-103.76928033
14,500.00	90.00	179.69	9,030.00	-5,575.29	-90.50	397,724.57	716,013.31	32.09216858	-103.76928029
14,600.00	90.00	179.69	9,030.00	-5,675.29	-89.96	397,624.57	716,013.84	32.09189369	-103.76928025
14,700.00	90.00	179.69	9,030.00	-5,775.28	-89.43	397,524.57	716,014.38	32.09161881	-103.76928022
14,800.00	90.00	179.69	9,030.00	-5,875.28	-88.89	397,424.58	716,014.91	32.09134392	-103.76928018
14,900.00	90.00	179.69	9,030.00	-5,975.28	-88.36	397,324.58	716,015.45	32.09106903	-103.76928015
15,000.00	90.00	179.69	9,030.00	-6,075.28	-87.82	397,224.58	716,015.98	32.09079415	-103.76928011
15,100.00	90.00	179.69	9,030.00	-6,175.28	-87.29	397,124.58	716,016.52	32.09051926	-103.76928007
15,200.00	90.00	179.69	9,030.00	-6,275.28	-86.76	397,024.58	716,017.05	32.09024437	-103.76928004
15,300.00	90.00	179.69	9,030.00	-6,375.28	-86.22	396,924.58	716,017.58	32.08996949	-103.76928000
15,400.00	90.00	179.69	9,030.00	-6,475.27	-85.69	396,824.58	716,018.12	32.08969460	-103.76927997
15,500.00	90.00	179.69	9,030.00	-6,575.27	-85.15	396,724.59	716,018.65	32.08941971	-103.76927993
15,600.00	90.00	179.69	9,030.00	-6,675.27	-84.62	396,624.59	716,019.19	32.08914482	-103.76927989
15,700.00	90.00	179.69	9,030.00	-6,775.27	-84.09	396,524.59	716,019.72	32.08886994	-103.76927986
15,800.00	90.00	179.69	9,030.00	-6,875.27	-83.55	396,424.59	716,020.25	32.08859505	-103.76927982
15,900.00	90.00	179.69	9,030.00	-6,975.27	-83.02	396,324.59	716,020.79	32.08832016	-103.76927978
16,000.00	90.00	179.69	9,030.00	-7,075.27	-82.48	396,224.59	716,021.32	32.08804528	-103.76927975
16,100.00	90.00	179.69	9,030.00	-7,175.26	-81.95	396,124.59	716,021.86	32.08777039	-103.76927971
16,200.00	90.00	179.69	9,030.00	-7,275.26	-81.41	396,024.60	716,022.39	32.08749550	-103.76927968
16,300.00	90.00	179.69	9,030.00	-7,375.26	-80.88	395,924.60	716,022.93	32.08722062	-103.76927964
16,400.00	90.00	179.69	9,030.00	-7,475.26	-80.35	395,824.60	716,023.46	32.08694573	-103.76927960
16,500.00	90.00	179.69	9,030.00	-7,575.26	-79.81	395,724.60	716,023.99	32.08667084	-103.76927957
16,600.00	90.00	179.69	9,030.00	-7,675.26	-79.28	395,624.60	716,024.53	32.08639595	-103.76927953
16,700.00	90.00	179.69	9,030.00	-7,775.26	-78.74	395,524.60	716,025.06	32.08612107	-103.76927949
16,800.00	90.00	179.69	9,030.00	-7,875.25	-78.21	395,424.60	716,025.60	32.08584618	-103.76927946
16,900.00	90.00	179.69	9,030.00	-7,975.25	-77.68	395,324.61	716,026.13	32.08557130	-103.76927942
17,000.00	90.00	179.69	9,030.00	-8,075.25	-77.14	395,224.61	716,026.67	32.08529642	-103.76927939
17,100.00	90.00	179.69	9,030.00	-8,175.25	-76.61	395,124.61	716,027.20	32.08502153	-103.76927935
17,200.00	90.00	179.69	9,030.00	-8,275.25	-76.07	395,024.61	716,027.73	32.08474664	-103.76927931
17,300.00	90.00	179.69	9,030.00	-8,375.25	-75.54	394,924.61	716,028.27	32.08447175	-103.76927928
17,400.00	90.00	179.69	9,030.00	-8,475.25	-75.00	394,824.61	716,028.80	32.08419687	-103.76927924
17,500.00	90.00	179.69	9,030.00	-8,575.24	-74.47	394,724.61	716,029.34	32.08392198	-103.76927920
17,600.00	90.00	179.69	9,030.00	-8,675.24	-73.94	394,624.62	716,029.87	32.08364709	-103.76927917
17,700.00	90.00	179.69	9,030.00	-8,775.24	-73.40	394,524.62	716,030.40	32.08337221	-103.76927913
17,800.00	90.00	179.69	9,030.00	-8,875.24	-72.87	394,424.62	716,030.94	32.08309732	-103.76927909
17,900.00	90.00	179.69	9,030.00	-8,975.24	-72.33	394,324.62	716,031.47	32.08282243	-103.76927906
18,000.00	90.00	179.69	9,030.00	-9,075.24	-71.80	394,224.62	716,032.01	32.08254754	-103.76927902
18,100.00	90.00	179.69	9,030.00	-9,175.24	-71.26	394,124.62	716,032.54	32.08227266	-103.76927899
18,200.00	90.00	179.69	9,030.00	-9,275.24	-70.73	394,024.62	716,033.08	32.08199777	-103.76927895
18,300.00	90.00	179.69	9,030.00	-9,375.23	-70.20	393,924.63	716,033.61	32.08172288	-103.76927891
18,400.00	90.00	179.69	9,030.00	-9,475.23	-69.66	393,824.63	716,034.14	32.08144800	-103.76927888
18,500.00	90.00	179.69	9,030.00	-9,575.23	-69.13	393,724.63	716,034.68	32.08117311	-103.76927884
18,600.00	90.00	179.69	9,030.00	-9,675.23	-68.59	393,624.63	716,035.21	32.08089822	-103.76927880
18,700.00	90.00	179.69	9,030.00	-9,775.23	-68.06	393,524.63	716,035.75	32.08062333	-103.76927877
18,800.00	90.00	179.69	9,030.00	-9,875.23	-67.53	393,424.63	716,036.28	32.08034845	-103.76927873
18,900.00	90.00	179.69	9,030.00	-9,975.23	-66.99	393,324.63	716,036.81	32.08007356	-103.76927869
19,000.00	90.00	179.69	9,030.00	-10,075.22	-66.46	393,224.64	716,037.35	32.07979867	-103.76927866
19,031.77	90.00	179.69	9,030.00	-10,106.99	-66.29	393,192.87	716,037.52	32.07971135	-103.76927864
LTP (533H) - 100' FSL, 1650' FWL of Sec 34									
19,100.00	90.00	179.69	9,030.00	-10,175.22	-65.92	393,124.64	716,037.88	32.07952378	-103.76927862
19,111.77	90.00	179.69	9,030.00	-10,186.99	-65.86	393,112.87	716,037.95	32.07949143	-103.76927862
PBHL (533H) - 20' FSL, 1650' FWL of Sec 34									

LEAM Drilling Services

Planning Report - Geographic

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Site: Lusitano
Well: Lusitano 27-34 Fed Com 533H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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 (533H) - 385' FNL, - plan hits target center - Point	0.00	0.01	0.00	0.00	0.00	403,299.86	716,103.81	32.10749278	-103.76889383
KOP/FTP (533H) - 250' I - plan hits target center - Point	0.00	0.00	8,457.04	135.00	-121.00	403,434.86	715,982.81	32.10786561	-103.76928233
PBHL (533H) - 20' FSL, - plan hits target center - Point	0.00	0.00	9,030.00	-10,186.99	-65.86	393,112.87	716,037.95	32.07949143	-103.76927862
LTP (533H) - 100' FSL, - plan hits target center - Point	0.00	0.00	9,030.00	-10,106.99	-66.29	393,192.87	716,037.52	32.07971135	-103.76927865
S27/34 Crossing - 1383' - plan hits target center - Point	0.00	0.00	9,030.00	-4,909.75	-94.05	398,390.11	716,009.76	32.09399808	-103.76928053

COMPANY Devon Energy
FIELD Eddy County, NM (NAD-83)
SITE Lusitano
WELL Lusitano 27-34 Fed Com 533H
WELLPATH OH
DESIGN Plan #1
DEPTHUNT (usft)

WELL INFO
MAP DATUM North American Datum 1983
MAP SYSTEM US State Plane 1983
MAP ZONE New Mexico Eastern Zone
WELL LAT 32.107493
WELL LON -103.768894
WELL EW MAI 716103.81
WELL NS MAP 403299.86
CONVERGENC 0.3
MAGMODEL HDGM
DECLINATION 6.77
NORTH REF Grid
GROUND ELE 3333.2
KB ELEVN 3356.7
YS AZI 180.37

SURVEY PROGRAM
1 0.00 - 19111.77 PLAN #1 : LEAM MWD+HDGM

SURVEY LIST																
Measured Dip		Inclination	Azimuth	Course Length	True Vertical	SubSea TVD	Local N/S	Local E/-W	Easting	Northing	Latitude	Longitude	Dogleg Severity	Build Rate	Turn Rate	Vertical Section
MD	INC	AZI	CL	TVD	SSTVD	NS	EW	X	Y	LAT	LON	DLS	BLD	TRN	VS	
0.00	0.00	0.00	0.00	0.00	0.00	3356.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
30.00	0.00	0.00	0.00	30.00	30.00	3326.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
60.00	0.00	0.00	0.00	30.00	60.00	3296.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
90.00	0.00	0.00	0.00	30.00	90.00	3266.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
120.00	0.00	0.00	0.00	30.00	120.00	3236.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
150.00	0.00	0.00	0.00	30.00	150.00	3206.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
180.00	0.00	0.00	0.00	30.00	180.00	3176.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
210.00	0.00	0.00	0.00	30.00	210.00	3146.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
240.00	0.00	0.00	0.00	30.00	240.00	3116.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
270.00	0.00	0.00	0.00	30.00	270.00	3086.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
300.00	0.00	0.00	0.00	30.00	300.00	3056.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
330.00	0.00	0.00	0.00	30.00	330.00	3026.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
360.00	0.00	0.00	0.00	30.00	360.00	2996.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
390.00	0.00	0.00	0.00	30.00	390.00	2966.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
420.00	0.00	0.00	0.00	30.00	420.00	2936.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
450.00	0.00	0.00	0.00	30.00	450.00	2906.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
480.00	0.00	0.00	0.00	30.00	480.00	2876.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
510.00	0.00	0.00	0.00	30.00	510.00	2846.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
540.00	0.00	0.00	0.00	30.00	540.00	2816.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
570.00	0.00	0.00	0.00	30.00	570.00	2786.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
600.00	0.00	0.00	0.00	30.00	600.00	2756.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
630.00	0.00	0.00	0.00	30.00	630.00	2726.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
660.00	0.00	0.00	0.00	30.00	660.00	2696.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
690.00	0.00	0.00	0.00	30.00	690.00	2666.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
720.00	0.00	0.00	0.00	30.00	720.00	2636.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
750.00	0.00	0.00	0.00	30.00	750.00	2606.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
780.00	0.00	0.00	0.00	30.00	780.00	2576.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
810.00	0.00	0.00	0.00	30.00	810.00	2546.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
840.00	0.00	0.00	0.00	30.00	840.00	2516.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
870.00	0.00	0.00	0.00	30.00	870.00	2486.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
900.00	0.00	0.00	0.00	30.00	900.00	2456.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
930.00	0.00	0.00	0.00	30.00	930.00	2426.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
960.00	0.00	0.00	0.00	30.00	960.00	2396.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
990.00	0.00	0.00	0.00	30.00	990.00	2366.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1020.00	0.00	0.00	0.00	30.00	1020.00	2336.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1050.00	0.00	0.00	0.00	30.00	1050.00	2306.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1080.00	0.00	0.00	0.00	30.00	1080.00	2276.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1110.00	0.00	0.00	0.00	30.00	1110.00	2246.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1140.00	0.00	0.00	0.00	30.00	1140.00	2216.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1170.00	0.00	0.00	0.00	30.00	1170.00	2186.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1200.00	0.00	0.00	0.00	30.00	1200.00	2156.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1230.00	0.00	0.00	0.00	30.00	1230.00	2126.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1260.00	0.00	0.00	0.00	30.00	1260.00	2096.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1290.00	0.00	0.00	0.00	30.00	1290.00	2066.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1320.00	0.00	0.00	0.00	30.00	1320.00	2036.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1350.00	0.00	0.00	0.00	30.00	1350.00	2006.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1380.00	0.00	0.00	0.00	30.00	1380.00	1976.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1410.00	0.00	0.00	0.00	30.00	1410.00	1946.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1440.00	0.00	0.00	0.00	30.00	1440.00	1916.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1470.00	0.00	0.00	0.00	30.00	1470.00	1886.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1500.00	0.00	0.00	0.00	30.00	1500.00	1856.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1530.00	0.00	0.00	0.00	30.00	1530.00	1826.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1560.00	0.00	0.00	0.00	30.00	1560.00	1796.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1590.00	0.00	0.00	0.00	30.00	1590.00	1766.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1620.00	0.00	0.00	0.00	30.00	1620.00	1736.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1650.00	0.00	0.00	0.00	30.00	1650.00	1706.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1680.00	0.00	0.00	0.00	30.00	1680.00	1676.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1710.00	0.00	0.00	0.00	30.00	1710.00	1646.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
1740.00	0.00	0.00	0.00	30.00	1											

2070.00	0.00	0.00	30.00	2070.00	1286.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2100.00	0.00	0.00	30.00	2100.00	1256.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2130.00	0.00	0.00	30.00	2130.00	1226.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2160.00	0.00	0.00	30.00	2160.00	1196.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2190.00	0.00	0.00	30.00	2190.00	1166.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2220.00	0.00	0.00	30.00	2220.00	1136.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2250.00	0.00	0.00	30.00	2250.00	1106.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2280.00	0.00	0.00	30.00	2280.00	1076.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2310.00	0.00	0.00	30.00	2310.00	1046.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2340.00	0.00	0.00	30.00	2340.00	1016.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2370.00	0.00	0.00	30.00	2370.00	986.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2400.00	0.00	0.00	30.00	2400.00	956.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2430.00	0.00	0.00	30.00	2430.00	926.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2460.00	0.00	0.00	30.00	2460.00	896.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2490.00	0.00	0.00	30.00	2490.00	866.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2520.00	0.00	0.00	30.00	2520.00	836.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2550.00	0.00	0.00	30.00	2550.00	806.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2580.00	0.00	0.00	30.00	2580.00	776.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2610.00	0.00	0.00	30.00	2610.00	746.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2640.00	0.00	0.00	30.00	2640.00	716.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2670.00	0.00	0.00	30.00	2670.00	686.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2700.00	0.00	0.00	30.00	2700.00	656.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2730.00	0.00	0.00	30.00	2730.00	626.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2760.00	0.00	0.00	30.00	2760.00	596.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2790.00	0.00	0.00	30.00	2790.00	566.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2820.00	0.00	0.00	30.00	2820.00	536.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2850.00	0.00	0.00	30.00	2850.00	506.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2880.00	0.00	0.00	30.00	2880.00	476.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2910.00	0.00	0.00	30.00	2910.00	446.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2940.00	0.00	0.00	30.00	2940.00	416.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
2970.00	0.00	0.00	30.00	2970.00	386.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3000.00	0.00	0.00	30.00	3000.00	356.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3030.00	0.00	0.00	30.00	3030.00	326.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3060.00	0.00	0.00	30.00	3060.00	296.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3090.00	0.00	0.00	30.00	3090.00	266.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3120.00	0.00	0.00	30.00	3120.00	236.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3150.00	0.00	0.00	30.00	3150.00	206.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3180.00	0.00	0.00	30.00	3180.00	176.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3210.00	0.00	0.00	30.00	3210.00	146.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3240.00	0.00	0.00	30.00	3240.00	116.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3270.00	0.00	0.00	30.00	3270.00	86.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3300.00	0.00	0.00	30.00	3300.00	56.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3330.00	0.00	0.00	30.00	3330.00	26.70	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3360.00	0.00	0.00	30.00	3360.00	-3.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3390.00	0.00	0.00	30.00	3390.00	-33.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3420.00	0.00	0.00	30.00	3420.00	-63.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3450.00	0.00	0.00	30.00	3450.00	-93.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3480.00	0.00	0.00	30.00	3480.00	-123.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3510.00	0.00	0.00	30.00	3510.00	-153.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3540.00	0.00	0.00	30.00	3540.00	-183.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3570.00	0.00	0.00	30.00	3570.00	-213.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3600.00	0.00	0.00	30.00	3600.00	-243.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3630.00	0.00	0.00	30.00	3630.00	-273.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3660.00	0.00	0.00	30.00	3660.00	-303.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3690.00	0.00	0.00	30.00	3690.00	-333.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3720.00	0.00	0.00	30.00	3720.00	-363.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3750.00	0.00	0.00	30.00	3750.00	-393.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3780.00	0.00	0.00	30.00	3780.00	-423.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3810.00	0.00	0.00	30.00	3810.00	-453.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3840.00	0.00	0.00	30.00	3840.00	-483.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3870.00	0.00	0.00	30.00	3870.00	-513.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3900.00	0.00	0.00	30.00	3900.00	-543.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3930.00	0.00	0.00	30.00	3930.00	-573.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3960.00	0.00	0.00	30.00	3960.00	-603.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
3990.00	0.00	0.00	30.00	3990.00	-633.30	0.00	0.00	716103.81	403299.86	32.107493	-103.768894	0.00	0.00	0.00	0.00
4020.00	0.20	318.13	30.00	4020.00	-663.30	0.03	-0.02	716103.79	403299.89	32.107493	-103.768894	0.67	0.67	0.00	-0.03
4050.00	0.50	318.13	30.00	4050.00	-693.30	0.16	-0.15	716103.66	403300.02	32.107493	-103.768894	1.00	1.00	0.00	-0.16
4080.00	0.80	318.13	30.00	4080.00	-723.30	0.42	-0.37	716103.44	403300.28	32.107494	-103.768895	1.00	1.00	0.00	-0.41
4110.00	1.10	318.13	30.00	4109.99	-753.29	0.79	-0.71	716103.11	403300.65	32.107495	-103.768896	1.00	1.00	0.00	-0.78
4140.00	1.40	318.13	30.00	4139.99	-783.29	1.27	-1.14	716							

5040.00	3.64	318.13	30.00	5038.40	-1681.70	40.52	-36.32	716067.49	403340.38	32.107605	-103.769010	0.00	0.00	0.00	-40.28
5070.00	3.64	318.13	30.00	5068.34	-1711.64	41.94	-37.59	716066.22	403341.80	32.107609	-103.769015	0.00	0.00	0.00	-41.69
5100.00	3.64	318.13	30.00	5098.28	-1741.58	43.35	-38.86	716064.96	403343.21	32.107613	-103.769019	0.00	0.00	0.00	-43.10
5130.00	3.64	318.13	30.00	5128.22	-1771.52	44.77	-40.12	716063.69	403344.63	32.107616	-103.769023	0.00	0.00	0.00	-44.51
5160.00	3.64	318.13	30.00	5158.15	-1801.45	46.18	-41.39	716062.42	403346.04	32.107620	-103.769027	0.00	0.00	0.00	-45.92
5190.00	3.64	318.13	30.00	5188.09	-1831.39	47.60	-42.66	716061.15	403347.46	32.107624	-103.769031	0.00	0.00	0.00	-47.32
5220.00	3.64	318.13	30.00	5218.03	-1861.33	49.02	-43.93	716059.88	403348.88	32.107628	-103.769035	0.00	0.00	0.00	-48.73
5250.00	3.64	318.13	30.00	5247.97	-1891.27	50.43	-45.20	716058.61	403350.29	32.107632	-103.769039	0.00	0.00	0.00	-50.14
5280.00	3.64	318.13	30.00	5277.91	-1921.21	51.85	-46.47	716057.34	403351.71	32.107636	-103.769043	0.00	0.00	0.00	-51.55
5310.00	3.64	318.13	30.00	5307.85	-1951.15	53.26	-47.74	716056.07	403353.12	32.107640	-103.769047	0.00	0.00	0.00	-52.95
5340.00	3.64	318.13	30.00	5337.79	-1981.09	54.68	-49.01	716054.80	403354.54	32.107644	-103.769051	0.00	0.00	0.00	-54.36
5370.00	3.64	318.13	30.00	5367.73	-2011.03	56.10	-50.28	716053.53	403355.96	32.107648	-103.769055	0.00	0.00	0.00	-55.77
5400.00	3.64	318.13	30.00	5397.67	-2040.97	57.51	-51.55	716052.26	403357.37	32.107652	-103.769059	0.00	0.00	0.00	-57.18
5430.00	3.64	318.13	30.00	5427.61	-2070.91	58.93	-52.82	716050.99	403358.79	32.107656	-103.769063	0.00	0.00	0.00	-58.59
5460.00	3.64	318.13	30.00	5457.55	-2100.85	60.35	-54.09	716049.72	403360.21	32.107659	-103.769067	0.00	0.00	0.00	-59.99
5490.00	3.64	318.13	30.00	5487.49	-2130.79	61.76	-55.36	716048.45	403361.62	32.107663	-103.769071	0.00	0.00	0.00	-61.40
5520.00	3.64	318.13	30.00	5517.43	-2160.73	63.18	-56.63	716047.18	403363.04	32.107667	-103.769075	0.00	0.00	0.00	-62.81
5550.00	3.64	318.13	30.00	5547.37	-2190.67	64.59	-57.90	716045.91	403364.45	32.107671	-103.769079	0.00	0.00	0.00	-64.22
5580.00	3.64	318.13	30.00	5577.31	-2220.61	66.01	-59.16	716044.65	403365.87	32.107675	-103.769083	0.00	0.00	0.00	-65.63
5610.00	3.64	318.13	30.00	5607.25	-2250.55	67.43	-60.43	716043.38	403367.29	32.107679	-103.769087	0.00	0.00	0.00	-67.03
5640.00	3.64	318.13	30.00	5637.19	-2280.49	68.84	-61.70	716042.11	403368.70	32.107683	-103.769091	0.00	0.00	0.00	-68.44
5670.00	3.64	318.13	30.00	5667.13	-2310.43	70.26	-62.97	716040.84	403370.12	32.107687	-103.769095	0.00	0.00	0.00	-69.85
5700.00	3.64	318.13	30.00	5697.07	-2340.37	71.67	-64.24	716039.57	403371.53	32.107691	-103.769099	0.00	0.00	0.00	-71.26
5730.00	3.64	318.13	30.00	5727.01	-2370.31	73.09	-65.51	716038.30	403372.95	32.107695	-103.769103	0.00	0.00	0.00	-72.67
5760.00	3.64	318.13	30.00	5756.95	-2400.25	74.51	-66.78	716037.03	403374.37	32.107699	-103.769107	0.00	0.00	0.00	-74.07
5790.00	3.64	318.13	30.00	5786.89	-2430.19	75.92	-68.05	716035.76	403375.78	32.107702	-103.769111	0.00	0.00	0.00	-75.48
5820.00	3.64	318.13	30.00	5816.83	-2460.13	77.34	-69.32	716034.49	403377.20	32.107706	-103.769115	0.00	0.00	0.00	-76.89
5850.00	3.64	318.13	30.00	5846.77	-2490.07	78.76	-70.59	716033.22	403378.62	32.107710	-103.769119	0.00	0.00	0.00	-78.30
5880.00	3.64	318.13	30.00	5876.71	-2520.01	80.17	-71.86	716031.95	403380.03	32.107714	-103.769123	0.00	0.00	0.00	-79.71
5910.00	3.64	318.13	30.00	5906.65	-2549.95	81.59	-73.13	716030.68	403381.45	32.107718	-103.769127	0.00	0.00	0.00	-81.11
5940.00	3.64	318.13	30.00	5936.59	-2579.89	83.00	-74.40	716029.41	403382.86	32.107722	-103.769131	0.00	0.00	0.00	-82.52
5970.00	3.64	318.13	30.00	5966.53	-2609.83	84.42	-75.67	716028.15	403384.28	32.107726	-103.769135	0.00	0.00	0.00	-83.93
6000.00	3.64	318.13	30.00	5996.47	-2639.77	85.84	-76.94	716026.88	403385.70	32.107730	-103.769139	0.00	0.00	0.00	-85.34
6030.00	3.64	318.13	30.00	6026.40	-2669.70	87.25	-78.20	716025.61	403387.11	32.107734	-103.769143	0.00	0.00	0.00	-86.75
6060.00	3.64	318.13	30.00	6056.34	-2699.64	88.67	-79.47	716024.34	403388.53	32.107738	-103.769147	0.00	0.00	0.00	-88.15
6090.00	3.64	318.13	30.00	6086.28	-2729.58	90.09	-80.74	716023.07	403389.95	32.107742	-103.769151	0.00	0.00	0.00	-89.56
6120.00	3.64	318.13	30.00	6116.22	-2759.52	91.50	-82.01	716021.80	403391.36	32.107746	-103.769155	0.00	0.00	0.00	-90.97
6150.00	3.64	318.13	30.00	6146.16	-2789.46	92.92	-83.28	716020.53	403392.78	32.107750	-103.769159	0.00	0.00	0.00	-92.38
6180.00	3.64	318.13	30.00	6176.10	-2819.40	94.33	-84.55	716019.26	403394.19	32.107754	-103.769163	0.00	0.00	0.00	-93.79
6210.00	3.64	318.13	30.00	6206.04	-2849.34	95.75	-85.82	716017.99	403395.61	32.107758	-103.769167	0.00	0.00	0.00	-95.19
6240.00	3.64	318.13	30.00	6235.98	-2879.28	97.17	-87.09	716016.72	403397.03	32.107762	-103.769171	0.00	0.00	0.00	-96.60
6270.00	3.64	318.13	30.00	6265.92	-2909.22	98.58	-88.36	716015.45	403398.44	32.107766	-103.769175	0.00	0.00	0.00	-98.01
6300.00	3.64	318.13	30.00	6295.86	-2939.16	100.00	-89.63	716014.18	403399.86	32.107770	-103.769179	0.00	0.00	0.00	-99.42
6330.00	3.64	318.13	30.00	6325.80	-2969.10	101.41	-90.90	716012.91	403401.27	32.107774	-103.769183	0.00	0.00	0.00	-100.82
6360.00	3.64	318.13	30.00	6355.74	-2999.04	102.83	-92.17	716011.64	403402.69	32.107778	-103.769187	0.00	0.00	0.00	-102.23
6390.00	3.64	318.13	30.00	6385.68	-3028.98	104.25	-93.44	716010.37	403404.11	32.107782	-103.769191	0.00	0.00	0.00	-103.64
6420.00	3.64	318.13	30.00	6415.62	-3058.92	105.66	-94.71	716009.10	403405.52	32.107786	-103.769195	0.00	0.00	0.00	-105.05
6450.00	3.64	318.13	30.00	6445.56	-3088.86	107.08	-95.97	716007.84	403406.94	32.107790	-103.769199	0.00	0.00	0.00	-106.46
6480.00	3.64	318.13	30.00	6475.50	-3118.80	108.50	-97.24	716006.57	403408.36	32.107794	-103.769203	0.00	0.00	0.00	-107.86
6510.00	3.64	318.13	30.00	6505.44	-3148.74	109.91	-98.51	716005.30	403409.77	32.107798	-103.769207	0.00	0.00	0.00	-109.27
6540.00	3.64	318.13	30.00	6535.38	-3178.68	111.33	-99.78	716004.03	403411.19	32.107802	-103.769211	0.00	0.00	0.00	-110.68
6570.00	3.64	318.13	30.00	6565.32	-3208.62	112.74	-101.05	716002.76	403412.60	32.107806	-103.769215	0.00	0.00	0.00	-112.09
6600.00	3.64	318.13	30.00	6595.26	-3238.56	114.16	-102.32	716001.49	403414.02	32.107810	-103.769219	0.00	0.00	0.00	-113.50
6630.00	3.64	318.13	30.00	6625.20	-3268.50	115.58	-103.59	716000.22	403415.44	32.107814	-103.769223	0.00	0.00	0.00	-114.90
6660.00	3.64	318.13	30.00	6655.14	-3298.44	116.99	-104.86	715998.95	403416.85	32.107818	-103.769227	0.00	0.00	0.00	-116.31
6690.00	3.64	318.13	30.00	6685.08	-3328.38	118.41	-106.13	715997.68	403418.27	32.107822	-103.769231	0.00	0.00	0.00	-117.72
6720.00	3.64	318.13	30.00	6715.02	-3358.32	119.82	-107.40	715996.41	403419.68	32.107826	-103.769235	0.00	0.00	0.00	-119.13
6750.00	3.64	318.13	30.00	6744.96	-3388.26	121.24	-108.67	715995.14	403421.10	32.107830	-103.769239	0.00	0.00	0.00	-120.54
6780.00	3.64	318.13	30.00	6774.90	-3418.20	122.66	-109.94	715993.87	403422.52	32.107834	-103.769243	0.00	0.00	0.00	-121.94
6810.00	3.64	318.13	30.00	6804.84	-3448.14	124.07	-111.21	715992.60	403423.93	32.107838	-103.769247	0.00	0.00	0.00	-123.35
6840.00	3.64	318.13	30.00	6834.78	-3478.08	125.49	-112.48	715991.34	403425.35	32.107842	-103.769251	0.00	0.00	0.00	-124.76
6870.00	3.64	318.13	30.00	6864.72	-3508.02	126.91	-113.75	715990.07	403426.77	32.107846	-103.769255	0.00	0.00	0.00	-126.17
6900.00	3.64	318.13	30.00	6894.66	-3537.96	128.32	-115.01	715988.80	403428.18	32.107850	-103.769259	0.00	0.00	0.00	-127.58
6930.00	3.49	318.13	30.00	6924.60	-3567.90	129.73	-116.28	715987.54	403429.59	32.107854	-103.769263	0.49	-0.49	0.00	-128.97
6960.00	3.04	318.13	30.00	6954.55	-3597.85	131.00	-117.42	715986.27	403430.96	32.107858	-103.769267	1.50	-1.50	0.00	-130.24
6990.00	2.59	318.13	30.00	6984.51	-3627.81	132.10	-118.40	715985.01	403431.96	32.107862	-103.769271	1.50	-1.50	0.00	-131.33
7020.00	2.14	318.13	30.00	7014.48	-3657.78	133.02	-119								

8010.00	0.00	0.00	30.00	8004.45	-4647.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8040.00	0.00	0.00	30.00	8034.45	-4677.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8070.00	0.00	0.00	30.00	8064.45	-4707.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8100.00	0.00	0.00	30.00	8094.45	-4737.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8130.00	0.00	0.00	30.00	8124.45	-4767.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8160.00	0.00	0.00	30.00	8154.45	-4797.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8190.00	0.00	0.00	30.00	8184.45	-4827.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8220.00	0.00	0.00	30.00	8214.45	-4857.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8250.00	0.00	0.00	30.00	8244.45	-4887.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8280.00	0.00	0.00	30.00	8274.45	-4917.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8310.00	0.00	0.00	30.00	8304.45	-4947.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8340.00	0.00	0.00	30.00	8334.45	-4977.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8370.00	0.00	0.00	30.00	8364.45	-5007.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8400.00	0.00	0.00	30.00	8394.45	-5037.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8430.00	0.00	0.00	30.00	8424.45	-5067.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8460.00	0.00	0.00	30.00	8454.45	-5097.75	135.00	-121.00	715982.81	403434.86	32.107866	-103.769282	0.00	0.00	0.00	-134.22
8490.00	2.74	179.69	30.00	8484.44	-5127.74	134.34	-121.00	715982.81	403434.20	32.107864	-103.769282	9.14	9.14	0.00	-133.56
8520.00	5.74	179.69	30.00	8514.36	-5157.66	132.13	-120.99	715982.83	403431.99	32.107858	-103.769282	10.00	10.00	0.00	-131.34
8550.00	8.74	179.69	30.00	8544.11	-5187.41	128.35	-120.96	715982.85	403428.21	32.107847	-103.769282	10.00	10.00	0.00	-127.56
8580.00	11.74	179.69	30.00	8573.63	-5216.93	123.01	-120.94	715982.87	403422.87	32.107833	-103.769282	10.00	10.00	0.00	-122.23
8610.00	14.74	179.69	30.00	8602.83	-5246.13	116.14	-120.90	715982.91	403416.00	32.107814	-103.769282	10.00	10.00	0.00	-115.36
8640.00	17.74	179.69	30.00	8631.63	-5274.93	107.75	-120.85	715982.96	403407.61	32.107791	-103.769282	10.00	10.00	0.00	-106.97
8670.00	20.74	179.69	30.00	8659.95	-5303.25	97.87	-120.80	715983.01	403397.73	32.107764	-103.769282	10.00	10.00	0.00	-97.08
8700.00	23.74	179.69	30.00	8687.72	-5331.02	86.51	-120.74	715983.07	403386.37	32.107732	-103.769282	10.00	10.00	0.00	-85.73
8730.00	26.74	179.69	30.00	8714.85	-5358.15	73.72	-120.67	715983.14	403373.58	32.107697	-103.769282	10.00	10.00	0.00	-72.94
8760.00	29.74	179.69	30.00	8741.27	-5384.57	59.53	-120.60	715983.21	403359.39	32.107658	-103.769282	10.00	10.00	0.00	-58.75
8790.00	32.74	179.69	30.00	8766.92	-5410.22	43.97	-120.51	715983.30	403343.83	32.107615	-103.769282	10.00	10.00	0.00	-43.19
8820.00	35.74	179.69	30.00	8791.72	-5435.02	27.09	-120.42	715983.39	403326.95	32.107569	-103.769282	10.00	10.00	0.00	-26.31
8850.00	38.74	179.69	30.00	8815.60	-5458.90	8.94	-120.33	715983.48	403308.80	32.107519	-103.769282	10.00	10.00	0.00	-8.16
8880.00	41.74	179.69	30.00	8838.50	-5481.80	-10.44	-120.22	715983.59	403289.42	32.107466	-103.769282	10.00	10.00	0.00	-11.21
8910.00	44.74	179.69	30.00	8860.35	-5503.65	-30.99	-120.11	715983.70	403268.87	32.107409	-103.769282	10.00	10.00	0.00	-31.76
8940.00	47.74	179.69	30.00	8881.09	-5524.39	-52.65	-120.00	715983.81	403247.21	32.107350	-103.769282	10.00	10.00	0.00	-53.43
8970.00	50.74	179.69	30.00	8900.68	-5543.98	-75.37	-119.88	715983.93	403224.49	32.107287	-103.769282	10.00	10.00	0.00	-76.15
9000.00	53.74	179.69	30.00	8919.05	-5562.35	-99.09	-119.75	715984.06	403200.77	32.107222	-103.769282	10.00	10.00	0.00	-99.86
9030.00	56.74	179.69	30.00	8936.15	-5579.45	-123.73	-119.62	715984.19	403176.13	32.107154	-103.769282	10.00	10.00	0.00	-124.50
9060.00	59.74	179.69	30.00	8951.94	-5595.24	-149.24	-119.48	715984.33	403150.62	32.107084	-103.769282	10.00	10.00	0.00	-150.01
9090.00	62.74	179.69	30.00	8967.37	-5609.67	-175.53	-119.34	715984.47	403124.33	32.107012	-103.769282	10.00	10.00	0.00	-176.30
9120.00	65.74	179.69	30.00	8979.41	-5622.71	-202.55	-119.20	715984.61	403097.31	32.106938	-103.769282	10.00	10.00	0.00	-203.31
9150.00	68.74	179.69	30.00	8991.01	-5634.31	-230.21	-119.05	715984.76	403069.65	32.106862	-103.769282	10.00	10.00	0.00	-230.97
9180.00	71.74	179.69	30.00	9001.15	-5644.45	-258.44	-118.90	715984.91	403041.42	32.106784	-103.769282	10.00	10.00	0.00	-259.20
9210.00	74.74	179.69	30.00	9009.80	-5653.10	-287.16	-118.75	715985.07	403012.70	32.106705	-103.769282	10.00	10.00	0.00	-287.92
9240.00	77.74	179.69	30.00	9016.93	-5660.23	-316.30	-118.59	715985.22	402983.56	32.106625	-103.769282	10.00	10.00	0.00	-317.06
9270.00	80.74	179.69	30.00	9022.53	-5665.83	-345.77	-118.43	715985.38	402954.10	32.106544	-103.769282	10.00	10.00	0.00	-346.52
9300.00	83.74	179.69	30.00	9026.58	-5669.88	-375.49	-118.27	715985.54	402924.37	32.106462	-103.769282	10.00	10.00	0.00	-376.24
9330.00	86.74	179.69	30.00	9029.07	-5672.37	-405.38	-118.11	715985.70	402894.48	32.106380	-103.769282	10.00	10.00	0.00	-406.13
9360.00	89.74	179.69	30.00	9029.99	-5673.29	-435.36	-117.95	715985.85	402864.50	32.106298	-103.769282	10.00	10.00	0.00	-436.11
9390.00	92.74	179.69	30.00	9030.00	-5673.30	-465.36	-117.79	715986.02	402834.50	32.106215	-103.769282	0.86	0.86	0.00	-466.11
9420.00	95.74	179.69	30.00	9030.00	-5673.30	-495.36	-117.63	715986.18	402804.50	32.106133	-103.769282	0.00	0.00	0.00	-496.11
9450.00	98.74	179.69	30.00	9030.00	-5673.30	-525.36	-117.47	715986.34	402774.50	32.106050	-103.769282	0.00	0.00	0.00	-526.11
9480.00	101.74	179.69	30.00	9030.00	-5673.30	-555.36	-117.31	715986.50	402744.50	32.105968	-103.769282	0.00	0.00	0.00	-556.11
9510.00	104.74	179.69	30.00	9030.00	-5673.30	-585.36	-117.15	715986.66	402714.50	32.105885	-103.769282	0.00	0.00	0.00	-586.10
9540.00	107.74	179.69	30.00	9030.00	-5673.30	-615.36	-116.99	715986.82	402684.50	32.105803	-103.769282	0.00	0.00	0.00	-616.10
9570.00	110.74	179.69	30.00	9030.00	-5673.30	-645.36	-116.83	715986.98	402654.50	32.105720	-103.769282	0.00	0.00	0.00	-646.10
9600.00	113.74	179.69	30.00	9030.00	-5673.30	-675.36	-116.67	715987.14	402624.50	32.105638	-103.769282	0.00	0.00	0.00	-676.10
9630.00	116.74	179.69	30.00	9030.00	-5673.30	-705.36	-116.51	715987.30	402594.50	32.105556	-103.769282	0.00	0.00	0.00	-706.10
9660.00	119.74	179.69	30.00	9030.00	-5673.30	-735.36	-116.35	715987.46	402564.50	32.105473	-103.769282	0.00	0.00	0.00	-736.09
9690.00	122.74	179.69	30.00	9030.00	-5673.30	-765.36	-116.19	715987.62	402534.50	32.105391	-103.769282	0.00	0.00	0.00	-766.09
9720.00	125.74	179.69	30.00	9030.00	-5673.30	-795.36	-116.03	715987.78	402504.50	32.105308	-103.769282	0.00	0.00	0.00	-796.09
9750.00	128.74	179.69	30.00	9030.00	-5673.30	-825.36	-115.87	715987.94	402474.51	32.105226	-103.769282	0.00	0.00	0.00	-826.09
9780.00	131.74	179.69	30.00	9030.00	-5673.30	-855.36	-115.71	715988.10	402444.51	32.105143	-103.769282	0.00	0.00	0.00	-856.09
9810.00	134.74	179.69	30.00	9030.00	-5673.30	-885.36	-115.55	715988.26	402414.51	32.105061	-103.769282	0.00	0.00	0.00	-886.08
9840.00	137.74	179.69	30.00	9030.00	-5673.30	-915.35	-115.39	715988.42	402384.51	32.104978	-103.769282	0.00	0.00	0.00	-916.08
9870.00	140.74	179.69	30.00	9030.00	-5673.30	-945.35	-115.23	715988.58	402354.51	32.104896	-103.769282	0.00	0.00	0.00	-946.08
9900.00	143.74	179.69	30.00	9030.00	-5673.30	-975.35	-115.07	715988.74	402324.51	32.104813	-103.769282	0.00	0.00	0.00	-976.08
9930.00	146.74	179.69	30.00	9030.00	-5673.30	-1005.35	-114.91	715988.90	402294.51	32.104731	-103.769282	0.00	0.00	0.00	-1006.08
9960.00	149.74	179.69	30.00	9030.00	-5673.30	-									

0980.00	90.00	179.69	30.00	9030.00	-5673.30	-2055.34	-109.30	715994.51	401244.52	32.101845	-103.769282	0.00	0.00	0.00	2056.00
1010.00	90.00	179.69	30.00	9030.00	-5673.30	-2085.34	-109.14	715994.67	401214.52	32.101762	-103.769282	0.00	0.00	0.00	2086.00
1040.00	90.00	179.69	30.00	9030.00	-5673.30	-2115.34	-108.98	715994.83	401184.52	32.101680	-103.769282	0.00	0.00	0.00	2116.00
1070.00	90.00	179.69	30.00	9030.00	-5673.30	-2145.34	-108.82	715994.99	401154.52	32.101597	-103.769282	0.00	0.00	0.00	2146.00
1100.00	90.00	179.69	30.00	9030.00	-5673.30	-2175.34	-108.66	715995.15	401124.52	32.101515	-103.769282	0.00	0.00	0.00	2175.99
1130.00	90.00	179.69	30.00	9030.00	-5673.30	-2205.34	-108.50	715995.31	401094.52	32.101432	-103.769281	0.00	0.00	0.00	2205.99
1160.00	90.00	179.69	30.00	9030.00	-5673.30	-2235.34	-108.34	715995.47	401064.53	32.101350	-103.769281	0.00	0.00	0.00	2235.99
1190.00	90.00	179.69	30.00	9030.00	-5673.30	-2265.34	-108.18	715995.63	401034.53	32.101267	-103.769281	0.00	0.00	0.00	2265.99
1220.00	90.00	179.69	30.00	9030.00	-5673.30	-2295.33	-108.02	715995.79	401004.53	32.101185	-103.769281	0.00	0.00	0.00	2295.99
1250.00	90.00	179.69	30.00	9030.00	-5673.30	-2325.33	-107.86	715995.95	400974.53	32.101102	-103.769281	0.00	0.00	0.00	2325.98
1280.00	90.00	179.69	30.00	9030.00	-5673.30	-2355.33	-107.70	715996.11	400944.53	32.101020	-103.769281	0.00	0.00	0.00	2355.98
1310.00	90.00	179.69	30.00	9030.00	-5673.30	-2385.33	-107.54	715996.27	400914.53	32.100937	-103.769281	0.00	0.00	0.00	2385.98
1340.00	90.00	179.69	30.00	9030.00	-5673.30	-2415.33	-107.38	715996.43	400884.53	32.100855	-103.769281	0.00	0.00	0.00	2415.98
1370.00	90.00	179.69	30.00	9030.00	-5673.30	-2445.33	-107.22	715996.59	400854.53	32.100773	-103.769281	0.00	0.00	0.00	2445.97
1400.00	90.00	179.69	30.00	9030.00	-5673.30	-2475.33	-107.06	715996.75	400824.53	32.100690	-103.769281	0.00	0.00	0.00	2475.97
1430.00	90.00	179.69	30.00	9030.00	-5673.30	-2505.33	-106.90	715996.92	400794.53	32.100608	-103.769281	0.00	0.00	0.00	2505.97
1460.00	90.00	179.69	30.00	9030.00	-5673.30	-2535.33	-106.74	715997.08	400764.53	32.100525	-103.769281	0.00	0.00	0.00	2535.97
1490.00	90.00	179.69	30.00	9030.00	-5673.30	-2565.33	-106.58	715997.24	400734.53	32.100443	-103.769281	0.00	0.00	0.00	2565.97
1520.00	90.00	179.69	30.00	9030.00	-5673.30	-2595.33	-106.42	715997.40	400704.53	32.100360	-103.769281	0.00	0.00	0.00	2595.96
1550.00	90.00	179.69	30.00	9030.00	-5673.30	-2625.33	-106.25	715997.56	400674.53	32.100278	-103.769281	0.00	0.00	0.00	2625.96
1580.00	90.00	179.69	30.00	9030.00	-5673.30	-2655.33	-106.09	715997.72	400644.53	32.100195	-103.769281	0.00	0.00	0.00	2655.96
1610.00	90.00	179.69	30.00	9030.00	-5673.30	-2685.33	-105.93	715997.88	400614.53	32.100113	-103.769281	0.00	0.00	0.00	2685.96
1640.00	90.00	179.69	30.00	9030.00	-5673.30	-2715.33	-105.77	715998.04	400584.53	32.100030	-103.769281	0.00	0.00	0.00	2715.96
1670.00	90.00	179.69	30.00	9030.00	-5673.30	-2745.33	-105.61	715998.20	400554.53	32.099948	-103.769281	0.00	0.00	0.00	2745.95
1700.00	90.00	179.69	30.00	9030.00	-5673.30	-2775.33	-105.45	715998.36	400524.53	32.099865	-103.769281	0.00	0.00	0.00	2775.95
1730.00	90.00	179.69	30.00	9030.00	-5673.30	-2805.33	-105.29	715998.52	400494.53	32.099783	-103.769281	0.00	0.00	0.00	2805.95
1760.00	90.00	179.69	30.00	9030.00	-5673.30	-2835.33	-105.13	715998.68	400464.53	32.099700	-103.769281	0.00	0.00	0.00	2835.95
1790.00	90.00	179.69	30.00	9030.00	-5673.30	-2865.33	-104.97	715998.84	400434.53	32.099618	-103.769281	0.00	0.00	0.00	2865.95
1820.00	90.00	179.69	30.00	9030.00	-5673.30	-2895.33	-104.81	715999.00	400404.53	32.099536	-103.769281	0.00	0.00	0.00	2895.94
1850.00	90.00	179.69	30.00	9030.00	-5673.30	-2925.33	-104.65	715999.16	400374.53	32.099453	-103.769281	0.00	0.00	0.00	2925.94
1880.00	90.00	179.69	30.00	9030.00	-5673.30	-2955.33	-104.49	715999.32	400344.54	32.099371	-103.769281	0.00	0.00	0.00	2955.94
1910.00	90.00	179.69	30.00	9030.00	-5673.30	-2985.33	-104.33	715999.48	400314.54	32.099288	-103.769281	0.00	0.00	0.00	2985.94
1940.00	90.00	179.69	30.00	9030.00	-5673.30	-3015.32	-104.17	715999.64	400284.54	32.099206	-103.769281	0.00	0.00	0.00	3015.94
1970.00	90.00	179.69	30.00	9030.00	-5673.30	-3045.32	-104.01	715999.80	400254.54	32.099123	-103.769281	0.00	0.00	0.00	3045.93
2000.00	90.00	179.69	30.00	9030.00	-5673.30	-3075.32	-103.85	715999.96	400224.54	32.099041	-103.769281	0.00	0.00	0.00	3075.93
2030.00	90.00	179.69	30.00	9030.00	-5673.30	-3105.32	-103.69	716000.12	400194.54	32.098958	-103.769281	0.00	0.00	0.00	3105.93
2060.00	90.00	179.69	30.00	9030.00	-5673.30	-3135.32	-103.53	716000.28	400164.54	32.098876	-103.769281	0.00	0.00	0.00	3135.93
2090.00	90.00	179.69	30.00	9030.00	-5673.30	-3165.32	-103.37	716000.44	400134.54	32.098793	-103.769281	0.00	0.00	0.00	3165.92
2120.00	90.00	179.69	30.00	9030.00	-5673.30	-3195.32	-103.21	716000.60	400104.54	32.098711	-103.769281	0.00	0.00	0.00	3195.92
2150.00	90.00	179.69	30.00	9030.00	-5673.30	-3225.32	-103.05	716000.76	400074.54	32.098628	-103.769281	0.00	0.00	0.00	3225.92
2180.00	90.00	179.69	30.00	9030.00	-5673.30	-3255.32	-102.89	716000.92	400044.54	32.098546	-103.769281	0.00	0.00	0.00	3255.92
2210.00	90.00	179.69	30.00	9030.00	-5673.30	-3285.32	-102.73	716001.08	400014.54	32.098463	-103.769281	0.00	0.00	0.00	3285.92
2240.00	90.00	179.69	30.00	9030.00	-5673.30	-3315.32	-102.57	716001.24	399984.54	32.098381	-103.769281	0.00	0.00	0.00	3315.91
2270.00	90.00	179.69	30.00	9030.00	-5673.30	-3345.32	-102.41	716001.40	399954.54	32.098299	-103.769281	0.00	0.00	0.00	3345.91
2300.00	90.00	179.69	30.00	9030.00	-5673.30	-3375.32	-102.25	716001.56	399924.54	32.098216	-103.769281	0.00	0.00	0.00	3375.91
2330.00	90.00	179.69	30.00	9030.00	-5673.30	-3405.32	-102.09	716001.72	399894.54	32.098134	-103.769281	0.00	0.00	0.00	3405.91
2360.00	90.00	179.69	30.00	9030.00	-5673.30	-3435.32	-101.93	716001.88	399864.54	32.098051	-103.769281	0.00	0.00	0.00	3435.91
2390.00	90.00	179.69	30.00	9030.00	-5673.30	-3465.32	-101.77	716002.04	399834.54	32.097969	-103.769281	0.00	0.00	0.00	3465.90
2420.00	90.00	179.69	30.00	9030.00	-5673.30	-3495.32	-101.61	716002.20	399804.54	32.097886	-103.769281	0.00	0.00	0.00	3495.90
2450.00	90.00	179.69	30.00	9030.00	-5673.30	-3525.32	-101.45	716002.36	399774.54	32.097804	-103.769281	0.00	0.00	0.00	3525.90
2480.00	90.00	179.69	30.00	9030.00	-5673.30	-3555.32	-101.29	716002.52	399744.54	32.097721	-103.769281	0.00	0.00	0.00	3555.90
2510.00	90.00	179.69	30.00	9030.00	-5673.30	-3585.32	-101.13	716002.68	399714.54	32.097639	-103.769281	0.00	0.00	0.00	3585.90
2540.00	90.00	179.69	30.00	9030.00	-5673.30	-3615.32	-100.97	716002.84	399684.54	32.097556	-103.769281	0.00	0.00	0.00	3615.89
2570.00	90.00	179.69	30.00	9030.00	-5673.30	-3645.32	-100.81	716003.00	399654.55	32.097474	-103.769281	0.00	0.00	0.00	3645.89
2600.00	90.00	179.69	30.00	9030.00	-5673.30	-3675.32	-100.65	716003.17	399624.55	32.097391	-103.769281	0.00	0.00	0.00	3675.89
2630.00	90.00	179.69	30.00	9030.00	-5673.30	-3705.31	-100.49	716003.33	399594.55	32.097309	-103.769281	0.00	0.00	0.00	3705.89
2660.00	90.00	179.69	30.00	9030.00	-5673.30	-3735.31	-100.33	716003.49	399564.55	32.097227	-103.769281	0.00	0.00	0.00	3735.88
2690.00	90.00	179.69	30.00	9030.00	-5673.30	-3765.31	-100.17	716003.65	399534.55	32.097144	-103.769281	0.00	0.00	0.00	3765.88
2720.00	90.00	179.69	30.00	9030.00	-5673.30	-3795.31	-100.00	716003.81	399504.55	32.097062	-103.769281	0.00	0.00	0.00	3795.88
2750.00	90.00	179.69	30.00	9030.00	-5673.30	-3825.31	-99.84	716003.97	399474.55	32.096979	-103.769281	0.00	0.00	0.00	3825.88
2780.00	90.00	179.69	30.00	9030.00	-5673.30	-3855.31	-99.68	716004.13	399444.55	32.096897	-103.769281	0.00	0.00	0.00	3855.88
2810.00	90.00	179.69	30.00	9030.00	-5673.30	-3885.31	-99.52	716004.29	399414.55	32.096814	-103.769281	0.00	0.00	0.00	3885.87
2840.00	90.00	179.69	30.00	9030.00	-5673.30	-3915.31	-99.36	716004.45	399384.55	32.096732	-103.769281	0.00	0.00	0.00	3915.87
2870.00	90.00	179.69	30.00	9030.00	-5673.30	-3945.31	-99.20	716004.61	399354.55	32.096649	-103.769281	0.00	0.00	0.00	3945.87
2900.00	90.00	179.69	30.00	9030.00	-5673.30	-3975.31	-99.04	716004.77	399324.55	32.096567	-103				

13950.00	90.00	179.69	30.00	9030.00	-5673.30	-5025.30	-93.43	716010.38	398274.57	32.093680	-103.769280	0.00	0.00	0.00	5025.79
13980.00	90.00	179.69	30.00	9030.00	-5673.30	-5055.30	-93.27	716010.54	398244.57	32.093598	-103.769280	0.00	0.00	0.00	5055.79
14010.00	90.00	179.69	30.00	9030.00	-5673.30	-5085.30	-93.11	716010.70	398214.57	32.093516	-103.769280	0.00	0.00	0.00	5085.79
14040.00	90.00	179.69	30.00	9030.00	-5673.30	-5115.29	-92.95	716010.86	398184.57	32.093433	-103.769280	0.00	0.00	0.00	5115.79
14070.00	90.00	179.69	30.00	9030.00	-5673.30	-5145.29	-92.79	716011.02	398154.57	32.093351	-103.769280	0.00	0.00	0.00	5145.79
14100.00	90.00	179.69	30.00	9030.00	-5673.30	-5175.29	-92.63	716011.18	398124.57	32.093268	-103.769280	0.00	0.00	0.00	5175.78
14130.00	90.00	179.69	30.00	9030.00	-5673.30	-5205.29	-92.47	716011.34	398094.57	32.093186	-103.769280	0.00	0.00	0.00	5205.78
14160.00	90.00	179.69	30.00	9030.00	-5673.30	-5235.29	-92.31	716011.50	398064.57	32.093103	-103.769280	0.00	0.00	0.00	5235.78
14190.00	90.00	179.69	30.00	9030.00	-5673.30	-5265.29	-92.15	716011.66	398034.57	32.093021	-103.769280	0.00	0.00	0.00	5265.78
14220.00	90.00	179.69	30.00	9030.00	-5673.30	-5295.29	-91.99	716011.82	398004.57	32.092938	-103.769280	0.00	0.00	0.00	5295.78
14250.00	90.00	179.69	30.00	9030.00	-5673.30	-5325.29	-91.83	716011.98	397974.57	32.092856	-103.769280	0.00	0.00	0.00	5325.77
14280.00	90.00	179.69	30.00	9030.00	-5673.30	-5355.29	-91.67	716012.14	397944.57	32.092773	-103.769280	0.00	0.00	0.00	5355.77
14310.00	90.00	179.69	30.00	9030.00	-5673.30	-5385.29	-91.51	716012.30	397914.57	32.092691	-103.769280	0.00	0.00	0.00	5385.77
14340.00	90.00	179.69	30.00	9030.00	-5673.30	-5415.29	-91.35	716012.46	397884.57	32.092608	-103.769280	0.00	0.00	0.00	5415.77
14370.00	90.00	179.69	30.00	9030.00	-5673.30	-5445.29	-91.19	716012.62	397854.57	32.092526	-103.769280	0.00	0.00	0.00	5445.77
14400.00	90.00	179.69	30.00	9030.00	-5673.30	-5475.29	-91.03	716012.78	397824.57	32.092443	-103.769280	0.00	0.00	0.00	5475.76
14430.00	90.00	179.69	30.00	9030.00	-5673.30	-5505.29	-90.87	716012.94	397794.57	32.092361	-103.769280	0.00	0.00	0.00	5505.76
14460.00	90.00	179.69	30.00	9030.00	-5673.30	-5535.29	-90.71	716013.10	397764.57	32.092279	-103.769280	0.00	0.00	0.00	5535.76
14490.00	90.00	179.69	30.00	9030.00	-5673.30	-5565.29	-90.55	716013.26	397734.57	32.092196	-103.769280	0.00	0.00	0.00	5565.76
14520.00	90.00	179.69	30.00	9030.00	-5673.30	-5595.29	-90.39	716013.42	397704.57	32.092114	-103.769280	0.00	0.00	0.00	5595.76
14550.00	90.00	179.69	30.00	9030.00	-5673.30	-5625.29	-90.23	716013.58	397674.57	32.092031	-103.769280	0.00	0.00	0.00	5625.75
14580.00	90.00	179.69	30.00	9030.00	-5673.30	-5655.29	-90.07	716013.74	397644.57	32.091949	-103.769280	0.00	0.00	0.00	5655.75
14610.00	90.00	179.69	30.00	9030.00	-5673.30	-5685.29	-89.91	716013.90	397614.57	32.091866	-103.769280	0.00	0.00	0.00	5685.75
14640.00	90.00	179.69	30.00	9030.00	-5673.30	-5715.29	-89.75	716014.06	397584.57	32.091784	-103.769280	0.00	0.00	0.00	5715.75
14670.00	90.00	179.69	30.00	9030.00	-5673.30	-5745.29	-89.59	716014.22	397554.58	32.091701	-103.769280	0.00	0.00	0.00	5745.74
14700.00	90.00	179.69	30.00	9030.00	-5673.30	-5775.29	-89.43	716014.38	397524.58	32.091619	-103.769280	0.00	0.00	0.00	5775.74
14730.00	90.00	179.69	30.00	9030.00	-5673.30	-5805.28	-89.27	716014.54	397494.58	32.091536	-103.769280	0.00	0.00	0.00	5805.74
14760.00	90.00	179.69	30.00	9030.00	-5673.30	-5835.28	-89.11	716014.70	397464.58	32.091454	-103.769280	0.00	0.00	0.00	5835.74
14790.00	90.00	179.69	30.00	9030.00	-5673.30	-5865.28	-88.95	716014.86	397434.58	32.091371	-103.769280	0.00	0.00	0.00	5865.74
14820.00	90.00	179.69	30.00	9030.00	-5673.30	-5895.28	-88.79	716015.02	397404.58	32.091289	-103.769280	0.00	0.00	0.00	5895.73
14850.00	90.00	179.69	30.00	9030.00	-5673.30	-5925.28	-88.63	716015.18	397374.58	32.091206	-103.769280	0.00	0.00	0.00	5925.73
14880.00	90.00	179.69	30.00	9030.00	-5673.30	-5955.28	-88.47	716015.34	397344.58	32.091124	-103.769280	0.00	0.00	0.00	5955.73
14910.00	90.00	179.69	30.00	9030.00	-5673.30	-5985.28	-88.31	716015.51	397314.58	32.091042	-103.769280	0.00	0.00	0.00	5985.73
14940.00	90.00	179.69	30.00	9030.00	-5673.30	-6015.28	-88.15	716015.67	397284.58	32.090959	-103.769280	0.00	0.00	0.00	6015.73
14970.00	90.00	179.69	30.00	9030.00	-5673.30	-6045.28	-87.99	716015.83	397254.58	32.090877	-103.769280	0.00	0.00	0.00	6045.72
15000.00	90.00	179.69	30.00	9030.00	-5673.30	-6075.28	-87.83	716015.99	397224.58	32.090794	-103.769280	0.00	0.00	0.00	6075.72
15030.00	90.00	179.69	30.00	9030.00	-5673.30	-6105.28	-87.66	716016.15	397194.58	32.090712	-103.769280	0.00	0.00	0.00	6105.72
15060.00	90.00	179.69	30.00	9030.00	-5673.30	-6135.28	-87.50	716016.31	397164.58	32.090629	-103.769280	0.00	0.00	0.00	6135.72
15090.00	90.00	179.69	30.00	9030.00	-5673.30	-6165.28	-87.34	716016.47	397134.58	32.090547	-103.769280	0.00	0.00	0.00	6165.72
15120.00	90.00	179.69	30.00	9030.00	-5673.30	-6195.28	-87.18	716016.63	397104.58	32.090464	-103.769280	0.00	0.00	0.00	6195.71
15150.00	90.00	179.69	30.00	9030.00	-5673.30	-6225.28	-87.02	716016.79	397074.58	32.090382	-103.769280	0.00	0.00	0.00	6225.71
15180.00	90.00	179.69	30.00	9030.00	-5673.30	-6255.28	-86.86	716016.95	397044.58	32.090299	-103.769280	0.00	0.00	0.00	6255.71
15210.00	90.00	179.69	30.00	9030.00	-5673.30	-6285.28	-86.70	716017.11	397014.58	32.090217	-103.769280	0.00	0.00	0.00	6285.71
15240.00	90.00	179.69	30.00	9030.00	-5673.30	-6315.28	-86.54	716017.27	396984.58	32.090134	-103.769280	0.00	0.00	0.00	6315.71
15270.00	90.00	179.69	30.00	9030.00	-5673.30	-6345.28	-86.38	716017.43	396954.58	32.090052	-103.769280	0.00	0.00	0.00	6345.70
15300.00	90.00	179.69	30.00	9030.00	-5673.30	-6375.28	-86.22	716017.59	396924.58	32.089969	-103.769280	0.00	0.00	0.00	6375.70
15330.00	90.00	179.69	30.00	9030.00	-5673.30	-6405.28	-86.06	716017.75	396894.58	32.089887	-103.769280	0.00	0.00	0.00	6405.70
15360.00	90.00	179.69	30.00	9030.00	-5673.30	-6435.28	-85.90	716017.91	396864.59	32.089805	-103.769280	0.00	0.00	0.00	6435.70
15390.00	90.00	179.69	30.00	9030.00	-5673.30	-6465.28	-85.74	716018.07	396834.59	32.089722	-103.769280	0.00	0.00	0.00	6465.69
15420.00	90.00	179.69	30.00	9030.00	-5673.30	-6495.27	-85.58	716018.23	396804.59	32.089640	-103.769280	0.00	0.00	0.00	6495.69
15450.00	90.00	179.69	30.00	9030.00	-5673.30	-6525.27	-85.42	716018.39	396774.59	32.089557	-103.769280	0.00	0.00	0.00	6525.69
15480.00	90.00	179.69	30.00	9030.00	-5673.30	-6555.27	-85.26	716018.55	396744.59	32.089475	-103.769280	0.00	0.00	0.00	6555.69
15510.00	90.00	179.69	30.00	9030.00	-5673.30	-6585.27	-85.10	716018.71	396714.59	32.089392	-103.769280	0.00	0.00	0.00	6585.69
15540.00	90.00	179.69	30.00	9030.00	-5673.30	-6615.27	-84.94	716018.87	396684.59	32.089310	-103.769280	0.00	0.00	0.00	6615.68
15570.00	90.00	179.69	30.00	9030.00	-5673.30	-6645.27	-84.78	716019.03	396654.59	32.089227	-103.769280	0.00	0.00	0.00	6645.68
15600.00	90.00	179.69	30.00	9030.00	-5673.30	-6675.27	-84.62	716019.19	396624.59	32.089145	-103.769280	0.00	0.00	0.00	6675.68
15630.00	90.00	179.69	30.00	9030.00	-5673.30	-6705.27	-84.46	716019.35	396594.59	32.089062	-103.769280	0.00	0.00	0.00	6705.68
15660.00	90.00	179.69	30.00	9030.00	-5673.30	-6735.27	-84.30	716019.51	396564.59	32.088980	-103.769280	0.00	0.00	0.00	6735.68
15690.00	90.00	179.69	30.00	9030.00	-5673.30	-6765.27	-84.14	716019.67	396534.59	32.088897	-103.769280	0.00	0.00	0.00	6765.67
15720.00	90.00	179.69	30.00	9030.00	-5673.30	-6795.27	-83.98	716019.83	396504.59	32.088815	-103.769280	0.00	0.00	0.00	6795.67
15750.00	90.00	179.69	30.00	9030.00	-5673.30	-6825.27	-83.82	716019.99	396474.59	32.088732	-103.769280	0.00	0.00	0.00	6825.67
15780.00	90.00	179.69	30.00	9030.00	-5673.30	-6855.27	-83.66	716020.15	396444.59	32.088650	-103.769280	0.00	0.00	0.00	6855.67
15810.00	90.00	179.69	30.00	9030.00	-5673.30	-6885.27	-83.50	716020.31	396414.59	32.088568	-103.769280	0.00	0.00	0.00	6885.67
15840.00	90.00	179.69	30.00	9030.00	-5673.30	-6915.27	-83.34	716020.47	396384.59	32.088485	-103.769280	0.00	0.00	0.00	6915.66
15870.00	90.00	179.69	30.00	9030.00	-5673.30	-6945.27	-83.18	716020.63	396354.59	32.088403</					

