

Intent ☒ As Drilled ☐

SEP 25 2018

API #  
**30-015-45266**

**RECEIVED**

Operator Name: Devon Energy Production Co., LP	Property Name: Spud Muffin 31-30 Com	Well Number 622H
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**Kick Off Point (KOP)**

UL	Section 31	Township 23S	Range 29E	Lot	Feet 200	From N/S South	Feet 1870	From E/W West	County Eddy
Latitude 32.254811					Longitude -104.026525			NAD 83	

**First Take Point (FTP)**

UL	Section 31	Township 23S	Range 29E	Lot	Feet 330	From N/S South	Feet 1870	From E/W West	County Eddy
Latitude 32.255168					Longitude -104.026521			NAD 83	

**Last Take Point (LTP)**

UL	Section 30	Township 23S	Range 29E	Lot	Feet 330	From N/S North	Feet 1870	From E/W West	County Eddy
Latitude 32.282532					Longitude -104.026201			NAD 83	

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

Is this well an infill well? ☐

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

API #	Operator Name:	Property Name:	Well Number

KZ 06/29/2018

30.015-45266

**1. Geologic Formations**

TVD of target	9,975'	Pilot hole depth	N/A
MD at TD:	19,951	Deepest expected fresh water:	400'

**Basin**

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Top Salt	500		
Base of Salt	2700		
Lamar	3106		
Bell Canyon	3157		
Brushy Canyon	5230		
Bone Spring Lime	6812		
1st BSPG Sand	7872		
2nd BSPG Sand	8716		
3rd BSPG Sand	9791		
Wolfcamp	10050		
Wolfcamp XY	10164		
Wolfcamp 100	10268		

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

## Devon Energy, Spud Muffin 31-30 Com 622H

### 2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	400'	13.375"	48	J-55	STC	1.125	1.25	1.6
12.25"	0	2700'	10.75"	45.5	J-55	STC	1.125	1.25	1.6
9.875"	0	9439'	7.625"	29.7	P110	BTC	1.125	1.25	1.6
8.75"	9439'	10389'	7.625"	29.7	P110	Flushmax III	1.125	1.25	1.6
6.75"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6

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

Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.

A variance is requested to wave the annular clearance guidelines pertaining to casing collars allowing the use of 10-3/4" casing in 12-1/4" hole.

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

#### Casing Program (Alternate Design)

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	400'	13.375"	48	J-55	STC	1.125	1.25	1.6
12.25"	0	2700'	10.75"	45.5	J-55	STC	1.125	1.25	1.6
9.875"	0	9200'	8.625"	32	P110EC	VAM FJL	1.125	1.25	1.6
7.875"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6

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

Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.

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

A variance is requested to wave the annular clearance guidelines pertaining to casing collars allowing the use of 10-3/4" casing in 12-1/4" hole.

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

**Devon Energy, Spud Muffin 31-30 Com 622H**

**Casing Program (Alternate Design II)**

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	400'	13.375"	48	J-55	STC	1.125	1.25	1.6
10.625"	0	9200'	8.625"	32	P110EC	BTC	1.125	1.25	1.6
7.875"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6

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

## Devon Energy, Spud Muffin 31-30 Com 622H

### 3. Cementing Program (Primary Design)

Casing	# Sk	Wt. lb/ gal	H <sub>2</sub> O gal/sk	Yld ft <sup>3</sup> / sack	Slurry Description
Surface	310	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
Int I	448	12.9	13.5	1.85	Lead: Class H/C + additives
	142	14.8	3.31	1.33	Tail: Class H/C + additives
Int II	812	9	5.31	3.27	Lead: Tuned Light® Cement
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Intermediate II (Bradenhead)	730	14.8	6.32	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	386	13.2	5.31	1.6	Lead: Class H/C + additives
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Production	702	14.8	6.32	1.33	Class H Cement + 0.125 lbs/sack Poly-E-Flake

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

Casing String	% Excess
Surface	50%
Intermediate	30%
Production	25%

### Cementing Program (Alternate Design I)

Casing	# Sk	Wt. lb/ gal	H <sub>2</sub> O gal/sk	Yld ft <sup>3</sup> / sack	Slurry Description
Surface	310	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
Int I	448	12.9	13.5	1.85	