16920.00	90.00	179.69	30.00	9030.00	-5673.30	-7995.25	-77.57	716026.24	395304.61	32.085516	-103.769279	0.00	0.00	0.00	7995.59
16950.00	90.00	179.69	30.00	9030.00	-5673.30	-8025.25	-77.41	716026.40	395274.61	32.085434	-103.769279	0.00	0.00	0.00	8025.59
16980.00	90.00	179.69	30.00	9030.00	-5673.30	-8055.25	-77.25	716026.56	395244.61	32.085351	-103.769279	0.00	0.00	0.00	8055.58
17010.00	90.00	179.69	30.00	9030.00	-5673.30	-8085.25	-77.09	716026.72	395214.61	32.085269	-103.769279	0.00	0.00	0.00	8085.58
17040.00	90.00	179.69	30.00	9030.00	-5673.30	-8115.25	-76.93	716026.88	395184.61	32.085186	-103.769279	0.00	0.00	0.00	8115.58
17070.00	90.00	179.69	30.00	9030.00	-5673.30	-8145.25	-76.77	716027.04	395154.61	32.085104	-103.769279	0.00	0.00	0.00	8145.58
17100.00	90.00	179.69	30.00	9030.00	-5673.30	-8175.25	-76.61	716027.20	395124.61	32.085022	-103.769279	0.00	0.00	0.00	8175.58
17130.00	90.00	179.69	30.00	9030.00	-5673.30	-8205.25	-76.45	716027.36	395094.61	32.084939	-103.769279	0.00	0.00	0.00	8205.57
17160.00	90.00	179.69	30.00	9030.00	-5673.30	-8235.25	-76.29	716027.52	395064.61	32.084857	-103.769279	0.00	0.00	0.00	8235.57
17190.00	90.00	179.69	30.00	9030.00	-5673.30	-8265.25	-76.13	716027.68	395034.61	32.084774	-103.769279	0.00	0.00	0.00	8265.57
17220.00	90.00	179.69	30.00	9030.00	-5673.30	-8295.25	-75.97	716027.84	395004.61	32.084692	-103.769279	0.00	0.00	0.00	8295.57
17250.00	90.00	179.69	30.00	9030.00	-5673.30	-8325.25	-75.81	716028.01	394974.61	32.084609	-103.769279	0.00	0.00	0.00	8325.56
17280.00	90.00	179.69	30.00	9030.00	-5673.30	-8355.25	-75.65	716028.17	394944.61	32.084527	-103.769279	0.00	0.00	0.00	8355.56
17310.00	90.00	179.69	30.00	9030.00	-5673.30	-8385.25	-75.49	716028.33	394914.61	32.084444	-103.769279	0.00	0.00	0.00	8385.56
17340.00	90.00	179.69	30.00	9030.00	-5673.30	-8415.25	-75.33	716028.49	394884.61	32.084362	-103.769279	0.00	0.00	0.00	8415.56
17370.00	90.00	179.69	30.00	9030.00	-5673.30	-8445.25	-75.16	716028.65	394854.61	32.084279	-103.769279	0.00	0.00	0.00	8445.56
17400.00	90.00	179.69	30.00	9030.00	-5673.30	-8475.25	-75.00	716028.81	394824.61	32.084197	-103.769279	0.00	0.00	0.00	8475.55
17430.00	90.00	179.69	30.00	9030.00	-5673.30	-8505.25	-74.84	716028.97	394794.61	32.084114	-103.769279	0.00	0.00	0.00	8505.55
17460.00	90.00	179.69	30.00	9030.00	-5673.30	-8535.25	-74.68	716029.13	394764.62	32.084032	-103.769279	0.00	0.00	0.00	8535.55
17490.00	90.00	179.69	30.00	9030.00	-5673.30	-8565.25	-74.52	716029.29	394734.62	32.083949	-103.769279	0.00	0.00	0.00	8565.55
17520.00	90.00	179.69	30.00	9030.00	-5673.30	-8595.25	-74.36	716029.45	394704.62	32.083867	-103.769279	0.00	0.00	0.00	8595.55
17550.00	90.00	179.69	30.00	9030.00	-5673.30	-8625.24	-74.20	716029.61	394674.62	32.083785	-103.769279	0.00	0.00	0.00	8625.54
17580.00	90.00	179.69	30.00	9030.00	-5673.30	-8655.24	-74.04	716029.77	394644.62	32.083702	-103.769279	0.00	0.00	0.00	8655.54
17610.00	90.00	179.69	30.00	9030.00	-5673.30	-8685.24	-73.88	716029.93	394614.62	32.083620	-103.769279	0.00	0.00	0.00	8685.54
17640.00	90.00	179.69	30.00	9030.00	-5673.30	-8715.24	-73.72	716030.09	394584.62	32.083537	-103.769279	0.00	0.00	0.00	8715.54
17670.00	90.00	179.69	30.00	9030.00	-5673.30	-8745.24	-73.56	716030.25	394554.62	32.083455	-103.769279	0.00	0.00	0.00	8745.54
17700.00	90.00	179.69	30.00	9030.00	-5673.30	-8775.24	-73.40	716030.41	394524.62	32.083372	-103.769279	0.00	0.00	0.00	8775.53
17730.00	90.00	179.69	30.00	9030.00	-5673.30	-8805.24	-73.24	716030.57	394494.62	32.083290	-103.769279	0.00	0.00	0.00	8805.53
17760.00	90.00	179.69	30.00	9030.00	-5673.30	-8835.24	-73.08	716030.73	394464.62	32.083207	-103.769279	0.00	0.00	0.00	8835.53
17790.00	90.00	179.69	30.00	9030.00	-5673.30	-8865.24	-72.92	716030.89	394434.62	32.083125	-103.769279	0.00	0.00	0.00	8865.53
17820.00	90.00	179.69	30.00	9030.00	-5673.30	-8895.24	-72.76	716031.05	394404.62	32.083042	-103.769279	0.00	0.00	0.00	8895.53
17850.00	90.00	179.69	30.00	9030.00	-5673.30	-8925.24	-72.60	716031.21	394374.62	32.082960	-103.769279	0.00	0.00	0.00	8925.52
17880.00	90.00	179.69	30.00	9030.00	-5673.30	-8955.24	-72.44	716031.37	394344.62	32.082877	-103.769279	0.00	0.00	0.00	8955.52
17910.00	90.00	179.69	30.00	9030.00	-5673.30	-8985.24	-72.28	716031.53	394314.62	32.082795	-103.769279	0.00	0.00	0.00	8985.52
17940.00	90.00	179.69	30.00	9030.00	-5673.30	-9015.24	-72.12	716031.69	394284.62	32.082712	-103.769279	0.00	0.00	0.00	9015.52
17970.00	90.00	179.69	30.00	9030.00	-5673.30	-9045.24	-71.96	716031.85	394254.62	32.082630	-103.769279	0.00	0.00	0.00	9045.51
18000.00	90.00	179.69	30.00	9030.00	-5673.30	-9075.24	-71.80	716032.01	394224.62	32.082548	-103.769279	0.00	0.00	0.00	9075.51
18030.00	90.00	179.69	30.00	9030.00	-5673.30	-9105.24	-71.64	716032.17	394194.62	32.082465	-103.769279	0.00	0.00	0.00	9105.51
18060.00	90.00	179.69	30.00	9030.00	-5673.30	-9135.24	-71.48	716032.33	394164.62	32.082383	-103.769279	0.00	0.00	0.00	9135.51
18090.00	90.00	179.69	30.00	9030.00	-5673.30	-9165.24	-71.32	716032.49	394134.62	32.082300	-103.769279	0.00	0.00	0.00	9165.51
18120.00	90.00	179.69	30.00	9030.00	-5673.30	-9195.24	-71.16	716032.65	394104.62	32.082218	-103.769279	0.00	0.00	0.00	9195.50
18150.00	90.00	179.69	30.00	9030.00	-5673.30	-9225.24	-71.00	716032.81	394074.62	32.082135	-103.769279	0.00	0.00	0.00	9225.50
18180.00	90.00	179.69	30.00	9030.00	-5673.30	-9255.24	-70.84	716032.97	394044.63	32.082053	-103.769279	0.00	0.00	0.00	9255.50
18210.00	90.00	179.69	30.00	9030.00	-5673.30	-9285.24	-70.68	716033.13	394014.63	32.081970	-103.769279	0.00	0.00	0.00	9285.50
18240.00	90.00	179.69	30.00	9030.00	-5673.30	-9315.23	-70.52	716033.29	393984.63	32.081888	-103.769279	0.00	0.00	0.00	9315.50
18270.00	90.00	179.69	30.00	9030.00	-5673.30	-9345.23	-70.36	716033.45	393954.63	32.081805	-103.769279	0.00	0.00	0.00	9345.49
18300.00	90.00	179.69	30.00	9030.00	-5673.30	-9375.23	-70.20	716033.61	393924.63	32.081723	-103.769279	0.00	0.00	0.00	9375.49
18330.00	90.00	179.69	30.00	9030.00	-5673.30	-9405.23	-70.04	716033.77	393894.63	32.081640	-103.769279	0.00	0.00	0.00	9405.49
18360.00	90.00	179.69	30.00	9030.00	-5673.30	-9435.23	-69.88	716033.93	393864.63	32.081558	-103.769279	0.00	0.00	0.00	9435.49
18390.00	90.00	179.69	30.00	9030.00	-5673.30	-9465.23	-69.72	716034.09	393834.63	32.081475	-103.769279	0.00	0.00	0.00	9465.49
18420.00	90.00	179.69	30.00	9030.00	-5673.30	-9495.23	-69.56	716034.26	393804.63	32.081393	-103.769279	0.00	0.00	0.00	9495.48
18450.00	90.00	179.69	30.00	9030.00	-5673.30	-9525.23	-69.40	716034.42	393774.63	32.081311	-103.769279	0.00	0.00	0.00	9525.48
18480.00	90.00	179.69	30.00	9030.00	-5673.30	-9555.23	-69.24	716034.58	393744.63	32.081228	-103.769279	0.00	0.00	0.00	9555.48
18510.00	90.00	179.69	30.00	9030.00	-5673.30	-9585.23	-69.08	716034.74	393714.63	32.081146	-103.769279	0.00	0.00	0.00	9585.48
18540.00	90.00	179.69	30.00	9030.00	-5673.30	-9615.23	-68.91	716034.90	393684.63	32.081063	-103.769279	0.00	0.00	0.00	9615.48
18570.00	90.00	179.69	30.00	9030.00	-5673.30	-9645.23	-68.75	716035.06	393654.63	32.080981	-103.769279	0.00	0.00	0.00	9645.47
18600.00	90.00	179.69	30.00	9030.00	-5673.30	-9675.23	-68.59	716035.22	393624.63	32.080898	-103.769279	0.00	0.00	0.00	9675.47
18630.00	90.00	179.69	30.00	9030.00	-5673.30	-9705.23	-68.43	716035.38	393594.63	32.080816	-103.769279	0.00	0.00	0.00	9705.47
18660.00	90.00	179.69	30.00	9030.00	-5673.30	-9735.23	-68.27	716035.54	393564.63	32.080733	-103.769279	0.00	0.00	0.00	9735.47
18690.00	90.00	179.69	30.00	9030.00	-5673.30	-9765.23	-68.11	716035.70	393534.63	32.080651	-103.769279	0.00	0.00	0.00	9765.46
18720.00	90.00	179.69	30.00	9030.00	-5673.30	-9795.23	-67.95	716035.86	393504.63	32.080568	-103.769279	0.00	0.00	0.00	9795.46
18750.00	90.00	179.69	30.00	9030.00	-5673.30	-9825.23	-67.79	716036.02	393474.63	32.080486	-103.769279	0.00	0.00	0.00	9825.46
18780.00	90.00	179.69	30.00	9030.00	-5673.30	-9855.23	-67.63	716036.18	393444.63	32.080403	-103.769279	0.00	0.00	0.00	9855.46
18810.00	90.00	179.69	30.00	9030.00	-5673.30	-9885.23	-67.47	716036.34	393414.63	32.080321	-103.769279	0.00	0.00	0.00	9885.46
18840.00	90.00	179.69	30.00	9030.00	-5673.30	-9915.23	-67.31	716036.50	393384.63	32.080238</					

Devon Energy

Eddy County, NM (NAD-83)

Lusitano

Lusitano 27-34 Fed Com 533H

OH

Plan #1

Anticollision Report

10 October, 2018

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 2,174.65 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	10/10/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	19,111.77	Plan #1 (OH)	LEAM MWD+HDGM	MWD+HDGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Lusitano						
Lusitano 27-34 Fed Com 232H - OH - Plan #1	4,000.00	4,000.00	1,640.48	1,622.78	92.663	CC
Lusitano 27-34 Fed Com 232H - OH - Plan #1	4,100.00	4,109.19	1,640.78	1,622.61	90.309	ES
Lusitano 27-34 Fed Com 232H - OH - Plan #1	19,111.77	20,099.26	1,933.91	1,631.12	6.387	SF
Lusitano 27-34 Fed Com 233H - OH - Plan #1	2,916.47	2,917.07	29.99	17.16	2.337	CC
Lusitano 27-34 Fed Com 233H - OH - Plan #1	3,100.00	3,100.48	30.18	16.52	2.210	ES
Lusitano 27-34 Fed Com 233H - OH - Plan #1	5,900.00	5,898.35	46.76	20.47	1.779	SF
Lusitano 27-34 Fed Com 333H - OH - Plan #1	4,903.09	4,900.45	125.17	103.53	5.784	CC, ES
Lusitano 27-34 Fed Com 333H - OH - Plan #1	5,000.00	4,995.62	126.12	104.07	5.721	SF
Lusitano 27-34 Fed Com 335H - OH - Plan #1	8,824.80	8,924.52	2,124.75	2,086.08	54.939	CC, ES
Lusitano 27-34 Fed Com 335H - OH - Plan #1	9,200.00	9,134.09	2,157.01	2,117.02	53.940	SF
Lusitano 27-34 Fed Com 523H - OH - Plan #1	3,500.00	3,499.40	29.95	14.50	1.938	CC, ES
Lusitano 27-34 Fed Com 523H - OH - Plan #1	19,111.77	18,822.21	510.70	211.37	1.706	SF
Lusitano 27-34 Fed Com 525H - OH - Plan #1	2,500.00	2,499.70	1,700.44	1,689.48	155.149	CC, ES
Lusitano 27-34 Fed Com 525H - OH - Plan #1	6,700.00	6,507.52	2,164.04	2,134.37	72.959	SF
Lusitano 27-34 Fed Com 535H - OH - Plan #1	4,000.00	3,999.00	1,670.46	1,652.76	94.369	CC
Lusitano 27-34 Fed Com 535H - OH - Plan #1	19,111.77	19,092.58	1,812.30	1,477.88	5.419	ES, SF
Lusitano 27-34 Fed Com 622H - OH - Plan #1	6,483.60	6,478.85	139.75	110.82	4.831	CC
Lusitano 27-34 Fed Com 622H - OH - Plan #1	6,800.00	6,794.87	140.59	110.20	4.627	ES
Lusitano 27-34 Fed Com 622H - OH - Plan #1	8,400.00	8,394.29	168.36	130.91	4.496	SF
Lusitano 27-34 Fed Com 624H - OH - Plan #1	8,775.79	8,851.74	1,402.71	1,364.15	36.377	CC, ES
Lusitano 27-34 Fed Com 624H - OH - Plan #1	8,900.00	8,928.87	1,406.87	1,367.97	36.171	SF
Lusitano 27-34 Fed Com 713H - OH - Plan #1	2,416.06	2,417.86	153.23	142.64	14.472	CC
Lusitano 27-34 Fed Com 713H - OH - Plan #1	2,500.00	2,501.77	153.23	142.26	13.975	ES
Lusitano 27-34 Fed Com 713H - OH - Plan #1	4,400.00	4,391.10	238.03	218.71	12.320	SF
Lusitano 27-34 Fed Com 716H - OH - Plan #1						Out of range
Lusitano 27-34 Fed Com 733H - OH - Plan #1	7,000.00	6,994.79	123.87	92.60	3.961	CC, ES
Lusitano 27-34 Fed Com 733H - OH - Plan #1	7,100.00	7,094.77	124.53	92.86	3.931	SF
Lusitano 27-34 Fed Com 734H - OH - Plan #1	8,701.01	8,784.96	1,535.82	1,497.37	39.941	CC, ES
Lusitano 27-34 Fed Com 734H - OH - Plan #1	8,900.00	8,946.21	1,544.70	1,505.61	39.517	SF
Lusitano 27-34 Fed Com 736H - OH - Plan #1						Out of range

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 232H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference	Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	89.65	10.00	1,640.45	1,640.48				
100.00	100.00	100.00	100.00	0.09	0.09	89.65	10.00	1,640.45	1,640.48	1,640.31	0.17	9,540.659	
200.00	200.00	200.00	200.00	0.31	0.31	89.65	10.00	1,640.45	1,640.48	1,639.86	0.62	2,639.642	
300.00	300.00	300.00	300.00	0.54	0.54	89.65	10.00	1,640.45	1,640.48	1,639.41	1.07	1,531.713	
400.00	400.00	400.00	400.00	0.76	0.76	89.65	10.00	1,640.45	1,640.48	1,638.96	1.52	1,078.878	
500.00	500.00	500.00	500.00	0.99	0.99	89.65	10.00	1,640.45	1,640.48	1,638.51	1.97	832.700	
600.00	600.00	600.00	600.00	1.21	1.21	89.65	10.00	1,640.45	1,640.48	1,638.06	2.42	677.995	
700.00	700.00	700.00	700.00	1.43	1.43	89.65	10.00	1,640.45	1,640.48	1,637.61	2.87	571.768	
800.00	800.00	800.00	800.00	1.66	1.66	89.65	10.00	1,640.45	1,640.48	1,637.16	3.32	494.319	
900.00	900.00	900.00	900.00	1.88	1.88	89.65	10.00	1,640.45	1,640.48	1,636.71	3.77	435.348	
1,000.00	1,000.00	1,000.00	1,000.00	2.11	2.11	89.65	10.00	1,640.45	1,640.48	1,636.26	4.22	388.948	
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	89.65	10.00	1,640.45	1,640.48	1,635.81	4.67	351.486	
1,200.00	1,200.00	1,200.00	1,200.00	2.56	2.56	89.65	10.00	1,640.45	1,640.48	1,635.36	5.12	320.607	
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	89.65	10.00	1,640.45	1,640.48	1,634.91	5.57	294.715	
1,400.00	1,400.00	1,400.00	1,400.00	3.01	3.01	89.65	10.00	1,640.45	1,640.48	1,634.46	6.02	272.692	
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	89.65	10.00	1,640.45	1,640.48	1,634.02	6.47	253.732	
1,600.00	1,600.00	1,600.00	1,600.00	3.46	3.46	89.65	10.00	1,640.45	1,640.48	1,633.57	6.91	237.238	
1,700.00	1,700.00	1,700.00	1,700.00	3.68	3.68	89.65	10.00	1,640.45	1,640.48	1,633.12	7.36	222.756	
1,800.00	1,800.00	1,800.00	1,800.00	3.91	3.91	89.65	10.00	1,640.45	1,640.48	1,632.67	7.81	209.941	
1,900.00	1,900.00	1,900.00	1,900.00	4.13	4.13	89.65	10.00	1,640.45	1,640.48	1,632.22	8.26	198.521	
2,000.00	2,000.00	2,000.00	2,000.00	4.36	4.36	89.65	10.00	1,640.45	1,640.48	1,631.77	8.71	188.278	
2,100.00	2,100.00	2,100.00	2,100.00	4.58	4.58	89.65	10.00	1,640.45	1,640.48	1,631.32	9.16	179.041	
2,200.00	2,200.00	2,200.00	2,200.00	4.81	4.81	89.65	10.00	1,640.45	1,640.48	1,630.87	9.61	170.668	
2,300.00	2,300.00	2,300.00	2,300.00	5.03	5.03	89.65	10.00	1,640.45	1,640.48	1,630.42	10.06	163.043	
2,400.00	2,400.00	2,400.00	2,400.00	5.26	5.26	89.65	10.00	1,640.45	1,640.48	1,629.97	10.51	156.070	
2,500.00	2,500.00	2,500.00	2,500.00	5.48	5.48	89.65	10.00	1,640.45	1,640.48	1,629.52	10.96	149.669	
2,600.00	2,600.00	2,600.00	2,600.00	5.71	5.71	89.65	10.00	1,640.45	1,640.48	1,629.07	11.41	143.773	
2,700.00	2,700.00	2,700.00	2,700.00	5.93	5.93	89.65	10.00	1,640.45	1,640.48	1,628.62	11.86	138.323	
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	89.65	10.00	1,640.45	1,640.48	1,628.17	12.31	133.272	
2,900.00	2,900.00	2,900.00	2,900.00	6.38	6.38	89.65	10.00	1,640.45	1,640.48	1,627.72	12.76	128.576	
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	89.65	10.00	1,640.45	1,640.48	1,627.27	13.21	124.200	
3,100.00	3,100.00	3,100.00	3,100.00	6.83	6.83	89.65	10.00	1,640.45	1,640.48	1,626.82	13.66	120.112	
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	89.65	10.00	1,640.45	1,640.48	1,626.37	14.11	116.285	
3,300.00	3,300.00	3,300.00	3,300.00	7.28	7.28	89.65	10.00	1,640.45	1,640.48	1,625.92	14.56	112.694	
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	89.65	10.00	1,640.45	1,640.48	1,625.47	15.01	109.318	
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	89.65	10.00	1,640.45	1,640.48	1,625.02	15.46	106.138	
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	89.65	10.00	1,640.45	1,640.48	1,624.57	15.91	103.139	
3,700.00	3,700.00	3,700.00	3,700.00	8.18	8.18	89.65	10.00	1,640.45	1,640.48	1,624.13	16.36	100.304	
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	89.65	10.00	1,640.45	1,640.48	1,623.68	16.80	97.621	
3,900.00	3,900.00	3,900.00	3,900.00	8.63	8.63	89.65	10.00	1,640.45	1,640.48	1,623.23	17.25	95.077	
4,000.00	4,000.00	4,000.00	4,000.00	8.85	8.85	89.65	10.00	1,640.45	1,640.48	1,622.78	17.70	92.663 CC	
4,100.00	4,100.00	4,109.19	4,109.18	9.07	9.10	131.50	11.26	1,640.14	1,640.78	1,622.61	18.17	90.309 ES	
4,200.00	4,199.96	4,214.87	4,214.80	9.29	9.33	131.44	14.73	1,639.27	1,641.71	1,623.09	18.62	88.168	
4,300.00	4,299.86	4,314.85	4,314.70	9.51	9.56	131.41	18.48	1,638.34	1,643.70	1,624.64	19.06	86.238	
4,400.00	4,399.68	4,414.80	4,414.58	9.73	9.78	131.42	22.22	1,637.41	1,646.76	1,627.26	19.50	84.447	
4,500.00	4,499.48	4,514.74	4,514.44	9.95	10.01	131.46	25.96	1,636.48	1,650.05	1,630.11	19.94	82.743	
4,600.00	4,599.28	4,614.68	4,614.31	10.17	10.23	131.49	29.70	1,635.55	1,653.35	1,632.97	20.38	81.109	
4,700.00	4,699.08	4,714.62	4,714.18	10.40	10.46	131.53	33.44	1,634.62	1,656.64	1,635.82	20.83	79.539	
4,800.00	4,798.88	4,814.56	4,814.04	10.62	10.68	131.56	37.18	1,633.69	1,659.94	1,638.67	21.27	78.031	
4,900.00	4,898.68	4,914.50	4,913.91	10.85	10.90	131.60	40.93	1,632.76	1,663.24	1,641.52	21.72	76.582	
5,000.00	4,998.48	5,014.44	5,013.77	11.07	11.13	131.63	44.67	1,631.83	1,666.54	1,644.37	22.16	75.188	
5,100.00	5,098.27	5,114.38	5,113.64	11.30	11.35	131.66	48.41	1,630.90	1,669.83	1,647.22	22.61	73.846	

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Lusitano - Lusitano 27-34 Fed Com 232H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,198.07	5,214.32	5,213.51	11.53	11.58	131.70	52.15	1,629.97	1,673.13	1,650.07	23.06	72.554	
5,300.00	5,297.87	5,314.26	5,313.37	11.75	11.81	131.73	55.89	1,629.04	1,676.43	1,652.92	23.51	71.308	
5,400.00	5,397.67	5,414.20	5,413.24	11.98	12.03	131.77	59.63	1,628.11	1,679.73	1,655.77	23.96	70.107	
5,500.00	5,497.47	5,514.14	5,513.11	12.21	12.26	131.80	63.38	1,627.18	1,683.03	1,658.62	24.41	68.949	
5,600.00	5,597.27	5,614.09	5,612.97	12.44	12.48	131.83	67.12	1,626.25	1,686.33	1,661.47	24.86	67.831	
5,700.00	5,697.07	5,714.03	5,712.84	12.67	12.71	131.87	70.86	1,625.32	1,689.63	1,664.32	25.31	66.751	
5,800.00	5,796.87	5,813.97	5,812.70	12.90	12.94	131.90	74.60	1,624.39	1,692.93	1,667.17	25.76	65.708	
5,900.00	5,896.67	5,913.91	5,912.57	13.14	13.16	131.93	78.34	1,623.46	1,696.24	1,670.02	26.22	64.699	
6,000.00	5,996.46	6,013.85	6,012.44	13.37	13.39	131.96	82.08	1,622.53	1,699.54	1,672.87	26.67	63.724	
6,100.00	6,096.26	6,113.79	6,112.30	13.60	13.62	132.00	85.82	1,621.60	1,702.84	1,675.72	27.12	62.780	
6,200.00	6,196.06	6,213.73	6,212.17	13.83	13.84	132.03	89.57	1,620.67	1,706.15	1,678.57	27.58	61.865	
6,300.00	6,295.86	6,313.67	6,312.04	14.07	14.07	132.06	93.31	1,619.74	1,709.45	1,681.42	28.03	60.980	
6,400.00	6,395.66	6,413.61	6,411.90	14.30	14.30	132.09	97.05	1,618.81	1,712.76	1,684.27	28.49	60.122	
6,500.00	6,495.46	6,513.55	6,511.77	14.53	14.53	132.13	100.79	1,617.88	1,716.06	1,687.12	28.94	59.290	
6,600.00	6,595.26	6,613.49	6,611.63	14.77	14.75	132.16	104.53	1,616.94	1,719.37	1,689.97	29.40	58.484	
6,700.00	6,695.06	6,713.43	6,711.50	15.00	14.98	132.19	108.27	1,616.01	1,722.68	1,692.82	29.86	57.701	
6,800.00	6,794.86	6,813.37	6,811.37	15.24	15.21	132.22	112.02	1,615.08	1,725.98	1,695.67	30.31	56.941	
6,900.00	6,894.65	6,913.31	6,911.23	15.47	15.44	132.25	115.76	1,614.15	1,729.29	1,698.52	30.77	56.203	
7,000.00	6,994.50	7,013.27	7,011.12	15.69	15.67	132.29	119.50	1,613.22	1,732.04	1,700.84	31.21	55.504	
7,100.00	7,094.45	7,113.25	7,111.02	15.86	15.89	132.25	123.24	1,612.29	1,733.07	1,701.46	31.61	54.825	
7,200.00	7,194.45	7,213.19	7,210.89	16.04	16.12	90.27	126.98	1,611.36	1,732.46	1,700.44	32.02	54.103	
7,300.00	7,294.45	7,313.12	7,310.74	16.26	16.35	90.14	130.72	1,610.43	1,731.51	1,699.04	32.47	53.324	
7,400.00	7,394.45	7,413.05	7,410.59	16.48	16.58	90.02	134.47	1,609.50	1,730.58	1,697.66	32.92	52.567	
7,500.00	7,494.45	7,512.97	7,510.44	16.70	16.81	89.89	138.21	1,608.57	1,729.65	1,696.28	33.37	51.831	
7,600.00	7,594.45	7,612.90	7,610.29	16.93	17.04	89.77	141.95	1,607.64	1,728.73	1,694.91	33.82	51.114	
7,700.00	7,694.45	7,712.82	7,710.15	17.15	17.27	89.65	145.69	1,606.71	1,727.82	1,693.54	34.27	50.416	
7,800.00	7,794.45	7,812.75	7,810.00	17.37	17.49	89.52	149.43	1,605.78	1,726.91	1,692.19	34.72	49.736	
7,900.00	7,894.45	7,912.67	7,909.85	17.59	17.72	89.40	153.17	1,604.85	1,726.02	1,690.84	35.17	49.073	
8,000.00	7,994.45	8,012.60	8,009.70	17.81	17.95	89.27	156.91	1,603.92	1,725.13	1,689.50	35.62	48.427	
8,100.00	8,094.45	8,112.52	8,109.55	18.03	18.18	89.15	160.65	1,602.99	1,724.25	1,688.17	36.07	47.798	
8,200.00	8,194.45	8,212.45	8,209.40	18.25	18.41	89.02	164.39	1,602.06	1,723.38	1,686.85	36.52	47.183	
8,300.00	8,294.45	8,312.38	8,309.25	18.47	18.64	88.90	168.13	1,601.13	1,722.51	1,685.54	36.98	46.585	
8,400.00	8,394.45	8,412.30	8,409.10	18.69	18.87	88.77	171.88	1,600.20	1,721.66	1,684.23	37.43	46.000	
8,500.00	8,494.42	8,512.15	8,508.88	18.90	19.10	-91.12	175.61	1,599.27	1,720.83	1,682.87	37.87	45.444	
8,600.00	8,593.14	8,610.22	8,606.88	19.06	19.32	-91.78	179.28	1,598.36	1,720.40	1,682.16	38.24	44.993	
8,606.47	8,599.41	8,616.44	8,613.09	19.06	19.34	-91.83	179.52	1,598.30	1,720.39	1,682.13	38.26	44.967	
8,700.00	8,697.72	8,717.53	8,714.12	19.19	19.54	-92.82	182.78	1,597.49	1,720.97	1,682.40	38.57	44.616	
8,800.00	8,797.28	8,817.23	8,813.76	19.32	19.73	-94.02	185.99	1,596.69	1,723.53	1,684.65	38.88	44.325	
8,900.00	8,896.18	8,916.73	8,913.20	19.43	19.91	-95.08	188.81	1,595.99	1,729.30	1,690.12	39.19	44.128	
9,000.00	8,995.05	9,015.73	9,012.15	19.55	20.05	-95.67	191.17	1,595.40	1,739.55	1,700.04	39.50	44.034	
9,100.00	9,094.87	9,114.76	9,111.26	19.77	20.16	-95.47	192.93	1,594.96	1,755.31	1,715.47	39.84	44.058	
9,200.00	9,194.08	9,214.03	9,210.40	20.12	20.22	-94.28	193.88	1,594.73	1,777.19	1,736.98	40.20	44.204	
9,300.00	9,293.58	9,312.83	9,309.80	20.58	20.25	-91.95	194.26	1,594.63	1,805.18	1,764.58	40.60	44.467	
9,400.00	9,393.00	9,411.00	9,407.37	21.14	20.25	-89.85	194.29	1,594.63	1,838.65	1,797.65	41.01	44.839	
9,500.00	9,492.00	9,510.00	9,507.29	21.79	20.25	-89.78	194.25	1,594.64	1,876.90	1,835.44	41.46	45.275	
9,600.00	9,591.00	9,609.00	9,606.00	22.55	20.25	-89.70	194.21	1,594.65	1,919.59	1,877.65	41.94	45.771	
9,700.00	9,690.00	9,708.00	9,705.00	23.40	25.39	-118.83	-770.72	1,597.06	1,955.59	1,910.93	44.66	43.789	
9,800.00	9,789.00	9,807.00	9,804.00	24.33	26.26	-118.83	-870.72	1,597.33	1,955.36	1,909.08	46.28	42.249	
9,900.00	9,888.00	9,906.00	9,903.00	25.33	27.21	-118.84	-970.72	1,597.60	1,955.13	1,907.10	48.03	40.706	
10,000.00	9,987.00	9,995.00	9,992.00	26.39	28.21	-118.84	-1,070.72	1,597.88	1,954.90	1,905.00	49.89	39.183	
10,100.00	10,086.00	10,094.00	10,091.00	27.51	29.28	-118.84	-1,170.72	1,598.15	1,954.66	1,902.81	51.85	37.695	
10,200.00	10,185.00	10,193.00	10,190.00	28.68	30.39	-118.85	-1,270.72	1,598.42	1,954.43	1,900.53	53.91	36.255	

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 232H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,300.00	9,030.00	11,296.44	9,973.00	29.89	31.55	-118.85	-1,370.72	1,598.69	1,954.20	1,898.16	56.04	34.872		
10,400.00	9,030.00	11,396.44	9,973.00	31.14	32.76	-118.86	-1,470.71	1,598.96	1,953.97	1,895.73	58.24	33.548		
10,500.00	9,030.00	11,496.44	9,973.00	32.43	33.99	-118.86	-1,570.71	1,599.23	1,953.74	1,893.23	60.51	32.287		
10,600.00	9,030.00	11,596.44	9,973.00	33.75	35.26	-118.86	-1,670.71	1,599.50	1,953.51	1,890.68	62.84	31.089		
10,700.00	9,030.00	11,696.44	9,973.00	35.09	36.56	-118.87	-1,770.71	1,599.77	1,953.28	1,888.07	65.21	29.954		
10,800.00	9,030.00	11,796.44	9,973.00	36.46	37.89	-118.87	-1,870.71	1,600.04	1,953.05	1,885.42	67.63	28.879		
10,900.00	9,030.00	11,896.44	9,973.00	37.85	39.24	-118.87	-1,970.71	1,600.31	1,952.82	1,882.73	70.09	27.862		
11,000.00	9,030.00	11,996.44	9,973.00	39.25	40.60	-118.88	-2,070.71	1,600.58	1,952.59	1,880.00	72.58	26.901		
11,100.00	9,030.00	12,096.44	9,973.00	40.68	41.99	-118.88	-2,170.71	1,600.85	1,952.36	1,877.24	75.11	25.992		
11,200.00	9,030.00	12,196.44	9,973.00	42.12	43.40	-118.89	-2,270.71	1,601.12	1,952.13	1,874.45	77.67	25.133		
11,300.00	9,030.00	12,296.44	9,973.00	43.57	44.82	-118.89	-2,370.71	1,601.39	1,951.90	1,871.64	80.26	24.321		
11,400.00	9,030.00	12,396.44	9,973.00	45.04	46.26	-118.89	-2,470.71	1,601.66	1,951.66	1,868.80	82.87	23.552		
11,500.00	9,030.00	12,496.44	9,973.00	46.52	47.71	-118.90	-2,570.71	1,601.93	1,951.43	1,865.94	85.50	22.825		
11,600.00	9,030.00	12,596.44	9,973.00	48.01	49.17	-118.90	-2,670.71	1,602.21	1,951.20	1,863.06	88.15	22.136		
11,700.00	9,030.00	12,696.44	9,973.00	49.50	50.64	-118.90	-2,770.71	1,602.48	1,950.97	1,860.16	90.82	21.482		
11,800.00	9,030.00	12,796.44	9,973.00	51.01	52.12	-118.91	-2,870.70	1,602.75	1,950.74	1,857.24	93.50	20.863		
11,900.00	9,030.00	12,896.44	9,973.00	52.52	53.61	-118.91	-2,970.70	1,603.02	1,950.51	1,854.31	96.20	20.275		
12,000.00	9,030.00	12,996.44	9,973.00	54.05	55.11	-118.92	-3,070.70	1,603.29	1,950.28	1,851.36	98.92	19.716		
12,100.00	9,030.00	13,096.44	9,973.00	55.57	56.61	-118.92	-3,170.70	1,603.56	1,950.05	1,848.40	101.65	19.185		
12,200.00	9,030.00	13,196.44	9,973.00	57.11	58.12	-118.92	-3,270.70	1,603.83	1,949.82	1,845.43	104.39	18.679		
12,300.00	9,030.00	13,296.43	9,973.00	58.65	59.64	-118.93	-3,370.70	1,604.10	1,949.59	1,842.45	107.14	18.197		
12,400.00	9,030.00	13,396.43	9,973.00	60.19	61.17	-118.93	-3,470.70	1,604.37	1,949.36	1,839.46	109.90	17.738		
12,500.00	9,030.00	13,496.43	9,973.00	61.74	62.70	-118.93	-3,570.70	1,604.64	1,949.13	1,836.46	112.67	17.300		
12,600.00	9,030.00	13,596.43	9,973.00	63.29	64.23	-118.94	-3,670.70	1,604.91	1,948.90	1,833.45	115.44	16.882		
12,700.00	9,030.00	13,696.43	9,973.00	64.85	65.78	-118.94	-3,770.70	1,605.18	1,948.67	1,830.43	118.23	16.482		
12,800.00	9,030.00	13,796.43	9,973.00	66.41	67.32	-118.95	-3,870.70	1,605.45	1,948.43	1,827.41	121.02	16.100		
12,900.00	9,030.00	13,896.43	9,973.00	67.98	68.87	-118.95	-3,970.70	1,605.72	1,948.20	1,824.38	123.82	15.734		
13,000.00	9,030.00	13,996.43	9,973.00	69.55	70.42	-118.95	-4,070.70	1,605.99	1,947.97	1,821.34	126.63	15.383		
13,100.00	9,030.00	14,096.43	9,973.00	71.12	71.98	-118.96	-4,170.70	1,606.26	1,947.74	1,818.30	129.44	15.047		
13,200.00	9,030.00	14,196.43	9,973.00	72.69	73.54	-118.96	-4,270.69	1,606.54	1,947.51	1,815.25	132.26	14.724		
13,300.00	9,030.00	14,296.43	9,973.00	74.27	75.11	-118.96	-4,370.69	1,606.81	1,947.28	1,812.19	135.09	14.415		
13,400.00	9,030.00	14,396.43	9,973.00	75.85	76.67	-118.97	-4,470.69	1,607.08	1,947.05	1,809.13	137.92	14.118		
13,500.00	9,030.00	14,496.43	9,973.00	77.43	78.24	-118.97	-4,570.69	1,607.35	1,946.82	1,806.07	140.75	13.832		
13,600.00	9,030.00	14,596.43	9,973.00	79.01	79.81	-118.98	-4,670.69	1,607.62	1,946.59	1,803.00	143.59	13.557		
13,700.00	9,030.00	14,696.43	9,973.00	80.60	81.39	-118.98	-4,770.69	1,607.89	1,946.36	1,799.93	146.43	13.292		
13,800.00	9,030.00	14,796.43	9,973.00	82.19	82.96	-118.98	-4,870.69	1,608.16	1,946.13	1,796.85	149.28	13.037		
13,900.00	9,030.00	14,896.43	9,973.00	83.78	84.54	-118.99	-4,970.69	1,608.43	1,945.90	1,793.77	152.13	12.791		
14,000.00	9,030.00	14,996.43	9,973.00	85.37	86.13	-118.99	-5,070.69	1,608.70	1,945.67	1,790.69	154.98	12.554		
14,100.00	9,030.00	15,096.43	9,973.00	86.96	87.71	-118.99	-5,170.69	1,608.97	1,945.44	1,787.60	157.83	12.326		
14,200.00	9,030.00	15,196.43	9,973.00	88.56	89.29	-119.00	-5,270.69	1,609.24	1,945.21	1,784.51	160.69	12.105		
14,300.00	9,030.00	15,296.43	9,973.00	90.15	90.88	-119.00	-5,370.69	1,609.51	1,944.98	1,781.42	163.56	11.892		
14,400.00	9,030.00	15,396.43	9,973.00	91.75	92.47	-119.01	-5,470.69	1,609.78	1,944.75	1,778.33	166.42	11.686		
14,500.00	9,030.00	15,496.43	9,973.00	93.35	94.06	-119.01	-5,570.69	1,610.05	1,944.51	1,775.23	169.29	11.487		
14,600.00	9,030.00	15,596.43	9,973.00	94.95	95.65	-119.01	-5,670.68	1,610.32	1,944.28	1,772.13	172.16	11.294		
14,700.00	9,030.00	15,696.43	9,973.00	96.55	97.25	-119.02	-5,770.68	1,610.59	1,944.05	1,769.03	175.03	11.107		
14,800.00	9,030.00	15,796.43	9,973.00	98.16	98.84	-119.02	-5,870.68	1,610.87	1,943.82	1,765.92	177.90	10.926		
14,900.00	9,030.00	15,896.43	9,973.00	99.76	100.44	-119.02	-5,970.68	1,611.14	1,943.59	1,762.81	180.78	10.751		
15,000.00	9,030.00	15,996.43	9,973.00	101.37	102.03	-119.03	-6,070.68	1,611.41	1,943.36	1,759.71	183.66	10.581		
15,100.00	9,030.00	16,096.43	9,973.00	102.97	103.63	-119.03	-6,170.68	1,611.68	1,943.13	1,756.60	186.54	10.417		
15,200.00	9,030.00	16,196.42	9,973.00	104.58	105.23	-119.04	-6,270.68	1,611.95	1,942.90	1,753.48	189.42	10.257		
15,300.00	9,030.00	16,296.42	9,973.00	106.19	106.83	-119.04	-6,370.68	1,612.22	1,942.67	1,750.37	192.30	10.102		
15,400.00	9,030.00	16,396.42	9,973.00	107.79	108.43	-119.04	-6,470.68	1,612.49	1,942.44	1,747.25	195.19	9.952		

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Lusitano
 Site Error: 0.00 usft
 Reference Well: Lusitano 27-34 Fed Com 533H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
 TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
 MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 232H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,500.00	9,030.00	16,496.42	9,973.00	109.40	110.04	-119.05	-6,570.68	1,612.76	1,942.21	1,744.14	198.07	9.806	
15,600.00	9,030.00	16,596.42	9,973.00	111.01	111.64	-119.05	-6,670.68	1,613.03	1,941.98	1,741.02	200.96	9.663	
15,700.00	9,030.00	16,696.42	9,973.00	112.63	113.25	-119.05	-6,770.68	1,613.30	1,941.75	1,737.90	203.85	9.525	
15,800.00	9,030.00	16,796.42	9,973.00	114.24	114.85	-119.06	-6,870.68	1,613.57	1,941.52	1,734.78	206.74	9.391	
15,900.00	9,030.00	16,896.42	9,973.00	115.85	116.46	-119.06	-6,970.68	1,613.84	1,941.29	1,731.66	209.63	9.260	
16,000.00	9,030.00	16,996.42	9,973.00	117.46	118.06	-119.07	-7,070.67	1,614.11	1,941.06	1,728.53	212.53	9.133	
16,100.00	9,030.00	17,096.42	9,973.00	119.08	119.67	-119.07	-7,170.67	1,614.38	1,940.83	1,725.41	215.42	9.009	
16,200.00	9,030.00	17,196.42	9,973.00	120.69	121.28	-119.07	-7,270.67	1,614.65	1,940.60	1,722.28	218.32	8.889	
16,300.00	9,030.00	17,296.42	9,973.00	122.31	122.89	-119.08	-7,370.67	1,614.92	1,940.37	1,719.15	221.21	8.772	
16,400.00	9,030.00	17,396.42	9,973.00	123.92	124.50	-119.08	-7,470.67	1,615.20	1,940.14	1,716.03	224.11	8.657	
16,500.00	9,030.00	17,496.42	9,973.00	125.54	126.11	-119.09	-7,570.67	1,615.47	1,939.91	1,712.90	227.01	8.546	
16,600.00	9,030.00	17,596.42	9,973.00	127.16	127.72	-119.09	-7,670.67	1,615.74	1,939.68	1,709.77	229.91	8.437	
16,700.00	9,030.00	17,696.42	9,973.00	128.77	129.33	-119.09	-7,770.67	1,616.01	1,939.45	1,706.64	232.81	8.331	
16,800.00	9,030.00	17,796.42	9,973.00	130.39	130.95	-119.10	-7,870.67	1,616.28	1,939.22	1,703.51	235.71	8.227	
16,900.00	9,030.00	17,896.42	9,973.00	132.01	132.56	-119.10	-7,970.67	1,616.55	1,938.99	1,700.38	238.61	8.126	
17,000.00	9,030.00	17,996.42	9,973.00	133.63	134.17	-119.10	-8,070.67	1,616.82	1,938.75	1,697.24	241.51	8.028	
17,100.00	9,030.00	18,096.42	9,973.00	135.25	135.79	-119.11	-8,170.67	1,617.09	1,938.52	1,694.11	244.42	7.931	
17,200.00	9,030.00	18,196.42	9,973.00	136.86	137.40	-119.11	-8,270.67	1,617.36	1,938.29	1,690.97	247.32	7.837	
17,300.00	9,030.00	18,296.42	9,973.00	138.48	139.02	-119.12	-8,370.67	1,617.63	1,938.06	1,687.84	250.22	7.745	
17,400.00	9,030.00	18,396.42	9,973.00	140.10	140.63	-119.12	-8,470.66	1,617.90	1,937.83	1,684.70	253.13	7.656	
17,500.00	9,030.00	18,496.42	9,973.00	141.73	142.25	-119.12	-8,570.66	1,618.17	1,937.60	1,681.57	256.03	7.568	
17,600.00	9,030.00	18,596.42	9,973.00	143.35	143.87	-119.13	-8,670.66	1,618.44	1,937.37	1,678.43	258.94	7.482	
17,700.00	9,030.00	18,696.42	9,973.00	144.97	145.48	-119.13	-8,770.66	1,618.71	1,937.14	1,675.29	261.85	7.398	
17,800.00	9,030.00	18,796.42	9,973.00	146.59	147.10	-119.13	-8,870.66	1,618.98	1,936.91	1,672.16	264.76	7.316	
17,900.00	9,030.00	18,896.42	9,973.00	148.21	148.72	-119.14	-8,970.66	1,619.25	1,936.68	1,669.02	267.66	7.236	
18,000.00	9,030.00	18,996.42	9,973.00	149.83	150.34	-119.14	-9,070.66	1,619.53	1,936.45	1,665.88	270.57	7.157	
18,100.00	9,030.00	19,096.41	9,973.00	151.46	151.96	-119.15	-9,170.66	1,619.80	1,936.22	1,662.74	273.48	7.080	
18,200.00	9,030.00	19,196.41	9,973.00	153.08	153.57	-119.15	-9,270.66	1,620.07	1,935.99	1,659.60	276.39	7.005	
18,300.00	9,030.00	19,296.41	9,973.00	154.70	155.19	-119.15	-9,370.66	1,620.34	1,935.76	1,656.46	279.30	6.931	
18,400.00	9,030.00	19,396.41	9,973.00	156.33	156.81	-119.16	-9,470.66	1,620.61	1,935.53	1,653.32	282.21	6.858	
18,500.00	9,030.00	19,496.41	9,973.00	157.95	158.43	-119.16	-9,570.66	1,620.88	1,935.30	1,650.18	285.12	6.788	
18,600.00	9,030.00	19,596.41	9,973.00	159.57	160.05	-119.16	-9,670.66	1,621.15	1,935.07	1,647.04	288.03	6.718	
18,700.00	9,030.00	19,696.41	9,973.00	161.20	161.67	-119.17	-9,770.66	1,621.42	1,934.84	1,643.90	290.94	6.650	
18,800.00	9,030.00	19,796.41	9,973.00	162.82	163.30	-119.17	-9,870.65	1,621.69	1,934.61	1,640.76	293.85	6.584	
18,900.00	9,030.00	19,896.41	9,973.00	164.45	164.92	-119.18	-9,970.65	1,621.96	1,934.38	1,637.61	296.77	6.518	
19,000.00	9,030.00	19,996.41	9,973.00	166.07	166.54	-119.18	-10,070.65	1,622.23	1,934.15	1,634.47	299.68	6.454	
19,100.00	9,030.00	20,096.41	9,973.00	167.70	168.16	-119.18	-10,170.65	1,622.50	1,933.92	1,631.33	302.59	6.391	
19,107.30	9,030.00	20,099.26	9,973.00	167.82	168.21	-119.18	-10,173.50	1,622.51	1,933.91	1,631.18	302.73	6.388	
19,111.77	9,030.00	20,099.26	9,973.00	167.89	168.21	-119.18	-10,173.50	1,622.51	1,933.91	1,631.12	302.79	6.387 SF	

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 233H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.60	0.60	0.00	0.00	-90.40	-0.21	-29.99	29.99				
100.00	100.00	100.60	100.60	0.09	0.09	-90.40	-0.21	-29.99	29.99	29.82	0.17	173.062	
200.00	200.00	200.60	200.60	0.31	0.31	-90.40	-0.21	-29.99	29.99	29.37	0.62	48.153	
300.00	300.00	300.60	300.60	0.54	0.54	-90.40	-0.21	-29.99	29.99	28.92	1.07	27.967	
400.00	400.00	400.60	400.60	0.76	0.76	-90.40	-0.21	-29.99	29.99	28.47	1.52	19.706	
500.00	500.00	500.60	500.60	0.99	0.99	-90.40	-0.21	-29.99	29.99	28.02	1.97	15.213	
600.00	600.00	600.60	600.60	1.21	1.21	-90.40	-0.21	-29.99	29.99	27.57	2.42	12.388	
700.00	700.00	700.60	700.60	1.43	1.44	-90.40	-0.21	-29.99	29.99	27.12	2.87	10.448	
800.00	800.00	800.60	800.60	1.66	1.66	-90.40	-0.21	-29.99	29.99	26.67	3.32	9.033	
900.00	900.00	900.60	900.60	1.88	1.89	-90.40	-0.21	-29.99	29.99	26.22	3.77	7.956	
1,000.00	1,000.00	1,000.60	1,000.60	2.11	2.11	-90.40	-0.21	-29.99	29.99	25.77	4.22	7.108	
1,100.00	1,100.00	1,100.60	1,100.60	2.33	2.33	-90.40	-0.21	-29.99	29.99	25.32	4.67	6.424	
1,200.00	1,200.00	1,200.60	1,200.60	2.56	2.56	-90.40	-0.21	-29.99	29.99	24.87	5.12	5.860	
1,300.00	1,300.00	1,300.60	1,300.60	2.78	2.78	-90.40	-0.21	-29.99	29.99	24.42	5.57	5.387	
1,400.00	1,400.00	1,400.60	1,400.60	3.01	3.01	-90.40	-0.21	-29.99	29.99	23.97	6.02	4.984	
1,500.00	1,500.00	1,500.60	1,500.60	3.23	3.23	-90.40	-0.21	-29.99	29.99	23.52	6.47	4.638	
1,600.00	1,600.00	1,600.60	1,600.60	3.46	3.46	-90.40	-0.21	-29.99	29.99	23.07	6.92	4.336	
1,700.00	1,700.00	1,700.60	1,700.60	3.68	3.68	-90.40	-0.21	-29.99	29.99	22.62	7.37	4.072	
1,800.00	1,800.00	1,800.60	1,800.60	3.91	3.91	-90.40	-0.21	-29.99	29.99	22.18	7.82	3.837	
1,900.00	1,900.00	1,900.60	1,900.60	4.13	4.13	-90.40	-0.21	-29.99	29.99	21.73	8.26	3.629	
2,000.00	2,000.00	2,000.60	2,000.60	4.36	4.36	-90.40	-0.21	-29.99	29.99	21.28	8.71	3.442	
2,100.00	2,100.00	2,100.60	2,100.60	4.58	4.58	-90.40	-0.21	-29.99	29.99	20.83	9.16	3.273	
2,200.00	2,200.00	2,200.60	2,200.60	4.81	4.81	-90.40	-0.21	-29.99	29.99	20.38	9.61	3.120	
2,300.00	2,300.00	2,300.60	2,300.60	5.03	5.03	-90.40	-0.21	-29.99	29.99	19.93	10.06	2.980	
2,400.00	2,400.00	2,400.60	2,400.60	5.26	5.26	-90.40	-0.21	-29.99	29.99	19.48	10.51	2.853	
2,500.00	2,500.00	2,500.60	2,500.60	5.48	5.48	-90.40	-0.21	-29.99	29.99	19.03	10.96	2.736	
2,600.00	2,600.00	2,600.60	2,600.60	5.71	5.71	-90.40	-0.21	-29.99	29.99	18.58	11.41	2.628	
2,700.00	2,700.00	2,700.60	2,700.60	5.93	5.93	-90.40	-0.21	-29.99	29.99	18.13	11.86	2.528	
2,800.00	2,800.00	2,800.60	2,800.60	6.15	6.16	-90.40	-0.21	-29.99	29.99	17.68	12.31	2.436	
2,900.00	2,900.00	2,900.60	2,900.60	6.38	6.38	-90.40	-0.21	-29.99	29.99	17.23	12.76	2.350	
2,916.47	2,916.47	2,917.07	2,917.07	6.42	6.42	-90.40	-0.21	-29.99	29.99	17.16	12.83	2.337 CC	
3,000.00	3,000.00	3,000.60	3,000.60	6.60	6.61	-90.40	-0.21	-29.99	29.99	16.78	13.21	2.270	
3,100.00	3,100.00	3,100.48	3,100.48	6.83	6.83	-88.76	0.65	-30.17	30.18	16.52	13.66	2.210 ES	
3,200.00	3,200.00	3,200.31	3,200.27	7.05	7.05	-84.03	3.21	-30.72	30.89	16.78	14.10	2.190	
3,300.00	3,300.00	3,300.09	3,299.96	7.28	7.28	-76.87	7.37	-31.60	32.46	17.91	14.55	2.231	
3,400.00	3,400.00	3,399.99	3,399.75	7.50	7.50	-69.94	11.89	-32.57	34.68	19.68	15.00	2.312	
3,500.00	3,500.00	3,499.88	3,499.53	7.73	7.73	-63.91	16.42	-33.53	37.35	21.90	15.44	2.418	
3,600.00	3,600.00	3,599.77	3,599.32	7.95	7.95	-58.74	20.94	-34.49	40.37	24.48	15.89	2.540	
3,700.00	3,700.00	3,699.66	3,699.10	8.18	8.18	-54.32	25.46	-35.45	43.67	27.33	16.34	2.673	
3,800.00	3,800.00	3,799.56	3,798.89	8.40	8.40	-50.53	29.98	-36.41	47.20	30.41	16.79	2.812	
3,900.00	3,900.00	3,899.45	3,898.68	8.63	8.63	-47.29	34.50	-37.38	50.90	33.67	17.24	2.953	
4,000.00	4,000.00	3,999.34	3,998.46	8.85	8.85	-44.49	39.02	-38.34	54.75	37.06	17.69	3.096	
4,100.00	4,100.00	4,099.27	4,098.28	9.07	9.08	-0.20	43.55	-39.30	57.83	39.70	18.13	3.190	
4,200.00	4,199.96	4,199.23	4,198.13	9.29	9.31	2.03	48.07	-40.26	59.27	40.69	18.57	3.191	
4,300.00	4,299.86	4,299.20	4,298.00	9.51	9.53	4.28	52.60	-41.23	59.05	40.03	19.02	3.105	
4,400.00	4,399.68	4,399.15	4,397.84	9.73	9.76	6.73	57.12	-42.19	57.30	37.84	19.46	2.945	
4,500.00	4,499.48	4,499.10	4,497.68	9.95	9.99	9.38	61.65	-43.15	55.32	35.41	19.90	2.779	
4,600.00	4,599.28	4,599.05	4,597.52	10.17	10.22	12.22	66.17	-44.11	53.46	33.11	20.35	2.627	
4,700.00	4,699.08	4,698.99	4,697.36	10.40	10.45	15.26	70.69	-45.08	51.75	30.95	20.80	2.488	
4,800.00	4,798.88	4,798.94	4,797.20	10.62	10.68	18.50	75.22	-46.04	50.19	28.94	21.24	2.362	
4,900.00	4,898.68	4,898.89	4,897.04	10.85	10.91	21.93	79.74	-47.00	48.80	27.11	21.69	2.250	
5,000.00	4,998.48	4,998.83	4,996.88	11.07	11.14	25.55	84.27	-47.96	47.60	25.45	22.14	2.149	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 233H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,098.27	5,098.78	5,096.72	11.30	11.37	29.34	88.79	-48.93	46.59	24.00	22.60	2.062	
5,200.00	5,198.07	5,198.72	5,196.56	11.53	11.60	33.28	93.32	-49.89	45.80	22.75	23.05	1.987	
5,300.00	5,297.87	5,298.67	5,296.40	11.75	11.83	37.34	97.84	-50.85	45.23	21.73	23.51	1.924	
5,400.00	5,397.67	5,398.62	5,396.24	11.98	12.06	41.48	102.36	-51.81	44.90	20.93	23.97	1.873	
5,491.02	5,488.51	5,489.59	5,487.11	12.19	12.27	45.28	106.48	-52.69	44.80	20.41	24.39	1.837	
5,500.00	5,497.47	5,498.56	5,496.08	12.21	12.29	45.66	106.89	-52.78	44.80	20.37	24.43	1.834	
5,600.00	5,597.27	5,598.51	5,595.92	12.44	12.52	49.83	111.41	-53.74	44.94	20.05	24.89	1.806	
5,700.00	5,697.07	5,698.46	5,695.75	12.67	12.75	53.96	115.94	-54.70	45.32	19.96	25.36	1.787	
5,800.00	5,796.87	5,798.40	5,795.59	12.90	12.98	58.00	120.46	-55.66	45.93	20.11	25.82	1.779	
5,900.00	5,896.67	5,898.35	5,895.43	13.14	13.21	61.92	124.98	-56.63	46.76	20.47	26.29	1.779 SF	
6,000.00	5,996.46	5,998.30	5,995.27	13.37	13.44	65.68	129.51	-57.59	47.80	21.04	26.76	1.786	
6,100.00	6,096.26	6,098.24	6,095.11	13.60	13.67	69.27	134.03	-58.55	49.04	21.81	27.23	1.801	
6,200.00	6,196.06	6,198.19	6,194.95	13.83	13.90	72.66	138.56	-59.51	50.46	22.76	27.69	1.822	
6,300.00	6,295.86	6,298.13	6,294.79	14.07	14.14	75.87	143.08	-60.48	52.05	23.88	28.16	1.848	
6,400.00	6,395.66	6,398.08	6,394.63	14.30	14.37	78.87	147.61	-61.44	53.79	25.15	28.63	1.879	
6,500.00	6,495.46	6,498.03	6,494.47	14.53	14.60	81.68	152.13	-62.40	55.67	26.57	29.10	1.913	
6,600.00	6,595.26	6,597.97	6,594.31	14.77	14.83	84.30	156.65	-63.37	57.67	28.10	29.57	1.950	
6,700.00	6,695.06	6,697.92	6,694.15	15.00	15.06	86.73	161.18	-64.33	59.79	29.75	30.04	1.990	
6,800.00	6,794.86	6,797.87	6,793.99	15.24	15.29	89.00	165.70	-65.29	62.00	31.50	30.50	2.033	
6,900.00	6,894.65	6,897.81	6,893.83	15.47	15.53	91.11	170.23	-66.25	64.31	33.34	30.97	2.076	
7,000.00	6,994.50	6,997.77	6,993.68	15.69	15.76	92.39	174.75	-67.22	66.66	35.24	31.41	2.122	
7,100.00	7,094.45	7,097.74	7,093.54	15.86	15.99	91.45	179.28	-68.18	68.93	37.10	31.82	2.166	
7,200.00	7,194.45	7,197.65	7,193.34	16.04	16.22	46.74	183.80	-69.14	71.23	39.00	32.23	2.210	
7,300.00	7,294.45	7,297.54	7,293.13	16.26	16.45	43.67	188.32	-70.10	73.74	41.06	32.68	2.256	
7,400.00	7,394.45	7,397.43	7,392.91	16.48	16.69	40.80	192.84	-71.06	76.45	43.32	33.13	2.308	
7,500.00	7,494.45	7,497.33	7,492.70	16.70	16.92	38.14	197.36	-72.03	79.33	45.76	33.57	2.363	
7,600.00	7,594.45	7,597.22	7,592.48	16.93	17.15	35.67	201.89	-72.99	82.37	48.36	34.01	2.422	
7,700.00	7,694.45	7,697.11	7,692.27	17.15	17.38	33.38	206.41	-73.95	85.56	51.10	34.46	2.483	
7,800.00	7,794.45	7,797.01	7,792.05	17.37	17.62	31.26	210.93	-74.91	88.87	53.97	34.90	2.547	
7,900.00	7,894.45	7,896.90	7,891.84	17.59	17.85	29.29	215.45	-75.88	92.30	56.96	35.34	2.612	
8,000.00	7,994.45	7,996.79	7,991.63	17.81	18.08	27.46	219.97	-76.84	95.83	60.04	35.78	2.678	
8,100.00	8,094.45	8,096.68	8,091.41	18.03	18.31	25.77	224.49	-77.80	99.44	63.22	36.23	2.745	
8,200.00	8,194.45	8,196.58	8,191.20	18.25	18.55	24.19	229.02	-78.76	103.14	66.47	36.67	2.813	
8,300.00	8,294.45	8,297.90	8,292.43	18.47	18.76	22.86	233.11	-79.63	106.51	69.40	37.10	2.871	
8,400.00	8,394.45	8,400.25	8,394.77	18.69	18.94	22.35	234.77	-79.99	107.87	70.38	37.49	2.877	
8,401.88	8,396.33	8,402.17	8,396.69	18.70	18.94	-157.35	234.78	-79.99	107.88	70.38	37.50	2.877	
8,500.00	8,494.42	8,500.51	8,495.02	18.90	19.13	-157.56	234.79	-79.99	109.02	71.12	37.89	2.877	
8,600.00	8,593.14	8,599.22	8,593.74	19.06	19.35	-159.76	234.79	-79.99	123.18	84.93	38.26	3.220	
8,700.00	8,687.72	8,693.80	8,688.32	19.19	19.56	-162.96	234.79	-79.99	153.77	115.18	38.59	3.984	
8,800.00	8,775.28	8,781.37	8,775.88	19.32	19.75	-165.71	234.79	-79.99	200.43	161.53	38.91	5.152	
8,900.00	8,853.18	8,859.27	8,853.78	19.43	19.92	-167.46	234.79	-79.99	261.90	222.71	39.19	6.683	
9,000.00	8,919.05	8,925.13	8,919.65	19.55	20.06	-168.11	234.79	-79.99	336.24	296.81	39.43	8.528	
9,100.00	8,970.87	8,976.95	8,971.47	19.77	20.18	-167.37	234.79	-79.99	421.09	381.48	39.61	10.630	
9,200.00	9,007.08	9,013.17	9,007.68	20.12	20.26	-163.84	234.79	-79.99	513.79	474.05	39.74	12.928	
9,300.00	9,026.58	9,032.67	9,027.18	20.58	20.30	-148.01	234.79	-79.99	611.48	571.66	39.81	15.358	
9,400.00	9,030.00	9,036.08	9,030.60	21.14	20.31	-90.00	234.79	-79.99	711.15	671.32	39.83	17.854	
9,500.00	9,030.00	9,036.08	9,030.60	21.79	20.31	-90.00	234.79	-79.99	811.00	771.16	39.84	20.357	
9,600.00	9,030.00	9,036.08	9,030.60	22.55	20.31	-90.00	234.79	-79.99	910.89	871.04	39.85	22.859	
9,700.00	9,030.00	9,036.08	9,030.60	23.40	20.31	-90.00	234.79	-79.99	1,010.79	970.93	39.86	25.359	
9,800.00	9,030.00	9,036.08	9,030.60	24.33	20.31	-90.00	234.79	-79.99	1,110.72	1,070.84	39.87	27.857	
9,900.00	9,030.00	9,036.08	9,030.60	25.33	20.31	-90.00	234.79	-79.99	1,210.65	1,170.76	39.89	30.352	
10,000.00	9,030.00	11,349.66	10,280.00	26.39	28.84	-178.33	-1,075.30	-78.21	1,249.93	1,221.13	28.80	43.400	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 233H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.00	9,030.00	11,449.66	10,280.00	27.51	29.89	-178.35	-1,175.30	-78.08	1,249.92	1,220.23	29.69	42.098	
10,200.00	9,030.00	11,549.66	10,280.00	28.68	30.98	-178.37	-1,275.30	-77.94	1,249.90	1,219.28	30.63	40.812	
10,300.00	9,030.00	11,649.66	10,280.00	29.89	32.13	-178.39	-1,375.30	-77.81	1,249.89	1,218.29	31.60	39.552	
10,400.00	9,030.00	11,749.66	10,280.00	31.14	33.31	-178.41	-1,475.30	-77.67	1,249.88	1,217.27	32.61	38.324	
10,500.00	9,030.00	11,849.66	10,280.00	32.43	34.54	-178.43	-1,575.30	-77.54	1,249.87	1,216.21	33.66	37.133	
10,600.00	9,030.00	11,949.65	10,280.00	33.75	35.79	-178.44	-1,675.30	-77.40	1,249.86	1,215.13	34.73	35.983	
10,700.00	9,030.00	12,049.65	10,280.00	35.09	37.08	-178.46	-1,775.30	-77.26	1,249.85	1,214.01	35.84	34.875	
10,800.00	9,030.00	12,149.65	10,280.00	36.46	38.39	-178.48	-1,875.30	-77.13	1,249.84	1,212.87	36.97	33.810	
10,900.00	9,030.00	12,249.65	10,280.00	37.85	39.72	-178.50	-1,975.29	-76.99	1,249.83	1,211.71	38.12	32.788	
11,000.00	9,030.00	12,349.65	10,280.00	39.25	41.08	-178.52	-2,075.29	-76.86	1,249.82	1,210.53	39.29	31.810	
11,100.00	9,030.00	12,449.65	10,280.00	40.68	42.46	-178.54	-2,175.29	-76.72	1,249.81	1,209.33	40.48	30.873	
11,200.00	9,030.00	12,549.65	10,280.00	42.12	43.85	-178.55	-2,275.29	-76.59	1,249.80	1,208.11	41.69	29.978	
11,300.00	9,030.00	12,649.65	10,280.00	43.57	45.26	-178.57	-2,375.29	-76.45	1,249.79	1,206.87	42.92	29.122	
11,400.00	9,030.00	12,749.65	10,280.00	45.04	46.69	-178.59	-2,475.29	-76.32	1,249.78	1,205.62	44.15	28.305	
11,500.00	9,030.00	12,849.65	10,280.00	46.52	48.13	-178.61	-2,575.29	-76.18	1,249.77	1,204.36	45.41	27.524	
11,600.00	9,030.00	12,949.65	10,280.00	48.01	49.58	-178.63	-2,675.29	-76.04	1,249.76	1,203.09	46.67	26.777	
11,700.00	9,030.00	13,049.65	10,280.00	49.50	51.04	-178.65	-2,775.29	-75.91	1,249.75	1,201.80	47.95	26.064	
11,800.00	9,030.00	13,149.65	10,280.00	51.01	52.51	-178.66	-2,875.29	-75.77	1,249.74	1,200.50	49.24	25.383	
11,900.00	9,030.00	13,249.64	10,280.00	52.52	54.00	-178.68	-2,975.29	-75.64	1,249.73	1,199.20	50.53	24.732	
12,000.00	9,030.00	13,349.64	10,280.00	54.05	55.49	-178.70	-3,075.28	-75.50	1,249.72	1,197.88	51.84	24.109	
12,100.00	9,030.00	13,449.64	10,280.00	55.57	56.98	-178.72	-3,175.28	-75.37	1,249.71	1,196.56	53.15	23.513	
12,200.00	9,030.00	13,549.64	10,280.00	57.11	58.49	-178.74	-3,275.28	-75.23	1,249.70	1,195.23	54.47	22.942	
12,300.00	9,030.00	13,649.64	10,280.00	58.65	60.00	-178.76	-3,375.28	-75.10	1,249.70	1,193.89	55.80	22.396	
12,400.00	9,030.00	13,749.64	10,280.00	60.19	61.52	-178.77	-3,475.28	-74.96	1,249.69	1,192.55	57.14	21.872	
12,500.00	9,030.00	13,849.64	10,280.00	61.74	63.05	-178.79	-3,575.28	-74.82	1,249.68	1,191.20	58.48	21.370	
12,600.00	9,030.00	13,949.64	10,280.00	63.29	64.58	-178.81	-3,675.28	-74.69	1,249.67	1,189.85	59.82	20.889	
12,700.00	9,030.00	14,049.64	10,280.00	64.85	66.11	-178.83	-3,775.28	-74.55	1,249.66	1,188.48	61.18	20.427	
12,800.00	9,030.00	14,149.64	10,280.00	66.41	67.65	-178.85	-3,875.28	-74.42	1,249.65	1,187.12	62.53	19.983	
12,900.00	9,030.00	14,249.64	10,280.00	67.98	69.19	-178.86	-3,975.28	-74.28	1,249.65	1,185.75	63.90	19.557	
13,000.00	9,030.00	14,349.64	10,280.00	69.55	70.74	-178.88	-4,075.28	-74.15	1,249.64	1,184.37	65.26	19.148	
13,100.00	9,030.00	14,449.63	10,280.00	71.12	72.29	-178.90	-4,175.27	-74.01	1,249.63	1,183.00	66.63	18.754	
13,200.00	9,030.00	14,549.63	10,280.00	72.69	73.85	-178.92	-4,275.27	-73.88	1,249.62	1,181.61	68.01	18.374	
13,300.00	9,030.00	14,649.63	10,280.00	74.27	75.41	-178.94	-4,375.27	-73.74	1,249.61	1,180.23	69.39	18.009	
13,400.00	9,030.00	14,749.63	10,280.00	75.85	76.97	-178.96	-4,475.27	-73.60	1,249.61	1,178.84	70.77	17.657	
13,500.00	9,030.00	14,849.63	10,280.00	77.43	78.54	-178.97	-4,575.27	-73.47	1,249.60	1,177.45	72.15	17.318	
13,600.00	9,030.00	14,949.63	10,280.00	79.01	80.10	-178.99	-4,675.27	-73.33	1,249.59	1,176.05	73.54	16.991	
13,700.00	9,030.00	15,049.63	10,280.00	80.60	81.68	-179.01	-4,775.27	-73.20	1,249.58	1,174.65	74.93	16.676	
13,800.00	9,030.00	15,149.63	10,280.00	82.19	83.25	-179.03	-4,875.27	-73.06	1,249.58	1,173.25	76.33	16.371	
13,900.00	9,030.00	15,249.63	10,280.00	83.78	84.82	-179.05	-4,975.27	-72.93	1,249.57	1,171.85	77.72	16.077	
14,000.00	9,030.00	15,349.63	10,280.00	85.37	86.40	-179.07	-5,075.27	-72.79	1,249.57	1,170.44	79.12	15.793	
14,100.00	9,030.00	15,449.63	10,280.00	86.96	87.98	-179.08	-5,175.27	-72.65	1,249.56	1,169.04	80.52	15.518	
14,200.00	9,030.00	15,549.63	10,280.00	88.56	89.56	-179.10	-5,275.27	-72.52	1,249.55	1,167.63	81.93	15.252	
14,300.00	9,030.00	15,649.63	10,280.00	90.15	91.15	-179.12	-5,375.26	-72.38	1,249.55	1,166.21	83.33	14.995	
14,400.00	9,030.00	15,749.62	10,280.00	91.75	92.73	-179.14	-5,475.26	-72.25	1,249.54	1,164.80	84.74	14.745	
14,500.00	9,030.00	15,849.62	10,280.00	93.35	94.32	-179.16	-5,575.26	-72.11	1,249.54	1,163.38	86.15	14.504	
14,600.00	9,030.00	15,949.62	10,280.00	94.95	95.91	-179.18	-5,675.26	-71.98	1,249.53	1,161.97	87.56	14.270	
14,700.00	9,030.00	16,049.62	10,280.00	96.55	97.50	-179.19	-5,775.26	-71.84	1,249.52	1,160.55	88.98	14.044	
14,800.00	9,030.00	16,149.62	10,280.00	98.16	99.09	-179.21	-5,875.26	-71.71	1,249.52	1,159.13	90.39	13.824	
14,900.00	9,030.00	16,249.62	10,280.00	99.76	100.68	-179.23	-5,975.26	-71.57	1,249.51	1,157.71	91.81	13.610	
15,000.00	9,030.00	16,349.62	10,280.00	101.37	102.28	-179.25	-6,075.26	-71.43	1,249.51	1,156.28	93.22	13.403	
15,100.00	9,030.00	16,449.62	10,280.00	102.97	103.87	-179.27	-6,175.26	-71.30	1,249.50	1,154.86	94.64	13.202	
15,200.00	9,030.00	16,549.62	10,280.00	104.58	105.47	-179.28	-6,275.26	-71.16	1,249.50	1,153.43	96.06	13.007	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 233H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,300.00	9,030.00	16,649.62	10,280.00	106.19	107.07	-179.30	-6,375.26	-71.03	1,249.49	1,152.01	97.49	12.817	
15,400.00	9,030.00	16,749.62	10,280.00	107.79	108.67	-179.32	-6,475.25	-70.89	1,249.49	1,150.58	98.91	12.633	
15,500.00	9,030.00	16,849.62	10,280.00	109.40	110.27	-179.34	-6,575.25	-70.76	1,249.48	1,149.15	100.33	12.453	
15,600.00	9,030.00	16,949.62	10,280.00	111.01	111.87	-179.36	-6,675.25	-70.62	1,249.48	1,147.72	101.76	12.279	
15,700.00	9,030.00	17,049.61	10,280.00	112.63	113.47	-179.38	-6,775.25	-70.49	1,249.47	1,146.29	103.19	12.109	
15,800.00	9,030.00	17,149.61	10,280.00	114.24	115.08	-179.39	-6,875.25	-70.35	1,249.47	1,144.86	104.61	11.944	
15,900.00	9,030.00	17,249.61	10,280.00	115.85	116.68	-179.41	-6,975.25	-70.21	1,249.47	1,143.42	106.04	11.783	
16,000.00	9,030.00	17,349.61	10,280.00	117.46	118.28	-179.43	-7,075.25	-70.08	1,249.46	1,141.99	107.47	11.626	
16,100.00	9,030.00	17,449.61	10,280.00	119.08	119.89	-179.45	-7,175.25	-69.94	1,249.46	1,140.56	108.90	11.473	
16,200.00	9,030.00	17,549.61	10,280.00	120.69	121.50	-179.47	-7,275.25	-69.81	1,249.45	1,139.12	110.33	11.324	
16,300.00	9,030.00	17,649.61	10,280.00	122.31	123.10	-179.49	-7,375.25	-69.67	1,249.45	1,137.68	111.77	11.179	
16,400.00	9,030.00	17,749.61	10,280.00	123.92	124.71	-179.50	-7,475.25	-69.54	1,249.45	1,136.25	113.20	11.038	
16,500.00	9,030.00	17,849.61	10,280.00	125.54	126.32	-179.52	-7,575.24	-69.40	1,249.44	1,134.81	114.63	10.899	
16,600.00	9,030.00	17,949.61	10,280.00	127.16	127.93	-179.54	-7,675.24	-69.27	1,249.44	1,133.37	116.07	10.765	
16,700.00	9,030.00	18,049.61	10,280.00	128.77	129.54	-179.56	-7,775.24	-69.13	1,249.44	1,131.93	117.51	10.633	
16,800.00	9,030.00	18,149.61	10,280.00	130.39	131.15	-179.58	-7,875.24	-68.99	1,249.43	1,130.49	118.94	10.505	
16,900.00	9,030.00	18,249.60	10,280.00	132.01	132.76	-179.60	-7,975.24	-68.86	1,249.43	1,129.05	120.38	10.379	
17,000.00	9,030.00	18,349.60	10,280.00	133.63	134.37	-179.61	-8,075.24	-68.72	1,249.43	1,127.61	121.82	10.257	
17,100.00	9,030.00	18,449.60	10,280.00	135.25	135.99	-179.63	-8,175.24	-68.59	1,249.43	1,126.17	123.26	10.137	
17,200.00	9,030.00	18,549.60	10,280.00	136.86	137.60	-179.65	-8,275.24	-68.45	1,249.42	1,124.73	124.69	10.020	
17,300.00	9,030.00	18,649.60	10,280.00	138.48	139.21	-179.67	-8,375.24	-68.32	1,249.42	1,123.29	126.13	9.905	
17,400.00	9,030.00	18,749.60	10,280.00	140.10	140.83	-179.69	-8,475.24	-68.18	1,249.42	1,121.84	127.57	9.794	
17,500.00	9,030.00	18,849.60	10,280.00	141.73	142.44	-179.71	-8,575.24	-68.05	1,249.42	1,120.40	129.02	9.684	
17,600.00	9,030.00	18,949.60	10,280.00	143.35	144.06	-179.72	-8,675.24	-67.91	1,249.41	1,118.96	130.46	9.577	
17,700.00	9,030.00	19,049.60	10,280.00	144.97	145.67	-179.74	-8,775.23	-67.77	1,249.41	1,117.51	131.90	9.472	
17,800.00	9,030.00	19,149.60	10,280.00	146.59	147.29	-179.76	-8,875.23	-67.64	1,249.41	1,116.07	133.34	9.370	
17,900.00	9,030.00	19,249.60	10,280.00	148.21	148.90	-179.78	-8,975.23	-67.50	1,249.41	1,114.62	134.79	9.270	
18,000.00	9,030.00	19,349.60	10,280.00	149.83	150.52	-179.80	-9,075.23	-67.37	1,249.41	1,113.18	136.23	9.171	
18,100.00	9,030.00	19,449.60	10,280.00	151.46	152.14	-179.82	-9,175.23	-67.23	1,249.41	1,111.73	137.67	9.075	
18,200.00	9,030.00	19,549.59	10,280.00	153.08	153.76	-179.83	-9,275.23	-67.10	1,249.41	1,110.29	139.12	8.981	
18,300.00	9,030.00	19,649.59	10,280.00	154.70	155.37	-179.85	-9,375.23	-66.96	1,249.40	1,108.84	140.56	8.888	
18,400.00	9,030.00	19,749.59	10,280.00	156.33	156.99	-179.87	-9,475.23	-66.83	1,249.40	1,107.39	142.01	8.798	
18,500.00	9,030.00	19,849.59	10,280.00	157.95	158.61	-179.89	-9,575.23	-66.69	1,249.40	1,105.95	143.46	8.709	
18,600.00	9,030.00	19,949.59	10,280.00	159.57	160.23	-179.91	-9,675.23	-66.55	1,249.40	1,104.50	144.90	8.622	
18,700.00	9,030.00	20,049.59	10,280.00	161.20	161.85	-179.92	-9,775.23	-66.42	1,249.40	1,103.05	146.35	8.537	
18,800.00	9,030.00	20,149.59	10,280.00	162.82	163.47	-179.94	-9,875.22	-66.28	1,249.40	1,101.60	147.80	8.453	
18,900.00	9,030.00	20,249.59	10,280.00	164.45	165.09	-179.96	-9,975.22	-66.15	1,249.40	1,100.15	149.25	8.371	
19,000.00	9,030.00	20,349.59	10,280.00	166.07	166.71	-179.98	-10,075.22	-66.01	1,249.40	1,098.71	150.69	8.291	
19,100.00	9,030.00	20,449.59	10,280.00	167.70	168.33	-180.00	-10,175.22	-65.88	1,249.40	1,097.26	152.14	8.212	
19,111.77	9,030.00	20,461.36	10,280.00	167.89	168.52	-180.00	-10,186.99	-65.86	1,249.40	1,097.09	152.31	8.203	

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 333H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HOGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)					
0.00	0.00	2.00	2.00	0.00	0.00	0.17	149.98	0.44	149.98				
100.00	100.00	102.00	102.00	0.09	0.09	0.17	149.98	0.44	149.98	149.80	0.18	850.030	
200.00	200.00	202.00	202.00	0.31	0.32	0.17	149.98	0.44	149.98	149.35	0.63	239.596	
300.00	300.00	302.00	302.00	0.54	0.54	0.17	149.98	0.44	149.98	148.91	1.08	139.451	
400.00	400.00	402.00	402.00	0.76	0.76	0.17	149.98	0.44	149.98	148.46	1.53	98.346	
500.00	500.00	502.00	502.00	0.99	0.99	0.17	149.98	0.44	149.98	148.01	1.97	75.956	
600.00	600.00	602.00	602.00	1.21	1.21	0.17	149.98	0.44	149.98	147.56	2.42	61.871	
700.00	700.00	702.00	702.00	1.43	1.44	0.17	149.98	0.44	149.98	147.11	2.87	52.192	
800.00	800.00	802.00	802.00	1.66	1.66	0.17	149.98	0.44	149.98	146.66	3.32	45.132	
900.00	900.00	902.00	902.00	1.88	1.89	0.17	149.98	0.44	149.98	146.21	3.77	39.754	
1,000.00	1,000.00	1,002.00	1,002.00	2.11	2.11	0.17	149.98	0.44	149.98	145.76	4.22	35.522	
1,100.00	1,100.00	1,102.00	1,102.00	2.33	2.34	0.17	149.98	0.44	149.98	145.31	4.67	32.104	
1,200.00	1,200.00	1,202.00	1,202.00	2.56	2.56	0.17	149.98	0.44	149.98	144.86	5.12	29.286	
1,300.00	1,300.00	1,302.00	1,302.00	2.78	2.79	0.17	149.98	0.44	149.98	144.41	5.57	26.923	
1,400.00	1,400.00	1,402.00	1,402.00	3.01	3.01	0.17	149.98	0.44	149.98	143.96	6.02	24.912	
1,500.00	1,500.00	1,502.00	1,502.00	3.23	3.24	0.17	149.98	0.44	149.98	143.51	6.47	23.181	
1,600.00	1,600.00	1,602.00	1,602.00	3.46	3.46	0.17	149.98	0.44	149.98	143.06	6.92	21.675	
1,700.00	1,700.00	1,702.00	1,702.00	3.68	3.69	0.17	149.98	0.44	149.98	142.61	7.37	20.353	
1,800.00	1,800.00	1,802.00	1,802.00	3.91	3.91	0.17	149.98	0.44	149.98	142.16	7.82	19.183	
1,900.00	1,900.00	1,902.00	1,902.00	4.13	4.14	0.17	149.98	0.44	149.98	141.71	8.27	18.140	
2,000.00	2,000.00	2,002.00	2,002.00	4.36	4.36	0.17	149.98	0.44	149.98	141.26	8.72	17.204	
2,100.00	2,100.00	2,102.00	2,102.00	4.58	4.59	0.17	149.98	0.44	149.98	140.81	9.17	16.361	
2,200.00	2,200.00	2,202.00	2,202.00	4.81	4.81	0.17	149.98	0.44	149.98	140.36	9.62	15.596	
2,300.00	2,300.00	2,302.00	2,302.00	5.03	5.04	0.17	149.98	0.44	149.98	139.91	10.07	14.900	
2,400.00	2,400.00	2,402.00	2,402.00	5.26	5.26	0.17	149.98	0.44	149.98	139.46	10.52	14.263	
2,500.00	2,500.00	2,502.00	2,502.00	5.48	5.48	0.17	149.98	0.44	149.98	139.02	10.97	13.678	
2,600.00	2,600.00	2,602.00	2,602.00	5.71	5.71	0.17	149.98	0.44	149.98	138.57	11.41	13.139	
2,700.00	2,700.00	2,702.00	2,702.00	5.93	5.93	0.17	149.98	0.44	149.98	138.12	11.86	12.641	
2,800.00	2,800.00	2,802.00	2,802.00	6.15	6.16	0.17	149.98	0.44	149.98	137.67	12.31	12.180	
2,900.00	2,900.00	2,902.00	2,902.00	6.38	6.38	0.17	149.98	0.44	149.98	137.22	12.76	11.751	
3,000.00	3,000.00	3,002.00	3,002.00	6.60	6.61	0.17	149.98	0.44	149.98	136.77	13.21	11.351	
3,100.00	3,100.00	3,102.00	3,102.00	6.83	6.83	0.17	149.98	0.44	149.98	136.32	13.66	10.978	
3,200.00	3,200.00	3,202.00	3,202.00	7.05	7.06	0.17	149.98	0.44	149.98	135.87	14.11	10.628	
3,300.00	3,300.00	3,302.00	3,302.00	7.28	7.28	0.17	149.98	0.44	149.98	135.42	14.56	10.300	
3,400.00	3,400.00	3,402.00	3,402.00	7.50	7.51	0.17	149.98	0.44	149.98	134.97	15.01	9.991	
3,500.00	3,500.00	3,502.00	3,502.00	7.73	7.73	0.17	149.98	0.44	149.98	134.52	15.46	9.701	
3,600.00	3,600.00	3,602.00	3,602.00	7.95	7.96	0.17	149.98	0.44	149.98	134.07	15.91	9.427	
3,700.00	3,700.00	3,702.00	3,702.00	8.18	8.18	0.17	149.98	0.44	149.98	133.62	16.36	9.168	
3,800.00	3,800.00	3,802.00	3,802.00	8.40	8.41	0.17	149.98	0.44	149.98	133.17	16.81	8.923	
3,900.00	3,900.00	3,902.00	3,902.00	8.63	8.63	0.17	149.98	0.44	149.98	132.72	17.26	8.690	
4,000.00	4,000.00	4,002.00	4,002.00	8.85	8.86	0.17	149.98	0.44	149.98	132.27	17.71	8.470	
4,100.00	4,100.00	4,102.00	4,102.00	9.07	9.08	42.27	149.98	0.44	149.33	131.18	18.15	8.226	
4,200.00	4,199.96	4,201.96	4,201.96	9.29	9.31	42.96	149.98	0.44	147.41	128.81	18.60	7.926	
4,300.00	4,299.86	4,301.86	4,301.86	9.51	9.53	44.17	149.98	0.44	144.24	125.20	19.04	7.575	
4,400.00	4,399.68	4,401.68	4,401.68	9.73	9.75	45.89	149.98	0.44	140.01	120.52	19.49	7.185	
4,500.00	4,499.48	4,501.48	4,501.48	9.95	9.98	47.81	149.98	0.44	135.67	115.74	19.93	6.807	
4,600.00	4,599.28	4,600.81	4,600.81	10.17	10.19	50.22	150.03	1.33	131.67	111.31	20.36	6.466	
4,700.00	4,699.08	4,700.00	4,699.96	10.40	10.39	53.52	150.19	3.92	128.36	107.58	20.78	6.176	
4,800.00	4,798.88	4,798.84	4,798.70	10.62	10.59	57.70	150.45	8.22	126.06	104.86	21.20	5.945	
4,900.00	4,898.68	4,897.41	4,897.09	10.85	10.79	62.70	150.81	14.19	125.17	103.54	21.63	5.788	
4,903.09	4,901.76	4,900.45	4,900.13	10.85	10.79	62.87	150.83	14.40	125.17	103.53	21.64	5.784 CC, ES	
5,000.00	4,998.48	4,995.62	4,995.00	11.07	10.99	68.38	151.27	21.82	126.12	104.07	22.04	5.721 SF	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 333H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,098.27	5,093.40	5,092.34	11.30	11.20	74.49	151.84	31.08	129.32	106.87	22.45	5.760	
5,200.00	5,198.07	5,191.69	5,190.05	11.53	11.41	80.71	152.48	41.72	134.88	112.02	22.87	5.899	
5,300.00	5,297.87	5,290.46	5,288.22	11.75	11.62	86.43	153.13	52.52	142.03	118.74	23.28	6.100	
5,400.00	5,397.67	5,389.23	5,386.40	11.98	11.84	91.58	153.79	63.32	150.46	126.76	23.70	6.348	
5,500.00	5,497.47	5,487.99	5,484.57	12.21	12.06	96.15	154.44	74.11	159.99	135.87	24.12	6.632	
5,600.00	5,597.27	5,586.76	5,582.74	12.44	12.29	100.19	155.09	84.91	170.42	145.88	24.54	6.944	
5,700.00	5,697.07	5,685.53	5,680.92	12.67	12.51	103.76	155.75	95.71	181.61	156.64	24.97	7.274	
5,800.00	5,796.87	5,784.29	5,779.09	12.90	12.74	106.91	156.40	106.50	193.41	168.02	25.39	7.618	
5,900.00	5,896.67	5,883.06	5,877.26	13.14	12.97	109.69	157.06	117.30	205.73	179.92	25.82	7.969	
6,000.00	5,996.46	5,981.83	5,975.44	13.37	13.20	112.15	157.71	128.10	218.48	192.24	26.24	8.325	
6,100.00	6,096.26	6,080.60	6,073.61	13.60	13.43	114.35	158.36	138.89	231.59	204.91	26.67	8.682	
6,200.00	6,196.06	6,179.36	6,171.78	13.83	13.67	116.30	159.02	149.69	244.99	217.89	27.10	9.039	
6,300.00	6,295.86	6,278.13	6,269.96	14.07	13.91	118.05	159.67	160.49	258.65	231.11	27.54	9.393	
6,400.00	6,395.66	6,376.90	6,368.13	14.30	14.15	119.63	160.33	171.29	272.52	244.55	27.97	9.743	
6,500.00	6,495.46	6,475.67	6,466.30	14.53	14.39	121.05	160.98	182.08	286.57	258.17	28.40	10.089	
6,600.00	6,595.26	6,574.43	6,564.48	14.77	14.63	122.34	161.63	192.88	300.78	271.94	28.84	10.429	
6,700.00	6,695.06	6,673.20	6,662.65	15.00	14.87	123.52	162.29	203.68	315.13	285.86	29.28	10.763	
6,800.00	6,794.86	6,771.97	6,760.82	15.24	15.12	124.59	162.94	214.47	329.60	299.88	29.72	11.091	
6,900.00	6,894.65	6,870.74	6,859.00	15.47	15.36	125.57	163.59	225.27	344.17	314.02	30.16	11.413	
7,000.00	6,994.45	6,969.61	6,957.27	15.69	15.61	126.50	164.25	236.08	358.35	327.77	30.58	11.719	
7,100.00	7,094.45	7,068.76	7,055.83	15.86	15.86	127.07	164.91	246.92	371.05	340.08	30.97	11.981	
7,200.00	7,194.45	7,168.12	7,154.59	16.04	16.11	85.39	165.56	257.78	382.31	350.94	31.37	12.187	
7,300.00	7,294.45	7,267.52	7,253.39	16.26	16.37	85.42	166.22	268.65	393.26	361.45	31.81	12.363	
7,400.00	7,394.45	7,366.92	7,352.19	16.48	16.62	85.45	166.88	279.51	404.21	371.96	32.25	12.533	
7,500.00	7,494.45	7,466.31	7,450.99	16.70	16.87	85.48	167.54	290.38	415.16	382.47	32.69	12.699	
7,600.00	7,594.45	7,565.71	7,549.79	16.93	17.13	85.50	168.19	301.24	426.11	392.98	33.13	12.860	
7,700.00	7,694.45	7,665.11	7,648.59	17.15	17.38	85.53	168.85	312.11	437.06	403.48	33.58	13.017	
7,800.00	7,794.45	7,764.51	7,747.39	17.37	17.64	85.56	169.51	322.98	448.01	413.99	34.02	13.170	
7,900.00	7,894.45	7,863.91	7,846.19	17.59	17.90	85.58	170.17	333.84	458.96	424.50	34.46	13.318	
8,000.00	7,994.45	7,963.31	7,944.99	17.81	18.16	85.60	170.83	344.71	469.91	435.00	34.90	13.463	
8,100.00	8,094.45	8,062.70	8,043.80	18.03	18.42	85.62	171.48	355.57	480.86	445.51	35.35	13.603	
8,200.00	8,194.45	8,162.10	8,142.60	18.25	18.68	85.64	172.14	366.44	491.81	456.02	35.79	13.740	
8,300.00	8,294.45	8,261.50	8,241.40	18.47	18.94	85.66	172.80	377.31	502.76	466.52	36.24	13.874	
8,400.00	8,394.45	8,360.90	8,340.20	18.69	19.20	85.68	173.46	388.17	513.71	477.03	36.68	14.004	
8,500.00	8,494.42	8,460.26	8,438.96	18.90	19.46	-93.71	174.12	399.03	524.74	487.63	37.12	14.137	
8,600.00	8,593.14	8,558.29	8,536.40	19.06	19.72	-94.08	174.77	409.75	536.85	499.35	37.49	14.318	
8,700.00	8,687.72	8,652.11	8,629.65	19.19	19.97	-95.75	175.39	420.01	551.28	513.43	37.85	14.564	
8,800.00	8,775.28	8,738.86	8,715.88	19.32	20.20	-98.04	175.96	429.49	570.21	532.00	38.21	14.924	
8,900.00	8,853.18	8,815.91	8,792.47	19.43	20.40	-100.07	176.47	437.91	586.29	557.71	38.58	15.456	
9,000.00	8,919.05	8,880.83	8,857.10	19.55	20.58	-100.98	176.90	445.02	631.84	592.86	38.98	16.209	
9,100.00	8,970.87	8,931.92	8,907.79	19.77	20.71	-99.95	177.24	450.59	678.11	638.72	39.39	17.215	
9,200.00	9,007.08	8,967.36	8,943.01	20.12	20.81	-96.26	177.47	454.47	734.87	695.09	39.78	18.474	
9,300.00	9,026.58	8,986.15	8,961.68	20.58	20.86	-89.35	177.60	456.52	800.48	760.37	40.11	19.958	
9,400.00	9,030.00	8,988.94	8,964.46	21.14	20.87	-83.34	177.62	456.83	872.39	832.03	40.36	21.617	
9,500.00	9,030.00	8,988.34	8,963.86	21.79	20.86	-83.28	177.61	456.76	949.23	908.67	40.57	23.400	
9,600.00	9,030.00	8,987.73	8,963.26	22.55	20.86	-83.22	177.61	456.69	1,030.06	989.31	40.75	25.278	
9,700.00	9,030.00	8,987.13	8,962.66	23.40	20.86	-83.16	177.60	456.63	1,114.00	1,073.10	40.91	27.233	
9,800.00	9,030.00	8,986.53	8,962.06	24.33	20.86	-83.10	177.60	456.56	1,200.41	1,159.36	41.04	29.247	
9,900.00	9,030.00	8,985.92	8,961.46	25.33	20.86	-83.04	177.60	456.50	1,288.78	1,247.62	41.16	31.309	
10,000.00	9,030.00	8,985.32	8,960.86	26.39	20.86	-82.98	177.59	456.43	1,378.74	1,337.47	41.27	33.410	
10,100.00	9,030.00	8,984.72	8,960.26	27.51	20.85	-82.92	177.59	456.36	1,470.00	1,428.64	41.36	35.540	
10,200.00	9,030.00	8,984.11	8,959.66	28.68	20.85	-82.86	177.58	456.30	1,562.33	1,520.88	41.45	37.695	

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 333H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,300.00	9,030.00	8,983.51	8,959.06	29.89	20.85	-82.80	177.58	456.23	1,655.55	1,614.03	41.52	39.870	
10,400.00	9,030.00	8,982.90	8,958.46	31.14	20.85	-82.74	177.58	456.17	1,749.52	1,707.93	41.59	42.061	
10,500.00	9,030.00	8,982.30	8,957.86	32.43	20.85	-82.68	177.57	456.10	1,844.12	1,802.46	41.66	44.265	
10,600.00	9,030.00	8,981.70	8,957.26	33.75	20.85	-82.62	177.57	456.04	1,939.27	1,897.55	41.72	46.478	
10,700.00	9,030.00	8,981.09	8,956.66	35.09	20.84	-82.56	177.56	455.97	2,034.88	1,993.10	41.78	48.700	
10,800.00	9,030.00	8,980.49	8,956.06	36.46	20.84	-82.50	177.56	455.90	2,130.89	2,089.05	41.84	50.928	

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 335H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,800.00	7,794.45	7,925.46	7,918.33	17.37	17.73	88.61	187.85	2,049.23	2,174.12	2,139.64	34.48	63.048	
7,900.00	7,894.45	8,025.31	8,018.03	17.59	17.96	88.59	188.34	2,043.77	2,168.66	2,133.73	34.93	62.089	
8,000.00	7,994.45	8,125.16	8,117.72	17.81	18.20	88.57	188.84	2,038.30	2,163.20	2,127.82	35.37	61.153	
8,100.00	8,094.45	8,225.01	8,217.42	18.03	18.44	88.55	189.33	2,032.83	2,157.74	2,121.92	35.82	60.241	
8,200.00	8,194.45	8,324.86	8,317.12	18.25	18.67	88.54	189.83	2,027.36	2,152.27	2,116.01	36.26	59.350	
8,300.00	8,294.45	8,424.71	8,416.82	18.47	18.91	88.52	190.33	2,021.89	2,146.81	2,110.10	36.71	58.481	
8,400.00	8,394.45	8,524.56	8,516.51	18.69	19.14	88.50	190.82	2,016.42	2,141.35	2,104.19	37.16	57.633	
8,500.00	8,494.42	8,624.37	8,616.18	18.90	19.38	-91.44	191.32	2,010.96	2,135.91	2,098.32	37.59	56.822	
8,600.00	8,593.14	8,722.85	8,714.51	19.06	19.61	-92.36	191.81	2,005.56	2,130.91	2,092.95	37.95	56.144	
8,700.00	8,687.72	8,817.12	8,808.64	19.19	19.84	-93.59	192.28	2,000.40	2,126.93	2,088.64	38.29	55.553	
8,800.00	8,775.28	8,904.30	8,895.69	19.32	20.05	-94.94	192.71	1,995.62	2,124.85	2,086.26	38.60	55.052	
8,824.80	8,795.60	8,924.52	8,915.87	19.34	20.09	-95.26	192.81	1,994.52	2,124.75	2,086.08	38.67	54.939 CC, ES	
8,900.00	8,853.18	8,981.76	8,973.02	19.43	20.23	-96.16	193.09	1,991.38	2,125.76	2,086.86	38.90	54.642	
9,000.00	8,919.05	9,047.13	9,038.29	19.55	20.38	-96.98	193.42	1,987.80	2,130.81	2,091.59	39.23	54.319	
9,100.00	8,970.87	9,098.42	9,089.51	19.77	20.51	-97.15	193.67	1,984.99	2,141.00	2,101.42	39.59	54.084	
9,200.00	9,007.08	9,134.09	9,125.13	20.12	20.59	-96.43	193.85	1,983.04	2,157.01	2,117.02	39.99	53.940 SF	

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 523H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	89.66	0.18	29.95	29.96				
100.00	100.00	99.40	99.40	0.09	0.09	89.66	0.18	29.95	29.95	29.78	0.17	174.710	
200.00	200.00	199.40	199.40	0.31	0.31	89.66	0.18	29.95	29.95	29.33	0.62	48.297	
300.00	300.00	299.40	299.40	0.54	0.53	89.66	0.18	29.95	29.95	28.88	1.07	28.000	
400.00	400.00	399.40	399.40	0.76	0.76	89.66	0.18	29.95	29.95	28.43	1.52	19.715	
500.00	500.00	499.40	499.40	0.99	0.98	89.66	0.18	29.95	29.95	27.98	1.97	15.213	
600.00	600.00	599.40	599.40	1.21	1.21	89.66	0.18	29.95	29.95	27.53	2.42	12.385	
700.00	700.00	699.40	699.40	1.43	1.43	89.66	0.18	29.95	29.95	27.08	2.87	10.444	
800.00	800.00	799.40	799.40	1.66	1.66	89.66	0.18	29.95	29.95	26.63	3.32	9.029	
900.00	900.00	899.40	899.40	1.88	1.88	89.66	0.18	29.95	29.95	26.18	3.77	7.951	
1,000.00	1,000.00	999.40	999.40	2.11	2.11	89.66	0.18	29.95	29.95	25.73	4.22	7.103	
1,100.00	1,100.00	1,099.40	1,099.40	2.33	2.33	89.66	0.18	29.95	29.95	25.28	4.67	6.419	
1,200.00	1,200.00	1,199.40	1,199.40	2.56	2.56	89.66	0.18	29.95	29.95	24.84	5.12	5.855	
1,300.00	1,300.00	1,299.40	1,299.40	2.78	2.78	89.66	0.18	29.95	29.95	24.39	5.56	5.382	
1,400.00	1,400.00	1,399.40	1,399.40	3.01	3.01	89.66	0.18	29.95	29.95	23.94	6.01	4.980	
1,500.00	1,500.00	1,499.40	1,499.40	3.23	3.23	89.66	0.18	29.95	29.95	23.49	6.46	4.633	
1,600.00	1,600.00	1,599.40	1,599.40	3.46	3.46	89.66	0.18	29.95	29.95	23.04	6.91	4.332	
1,700.00	1,700.00	1,699.40	1,699.40	3.68	3.68	89.66	0.18	29.95	29.95	22.59	7.36	4.068	
1,800.00	1,800.00	1,799.40	1,799.40	3.91	3.91	89.66	0.18	29.95	29.95	22.14	7.81	3.834	
1,900.00	1,900.00	1,899.40	1,899.40	4.13	4.13	89.66	0.18	29.95	29.95	21.69	8.26	3.625	
2,000.00	2,000.00	1,999.40	1,999.40	4.36	4.36	89.66	0.18	29.95	29.95	21.24	8.71	3.438	
2,100.00	2,100.00	2,099.40	2,099.40	4.58	4.58	89.66	0.18	29.95	29.95	20.79	9.16	3.269	
2,200.00	2,200.00	2,199.40	2,199.40	4.81	4.80	89.66	0.18	29.95	29.95	20.34	9.61	3.116	
2,300.00	2,300.00	2,299.40	2,299.40	5.03	5.03	89.66	0.18	29.95	29.95	19.89	10.06	2.977	
2,400.00	2,400.00	2,399.40	2,399.40	5.26	5.25	89.66	0.18	29.95	29.95	19.44	10.51	2.850	
2,500.00	2,500.00	2,499.40	2,499.40	5.48	5.48	89.66	0.18	29.95	29.95	18.99	10.96	2.733	
2,600.00	2,600.00	2,599.40	2,599.40	5.71	5.70	89.66	0.18	29.95	29.95	18.54	11.41	2.625	
2,700.00	2,700.00	2,699.40	2,699.40	5.93	5.93	89.66	0.18	29.95	29.95	18.09	11.86	2.526	
2,800.00	2,800.00	2,799.40	2,799.40	6.15	6.15	89.66	0.18	29.95	29.95	17.64	12.31	2.433	
2,900.00	2,900.00	2,899.40	2,899.40	6.38	6.38	89.66	0.18	29.95	29.95	17.19	12.76	2.348	
3,000.00	3,000.00	2,999.40	2,999.40	6.60	6.60	89.66	0.18	29.95	29.95	16.74	13.21	2.268	
3,100.00	3,100.00	3,099.40	3,099.40	6.83	6.83	89.66	0.18	29.95	29.95	16.29	13.66	2.193	
3,200.00	3,200.00	3,199.40	3,199.40	7.05	7.05	89.66	0.18	29.95	29.95	15.84	14.11	2.123	
3,300.00	3,300.00	3,299.40	3,299.40	7.28	7.28	89.66	0.18	29.95	29.95	15.39	14.56	2.058	
3,400.00	3,400.00	3,399.40	3,399.40	7.50	7.50	89.66	0.18	29.95	29.95	14.95	15.01	1.996	
3,500.00	3,500.00	3,499.40	3,499.40	7.73	7.73	89.66	0.18	29.95	29.95	14.50	15.45	1.938 CC. ES	
3,600.00	3,600.00	3,598.89	3,598.89	7.95	7.94	89.20	0.43	30.78	30.78	14.89	15.89	1.937	
3,700.00	3,700.00	3,698.32	3,698.28	8.18	8.15	87.96	1.18	33.25	33.29	16.98	16.31	2.041	
3,800.00	3,800.00	3,797.63	3,797.50	8.40	8.35	86.27	2.44	37.37	37.50	20.77	16.73	2.242	
3,900.00	3,900.00	3,896.77	3,896.45	8.63	8.56	84.46	4.19	43.13	43.43	26.29	17.14	2.533	
4,000.00	4,000.00	3,995.69	3,995.07	8.85	8.77	82.75	6.43	50.50	51.09	33.54	17.55	2.911	
4,100.00	4,100.00	4,095.28	4,094.30	9.07	8.99	123.86	8.92	58.69	60.06	42.08	17.98	3.341	
4,200.00	4,199.96	4,194.78	4,193.43	9.29	9.21	124.46	11.40	66.87	70.01	51.60	18.41	3.804	
4,300.00	4,299.86	4,294.16	4,292.44	9.51	9.43	125.91	13.89	75.04	80.97	62.14	18.83	4.300	
4,400.00	4,399.68	4,393.39	4,391.30	9.73	9.65	127.82	16.37	83.20	92.96	73.70	19.26	4.827	
4,500.00	4,499.48	4,492.59	4,490.13	9.95	9.87	129.49	18.84	91.36	105.26	85.57	19.69	5.346	
4,600.00	4,599.28	4,591.79	4,588.97	10.17	10.10	130.81	21.32	99.51	117.63	97.51	20.12	5.846	
4,700.00	4,699.08	4,690.99	4,687.80	10.40	10.32	131.88	23.80	107.67	130.04	109.49	20.55	6.327	
4,800.00	4,798.88	4,790.19	4,786.63	10.62	10.55	132.77	26.28	115.83	142.50	121.51	20.99	6.790	
4,900.00	4,898.68	4,889.39	4,885.47	10.85	10.78	133.51	28.76	123.98	154.98	133.55	21.42	7.234	
5,000.00	4,998.48	4,988.59	4,984.30	11.07	11.01	134.14	31.24	132.14	167.48	145.62	21.86	7.661	
5,100.00	5,098.27	5,087.79	5,083.13	11.30	11.25	134.68	33.72	140.30	180.00	157.70	22.30	8.072	

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 523H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,198.07	5,186.99	5,181.96	11.53	11.48	135.15	36.20	148.45	192.53	169.79	22.74	8.468	
5,300.00	5,297.87	5,286.19	5,280.80	11.75	11.71	135.57	38.68	156.61	205.08	181.90	23.18	8.848	
5,400.00	5,397.67	5,385.39	5,379.63	11.98	11.95	135.93	41.16	164.77	217.63	194.01	23.62	9.214	
5,500.00	5,497.47	5,484.59	5,478.46	12.21	12.19	136.26	43.64	172.92	230.19	206.13	24.06	9.566	
5,600.00	5,597.27	5,583.79	5,577.30	12.44	12.43	136.55	46.12	181.08	242.76	218.26	24.51	9.906	
5,700.00	5,697.07	5,682.99	5,676.13	12.67	12.66	136.82	48.59	189.23	255.34	230.38	24.95	10.233	
5,800.00	5,796.87	5,782.19	5,774.96	12.90	12.90	137.06	51.07	197.39	267.91	242.52	25.40	10.549	
5,900.00	5,896.67	5,881.39	5,873.79	13.14	13.15	137.27	53.55	205.55	280.50	254.65	25.84	10.854	
6,000.00	5,996.46	5,980.59	5,972.63	13.37	13.39	137.47	56.03	213.70	293.08	266.79	26.29	11.148	
6,100.00	6,096.26	6,079.79	6,071.46	13.60	13.63	137.65	58.51	221.86	305.68	278.94	26.74	11.432	
6,200.00	6,196.06	6,178.99	6,170.29	13.83	13.87	137.82	60.99	230.02	318.27	291.08	27.19	11.707	
6,300.00	6,295.86	6,278.19	6,269.13	14.07	14.11	137.98	63.47	238.17	330.86	303.23	27.64	11.972	
6,400.00	6,395.66	6,377.39	6,367.96	14.30	14.36	138.12	65.95	246.33	343.46	315.37	28.09	12.229	
6,500.00	6,495.46	6,476.59	6,466.79	14.53	14.60	138.26	68.43	254.49	356.06	327.52	28.54	12.477	
6,600.00	6,595.26	6,575.79	6,565.62	14.77	14.85	138.38	70.91	262.64	368.66	339.67	28.99	12.717	
6,700.00	6,695.06	6,674.99	6,664.46	15.00	15.09	138.50	73.39	270.80	381.26	351.82	29.44	12.950	
6,800.00	6,794.86	6,774.19	6,763.29	15.24	15.34	138.61	75.87	278.95	393.87	363.98	29.89	13.176	
6,900.00	6,894.65	6,873.39	6,862.12	15.47	15.59	138.71	78.34	287.11	406.48	376.13	30.35	13.395	
7,000.00	6,994.50	6,972.66	6,961.03	15.69	15.83	138.82	80.83	295.27	418.46	387.68	30.78	13.595	
7,100.00	7,094.45	7,072.14	7,060.14	15.86	16.08	138.71	83.31	303.45	428.53	397.35	31.18	13.743	
7,200.00	7,194.45	7,171.75	7,159.38	16.04	16.33	96.49	85.80	311.64	436.79	405.20	31.59	13.827	
7,300.00	7,294.45	7,271.38	7,258.64	16.26	16.58	96.05	88.29	319.83	444.70	412.66	32.04	13.881	
7,400.00	7,394.45	7,371.01	7,357.90	16.48	16.83	95.62	90.78	328.03	452.63	420.15	32.48	13.934	
7,500.00	7,494.45	7,470.64	7,457.17	16.70	17.08	95.21	93.27	336.22	460.58	427.65	32.93	13.987	
7,600.00	7,594.45	7,570.27	7,556.43	16.93	17.33	94.82	95.76	344.41	468.56	435.18	33.38	14.038	
7,700.00	7,694.45	7,681.35	7,667.20	17.15	17.56	94.45	98.17	352.33	475.51	441.65	33.85	14.045	
7,800.00	7,794.45	7,794.43	7,780.16	17.37	17.77	94.23	99.66	357.24	479.74	445.43	34.31	13.982	
7,900.00	7,894.45	7,907.72	7,893.43	17.59	17.98	94.15	100.18	358.95	481.21	446.47	34.74	13.850	
8,000.00	7,994.45	8,008.15	7,993.85	17.81	18.17	94.15	100.18	358.95	481.21	446.05	35.16	13.684	
8,100.00	8,094.45	8,108.15	8,093.85	18.03	18.38	94.15	100.18	358.95	481.21	445.61	35.60	13.516	
8,200.00	8,194.45	8,208.15	8,193.85	18.25	18.59	94.15	100.18	358.95	481.21	445.17	36.04	13.352	
8,300.00	8,294.45	8,300.00	8,285.35	18.47	18.75	94.96	93.33	358.96	481.84	445.41	36.43	13.227	
8,400.00	8,394.45	8,390.57	8,373.37	18.69	18.89	97.43	72.37	358.99	484.49	447.72	36.77	13.175	
8,500.00	8,494.42	8,471.80	8,448.62	18.90	19.01	-78.55	41.99	359.04	490.81	453.80	37.01	13.261	
8,600.00	8,593.14	8,550.00	8,516.33	19.08	19.13	-74.50	2.97	359.09	499.58	462.52	37.06	13.481	
8,700.00	8,687.72	8,623.24	8,574.37	19.19	19.23	-71.00	-41.61	359.16	509.34	472.42	36.93	13.793	
8,800.00	8,775.28	8,700.00	8,628.58	19.32	19.36	-67.85	-95.88	359.24	519.17	482.43	36.74	14.131	
8,900.00	8,853.18	8,766.97	8,669.59	19.43	19.49	-65.47	-148.78	359.32	528.15	491.72	36.43	14.497	
9,000.00	8,919.05	8,837.05	8,705.59	19.55	19.66	-63.55	-208.85	359.40	535.67	499.42	36.25	14.778	
9,100.00	8,970.87	8,900.00	8,731.46	19.77	19.86	-62.27	-266.20	359.49	541.24	505.07	36.18	14.961	
9,200.00	9,007.08	8,975.26	8,753.91	20.12	20.17	-61.45	-337.97	359.59	544.33	507.82	36.52	14.906	
9,300.00	9,026.58	9,050.00	8,766.72	20.58	20.54	-61.27	-411.56	359.70	544.96	507.80	37.16	14.667	
9,400.00	9,030.00	9,113.22	8,770.00	21.14	20.90	-61.49	-474.66	359.79	543.44	505.39	38.05	14.282	
9,500.00	9,030.00	9,213.22	8,770.00	21.79	21.56	-61.47	-574.66	359.94	543.10	503.83	39.27	13.832	
9,600.00	9,030.00	9,313.22	8,770.00	22.55	22.32	-61.45	-674.66	360.09	542.76	502.10	40.65	13.351	
9,700.00	9,030.00	9,413.22	8,770.00	23.40	23.18	-61.43	-774.66	360.23	542.42	500.21	42.20	12.852	
9,800.00	9,030.00	9,513.21	8,770.00	24.33	24.11	-61.41	-874.66	360.38	542.08	498.18	43.90	12.348	
9,900.00	9,030.00	9,613.21	8,770.00	25.33	25.11	-61.39	-974.66	360.53	541.74	496.02	45.72	11.849	
10,000.00	9,030.00	9,713.21	8,770.00	26.39	26.18	-61.37	-1,074.65	360.67	541.40	493.74	47.66	11.360	
10,100.00	9,030.00	9,813.21	8,770.00	27.51	27.30	-61.35	-1,174.65	360.82	541.06	491.37	49.69	10.888	
10,200.00	9,030.00	9,913.21	8,770.00	28.68	28.48	-61.33	-1,274.65	360.97	540.72	488.90	51.81	10.436	
10,300.00	9,030.00	10,013.21	8,770.00	29.89	29.69	-61.31	-1,374.65	361.11	540.38	486.36	54.01	10.004	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 523H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,400.00	9,030.00	10,113.21	8,770.00	31.14	30.95	-61.29	-1,474.65	361.26	540.04	483.76	56.28	9.595	
10,500.00	9,030.00	10,213.21	8,770.00	32.43	32.24	-61.27	-1,574.65	361.41	539.70	481.09	58.61	9.208	
10,600.00	9,030.00	10,313.21	8,770.00	33.75	33.56	-61.25	-1,674.65	361.55	539.36	478.37	60.99	8.843	
10,700.00	9,030.00	10,413.21	8,770.00	35.09	34.91	-61.23	-1,774.65	361.70	539.02	475.60	63.42	8.499	
10,800.00	9,030.00	10,513.21	8,770.00	36.46	36.28	-61.21	-1,874.65	361.85	538.68	472.79	65.89	8.175	
10,900.00	9,030.00	10,613.21	8,770.00	37.85	37.67	-61.19	-1,974.65	361.99	538.34	469.94	68.40	7.871	
11,000.00	9,030.00	10,713.21	8,770.00	39.25	39.08	-61.17	-2,074.65	362.14	538.00	467.06	70.94	7.584	
11,100.00	9,030.00	10,813.21	8,770.00	40.68	40.51	-61.15	-2,174.65	362.29	537.66	464.15	73.51	7.314	
11,200.00	9,030.00	10,913.20	8,770.00	42.12	41.95	-61.13	-2,274.64	362.43	537.32	461.22	76.10	7.061	
11,300.00	9,030.00	11,013.20	8,770.00	43.57	43.40	-61.11	-2,374.64	362.58	536.98	458.26	78.72	6.821	
11,400.00	9,030.00	11,113.20	8,770.00	45.04	44.87	-61.09	-2,474.64	362.73	536.64	455.28	81.36	6.596	
11,500.00	9,030.00	11,213.20	8,770.00	46.52	46.35	-61.07	-2,574.64	362.87	536.30	452.28	84.02	6.383	
11,600.00	9,030.00	11,313.20	8,770.00	48.01	47.84	-61.05	-2,674.64	363.02	535.96	449.26	86.70	6.182	
11,700.00	9,030.00	11,413.20	8,770.00	49.50	49.34	-61.03	-2,774.64	363.17	535.63	446.23	89.39	5.992	
11,800.00	9,030.00	11,513.20	8,770.00	51.01	50.85	-61.01	-2,874.64	363.32	535.29	443.19	92.10	5.812	
11,900.00	9,030.00	11,613.20	8,770.00	52.52	52.36	-60.99	-2,974.64	363.46	534.95	440.13	94.82	5.642	
12,000.00	9,030.00	11,713.20	8,770.00	54.05	53.88	-60.97	-3,074.64	363.61	534.61	437.06	97.55	5.480	
12,100.00	9,030.00	11,813.20	8,770.00	55.57	55.41	-60.95	-3,174.64	363.76	534.27	433.98	100.30	5.327	
12,200.00	9,030.00	11,913.20	8,770.00	57.11	56.95	-60.93	-3,274.64	363.90	533.93	430.88	103.05	5.181	
12,300.00	9,030.00	12,013.20	8,770.00	58.65	58.49	-60.91	-3,374.63	364.05	533.59	427.78	105.81	5.043	
12,400.00	9,030.00	12,113.20	8,770.00	60.19	60.03	-60.89	-3,474.63	364.20	533.25	424.68	108.58	4.911	
12,500.00	9,030.00	12,213.19	8,770.00	61.74	61.58	-60.87	-3,574.63	364.34	532.92	421.56	111.36	4.786	
12,600.00	9,030.00	12,313.19	8,770.00	63.29	63.14	-60.85	-3,674.63	364.49	532.58	418.44	114.14	4.666	
12,700.00	9,030.00	12,413.19	8,770.00	64.85	64.69	-60.83	-3,774.63	364.64	532.24	415.31	116.93	4.552	
12,800.00	9,030.00	12,513.19	8,770.00	66.41	66.25	-60.81	-3,874.63	364.78	531.90	412.18	119.73	4.443	
12,900.00	9,030.00	12,613.19	8,770.00	67.98	67.82	-60.79	-3,974.63	364.93	531.56	409.04	122.53	4.338	
13,000.00	9,030.00	12,713.19	8,770.00	69.55	69.39	-60.77	-4,074.63	365.08	531.22	405.89	125.33	4.238	
13,100.00	9,030.00	12,813.19	8,770.00	71.12	70.96	-60.75	-4,174.63	365.22	530.89	402.74	128.14	4.143	
13,200.00	9,030.00	12,913.19	8,770.00	72.69	72.53	-60.73	-4,274.63	365.37	530.55	399.59	130.96	4.051	
13,300.00	9,030.00	13,013.19	8,770.00	74.27	74.11	-60.71	-4,374.63	365.52	530.21	396.43	133.78	3.963	
13,400.00	9,030.00	13,113.19	8,770.00	75.85	75.69	-60.69	-4,474.63	365.66	529.87	393.27	136.60	3.879	
13,500.00	9,030.00	13,213.19	8,770.00	77.43	77.27	-60.67	-4,574.62	365.81	529.53	390.11	139.43	3.798	
13,600.00	9,030.00	13,313.19	8,770.00	79.01	78.86	-60.65	-4,674.62	365.96	529.20	386.94	142.26	3.720	
13,700.00	9,030.00	13,413.19	8,770.00	80.60	80.44	-60.63	-4,774.62	366.10	528.86	383.77	145.09	3.645	
13,800.00	9,030.00	13,513.19	8,770.00	82.19	82.03	-60.61	-4,874.62	366.25	528.52	380.60	147.92	3.573	
13,900.00	9,030.00	13,613.18	8,770.00	83.78	83.62	-60.59	-4,974.62	366.40	528.18	377.43	150.76	3.504	
14,000.00	9,030.00	13,713.18	8,770.00	85.37	85.21	-60.57	-5,074.62	366.54	527.85	374.25	153.60	3.437	
14,100.00	9,030.00	13,813.18	8,770.00	86.96	86.80	-60.54	-5,174.62	366.69	527.51	371.07	156.44	3.372	
14,200.00	9,030.00	13,913.18	8,770.00	88.56	88.40	-60.52	-5,274.62	366.84	527.17	367.89	159.28	3.310	
14,300.00	9,030.00	14,013.18	8,770.00	90.15	89.99	-60.50	-5,374.62	366.98	526.83	364.71	162.12	3.250	
14,400.00	9,030.00	14,113.18	8,770.00	91.75	91.59	-60.48	-5,474.62	367.13	526.50	361.53	164.97	3.191	
14,500.00	9,030.00	14,213.18	8,770.00	93.35	93.19	-60.46	-5,574.62	367.28	526.16	358.34	167.82	3.135	
14,600.00	9,030.00	14,313.18	8,770.00	94.95	94.79	-60.44	-5,674.62	367.42	525.82	355.16	170.66	3.081	
14,700.00	9,030.00	14,413.18	8,770.00	96.55	96.39	-60.42	-5,774.61	367.57	525.49	351.97	173.51	3.028	
14,800.00	9,030.00	14,513.18	8,770.00	98.16	97.99	-60.40	-5,874.61	367.72	525.15	348.78	176.36	2.978	
14,900.00	9,030.00	14,613.18	8,770.00	99.76	99.60	-60.38	-5,974.61	367.86	524.81	345.60	179.22	2.928	
15,000.00	9,030.00	14,713.18	8,770.00	101.37	101.20	-60.36	-6,074.61	368.01	524.48	342.41	182.07	2.881	
15,100.00	9,030.00	14,813.18	8,770.00	102.97	102.81	-60.34	-6,174.61	368.16	524.14	339.22	184.92	2.834	
15,200.00	9,030.00	14,913.17	8,770.00	104.58	104.41	-60.32	-6,274.61	368.30	523.80	336.03	187.78	2.790	
15,300.00	9,030.00	15,013.17	8,770.00	106.19	106.02	-60.29	-6,374.61	368.45	523.47	332.83	190.63	2.746	
15,400.00	9,030.00	15,113.17	8,770.00	107.79	107.63	-60.27	-6,474.61	368.60	523.13	329.64	193.49	2.704	
15,500.00	9,030.00	15,213.17	8,770.00	109.40	109.24	-60.25	-6,574.61	368.74	522.79	326.45	196.34	2.663	

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 523H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)					
15,600.00	9,030.00	15,313.17	8,770.00	111.01	110.85	-60.23	-6,674.61	368.89	522.46	323.26	199.20	2.623	
15,700.00	9,030.00	15,413.17	8,770.00	112.63	112.46	-60.21	-6,774.61	369.04	522.12	320.07	202.05	2.584	
15,800.00	9,030.00	15,513.17	8,770.00	114.24	114.07	-60.19	-6,874.60	369.18	521.78	316.87	204.91	2.546	
15,900.00	9,030.00	15,613.17	8,770.00	115.85	115.68	-60.17	-6,974.60	369.33	521.45	313.68	207.77	2.510	
16,000.00	9,030.00	15,713.17	8,770.00	117.46	117.29	-60.15	-7,074.60	369.48	521.11	310.49	210.63	2.474	
16,100.00	9,030.00	15,813.17	8,770.00	119.08	118.90	-60.13	-7,174.60	369.62	520.78	307.29	213.48	2.439	
16,200.00	9,030.00	15,913.17	8,770.00	120.69	120.52	-60.10	-7,274.60	369.77	520.44	304.10	216.34	2.406	
16,300.00	9,030.00	16,013.17	8,770.00	122.31	122.13	-60.08	-7,374.60	369.92	520.10	300.91	219.20	2.373	
16,400.00	9,030.00	16,113.17	8,770.00	123.92	123.75	-60.06	-7,474.60	370.06	519.77	297.71	222.06	2.341	
16,500.00	9,030.00	16,213.16	8,770.00	125.54	125.36	-60.04	-7,574.60	370.21	519.43	294.52	224.91	2.309	
16,600.00	9,030.00	16,313.16	8,770.00	127.16	126.98	-60.02	-7,674.60	370.36	519.10	291.33	227.77	2.279	
16,700.00	9,030.00	16,413.16	8,770.00	128.77	128.59	-60.00	-7,774.60	370.51	518.76	288.13	230.63	2.249	
16,800.00	9,030.00	16,513.16	8,770.00	130.39	130.21	-59.98	-7,874.60	370.65	518.43	284.94	233.48	2.220	
16,900.00	9,030.00	16,613.16	8,770.00	132.01	131.83	-59.95	-7,974.60	370.80	518.09	281.75	236.34	2.192	
17,000.00	9,030.00	16,713.16	8,770.00	133.63	133.45	-59.93	-8,074.59	370.95	517.75	278.56	239.20	2.165	
17,100.00	9,030.00	16,813.16	8,770.00	135.25	135.06	-59.91	-8,174.59	371.09	517.42	275.36	242.05	2.138	
17,200.00	9,030.00	16,913.16	8,770.00	136.86	136.68	-59.89	-8,274.59	371.24	517.08	272.17	244.91	2.111	
17,300.00	9,030.00	17,013.16	8,770.00	138.48	138.30	-59.87	-8,374.59	371.39	516.75	268.98	247.77	2.086	
17,400.00	9,030.00	17,113.16	8,770.00	140.10	139.92	-59.85	-8,474.59	371.53	516.41	265.79	250.62	2.061	
17,500.00	9,030.00	17,213.16	8,770.00	141.73	141.54	-59.83	-8,574.59	371.68	516.08	262.60	253.48	2.036	
17,600.00	9,030.00	17,313.16	8,770.00	143.35	143.16	-59.80	-8,674.59	371.83	515.74	259.41	256.33	2.012	
17,700.00	9,030.00	17,413.16	8,770.00	144.97	144.78	-59.78	-8,774.59	371.97	515.41	256.22	259.19	1.989	
17,800.00	9,030.00	17,513.16	8,770.00	146.59	146.40	-59.76	-8,874.59	372.12	515.07	253.03	262.04	1.966	
17,900.00	9,030.00	17,613.15	8,770.00	148.21	148.02	-59.74	-8,974.59	372.27	514.74	249.85	264.89	1.943	
18,000.00	9,030.00	17,713.15	8,770.00	149.83	149.64	-59.72	-9,074.59	372.41	514.41	246.66	267.75	1.921	
18,100.00	9,030.00	17,813.15	8,770.00	151.46	151.27	-59.70	-9,174.59	372.56	514.07	243.47	270.60	1.900	
18,200.00	9,030.00	17,913.15	8,770.00	153.08	152.89	-59.67	-9,274.58	372.71	513.74	240.29	273.45	1.879	
18,300.00	9,030.00	18,013.15	8,770.00	154.70	154.51	-59.65	-9,374.58	372.85	513.40	237.10	276.30	1.858	
18,400.00	9,030.00	18,113.15	8,770.00	156.33	156.13	-59.63	-9,474.58	373.00	513.07	233.91	279.15	1.838	
18,500.00	9,030.00	18,213.15	8,770.00	157.95	157.75	-59.61	-9,574.58	373.15	512.73	230.73	282.00	1.818	
18,600.00	9,030.00	18,313.15	8,770.00	159.57	159.38	-59.59	-9,674.58	373.29	512.40	227.55	284.85	1.799	
18,700.00	9,030.00	18,413.15	8,770.00	161.20	161.00	-59.56	-9,774.58	373.44	512.06	224.36	287.70	1.780	
18,800.00	9,030.00	18,513.15	8,770.00	162.82	162.62	-59.54	-9,874.58	373.59	511.73	221.18	290.55	1.761	
18,900.00	9,030.00	18,613.15	8,770.00	164.45	164.25	-59.52	-9,974.58	373.73	511.40	218.00	293.40	1.743	
19,000.00	9,030.00	18,713.15	8,770.00	166.07	165.87	-59.50	-10,074.58	373.88	511.06	214.82	296.24	1.725	
19,100.00	9,030.00	18,813.15	8,770.00	167.70	167.45	-59.48	-10,174.58	374.03	510.73	211.69	299.04	1.708	
19,110.80	9,030.00	18,822.21	8,770.00	167.87	167.56	-59.47	-10,183.64	374.04	510.70	211.39	299.30	1.706	
19,111.77	9,030.00	18,822.21	8,770.00	167.89	167.56	-59.47	-10,183.64	374.04	510.70	211.37	299.32	1.706 SF	

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 525H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	89.65	10.40	1,700.41	1,700.44				
100.00	100.00	99.70	99.70	0.09	0.09	89.65	10.40	1,700.41	1,700.44	1,700.27	0.17	9,904.237	
200.00	200.00	199.70	199.70	0.31	0.31	89.65	10.40	1,700.41	1,700.44	1,699.82	0.62	2,739.096	
300.00	300.00	299.70	299.70	0.54	0.53	89.65	10.40	1,700.41	1,700.44	1,699.37	1.07	1,588.699	
400.00	400.00	399.70	399.70	0.76	0.76	89.65	10.40	1,700.41	1,700.44	1,698.92	1.52	1,118.809	
500.00	500.00	499.70	499.70	0.99	0.98	89.65	10.40	1,700.41	1,700.44	1,698.47	1.97	863.431	
600.00	600.00	599.70	599.70	1.21	1.21	89.65	10.40	1,700.41	1,700.44	1,698.02	2.42	702.972	
700.00	700.00	699.70	699.70	1.43	1.43	89.65	10.40	1,700.41	1,700.44	1,697.57	2.87	592.806	
800.00	800.00	799.70	799.70	1.66	1.66	89.65	10.40	1,700.41	1,700.44	1,697.12	3.32	512.491	
900.00	900.00	899.70	899.70	1.88	1.88	89.65	10.40	1,700.41	1,700.44	1,696.67	3.77	451.341	
1,000.00	1,000.00	999.70	999.70	2.11	2.11	89.65	10.40	1,700.41	1,700.44	1,696.22	4.22	403.229	
1,100.00	1,100.00	1,099.70	1,099.70	2.33	2.33	89.65	10.40	1,700.41	1,700.44	1,695.78	4.67	364.386	
1,200.00	1,200.00	1,199.70	1,199.70	2.56	2.56	89.65	10.40	1,700.41	1,700.44	1,695.33	5.12	332.369	
1,300.00	1,300.00	1,299.70	1,299.70	2.78	2.78	89.65	10.40	1,700.41	1,700.44	1,694.88	5.57	305.524	
1,400.00	1,400.00	1,399.70	1,399.70	3.01	3.01	89.65	10.40	1,700.41	1,700.44	1,694.43	6.02	282.691	
1,500.00	1,500.00	1,499.70	1,499.70	3.23	3.23	89.65	10.40	1,700.41	1,700.44	1,693.98	6.46	263.034	
1,600.00	1,600.00	1,599.70	1,599.70	3.46	3.46	89.65	10.40	1,700.41	1,700.44	1,693.53	6.91	245.933	
1,700.00	1,700.00	1,699.70	1,699.70	3.68	3.68	89.65	10.40	1,700.41	1,700.44	1,693.08	7.36	230.920	
1,800.00	1,800.00	1,799.70	1,799.70	3.91	3.91	89.65	10.40	1,700.41	1,700.44	1,692.63	7.81	217.634	
1,900.00	1,900.00	1,899.70	1,899.70	4.13	4.13	89.65	10.40	1,700.41	1,700.44	1,692.18	8.26	205.794	
2,000.00	2,000.00	1,999.70	1,999.70	4.36	4.36	89.65	10.40	1,700.41	1,700.44	1,691.73	8.71	195.175	
2,100.00	2,100.00	2,099.70	2,099.70	4.58	4.58	89.65	10.40	1,700.41	1,700.44	1,691.28	9.16	185.599	
2,200.00	2,200.00	2,199.70	2,199.70	4.81	4.81	89.65	10.40	1,700.41	1,700.44	1,690.83	9.61	176.918	
2,300.00	2,300.00	2,299.70	2,299.70	5.03	5.03	89.65	10.40	1,700.41	1,700.44	1,690.38	10.06	169.014	
2,400.00	2,400.00	2,399.70	2,399.70	5.26	5.25	89.65	10.40	1,700.41	1,700.44	1,689.93	10.51	161.785	
2,500.00	2,500.00	2,499.70	2,499.70	5.48	5.48	89.65	10.40	1,700.41	1,700.44	1,689.48	10.96	155.149 CC, ES	
2,600.00	2,600.00	2,580.37	2,580.37	5.71	5.66	89.64	10.73	1,700.86	1,701.01	1,689.65	11.36	149.729	
2,700.00	2,700.00	2,660.95	2,660.93	5.93	5.83	89.60	11.74	1,702.23	1,702.72	1,690.96	11.76	144.836	
2,800.00	2,800.00	2,741.47	2,741.40	6.15	6.00	89.55	13.41	1,704.51	1,705.56	1,693.41	12.15	140.385	
2,900.00	2,900.00	2,821.89	2,821.72	6.38	6.18	89.47	15.74	1,707.70	1,709.55	1,697.01	12.54	136.319	
3,000.00	3,000.00	2,900.00	2,899.68	6.60	6.35	89.38	18.65	1,711.67	1,714.69	1,701.76	12.93	132.661	
3,100.00	3,100.00	2,982.32	2,981.75	6.83	6.53	89.25	22.40	1,716.77	1,720.97	1,707.65	13.32	129.205	
3,200.00	3,200.00	3,062.27	3,061.37	7.05	6.71	89.11	26.70	1,722.64	1,728.39	1,714.69	13.71	126.095	
3,300.00	3,300.00	3,142.00	3,140.65	7.28	6.89	88.95	31.64	1,729.39	1,736.97	1,722.88	14.09	123.253	
3,400.00	3,400.00	3,236.26	3,234.30	7.50	7.11	88.75	38.05	1,738.13	1,746.40	1,731.88	14.52	120.269	
3,500.00	3,500.00	3,335.60	3,332.97	7.73	7.35	88.53	44.82	1,747.37	1,755.88	1,740.91	14.97	117.326	
3,600.00	3,600.00	3,434.93	3,431.64	7.95	7.58	88.32	51.60	1,756.61	1,765.39	1,749.97	15.41	114.542	
3,700.00	3,700.00	3,534.26	3,530.31	8.18	7.83	88.11	58.37	1,765.85	1,774.92	1,759.06	15.86	111.904	
3,800.00	3,800.00	3,633.59	3,628.97	8.40	8.07	87.90	65.15	1,775.09	1,784.47	1,768.16	16.31	109.403	
3,900.00	3,900.00	3,732.93	3,727.64	8.63	8.32	87.69	71.92	1,784.34	1,794.05	1,777.29	16.76	107.028	
4,000.00	4,000.00	3,832.26	3,826.31	8.85	8.57	87.49	78.69	1,793.58	1,803.66	1,786.44	17.22	104.772	
4,100.00	4,100.00	3,931.58	3,924.97	9.07	8.82	129.10	85.47	1,802.82	1,813.83	1,796.16	17.67	102.678	
4,200.00	4,199.96	4,030.84	4,023.57	9.29	9.07	128.87	92.24	1,812.05	1,825.11	1,807.00	18.11	100.765	
4,300.00	4,299.86	4,130.03	4,122.10	9.51	9.33	128.68	99.00	1,821.28	1,837.48	1,818.92	18.56	98.997	
4,400.00	4,399.68	4,229.12	4,220.52	9.73	9.59	128.57	105.76	1,830.50	1,850.87	1,831.86	19.01	97.360	
4,500.00	4,499.48	4,328.18	4,318.92	9.95	9.85	128.53	112.52	1,839.71	1,864.48	1,845.02	19.46	95.806	
4,600.00	4,599.28	4,427.24	4,417.32	10.17	10.11	128.48	119.27	1,848.93	1,878.09	1,858.17	19.91	94.314	
4,700.00	4,699.08	4,526.30	4,515.72	10.40	10.37	128.44	126.03	1,858.15	1,891.70	1,871.33	20.37	92.882	
4,800.00	4,798.88	4,625.36	4,614.12	10.62	10.63	128.40	132.78	1,867.36	1,905.31	1,884.48	20.82	91.505	
4,900.00	4,898.68	4,724.42	4,712.52	10.85	10.90	128.37	139.54	1,876.58	1,918.92	1,897.64	21.28	90.181	
5,000.00	4,998.48	4,823.48	4,810.92	11.07	11.16	128.33	146.29	1,885.79	1,932.53	1,910.79	21.74	88.908	
5,100.00	5,098.27	4,922.54	4,909.32	11.30	11.43	128.29	153.05	1,895.01	1,946.14	1,923.94	22.20	87.682	

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 525H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,198.07	5,021.61	5,007.72	11.53	11.70	128.25	159.81	1,904.23	1,959.75	1,937.10	22.66	86.502	
5,300.00	5,297.87	5,120.67	5,106.12	11.75	11.97	128.21	166.56	1,913.44	1,973.37	1,950.25	23.12	85.364	
5,400.00	5,397.67	5,219.73	5,204.52	11.98	12.23	128.18	173.32	1,922.66	1,986.98	1,963.40	23.58	84.268	
5,500.00	5,497.47	5,318.79	5,302.92	12.21	12.50	128.14	180.07	1,931.87	2,000.60	1,976.55	24.04	83.211	
5,600.00	5,597.27	5,417.85	5,401.32	12.44	12.78	128.11	186.83	1,941.09	2,014.21	1,989.70	24.51	82.190	
5,700.00	5,697.07	5,516.91	5,499.72	12.67	13.05	128.07	193.58	1,950.31	2,027.83	2,002.86	24.97	81.205	
5,800.00	5,796.87	5,615.97	5,598.12	12.90	13.32	128.04	200.34	1,959.52	2,041.45	2,016.01	25.44	80.253	
5,900.00	5,896.67	5,715.03	5,696.52	13.14	13.59	128.00	207.09	1,968.74	2,055.06	2,029.16	25.90	79.333	
6,000.00	5,996.46	5,814.09	5,794.92	13.37	13.86	127.97	213.85	1,977.95	2,068.68	2,042.31	26.37	78.443	
6,100.00	6,096.26	5,913.15	5,893.32	13.60	14.14	127.94	220.61	1,987.17	2,082.30	2,055.46	26.84	77.583	
6,200.00	6,196.06	6,012.22	5,991.72	13.83	14.41	127.90	227.36	1,996.39	2,095.92	2,068.62	27.31	76.750	
6,300.00	6,295.86	6,111.28	6,090.12	14.07	14.69	127.87	234.12	2,005.60	2,109.54	2,081.77	27.78	75.943	
6,400.00	6,395.66	6,210.34	6,188.52	14.30	14.96	127.84	240.87	2,014.82	2,123.17	2,094.92	28.25	75.162	
6,500.00	6,495.46	6,309.40	6,286.92	14.53	15.24	127.81	247.63	2,024.03	2,136.79	2,108.07	28.72	74.405	
6,600.00	6,595.26	6,408.46	6,385.32	14.77	15.52	127.78	254.38	2,033.25	2,150.41	2,121.22	29.19	73.671	
6,700.00	6,695.06	6,507.52	6,483.72	15.00	15.79	127.74	261.14	2,042.46	2,164.04	2,134.37	29.66	72.959 SF	

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 533H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	89.65	10.16	1,670.43	1,670.46				
100.00	100.00	99.00	99.00	0.09	0.09	89.65	10.16	1,670.43	1,670.46	1,670.29	0.17	9,763.838	
200.00	200.00	199.00	199.00	0.31	0.31	89.65	10.16	1,670.43	1,670.46	1,669.84	0.62	2,697.639	
300.00	300.00	299.00	299.00	0.54	0.53	89.65	10.16	1,670.43	1,670.46	1,669.39	1.07	1,562.986	
400.00	400.00	399.00	399.00	0.76	0.76	89.65	10.16	1,670.43	1,670.46	1,668.94	1.52	1,100.222	
500.00	500.00	499.00	499.00	0.99	0.98	89.65	10.16	1,670.43	1,670.46	1,668.49	1.97	848.886	
600.00	600.00	599.00	599.00	1.21	1.21	89.65	10.16	1,670.43	1,670.46	1,668.04	2.42	691.027	
700.00	700.00	699.00	699.00	1.43	1.43	89.65	10.16	1,670.43	1,670.46	1,667.59	2.87	582.673	
800.00	800.00	799.00	799.00	1.66	1.66	89.65	10.16	1,670.43	1,670.46	1,667.14	3.32	503.694	
900.00	900.00	899.00	899.00	1.88	1.88	89.65	10.16	1,670.43	1,670.46	1,666.69	3.77	443.569	
1,000.00	1,000.00	999.00	999.00	2.11	2.11	89.65	10.16	1,670.43	1,670.46	1,666.25	4.22	396.268	
1,100.00	1,100.00	1,099.00	1,099.00	2.33	2.33	89.65	10.16	1,670.43	1,670.46	1,665.80	4.67	358.082	
1,200.00	1,200.00	1,199.00	1,199.00	2.56	2.56	89.65	10.16	1,670.43	1,670.46	1,665.35	5.11	326.609	
1,300.00	1,300.00	1,299.00	1,299.00	2.78	2.78	89.65	10.16	1,670.43	1,670.46	1,664.90	5.56	300.222	
1,400.00	1,400.00	1,399.00	1,399.00	3.01	3.01	89.65	10.16	1,670.43	1,670.46	1,664.45	6.01	277.780	
1,500.00	1,500.00	1,499.00	1,499.00	3.23	3.23	89.65	10.16	1,670.43	1,670.46	1,664.00	6.46	258.459	
1,600.00	1,600.00	1,599.00	1,599.00	3.46	3.46	89.65	10.16	1,670.43	1,670.46	1,663.55	6.91	241.652	
1,700.00	1,700.00	1,699.00	1,699.00	3.68	3.68	89.65	10.16	1,670.43	1,670.46	1,663.10	7.36	226.897	
1,800.00	1,800.00	1,799.00	1,799.00	3.91	3.90	89.65	10.16	1,670.43	1,670.46	1,662.65	7.81	213.840	
1,900.00	1,900.00	1,899.00	1,899.00	4.13	4.13	89.65	10.16	1,670.43	1,670.46	1,662.20	8.26	202.204	
2,000.00	2,000.00	1,999.00	1,999.00	4.36	4.35	89.65	10.16	1,670.43	1,670.46	1,661.75	8.71	191.789	
2,100.00	2,100.00	2,099.00	2,099.00	4.58	4.58	89.65	10.16	1,670.43	1,670.46	1,661.30	9.16	182.358	
2,200.00	2,200.00	2,199.00	2,199.00	4.81	4.80	89.65	10.16	1,670.43	1,670.46	1,660.85	9.61	173.828	
2,300.00	2,300.00	2,299.00	2,299.00	5.03	5.03	89.65	10.16	1,670.43	1,670.46	1,660.40	10.06	166.060	
2,400.00	2,400.00	2,399.00	2,399.00	5.26	5.25	89.65	10.16	1,670.43	1,670.46	1,659.95	10.51	158.956	
2,500.00	2,500.00	2,499.00	2,499.00	5.48	5.48	89.65	10.16	1,670.43	1,670.46	1,659.50	10.96	152.436	
2,600.00	2,600.00	2,599.00	2,599.00	5.71	5.70	89.65	10.16	1,670.43	1,670.46	1,659.05	11.41	146.429	
2,700.00	2,700.00	2,699.00	2,699.00	5.93	5.93	89.65	10.16	1,670.43	1,670.46	1,658.60	11.86	140.878	
2,800.00	2,800.00	2,799.00	2,799.00	6.15	6.15	89.65	10.16	1,670.43	1,670.46	1,658.15	12.31	135.732	
2,900.00	2,900.00	2,899.00	2,899.00	6.38	6.38	89.65	10.16	1,670.43	1,670.46	1,657.70	12.76	130.949	
3,000.00	3,000.00	2,999.00	2,999.00	6.60	6.60	89.65	10.16	1,670.43	1,670.46	1,657.25	13.21	126.491	
3,100.00	3,100.00	3,099.00	3,099.00	6.83	6.83	89.65	10.16	1,670.43	1,670.46	1,656.81	13.66	122.327	
3,200.00	3,200.00	3,199.00	3,199.00	7.05	7.05	89.65	10.16	1,670.43	1,670.46	1,656.36	14.11	118.429	
3,300.00	3,300.00	3,299.00	3,299.00	7.28	7.28	89.65	10.16	1,670.43	1,670.46	1,655.91	14.55	114.771	
3,400.00	3,400.00	3,399.00	3,399.00	7.50	7.50	89.65	10.16	1,670.43	1,670.46	1,655.46	15.00	111.332	
3,500.00	3,500.00	3,499.00	3,499.00	7.73	7.73	89.65	10.16	1,670.43	1,670.46	1,655.01	15.45	108.094	
3,600.00	3,600.00	3,599.00	3,599.00	7.95	7.95	89.65	10.16	1,670.43	1,670.46	1,654.56	15.90	105.038	
3,700.00	3,700.00	3,699.00	3,699.00	8.18	8.18	89.65	10.16	1,670.43	1,670.46	1,654.11	16.35	102.151	
3,800.00	3,800.00	3,799.00	3,799.00	8.40	8.40	89.65	10.16	1,670.43	1,670.46	1,653.66	16.80	99.418	
3,900.00	3,900.00	3,899.00	3,899.00	8.63	8.62	89.65	10.16	1,670.43	1,670.46	1,653.21	17.25	96.828	
4,000.00	4,000.00	3,999.00	3,999.00	8.85	8.85	89.65	10.16	1,670.43	1,670.46	1,652.76	17.70	94.369 CC	
4,100.00	4,100.00	4,094.90	4,094.90	9.07	9.07	131.51	10.94	1,670.54	1,671.16	1,653.02	18.14	92.140	
4,200.00	4,199.96	4,190.74	4,190.70	9.29	9.28	131.48	13.30	1,670.88	1,673.26	1,654.70	18.57	90.115	
4,300.00	4,299.86	4,286.52	4,286.40	9.51	9.50	131.42	17.25	1,671.45	1,676.77	1,657.77	19.00	88.259	
4,400.00	4,399.68	4,382.21	4,381.93	9.73	9.71	131.36	22.77	1,672.24	1,681.61	1,662.18	19.43	86.553	
4,500.00	4,499.48	4,477.81	4,477.26	9.95	9.93	131.27	29.87	1,673.25	1,686.92	1,667.06	19.86	84.943	
4,600.00	4,599.28	4,573.99	4,573.03	10.17	10.14	131.13	38.57	1,674.50	1,692.49	1,672.20	20.29	83.401	
4,700.00	4,699.08	4,673.71	4,672.28	10.40	10.37	130.97	48.16	1,675.88	1,698.17	1,677.43	20.74	81.883	
4,800.00	4,798.88	4,773.44	4,771.54	10.62	10.59	130.81	57.75	1,677.25	1,703.85	1,682.67	21.19	80.420	
4,900.00	4,898.68	4,873.16	4,870.79	10.85	10.82	130.65	67.34	1,678.62	1,709.55	1,687.92	21.64	79.009	
5,000.00	4,898.48	4,872.88	4,870.04	11.07	11.05	130.49	76.93	1,680.00	1,715.27	1,693.18	22.09	77.647	
5,100.00	5,098.27	5,072.60	5,069.29	11.30	11.28	130.33	86.52	1,681.37	1,721.00	1,698.45	22.55	76.334	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 535H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,200.00	5,198.07	5,172.33	5,168.54	11.53	11.52	130.17	96.11	1,682.75	1,726.74	1,703.73	23.00	75.065	
5,300.00	5,297.87	5,272.05	5,267.79	11.75	11.75	130.02	105.70	1,684.12	1,732.49	1,709.03	23.46	73.841	
5,400.00	5,397.67	5,371.77	5,367.04	11.98	11.99	129.86	115.29	1,685.49	1,738.26	1,714.33	23.92	72.658	
5,500.00	5,497.47	5,471.49	5,466.29	12.21	12.23	129.71	124.88	1,686.87	1,744.03	1,719.65	24.39	71.516	
5,600.00	5,597.27	5,571.22	5,565.54	12.44	12.47	129.55	134.47	1,688.24	1,749.83	1,724.97	24.85	70.412	
5,700.00	5,697.07	5,670.94	5,664.79	12.67	12.71	129.40	144.06	1,689.62	1,755.63	1,730.31	25.32	69.344	
5,800.00	5,796.87	5,770.66	5,764.04	12.90	12.95	129.25	153.65	1,690.99	1,761.45	1,735.66	25.79	68.312	
5,900.00	5,896.67	5,870.38	5,863.29	13.14	13.20	129.10	163.24	1,692.36	1,767.27	1,741.02	26.25	67.313	
6,000.00	5,996.46	5,970.11	5,962.55	13.37	13.44	128.95	172.83	1,693.74	1,773.11	1,746.39	26.72	66.347	
6,100.00	6,096.26	6,069.83	6,061.80	13.60	13.69	128.80	182.42	1,695.11	1,778.97	1,751.77	27.20	65.411	
6,200.00	6,196.06	6,169.55	6,161.05	13.83	13.93	128.65	192.01	1,696.49	1,784.83	1,757.16	27.67	64.505	
6,300.00	6,295.86	6,269.27	6,260.30	14.07	14.18	128.51	201.60	1,697.86	1,790.71	1,762.56	28.14	63.627	
6,400.00	6,395.66	6,369.00	6,359.55	14.30	14.43	128.36	211.19	1,699.23	1,796.59	1,767.98	28.62	62.776	
6,500.00	6,495.46	6,468.72	6,458.80	14.53	14.68	128.21	220.78	1,700.61	1,802.49	1,773.40	29.10	61.952	
6,600.00	6,595.26	6,568.44	6,558.05	14.77	14.92	128.07	230.37	1,701.98	1,808.40	1,778.83	29.57	61.152	
6,700.00	6,695.06	6,668.16	6,657.30	15.00	15.17	127.93	239.96	1,703.36	1,814.33	1,784.28	30.05	60.376	
6,800.00	6,794.86	6,767.89	6,756.55	15.24	15.42	127.79	249.55	1,704.73	1,820.26	1,789.73	30.53	59.623	
6,900.00	6,894.65	6,867.61	6,855.80	15.47	15.68	127.65	259.14	1,706.10	1,826.20	1,795.19	31.01	58.892	
7,000.00	6,994.50	6,967.33	6,955.05	15.69	15.93	127.54	268.73	1,707.48	1,831.65	1,800.18	31.47	58.204	
7,100.00	7,094.45	7,066.99	7,054.24	15.86	16.18	127.36	278.31	1,708.85	1,835.56	1,803.67	31.90	57.545	
7,200.00	7,194.45	7,166.55	7,153.33	16.04	16.43	85.23	287.89	1,710.22	1,838.03	1,805.70	32.33	56.851	
7,300.00	7,294.45	7,266.07	7,252.38	16.26	16.68	84.93	297.46	1,711.60	1,840.24	1,807.44	32.80	56.100	
7,400.00	7,394.45	7,365.60	7,351.44	16.48	16.94	84.64	307.03	1,712.97	1,842.50	1,809.22	33.28	55.371	
7,500.00	7,494.45	7,465.13	7,450.50	16.70	17.19	84.35	316.60	1,714.34	1,844.80	1,811.05	33.75	54.663	
7,600.00	7,594.45	7,564.65	7,549.55	16.93	17.44	84.06	326.17	1,715.71	1,847.15	1,812.93	34.22	53.976	
7,700.00	7,694.45	7,676.26	7,660.75	17.15	17.68	83.77	335.61	1,717.06	1,849.27	1,814.59	34.68	53.330	
7,800.00	7,794.45	7,789.89	7,774.19	17.37	17.89	83.58	341.93	1,717.97	1,850.67	1,815.56	35.11	52.709	
7,900.00	7,894.45	7,903.80	7,888.05	17.59	18.09	83.49	344.91	1,718.39	1,851.34	1,815.81	35.53	52.101	
8,000.00	7,994.45	8,009.20	7,993.45	17.81	18.28	83.48	345.16	1,718.43	1,851.40	1,815.45	35.95	51.501	
8,100.00	8,094.45	8,109.20	8,093.45	18.03	18.49	83.48	345.16	1,718.43	1,851.40	1,815.01	36.39	50.883	
8,200.00	8,194.45	8,209.20	8,193.45	18.25	18.71	83.48	345.16	1,718.43	1,851.40	1,814.57	36.82	50.280	
8,300.00	8,294.45	8,343.22	8,327.04	18.47	18.92	83.73	337.23	1,718.44	1,850.83	1,813.58	37.25	49.685	
8,400.00	8,394.45	8,486.20	8,463.63	18.69	19.01	84.99	296.27	1,718.50	1,847.88	1,810.33	37.55	49.210	
8,500.00	8,494.42	8,604.57	8,566.21	18.90	19.03	-93.07	237.61	1,718.57	1,843.93	1,806.16	37.78	48.810	
8,600.00	8,593.14	8,706.87	8,643.55	19.06	19.03	-91.66	170.87	1,718.66	1,841.04	1,803.09	37.94	48.523	
8,700.00	8,687.72	8,799.14	8,702.15	19.19	19.07	-90.29	99.73	1,718.76	1,839.61	1,801.51	38.11	48.276	
8,749.89	8,732.45	8,842.32	8,725.48	19.25	19.10	-89.61	63.40	1,718.81	1,839.44	1,801.24	38.20	48.154	
8,800.00	8,775.28	8,884.15	8,745.41	19.32	19.15	-88.94	26.64	1,718.86	1,839.61	1,801.31	38.30	48.032	
8,900.00	8,853.18	8,963.82	8,775.72	19.43	19.29	-87.62	-46.98	1,718.95	1,840.84	1,802.29	38.55	47.758	
9,000.00	8,919.05	9,039.54	8,794.80	19.55	19.48	-86.34	-120.19	1,719.05	1,843.05	1,804.17	38.87	47.411	
9,100.00	8,970.87	9,112.27	8,803.90	19.77	19.72	-85.13	-192.30	1,719.15	1,845.94	1,806.62	39.31	46.953	
9,200.00	9,007.08	9,195.07	8,805.00	20.12	20.06	-83.94	-275.08	1,719.26	1,849.02	1,809.08	39.95	46.288	
9,300.00	9,026.58	9,293.02	8,805.00	20.58	20.57	-83.17	-373.03	1,719.39	1,850.86	1,809.99	40.87	45.286	
9,400.00	9,030.00	9,392.89	8,805.00	21.14	21.20	-83.05	-472.90	1,719.52	1,850.87	1,808.83	42.04	44.027	
9,500.00	9,030.00	9,492.89	8,805.00	21.79	21.94	-83.05	-572.90	1,719.66	1,850.47	1,807.05	43.42	42.615	
9,600.00	9,030.00	9,592.89	8,805.00	22.55	22.76	-83.05	-672.90	1,719.79	1,850.07	1,805.08	45.00	41.113	
9,700.00	9,030.00	9,692.89	8,805.00	23.40	23.68	-83.04	-772.90	1,719.92	1,849.68	1,802.93	46.75	39.566	
9,800.00	9,030.00	9,792.89	8,805.00	24.33	24.67	-83.04	-872.90	1,720.06	1,849.28	1,800.63	48.65	38.009	
9,900.00	9,030.00	9,892.89	8,805.00	25.33	25.72	-83.04	-972.90	1,720.19	1,848.88	1,798.19	50.70	36.470	
10,000.00	9,030.00	9,992.89	8,805.00	26.39	26.83	-83.04	-1,072.90	1,720.33	1,848.48	1,795.62	52.86	34.970	
10,100.00	9,030.00	10,092.89	8,805.00	27.51	28.00	-83.04	-1,172.90	1,720.46	1,848.09	1,792.96	55.13	33.522	
10,200.00	9,030.00	10,192.88	8,805.00	28.68	29.20	-83.04	-1,272.90	1,720.59	1,847.69	1,790.19	57.50	32.136	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 535H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,300.00	9,030.00	10,292.88	8,805.00	29.89	30.45	-83.04	-1,372.90	1,720.73	1,847.29	1,787.35	59.94	30.817	
10,400.00	9,030.00	10,392.88	8,805.00	31.14	31.74	-83.03	-1,472.90	1,720.86	1,846.89	1,784.43	62.47	29.567	
10,500.00	9,030.00	10,492.88	8,805.00	32.43	33.05	-83.03	-1,572.89	1,720.99	1,846.50	1,781.44	65.05	28.385	
10,600.00	9,030.00	10,592.88	8,805.00	33.75	34.39	-83.03	-1,672.89	1,721.13	1,846.10	1,778.40	67.70	27.270	
10,700.00	9,030.00	10,692.88	8,805.00	35.09	35.76	-83.03	-1,772.89	1,721.26	1,845.70	1,775.31	70.39	26.221	
10,800.00	9,030.00	10,792.88	8,805.00	36.46	37.15	-83.03	-1,872.89	1,721.40	1,845.30	1,772.17	73.13	25.233	
10,900.00	9,030.00	10,892.88	8,805.00	37.85	38.56	-83.03	-1,972.89	1,721.53	1,844.91	1,768.99	75.91	24.303	
11,000.00	9,030.00	10,992.88	8,805.00	39.25	39.98	-83.02	-2,072.89	1,721.66	1,844.51	1,765.78	78.73	23.428	
11,100.00	9,030.00	11,092.88	8,805.00	40.68	41.42	-83.02	-2,172.89	1,721.80	1,844.11	1,762.53	81.58	22.605	
11,200.00	9,030.00	11,192.88	8,805.00	42.12	42.88	-83.02	-2,272.89	1,721.93	1,843.71	1,759.26	84.46	21.830	
11,300.00	9,030.00	11,292.88	8,805.00	43.57	44.35	-83.02	-2,372.89	1,722.06	1,843.32	1,755.95	87.36	21.100	
11,400.00	9,030.00	11,392.88	8,805.00	45.04	45.82	-83.02	-2,472.89	1,722.20	1,842.92	1,752.63	90.29	20.411	
11,500.00	9,030.00	11,492.87	8,805.00	46.52	47.31	-83.02	-2,572.89	1,722.33	1,842.52	1,749.28	93.24	19.761	
11,600.00	9,030.00	11,592.87	8,805.00	48.01	48.81	-83.02	-2,672.88	1,722.46	1,842.12	1,745.91	96.21	19.147	
11,700.00	9,030.00	11,692.87	8,805.00	49.50	50.32	-83.01	-2,772.88	1,722.60	1,841.73	1,742.53	99.20	18.566	
11,800.00	9,030.00	11,792.87	8,805.00	51.01	51.83	-83.01	-2,872.88	1,722.73	1,841.33	1,739.13	102.20	18.017	
11,900.00	9,030.00	11,892.87	8,805.00	52.52	53.35	-83.01	-2,972.88	1,722.87	1,840.93	1,735.71	105.22	17.496	
12,000.00	9,030.00	11,992.87	8,805.00	54.05	54.88	-83.01	-3,072.88	1,723.00	1,840.53	1,732.28	108.25	17.002	
12,100.00	9,030.00	12,092.87	8,805.00	55.57	56.42	-83.01	-3,172.88	1,723.13	1,840.14	1,728.84	111.30	16.534	
12,200.00	9,030.00	12,192.87	8,805.00	57.11	57.96	-83.01	-3,272.88	1,723.27	1,839.74	1,725.39	114.35	16.088	
12,300.00	9,030.00	12,292.87	8,805.00	58.65	59.50	-83.00	-3,372.88	1,723.40	1,839.34	1,721.92	117.42	15.665	
12,400.00	9,030.00	12,392.87	8,805.00	60.19	61.05	-83.00	-3,472.88	1,723.53	1,838.94	1,718.45	120.49	15.262	
12,500.00	9,030.00	12,492.87	8,805.00	61.74	62.61	-83.00	-3,572.88	1,723.67	1,838.55	1,714.97	123.58	14.877	
12,600.00	9,030.00	12,592.87	8,805.00	63.29	64.16	-83.00	-3,672.88	1,723.80	1,838.15	1,711.48	126.67	14.511	
12,700.00	9,030.00	12,692.86	8,805.00	64.85	65.73	-83.00	-3,772.88	1,723.93	1,837.75	1,707.98	129.77	14.161	
12,800.00	9,030.00	12,792.86	8,805.00	66.41	67.29	-83.00	-3,872.87	1,724.07	1,837.35	1,704.47	132.88	13.827	
12,900.00	9,030.00	12,892.86	8,805.00	67.98	68.86	-83.00	-3,972.87	1,724.20	1,836.96	1,700.96	136.00	13.507	
13,000.00	9,030.00	12,992.86	8,805.00	69.55	70.43	-82.99	-4,072.87	1,724.34	1,836.56	1,697.44	139.12	13.201	
13,100.00	9,030.00	13,092.86	8,805.00	71.12	72.00	-82.99	-4,172.87	1,724.47	1,836.16	1,693.91	142.25	12.908	
13,200.00	9,030.00	13,192.86	8,805.00	72.69	73.58	-82.99	-4,272.87	1,724.60	1,835.76	1,690.38	145.38	12.627	
13,300.00	9,030.00	13,292.86	8,805.00	74.27	75.16	-82.99	-4,372.87	1,724.74	1,835.37	1,686.85	148.52	12.358	
13,400.00	9,030.00	13,392.86	8,805.00	75.85	76.74	-82.99	-4,472.87	1,724.87	1,834.97	1,683.31	151.66	12.099	
13,500.00	9,030.00	13,492.86	8,805.00	77.43	78.33	-82.99	-4,572.87	1,725.00	1,834.57	1,679.76	154.81	11.851	
13,600.00	9,030.00	13,592.86	8,805.00	79.01	79.91	-82.99	-4,672.87	1,725.14	1,834.17	1,676.22	157.96	11.612	
13,700.00	9,030.00	13,692.86	8,805.00	80.60	81.50	-82.98	-4,772.87	1,725.27	1,833.78	1,672.66	161.11	11.382	
13,800.00	9,030.00	13,792.86	8,805.00	82.19	83.09	-82.98	-4,872.87	1,725.41	1,833.38	1,669.11	164.27	11.161	
13,900.00	9,030.00	13,892.86	8,805.00	83.78	84.68	-82.98	-4,972.86	1,725.54	1,832.98	1,665.55	167.43	10.947	
14,000.00	9,030.00	13,992.85	8,805.00	85.37	86.28	-82.98	-5,072.86	1,725.67	1,832.58	1,661.98	170.60	10.742	
14,100.00	9,030.00	14,092.85	8,805.00	86.96	87.87	-82.98	-5,172.86	1,725.81	1,832.19	1,658.42	173.77	10.544	
14,200.00	9,030.00	14,192.85	8,805.00	88.56	89.47	-82.98	-5,272.86	1,725.94	1,831.79	1,654.85	176.94	10.352	
14,300.00	9,030.00	14,292.85	8,805.00	90.15	91.07	-82.97	-5,372.86	1,726.07	1,831.39	1,651.27	180.12	10.168	
14,400.00	9,030.00	14,392.85	8,805.00	91.75	92.66	-82.97	-5,472.86	1,726.21	1,830.99	1,647.70	183.29	9.989	
14,500.00	9,030.00	14,492.85	8,805.00	93.35	94.26	-82.97	-5,572.86	1,726.34	1,830.60	1,644.12	186.47	9.817	
14,600.00	9,030.00	14,592.85	8,805.00	94.95	95.87	-82.97	-5,672.86	1,726.47	1,830.20	1,640.54	189.66	9.650	
14,700.00	9,030.00	14,692.85	8,805.00	96.55	97.47	-82.97	-5,772.86	1,726.61	1,829.80	1,636.96	192.84	9.489	
14,800.00	9,030.00	14,792.85	8,805.00	98.16	99.07	-82.97	-5,872.86	1,726.74	1,829.40	1,633.37	196.03	9.332	
14,900.00	9,030.00	14,892.85	8,805.00	99.76	100.68	-82.97	-5,972.86	1,726.88	1,829.01	1,629.79	199.22	9.181	
15,000.00	9,030.00	14,992.85	8,805.00	101.37	102.28	-82.96	-6,072.85	1,727.01	1,828.61	1,626.20	202.41	9.034	
15,100.00	9,030.00	15,092.85	8,805.00	102.97	103.89	-82.96	-6,172.85	1,727.14	1,828.21	1,622.61	205.60	8.892	
15,200.00	9,030.00	15,192.84	8,805.00	104.58	105.50	-82.96	-6,272.85	1,727.28	1,827.81	1,619.01	208.80	8.754	
15,300.00	9,030.00	15,292.84	8,805.00	106.19	107.10	-82.96	-6,372.85	1,727.41	1,827.42	1,615.42	211.99	8.620	
15,400.00	9,030.00	15,392.84	8,805.00	107.79	108.71	-82.96	-6,472.85	1,727.54	1,827.02	1,611.83	215.19	8.490	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 535H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,500.00	9,030.00	15,492.84	8,805.00	109.40	110.32	-82.96	-6,572.85	1,727.68	1,826.62	1,608.23	218.39	8.364	
15,600.00	9,030.00	15,592.84	8,805.00	111.01	111.93	-82.95	-6,672.85	1,727.81	1,826.22	1,604.63	221.59	8.241	
15,700.00	9,030.00	15,692.84	8,805.00	112.63	113.55	-82.95	-6,772.85	1,727.95	1,825.83	1,601.03	224.80	8.122	
15,800.00	9,030.00	15,792.84	8,805.00	114.24	115.16	-82.95	-6,872.85	1,728.08	1,825.43	1,597.43	228.00	8.006	
15,900.00	9,030.00	15,892.84	8,805.00	115.85	116.77	-82.95	-6,972.85	1,728.21	1,825.03	1,593.82	231.21	7.894	
16,000.00	9,030.00	15,992.84	8,805.00	117.46	118.38	-82.95	-7,072.85	1,728.35	1,824.63	1,590.22	234.41	7.784	
16,100.00	9,030.00	16,092.84	8,805.00	119.08	120.00	-82.95	-7,172.84	1,728.48	1,824.24	1,586.62	237.62	7.677	
16,200.00	9,030.00	16,192.84	8,805.00	120.69	121.61	-82.95	-7,272.84	1,728.61	1,823.84	1,583.01	240.83	7.573	
16,300.00	9,030.00	16,292.84	8,805.00	122.31	123.23	-82.94	-7,372.84	1,728.75	1,823.44	1,579.40	244.04	7.472	
16,400.00	9,030.00	16,392.84	8,805.00	123.92	124.84	-82.94	-7,472.84	1,728.88	1,823.04	1,575.79	247.25	7.373	
16,500.00	9,030.00	16,492.83	8,805.00	125.54	126.46	-82.94	-7,572.84	1,729.01	1,822.65	1,572.18	250.46	7.277	
16,600.00	9,030.00	16,592.83	8,805.00	127.16	128.07	-82.94	-7,672.84	1,729.15	1,822.25	1,568.57	253.68	7.183	
16,700.00	9,030.00	16,692.83	8,805.00	128.77	129.69	-82.94	-7,772.84	1,729.28	1,821.85	1,564.96	256.89	7.092	
16,800.00	9,030.00	16,792.83	8,805.00	130.39	131.31	-82.94	-7,872.84	1,729.42	1,821.45	1,561.35	260.11	7.003	
16,900.00	9,030.00	16,892.83	8,805.00	132.01	132.93	-82.93	-7,972.84	1,729.55	1,821.06	1,557.73	263.32	6.916	
17,000.00	9,030.00	16,992.83	8,805.00	133.63	134.54	-82.93	-8,072.84	1,729.68	1,820.66	1,554.12	266.54	6.831	
17,100.00	9,030.00	17,092.83	8,805.00	135.25	136.16	-82.93	-8,172.84	1,729.82	1,820.26	1,550.50	269.76	6.748	
17,200.00	9,030.00	17,192.83	8,805.00	136.86	137.78	-82.93	-8,272.84	1,729.95	1,819.86	1,546.89	272.97	6.667	
17,300.00	9,030.00	17,292.83	8,805.00	138.48	139.40	-82.93	-8,372.83	1,730.08	1,819.47	1,543.27	276.19	6.588	
17,400.00	9,030.00	17,392.83	8,805.00	140.10	141.02	-82.93	-8,472.83	1,730.22	1,819.07	1,539.66	279.41	6.510	
17,500.00	9,030.00	17,492.83	8,805.00	141.73	142.64	-82.93	-8,572.83	1,730.35	1,818.67	1,536.04	282.63	6.435	
17,600.00	9,030.00	17,592.83	8,805.00	143.35	144.26	-82.92	-8,672.83	1,730.49	1,818.27	1,532.42	285.85	6.361	
17,700.00	9,030.00	17,692.82	8,805.00	144.97	145.88	-82.92	-8,772.83	1,730.62	1,817.88	1,528.80	289.08	6.289	
17,800.00	9,030.00	17,792.82	8,805.00	146.59	147.50	-82.92	-8,872.83	1,730.75	1,817.48	1,525.18	292.30	6.218	
17,900.00	9,030.00	17,892.82	8,805.00	148.21	149.13	-82.92	-8,972.83	1,730.89	1,817.08	1,521.56	295.52	6.149	
18,000.00	9,030.00	17,992.82	8,805.00	149.83	150.75	-82.92	-9,072.83	1,731.02	1,816.68	1,517.94	298.75	6.081	
18,100.00	9,030.00	18,092.82	8,805.00	151.46	152.37	-82.92	-9,172.83	1,731.15	1,816.29	1,514.32	301.97	6.015	
18,200.00	9,030.00	18,192.82	8,805.00	153.08	153.99	-82.91	-9,272.83	1,731.29	1,815.89	1,510.69	305.20	5.950	
18,300.00	9,030.00	18,292.82	8,805.00	154.70	155.61	-82.91	-9,372.83	1,731.42	1,815.49	1,507.07	308.42	5.886	
18,400.00	9,030.00	18,392.82	8,805.00	156.33	157.24	-82.91	-9,472.82	1,731.55	1,815.09	1,503.45	311.65	5.824	
18,500.00	9,030.00	18,492.82	8,805.00	157.95	158.86	-82.91	-9,572.82	1,731.69	1,814.70	1,499.82	314.87	5.763	
18,600.00	9,030.00	18,592.82	8,805.00	159.57	160.48	-82.91	-9,672.82	1,731.82	1,814.30	1,496.20	318.10	5.704	
18,700.00	9,030.00	18,692.82	8,805.00	161.20	162.11	-82.91	-9,772.82	1,731.96	1,813.90	1,492.57	321.33	5.645	
18,800.00	9,030.00	18,792.82	8,805.00	162.82	163.73	-82.90	-9,872.82	1,732.09	1,813.50	1,488.95	324.56	5.588	
18,900.00	9,030.00	18,892.82	8,805.00	164.45	165.36	-82.90	-9,972.82	1,732.22	1,813.11	1,485.32	327.78	5.531	
19,000.00	9,030.00	18,992.81	8,805.00	166.07	166.98	-82.90	-10,072.82	1,732.36	1,812.71	1,481.70	331.01	5.476	
19,100.00	9,030.00	19,092.58	8,805.00	167.70	168.60	-82.90	-10,172.58	1,732.49	1,812.31	1,478.07	334.24	5.422	
19,106.97	9,030.00	19,092.58	8,805.00	167.81	168.60	-82.90	-10,172.58	1,732.49	1,812.30	1,477.95	334.35	5.420	
19,111.77	9,030.00	19,092.58	8,805.00	167.89	168.60	-82.90	-10,172.58	1,732.49	1,812.30	1,477.88	334.42	5.419 ES, SF	

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
 Project: Eddy County, NM (NAD-83)
 Reference Site: Lusitano
 Site Error: 0.00 usft
 Reference Well: Lusitano 27-34 Fed Com 533H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
 TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
 MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 622H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	1.70	1.70	0.00	0.00	-11.17	149.79	-29.58	152.68				
100.00	100.00	101.70	101.70	0.09	0.09	-11.17	149.79	-29.58	152.68	152.51	0.18	868.664	
200.00	200.00	201.70	201.70	0.31	0.31	-11.17	149.79	-29.58	152.68	152.06	0.63	244.175	
300.00	300.00	301.70	301.70	0.54	0.54	-11.17	149.79	-29.58	152.68	151.61	1.07	142.053	
400.00	400.00	401.70	401.70	0.76	0.76	-11.17	149.79	-29.58	152.68	151.16	1.52	100.162	
500.00	500.00	501.70	501.70	0.99	0.99	-11.17	149.79	-29.58	152.68	150.71	1.97	77.351	
600.00	600.00	601.70	601.70	1.21	1.21	-11.17	149.79	-29.58	152.68	150.26	2.42	63.003	
700.00	700.00	701.70	701.70	1.43	1.44	-11.17	149.79	-29.58	152.68	149.81	2.87	53.145	
800.00	800.00	801.70	801.70	1.66	1.66	-11.17	149.79	-29.58	152.68	149.36	3.32	45.954	
900.00	900.00	901.70	901.70	1.88	1.89	-11.17	149.79	-29.58	152.68	148.91	3.77	40.478	
1,000.00	1,000.00	1,001.70	1,001.70	2.11	2.11	-11.17	149.79	-29.58	152.68	148.46	4.22	36.167	
1,100.00	1,100.00	1,101.70	1,101.70	2.33	2.34	-11.17	149.79	-29.58	152.68	148.01	4.67	32.687	
1,200.00	1,200.00	1,201.70	1,201.70	2.56	2.56	-11.17	149.79	-29.58	152.68	147.56	5.12	29.817	
1,300.00	1,300.00	1,301.70	1,301.70	2.78	2.79	-11.17	149.79	-29.58	152.68	147.11	5.57	27.411	
1,400.00	1,400.00	1,401.70	1,401.70	3.01	3.01	-11.17	149.79	-29.58	152.68	146.66	6.02	25.364	
1,500.00	1,500.00	1,501.70	1,501.70	3.23	3.24	-11.17	149.79	-29.58	152.68	146.21	6.47	23.601	
1,600.00	1,600.00	1,601.70	1,601.70	3.46	3.46	-11.17	149.79	-29.58	152.68	145.76	6.92	22.068	
1,700.00	1,700.00	1,701.70	1,701.70	3.68	3.69	-11.17	149.79	-29.58	152.68	145.31	7.37	20.722	
1,800.00	1,800.00	1,801.70	1,801.70	3.91	3.91	-11.17	149.79	-29.58	152.68	144.86	7.82	19.530	
1,900.00	1,900.00	1,901.70	1,901.70	4.13	4.14	-11.17	149.79	-29.58	152.68	144.42	8.27	18.468	
2,000.00	2,000.00	2,001.70	2,001.70	4.36	4.36	-11.17	149.79	-29.58	152.68	143.97	8.72	17.516	
2,100.00	2,100.00	2,101.70	2,101.70	4.58	4.59	-11.17	149.79	-29.58	152.68	143.52	9.17	16.657	
2,200.00	2,200.00	2,201.70	2,201.70	4.81	4.81	-11.17	149.79	-29.58	152.68	143.07	9.62	15.878	
2,300.00	2,300.00	2,301.70	2,301.70	5.03	5.03	-11.17	149.79	-29.58	152.68	142.62	10.07	15.169	
2,400.00	2,400.00	2,401.70	2,401.70	5.26	5.26	-11.17	149.79	-29.58	152.68	142.17	10.52	14.520	
2,500.00	2,500.00	2,501.70	2,501.70	5.48	5.48	-11.17	149.79	-29.58	152.68	141.72	10.96	13.925	
2,600.00	2,600.00	2,601.70	2,601.70	5.71	5.71	-11.17	149.79	-29.58	152.68	141.27	11.41	13.377	
2,700.00	2,700.00	2,701.70	2,701.70	5.93	5.93	-11.17	149.79	-29.58	152.68	140.82	11.86	12.870	
2,800.00	2,800.00	2,801.70	2,801.70	6.15	6.16	-11.17	149.79	-29.58	152.68	140.37	12.31	12.400	
2,900.00	2,900.00	2,901.70	2,901.70	6.38	6.38	-11.17	149.79	-29.58	152.68	139.92	12.76	11.963	
2,916.09	2,916.09	2,917.79	2,917.79	6.42	6.42	-11.17	149.79	-29.58	152.68	139.85	12.83	11.896	
3,000.00	3,000.00	3,001.66	3,001.66	6.60	6.61	-11.17	149.79	-29.58	152.68	139.47	13.21	11.556	
3,100.00	3,100.00	3,100.00	3,099.99	6.83	6.83	-11.11	150.66	-29.58	153.55	139.89	13.66	11.243	
3,200.00	3,200.00	3,198.10	3,198.07	7.05	7.05	-10.95	152.88	-29.58	155.76	141.66	14.10	11.047	
3,300.00	3,300.00	3,298.07	3,298.01	7.28	7.27	-10.79	155.25	-29.58	158.09	143.54	14.55	10.866	
3,400.00	3,400.00	3,398.04	3,397.95	7.50	7.50	-10.63	157.63	-29.58	160.42	145.43	15.00	10.696	
3,500.00	3,500.00	3,498.01	3,497.90	7.73	7.72	-10.47	160.01	-29.58	162.76	147.31	15.45	10.536	
3,600.00	3,600.00	3,597.98	3,597.84	7.95	7.95	-10.32	162.38	-29.58	165.10	149.20	15.90	10.385	
3,700.00	3,700.00	3,697.96	3,697.78	8.18	8.17	-10.18	164.76	-29.58	167.44	151.09	16.35	10.243	
3,800.00	3,800.00	3,797.93	3,797.73	8.40	8.40	-10.04	167.13	-29.58	169.77	152.98	16.80	10.108	
3,900.00	3,900.00	3,897.90	3,897.67	8.63	8.62	-9.90	169.51	-29.58	172.11	154.87	17.25	9.980	
4,000.00	4,000.00	3,997.87	3,997.62	8.85	8.85	-9.76	171.88	-29.58	174.46	156.76	17.70	9.859	
4,100.00	4,100.00	4,097.85	4,097.57	9.07	9.07	32.38	174.26	-29.58	176.06	157.92	18.14	9.705	
4,200.00	4,199.96	4,197.84	4,197.52	9.29	9.30	32.96	176.63	-29.58	176.20	157.62	18.58	9.481	
4,300.00	4,299.86	4,297.79	4,297.45	9.51	9.52	33.87	179.01	-29.58	174.91	155.88	19.03	9.192	
4,400.00	4,399.68	4,397.69	4,397.32	9.73	9.75	35.09	181.38	-29.58	172.33	152.85	19.47	8.849	
4,500.00	4,499.48	4,497.57	4,497.17	9.95	9.97	36.42	183.75	-29.58	169.54	149.62	19.92	8.511	
4,600.00	4,599.28	4,597.45	4,597.03	10.17	10.20	37.79	186.13	-29.58	166.85	146.48	20.37	8.193	
4,700.00	4,699.08	4,697.33	4,696.88	10.40	10.42	39.20	188.50	-29.58	164.26	143.44	20.81	7.892	
4,800.00	4,798.88	4,797.22	4,796.74	10.62	10.65	40.66	190.87	-29.58	161.77	140.50	21.26	7.608	
4,900.00	4,898.68	4,897.10	4,896.59	10.85	10.87	42.16	193.25	-29.58	159.38	137.67	21.71	7.341	
5,000.00	4,998.48	4,996.98	4,996.45	11.07	11.10	43.71	195.62	-29.58	157.11	134.95	22.16	7.090	

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

LEAM Drilling Services

Anticollision Report

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Well Error: 0.00 usft
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TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 622H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,098.27	5,096.87	5,096.30	11.30	11.32	45.30	197.99	-29.58	154.96	132.35	22.61	6.853	
5,200.00	5,198.07	5,196.75	5,196.15	11.53	11.55	46.93	200.37	-29.58	152.93	129.87	23.06	6.631	
5,300.00	5,297.87	5,296.63	5,296.01	11.75	11.77	48.61	202.74	-29.58	151.03	127.52	23.52	6.423	
5,400.00	5,397.67	5,396.51	5,395.86	11.98	12.00	50.33	205.11	-29.58	149.27	125.30	23.97	6.228	
5,500.00	5,497.47	5,496.40	5,495.72	12.21	12.22	52.08	207.48	-29.58	147.64	123.21	24.42	6.045	
5,600.00	5,597.27	5,596.28	5,595.57	12.44	12.45	53.88	209.86	-29.58	146.15	121.27	24.88	5.875	
5,700.00	5,697.07	5,696.16	5,695.43	12.67	12.67	55.71	212.23	-29.58	144.81	119.47	25.33	5.716	
5,800.00	5,796.87	5,796.05	5,795.28	12.90	12.90	57.57	214.60	-29.58	143.61	117.82	25.79	5.569	
5,900.00	5,896.67	5,895.93	5,895.14	13.14	13.12	59.46	216.98	-29.58	142.58	116.33	26.25	5.432	
6,000.00	5,996.46	5,995.81	5,994.99	13.37	13.35	61.38	219.35	-29.58	141.70	114.99	26.71	5.306	
6,100.00	6,096.26	6,095.69	6,094.85	13.60	13.57	63.31	221.72	-29.58	140.98	113.82	27.16	5.190	
6,200.00	6,196.06	6,195.58	6,194.70	13.83	13.80	65.27	224.10	-29.58	140.43	112.80	27.62	5.084	
6,300.00	6,295.86	6,295.46	6,294.56	14.07	14.03	67.24	226.47	-29.58	140.04	111.95	28.08	4.986	
6,400.00	6,395.66	6,395.34	6,394.41	14.30	14.25	69.21	228.84	-29.58	139.81	111.27	28.54	4.898	
6,483.60	6,479.10	6,478.85	6,477.89	14.50	14.44	70.87	230.83	-29.58	139.75	110.82	28.93	4.831 CC	
6,500.00	6,495.46	6,495.23	6,494.27	14.53	14.48	71.20	231.22	-29.58	139.76	110.75	29.00	4.819	
6,600.00	6,595.26	6,595.11	6,594.12	14.77	14.70	73.18	233.59	-29.58	139.87	110.40	29.46	4.747	
6,700.00	6,695.06	6,694.99	6,693.97	15.00	14.93	75.15	235.96	-29.58	140.14	110.22	29.93	4.683	
6,800.00	6,794.86	6,794.87	6,793.83	15.24	15.16	77.11	238.34	-29.58	140.59	110.20	30.39	4.627 ES	
6,900.00	6,894.65	6,894.76	6,893.68	15.47	15.38	79.06	240.71	-29.58	141.20	110.35	30.85	4.577	
7,000.00	6,994.50	6,994.67	6,993.57	15.69	15.61	80.88	243.08	-29.58	142.10	110.82	31.29	4.542	
7,100.00	7,094.45	7,094.65	7,093.52	15.86	15.83	81.26	245.46	-29.58	143.48	111.79	31.69	4.528	
7,200.00	7,194.45	7,194.63	7,193.47	16.04	16.06	39.02	247.83	-29.58	145.24	113.15	32.10	4.525	
7,300.00	7,294.45	7,294.60	7,293.41	16.26	16.29	38.43	250.21	-29.58	147.10	114.56	32.54	4.520	
7,400.00	7,394.45	7,394.57	7,393.36	16.48	16.51	37.86	252.58	-29.58	148.97	115.98	32.99	4.516	
7,500.00	7,494.45	7,494.54	7,493.30	16.70	16.74	37.31	254.96	-29.58	150.85	117.42	33.43	4.512	
7,600.00	7,594.45	7,594.52	7,593.24	16.93	16.96	36.77	257.33	-29.58	152.75	118.87	33.88	4.509	
7,700.00	7,694.45	7,694.49	7,693.19	17.15	17.19	36.24	259.71	-29.58	154.68	120.33	34.33	4.506	
7,800.00	7,794.45	7,794.46	7,793.13	17.37	17.42	35.73	262.08	-29.58	156.58	121.81	34.77	4.503	
7,900.00	7,894.45	7,894.43	7,893.07	17.59	17.64	35.23	264.46	-29.58	158.51	123.30	35.22	4.501	
8,000.00	7,994.45	7,994.40	7,993.02	17.81	17.87	34.74	266.83	-29.58	160.46	124.80	35.66	4.499	
8,100.00	8,094.45	8,094.37	8,092.96	18.03	18.09	34.26	269.21	-29.58	162.42	126.31	36.11	4.498	
8,200.00	8,194.45	8,194.35	8,192.91	18.25	18.32	33.80	271.59	-29.58	164.39	127.83	36.56	4.497	
8,300.00	8,294.45	8,294.32	8,292.85	18.47	18.55	33.34	273.96	-29.58	166.37	129.37	37.00	4.496	
8,400.00	8,394.45	8,394.29	8,392.79	18.69	18.77	32.90	276.34	-29.58	168.36	130.91	37.45	4.496 SF	
8,500.00	8,494.42	8,494.21	8,492.68	18.90	19.00	-147.36	278.71	-29.58	171.39	133.50	37.89	4.524	
8,600.00	8,593.14	8,592.53	8,590.98	19.06	19.22	-149.48	281.05	-29.58	186.40	148.14	38.26	4.872	
8,700.00	8,687.72	8,686.32	8,684.74	19.19	19.43	-152.58	283.27	-29.58	216.90	178.30	38.61	5.618	
8,800.00	8,775.28	8,772.72	8,771.12	19.32	19.63	-155.42	285.33	-29.58	263.11	224.19	38.92	6.760	
8,900.00	8,853.18	8,849.11	8,847.49	19.43	19.80	-157.19	287.14	-29.58	324.15	284.95	39.20	8.268	
9,000.00	8,919.05	8,913.17	8,911.53	19.55	19.95	-157.40	288.66	-29.58	398.20	358.76	39.44	10.096	
9,100.00	8,970.87	8,962.96	8,961.30	19.77	20.06	-155.19	289.85	-29.58	482.85	443.22	39.63	12.185	
9,200.00	9,007.08	8,996.95	8,995.28	20.12	20.14	-147.71	290.65	-29.58	575.31	535.56	39.75	14.473	
9,300.00	9,026.58	9,014.11	9,012.44	20.58	20.18	-121.65	291.06	-29.58	672.61	632.79	39.82	16.893	
9,400.00	9,030.00	9,015.16	9,013.48	21.14	20.18	-78.83	291.09	-29.58	771.72	731.89	39.83	19.376	
9,500.00	9,030.00	9,012.78	9,011.11	21.79	20.17	-77.42	291.03	-29.58	871.05	831.22	39.83	21.869	
9,600.00	9,030.00	9,010.40	9,008.73	22.55	20.17	-76.02	290.97	-29.58	970.52	930.68	39.84	24.363	
9,700.00	9,030.00	9,008.03	9,006.36	23.40	20.16	-74.64	290.92	-29.58	1,070.08	1,030.24	39.84	26.858	
9,800.00	9,030.00	9,005.65	9,003.98	24.33	20.16	-73.28	290.86	-29.58	1,169.71	1,129.86	39.85	29.352	
9,900.00	9,030.00	9,003.28	9,001.61	25.33	20.15	-71.93	290.80	-29.58	1,269.40	1,229.53	39.86	31.844	
10,000.00	9,030.00	9,000.90	8,999.23	26.39	20.15	-70.61	290.75	-29.58	1,369.12	1,329.25	39.88	34.335	
10,100.00	9,030.00	8,998.52	8,996.86	27.51	20.14	-69.31	290.69	-29.58	1,468.88	1,428.99	39.89	36.823	

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Lusitano - Lusitano 27-34 Fed Com 622H - OH - Plan #1												Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.00	9,030.00	8,996.15	8,994.48	28.68	20.14	-68.03	290.64	-29.58	1,568.67	1,528.76	39.91	39.308	
10,300.00	9,030.00	8,993.77	8,992.11	29.89	20.13	-66.77	290.58	-29.58	1,668.48	1,628.56	39.92	41.790	
10,400.00	9,030.00	8,991.40	8,989.73	31.14	20.13	-65.54	290.52	-29.58	1,768.31	1,728.36	39.94	44.269	
10,500.00	9,030.00	8,989.02	8,987.36	32.43	20.12	-64.33	290.47	-29.58	1,868.15	1,828.18	39.97	46.744	
10,600.00	9,030.00	8,986.65	8,984.98	33.75	20.11	-63.14	290.41	-29.58	1,968.01	1,928.02	39.99	49.214	
10,700.00	9,030.00	8,984.27	8,982.61	35.09	20.11	-61.98	290.35	-29.58	2,067.87	2,027.86	40.01	51.679	
10,800.00	9,030.00	8,981.89	8,980.23	36.46	20.10	-60.84	290.30	-29.58	2,167.75	2,127.71	40.04	54.140	

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 624H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	3.60	3.60	0.00	0.00	84.43	159.96	1,640.48	1,648.26					
100.00	100.00	103.60	103.60	0.09	0.09	84.43	159.96	1,640.48	1,648.26	1,648.08	0.18	9,155.078		
200.00	200.00	203.60	203.60	0.31	0.32	84.43	159.96	1,640.48	1,648.26	1,647.63	0.63	2,618.074		
300.00	300.00	303.60	303.60	0.54	0.54	84.43	159.96	1,640.48	1,648.26	1,647.18	1.08	1,527.437		
400.00	400.00	403.60	403.60	0.76	0.77	84.43	159.96	1,640.48	1,648.26	1,646.73	1.53	1,078.257		
500.00	500.00	503.60	503.60	0.99	0.99	84.43	159.96	1,640.48	1,648.26	1,646.28	1.98	833.226		
600.00	600.00	603.60	603.60	1.21	1.22	84.43	159.96	1,640.48	1,648.26	1,645.83	2.43	678.940		
700.00	700.00	703.60	703.60	1.43	1.44	84.43	159.96	1,640.48	1,648.26	1,645.38	2.88	572.864		
800.00	800.00	803.60	803.60	1.66	1.67	84.43	159.96	1,640.48	1,648.26	1,644.93	3.33	495.455		
900.00	900.00	903.60	903.60	1.88	1.89	84.43	159.96	1,640.48	1,648.26	1,644.48	3.78	436.476		
1,000.00	1,000.00	1,003.60	1,003.60	2.11	2.12	84.43	159.96	1,640.48	1,648.26	1,644.03	4.23	390.044		
1,100.00	1,100.00	1,103.60	1,103.60	2.33	2.34	84.43	159.96	1,640.48	1,648.26	1,643.58	4.68	352.542		
1,200.00	1,200.00	1,203.60	1,203.60	2.56	2.57	84.43	159.96	1,640.48	1,648.26	1,643.14	5.12	321.619		
1,300.00	1,300.00	1,303.60	1,303.60	2.78	2.79	84.43	159.96	1,640.48	1,648.26	1,642.69	5.57	295.683		
1,400.00	1,400.00	1,403.60	1,403.60	3.01	3.02	84.43	159.96	1,640.48	1,648.26	1,642.24	6.02	273.618		
1,500.00	1,500.00	1,503.60	1,503.60	3.23	3.24	84.43	159.96	1,640.48	1,648.26	1,641.79	6.47	254.617		
1,600.00	1,600.00	1,603.60	1,603.60	3.46	3.47	84.43	159.96	1,640.48	1,648.26	1,641.34	6.92	238.084		
1,700.00	1,700.00	1,703.60	1,703.60	3.68	3.69	84.43	159.96	1,640.48	1,648.26	1,640.89	7.37	223.567		
1,800.00	1,800.00	1,803.60	1,803.60	3.91	3.92	84.43	159.96	1,640.48	1,648.26	1,640.44	7.82	210.719		
1,900.00	1,900.00	1,903.60	1,903.60	4.13	4.14	84.43	159.96	1,640.48	1,648.26	1,639.99	8.27	199.267		
2,000.00	2,000.00	2,003.60	2,003.60	4.36	4.36	84.43	159.96	1,640.48	1,648.26	1,639.54	8.72	188.996		
2,100.00	2,100.00	2,103.60	2,103.60	4.58	4.59	84.43	159.96	1,640.48	1,648.26	1,639.09	9.17	179.732		
2,200.00	2,200.00	2,203.60	2,203.60	4.81	4.81	84.43	159.96	1,640.48	1,648.26	1,638.64	9.62	171.333		
2,300.00	2,300.00	2,303.60	2,303.60	5.03	5.04	84.43	159.96	1,640.48	1,648.26	1,638.19	10.07	163.684		
2,400.00	2,400.00	2,403.60	2,403.60	5.26	5.26	84.43	159.96	1,640.48	1,648.26	1,637.74	10.52	156.690		
2,500.00	2,500.00	2,505.02	2,505.02	5.48	5.49	84.43	159.96	1,640.48	1,648.26	1,637.29	10.97	150.233		
2,600.00	2,600.00	2,644.36	2,644.34	5.71	5.78	84.42	160.13	1,638.67	1,646.98	1,635.50	11.48	143.430		
2,700.00	2,700.00	2,783.53	2,783.41	5.93	6.06	84.38	160.61	1,633.50	1,643.31	1,631.33	11.98	137.195		
2,800.00	2,800.00	2,900.06	2,899.76	6.15	6.31	84.34	161.23	1,626.86	1,637.66	1,625.22	12.43	131.717		
2,900.00	2,900.00	2,999.88	2,999.40	6.38	6.52	84.30	161.78	1,620.92	1,631.79	1,618.92	12.86	126.868		
3,000.00	3,000.00	3,099.70	3,099.04	6.60	6.73	84.26	162.33	1,614.97	1,625.92	1,612.62	13.29	122.317		
3,100.00	3,100.00	3,199.53	3,198.68	6.83	6.94	84.22	162.89	1,609.03	1,620.05	1,606.32	13.72	118.040		
3,200.00	3,200.00	3,299.35	3,298.32	7.05	7.16	84.18	163.44	1,603.09	1,614.18	1,600.02	14.16	114.014		
3,300.00	3,300.00	3,399.17	3,397.97	7.28	7.38	84.14	163.99	1,597.14	1,608.31	1,593.72	14.59	110.218		
3,400.00	3,400.00	3,498.99	3,497.61	7.50	7.60	84.10	164.55	1,591.20	1,602.44	1,587.42	15.03	106.634		
3,500.00	3,500.00	3,598.81	3,597.25	7.73	7.82	84.05	165.10	1,585.25	1,596.58	1,581.11	15.46	103.245		
3,600.00	3,600.00	3,698.63	3,696.89	7.95	8.04	84.01	165.65	1,579.31	1,590.71	1,574.81	15.90	100.036		
3,700.00	3,700.00	3,798.45	3,796.54	8.18	8.27	83.97	166.21	1,573.36	1,584.85	1,568.51	16.34	96.994		
3,800.00	3,800.00	3,898.27	3,896.18	8.40	8.49	83.93	166.76	1,567.42	1,578.98	1,562.20	16.78	94.107		
3,900.00	3,900.00	3,998.09	3,995.82	8.63	8.72	83.88	167.31	1,561.48	1,573.12	1,555.90	17.22	91.363		
4,000.00	4,000.00	4,097.91	4,095.46	8.85	8.94	83.84	167.87	1,555.53	1,567.26	1,549.60	17.66	88.753		
4,100.00	4,100.00	4,197.77	4,195.14	9.07	9.17	125.74	168.42	1,549.59	1,561.91	1,543.81	18.10	86.314		
4,200.00	4,199.96	4,297.67	4,294.86	9.29	9.40	125.81	168.97	1,543.64	1,557.57	1,539.04	18.53	84.059		
4,300.00	4,299.86	4,397.59	4,394.60	9.51	9.63	125.92	169.53	1,537.69	1,554.26	1,535.30	18.96	81.958		
4,400.00	4,399.68	4,497.49	4,494.32	9.73	9.86	126.07	170.08	1,531.74	1,551.91	1,532.51	19.40	79.997		
4,500.00	4,499.48	4,597.39	4,594.04	9.95	10.09	126.21	170.64	1,525.79	1,549.78	1,529.94	19.84	78.127		
4,600.00	4,599.28	4,697.29	4,693.76	10.17	10.32	126.36	171.19	1,519.84	1,547.65	1,527.38	20.28	76.333		
4,700.00	4,699.08	4,797.18	4,793.48	10.40	10.55	126.51	171.74	1,513.89	1,545.54	1,524.82	20.71	74.611		
4,800.00	4,798.88	4,897.08	4,893.20	10.62	10.79	126.66	172.30	1,507.94	1,543.43	1,522.28	21.16	72.957		
4,900.00	4,898.68	4,996.98	4,992.92	10.85	11.02	126.81	172.85	1,501.99	1,541.34	1,519.74	21.60	71.368		
5,000.00	4,998.48	5,096.88	5,092.64	11.07	11.25	126.95	173.40	1,496.05	1,539.26	1,517.22	22.04	69.840		
5,100.00	5,098.27	5,196.78	5,192.36	11.30	11.49	127.10	173.96	1,490.10	1,537.19	1,514.70	22.48	68.369		

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 624H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,200.00	5,198.07	5,296.68	5,292.08	11.53	11.72	127.25	174.51	1,484.15	1,535.12	1,512.20	22.93	66.953	
5,300.00	5,297.87	5,396.57	5,391.80	11.75	11.96	127.40	175.07	1,478.20	1,533.07	1,509.70	23.37	65.590	
5,400.00	5,397.87	5,496.47	5,491.52	11.98	12.19	127.55	175.62	1,472.25	1,531.03	1,507.21	23.82	64.276	
5,500.00	5,497.47	5,596.37	5,591.24	12.21	12.43	127.70	176.17	1,466.30	1,529.00	1,504.73	24.27	63.008	
5,600.00	5,597.27	5,696.27	5,690.96	12.44	12.66	127.85	176.73	1,460.35	1,526.98	1,502.27	24.71	61.785	
5,700.00	5,697.07	5,796.17	5,790.68	12.67	12.90	128.01	177.28	1,454.40	1,524.97	1,499.81	25.16	60.605	
5,800.00	5,796.87	5,896.07	5,890.40	12.90	13.14	128.16	177.83	1,448.46	1,522.97	1,497.36	25.61	59.465	
5,900.00	5,896.67	5,995.96	5,990.12	13.14	13.37	128.31	178.39	1,442.51	1,520.99	1,494.93	26.06	58.363	
6,000.00	5,996.46	6,095.86	6,089.84	13.37	13.61	128.46	178.94	1,436.56	1,519.01	1,492.50	26.51	57.298	
6,100.00	6,096.26	6,195.76	6,189.55	13.60	13.85	128.61	179.50	1,430.61	1,517.04	1,490.08	26.96	56.268	
6,200.00	6,196.06	6,295.66	6,289.27	13.83	14.09	128.77	180.05	1,424.66	1,515.09	1,487.68	27.41	55.271	
6,300.00	6,295.86	6,395.56	6,388.99	14.07	14.32	128.92	180.60	1,418.71	1,513.14	1,485.28	27.86	54.308	
6,400.00	6,395.66	6,495.46	6,488.71	14.30	14.56	129.08	181.16	1,412.76	1,511.21	1,482.89	28.31	53.371	
6,500.00	6,495.46	6,595.35	6,588.43	14.53	14.80	129.23	181.71	1,406.81	1,509.29	1,480.52	28.77	52.466	
6,600.00	6,595.26	6,695.25	6,688.15	14.77	15.04	129.39	182.26	1,400.87	1,507.38	1,478.16	29.22	51.588	
6,700.00	6,695.06	6,795.15	6,787.87	15.00	15.28	129.54	182.82	1,394.92	1,505.48	1,475.80	29.67	50.736	
6,800.00	6,794.86	6,895.05	6,887.59	15.24	15.52	129.70	183.37	1,388.97	1,503.59	1,473.46	30.13	49.911	
6,900.00	6,894.65	6,994.95	6,987.31	15.47	15.75	129.85	183.93	1,383.02	1,501.71	1,471.13	30.58	49.109	
7,000.00	6,994.50	7,094.86	7,087.04	15.69	15.99	129.96	184.48	1,377.07	1,499.31	1,468.29	31.01	48.345	
7,100.00	7,094.45	7,194.76	7,186.77	15.86	16.23	129.97	185.03	1,371.12	1,495.26	1,463.85	31.41	47.597	
7,200.00	7,194.45	7,294.60	7,286.43	16.04	16.47	88.05	185.59	1,365.18	1,489.66	1,457.84	31.82	46.812	
7,300.00	7,294.45	7,394.42	7,386.07	16.26	16.71	88.02	186.14	1,359.23	1,483.73	1,451.46	32.27	45.982	
7,400.00	7,394.45	7,494.24	7,485.71	16.48	16.95	87.99	186.69	1,353.29	1,477.80	1,445.08	32.71	45.175	
7,500.00	7,494.45	7,594.06	7,585.36	16.70	17.19	87.96	187.25	1,347.34	1,471.86	1,438.70	33.16	44.388	
7,600.00	7,594.45	7,693.89	7,685.00	16.93	17.43	87.93	187.80	1,341.40	1,465.93	1,432.33	33.60	43.622	
7,700.00	7,694.45	7,793.71	7,784.64	17.15	17.67	87.90	188.35	1,335.45	1,460.00	1,425.95	34.05	42.877	
7,800.00	7,794.45	7,893.53	7,884.28	17.37	17.91	87.87	188.91	1,329.51	1,454.07	1,419.57	34.50	42.150	
7,900.00	7,894.45	7,993.35	7,983.92	17.59	18.15	87.84	189.46	1,323.57	1,448.14	1,413.20	34.94	41.441	
8,000.00	7,994.45	8,093.17	8,083.57	17.81	18.39	87.81	190.01	1,317.62	1,442.21	1,406.82	35.39	40.751	
8,100.00	8,094.45	8,192.99	8,183.21	18.03	18.63	87.78	190.57	1,311.68	1,436.28	1,400.44	35.84	40.077	
8,200.00	8,194.45	8,292.81	8,282.85	18.25	18.87	87.75	191.12	1,305.73	1,430.35	1,394.07	36.29	39.420	
8,300.00	8,294.45	8,392.63	8,382.49	18.47	19.11	87.72	191.67	1,299.79	1,424.42	1,387.69	36.73	38.778	
8,400.00	8,394.45	8,492.45	8,482.14	18.69	19.35	87.68	192.23	1,293.85	1,418.50	1,381.32	37.18	38.152	
8,500.00	8,494.42	8,592.24	8,581.74	18.90	19.59	-92.31	192.78	1,287.90	1,412.61	1,375.00	37.62	37.554	
8,600.00	8,593.14	8,690.69	8,680.02	19.06	19.83	-93.47	193.33	1,282.04	1,407.41	1,369.42	37.98	37.053	
8,700.00	8,687.72	8,784.91	8,774.07	19.19	20.06	-95.10	193.85	1,276.43	1,403.73	1,365.41	38.32	36.632	
8,775.79	8,754.87	8,851.74	8,840.78	19.29	20.22	-96.48	194.22	1,272.45	1,402.71	1,364.15	38.56	36.377 CC, ES	
8,800.00	8,775.28	8,871.26	8,860.27	19.32	20.27	-96.90	194.33	1,271.29	1,402.83	1,364.20	38.63	36.311	
8,900.00	8,853.18	8,928.87	8,917.80	19.43	20.38	-97.98	194.61	1,268.29	1,406.87	1,367.97	38.89	36.171 SF	
9,000.00	8,919.05	8,977.21	8,966.10	19.55	20.47	-98.38	194.78	1,266.44	1,417.66	1,378.49	39.17	36.193	
9,100.00	8,970.87	9,015.33	9,004.20	19.77	20.54	-97.85	194.87	1,265.41	1,436.03	1,396.55	39.48	36.370	
9,200.00	9,007.08	9,042.01	9,030.88	20.12	20.59	-96.16	194.92	1,264.92	1,462.29	1,422.45	39.84	36.703	
9,300.00	9,026.58	9,056.38	9,045.25	20.58	20.61	-93.15	194.94	1,264.73	1,496.09	1,455.86	40.23	37.189	
9,400.00	9,030.00	9,058.84	9,047.71	21.14	20.62	-90.58	194.94	1,264.70	1,536.44	1,495.81	40.63	37.814	
9,500.00	9,030.00	9,058.76	9,047.63	21.79	20.62	-90.58	194.94	1,264.70	1,582.16	1,541.10	41.06	38.534	
9,600.00	9,030.00	9,058.68	9,047.55	22.55	20.62	-90.58	194.94	1,264.70	1,632.73	1,591.22	41.51	39.338	
9,700.00	9,030.00	9,058.60	9,047.47	23.40	20.62	-90.57	194.94	1,264.70	1,687.71	1,645.76	41.96	40.225	
9,800.00	9,030.00	9,058.52	9,047.39	24.33	20.62	-90.57	194.94	1,264.70	1,746.70	1,704.30	42.40	41.192	
9,900.00	9,030.00	9,058.44	9,047.31	25.33	20.62	-90.57	194.94	1,264.70	1,809.29	1,766.46	42.84	42.237	
10,000.00	9,030.00	9,058.36	9,047.23	26.39	20.62	-90.56	194.94	1,264.70	1,875.13	1,831.88	43.25	43.355	
10,100.00	9,030.00	9,058.28	9,047.15	27.51	20.62	-90.56	194.94	1,264.71	1,943.89	1,900.25	43.64	44.540	
10,200.00	9,030.00	9,058.20	9,047.07	28.68	20.62	-90.56	194.94	1,264.71	2,015.26	1,971.25	44.01	45.786	

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Lusitano - Lusitano 27-34 Fed Com 624H - OH - Plan #1												Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.00	9,030.00	9,058.12	9,046.99	29.89	20.62	-90.55	194.94	1,264.71	2,088.99	2,044.63	44.36	47.090	
10,400.00	9,030.00	9,058.04	9,046.91	31.14	20.62	-90.55	194.94	1,264.71	2,164.82	2,120.13	44.69	48.444	

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 713H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	1.80	1.80	0.00	0.00	11.44	150.18	30.40	153.23				
100.00	100.00	101.80	101.80	0.09	0.09	11.44	150.18	30.40	153.23	153.05	0.18	870.641	
200.00	200.00	201.80	201.80	0.31	0.31	11.44	150.18	30.40	153.23	152.60	0.63	244.956	
300.00	300.00	301.80	301.80	0.54	0.54	11.44	150.18	30.40	153.23	152.15	1.08	142.528	
400.00	400.00	401.80	401.80	0.76	0.76	11.44	150.18	30.40	153.23	151.70	1.52	100.503	
500.00	500.00	501.80	501.80	0.99	0.99	11.44	150.18	30.40	153.23	151.25	1.97	77.617	
600.00	600.00	601.80	601.80	1.21	1.21	11.44	150.18	30.40	153.23	150.80	2.42	63.221	
700.00	700.00	701.80	701.80	1.43	1.44	11.44	150.18	30.40	153.23	150.35	2.87	53.330	
800.00	800.00	801.80	801.80	1.66	1.66	11.44	150.18	30.40	153.23	149.90	3.32	46.115	
900.00	900.00	901.80	901.80	1.88	1.89	11.44	150.18	30.40	153.23	149.45	3.77	40.619	
1,000.00	1,000.00	1,001.80	1,001.80	2.11	2.11	11.44	150.18	30.40	153.23	149.00	4.22	36.294	
1,100.00	1,100.00	1,101.80	1,101.80	2.33	2.34	11.44	150.18	30.40	153.23	148.55	4.67	32.801	
1,200.00	1,200.00	1,201.80	1,201.80	2.56	2.56	11.44	150.18	30.40	153.23	148.11	5.12	29.922	
1,300.00	1,300.00	1,301.80	1,301.80	2.78	2.79	11.44	150.18	30.40	153.23	147.66	5.57	27.507	
1,400.00	1,400.00	1,401.80	1,401.80	3.01	3.01	11.44	150.18	30.40	153.23	147.21	6.02	25.453	
1,500.00	1,500.00	1,501.80	1,501.80	3.23	3.24	11.44	150.18	30.40	153.23	146.76	6.47	23.685	
1,600.00	1,600.00	1,601.80	1,601.80	3.46	3.46	11.44	150.18	30.40	153.23	146.31	6.92	22.146	
1,700.00	1,700.00	1,701.80	1,701.80	3.68	3.69	11.44	150.18	30.40	153.23	145.86	7.37	20.795	
1,800.00	1,800.00	1,801.80	1,801.80	3.91	3.91	11.44	150.18	30.40	153.23	145.41	7.82	19.599	
1,900.00	1,900.00	1,901.80	1,901.80	4.13	4.14	11.44	150.18	30.40	153.23	144.96	8.27	18.533	
2,000.00	2,000.00	2,001.80	2,001.80	4.36	4.36	11.44	150.18	30.40	153.23	144.51	8.72	17.578	
2,100.00	2,100.00	2,101.80	2,101.80	4.58	4.59	11.44	150.18	30.40	153.23	144.06	9.17	16.716	
2,200.00	2,200.00	2,201.80	2,201.80	4.81	4.81	11.44	150.18	30.40	153.23	143.61	9.62	15.934	
2,300.00	2,300.00	2,301.80	2,301.80	5.03	5.03	11.44	150.18	30.40	153.23	143.16	10.07	15.223	
2,400.00	2,400.00	2,401.80	2,401.80	5.26	5.26	11.44	150.18	30.40	153.23	142.71	10.52	14.572	
2,416.06	2,416.06	2,417.86	2,417.86	5.29	5.30	11.44	150.18	30.40	153.23	142.64	10.59	14.472 CC	
2,500.00	2,500.00	2,501.77	2,501.77	5.48	5.48	11.44	150.18	30.40	153.23	142.26	10.96	13.975 ES	
2,600.00	2,600.00	2,600.00	2,599.99	5.71	5.70	11.80	150.53	31.43	153.79	142.39	11.40	13.490	
2,700.00	2,700.00	2,698.35	2,698.29	5.93	5.90	12.81	151.55	34.47	155.46	143.63	11.83	13.144	
2,800.00	2,800.00	2,796.41	2,796.20	6.15	6.11	14.45	153.24	39.48	158.35	146.09	12.25	12.922	
2,900.00	2,900.00	2,895.60	2,895.15	6.38	6.32	16.50	155.47	46.07	162.29	149.60	12.69	12.791	
3,000.00	3,000.00	2,995.34	2,994.64	6.60	6.53	18.50	157.74	52.78	166.49	153.36	13.13	12.684	
3,100.00	3,100.00	3,095.09	3,094.14	6.83	6.75	20.40	160.00	59.50	170.88	157.32	13.57	12.596	
3,200.00	3,200.00	3,184.84	3,183.63	7.05	6.97	22.20	162.27	66.22	175.45	161.45	14.01	12.526	
3,300.00	3,300.00	3,284.58	3,283.12	7.28	7.20	23.91	164.54	72.94	180.19	165.74	14.45	12.470	
3,400.00	3,400.00	3,394.33	3,392.62	7.50	7.42	25.53	166.81	79.66	185.08	170.19	14.89	12.427	
3,500.00	3,500.00	3,494.08	3,492.11	7.73	7.65	27.06	169.08	86.37	190.11	174.77	15.34	12.395	
3,600.00	3,600.00	3,593.83	3,591.61	7.95	7.87	28.52	171.34	93.09	195.27	179.48	15.78	12.373	
3,700.00	3,700.00	3,693.57	3,691.10	8.18	8.10	29.89	173.61	99.81	200.54	184.32	16.23	12.358	
3,800.00	3,800.00	3,793.32	3,790.60	8.40	8.33	31.20	175.88	106.53	205.93	189.26	16.67	12.351	
3,900.00	3,900.00	3,893.07	3,890.09	8.63	8.56	32.44	178.15	113.25	211.42	194.30	17.12	12.350	
4,000.00	4,000.00	3,992.81	3,989.59	8.85	8.80	33.62	180.42	119.96	217.00	199.44	17.57	12.353	
4,100.00	4,100.00	4,092.53	4,089.05	9.07	9.03	34.77	182.68	126.68	222.47	204.46	18.01	12.354	
4,200.00	4,199.96	4,192.17	4,188.44	9.29	9.26	35.82	184.95	133.39	227.70	209.26	18.45	12.344	
4,300.00	4,299.86	4,291.70	4,287.72	9.51	9.50	36.81	187.21	140.09	232.83	213.95	18.88	12.330	
4,400.00	4,399.68	4,391.10	4,386.86	9.73	9.73	37.71	189.47	146.79	238.03	218.71	19.32	12.320 SF	
4,500.00	4,499.48	4,490.47	4,485.98	9.95	9.97	38.53	191.73	153.48	243.58	223.82	19.76	12.329	
4,600.00	4,599.28	4,589.84	4,585.10	10.17	10.20	39.23	193.99	160.17	249.51	229.32	20.19	12.355	
4,700.00	4,699.08	4,689.20	4,684.22	10.40	10.44	39.84	196.25	166.87	255.79	235.16	20.63	12.398	
4,800.00	4,798.88	4,788.57	4,783.33	10.62	10.68	40.34	198.51	173.56	262.41	241.34	21.07	12.453	
4,900.00	4,898.68	4,887.94	4,882.45	10.85	10.92	40.74	200.77	180.25	269.33	247.82	21.51	12.520	
5,000.00	4,998.48	4,987.31	4,981.57	11.07	11.15	41.04	203.03	186.94	276.53	254.58	21.95	12.596	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 713H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	5,098.27	5,086.68	5,080.69	11.30	11.39	96.75	205.29	193.64	283.99	261.60	22.40	12.681	
5,200.00	5,198.07	5,186.05	5,179.80	11.53	11.63	98.37	207.55	200.33	291.70	268.86	22.84	12.772	
5,300.00	5,297.87	5,285.42	5,278.92	11.75	11.87	99.91	209.81	207.02	299.62	276.34	23.28	12.869	
5,400.00	5,397.67	5,384.79	5,378.04	11.98	12.11	101.37	212.07	213.71	307.75	284.02	23.73	12.971	
5,500.00	5,497.47	5,484.15	5,477.16	12.21	12.35	102.76	214.32	220.41	316.07	291.90	24.17	13.076	
5,600.00	5,597.27	5,583.52	5,576.27	12.44	12.59	104.07	216.58	227.10	324.56	299.95	24.62	13.184	
5,700.00	5,697.07	5,682.89	5,675.39	12.67	12.84	105.31	218.84	233.79	333.22	308.15	25.06	13.295	
5,800.00	5,796.87	5,782.26	5,774.51	12.90	13.08	106.49	221.10	240.48	342.02	316.51	25.51	13.406	
5,900.00	5,896.67	5,881.63	5,873.62	13.14	13.32	107.62	223.36	247.18	350.96	325.00	25.96	13.519	
6,000.00	5,996.46	5,981.00	5,972.74	13.37	13.56	108.68	225.62	253.87	360.03	333.62	26.41	13.633	
6,100.00	6,096.26	6,080.37	6,071.86	13.60	13.80	109.70	227.88	260.56	369.22	342.36	26.86	13.747	
6,200.00	6,196.06	6,179.74	6,170.98	13.83	14.05	110.66	230.14	267.25	378.51	351.21	27.31	13.861	
6,300.00	6,295.86	6,279.10	6,270.09	14.07	14.29	111.58	232.40	273.95	387.91	360.15	27.76	13.974	
6,400.00	6,395.66	6,378.47	6,369.21	14.30	14.53	112.45	234.66	280.64	397.41	369.20	28.21	14.087	
6,500.00	6,495.46	6,477.84	6,468.33	14.53	14.78	113.29	236.92	287.33	406.99	378.32	28.66	14.199	
6,600.00	6,595.26	6,577.21	6,567.45	14.77	15.02	114.08	239.18	294.02	416.65	387.53	29.11	14.311	
6,700.00	6,695.06	6,676.58	6,666.56	15.00	15.26	114.84	241.44	300.72	426.39	396.82	29.57	14.421	
6,800.00	6,794.86	6,775.95	6,765.68	15.24	15.51	115.57	243.70	307.41	436.20	406.18	30.02	14.530	
6,900.00	6,894.65	6,875.32	6,864.80	15.47	15.75	116.26	245.96	314.10	446.07	415.60	30.47	14.638	
7,000.00	6,994.50	6,974.76	6,963.99	15.69	15.99	116.93	248.22	320.80	455.64	424.73	30.91	14.742	
7,100.00	7,094.45	7,074.37	7,063.35	15.86	16.24	117.31	250.48	327.51	464.07	432.76	31.31	14.821	
7,200.00	7,194.45	7,174.10	7,162.83	16.04	16.49	75.50	252.75	334.23	471.39	439.68	31.72	14.862	
7,300.00	7,294.45	7,273.85	7,262.32	16.26	16.73	75.44	255.02	340.94	478.48	446.32	32.17	14.876	
7,400.00	7,394.45	7,373.60	7,361.82	16.48	16.98	75.38	257.28	347.66	485.57	452.96	32.61	14.889	
7,500.00	7,494.45	7,473.35	7,461.31	16.70	17.22	75.32	259.55	354.38	492.67	459.61	33.06	14.902	
7,600.00	7,594.45	7,573.09	7,560.81	16.93	17.47	75.26	261.82	361.10	499.76	466.25	33.51	14.915	
7,700.00	7,694.45	7,672.84	7,660.30	17.15	17.71	75.21	264.09	367.82	506.85	472.89	33.96	14.927	
7,800.00	7,794.45	7,772.59	7,759.80	17.37	17.96	75.15	266.36	374.53	513.94	479.54	34.40	14.938	
7,900.00	7,894.45	7,872.33	7,859.29	17.59	18.21	75.10	268.62	381.25	521.04	486.18	34.85	14.950	
8,000.00	7,994.45	7,972.08	7,958.79	17.81	18.45	75.05	270.89	387.97	528.13	492.83	35.30	14.961	
8,100.00	8,094.45	8,071.83	8,058.28	18.03	18.70	75.00	273.16	394.69	535.22	499.47	35.75	14.972	
8,200.00	8,194.45	8,171.57	8,157.78	18.25	18.95	74.95	275.43	401.41	542.32	506.12	36.20	14.982	
8,300.00	8,294.45	8,271.32	8,257.27	18.47	19.19	74.91	277.70	408.12	549.41	512.76	36.65	14.992	
8,400.00	8,394.45	8,371.07	8,356.77	18.69	19.44	74.86	279.96	414.84	556.51	519.41	37.10	15.002	
8,500.00	8,494.42	8,470.76	8,456.21	18.90	19.69	-104.71	282.23	421.56	563.91	526.38	37.53	15.024	
8,600.00	8,593.14	8,568.89	8,554.08	19.06	19.93	-105.12	284.46	428.16	575.03	537.13	37.91	15.170	
8,700.00	8,687.72	8,662.51	8,647.47	19.19	20.16	-106.38	286.59	434.47	591.66	553.40	38.25	15.467	
8,800.00	8,775.28	8,748.78	8,733.52	19.32	20.38	-107.87	288.55	440.28	615.54	578.95	38.59	15.952	
8,900.00	8,853.18	8,825.08	8,809.63	19.43	20.57	-108.84	290.29	445.42	648.62	609.70	38.92	16.665	
9,000.00	8,919.05	8,889.10	8,873.49	19.55	20.72	-108.49	291.74	449.73	692.31	653.05	39.26	17.634	
9,100.00	8,970.87	8,938.88	8,923.14	19.77	20.85	-106.05	292.87	453.08	746.94	707.35	39.59	18.866	
9,200.00	9,007.08	8,972.92	8,957.09	20.12	20.93	-100.73	293.65	455.38	811.55	771.65	39.89	20.343	
9,300.00	9,026.58	8,990.18	8,974.31	20.58	20.98	-91.87	294.04	456.54	884.08	843.94	40.14	22.025	
9,400.00	9,030.00	8,991.35	8,975.48	21.14	20.98	-84.44	294.07	456.62	961.81	921.49	40.32	23.853	
9,500.00	9,030.00	8,989.11	8,973.25	21.79	20.97	-84.22	294.02	456.47	1,043.24	1,002.76	40.48	25.772	
9,600.00	9,030.00	8,986.87	8,971.01	22.55	20.97	-84.00	293.97	456.32	1,127.65	1,087.03	40.62	27.759	
9,700.00	9,030.00	8,984.64	8,968.78	23.40	20.96	-83.78	293.91	456.16	1,214.43	1,173.68	40.75	29.801	
9,800.00	9,030.00	8,982.40	8,966.55	24.33	20.96	-83.56	293.86	456.01	1,303.10	1,262.23	40.87	31.886	
9,900.00	9,030.00	8,980.16	8,964.32	25.33	20.95	-83.34	293.81	455.86	1,393.31	1,352.33	40.97	34.006	
10,000.00	9,030.00	8,977.92	8,962.09	26.39	20.94	-83.12	293.76	455.71	1,484.76	1,443.69	41.07	36.154	
10,100.00	9,030.00	8,975.69	8,959.85	27.51	20.94	-82.90	293.71	455.56	1,577.25	1,536.09	41.16	38.324	
10,200.00	9,030.00	8,973.45	8,957.62	28.68	20.93	-82.68	293.66	455.41	1,670.60	1,629.37	41.24	40.513	

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 713H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,300.00	9,030.00	8,971.21	8,955.39	29.89	20.93	-82.46	293.61	455.26	1,764.68	1,723.37	41.31	42.717	
10,400.00	9,030.00	8,968.97	8,953.16	31.14	20.92	-82.24	293.56	455.11	1,859.37	1,817.99	41.38	44.933	
10,500.00	9,030.00	8,966.74	8,950.93	32.43	20.92	-82.02	293.51	454.96	1,954.59	1,913.15	41.45	47.158	
10,600.00	9,030.00	8,964.50	8,948.69	33.75	20.91	-81.80	293.46	454.81	2,050.27	2,008.76	41.51	49.391	
10,700.00	9,030.00	8,962.26	8,946.46	35.09	20.91	-81.58	293.41	454.66	2,146.33	2,104.76	41.57	51.629	

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 733H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)						
0.00	0.00	1.60	1.60	0.00	0.00	-21.71	149.61	-59.57	161.03					
100.00	100.00	101.60	101.60	0.09	0.09	-21.71	149.61	-59.57	161.03	160.86	0.18	917.347		
200.00	200.00	201.60	201.60	0.31	0.31	-21.71	149.61	-59.57	161.03	160.41	0.63	257.623		
300.00	300.00	301.60	301.60	0.54	0.54	-21.71	149.61	-59.57	161.03	159.96	1.07	149.853		
400.00	400.00	401.60	401.60	0.76	0.76	-21.71	149.61	-59.57	161.03	159.51	1.52	105.655		
500.00	500.00	501.60	501.60	0.99	0.99	-21.71	149.61	-59.57	161.03	159.06	1.97	81.591		
600.00	600.00	601.60	601.60	1.21	1.21	-21.71	149.61	-59.57	161.03	158.61	2.42	66.455		
700.00	700.00	701.60	701.60	1.43	1.44	-21.71	149.61	-59.57	161.03	158.16	2.87	56.056		
800.00	800.00	801.60	801.60	1.66	1.66	-21.71	149.61	-59.57	161.03	157.71	3.32	48.471		
900.00	900.00	901.60	901.60	1.88	1.89	-21.71	149.61	-59.57	161.03	157.26	3.77	42.694		
1,000.00	1,000.00	1,001.60	1,001.60	2.11	2.11	-21.71	149.61	-59.57	161.03	156.81	4.22	38.148		
1,100.00	1,100.00	1,101.60	1,101.60	2.33	2.34	-21.71	149.61	-59.57	161.03	156.36	4.67	34.476		
1,200.00	1,200.00	1,201.60	1,201.60	2.56	2.56	-21.71	149.61	-59.57	161.03	155.91	5.12	31.449		
1,300.00	1,300.00	1,301.60	1,301.60	2.78	2.79	-21.71	149.61	-59.57	161.03	155.46	5.57	28.911		
1,400.00	1,400.00	1,401.60	1,401.60	3.01	3.01	-21.71	149.61	-59.57	161.03	155.01	6.02	26.752		
1,500.00	1,500.00	1,501.60	1,501.60	3.23	3.24	-21.71	149.61	-59.57	161.03	154.56	6.47	24.893		
1,600.00	1,600.00	1,601.60	1,601.60	3.46	3.46	-21.71	149.61	-59.57	161.03	154.11	6.92	23.276		
1,700.00	1,700.00	1,701.60	1,701.60	3.68	3.69	-21.71	149.61	-59.57	161.03	153.67	7.37	21.856		
1,800.00	1,800.00	1,801.60	1,801.60	3.91	3.91	-21.71	149.61	-59.57	161.03	153.22	7.82	20.599		
1,900.00	1,900.00	1,901.60	1,901.60	4.13	4.14	-21.71	149.61	-59.57	161.03	152.77	8.27	19.479		
2,000.00	2,000.00	2,001.60	2,001.60	4.36	4.36	-21.71	149.61	-59.57	161.03	152.32	8.72	18.474		
2,100.00	2,100.00	2,101.60	2,101.60	4.58	4.58	-21.71	149.61	-59.57	161.03	151.87	9.17	17.568		
2,200.00	2,200.00	2,201.60	2,201.60	4.81	4.81	-21.71	149.61	-59.57	161.03	151.42	9.62	16.747		
2,300.00	2,300.00	2,301.60	2,301.60	5.03	5.03	-21.71	149.61	-59.57	161.03	150.97	10.07	15.999		
2,400.00	2,400.00	2,401.60	2,401.60	5.26	5.26	-21.71	149.61	-59.57	161.03	150.52	10.51	15.315		
2,416.12	2,416.12	2,417.72	2,417.72	5.29	5.30	-21.71	149.61	-59.57	161.03	150.45	10.59	15.210		
2,500.00	2,500.00	2,501.56	2,501.56	5.48	5.48	-21.71	149.61	-59.57	161.03	150.07	10.96	14.687		
2,600.00	2,600.00	2,600.00	2,599.99	5.71	5.71	-21.63	150.48	-59.67	161.88	150.48	11.41	14.188		
2,700.00	2,700.00	2,698.13	2,698.10	5.93	5.93	-21.44	152.57	-59.92	163.95	152.10	11.85	13.832		
2,800.00	2,800.00	2,798.10	2,798.05	6.15	6.15	-21.25	154.76	-60.18	166.09	153.79	12.30	13.501		
2,900.00	2,900.00	2,898.08	2,898.00	6.38	6.37	-21.06	156.95	-60.44	168.23	155.47	12.75	13.193		
3,000.00	3,000.00	2,998.05	2,997.95	6.60	6.60	-20.88	159.14	-60.70	170.37	157.17	13.20	12.906		
3,100.00	3,100.00	3,098.03	3,097.90	6.83	6.82	-20.70	161.34	-60.96	172.51	158.86	13.65	12.638		
3,200.00	3,200.00	3,198.00	3,197.85	7.05	7.05	-20.53	163.53	-61.23	174.65	160.55	14.10	12.388		
3,300.00	3,300.00	3,297.98	3,297.81	7.28	7.27	-20.36	165.72	-61.49	176.80	162.25	14.55	12.153		
3,400.00	3,400.00	3,397.95	3,397.76	7.50	7.50	-20.19	167.91	-61.75	178.95	163.95	15.00	11.932		
3,500.00	3,500.00	3,497.93	3,497.71	7.73	7.72	-20.03	170.10	-62.01	181.09	165.65	15.45	11.723		
3,600.00	3,600.00	3,597.91	3,597.66	7.95	7.95	-19.87	172.30	-62.27	183.24	167.35	15.90	11.527		
3,700.00	3,700.00	3,697.88	3,697.61	8.18	8.17	-19.72	174.49	-62.53	185.40	169.05	16.35	11.342		
3,800.00	3,800.00	3,797.86	3,797.56	8.40	8.40	-19.56	176.68	-62.79	187.55	170.75	16.80	11.166		
3,900.00	3,900.00	3,897.83	3,897.51	8.63	8.62	-19.42	178.87	-63.05	189.70	172.46	17.25	11.000		
4,000.00	4,000.00	3,997.81	3,997.46	8.85	8.85	-19.27	181.06	-63.31	191.86	174.16	17.69	10.842		
4,100.00	4,100.00	4,097.79	4,097.43	9.07	9.07	-22.83	183.26	-63.57	193.21	175.07	18.14	10.650		
4,200.00	4,199.96	4,197.78	4,197.39	9.29	9.30	-23.27	185.45	-63.83	192.96	174.38	18.58	10.383		
4,300.00	4,299.86	4,297.74	4,297.32	9.51	9.52	-23.93	187.64	-64.09	191.13	172.10	19.03	10.045		
4,400.00	4,399.68	4,397.64	4,397.20	9.73	9.75	-24.81	189.83	-64.35	187.84	168.37	19.47	9.646		
4,500.00	4,499.48	4,497.53	4,497.07	9.95	9.97	-25.76	192.02	-64.61	184.28	164.36	19.92	9.252		
4,600.00	4,599.28	4,597.42	4,596.93	10.17	10.20	-26.75	194.21	-64.87	180.77	160.41	20.36	8.877		
4,700.00	4,699.08	4,697.31	4,696.80	10.40	10.42	-27.77	196.40	-65.13	177.32	156.51	20.81	8.521		
4,800.00	4,798.88	4,797.20	4,796.66	10.62	10.65	-28.84	198.59	-65.39	173.93	152.67	21.26	8.182		
4,900.00	4,898.68	4,897.09	4,896.53	10.85	10.87	-29.95	200.78	-65.66	170.60	148.89	21.70	7.860		
5,000.00	4,998.48	4,996.98	4,996.39	11.07	11.10	-31.10	202.97	-65.92	167.33	145.18	22.15	7.553		

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 733H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)						
5,100.00	5,098.27	5,096.87	5,096.26	11.30	11.33	32.30	205.16	-66.18	164.14	141.54	22.60	7.262		
5,200.00	5,198.07	5,196.76	5,196.12	11.53	11.55	33.54	207.35	-66.44	161.02	137.97	23.05	6.985		
5,300.00	5,297.87	5,296.65	5,295.98	11.75	11.78	34.83	209.54	-66.70	157.98	134.48	23.50	6.721		
5,400.00	5,397.67	5,396.53	5,395.85	11.98	12.00	36.17	211.73	-66.96	155.02	131.07	23.96	6.471		
5,500.00	5,497.47	5,496.42	5,495.71	12.21	12.23	37.56	213.92	-67.22	152.16	127.75	24.41	6.234		
5,600.00	5,597.27	5,596.31	5,595.58	12.44	12.45	39.01	216.11	-67.48	149.38	124.52	24.86	6.008		
5,700.00	5,697.07	5,696.20	5,695.44	12.67	12.68	40.51	218.30	-67.74	146.70	121.39	25.32	5.795		
5,800.00	5,796.87	5,796.09	5,795.31	12.90	12.90	42.06	220.49	-68.00	144.13	118.36	25.77	5.593		
5,900.00	5,896.67	5,895.98	5,895.17	13.14	13.13	43.67	222.68	-68.26	141.67	115.44	26.23	5.402		
6,000.00	5,996.46	5,995.87	5,995.04	13.37	13.36	45.33	224.87	-68.52	139.32	112.64	26.68	5.221		
6,100.00	6,096.26	6,095.76	6,094.90	13.60	13.58	47.05	227.06	-68.78	137.10	109.96	27.14	5.051		
6,200.00	6,196.06	6,195.65	6,194.77	13.83	13.81	48.83	229.25	-69.04	135.00	107.40	27.60	4.891		
6,300.00	6,295.86	6,295.54	6,294.63	14.07	14.03	50.66	231.44	-69.30	133.04	104.98	28.06	4.741		
6,400.00	6,395.66	6,395.43	6,394.50	14.30	14.26	52.54	233.63	-69.56	131.21	102.69	28.52	4.600		
6,500.00	6,495.46	6,495.31	6,494.36	14.53	14.48	54.47	235.82	-69.82	129.53	100.55	28.98	4.469		
6,600.00	6,595.26	6,595.20	6,594.23	14.77	14.71	56.45	238.01	-70.08	128.01	98.56	29.44	4.347		
6,700.00	6,695.06	6,695.09	6,694.09	15.00	14.94	58.48	240.20	-70.34	126.64	96.73	29.91	4.234		
6,800.00	6,794.86	6,794.98	6,793.96	15.24	15.16	60.54	242.39	-70.60	125.43	95.06	30.37	4.130		
6,900.00	6,894.65	6,894.87	6,893.82	15.47	15.39	62.65	244.58	-70.86	124.39	93.55	30.84	4.034		
6,994.11	6,898.63	6,898.92	6,897.84	15.67	15.60	64.27	246.65	-71.11	123.96	92.71	31.25	3.967		
7,000.00	6,994.50	6,994.79	6,993.72	15.69	15.61	64.43	246.77	-71.12	123.87	92.60	31.28	3.961 CC, ES		
7,100.00	7,094.45	7,094.77	7,093.67	15.86	15.84	65.17	248.97	-71.39	124.53	92.86	31.68	3.931 SF		
7,200.00	7,194.45	7,194.76	7,193.63	16.04	16.06	65.92	251.16	-71.65	126.23	94.15	32.08	3.934		
7,300.00	7,294.45	7,294.73	7,293.58	16.26	16.29	66.67	253.35	-71.91	128.15	95.62	32.53	3.940		
7,400.00	7,394.45	7,394.71	7,393.54	16.48	16.52	67.42	255.54	-72.17	130.08	97.11	32.97	3.945		
7,500.00	7,494.45	7,494.68	7,493.49	16.70	16.74	68.17	257.73	-72.43	132.02	98.60	33.42	3.950		
7,600.00	7,594.45	7,594.66	7,593.44	16.93	16.97	68.92	259.93	-72.69	133.97	100.10	33.86	3.956		
7,700.00	7,694.45	7,694.63	7,693.39	17.15	17.19	69.67	262.12	-72.95	135.92	101.61	34.31	3.962		
7,800.00	7,794.45	7,794.61	7,793.34	17.37	17.42	70.42	264.31	-73.21	137.89	103.13	34.76	3.967		
7,900.00	7,894.45	7,894.59	7,893.29	17.59	17.65	71.17	266.50	-73.47	139.86	104.65	35.20	3.973		
8,000.00	7,994.45	7,994.56	7,993.24	17.81	17.87	71.92	268.69	-73.73	141.83	106.19	35.65	3.979		
8,100.00	8,094.45	8,094.54	8,093.19	18.03	18.10	72.67	270.89	-73.99	143.82	107.72	36.09	3.985		
8,200.00	8,194.45	8,194.51	8,193.15	18.25	18.33	73.42	273.08	-74.25	145.81	109.27	36.54	3.990		
8,300.00	8,294.45	8,294.49	8,293.10	18.47	18.55	74.17	275.27	-74.51	147.80	110.82	36.99	3.996		
8,400.00	8,394.45	8,394.46	8,393.05	18.69	18.78	74.92	277.46	-74.77	149.80	112.37	37.43	4.002		
8,500.00	8,494.42	8,494.39	8,492.95	18.90	18.90	75.67	279.65	-75.03	151.87	113.92	37.87	4.008		
8,600.00	8,593.14	8,592.74	8,591.28	19.06	19.23	76.42	281.81	-75.29	163.90	131.25	38.25	4.432		
8,700.00	8,687.72	8,686.59	8,685.11	19.19	19.44	77.17	283.87	-75.54	202.51	163.91	38.60	5.246		
8,800.00	8,775.28	8,773.09	8,771.58	19.32	19.63	77.92	285.76	-75.76	251.34	212.42	38.93	6.457		
8,900.00	8,853.18	8,849.60	8,848.07	19.43	19.81	78.67	287.44	-75.96	314.64	275.43	39.21	8.024		
9,000.00	8,919.05	8,913.80	8,912.25	19.55	19.95	79.42	288.85	-76.13	390.47	351.02	39.45	9.897		
9,100.00	8,970.87	8,963.73	8,962.18	19.77	20.07	80.17	289.94	-76.26	476.46	436.82	39.64	12.020		
9,200.00	9,007.08	8,997.90	8,996.33	20.12	20.14	80.92	290.69	-76.35	569.95	530.18	39.77	14.332		
9,300.00	9,026.58	9,015.24	9,013.67	20.58	20.18	81.67	291.07	-76.39	668.03	628.20	39.83	16.770		
9,400.00	9,030.00	9,016.46	9,014.90	21.14	20.18	82.42	291.10	-76.40	767.76	727.91	39.85	19.267		
9,500.00	9,030.00	9,014.27	9,012.70	21.79	20.18	83.17	291.05	-76.39	867.58	827.73	39.85	21.770		
9,600.00	9,030.00	9,012.08	9,010.51	22.55	20.17	83.92	291.00	-76.38	967.43	927.57	39.86	24.272		
9,700.00	9,030.00	9,009.88	9,008.32	23.40	20.17	84.67	290.96	-76.38	1,067.31	1,027.44	39.87	26.773		
9,800.00	9,030.00	9,007.69	9,006.12	24.33	20.16	85.42	290.91	-76.37	1,167.20	1,127.33	39.88	29.271		
9,900.00	9,030.00	9,005.50	9,003.93	25.33	20.16	86.17	290.86	-76.37	1,267.11	1,227.22	39.89	31.768		
10,000.00	9,030.00	9,003.30	9,001.74	26.39	20.15	86.92	290.81	-76.36	1,367.02	1,327.12	39.90	34.261		
10,100.00	9,030.00	9,001.11	8,999.54	27.51	20.15	87.67	290.76	-76.36	1,466.95	1,427.03	39.92	36.752		

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

LEAM Drilling Services

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 733H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,200.00	9,030.00	8,998.91	8,997.35	28.68	20.15	-53.02	290.72	-76.35	1,566.88	1,526.95	39.93	39.239		
10,300.00	9,030.00	8,996.72	8,995.16	29.89	20.14	-51.30	290.67	-76.34	1,666.82	1,626.87	39.95	41.722		
10,400.00	9,030.00	8,994.53	8,992.96	31.14	20.14	-49.66	290.62	-76.34	1,766.76	1,726.79	39.97	44.202		
10,500.00	9,030.00	8,992.33	8,990.77	32.43	20.13	-48.10	290.57	-76.33	1,866.70	1,826.71	39.99	46.677		
10,600.00	9,030.00	8,990.14	8,988.58	33.75	20.13	-46.61	290.52	-76.33	1,966.65	1,926.63	40.02	49.148		
10,700.00	9,030.00	8,987.94	8,986.38	35.09	20.12	-45.19	290.48	-76.32	2,066.60	2,026.56	40.04	51.613		
10,800.00	9,030.00	8,985.75	8,984.19	36.46	20.12	-43.83	290.43	-76.32	2,166.55	2,126.49	40.07	54.074		

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 734H - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	3.30	3.30	0.00	0.00	84.52	160.18	1,670.47	1,678.13				
100.00	100.00	103.30	103.30	0.09	0.09	84.52	160.18	1,670.47	1,678.13	1,677.95	0.18	9,356.040	
200.00	200.00	203.30	203.30	0.31	0.32	84.52	160.18	1,670.47	1,678.13	1,677.50	0.63	2,668.380	
300.00	300.00	303.30	303.30	0.54	0.54	84.52	160.18	1,670.47	1,678.13	1,677.05	1.08	1,556.092	
400.00	400.00	403.30	403.30	0.76	0.77	84.52	160.18	1,670.47	1,678.13	1,676.60	1.53	1,098.283	
500.00	500.00	503.30	503.30	0.99	0.99	84.52	160.18	1,670.47	1,678.13	1,676.15	1.98	848.617	
600.00	600.00	603.30	603.30	1.21	1.22	84.52	160.18	1,670.47	1,678.13	1,675.71	2.43	691.436	
700.00	700.00	703.30	703.30	1.43	1.44	84.52	160.18	1,670.47	1,678.13	1,675.26	2.88	583.382	
800.00	800.00	803.30	803.30	1.66	1.67	84.52	160.18	1,670.47	1,678.13	1,674.81	3.33	504.536	
900.00	900.00	903.30	903.30	1.88	1.89	84.52	160.18	1,670.47	1,678.13	1,674.36	3.78	444.465	
1,000.00	1,000.00	1,003.30	1,003.30	2.11	2.12	84.52	160.18	1,670.47	1,678.13	1,673.91	4.23	397.177	
1,100.00	1,100.00	1,103.30	1,103.30	2.33	2.34	84.52	160.18	1,670.47	1,678.13	1,673.46	4.67	358.983	
1,200.00	1,200.00	1,203.30	1,203.30	2.56	2.57	84.52	160.18	1,670.47	1,678.13	1,673.01	5.12	327.491	
1,300.00	1,300.00	1,303.30	1,303.30	2.78	2.79	84.52	160.18	1,670.47	1,678.13	1,672.56	5.57	301.078	
1,400.00	1,400.00	1,403.30	1,403.30	3.01	3.02	84.52	160.18	1,670.47	1,678.13	1,672.11	6.02	278.608	
1,500.00	1,500.00	1,503.30	1,503.30	3.23	3.24	84.52	160.18	1,670.47	1,678.13	1,671.66	6.47	259.259	
1,600.00	1,600.00	1,603.30	1,603.30	3.46	3.46	84.52	160.18	1,670.47	1,678.13	1,671.21	6.92	242.423	
1,700.00	1,700.00	1,703.30	1,703.30	3.68	3.69	84.52	160.18	1,670.47	1,678.13	1,670.76	7.37	227.640	
1,800.00	1,800.00	1,803.30	1,803.30	3.91	3.91	84.52	160.18	1,670.47	1,678.13	1,670.31	7.82	214.556	
1,900.00	1,900.00	1,903.30	1,903.30	4.13	4.14	84.52	160.18	1,670.47	1,678.13	1,669.86	8.27	202.895	
2,000.00	2,000.00	2,003.30	2,003.30	4.36	4.36	84.52	160.18	1,670.47	1,678.13	1,669.41	8.72	192.436	
2,100.00	2,100.00	2,103.30	2,103.30	4.58	4.59	84.52	160.18	1,670.47	1,678.13	1,668.96	9.17	183.002	
2,200.00	2,200.00	2,203.30	2,203.30	4.81	4.81	84.52	160.18	1,670.47	1,678.13	1,668.51	9.62	174.450	
2,300.00	2,300.00	2,303.30	2,303.30	5.03	5.04	84.52	160.18	1,670.47	1,678.13	1,668.06	10.07	166.662	
2,400.00	2,400.00	2,403.30	2,403.30	5.26	5.26	84.52	160.18	1,670.47	1,678.13	1,667.61	10.52	159.539	
2,500.00	2,500.00	2,503.30	2,503.30	5.48	5.49	84.52	160.18	1,670.47	1,678.13	1,667.16	10.97	153.001	
2,600.00	2,600.00	2,603.30	2,603.30	5.71	5.71	84.52	160.18	1,670.47	1,678.13	1,666.71	11.42	146.977	
2,700.00	2,700.00	2,703.30	2,703.30	5.93	5.94	84.52	160.18	1,670.47	1,678.13	1,666.27	11.87	141.409	
2,800.00	2,800.00	2,803.30	2,803.30	6.15	6.16	84.52	160.18	1,670.47	1,678.13	1,665.82	12.32	136.248	
2,900.00	2,900.00	2,903.30	2,903.30	6.38	6.39	84.52	160.18	1,670.47	1,678.13	1,665.37	12.77	131.451	
3,000.00	3,000.00	3,003.30	3,003.30	6.60	6.61	84.52	160.18	1,670.47	1,678.13	1,664.92	13.22	126.979	
3,100.00	3,100.00	3,103.30	3,103.30	6.83	6.84	84.52	160.18	1,670.47	1,678.13	1,664.47	13.67	122.802	
3,200.00	3,200.00	3,203.30	3,203.30	7.05	7.06	84.52	160.18	1,670.47	1,678.13	1,664.02	14.11	118.891	
3,300.00	3,300.00	3,303.30	3,303.30	7.28	7.29	84.52	160.18	1,670.47	1,678.13	1,663.57	14.56	115.222	
3,400.00	3,400.00	3,403.30	3,403.30	7.50	7.51	84.52	160.18	1,670.47	1,678.13	1,663.12	15.01	111.772	
3,500.00	3,500.00	3,503.30	3,503.30	7.73	7.74	84.52	160.18	1,670.47	1,678.13	1,662.67	15.46	108.522	
3,600.00	3,600.00	3,603.30	3,603.30	7.95	7.96	84.52	160.18	1,670.47	1,678.13	1,662.22	15.91	105.457	
3,700.00	3,700.00	3,703.30	3,703.30	8.18	8.18	84.52	160.18	1,670.47	1,678.13	1,661.77	16.36	102.560	
3,800.00	3,800.00	3,803.30	3,803.30	8.40	8.41	84.52	160.18	1,670.47	1,678.13	1,661.32	16.81	99.817	
3,900.00	3,900.00	3,903.30	3,903.30	8.63	8.63	84.52	160.18	1,670.47	1,678.13	1,660.87	17.26	97.218	
4,000.00	4,000.00	4,004.83	4,004.83	8.85	8.86	84.52	160.18	1,670.47	1,678.13	1,660.42	17.71	94.734	
4,100.00	4,100.00	4,151.25	4,151.23	9.07	9.18	126.39	161.21	1,668.20	1,677.17	1,658.93	18.24	91.949	
4,200.00	4,199.96	4,296.38	4,296.18	9.29	9.48	126.40	164.15	1,661.75	1,674.49	1,655.75	18.74	89.355	
4,300.00	4,299.86	4,396.34	4,395.93	9.51	9.70	126.43	166.81	1,655.93	1,671.52	1,652.36	19.17	87.213	
4,400.00	4,399.68	4,496.30	4,495.69	9.73	9.91	126.50	169.46	1,650.10	1,669.53	1,649.93	19.59	85.207	
4,500.00	4,499.48	4,596.27	4,595.45	9.95	10.13	126.56	172.12	1,644.27	1,667.74	1,647.72	20.02	83.288	
4,600.00	4,599.28	4,696.24	4,695.21	10.17	10.35	126.63	174.77	1,638.44	1,665.96	1,645.50	20.46	81.444	
4,700.00	4,699.08	4,796.20	4,794.97	10.40	10.56	126.70	177.43	1,632.61	1,664.18	1,643.29	20.89	79.669	
4,800.00	4,798.88	4,896.17	4,894.73	10.62	10.79	126.76	180.09	1,626.79	1,662.40	1,641.08	21.32	77.961	
4,900.00	4,898.68	4,996.13	4,994.49	10.85	11.01	126.83	182.74	1,620.96	1,660.62	1,638.86	21.76	76.316	
5,000.00	4,998.48	5,096.10	5,094.25	11.07	11.23	126.89	185.40	1,615.13	1,658.85	1,636.65	22.20	74.731	
5,100.00	5,098.27	5,196.06	5,194.01	11.30	11.45	126.96	188.05	1,609.30	1,657.08	1,634.44	22.64	73.204	

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

LEAM Drilling Services

Anticollision Report

Company: Devon Energy
Project: Eddy County, NM (NAD-83)
Reference Site: Lusitano
Site Error: 0.00 usft
Reference Well: Lusitano 27-34 Fed Com 533H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well Lusitano 27-34 Fed Com 533H
TVD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
MD Reference: 3333.2' GE + 23.5' KB @ 3356.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Lusitano - Lusitano 27-34 Fed Com 734H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: O-LEAM MWD+HDM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	5,198.07	5,296.03	5,293.77	11.53	11.68	127.03	190.71	1,603.47	1,655.31	1,632.23	23.08	71.731	
5,300.00	5,297.87	5,396.00	5,393.53	11.75	11.90	127.09	193.36	1,597.65	1,653.54	1,630.02	23.52	70.310	
5,400.00	5,397.67	5,495.96	5,493.29	11.98	12.13	127.16	196.02	1,591.82	1,651.77	1,627.81	23.96	68.938	
5,500.00	5,497.47	5,595.93	5,593.05	12.21	12.36	127.23	198.67	1,585.99	1,650.01	1,625.61	24.40	67.613	
5,600.00	5,597.27	5,695.89	5,692.81	12.44	12.58	127.29	201.33	1,580.16	1,648.25	1,623.40	24.85	66.333	
5,700.00	5,697.07	5,795.86	5,792.57	12.67	12.81	127.36	203.99	1,574.33	1,646.49	1,621.20	25.29	65.095	
5,800.00	5,796.87	5,895.83	5,892.33	12.90	13.04	127.43	206.64	1,568.51	1,644.74	1,619.00	25.74	63.899	
5,900.00	5,896.67	5,995.79	5,992.09	13.14	13.27	127.49	209.30	1,562.68	1,642.98	1,616.79	26.19	62.741	
6,000.00	5,896.46	6,095.76	6,091.85	13.37	13.50	127.56	211.95	1,556.85	1,641.23	1,614.60	26.63	61.621	
6,100.00	6,096.26	6,195.72	6,191.62	13.60	13.73	127.63	214.61	1,551.02	1,639.48	1,612.40	27.08	60.536	
6,200.00	6,196.06	6,295.69	6,291.38	13.83	13.96	127.70	217.26	1,545.19	1,637.73	1,610.20	27.53	59.485	
6,300.00	6,295.86	6,395.66	6,391.14	14.07	14.19	127.77	219.92	1,539.36	1,635.99	1,608.01	27.98	58.467	
6,400.00	6,395.66	6,495.62	6,490.90	14.30	14.43	127.83	222.58	1,533.54	1,634.25	1,605.81	28.43	57.479	
6,500.00	6,495.46	6,595.59	6,590.66	14.53	14.66	127.90	225.23	1,527.71	1,632.51	1,603.62	28.88	56.522	
6,600.00	6,595.26	6,695.55	6,690.42	14.77	14.89	127.97	227.89	1,521.88	1,630.77	1,601.43	29.33	55.592	
6,700.00	6,695.06	6,795.52	6,790.18	15.00	15.12	128.04	230.54	1,516.05	1,629.03	1,599.25	29.79	54.691	
6,800.00	6,794.86	6,895.49	6,889.94	15.24	15.36	128.11	233.20	1,510.22	1,627.30	1,597.06	30.24	53.815	
6,900.00	6,894.65	6,995.45	6,989.70	15.47	15.59	128.18	235.85	1,504.40	1,625.57	1,594.88	30.69	52.964	
7,000.00	6,994.50	7,095.42	7,089.46	15.69	15.83	128.20	238.51	1,498.57	1,623.32	1,592.20	31.12	52.155	
7,100.00	7,094.45	7,195.34	7,189.17	15.86	16.06	128.13	241.16	1,492.74	1,619.50	1,587.97	31.53	51.369	
7,200.00	7,194.45	7,295.16	7,288.79	16.04	16.30	86.13	243.82	1,486.92	1,614.17	1,582.24	31.93	50.548	
7,300.00	7,294.45	7,394.95	7,388.38	16.26	16.53	86.02	246.47	1,481.10	1,608.53	1,576.15	32.38	49.679	
7,400.00	7,394.45	7,494.75	7,487.97	16.48	16.77	85.91	249.12	1,475.29	1,602.90	1,570.08	32.82	48.832	
7,500.00	7,494.45	7,594.54	7,587.56	16.70	17.00	85.80	251.77	1,469.47	1,597.28	1,564.01	33.27	48.009	
7,600.00	7,594.45	7,694.34	7,687.15	16.93	17.24	85.69	254.42	1,463.65	1,591.66	1,557.94	33.72	47.206	
7,700.00	7,694.45	7,794.13	7,786.74	17.15	17.48	85.58	257.07	1,457.83	1,586.04	1,551.88	34.16	46.425	
7,800.00	7,794.45	7,893.93	7,886.33	17.37	17.71	85.47	259.72	1,452.01	1,580.44	1,545.82	34.61	45.663	
7,900.00	7,894.45	7,993.72	7,985.92	17.59	17.95	85.35	262.37	1,446.20	1,574.83	1,539.78	35.06	44.920	
8,000.00	7,994.45	8,093.51	8,085.51	17.81	18.19	85.24	265.02	1,440.38	1,569.24	1,533.73	35.51	44.196	
8,100.00	8,094.45	8,193.31	8,185.10	18.03	18.43	85.12	267.68	1,434.56	1,563.65	1,527.70	35.95	43.490	
8,200.00	8,194.45	8,293.10	8,284.69	18.25	18.66	85.01	270.33	1,428.74	1,558.07	1,521.66	36.40	42.801	
8,300.00	8,294.45	8,392.90	8,384.28	18.47	18.90	84.89	272.98	1,422.92	1,552.49	1,515.64	36.85	42.129	
8,400.00	8,394.45	8,492.69	8,483.87	18.69	19.14	84.78	275.63	1,417.11	1,546.92	1,509.62	37.30	41.473	
8,500.00	8,494.42	8,592.43	8,583.40	18.90	19.38	-95.28	278.28	1,411.29	1,541.47	1,503.73	37.74	40.847	
8,600.00	8,593.14	8,690.53	8,681.30	19.06	19.61	-96.35	280.89	1,405.57	1,537.43	1,499.32	38.11	40.344	
8,700.00	8,687.72	8,784.05	8,774.63	19.19	19.84	-97.72	283.37	1,400.12	1,535.82	1,497.38	38.45	39.944	
8,701.01	8,688.64	8,784.96	8,775.53	19.19	19.84	-97.74	283.39	1,400.07	1,535.82	1,497.37	38.45	39.941 CC, ES	
8,800.00	8,775.28	8,870.15	8,860.55	19.32	20.04	-99.15	285.66	1,395.10	1,537.79	1,499.02	38.77	39.664	
8,900.00	8,853.18	8,946.21	8,936.45	19.43	20.22	-100.29	287.68	1,390.67	1,544.70	1,505.61	39.09	39.517 SF	
9,000.00	8,919.05	9,009.92	9,000.03	19.55	20.38	-100.79	289.37	1,386.95	1,557.91	1,518.49	39.42	39.519	
9,100.00	8,970.87	9,059.34	9,049.35	19.77	20.50	-100.32	290.68	1,384.07	1,578.45	1,538.67	39.78	39.679	
9,200.00	9,007.08	9,092.98	9,082.92	20.12	20.58	-98.57	291.58	1,382.11	1,606.82	1,566.66	40.16	40.007	
9,300.00	9,026.58	9,109.81	9,099.71	20.58	20.62	-95.37	292.02	1,381.13	1,642.76	1,602.20	40.56	40.504	
9,400.00	9,030.00	9,110.53	9,100.43	21.14	20.62	-92.56	292.04	1,381.09	1,685.20	1,644.25	40.95	41.157	
9,500.00	9,030.00	9,107.84	9,097.75	21.79	20.61	-92.46	291.97	1,381.24	1,732.56	1,691.20	41.36	41.893	
9,600.00	9,030.00	9,105.15	9,095.07	22.55	20.61	-92.35	291.90	1,381.40	1,784.27	1,742.48	41.79	42.697	
9,700.00	9,030.00	9,102.47	9,092.39	23.40	20.60	-92.25	291.83	1,381.56	1,839.96	1,797.73	42.23	43.570	
9,800.00	9,030.00	9,099.78	9,089.70	24.33	20.59	-92.15	291.76	1,381.71	1,899.28	1,856.62	42.67	44.512	
9,900.00	9,030.00	9,097.09	9,087.02	25.33	20.59	-92.05	291.69	1,381.87	1,961.91	1,918.81	43.10	45.520	
10,000.00	9,030.00	9,094.40	9,084.34	26.39	20.58	-91.94	291.61	1,382.03	2,027.53	1,984.02	43.52	46.592	
10,100.00	9,030.00	9,091.72	9,081.66	27.51	20.57	-91.84	291.54	1,382.18	2,095.87	2,051.95	43.92	47.724	
10,200.00	9,030.00	9,089.03	9,078.98	28.68	20.57	-91.74	291.47	1,382.34	2,166.67	2,122.37	44.30	48.913	

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

LEAM Drilling Services

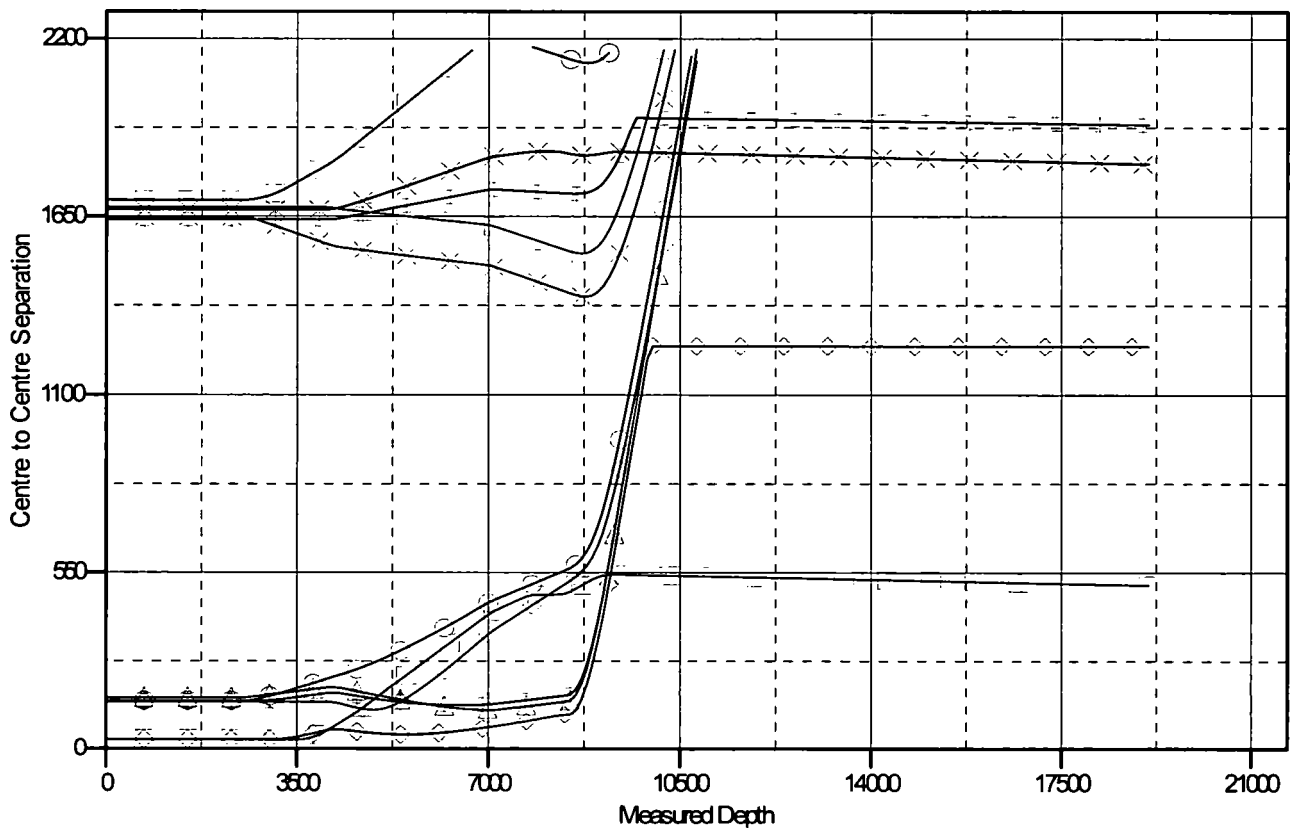
Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3333.2' GE + 23.5' KB @ 3356.70usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.3333334

Coordinates are relative to: Lusitano 27-34 Fed Com 533H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.30°

Ladder Plot



LEGEND

- Lusitano 27-34 Fed Com 232H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 535H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 733H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 523H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 233H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 622H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 713H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 624H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 734H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 333H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 525H, OH, Plan #1V0
- Lusitano 27-34 Fed Com 335H, OH, Plan #1V0

LEAM Drilling Services

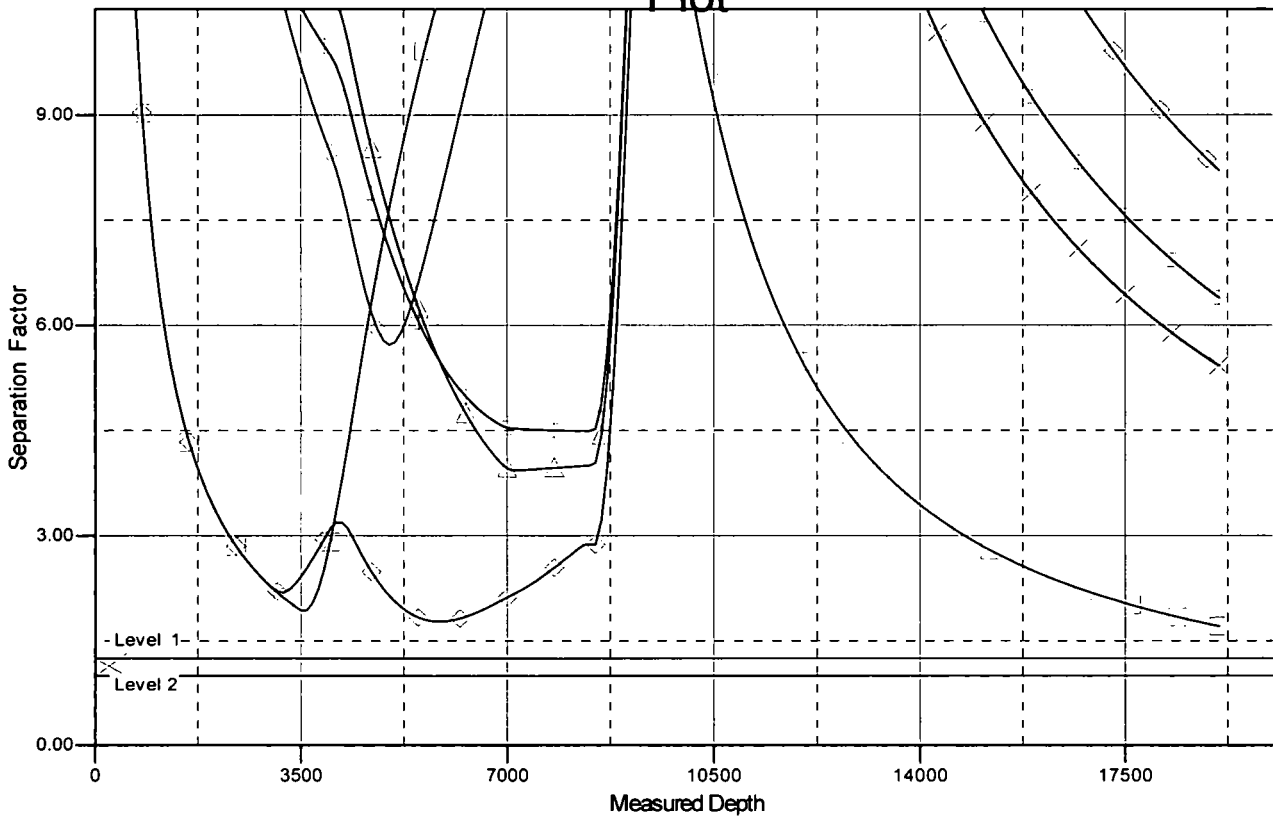
Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Lusitano 27-34 Fed Com 533H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Reference Site:	Lusitano	MD Reference:	3333.2' GE + 23.5' KB @ 3356.70usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Lusitano 27-34 Fed Com 533H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3333.2' GE + 23.5' KB @ 3356.70usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.3333334

Coordinates are relative to: Lusitano 27-34 Fed Com 533H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.30°

Separation Factor Plot



LEGEND

- | | | |
|--|--|--|
| ● Lusitano 27-34 Fed Com 232H, OH, Plan #1V0 | ✱ Lusitano 27-34 Fed Com 535H, OH, Plan #1V0 | ▲ Lusitano 27-34 Fed Com 733H, OH, Plan #1V0 |
| ■ Lusitano 27-34 Fed Com 523H, OH, Plan #1V0 | ◆ Lusitano 27-34 Fed Com 233H, OH, Plan #1V0 | ● Lusitano 27-34 Fed Com 622H, OH, Plan #1V0 |
| ○ Lusitano 27-34 Fed Com 713H, OH, Plan #1V0 | ✱ Lusitano 27-34 Fed Com 624H, OH, Plan #1V0 | ■ Lusitano 27-34 Fed Com 734H, OH, Plan #1V0 |
| ◆ Lusitano 27-34 Fed Com 333H, OH, Plan #1V0 | ■ Lusitano 27-34 Fed Com 525H, OH, Plan #1V0 | ○ Lusitano 27-34 Fed Com 335H, OH, Plan #1V0 |



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.

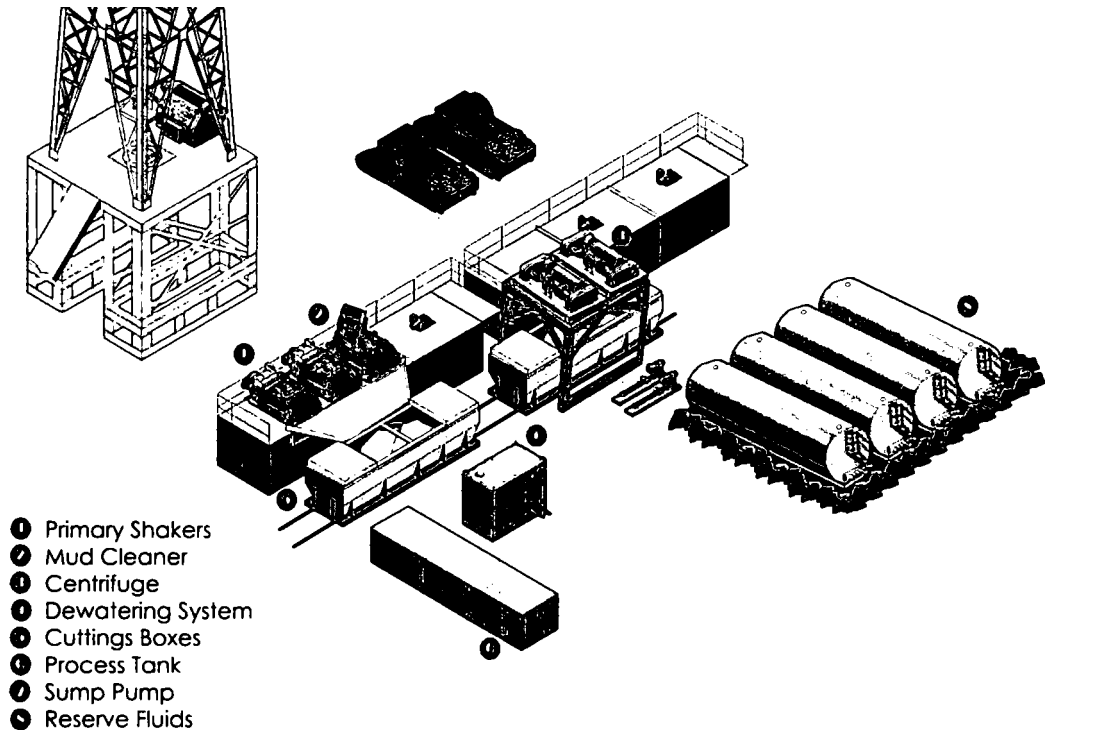
II. Operations and Maintenance Plan

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.

Devon Energy – Lusitano 27-34 Fed Com 533H

1. Geologic Formations

TVD of target	9030	Pilot hole depth	N/A
MD at TD:	19111	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	886		
Salado	1156		
Base of Salt	4241		
Delaware	4281		
L Brushy Canyon	7996		
Bone Spring	8221		
Leonard 'A'	8321		
Leonard 'B'	8726		
Leonard 'C'	8986		
Landing Pt	9030		

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

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (PPF)	Grade	Conn.
	From	To				
17.5"	0	911	13.375"	48	H-40	STC
12.25"	0	4381	9.625"	40	J-55	BTC
8.75"	0	TD	5.5"	17	P-110	BTC
BLM Minimum Safety Factor				Collapse: 1.125	Burst: 1.00	Tension: 1.6 Dry 1.8 Wet

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h Must have table for contingency casing
- Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
- Variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing. No losses are expected in subsequent hole section.
- Int casing shoe will be selected based on drilling data, gamma, and flows experienced while drilling. Setting depth will be revised accordingly if needed.
- A variance is requested to waive the centralizer requirement for the intermediate and production casing strings if drilling conditions dictate

Devon Energy – Lusitano 27-34 Fed Com 533H

	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 rd 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 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program (3-String Primary Design)

Casing	# Sks	TOC	Wt. (lb/gal)	H ₂ O (gal/sk)	Yld (ft ³ /sack)	Slurry Description
Surface	951	Surf	13.2	6.33	1.33	Lead: Class C Cement + additives
Int	681	Surf	9	20.6	1.94	Lead: Class C Cement + additives
	196	500' above shoe	13.2	6.42	1.33	Tail: Class H / C + additives
Production	357	500' tieback	9	20.6	1.94	Lead: Class H / C + additives
	1853	KOP	13.2	5.31	1.6	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet

Devon Energy – Lusitano 27-34 Fed Com 533H

above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	% Excess
Surface	100%
Intermediate	50%
Production	10%

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	3M	Annular	X	50% of rated working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	3M	Annular (5M)	X	50% of rated working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

5. Mud Program

6. Depth		Type	Weight (ppg)	Vis	Water Loss
From	To				
0	911	FW	8.5 – 9.0	28-34	N/C
911	4381	Brine	10 – 10.5	28-34	N/C
4381	TD	WBM	8.5 – 9.0	28-34	N/C

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

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

6. Logging and Testing Procedures

Logging, Coring and Testing.	
X	Will run GR/CNL 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	
	Density	
X	CBL	Production casing
X	Mud log	KOP to TD

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4226 psi
Abnormal Temperature	No

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

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

8. Other facets of operation

Is this a walking operation? Potentially

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

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

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.

Devon Energy – Lusitano 27-34 Fed Com 533H

- a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the 10 ¾" 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

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 3000 (3M) psi.

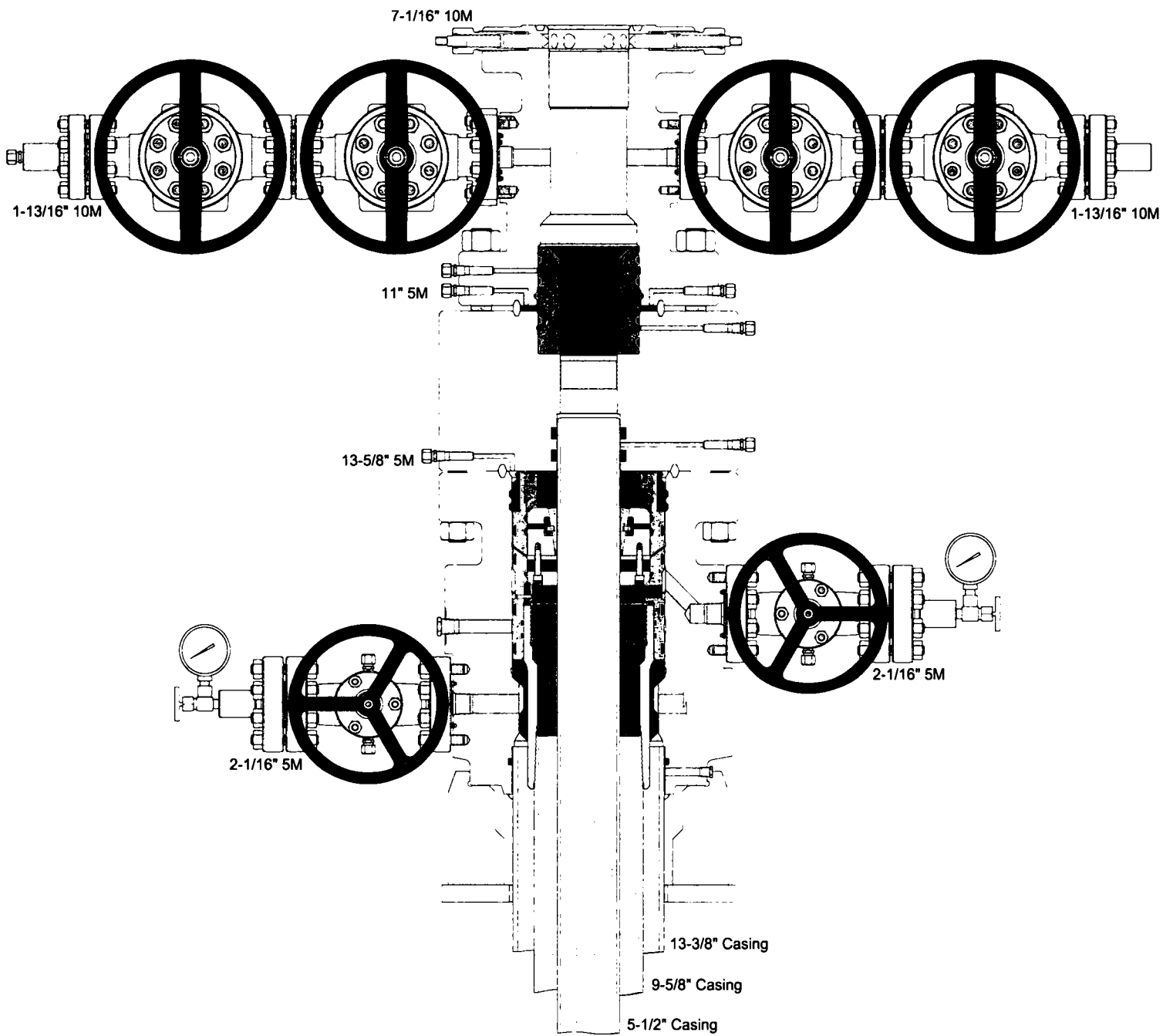
- Wellhead will be installed by wellhead representatives.
- If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- Wellhead representative will install the test plug for the initial 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 the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.

After running the 9-5/8" intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M 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 3,000 psi WP.

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





Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

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

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

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

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

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



RIG 212


**PHOENIX RUBBER
INDUSTRIAL LTD.**
QUALITY DOCUMENT

 6728 Szeged, Budapesti út 10. Hungary • H-6701 Szeged, P. O. Box 152
 Phone: (3662) 566-737 • Fax: (3662) 566-738

 SALES & MARKETING: H-1092 Budapest, Ráday u. 42-44. Hungary • H-1440 Budapest, P. O. Box 26
 Phone: (361) 456-4200 • Fax: (361) 217-2972, 456-4273 • www.taurusemerge.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 552	
PURCHASER: Phoenix Beattie Co.				P.O. N°: 1519FA-871	
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 34128		NOMINAL / ACTUAL LENGTH: 11,43 m			
W.P. 68,96 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature See attachment. (1 page)					
↑ 10 mm = 10 Min. → 10 mm = 25 MPa					
COUPLINGS					
Type	Serial N°		Quality	Heat N°	
3" coupling with 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 Testing Dept. PHOENIX RUBBER Q.C.		

40920-0-00015 N8006

6	GNL	+0.000	0°C	14:00		
	RD+	+0.000	0°C	14:00		
	BL	+1044	0°C	14:00		
7	GNL	+0.000	0°C	13:40	40	60
	RD+	+0.000	0°C	13:40		80
	BL	+1047	0°C	13:40		
6	GNL	+0.000	0°C	13:20		
	RD+	+0.000	0°C	13:20		
	BL	+1050	0°C	13:20		
5	GNL	+0.000	0°C	13:00		
	RD+	+0.000	0°C	13:00		
	BL	+1055	0°C	13:00		
4						
3						
2						

GEMEX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE CO.
PHOENIX RUBBER CO.



APD ID: 10400035209

Submission Date: 10/16/2018

Highlighted data
reflects the most
recent changes

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Show Final Text

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Lusitano_27_34_Fed_Com_533H_Ex_Access_Rd_20181015104234.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

ROW ID(s)

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:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Lusitano_27_34_Fed_Com_533H_Access_Rds_20181015104300.pdf

New road type: COLLECTOR,RESOURCE

Length: 9442

Feet

Width (ft.): 30

Max slope (%): 6

Max grade (%): 4

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 20

New road access erosion control: WATER DRAINAGE DITCH

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Access surfacing type: GRAVEL

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: SEE INTERIM RECLAMATION DIAGRAM

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: CULVERT

Drainage Control comments: N/A

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

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Lusitano_27_34_Fed_Com_533H_1mile_Map_20181015104333.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: All flowlines will be buried going to the Lusitano 27 CTB 3, aka Cotton Draw Unit 27-34 CTB 3.

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

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): 270000

Source volume (acre-feet): 34.801136

Source volume (gal): 11340000

Water source and transportation map:

Lusitano_27_34_Fed_Com_533H_Wtr_Xfr_Map_20181015120633.pdf

Water source comments: The attached Water Transfer Map is a proposal only and the final route and documentation will be provided by a Devon contractor prior to installation. When available Devon will always follow existing disturbance.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Section 6 - Construction Materials

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

Construction Materials source location attachment:

Lusitano_27_34_Fed_Com_533H_Caliche_Pit_20181015121009.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: WATER BASED CUTTINGS

Amount of waste: 1874 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 BE DISPOSED OF AT R360, SUNDANCE OR EQUIVALENT.

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: Produced water during production operations. This amount is a daily average during the first year of production (BWPD).

Amount of waste: 1000 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Disposal type description:

Disposal location description: One of three company owned SWD facilities in the area: CDU 181, CDU 89, CDU 84.

Waste type: FLOWBACK

Waste content description: Produced water during flowback operations. This amount is a daily average during flowback (BWPD).

Amount of waste: 1500 barrels

Waste disposal frequency : Daily

Safe containment description: N/A

Safe containmant attachment:

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

Disposal type description:

Disposal location description: One of three company owned SWD facilities in the area: CDU 181, CDU 89, CDU 84.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

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

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

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

WCuttings area liner

Cuttings area liner specifications and installation description

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Lusitano_27_34_Fed_Com_533H_Rig_Layout_20181015121120.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: LUSITANO 27 WELLPAD

Multiple Well Pad Number: 3

Recontouring attachment:

Lusitano_27_34_Fed_Com_533H_Reclamation_20181015131116.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.

Well pad proposed disturbance (acres): 5.62	Well pad interim reclamation (acres): 1.921	Well pad long term disturbance (acres): 3.699
Road proposed disturbance (acres): 6.502	Road interim reclamation (acres): 0	Road long term disturbance (acres): 6.502
Powerline proposed disturbance (acres): 0.621	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0.621
Pipeline proposed disturbance (acres): 0.185	Pipeline interim reclamation (acres): 0	Pipeline long term disturbance (acres): 0.185
Other proposed disturbance (acres): 4.219	Other interim reclamation (acres): 0	Other long term disturbance (acres): 4.219
Total proposed disturbance: 17.147	Total interim reclamation: 1.921	Total long term disturbance: 15.226

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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type

Pounds/Acre

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: JACOB

Last Name: OCHOA

Phone: (575)748-9934

Email: jacob.ochoa@dvn.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: MAINTAIN WEEDS ON AN AS NEED BASIS.

Weed treatment plan attachment:

Monitoring plan description: MONITOR AS NEEDED.

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: 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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

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:

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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:

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: LUSITANO 27-34 FED COM

Well Number: 533H

SUPO Additional Information: CTB PLAT ELECTRIC PLAT FLOWLINE PLAT GAS & WATER BATTERY CONNECT

Use a previously conducted onsite? YES

Previous Onsite information: 6/1/2016

Other SUPO Attachment

Lusitano_27_34_Fed_Com_533H_CDU_27_34_CTB_3_20181015121324.pdf

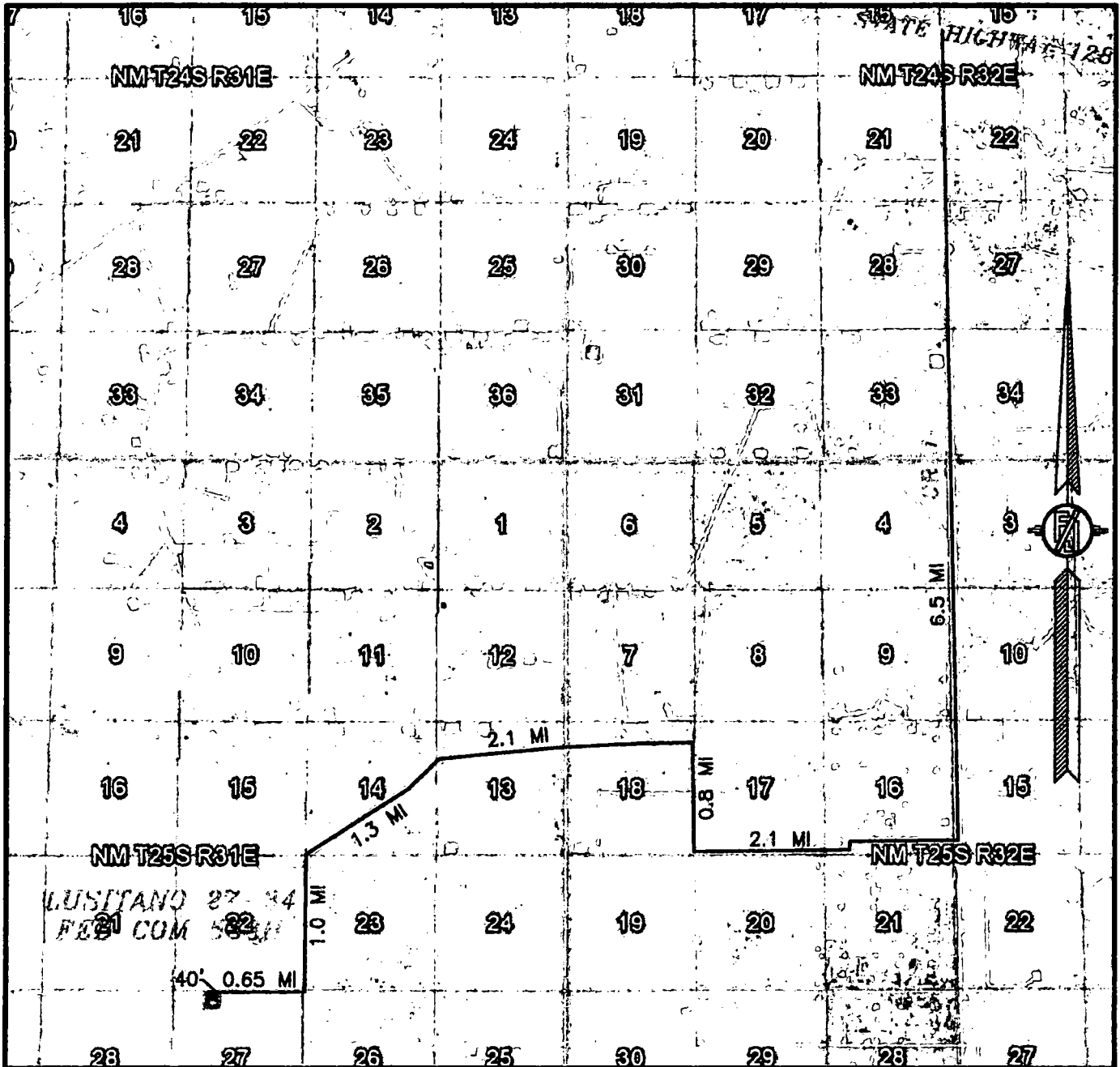
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Lusitano_27_34_Fed_Com_533H_Flowline_20181015121330.pdf

Lusitano_27_34_Fed_Com_533H_Gas_Wtr_Battery_Connect_20181015121335.pdf

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SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 ACCESS AERIAL ROUTE MAP



NOT TO SCALE
 AERIAL PHOTO:
 GOOGLE EARTH
 NOVEMBER 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.
 LUSITANO 27-34 FED COM 533H
 LOCATED 385 FT. FROM THE NORTH LINE
 AND 1732 FT. FROM THE WEST LINE OF
 SECTION 27, TOWNSHIP 25 SOUTH,
 RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 LAND STATUS: BLM

SEPTEMBER 27, 2018

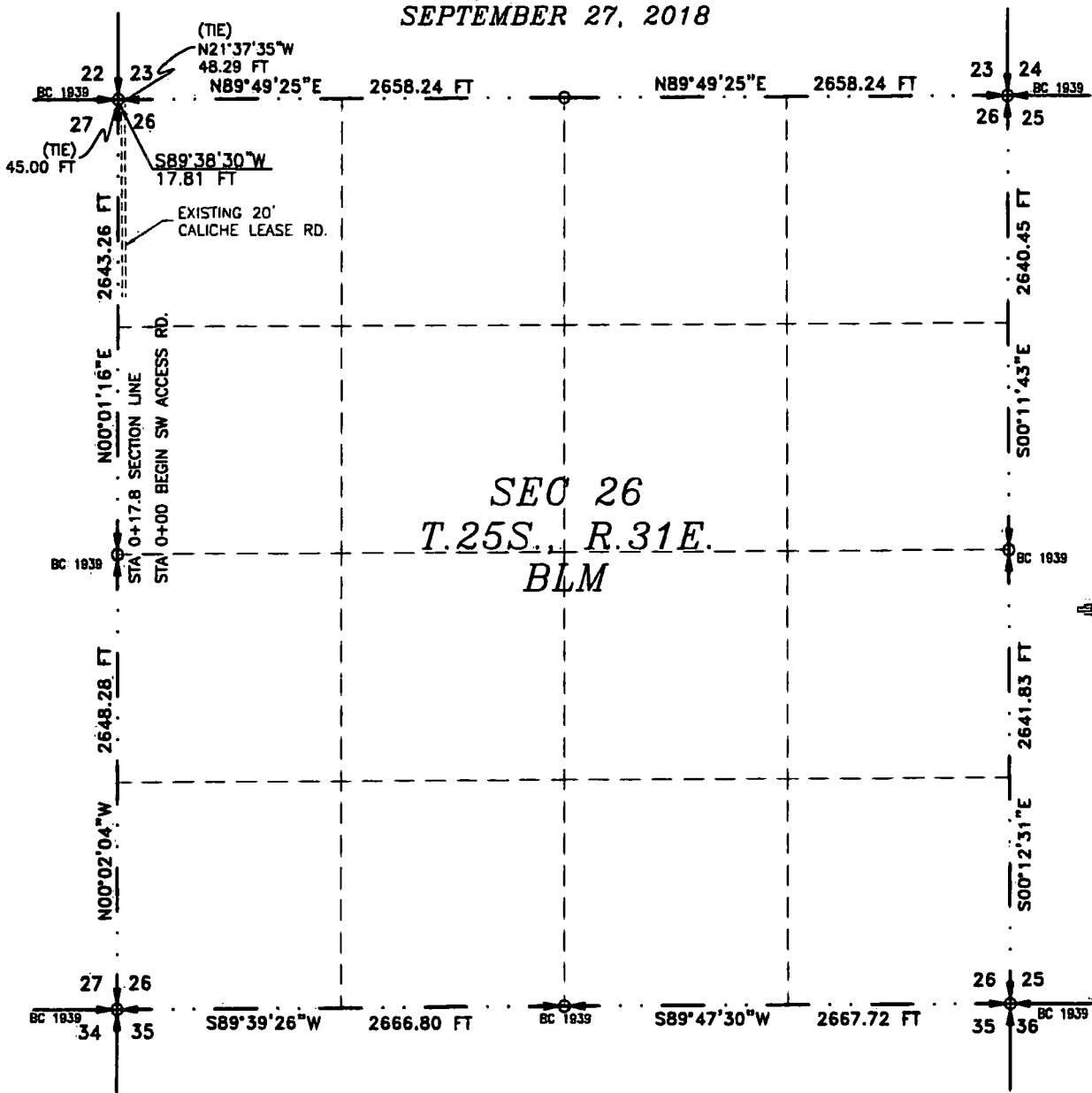
SURVEY NO. 6424A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

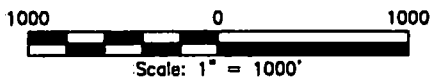
ACCESS ROAD PLAT

ACCESS ROAD TO THE LUSITANO 27 PAD 3 (LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 933H, 713H, 233H, 533H, 523H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SEPTEMBER 27, 2018



SEE NEXT SHEET (2-4) FOR DESCRIPTION



GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-4

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO 88220 Phone (575) 234-3341

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 27 DAY OF SEPTEMBER 2018

FILMON F. JARAMILLO 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6424A

ACCESS ROAD PLAT

ACCESS ROAD TO THE LUSITANO 27 PAD 3 (LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H, 523H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SEPTEMBER 27, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

SOUTHWEST ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N21°37'35"W, A DISTANCE OF 48.29 FEET;

THENCE S89°38'30"W A DISTANCE OF 17.81 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N00°01'16"E, A DISTANCE OF 45.00 FEET;

SAID STRIP OF LAND BEING 17.81 FEET OR 1.08 RODS IN LENGTH, CONTAINING 0.012 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 17.81 L.F. 1.08 RODS 0.012 ACRES

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 27 DAY OF SEPTEMBER 2018

FILMON F. JARAMILLO, INC. 12797
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-4

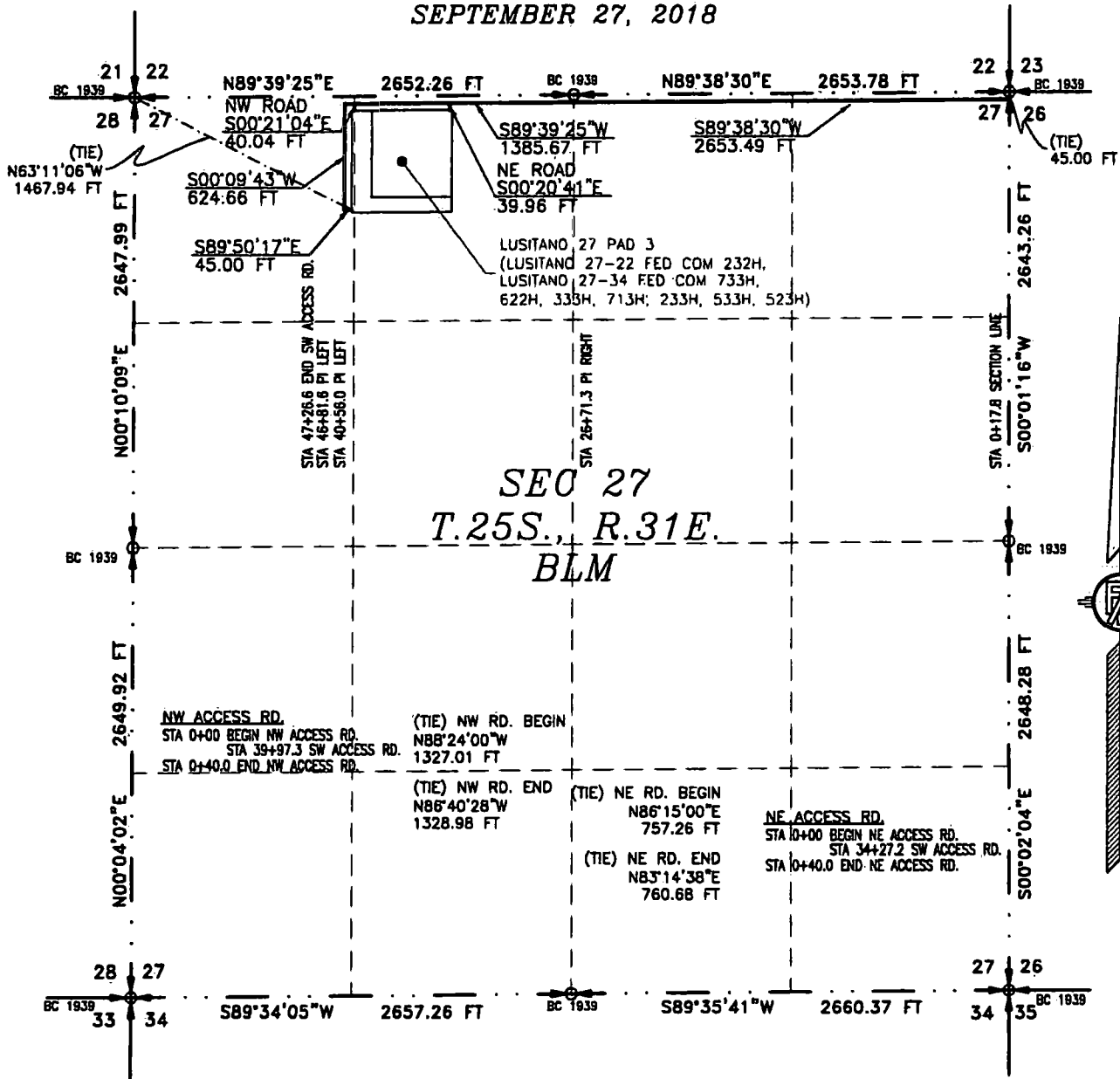
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SURVEY NO. 6424A

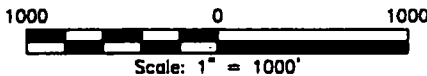
ACCESS ROAD PLAT

ACCESS ROAD TO THE LUSITANO 27 PAD 3 (LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H, 523H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SEPTEMBER 27, 2018



SEE NEXT SHEET (4-4) FOR DESCRIPTION



GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 3-4

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 27 DAY OF SEPTEMBER, 2018

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6424A

ACCESS ROAD PLAT

ACCESS ROAD TO THE LUSITANO 27 PAD 3 (LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H, 523H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SEPTEMBER 27, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

SOUTHWEST ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NE/4 NE/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHEAST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N00°01'16"E, A DISTANCE OF 45.00 FEET;

THENCE S89°38'30"W A DISTANCE OF 2653.49 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°39'25"W A DISTANCE OF 1385.67 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S00°09'43"W A DISTANCE OF 624.66 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°50'17"E A DISTANCE OF 45.00 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N63°11'06"W, A DISTANCE OF 1467.94 FEET;

SAID STRIP OF LAND BEING 4708.82 FEET OR 285.38 RODS IN LENGTH, CONTAINING 3.243 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NE/4 1326.91 L.F. 80.42 RODS 0.914 ACRES

NW/4 NE/4 1326.91 L.F. 80.42 RODS 0.914 ACRES

NE/4 NW/4 1326.17 L.F. 80.37 RODS 0.913 ACRES

NW/4 NW/4 728.83 L.F. 44.17 RODS 0.502 ACRES

NORTHEAST ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NE/4 NW/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N86°15'00"E, A DISTANCE OF 757.26 FEET;

THENCE S00°20'41"E A DISTANCE OF 39.96 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N83°14'38"E, A DISTANCE OF 760.68 FEET;

SAID STRIP OF LAND BEING 39.96 FEET OR 2.42 RODS IN LENGTH, CONTAINING 0.028 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NW/4 39.96 L.F. 2.42 RODS 0.028 ACRES

NORTHWEST ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NE/4 NW/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N88°24'00"W, A DISTANCE OF 1327.01 FEET;

THENCE S00°21'04"E A DISTANCE OF 40.04 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N86°40'28"W, A DISTANCE OF 1328.98 FEET;

SAID STRIP OF LAND BEING 40.04 FEET OR 2.43 RODS IN LENGTH, CONTAINING 0.028 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NW/4 40.04 L.F. 2.43 RODS 0.028 ACRES

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 27 DAY OF SEPTEMBER 2018

[Signature of Filmon F. Jaramillo]
FILMON F. JARAMILLO #12797
301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6424A

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

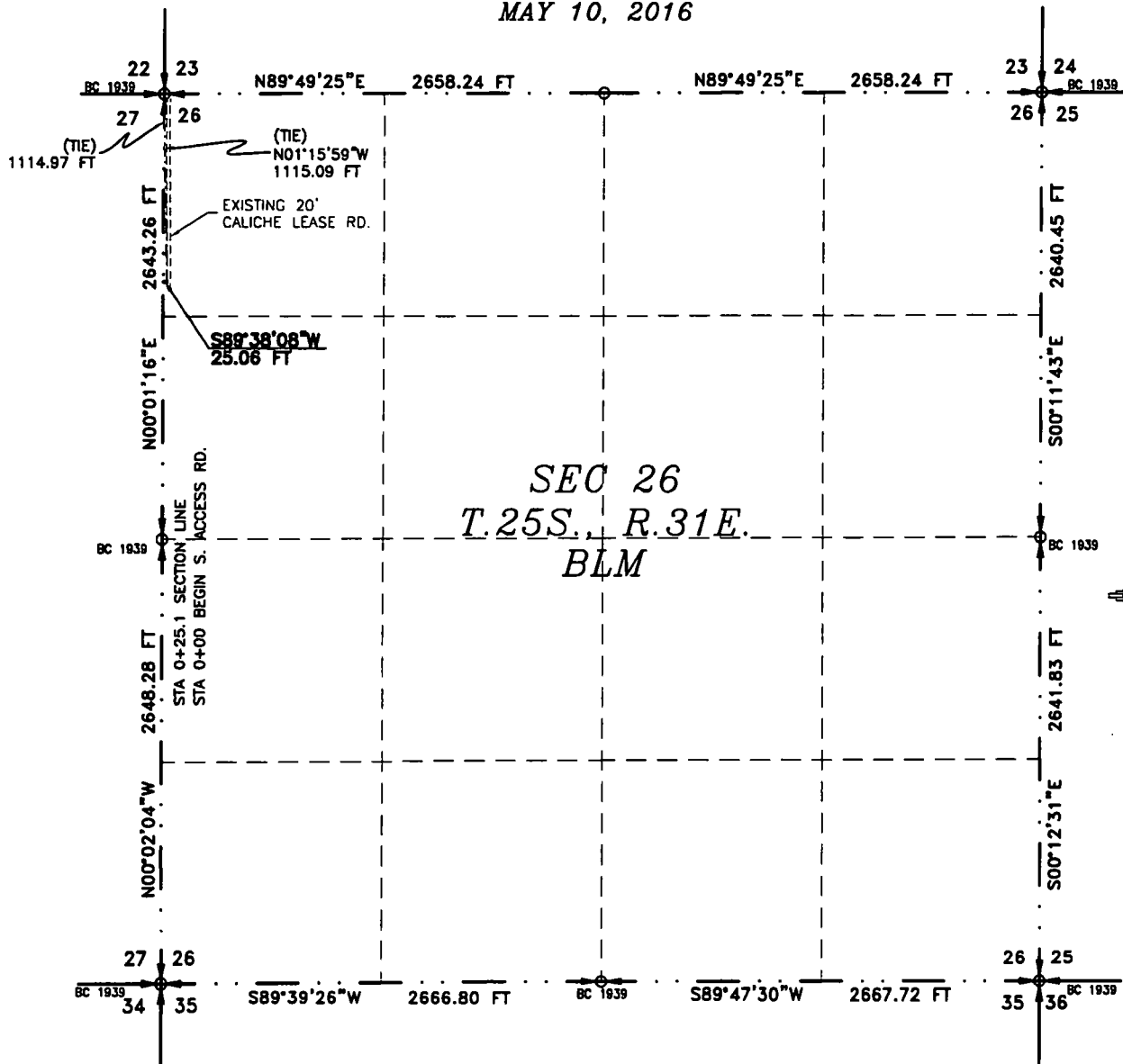
2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 4-4

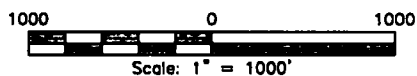
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT (AA000055110)
SOUTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3 & TO THE
COTTON DRAW UNIT 27-34 CTB 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016



SEE NEXT SHEET (2-6) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 11 DAY OF MAY 2016

Filmon F. Jaramillo
 FILMON F. JARAMILLO, PLS. 12797

MADRON SURVEYING, INC.
 301 SOUTH CANAL
 CARLSBAD, NEW MEXICO 88220
 Phone (575) 234-3341

SHEET: 1-6

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 4666

ACCESS ROAD PLAT (AA000055110)
SOUTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3 & TO THE
COTTON DRAW UNIT 27-34 CTB 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N01°15'59"W, A DISTANCE OF 1115.09 FEET;

THENCE S89°38'08"W A DISTANCE OF 25.06 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N00°01'16"E, A DISTANCE OF 1114.97 FEET;

SAID STRIP OF LAND BEING 25.06 FEET OR 1.52 RODS IN LENGTH, CONTAINING 0.017 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 25.06 L.F. 1.52 RODS 0.017 ACRES

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 10 DAY OF MAY 2016.

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES, NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

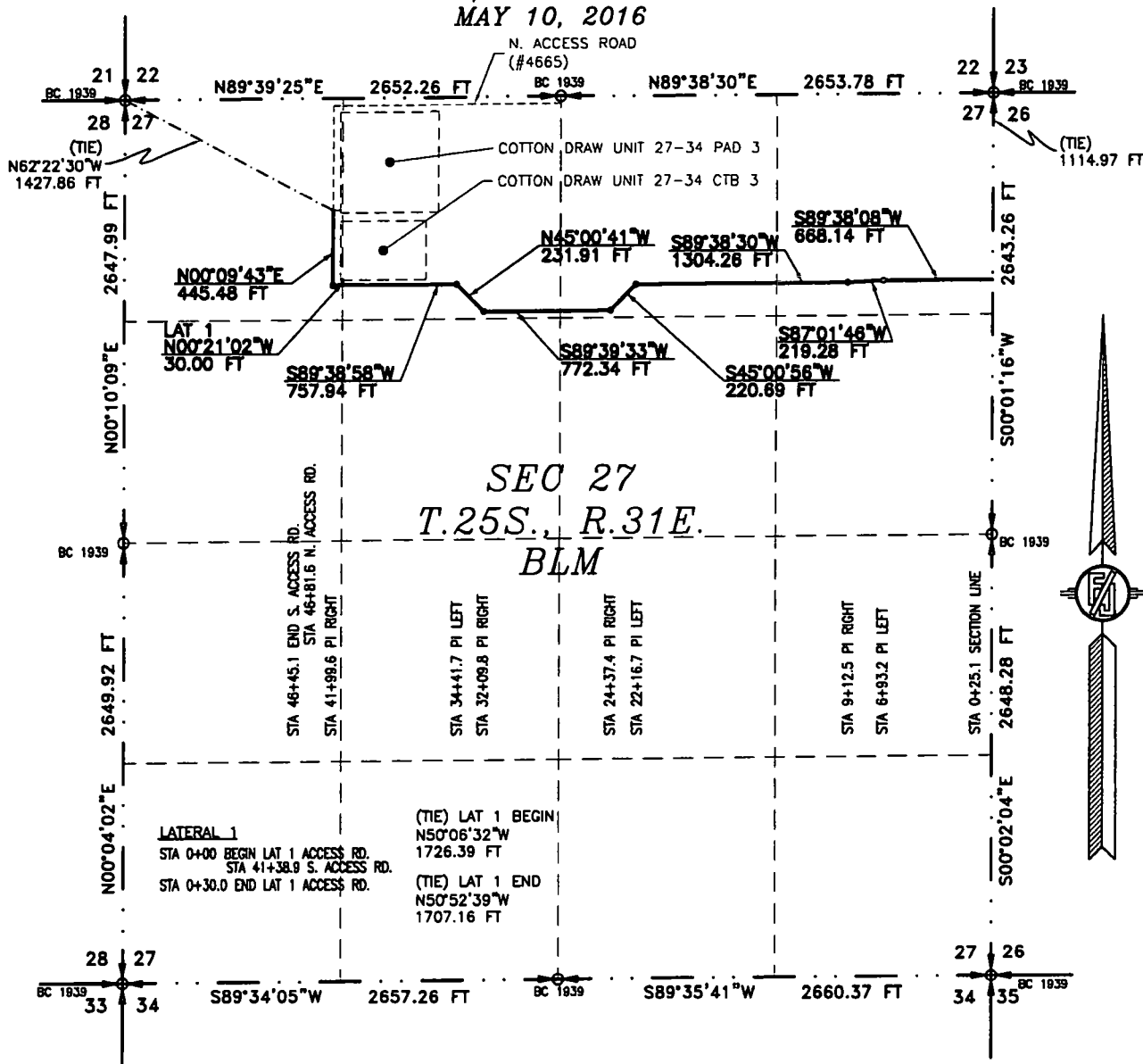
SHEET: 2-6

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 **CARLSBAD, NEW MEXICO**

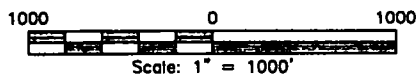
SURVEY NO. 4666

ACCESS ROAD PLAT (AA000055110)
SOUTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3 & TO THE
COTTON DRAW UNIT 27-34 CTB 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016



SEE NEXT SHEET (4-6) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 10 DAY OF MAY 2016

[Signature]
FILMON F. JARAMILLO, PLS. 12797
PROFESSIONAL SURVEYOR
301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 3-6

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 4666

ACCESS ROAD PLAT (AA000055110)
SOUTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3 & TO THE
COTTON DRAW UNIT 27-34 CTB 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

SOUTH ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NE/4 NE/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHEAST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N00°01'16"E, A DISTANCE OF 1114.97 FEET;

THENCE S89°38'08"W A DISTANCE OF 668.14 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S87°01'46"W A DISTANCE OF 219.28 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S89°38'30"W A DISTANCE OF 1304.26 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S45°00'56"W A DISTANCE OF 220.69 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S89°39'33"W A DISTANCE OF 772.34 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N45°00'41"W A DISTANCE OF 231.91 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE S89°38'58"W A DISTANCE OF 757.94 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N00°09'43"E A DISTANCE OF 445.48 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N62°22'30"W, A DISTANCE OF 1427.86 FEET;

SAID STRIP OF LAND BEING 4620.04 FEET OR 280.01 RODS IN LENGTH, CONTAINING 3.182 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NE/4	1327.61 L.F.	80.46 RODS	0.914 ACRES
NW/4 NE/4	1392.08 L.F.	84.37 RODS	0.959 ACRES
NE/4 NW/4	1394.86 L.F.	84.54 RODS	0.961 ACRES
NW/4 NW/4	505.49 L.F.	30.64 RODS	0.348 ACRES

LATERAL 1 ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N50°06'32"W, A DISTANCE OF 1726.39 FEET;

THENCE N00°21'02"W A DISTANCE OF 30.00 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N50°52'39"W, A DISTANCE OF 1707.16 FEET;

SAID STRIP OF LAND BEING 30.00 FEET OR 1.82 RODS IN LENGTH, CONTAINING 0.021 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4	30.00 L.F.	1.82 RODS	0.021 ACRES
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SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 10 DAY OF MAY, 2018

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 4-6

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

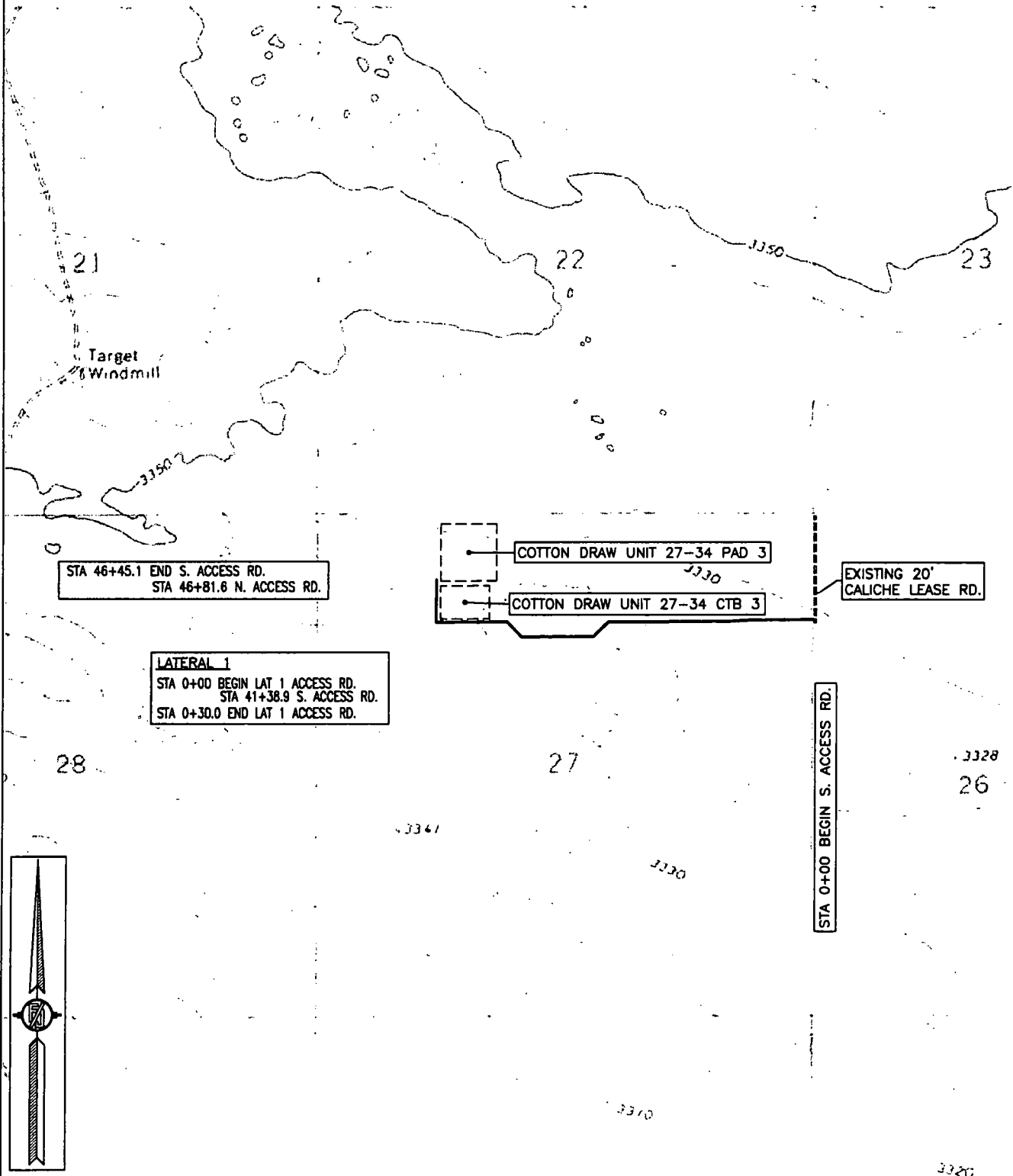
SURVEY NO. 4666

CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT (AA000055110)

**SOUTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3 & TO THE
COTTON DRAW UNIT 27-34 CTB 3**

**DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTIONS 26, 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016**



SHEET: 5-6

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SURVEY NO. 4666

ACCESS ROAD PLAT (AA000055110)
SOUTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3 & TO THE
COTTON DRAW UNIT 27-34 CTB 3

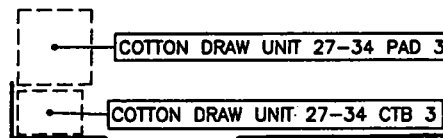
DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTIONS 26, 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016

NM T25S R31E

21

22

STA 46+45.1 END S. ACCESS RD.
STA 46+81.6 N. ACCESS RD.



EXISTING 20'
CALICHE LEASE RD.

LATERAL 1
STA 0+00 BEGIN LAT 1 ACCESS RD.
STA 41+38.9 S. ACCESS RD.
STA 0+30.0 END LAT 1 ACCESS RD.

28

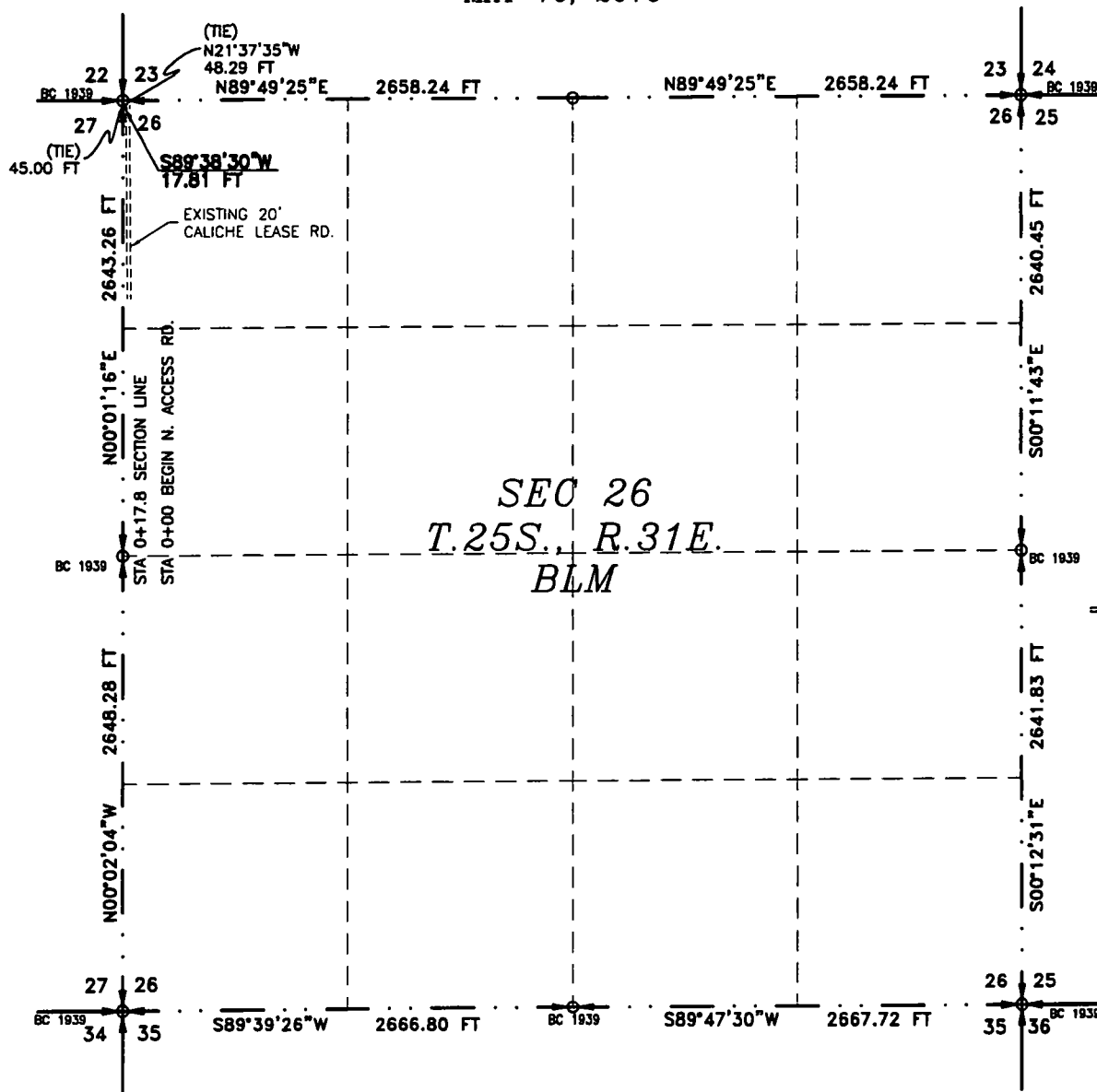
27

STA 0+00 BEGIN S. ACCESS RD.

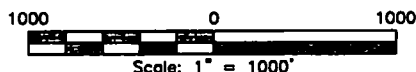


ACCESS ROAD PLAT (AA000055110)
NORTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016



SEE NEXT SHEET (2-6) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,
NEW MEXICO, THIS 17 DAY OF MAY 2016

FILMON F. JARAMILLO, PLS. 12797
REGISTERED PROFESSIONAL SURVEYOR
301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 1-6

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 4665

ACCESS ROAD PLAT (AA000055110)
NORTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NW/4 NW/4 OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N21°37'35"W, A DISTANCE OF 48.29 FEET;

THENCE S89°38'30"W A DISTANCE OF 17.81 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 26, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N00°01'16"E, A DISTANCE OF 45.00 FEET;

SAID STRIP OF LAND BEING 17.81 FEET OR 1.08 RODS IN LENGTH, CONTAINING 0.012 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NW/4 17.81 L.F. 1.08 RODS 0.012 ACRES

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,
NEW MEXICO, THIS 12 DAY OF MAY 2016

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-6

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

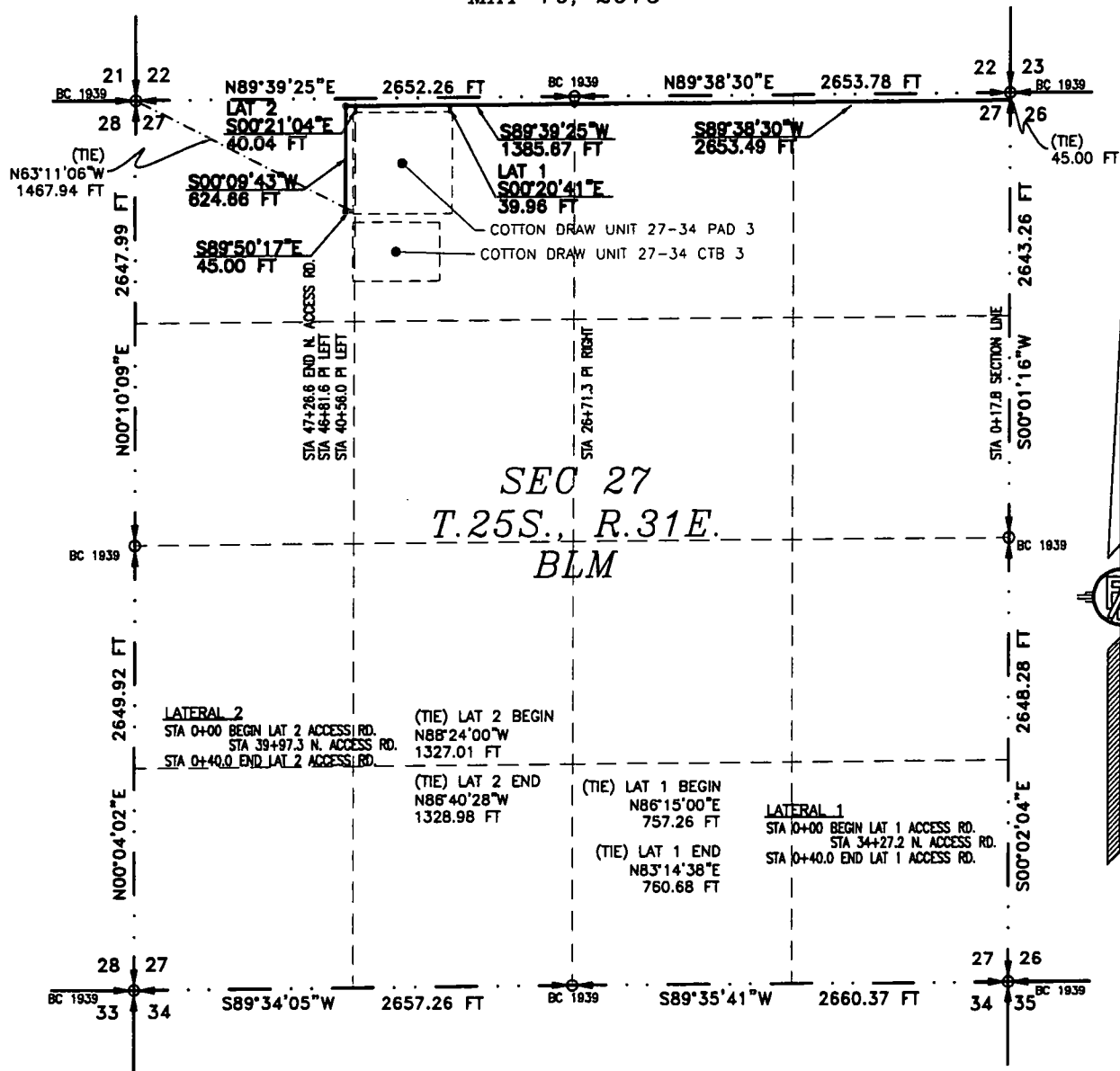
SURVEY NO. 4665

FILMON F. JARAMILLO
301 SOUTH CANAL
(575) 234-3341

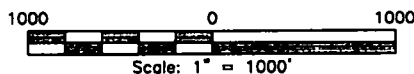
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

ACCESS ROAD PLAT (AA000055110)
NORTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016



SEE NEXT SHEET (4-6) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 12TH DAY OF MAY 2016

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 3-6

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SURVEY NO. 4665

ACCESS ROAD PLAT (AA000055110)
NORTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

NORTH ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NE/4 NE/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHEAST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N00°01'16"E, A DISTANCE OF 45.00 FEET;

THENCE S89°38'30"W A DISTANCE OF 2653.49 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°39'25"W A DISTANCE OF 1385.67 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S00°09'43"W A DISTANCE OF 624.66 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°50'17"E A DISTANCE OF 45.00 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N63°11'06"W, A DISTANCE OF 1467.94 FEET;

SAID STRIP OF LAND BEING 4708.82 FEET OR 285.38 RODS IN LENGTH, CONTAINING 3.243 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NE/4	1326.91 L.F.	80.42 RODS	0.914 ACRES
NW/4 NE/4	1326.91 L.F.	80.42 RODS	0.914 ACRES
NE/4 NW/4	1326.17 L.F.	80.37 RODS	0.913 ACRES
NW/4 NW/4	728.83 L.F.	44.17 RODS	0.502 ACRES

LATERAL 1 ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NE/4 NW/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N86°15'00"E, A DISTANCE OF 757.26 FEET;

THENCE S00°20'41"E A DISTANCE OF 39.96 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N83°14'38"E, A DISTANCE OF 760.68 FEET;

SAID STRIP OF LAND BEING 39.96 FEET OR 2.42 RODS IN LENGTH, CONTAINING 0.028 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NW/4	39.96 L.F.	2.42 RODS	0.028 ACRES
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LATERAL 2 ACCESS ROAD

BEGINNING AT A POINT WITHIN THE NE/4 NW/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N88°24'00"W, A DISTANCE OF 1327.01 FEET;

THENCE S00°21'04"E A DISTANCE OF 40.04 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N86°40'28"W, A DISTANCE OF 1328.98 FEET;

SAID STRIP OF LAND BEING 40.04 FEET OR 2.43 RODS IN LENGTH, CONTAINING 0.028 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NW/4	40.04 L.F.	2.43 RODS	0.028 ACRES
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SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 10 DAY OF MAY 2016

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

FILMON F. JARAMILLO
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

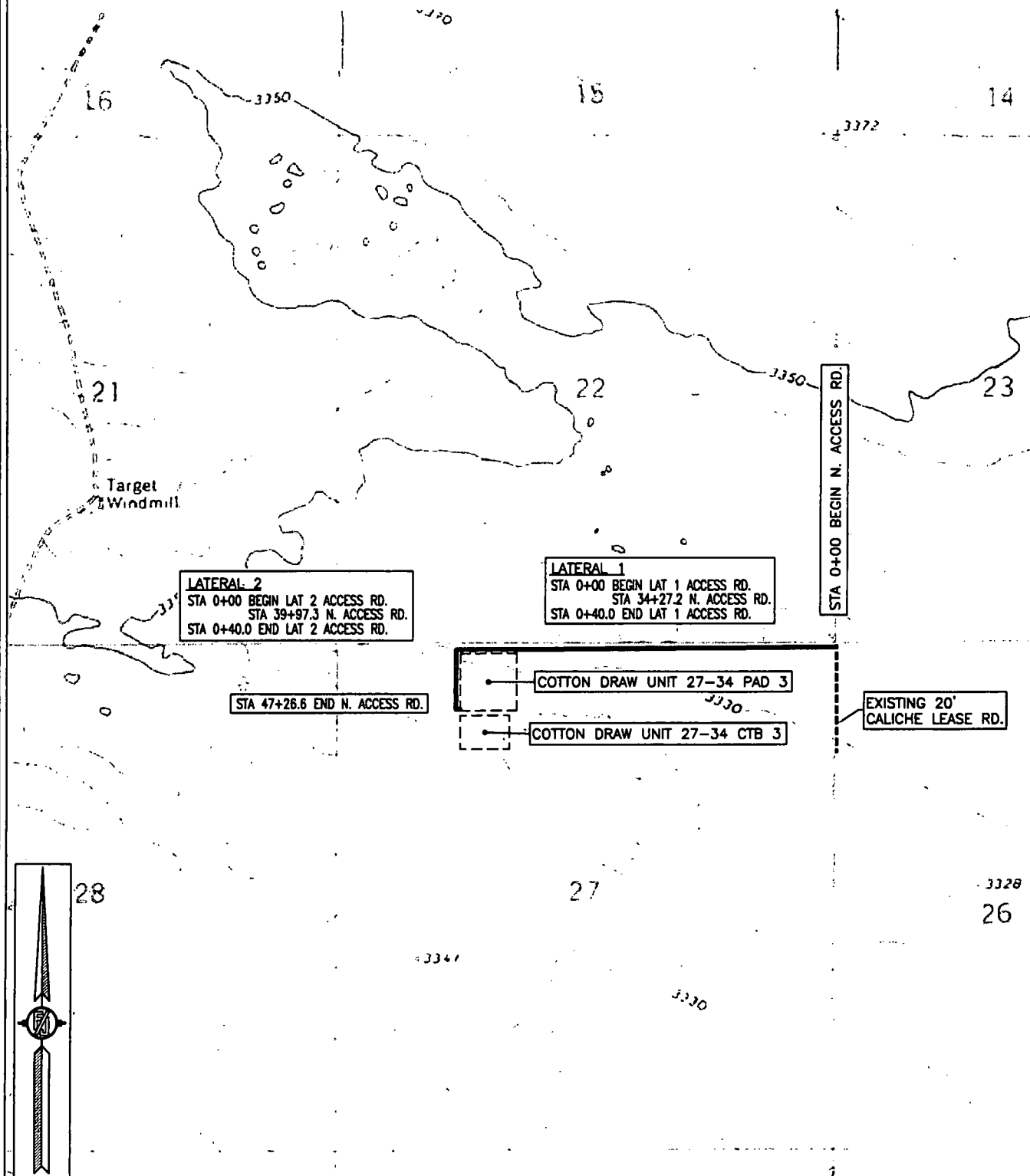
SHEET: 4-6

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 4665

ACCESS ROAD PLAT (AA000055110)
NORTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTIONS 26, 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016



ACCESS ROAD PLAT (AA000055110)
NORTH ACCESS ROAD TO THE COTTON DRAW UNIT 27-34 PAD 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTIONS 26, 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 10, 2016

NM T25S R31E

21

22

LATERAL 2

STA 0+00 BEGIN LAT 2 ACCESS RD.
STA 39+97.3 N. ACCESS RD.
STA 0+40.0 END LAT 2 ACCESS RD.

LATERAL 1

STA 0+00 BEGIN LAT 1 ACCESS RD.
STA 34+27.2 N. ACCESS RD.
STA 0+40.0 END LAT 1 ACCESS RD.

STA 0+00 BEGIN N. ACCESS RD.

STA 47+28.6 END N. ACCESS RD.

COTTON DRAW UNIT 27-34 PAD 3

COTTON DRAW UNIT 27-34 CTB 3

EXISTING 20'
CALICHE LEASE RD.

28

27



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 10/4/2018



0 0.3 Miles
1 inch = 0.44 miles

LUSITANO 27-34 FED COM 533H WA017161500

SHIRE 22 FED 1H

Nearest wellbore to SHL:

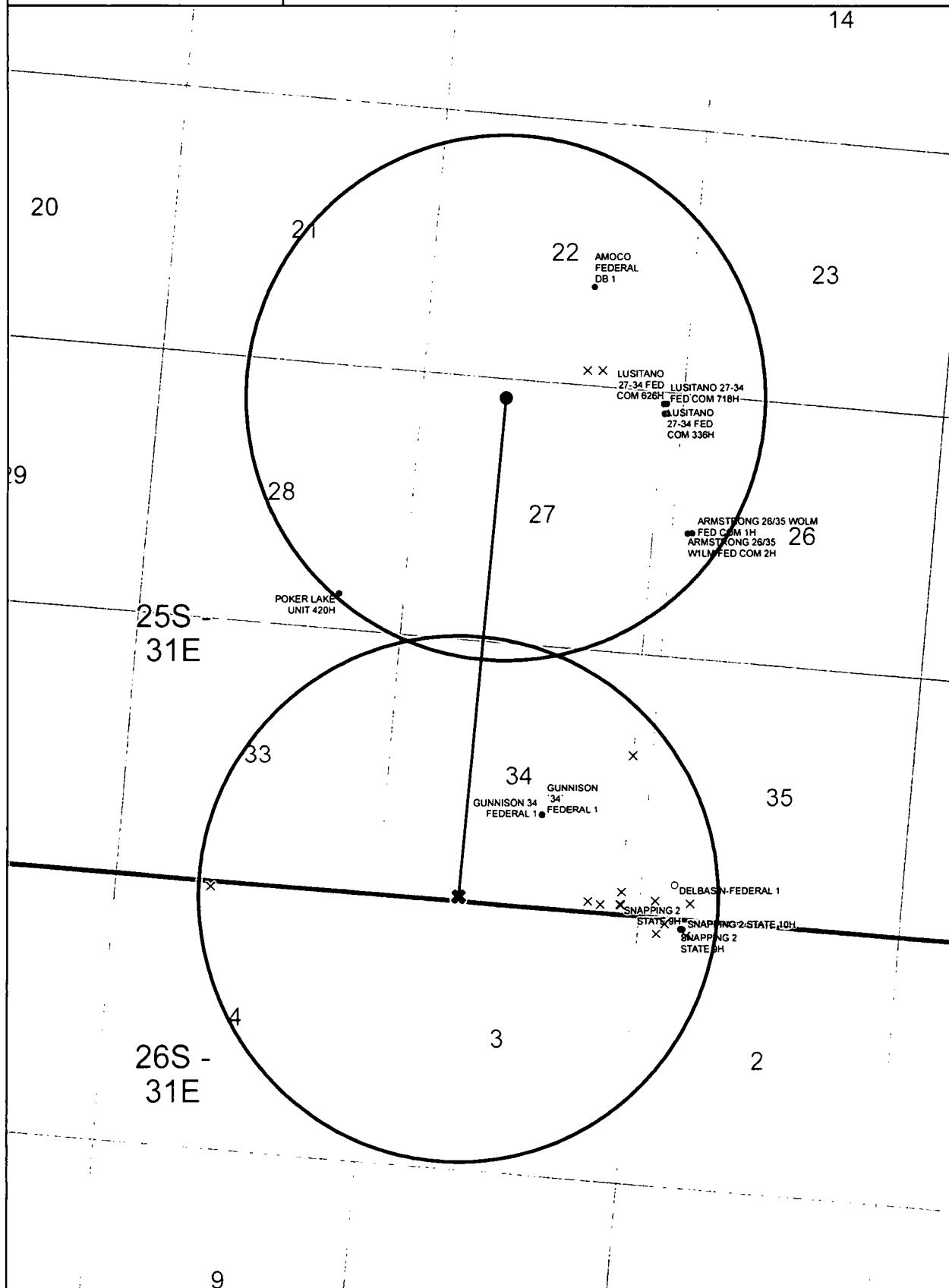
1748 ft.

LUSITANO 27-34 FED COM 626H

Nearest wellbore to BHL:

2621 ft.

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



233H/533H

devon

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

WGS_1984_Web_Mercator_Auxiliary_Sphere

Prepared by: _User

Map is current as of: 09-Oct-2018



Miles

0 0.14 0.28 0.56 1:28,457

- DVN Currently Drilling
- DVN Currently Fracing

28S - 31E - 9

28S - 31E - 10

28S - 31E - 11

28S - 31E - 12

DEVON 30 DAY INSTALL DAYS PRIOR TO COMPLETION
DEVON WILL CONTACT ELM FOR ADDITIONAL PERMITS NEEDED
D.S. VARIANCE EXISTING
CONVENT TREATED WATER
TYPE AND SIZE OF PIPE: DAY PLAT 12"
LENGTH OF PIPE: 23,805'

17

28S - 31E - 16

28S - 31E - 16

28S - 31E - 16

28S - 31E - 16

20

28S - 31E - 20

28S - 31E - 22

28S - 31E - 20

28S - 31E - 24

19

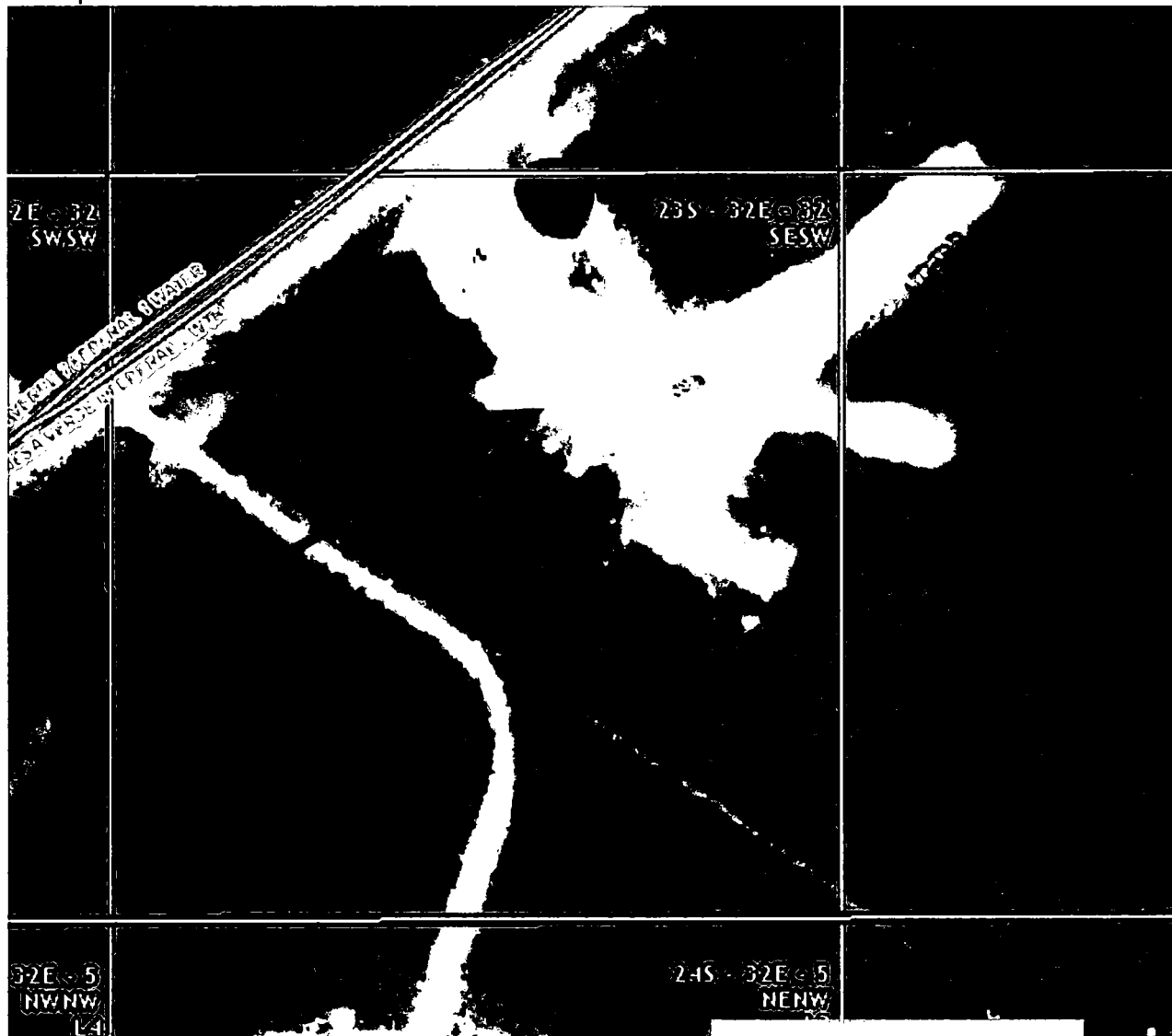
28S - 31E - 20

28S - 31E - 21

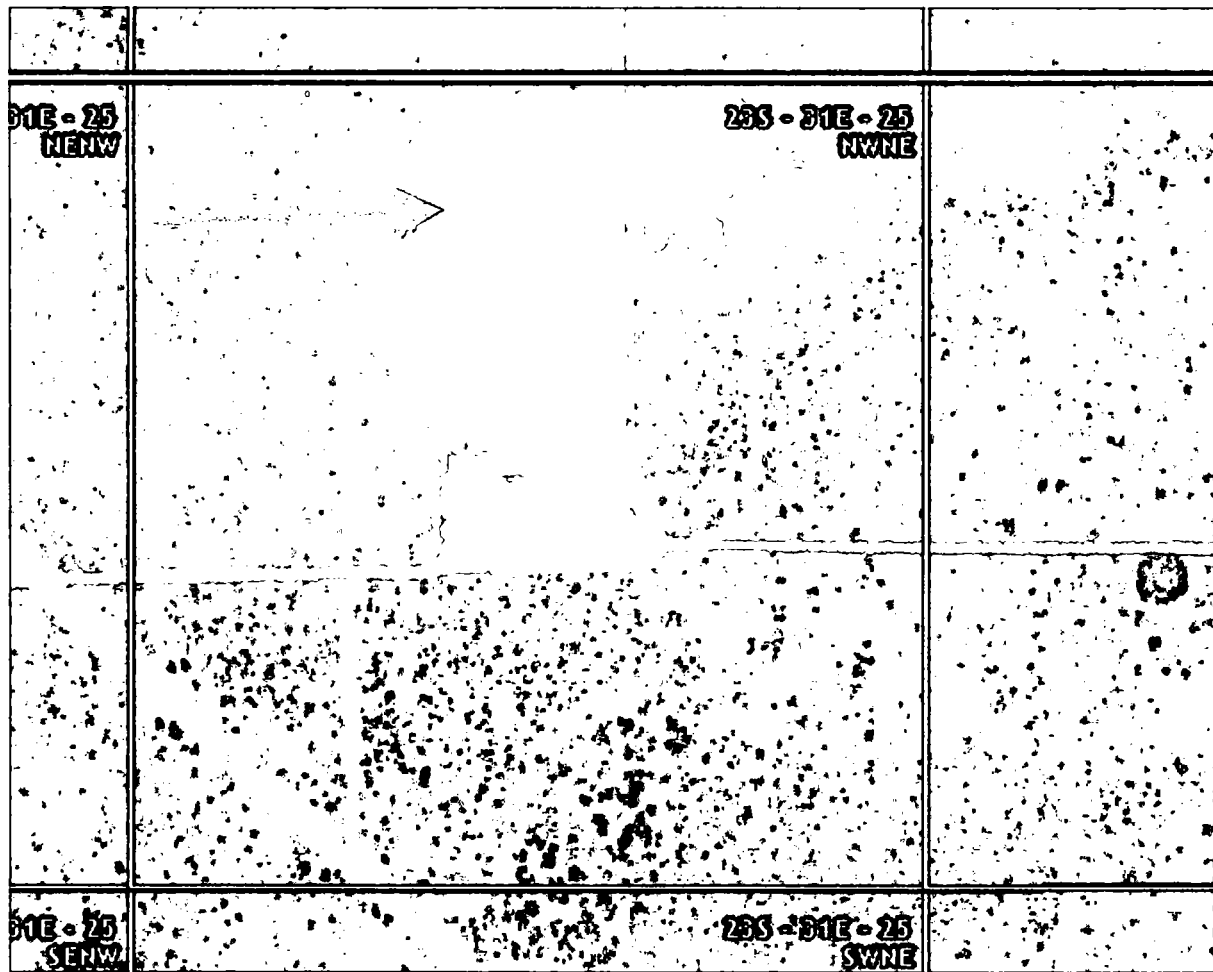
28S - 31E - 23

28S - 31E - 25

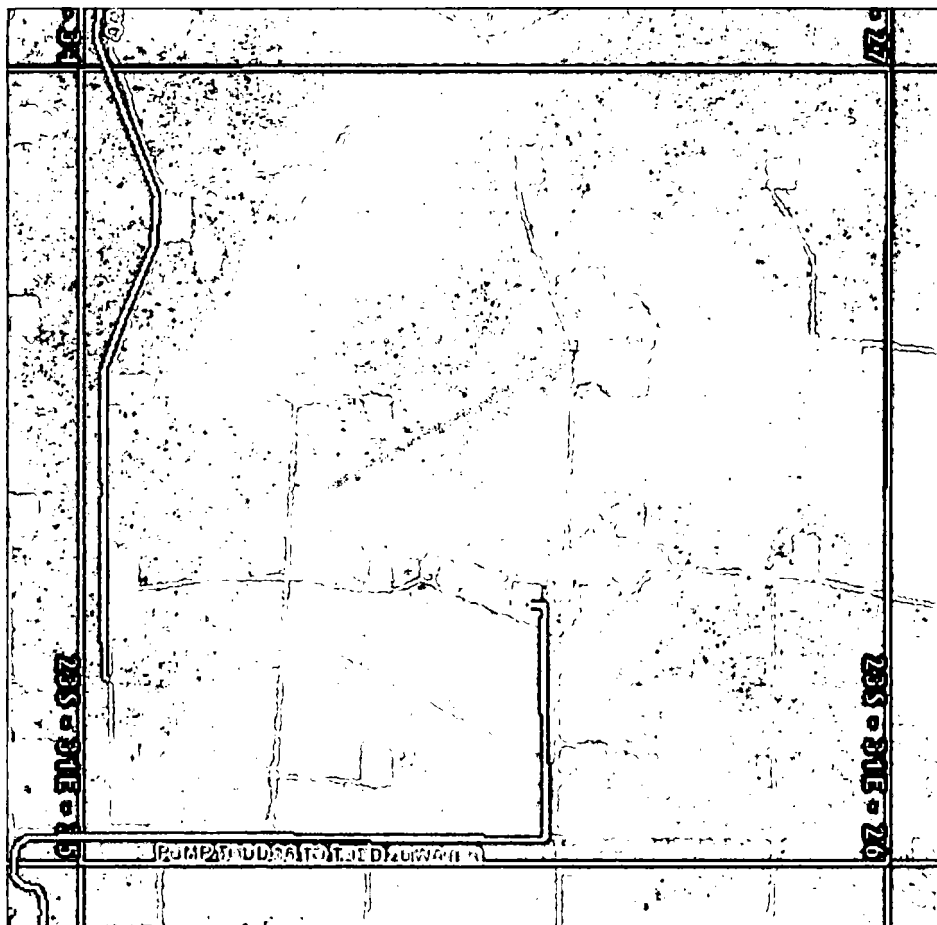
- State pit 616 and 617 32- 23S- 32E



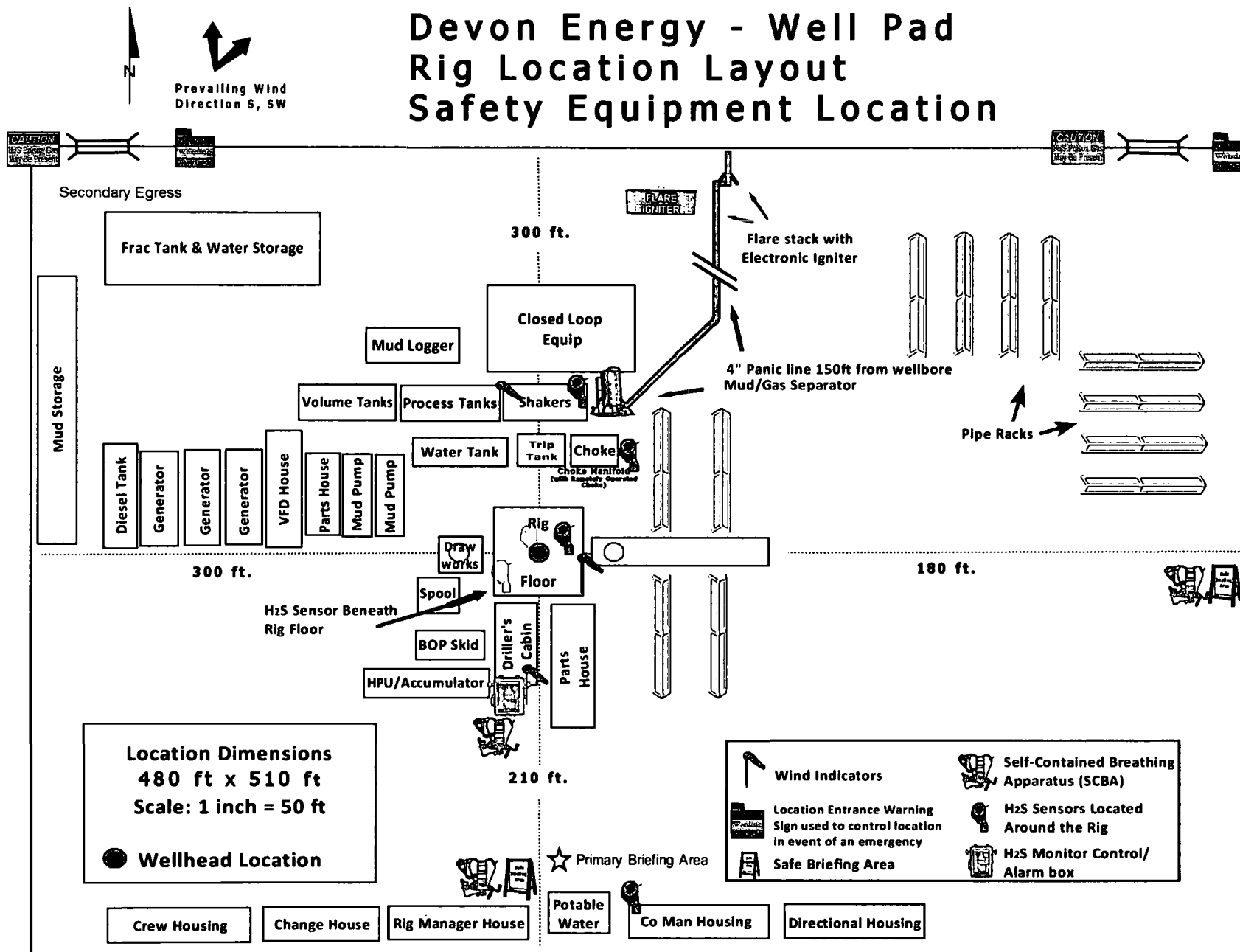
- Fed pit 25- 23S- 31E



- Private pit 26- 23S- 31E



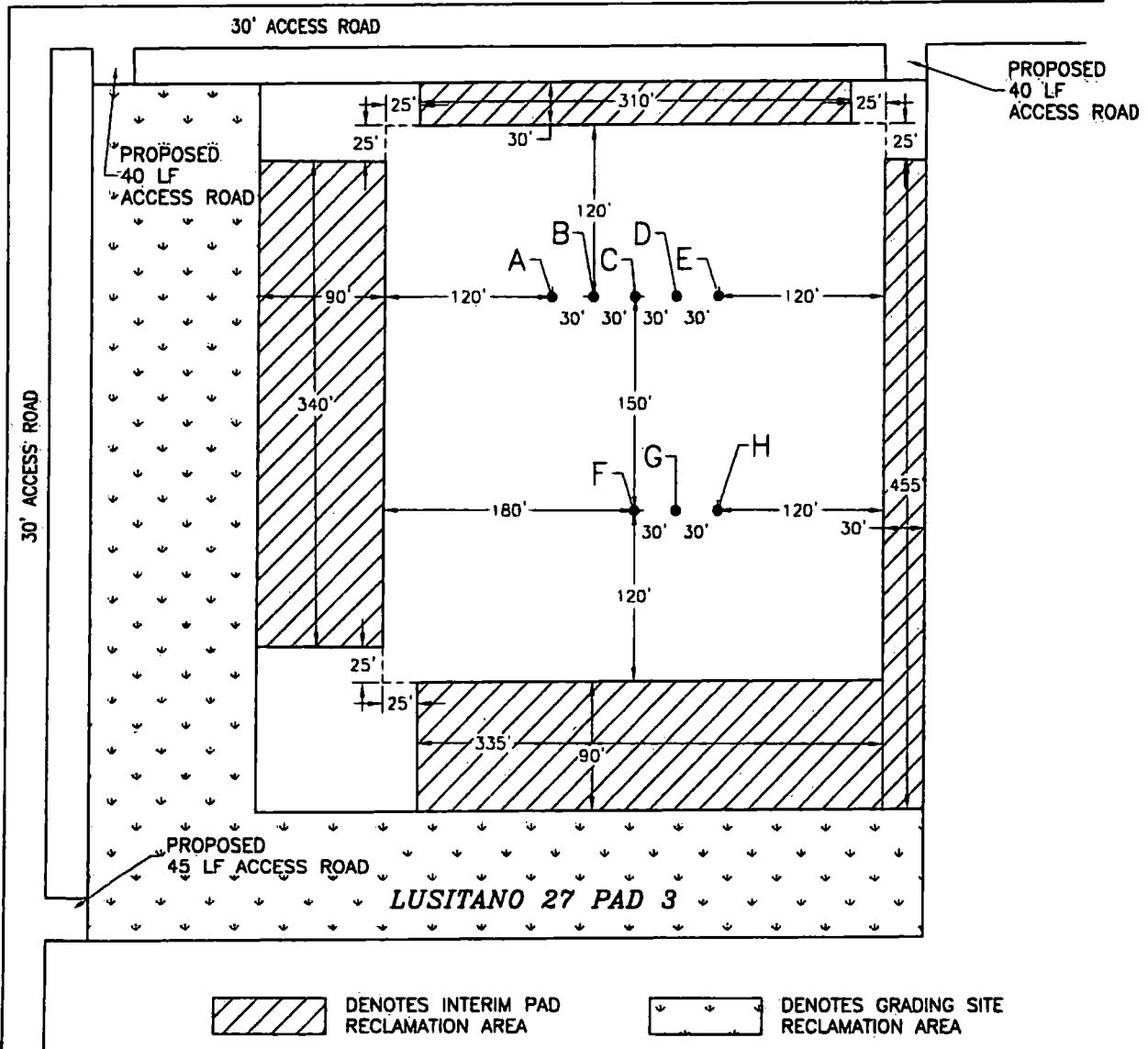
Devon Energy - Well Pad Rig Location Layout Safety Equipment Location



SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN

A - LUSITANO 27-22 FED COM 232H	F - LUSITANO 27-34 FED COM 233H
B - LUSITANO 27-34 FED COM 733H	G - LUSITANO 27-34 FED COM 533H
C - LUSITANO 27-34 FED COM 622H	H - LUSITANO 27-34 FED COM 523H
D - LUSITANO 27-34 FED COM 333H	
E - LUSITANO 27-34 FED COM 713H	

SEC. 22
SEC. 27



012 60 120 240
SCALE 1" = 120'

1.921± ACRES INTERIM PAD RECLAMATION AREA
2.646± ACRES GRADING SITE RECLAMATION AREA
3.699± ACRES NON-RECLAIMED AREA
8.266± ACRES LUSITANO 27 PAD 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
LUSITANO 27-34 FED COM 533H
LOCATED 385 FT. FROM THE NORTH LINE
AND 1732 FT. FROM THE WEST LINE OF
SECTION 27, TOWNSHIP 25 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LAND STATUS: BLM

SEPTEMBER 27, 2018

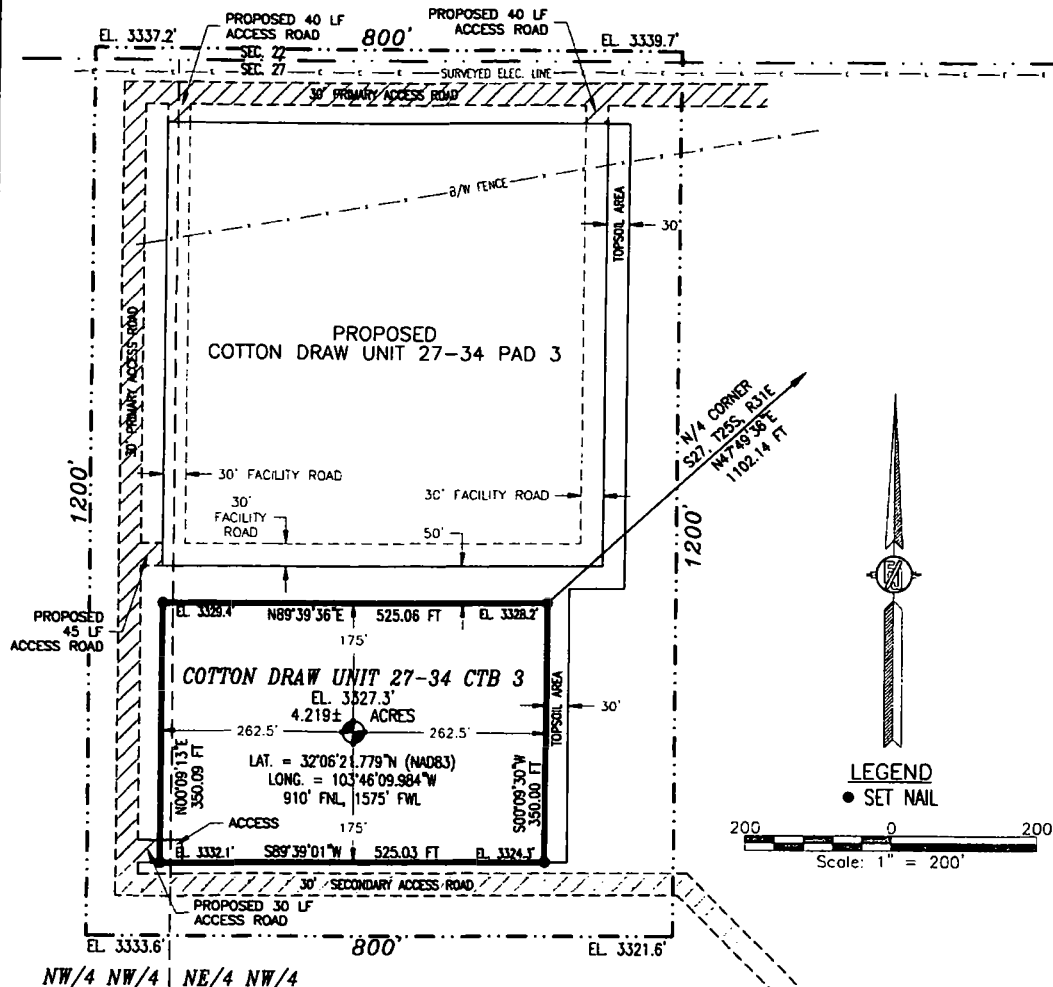
SURVEY NO. 6424A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

COTTON DRAW UNIT 27-34 CTB 3 (AA000056029)

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE NE/4 NW/4 & NW/4 NW/4 OF
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JUNE 17, 2016



DESCRIPTION

A CERTAIN PIECE OR PARCEL OF LAND AND REAL ESTATE LYING IN THE NE/4 NW/4 & NW/4 NW/4 OF SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST N.M.P.M., EDDY COUNTY, NEW MEXICO.

BEGINNING AT THE NORTHEAST CORNER OF THE PARCEL, WHENCE THE NORTH QUARTER CORNER OF SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N47°49'36"E, A DISTANCE OF 1102.14 FEET;
THENCE S00°09'30"W A DISTANCE OF 350.00 FEET TO THE SOUTHEAST CORNER OF THE PARCEL;
THENCE S89°39'01"W A DISTANCE OF 525.03 FEET TO THE SOUTHWEST CORNER OF THE PARCEL;
THENCE N00°09'13"E A DISTANCE OF 350.09 FEET TO THE NORTHWEST CORNER OF THE PARCEL;
THENCE N89°39'36"E A DISTANCE OF 525.06 FEET TO THE NORTHEAST CORNER OF THE PARCEL, TO THE POINT OF BEGINNING;
CONTAINING 4.104 ACRES IN THE NE/4 NW/4 & 0.115 ACRES IN THE NW/4 NW/4 FOR A TOTAL 4.219 ACRES MORE OR LESS.

GENERAL NOTES

- 1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A CENTRAL TANK BATTERY
- 2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83)

DRIVING DIRECTION: FROM STATE HIGHWAY 128 AND CR 1 (ORLA HIGHWAY) GO SOUTH ON CR 1 6.5 MILES TO MONSANTO ROAD, TURN RIGHT GO WEST 2.1 MILES, TURN RIGHT GO NORTH 0.8 OF A MILE, TURN LEFT GO WEST 2.1 MILES, BEND LEFT GO SOUTHWEST 1.3 MILES, TURN LEFT GO SOUTH 1.2 MILE TO BEGIN ROAD SURVEY, GO WEST 178' TO THE SOUTHEAST CORNER FOR CDU "27-27" CTB 6, FROM SOUTHWEST CORNER GO WEST APPROX. 360' TO THE SOUTHEAST CORNER FOR CDU "27-27" CTB 4, THEN GO WEST 0.38 MILE, GO NORTH 30' TO THE SOUTHWEST CORNER FOR THIS LOCATION.

SHEET: 1-3

MADRON SURVEYING, INC.

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 17 DAY OF JUNE 2016

[Signature]
FILMON F. JARAMILLO
12797
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 4494B
CARLSBAD, NEW MEXICO

COTTON DRAW UNIT 27-34 CTB 3 (AA000056029)

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE NE/4 NW/4 & NW/4 NW/4 OF
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JUNE 17, 2016

QUAD MAP

COTTON DRAW UNIT 27-34 PAD 3



COTTON DRAW UNIT 27-34 CTB 3

SECTION 27
T.26S., R.31E.
BLM



COTTON DRAW UNIT 27-34 CTB 3 (AA000056029)

DEVON ENERGY PRODUCTION COMPANY, L.P.
IN THE NE/4 NW/4 & NW/4 NW/4 OF
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JUNE 17, 2016

AERIAL PHOTO

22

COTTON DRAW UNIT 27-34 PAD 3

COTTON DRAW UNIT 27-34 CTB 3

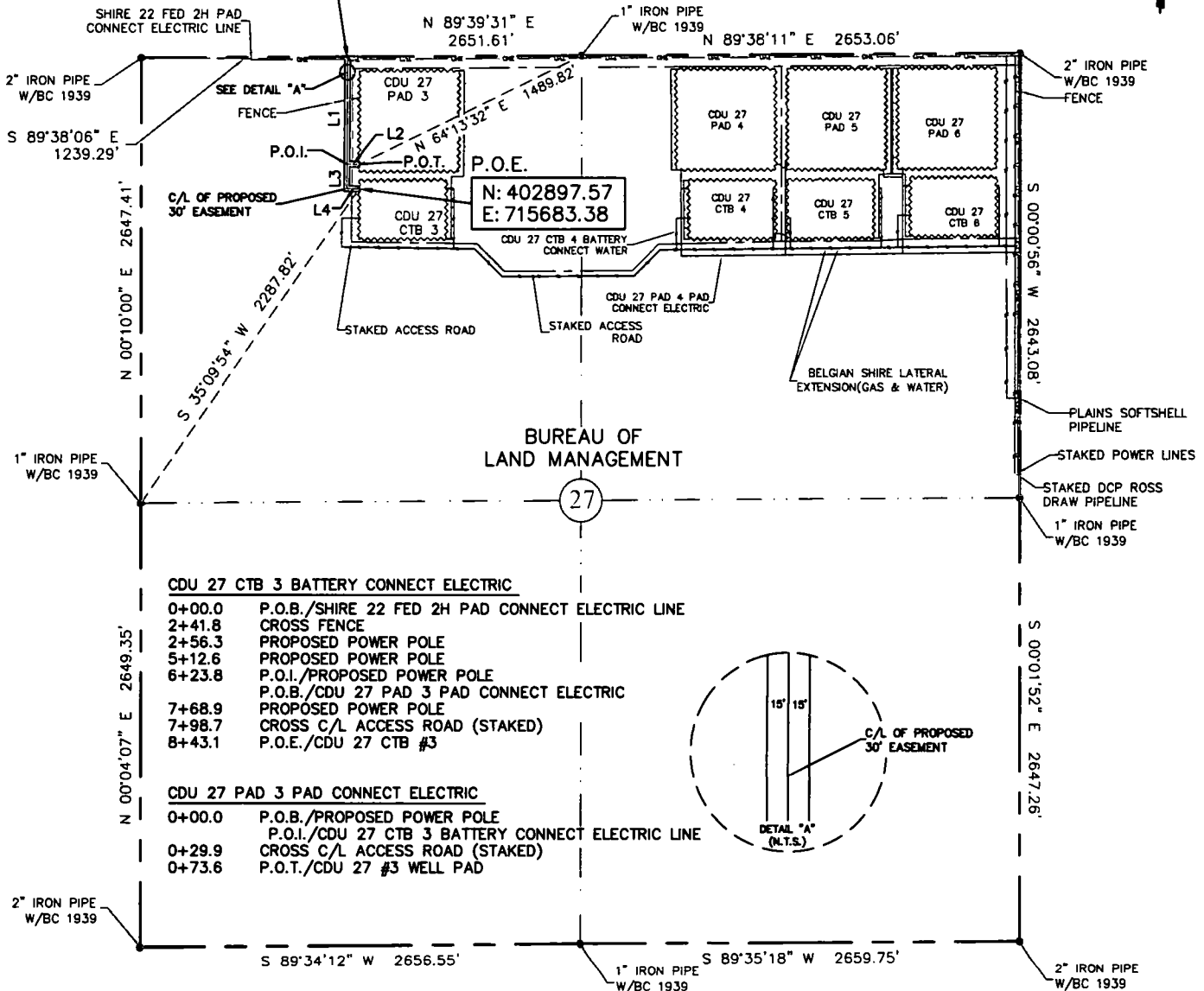
SECTION 27
T.25S., R.31E.
BLM

27

EXHIBIT "A"
PAGE 1 of 17
ELECTRIC LINE PLAT
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

P.O.B.

N: 403666.79
E: 715612.71

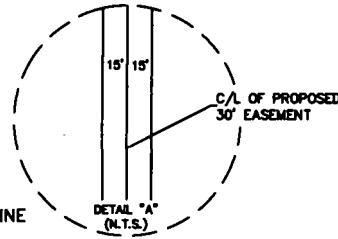


CDU 27 CTB 3 BATTERY CONNECT ELECTRIC

0+00.0 P.O.B./SHIRE 22 FED 2H PAD CONNECT ELECTRIC LINE
2+41.8 CROSS FENCE
2+56.3 PROPOSED POWER POLE
5+12.6 PROPOSED POWER POLE
6+23.8 P.O.I./PROPOSED POWER POLE
7+68.9 P.O.B./CDU 27 PAD 3 PAD CONNECT ELECTRIC
7+98.7 PROPOSED POWER POLE
8+43.1 CROSS C/L ACCESS ROAD (STAKED)
8+43.1 P.O.E./CDU 27 CTB #3

CDU 27 PAD 3 PAD CONNECT ELECTRIC

0+00.0 P.O.B./PROPOSED POWER POLE
0+29.9 P.O.I./CDU 27 CTB 3 BATTERY CONNECT ELECTRIC LINE
0+73.6 CROSS C/L ACCESS ROAD (STAKED)
0+73.6 P.O.T./CDU 27 #3 WELL PAD



30' EASEMENT AREA = 0.621 ACRE(S)
916.72 FEET OR 55.56 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
Date Signed: 05-13-2016
Horizonrow, LLC
571 State Street Jasper, TX
(409) 202-5111 75951
Employee of Horizonrow, LLC



0 1000 2000



LINE	BEARING	DISTANCE
L1	S 00°16'02" W	623.83'
L2	S 89°45'48" E	73.61'
L3	S 00°16'02" W	145.03'
L4	S 89°42'35" E	74.25'

CDU 27 CTB 3 BATTERY CONNECT ELECTRIC LINE		WBS NUMBER:	LINE NUMBER:
CDU 27 PAD 3 PAD CONNECT ELECTRIC LINE		CC-112971.AL	EL7794
CDU 27 PAD 3 PAD CONNECT ELECTRIC LINE		CC-112971.AL	EL7800
HORIZON ROW LLC		DEVON ENERGY PRODUCTION COMPANY, L.P. CDU 27 CTB 3 BATTERY CONNECT AND CDU 27 PAD 3 PAD CONNECT ELECTRIC LINES	
Drawn by: devon		SCALE: 1" = 1000' REVISIONS:	
Drawn by: WAYNE BEETS		SHEET: 1 OF 17	
Date: 05/09/2016		PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 27, T25S-R31E, N.M.P.M.	

**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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 1939 for the northwest corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence S 89°38'06" E a distance of 1239.29' to the **Point of Beginning** of this easement having coordinates of Northing=403666.79 feet, Easting=715612.71 feet, and continuing the following courses;

Thence S 00°16'02" W, a distance of 623.83' to the Point of Intersection;

Thence S 89°45'48" E, a distance of 73.61' to the point of termination of this portion of said easement, from said point a 1" iron pipe w/ BC1939 found for the north quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 64°13'32" E a distance of 1489.82';

Thence continuing from said point of intersection the following courses;

Thence S 00°16'02" W, a distance of 145.03' to an angle point;

Thence S 89°42'35" E, a distance of 74.25' to the **Point of Ending** having coordinates of Northing=402897.57 feet, Easting=715683.38 feet, from said point a 1" iron pipe w/ BC1939 found for the west quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears S 35°09'54" W a distance of 2287.82', covering **916.72' or 55.56 rods** and having an area of **0.621 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.

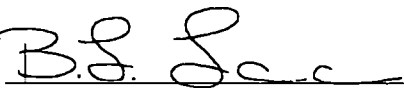
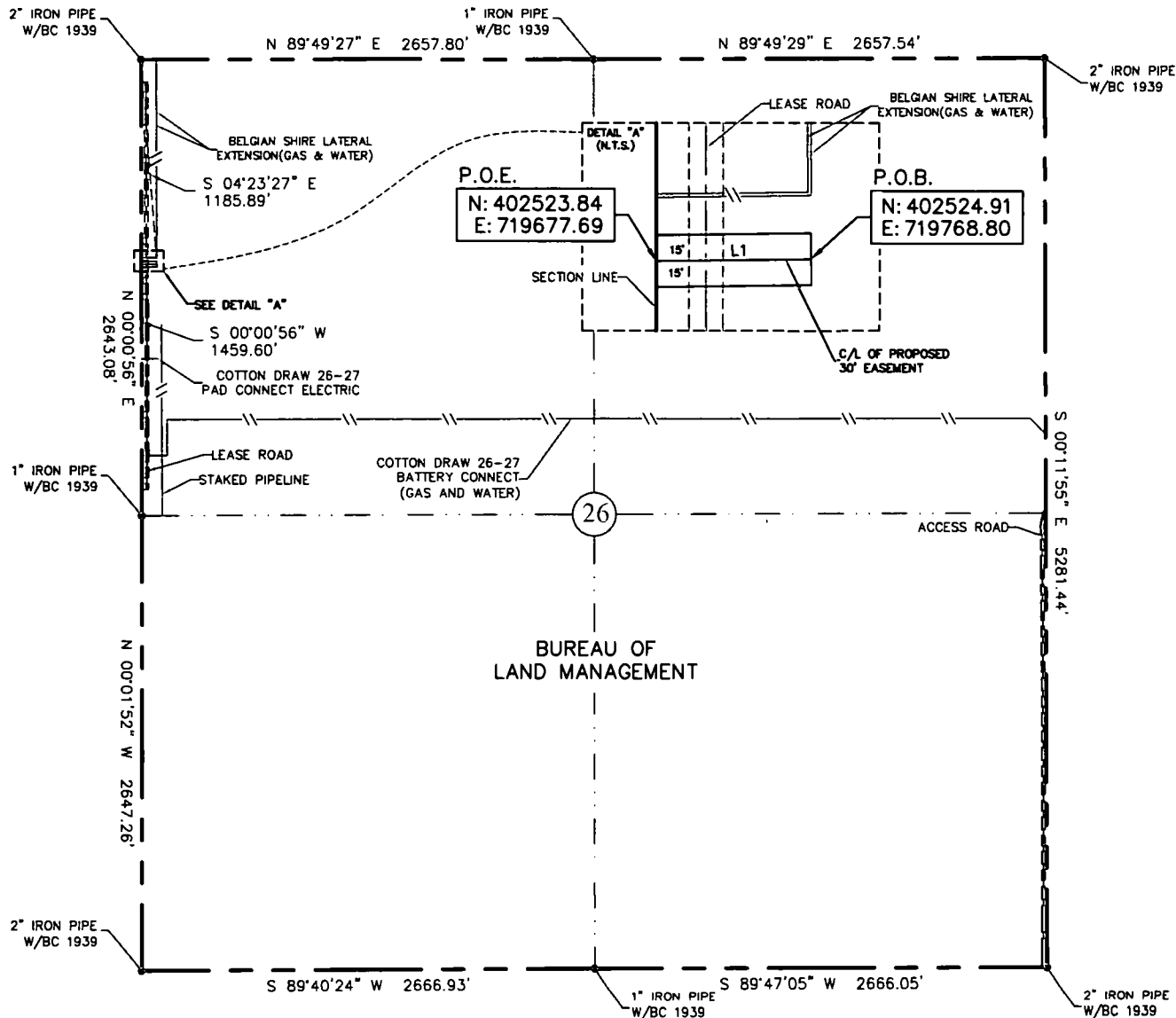

B.L. Laman PLS 22404
Date Signed: 05/13/2016
Horizon Row, LLC
571 State Street, Jasper, TX
(402) 202-5111 75951
Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 4 of 17
ELECTRIC LINE PLAT
SECTION 26, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.063 ACRE(S)
 91.12 FEET OR 5.52 RODS

- 0+00.0 P.O.B.
- 0+35.0 PROPOSED POWER POLE
- 0+49.9 EDGE OF LEASE ROAD
- 0+61.3 C/L LEASE ROAD
- 0+72.6 EDGE OF LEASE ROAD
- 0+91.1 P.O.E. 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.

LINE	BEARING	DISTANCE
L1	S 89°19'37\"	W 91.12'

0 1000 2000



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 PLS #22404
 Date Signed: 05-13-2016
 Horizonrow, LLC
 571 State Street Jasper, TX.
 (409) 202-5111 75951
 Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by: WAYNE BEETS Date: 05/05/2016

DEVON ENERGY PRODUCTION COMPANY, L.P. CDU 27 PAD 4 PAD CONNECT-ELECTRIC LINE PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 26, T25S-R31E, N.M.P.M.	LINE NUMBER: EL7801
	WBS NUMBER: CC-112971.AL
	SCALE: 1" = 1000'
	REVISIONS:
SHEET: 4 OF 17	

**SECTION 26, T25S-R31E, N.M.P.M.,
EDDY 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 26, Township 25 South, Range 31 East, N.M.P.M., Eddy 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 1939 for the northwest corner of Section 26, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence S 04°23'27" E a distance of 1185.89' to the **Point of Beginning** of this easement having coordinates of Northing=402524.91 feet, Easting=719768.80 feet, and continuing the following course;

Thence S 89°19'37" W, a distance of 91.12' to the **Point of Ending** having coordinates of Northing=402523.84 feet, Easting=719677.69 feet, being in the west line of Section 26, T25S-R31E, from said point a 1" iron pipe w/ BC1939 found for the west quarter corner of Section 26, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears S 00°00'56" W a distance of 1459.60', covering **91.12' or 5.52 rods** and having an area of **0.063 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: 05/13/2016

Horizon Row, LLC

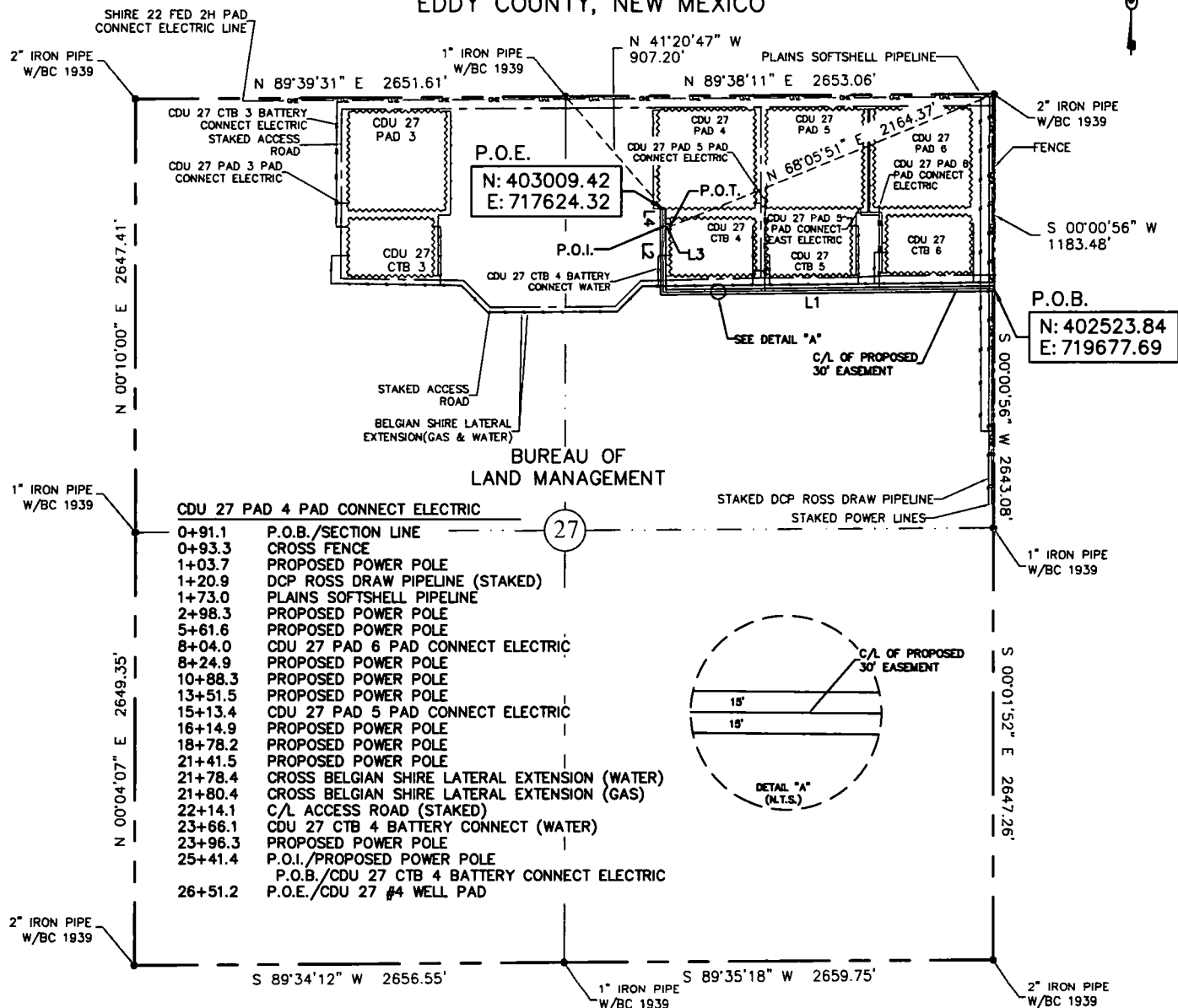
571 State Street, Jasper, TX

(402) 202-5111 75951

Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 6 of 17
ELECTRIC LINE PLAT
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



CDU 27 CTB 4 BATTERY CONNECT ELECTRIC

0+00.0 P.O.B./PROPOSED POWER POLE
P.O.I./CDU 27 PAD 4 PAD CONNECT ELECTRIC
0+44.9 P.O.T./CDU 27 CTB 4 PAD

LINE	BEARING	DISTANCE
L1	S 89°19'37" W	2050.37'
L2	N 00°21'11" W	399.93'
L3	N 89°39'00" E	44.87'
L4	N 00°21'11" W	109.74'

30' EASEMENT AREA = 1.784 ACRE(S)
2604.91 FEET OR 157.87 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
Date Signed: 05-13-2016
Horizonrow, LLC
571 State Street Jasper, TX
(409) 202-5111 75951
Employee of Horizonrow, LLC

CDU 27 PAD 4 PAD CONNECT ELECTRIC LINE		WBS NUMBER:	LINE NUMBER:
CDU 27 CTB 4 BATTERY CONNECT ELECTRIC LINE		CC-112971.AL	EL7801
CDU 27 CTB 4 BATTERY CONNECT ELECTRIC LINE		CC-112971.AL	EL7795
HORIZON ROW LLC		DEVON ENERGY PRODUCTION COMPANY, L.P.	
Drawn for:		CDU 27 PAD 4 PAD CONNECT AND CDU 27 CTB 4 BATTERY CONNECT ELECTRIC LINES	
devon		SCALE: 1" = 1000' REVISIONS:	
Drawn by: WAYNE BEETS		SHEET: 6 OF 17	
Date: 05/09/2016		PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 27, T25S-R31E, N.M.P.M.	

**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 northeast quarter (NE ¼) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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 1939 for the northeast corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence S 00°00'56" W a distance of 1183.48' to the **Point of Beginning** of this easement having coordinates of Northing=402523.84 feet, Easting=719677.69 feet, and continuing the following courses;

Thence S 89°19'37" W, a distance of 2050.37' to an angle point;

Thence N 00°21'11" W, a distance of 399.93' to the Point of Intersection;

Thence N 89°39'00" E, a distance of 44.87' to the point of termination of this portion of said easement, from said point a 2" iron pipe w/ BC1939 found for the northeast corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 68°05'51" E a distance of 2164.37';

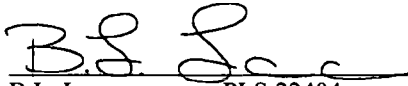
Thence continuing from said point of intersection the following courses;

Thence N 00°21'11" W, a distance of 109.74' to the **Point of Ending** having coordinates of Northing=403009.42 feet, Easting=717624.32 feet, from said point a 1" iron pipe w/ BC1939 found for the north quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 41°20'47" W a distance of 907.20', covering **2604.91' or 157.87 rods** and having an area of **1.784 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: 05/13/2016

Horizon Row, LLC

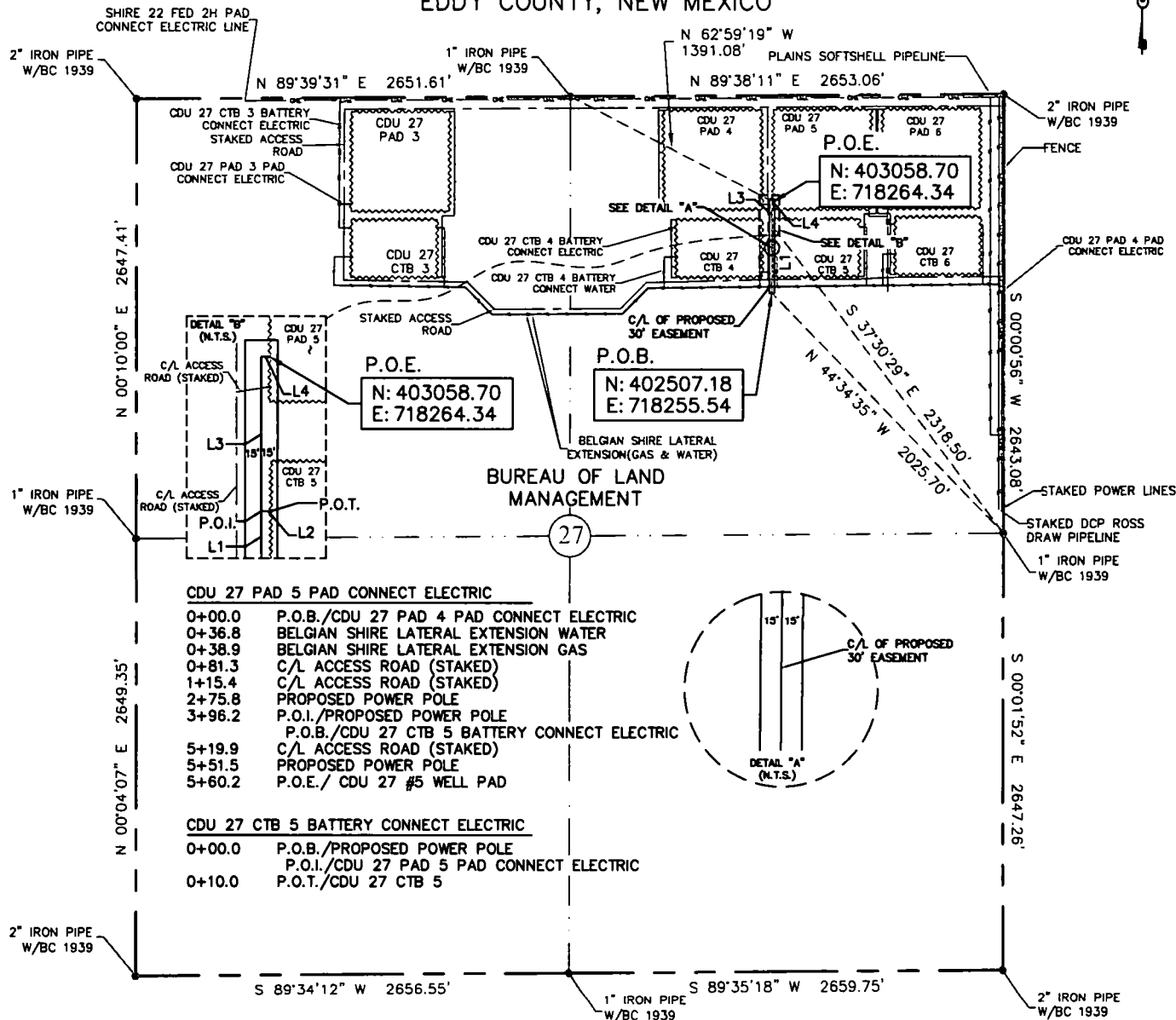
571 State Street, Jasper, TX

(402) 202-5111 75951

Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 9 of 17
ELECTRIC LINE PLAT
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



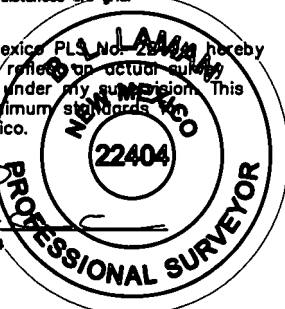
30' EASEMENT AREA = 0.390 ACRE(S)
570.14 FEET OR 34.55 RODS

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: 05-13-2016
Horizonrow, LLC
571 State Street Jasper, TX
(409) 202-5111 75951
Employee of Horizonrow, LLC



WBS NUMBER:		LINE NUMBER:
CDU 27 PAD 5 PAD CONNECT ELECTRIC LINE		CC-112971.AL EL7802
CDU 27 CTB 5 BATTERY CONNECT ELECTRIC LINE		CC-112971.AL EL7796
HORIZON ROW LLC		DEVON ENERGY PRODUCTION COMPANY, L.P.
Drawn for:		CDU 27 PAD 5 PAD CONNECT AND CDU 27 CTB 5 BATTERY CONNECT ELECTRIC LINES
devon		SCALE: 1" = 1000'
Drawn by: WAYNE BEETS		REVISIONS:
Date: 05/09/2016		SHEET: 9 OF 17
PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 27, T25S-R31E, N.M.P.M.		

**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 northeast quarter (NE ¼) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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 1939 for the east quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 44°34'35" W a distance of 2025.70' to the **Point of Beginning** of this easement having coordinates of Northing=402507.18 feet, Easting=718255.54 feet, and continuing the following courses;

Thence N 00°00'59" E, a distance of 396.22' to the Point of Intersection;

Thence N 89°50'02" E, a distance of 9.97' to the point of termination of this portion of said easement, from said point a 1" iron pipe w/ BC1939 found for the east quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears S 37°30'29" E a distance of 2318.50';

Thence continuing from said point of intersection the following courses;

Thence N 00°00'59" E, a distance of 155.30' to an angle point;

Thence N 89°59'36" E, a distance of 8.65' to the **Point of Ending** having coordinates of Northing=403058.70 feet, Easting=718264.34 feet, from said point a 1" iron pipe w/ BC1939 found for the north quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 62°59'19" W a distance of 1391.08', covering **570.14' or 34.55 rods** and having an area of **0.390 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: 05/13/2016

Horizon Row, LLC

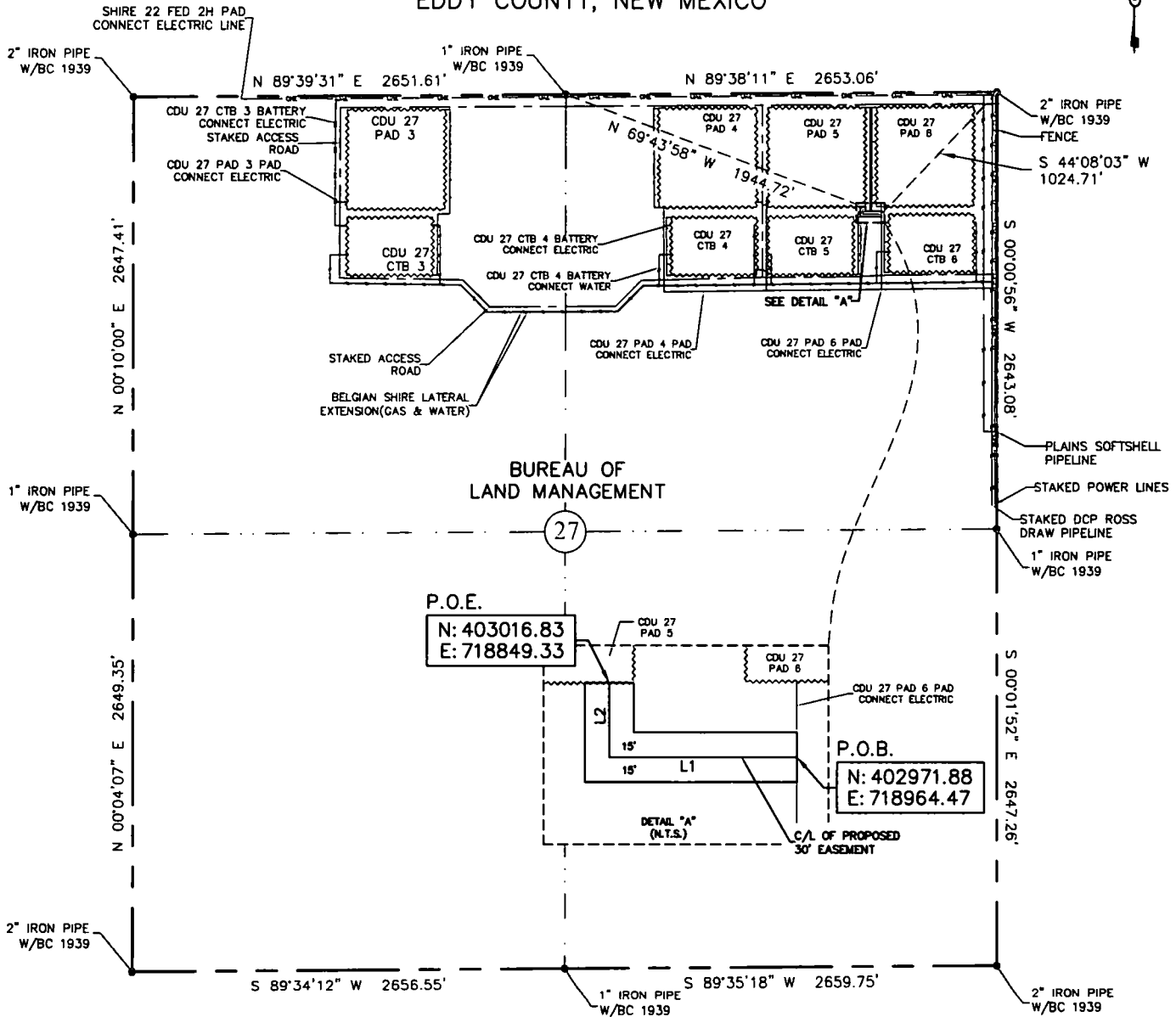
571 State Street, Jasper, TX

(402) 202-5111 75951

Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 12 of 17
ELECTRIC LINE PLAT
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.110 ACRE(S)
 160.17 FEET OR 9.71 RODS

0+00.0
 1+15.2
 1+60.2

P.O.B./CDU 27 PAD 6 PAD CONNECT ELECTRIC
 PROPOSED POWER POLE
 P.O.E./CDU 27 #5 WELL PAD

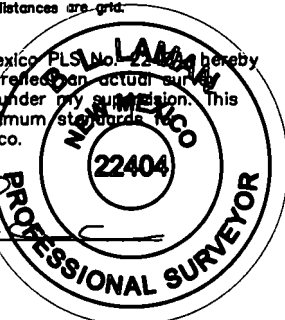
LINE	BEARING	DISTANCE
L1	S 89°58'05\"	W 115.15'
L2	N 00°01'04\"	E 145.02'

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 in feet.

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: 05-13-2016
 Horizonrow, LLC
 571 State Street Jasper, TX
 (409) 202-5111 75951
 Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:
 WAYNE BEETS

Date: 05/10/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

CDU 27 PAD 5 PAD
 CONNECT EAST-ELECTRIC LINE

PROPOSED 30' EASEMENT
 ON THE PROPERTY OF
 BUREAU OF LAND MANAGEMENT
 SECTION 27, T25S-R31E, N.M.P.M.

LINE NUMBER:
 EL7814

WBS NUMBER:
 CC-112971.AL

SCALE:
 1" = 1000'

REVISIONS:

SHEET:
 12 OF 17

0 1000 2000



**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 northeast quarter (NE ¼) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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 1939 for the northeast corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence S 44°08'03" W a distance of 1024.71' to the **Point of Beginning** of this easement having coordinates of Northing=402971.88 feet, Easting=718964.47 feet, and continuing the following courses;

Thence S 89°58'05" W, a distance of 115.15' to an angle point;

Thence N 00°01'04" E, a distance of 45.02' to the **Point of Ending** having coordinates of Northing=403016.83 feet, Easting=718849.33 feet, from said point a 1" iron pipe w/ BC1939 found for the north quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 69°43'58" W a distance of 1944.72', covering **160.17' or 9.71 rods** and having an area of **0.110 acres**.

NOTES:

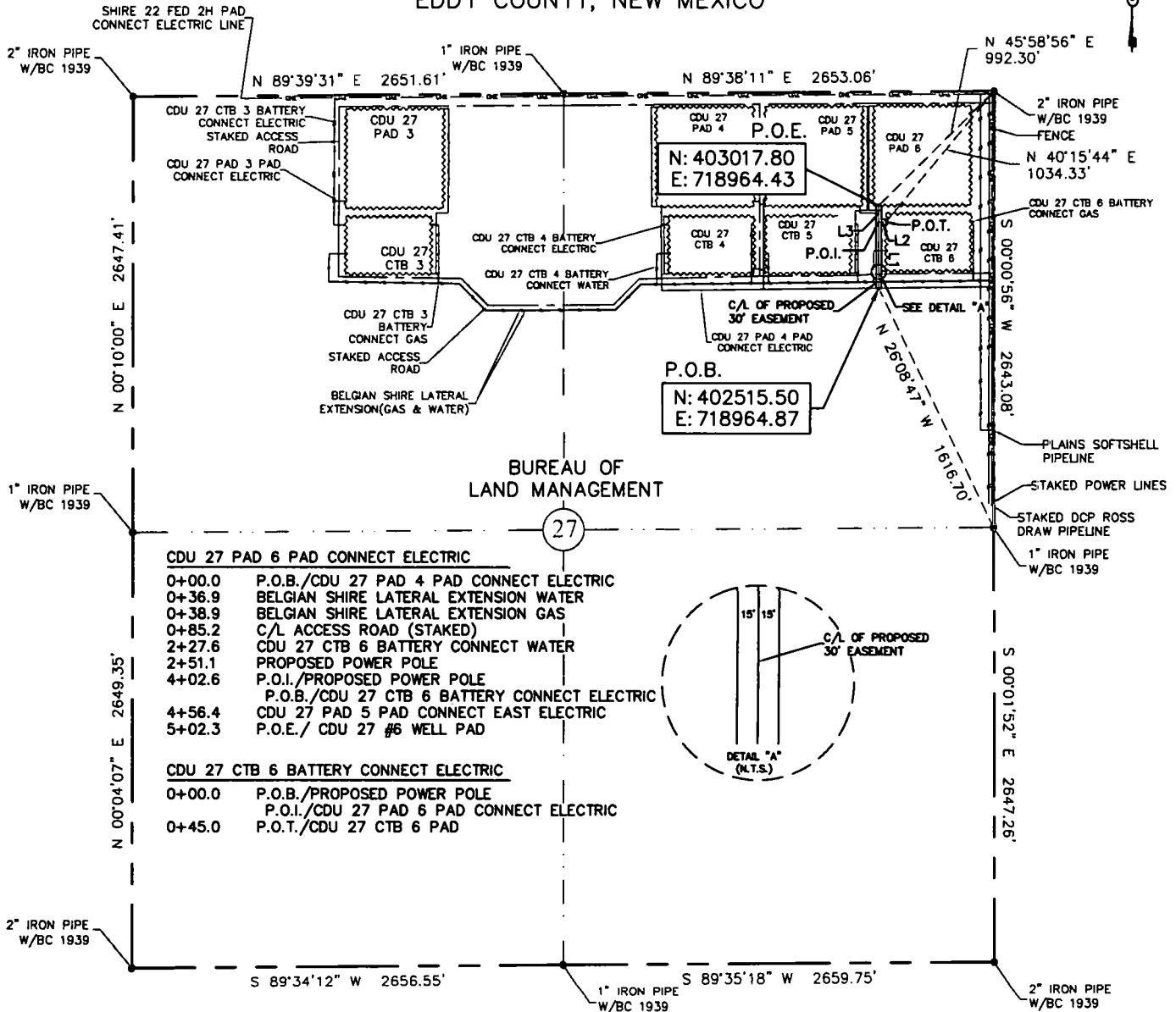
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Horizon Row, LLC
571 State Street, Jasper, TX
(402) 202-5111 75951
Employee of Horizon Row, LLC

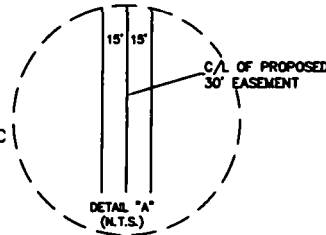


EXHIBIT "A"
PAGE 14 of 17
ELECTRIC LINE PLAT
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



CDU 27 PAD 6 PAD CONNECT ELECTRIC
0+00.0 P.O.B./CDU 27 PAD 4 PAD CONNECT ELECTRIC
0+36.9 BELGIAN SHIRE LATERAL EXTENSION WATER
0+38.9 BELGIAN SHIRE LATERAL EXTENSION GAS
0+85.2 C/L ACCESS ROAD (STAKED)
2+27.6 CDU 27 CTB 6 BATTERY CONNECT WATER
2+51.1 PROPOSED POWER POLE
4+02.6 P.O.I./PROPOSED POWER POLE
4+56.4 P.O.B./CDU 27 CTB 6 BATTERY CONNECT ELECTRIC
5+02.3 CDU 27 PAD 5 PAD CONNECT EAST ELECTRIC
P.O.E./CDU 27 #6 WELL PAD

CDU 27 CTB 6 BATTERY CONNECT ELECTRIC
0+00.0 P.O.B./PROPOSED POWER POLE
0+45.0 P.O.I./CDU 27 PAD 6 PAD CONNECT ELECTRIC
P.O.T./CDU 27 CTB 6 PAD



30' EASEMENT AREA = 0.367 ACRE(S)
547.32 FEET OR 33.17 RODS

LINE	BEARING	DISTANCE
L1	N 00°03'00\"	W 402.56'
L2	S 89°58'05\"	E 45.02'
L3	N 00°03'00\"	W 99.74'

0 1000 2000

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 #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
PROFESSIONAL SURVEYOR
22404
Date Signed: 05-13-2016
Horizonrow, LLC
571 State Street Jasper, TX
(409) 202-5111 75951
Employee of Horizonrow, LLC

CDU 27 PAD 6 PAD CONNECT ELECTRIC LINE		WBS NUMBER:	LINE NUMBER:
CDU 27 CTB 6 BATTERY CONNECT ELECTRIC LINE		CC-112971.AL	EL7803
CDU 27 CTB 6 BATTERY CONNECT ELECTRIC LINE		CC-112971.AL	EL7797
HORIZON ROW LLC		DEVON ENERGY PRODUCTION COMPANY, L.P. CDU 27 PAD 6 PAD CONNECT AND CDU 27 CTB 6 BATTERY CONNECT ELECTRIC LINES	
Drawn for:		SCALE: 1" = 1000'	
devon		REVISIONS:	
Drawn by: WAYNE BEETS		SHEET: 14 OF 17	
Date: 05/09/2016		PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT SECTION 27, T25S-R31E, N.M.P.M.	

**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 northeast quarter (NE ¼) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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 1939 for the east quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 26°08'47" W a distance of 1616.70' to the **Point of Beginning** of this easement having coordinates of Northing=402515.50 feet, Easting=718964.87 feet, and continuing the following courses;

Thence N 00°03'00" W, a distance of 402.56' to the Point of Intersection;

Thence S 89°58'05" E, a distance of 45.02' to the point of termination of this portion of said easement, from said point a 2" iron pipe w/ BC1939 found for the northeast corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 40°15'44" E a distance of 1034.33';

Thence continuing from said point of intersection the following course;

Thence N 00°03'00" W, a distance of 99.74' to the **Point of Ending** having coordinates of Northing=403017.80 feet, Easting=718964.43 feet, from said point a 2" iron pipe w/ BC1939 found for the northeast corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 45°58'56" E a distance of 992.30', covering **547.32' or 33.17 rods** and having an area of **0.367 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.

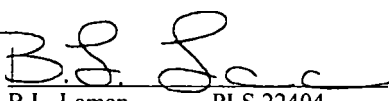
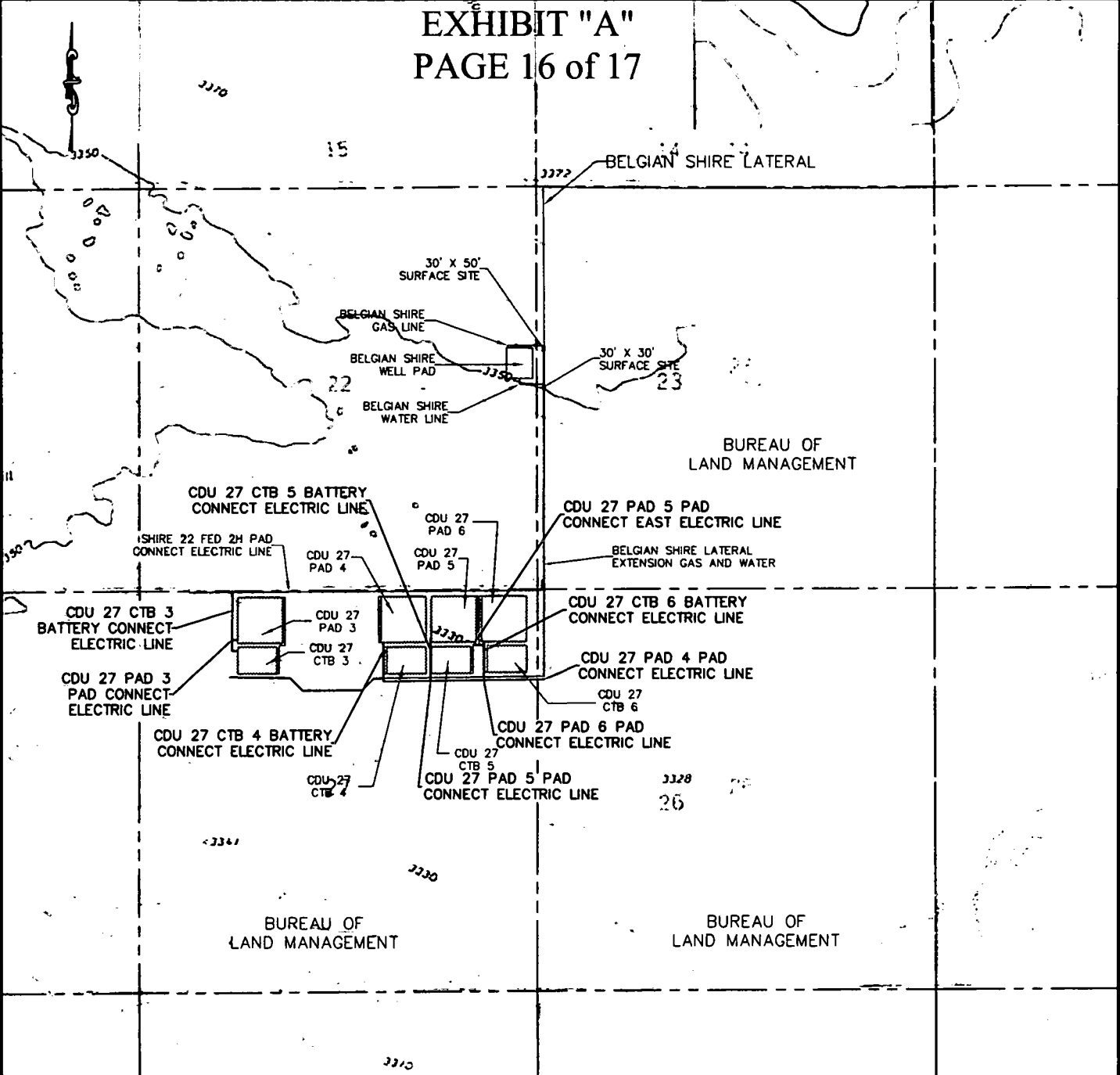

B.L. Laman PLS 22404
Date Signed: 05/13/2016
Horizon Row, LLC
571 State Street, Jasper, TX
(402) 202-5111 75951
Employee of Horizon Row, LLC



EXHIBIT "A"

PAGE 16 of 17



QUAD MAP

SECTION 27, T25S-R31E, N.M.P.M.
SECTION 26, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

	WBS NUMBER:	LINE NUMBER:
CDU 27 CTB 3 BATTERY CONNECT-ELECTRIC LINE	CC-112971.AL	EL7794
CDU 27 PAD 3 PAD CONNECT-ELECTRIC LINE	CC-112971.AL	EL7800
CDU 27 PAD 4 PAD CONNECT-ELECTRIC LINE	CC-112971.AL	EL7801
CDU 27 CTB 4 BATTERY CONNECT-ELECTRIC LINE	CC-112971.AL	EL7795
CDU 27 PAD 5 PAD CONNECT EAST-ELECTRIC LINE	CC-112971.AL	EL7814
CDU 27 PAD 5 PAD CONNECT-ELECTRIC LINE	CC-112971.AL	EL7802
CDU 27 CTB 5 BATTERY CONNECT-ELECTRIC LINE	CC-112971.AL	EL7796
CDU 27 PAD 6 PAD CONNECT-ELECTRIC LINE	CC-112971.AL	EL7803
CDU 27 CTB 6 BATTERY CONNECT-ELECTRIC LINE	CC-112971.AL	EL7797
Drawn for:		
 devon		
Drawn by: WAYNE BEETS Date: 05/10/2016		
DEVON ENERGY PRODUCTION COMPANY, L.P.		
PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT		
SCALE: 1" = 2000' REVISIONS: SHEET: 16 OF 17		

HORIZON ROW LLC

EXHIBIT "A"

PAGE 17 of 17

SEC. 15, T-25-S
R-31-E

SEC. 14, T-25-S
R-31-E

SEC. 13, T-25-S
R-31-E

SEC. 22, T-25-S
R-31-E

BELGIAN SHIRE LATERAL

30' X 50'
SURFACE SITE

BELGIAN SHIRE
GAS LINE

BELGIAN SHIRE
WELL PAD

BELGIAN SHIRE
WATER LINE

30' X 30'
SURFACE SITE

SEC. 23, T-25-S
R-31-E
BUREAU OF
LAND MANAGEMENT

SEC. 24, T-25-S
R-31-E

CDU 27 CTB 5 BATTERY
CONNECT ELECTRIC LINE

SHIRE 22 FED 2H PAD
CONNECT ELECTRIC LINE

CDU 27
PAD 4

CDU 27
PAD 6

CDU 27
PAD 5

CDU 27 PAD 5 PAD
CONNECT EAST ELECTRIC LINE

BELGIAN SHIRE LATERAL
EXTENSION GAS AND WATER

CDU 27 CTB 6 BATTERY
CONNECT ELECTRIC LINE

CDU 27 CTB 3
BATTERY CONNECT
ELECTRIC LINE

CDU 27 PAD 3
PAD CONNECT
ELECTRIC LINE

CDU 27
PAD 3

CDU 27
CTB 3

CDU 27 PAD 4 PAD
CONNECT ELECTRIC LINE

CDU 27
CTB 6

CDU 27 CTB 4 BATTERY
CONNECT ELECTRIC LINE

CDU 27
CTB 4

CDU 27 PAD 6 PAD
CONNECT ELECTRIC LINE

CDU 27
CTB 5

CDU 27 PAD 5 PAD
CONNECT ELECTRIC LINE

SEC. 27, T-25-S
R-31-E
BUREAU OF
LAND MANAGEMENT

SEC. 26, T-25-S
R-31-E
BUREAU OF
LAND MANAGEMENT

SEC. 25, T-25-S
R-31-E

SEC. 34, T-25-S
R-31-E

SEC. 35, T-25-S
R-31-E

SEC. 36, T-25-S
R-31-E

AERIAL MAP

SECTION 27, T25S-R31E, N.M.P.M.
SECTION 26, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

	WES NUMBER:	LINE NUMBER:
CDU 27 CTB 3 BATTERY CONNECT-ELECTRIC LINE	CC-112971.AL	EL7794
CDU 27 PAD 3 PAD CONNECT-ELECTRIC LINE	CC-112971.AL	EL7800
CDU 27 PAD 4 PAD CONNECT-ELECTRIC LINE	CC-112971.AL	EL7801
CDU 27 CTB 4 BATTERY CONNECT-ELECTRIC LINE	CC-112971.AL	EL7795
CDU 27 PAD 5 PAD CONNECT EAST-ELECTRIC LINE	CC-112971.AL	EL7814
CDU 27 PAD 5 PAD CONNECT-ELECTRIC LINE	CC-112971.AL	EL7802
CDU 27 CTB 5 BATTERY CONNECT-ELECTRIC LINE	CC-112971.AL	EL7798
CDU 27 PAD 6 PAD CONNECT-ELECTRIC LINE	CC-112971.AL	EL7803
CDU 27 CTB 6 BATTERY CONNECT-ELECTRIC LINE	CC-112971.AL	EL7797

Drawn for:

devon

DEVON ENERGY PRODUCTION COMPANY, L.P.

PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT

SCALE:

1" = 2000'

REVISIONS:

SHEET:

17 OF 17

HORIZON ROW LLC

Drawn by:
WAYNE BEETS

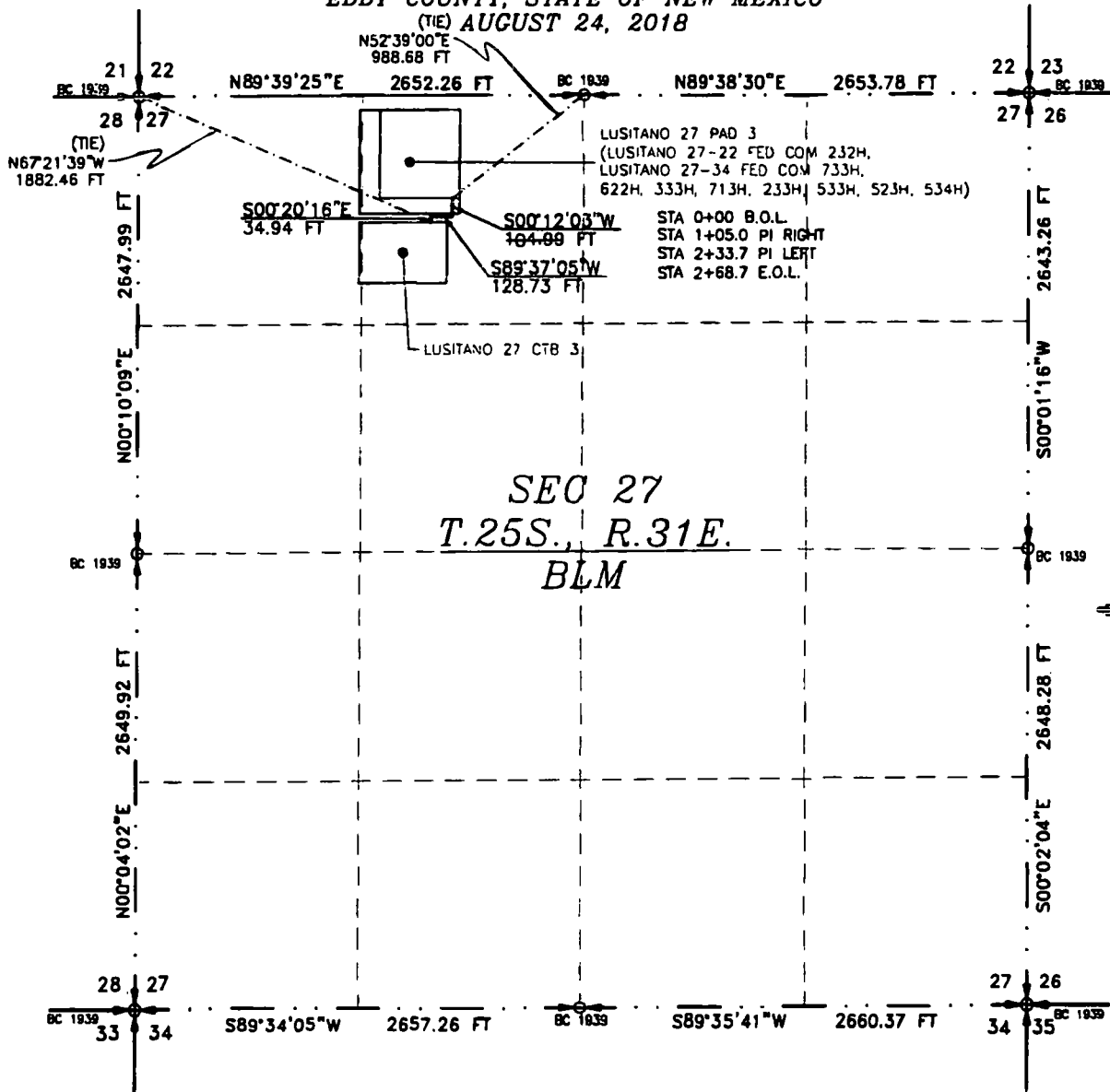
Date: 05/10/2016

FLOWLINE PLAT

NINE 8" BURIED COMPOSITE FLOWLINES AND ONE 8" GAS LIFT LINE FROM THE LUSITANO 27, PAD 3 (LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H, 523H, 534H) TO THE LUSITANO 27 CTB 3

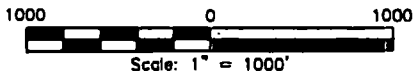
DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

(TIE) AUGUST 24, 2018



SEC 27
T.25S., R.31E.
BLM

SEE NEXT SHEET (2-4) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-4

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 27 DAY OF AUGUST 2018

FILMON F. JARAMILLO, P.S. 12797
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6504

FLOWLINE PLAT

NINE 8" BURIED COMPOSITE FLOWLINES AND ONE 8" GAS LIFT LINE FROM THE LUSITANO 27 PAD 3 (LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H, 523H, 534H) TO THE LUSITANO 27 CTB 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AUGUST 24, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NE/4 NW/4 OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N52°39'00"E. A DISTANCE OF 988.68 FEET;

THENCE S00°12'03"W A DISTANCE OF 104.99 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S89°37'05"W A DISTANCE OF 128.73 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S00°20'16"E A DISTANCE OF 34.94 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M. BEARS N67°21'39"W, A DISTANCE OF 1882.46 FEET;

SAID STRIP OF LAND BEING 268.66 FEET OR 16.28 RODS IN LENGTH, CONTAINING 0.185 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NE/4 NW/4 268.66 L.F. 16.28 RODS 0.185 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-4

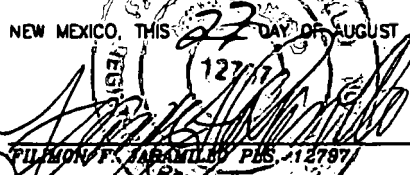
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 22 DAY OF AUGUST 2018


FILMON F. JARAMILLO PLS. 12797

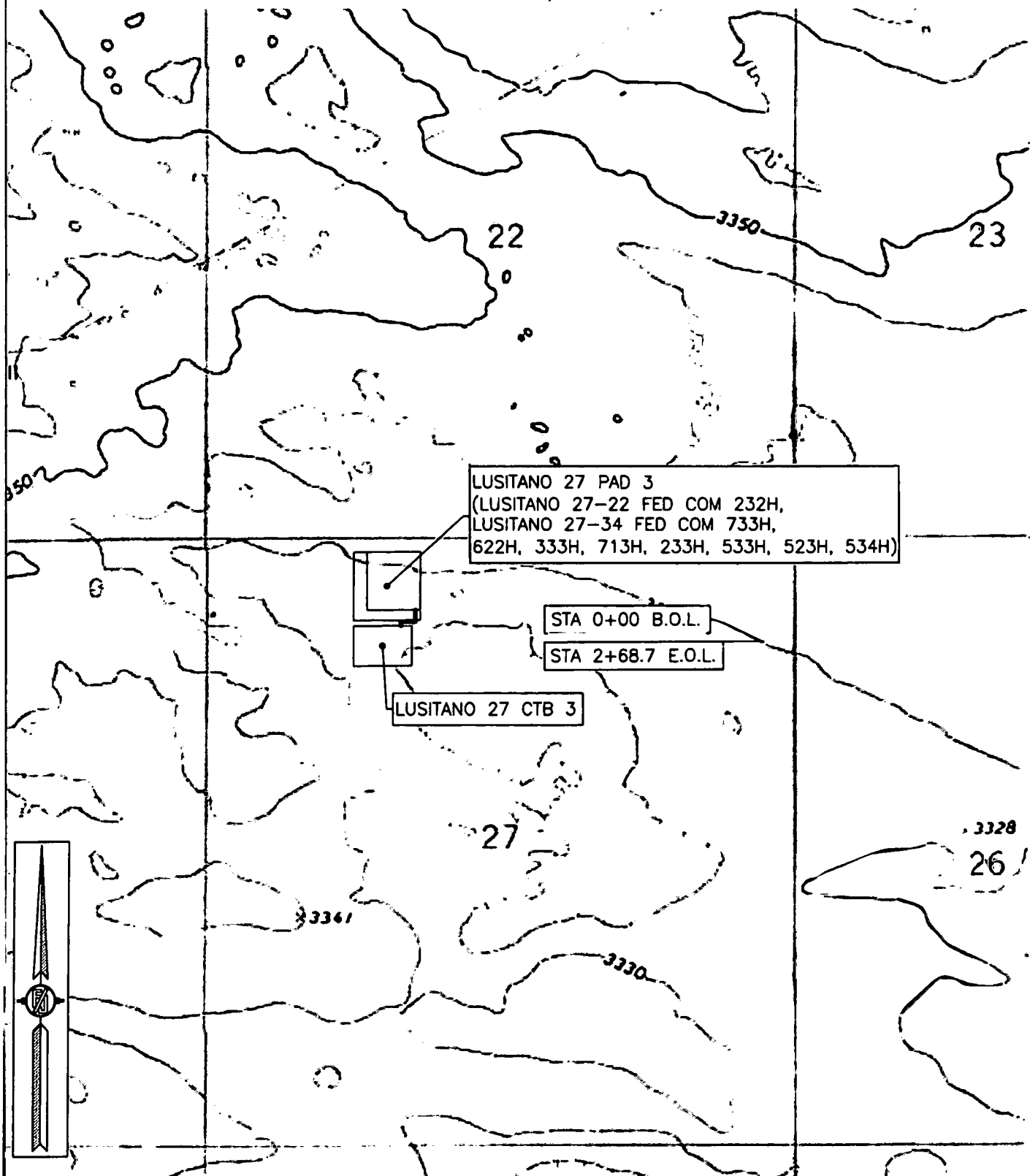
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6504

FLOWLINE PLAT

NINE 8" BURIED COMPOSITE FLOWLINES AND ONE 8" GAS LIFT LINE FROM THE LUSITANO 27 PAD 3
(LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H,
523H, 534H) TO THE LUSITANO 27 CTB 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AUGUST 24, 2018



SHEET: 3-4

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SURVEY NO. 6504

FLOWLINE PLAT

NINE 8" BURIED COMPOSITE FLOWLINES AND ONE 8" GAS LIFT LINE FROM THE LUSITANO 27 PAD 3
(LUSITANO 27-22 FED COM 232H, LUSITANO 27-34 FED COM 733H, 622H, 333H, 713H, 233H, 533H,
523H, 534H) TO THE LUSITANO 27 CTB 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 27, TOWNSHIP 25 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AUGUST 24, 2018

22

LUSITANO 27 PAD 3
(LUSITANO 27-22 FED COM 232H,
LUSITANO 27-34 FED COM 733H,
622H, 333H, 713H, 233H, 533H, 523H, 534H)

STA 0+00 B.O.L.

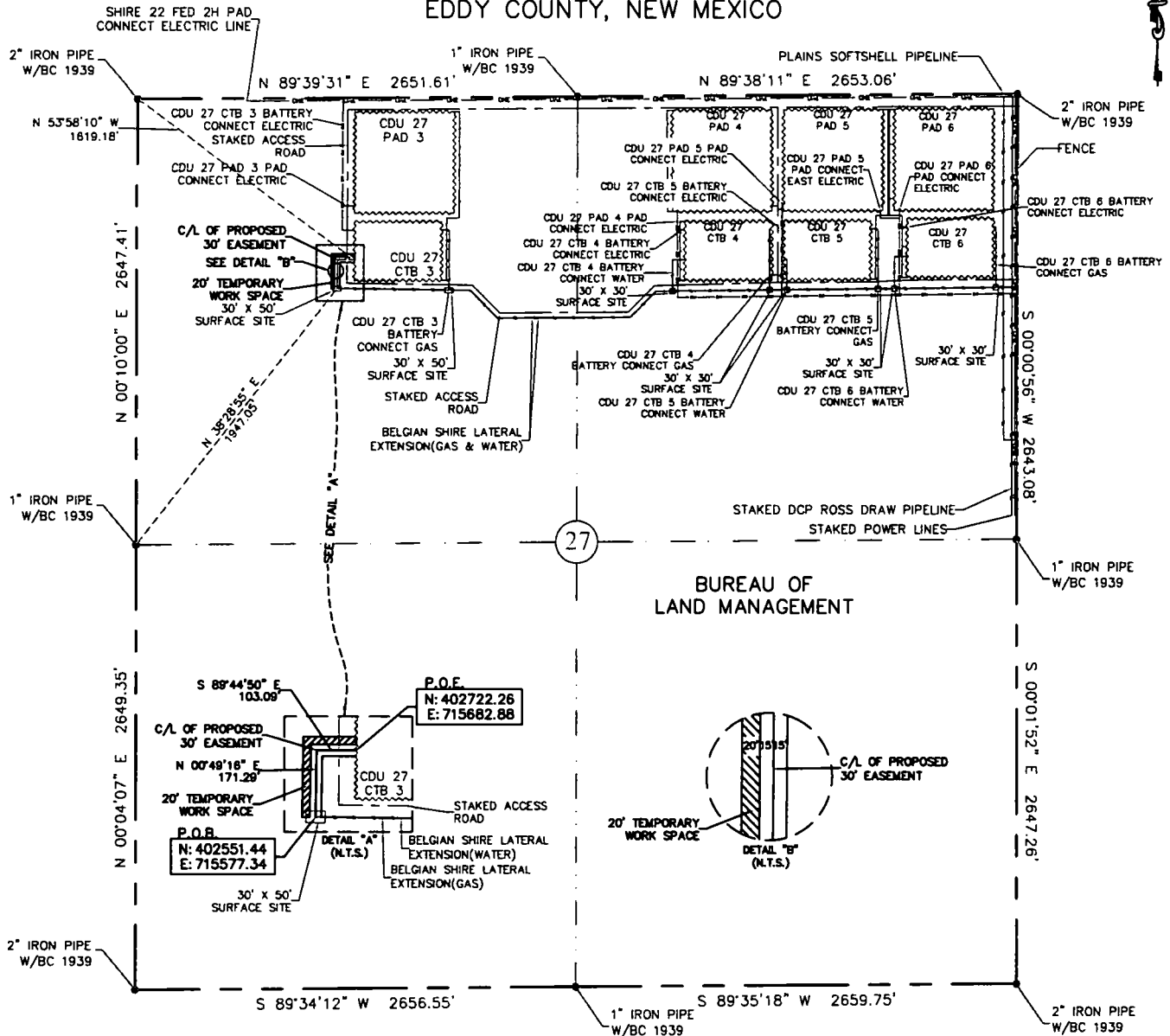
STA 2+68.7 E.O.L.

LUSITANO 27 CTB 3

27



EXHIBIT "A"
PAGE 1 of 18
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.189 ACRE(S)
20' TEMPORARY WORK SPACE AREA = 0.149 ACRE(S)
274.38 FEET OR 16.63 RODS

0+00.0 P.O.B./BELGIAN SHIRE LATERAL EXTENSION (WATER)
0+16.0 EXIT 30' X 50' SURFACE SITE
2+29.7 C/L STAKED ACCESS ROAD
2+74.4 P.O.E./CDU 27 CTB 3

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: 05-12-2016
Horizonrow, LLC
371 State Street Jasper, TX
(409) 202-5111 75951
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:
CHRIS MAAS

Date: 05/03/2016

DEVON ENERGY PRODUCTION COMPANY, L.P.

CDU 27 CTB 3 BATTERY
CONNECT (WATER)

PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 27, T25S-R31E, N.M.P.M.

LINE NUMBER:
7600672

WBS NUMBER:
CC-110133.03

SCALE:
1" = 1000'

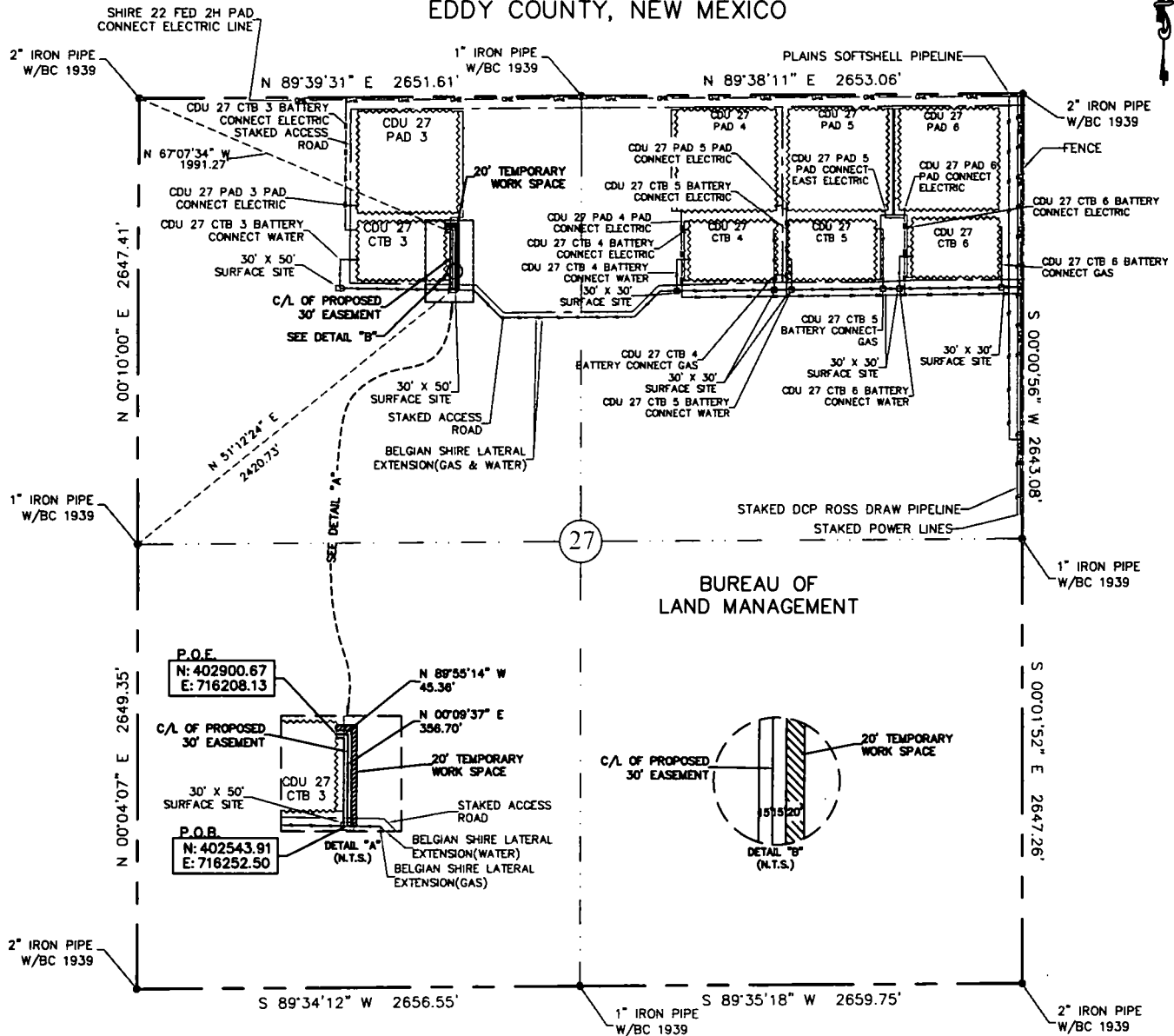
REVISIONS:

SHEET:
1 OF 18

0 1000 2000



EXHIBIT "A"
PAGE 3 of 18
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.277 ACRE(S)
 20' TEMPORARY WORK SPACE AREA = 0.208 ACRE(S)
 402.06 FEET OR 24.37 RODS

0+00.0 P.O.B./BELGIAN SHIRE LATERAL EXTENSION (GAS)
 0+13.0 EXIT 30' X 50' SURFACE SITE
 0+30.0 C/L STAKED ACCESS ROAD
 4+02.1 P.O.E./CDU 27 CTB 3

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 PLS #22404
 Date Signed: 05-12-2016
 Horizonrow, LLC
 571 State Street Jasper, TX.
 (409) 202-5111 75951
 Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:
CHRIS MAAS

Date: 05/03/2016

0 1000 2000



DEVON ENERGY PRODUCTION COMPANY, L.P.

CDU 27 CTB 3 BATTERY
CONNECT (GAS)

PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 27, T25S-R31E, N.M.P.M.

LINE NUMBER:
760067X

WBS NUMBER:
CC-110133.01

SCALE:
1" = 1000'

REVISIONS:

SHEET:
3 OF 18

**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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/ BC1939 found for the west quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 51°12'24" E, a distance of 2420.73' to the **Point of Beginning** of this easement having coordinates of Northing=402543.91 feet, Easting=716252.50 feet, being in the northwest quarter (NW ¼) of Section 27, T25S-R31E, and continuing the following courses;

Thence N 00°09'37" E, a distance of 356.70' to an angle point;

Thence N 89°55'14" W, a distance of 45.36' to the **Point of Ending** having coordinates of Northing=402900.67 feet, Easting=716208.13 feet, from said point a 2" iron pipe w/ BC1939 found for the northwest corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 67°07'34" W a distance of 1991.27', covering **402.06' or 24.37 rods** and having an area of **0.277 acres**.

20' TEMPORARY WORK SPACE DESCRIPTION:

Being a temporary work space twenty (20) feet in width lying on the right side and adjoining the right side of the above described thirty (30) feet easement, having a total area of **0.208 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: 05/12/2016
Horizon Row, LLC
571 State Street, Jasper, TX
(409) 202-5111 75951
Employee of Horizon Row, LLC





**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 northeast quarter (NE ¼) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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/ BC1939 found for the east quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 54°42'47" W, a distance of 2548.28' to the **Point of Beginning** of this easement having coordinates of Northing=402536.31 feet, Easting=717597.21 feet, being in the northeast quarter (NE ¼) of Section 27, T25S-R31E, and continuing the following courses;

Thence N 00°20'39" W, a distance of 187.88' to an angle point;

Thence N 89°42'07" E, a distance of 74.98' to the **Point of Ending** having coordinates of Northing=402724.57 feet, Easting=717671.05 feet, from said point a 1" iron pipe w/ BC1939 found for the north quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 33°46'35" W a distance of 1162.05', covering **262.86' or 15.93 rods** and having an area of **0.181 acres**.

20' TEMPORARY WORK SPACE DESCRIPTION:

Being a temporary work space twenty (20) feet in width lying on the left side and adjoining the left side of the above described thirty (30) feet easement, having a total area of **0.144 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: 05/12/2016

Horizon Row, LLC

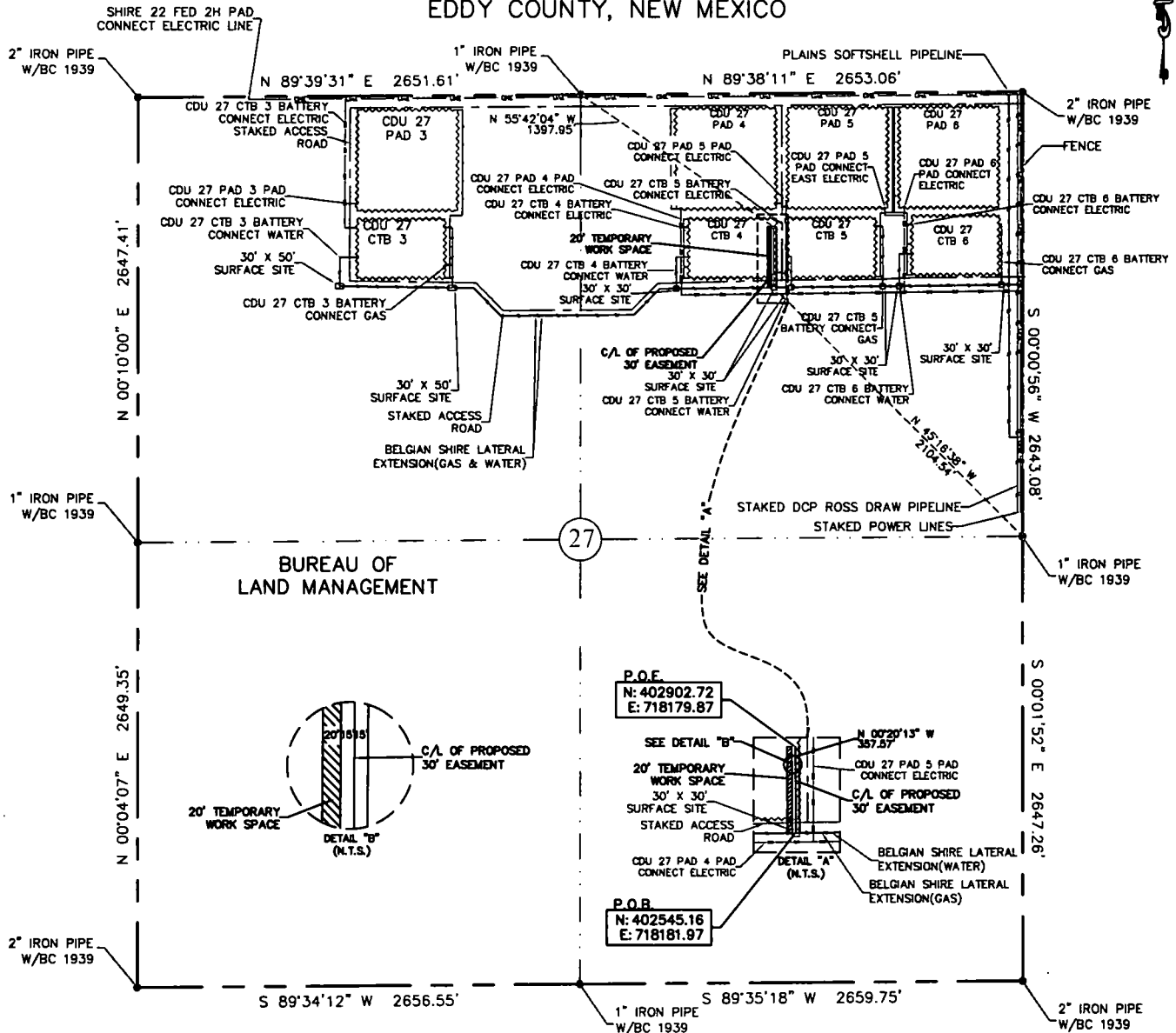
571 State Street, Jasper, TX

(409) 202-5111 75951

Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 7 of 18
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



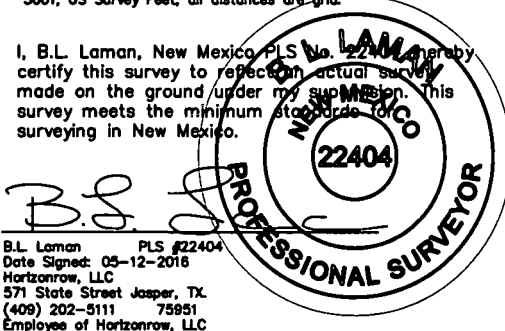
30' EASEMENT AREA = 0.246 ACRE(S)
 20' TEMPORARY WORK SPACE AREA = 0.164 ACRE(S)
 357.57 FEET OR 21.67 RODS

0+00.0 P.O.B./BELGIAN SHIRE LATERAL EXTENSION (GAS)
 0+14.0 EXIT 30' X 30' SURFACE SITE
 0+41.9 C/L STAKED ACCESS ROAD
 0+57.7 ENTER CDU 27 CTB 4
 3+57.6 P.O.E.

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 PLS #22404
 Date Signed: 05-12-2016
 Horizonrow, LLC
 571 State Street Jasper, TX
 (409) 202-5111 75951
 Employee of Horizonrow, LLC

HORIZONROW LLC

Drawn for:

devon

Drawn by:
 CHRIS MAAS

Date: 05/03/2016

DEVON ENERGY PRODUCTION COMPANY, L.P.

CDU 27 CTB 4 BATTERY
 CONNECT (GAS)

PROPOSED 30' EASEMENT
 ON THE PROPERTY OF
 BUREAU OF LAND MANAGEMENT
 SECTION 27, T25S-R31E, N.M.P.M.

LINE NUMBER:
 780068X

WBS NUMBER:
 CC-110133.01

SCALE:
 1" = 1000'

REVISIONS:

SHEET:
 7 OF 18

0 1000 2000



SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 northeast quarter (NE ¼) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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/ BC1939 found for the east quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 45°16'38" W, a distance of 2104.54' to the **Point of Beginning** of this easement having coordinates of Northing=402545.16 feet, Easting=718181.97 feet, being in the northeast quarter (NE ¼) of Section 27, T25S-R31E, and continuing the following course;

Thence N 00°20'13" W, a distance of 357.57' to the **Point of Ending** having coordinates of Northing=402902.72 feet, Easting=718179.87 feet, from said point a 1" iron pipe w/ BC1939 found for the north quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 55°42'04" W a distance of 1397.95', covering **357.57' or 21.67 rods** and having an area of **0.246 acres**.

20' TEMPORARY WORK SPACE DESCRIPTION:

Being a temporary work space twenty (20) feet in width lying on the left side and adjoining the left side of the above described thirty (30) feet easement, having a total area of **0.164 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.

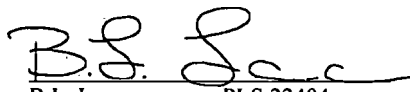
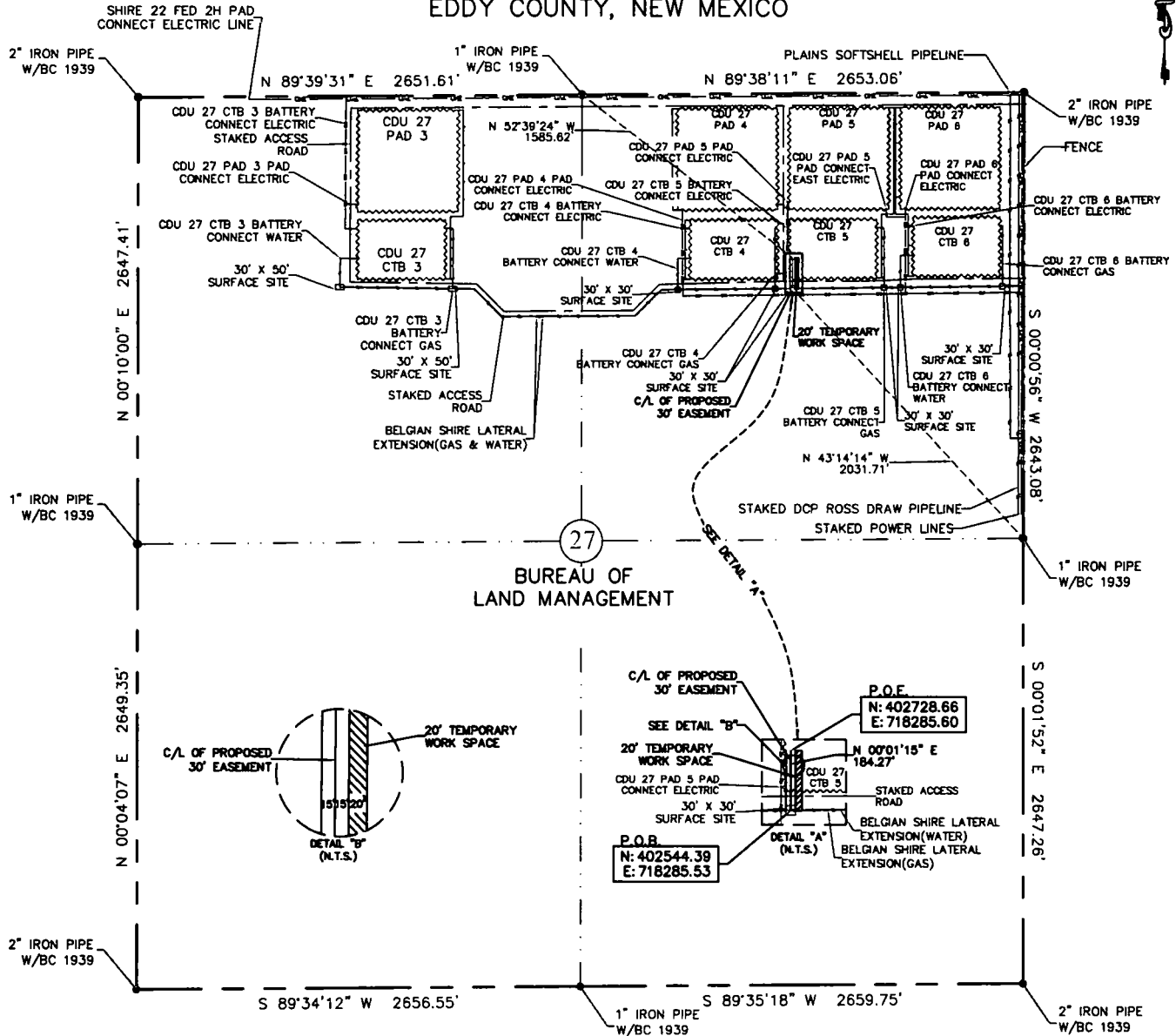

B.L. Laman PLS 22404
Date Signed: 05/12/2016
Horizon Row, LLC
571 State Street, Jasper, TX
(409) 202-5111 75951
Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 9 of 18
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.127 ACRE(S)
20' TEMPORARY WORK SPACE AREA = 0.085 ACRE(S)
184.27 FEET OR 11.17 RODS

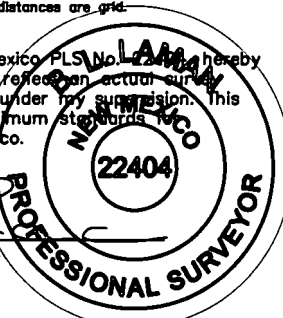
0+00.0 P.O.B./BELGIAN SHIRE LATERAL EXTENSION (WATER)
0+02.0 BELGIAN SHIRE LATERAL EXTENSION (GAS)
0+16.0 EXIT 30' X 30' SURFACE SITE
0+44.3 C/L STAKED ACCESS ROAD
0+59.3 ENTER CDU 27 CTB 5
1+84.3 P.O.E.

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, 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: 05-12-2018
Horizonrow, LLC
571 State Street Jasper, TX.
(409) 202-5111 75951
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:
CHRIS MAAS

Date: 05/03/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

CDU 27 CTB 5 BATTERY
CONNECT (WATER)

PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 27, T25S-R31E, N.M.P.M.

LINE NUMBER:
760069Z

WBS NUMBER:
CC-110133.03

SCALE:
1" = 1000'

REVISIONS:

SHEET:
9 OF 18

0 1000 2000



**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 northeast quarter (NE ¼) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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/ BC1939 found for the east quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 43°14'14" W, a distance of 2031.71' to the **Point of Beginning** of this easement having coordinates of Northing=402544.39 feet, Easting=718285.53 feet, being in the northeast quarter (NE ¼) of Section 27, T25S-R31E, and continuing the following courses;

Thence N 00°01'15" E, a distance of 184.27' to the **Point of Ending** having coordinates of Northing=402728.66 feet, Easting=718285.60 feet, from said point a 1" iron pipe w/ BC1939 found for the north quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 52°39'24" W a distance of 1585.62', covering **184.27' or 11.17 rods** and having an area of **0.127 acres**.

20' TEMPORARY WORK SPACE DESCRIPTION:

Being a temporary work space twenty (20) feet in width lying on the right side and adjoining the right side of the above described thirty (30) feet easement, having a total area of **0.085 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.

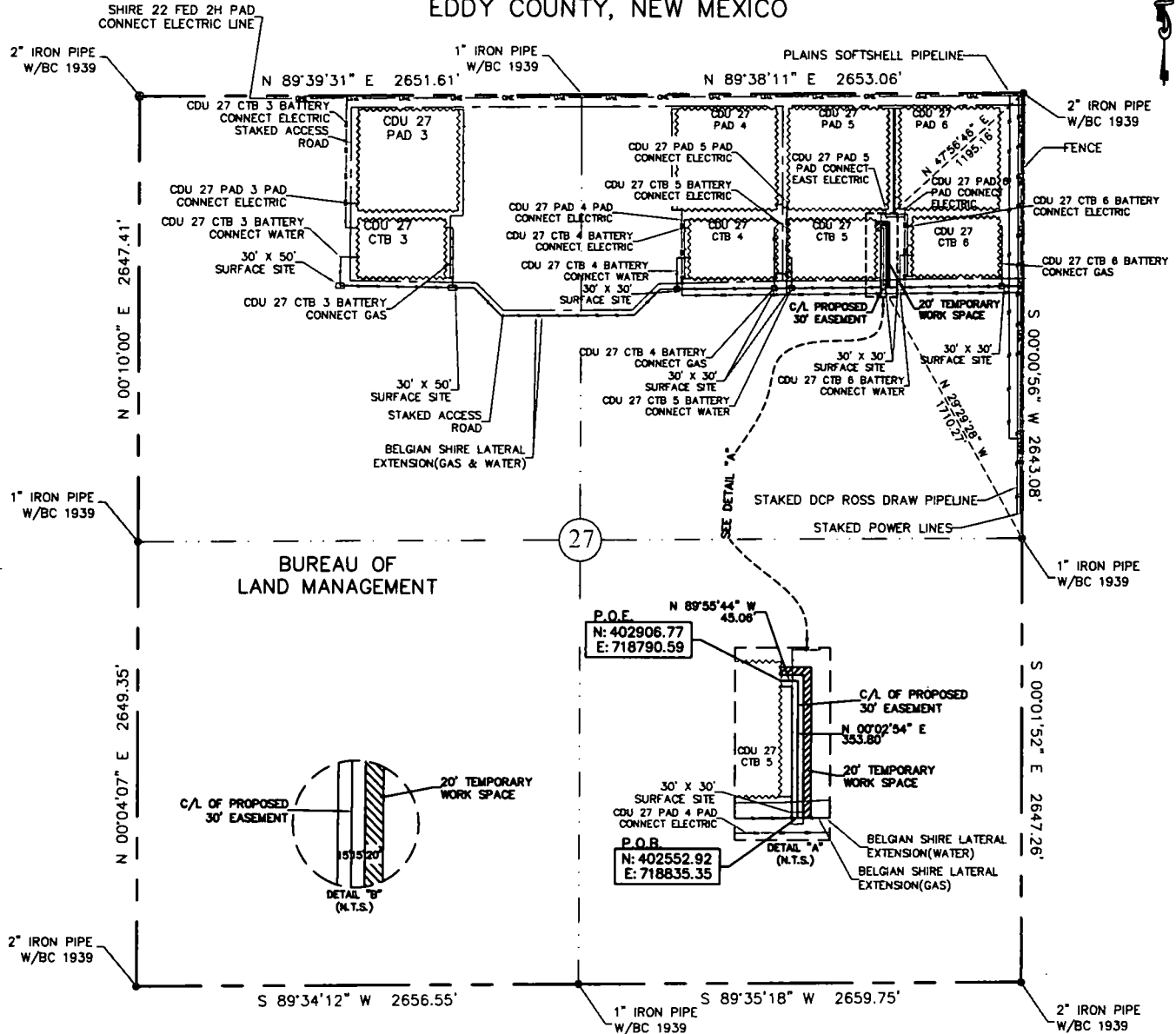
I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404
Date Signed: 05/12/2016
Horizon Row, LLC
571 State Street, Jasper, TX
(409) 202-5111 75951
Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 11 of 18
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.275 ACRE(S)
 20' TEMPORARY WORK SPACE AREA = 0.206 ACRE(S)
 398.86 FEET OR 24.17 RODS

0+00.0 P.O.B./BELGIAN SHIRE LATERAL EXTENSION (GAS)
 0+14.0 EXIT 30' X 30' SURFACE SITE
 0+41.9 C/L STAKED ACCESS ROAD
 3+98.9 P.O.E./CDU 27 CTB 5

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: 05-12-2018
 Horizonrow, LLC
 571 State Street Jasper, TX
 (409) 202-3111 75951
 Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:
CHRIS MAAS

Date: 05/03/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

CDU 27 CTB 5 BATTERY
CONNECT (GAS)

PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 27, T25S-R31E, N.M.P.M.

LINE NUMBER:
760069X

WBS NUMBER:
CC-110133.01

SCALE:
1" = 1000'

REVISIONS:

SHEET:
11 OF 18

0 1000 2000



**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 northeast quarter (NE ¼) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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/ BC1939 found for the east quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 29°29'28" W, a distance of 1710.27' to the **Point of Beginning** of this easement having coordinates of Northing=402552.92 feet, Easting=718835.35 feet, being in the northeast quarter (NE ¼) of Section 27, T25S-R31E, and continuing the following courses;

Thence N 00°02'54" E, a distance of 353.80' to an angle point;

Thence N 89°55'44" W, a distance of 45.06' to the **Point of Ending** having coordinates of Northing=402906.77 feet, Easting=718790.59 feet, from said point a 2" iron pipe w/ BC1939 found for the northeast corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 47°56'46" E a distance of 1195.16', covering **398.86' or 24.17 rods** and having an area of **0.275 acres**.

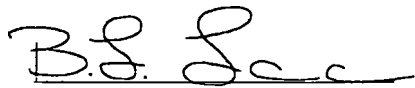
20' TEMPORARY WORK SPACE DESCRIPTION:

Being a temporary work space twenty (20) feet in width lying on the right side and adjoining the right side of the above described thirty (30) feet easement, having a total area of **0.206 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.

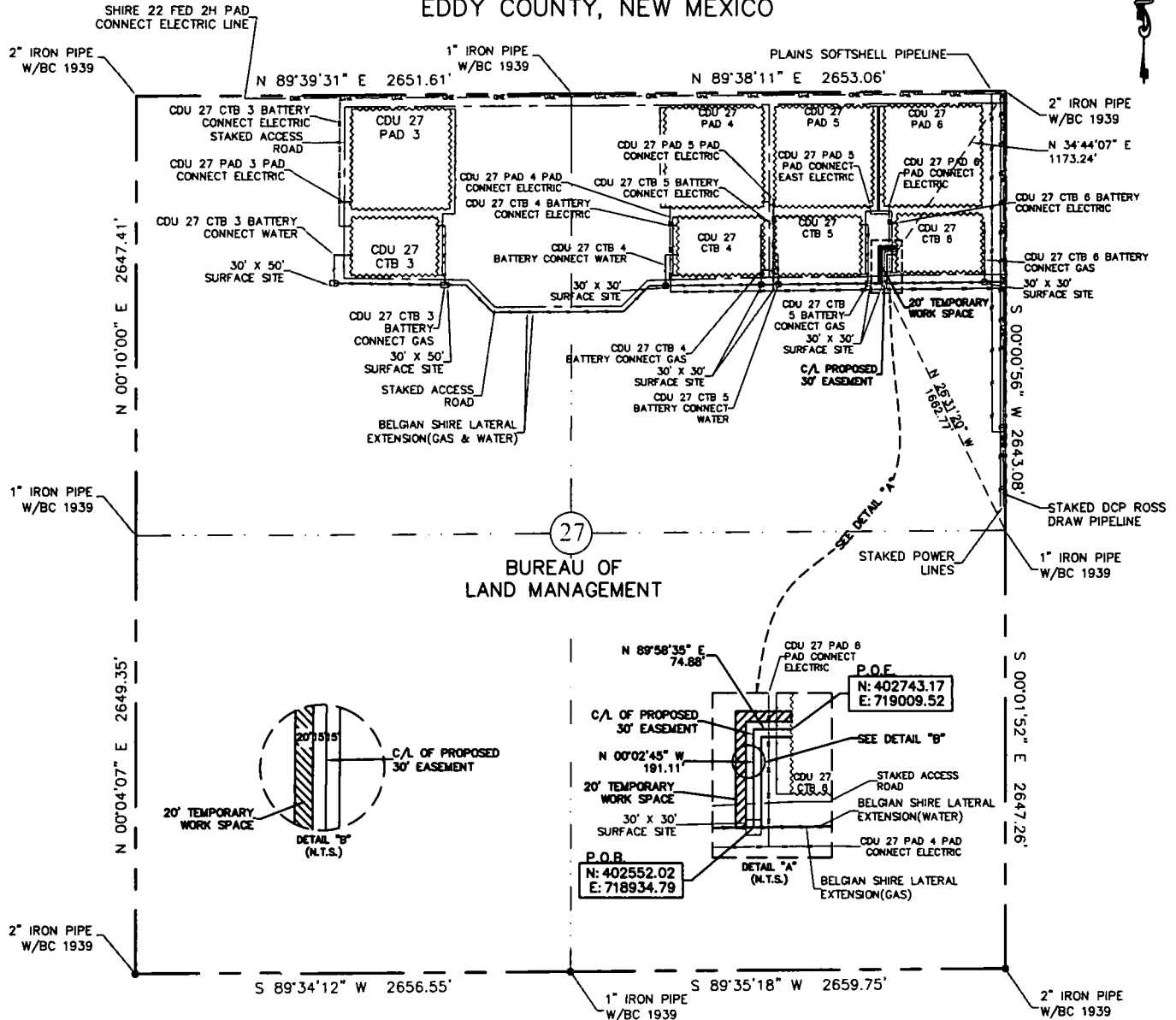
I, B.L. Laman, New Mexico PLS No. 22404, hereby certify this survey to reflect an actual survey made on the ground under my supervision. This survey meets the minimum standards for surveying in New Mexico.



B.L. Laman PLS 22404
Date Signed: 05/12/2016
Horizon Row, LLC
571 State Street, Jasper, TX
(409) 202-5111 75951
Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 13 of 18
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.183 ACRE(S)
20' TEMPORARY WORK SPACE AREA = 0.145 ACRE(S)
265.99 FEET OR 16.12 RODS

0+00.0 P.O.B./BELGIAN SHIRE LATERAL EXTENSION (WATER)
0+02.0 BELGIAN SHIRE LATERAL EXTENSION (GAS)
0+16.0 EXIT 30' X 30' SURFACE SITE
0+47.1 C/L STAKED ACCESS ROAD
2+21.1 CDU 27 PAD 6 PAD CONNECT ELECTRIC LINE
2+66.0 P.O.E./CDU 27 CTB 6

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: 05-12-2018
Horizonrow, LLC
571 State Street Jasper, TX
(409) 202-5111 75951
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:
CHRIS MAAS

Date: 05/04/2016

0 1000 2000



DEVON ENERGY PRODUCTION COMPANY, L.P.

CDU 27 CTB 6 BATTERY
CONNECT (WATER)

PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 27, T25S-R31E, N.M.P.M.

LINE NUMBER:
780070Z

WBS NUMBER:
CC-110133.03

SCALE:
1" = 1000'

REVISIONS:

SHEET:
13 OF 18

**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 northeast quarter (NE ¼) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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/ BC1939 found for the east quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 26°31'20" W, a distance of 1662.77' to the **Point of Beginning** of this easement having coordinates of Northing=402552.02 feet, Easting=718934.79 feet, being in the northeast quarter (NE ¼) of Section 27, T25S-R31E, and continuing the following courses;

Thence N 00°02'45" W, a distance of 191.11' to an angle point;

Thence N 89°58'35" E, a distance of 74.88' to the **Point of Ending** having coordinates of Northing=402743.17 feet, Easting=719009.52 feet, from said point a 2" iron pipe w/ BC1939 found for the northeast corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 34°44'07" E a distance of 1173.24', covering **265.99' or 16.12 rods** and having an area of **0.183 acres**.

20' TEMPORARY WORK SPACE DESCRIPTION:

Being a temporary work space twenty (20) feet in width lying on the left side and adjoining the left side of the above described thirty (30) feet easement, having a total area of **0.145 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: 05/12/2016

Horizon Row, LLC

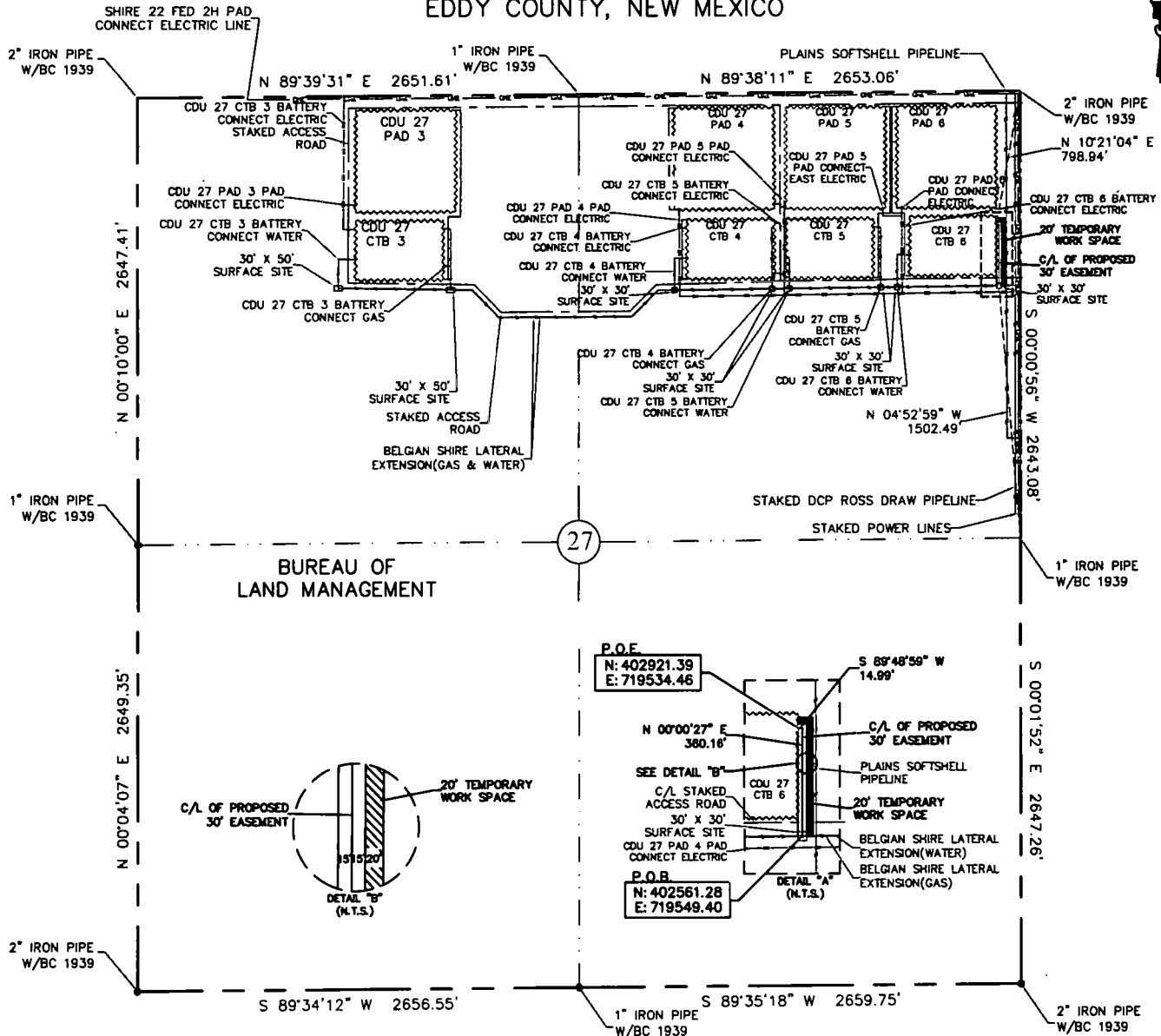
571 State Street, Jasper, TX

(409) 202-5111 75951

Employee of Horizon Row, LLC



EXHIBIT "A"
PAGE 15 of 18
SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



30' EASEMENT AREA = 0.258 ACRE(S)
20' TEMPORARY WORK SPACE AREA = 0.195 ACRE(S)
375.15 FEET OR 22.74 RODS

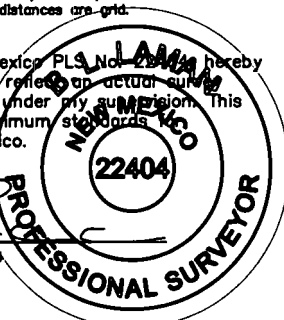
0+00.0 P.O.B./BELGIAN SHIRE LATERAL EXTENSION (GAS)
0+14.0 EXIT 30' X 30' SURFACE SITE
0+45.1 C/L STAKED ACCESS ROAD
3+75.2 P.O.E./CDU 27 CTB 6

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, 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: 05-12-2018
Horizonrow, LLC
571 State Street Jasper, TX
(409) 202-5111 75951
Employee of Horizonrow, LLC



HORIZON ROW LLC

Drawn for:

devon

Drawn by:
CHRIS MAAS

Date: 05/04/2018

DEVON ENERGY PRODUCTION COMPANY, L.P.

CDU 27 CTB 6 BATTERY
CONNECT (GAS)

PROPOSED 30' EASEMENT
ON THE PROPERTY OF
BUREAU OF LAND MANAGEMENT
SECTION 27, T25S-R31E, N.M.P.M.

LINE NUMBER:
780070X

WBS NUMBER:
CC-110133.01

SCALE:
1" = 1000'

REVISIONS:

SHEET:
15 OF 18

0 1000 2000



**SECTION 27, T25S-R31E, N.M.P.M.,
EDDY 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 northeast quarter (NE ¼) of Section 27, Township 25 South, Range 31 East, N.M.P.M., Eddy 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/ BC1939 found for the east quarter corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico;

Thence N 04°52'59" W, a distance of 1502.49' to the **Point of Beginning** of this easement having coordinates of Northing=402561.28 feet, Easting=719549.40 feet, being in the northeast quarter (NE ¼) of Section 27, T25S-R31E, and continuing the following courses;

Thence N 00°00'27" E, a distance of 360.16' to an angle point;

Thence S 89°48'59" W, a distance of 14.99' to the **Point of Ending** having coordinates of Northing=402921.39 feet, Easting=719534.46 feet, from said point a 2" iron pipe w/ BC1939 found for the northeast corner of Section 27, T25S-R31E, N.M.P.M., Eddy County, New Mexico bears N 10°21'04" E a distance of 798.94', covering **375.15' or 22.74 rods** and having an area of **0.258 acres**.

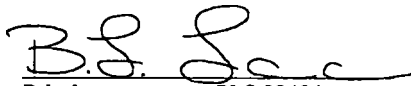
20' TEMPORARY WORK SPACE DESCRIPTION:

Being a temporary work space twenty (20) feet in width lying on the right side and adjoining the right side of the above described thirty (30) feet easement, having a total area of **0.195 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: 05/12/2016

Horizon Row, LLC

571 State Street, Jasper, TX

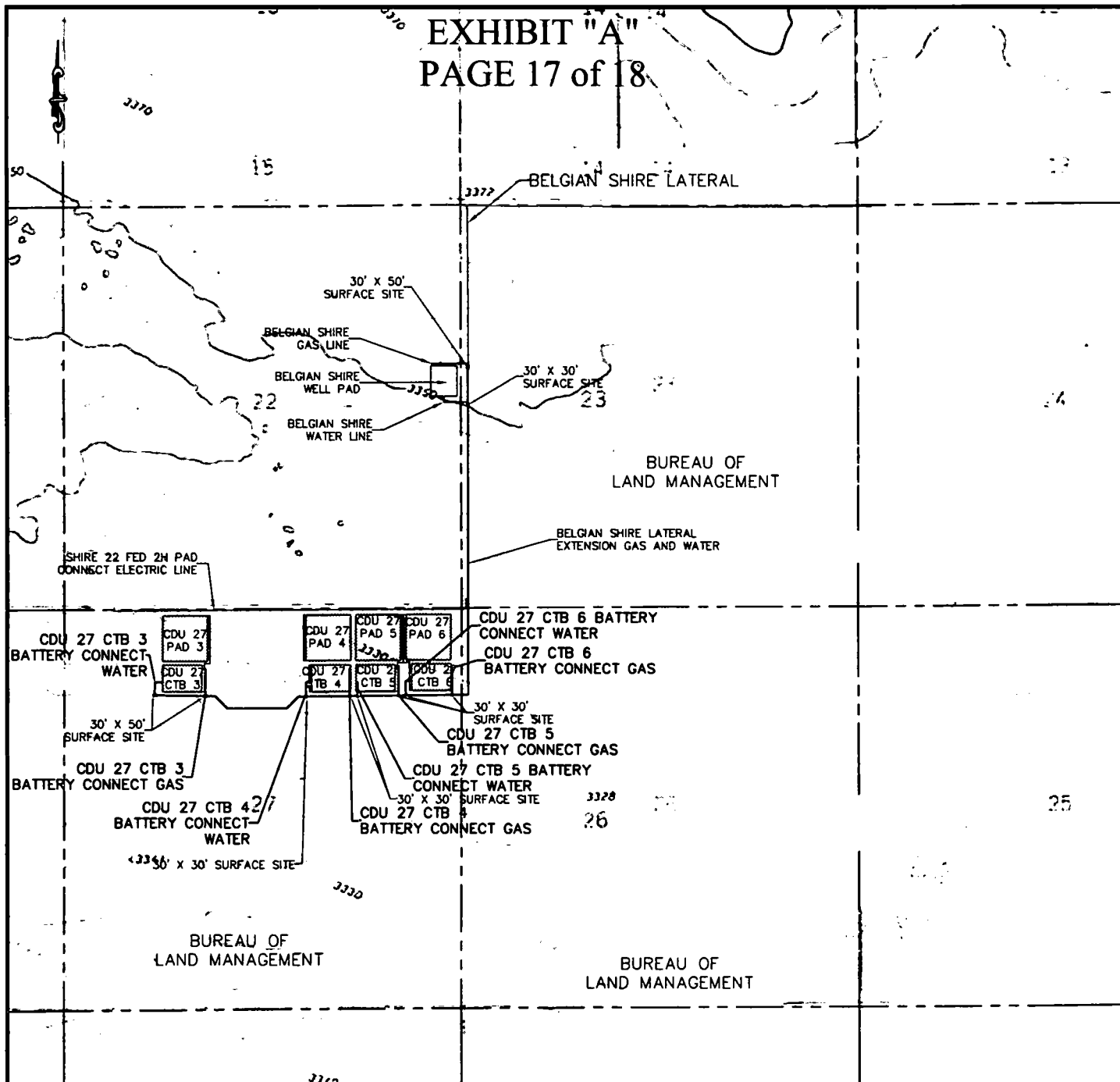
(409) 202-5111 75951

Employee of Horizon Row, LLC



EXHIBIT "A"

PAGE 17 of 18



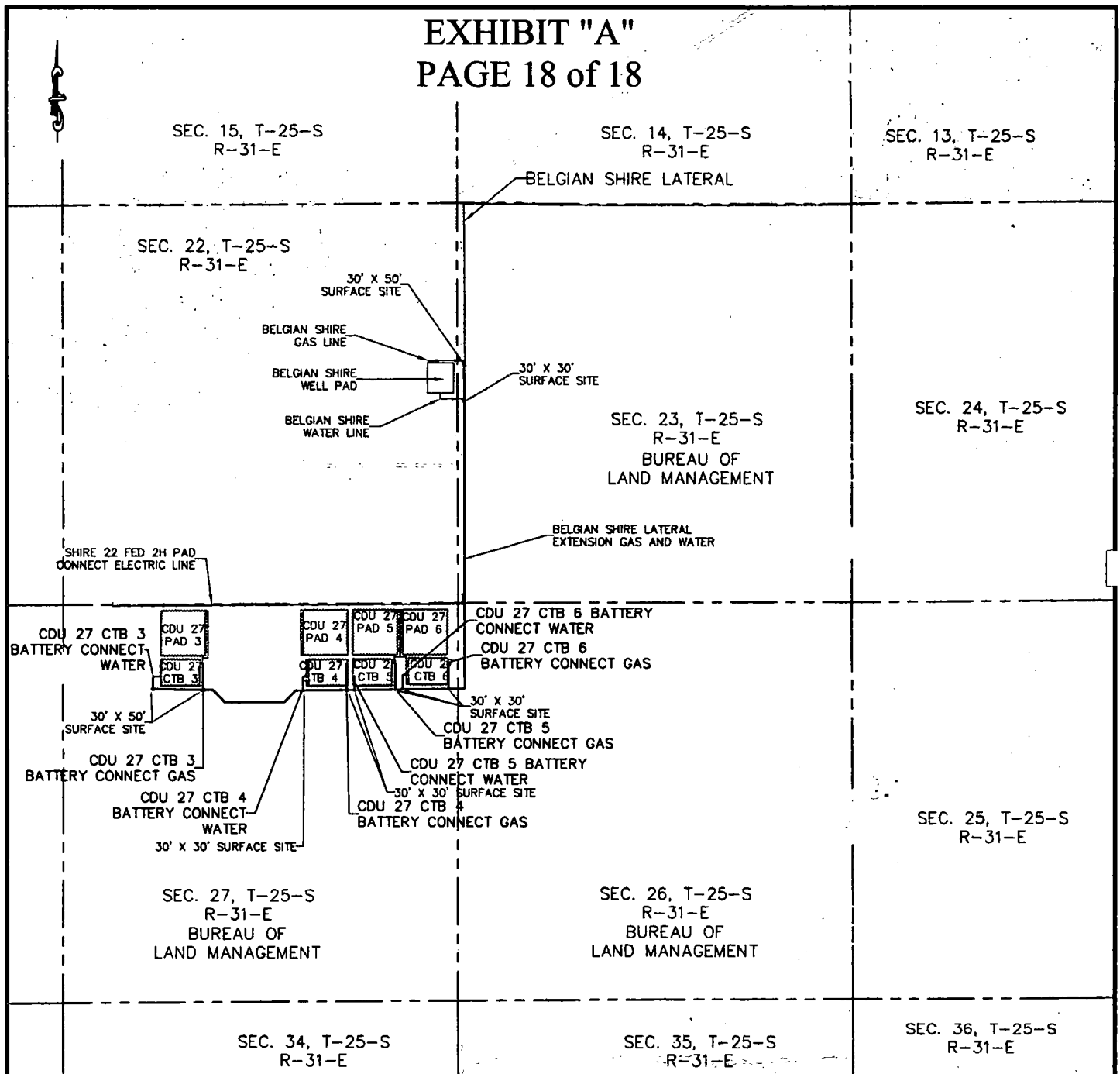
QUAD MAP

SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC		WES NUMBER:	LINE NUMBER:
CDU 27 CTB 3 BATTERY CONNECT (GAS & WATER)		CC-110133.01	760087X.2
CDU 27 CTB 4 BATTERY CONNECT (GAS & WATER)		CC-110133.01	760088X.2
CDU 27 CTB 5 BATTERY CONNECT (GAS & WATER)		CC-110133.01	760089X.2
CDU 27 CTB 6 BATTERY CONNECT (GAS & WATER)		CC-110133.01	760070X.2
Drawn for:		DEVON ENERGY PRODUCTION COMPANY, L.P.	
devon		PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT	
Drawn by: CHRIS MAAS	Date: 05/04/2018	SCALE: 1" = 2000'	REVISIONS: SHEET: 17 OF 18

EXHIBIT "A"

PAGE 18 of 18



AERIAL MAP

SECTION 27, T25S-R31E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

HORIZON ROW LLC		WBS NUMBER:	LINE NUMBER:
CDU 27 CTB 3 BATTERY CONNECT (GAS & WATER)		CC-110133.01	760087X.2
CDU 27 CTB 4 BATTERY CONNECT (GAS & WATER)		CC-110133.01	760088X.2
CDU 27 CTB 5 BATTERY CONNECT (GAS & WATER)		CC-110133.01	760089X.2
CDU 27 CTB 6 BATTERY CONNECT (GAS & WATER)		CC-110133.01	760090X.2
Drawn for:		DEVON ENERGY PRODUCTION COMPANY, L.P.	
		SCALE: 1" = 2000'	
		REVISIONS:	
		SHEET: 18 OF 18	
Drawn by: CHRIS MAAS	Date: 05/04/2016	PROPOSED 30' EASEMENT ON THE PROPERTY OF BUREAU OF LAND MANAGEMENT	



Receipt

Tracking Information

Pay.gov Tracking ID: 26D6U3UN

Agency Tracking ID: 75605497014

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

Application Name: BLM Oil and Gas Online Payment

Payment Information

Payment Type: Bank account (ACH)

Payment Amount: \$20,100.00

Transaction Date: 10/30/2018 10:46:21 AM EDT

Payment Date: 10/31/2018

Company: Devon Energy Production Co., L.P.

APD IDs: 10400035209, 10400035249

Lease Numbers: NMNM125635, NMNM016348

Well Numbers: 533H, 535H

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

Account Information

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

Routing Number: 061000052

Account Number: *****9892



Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

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:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

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:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



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

Bond Info Data Report

01/14/2019

Bond Information

Federal/Indian APD: FED

BLM Bond number: CO1104

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: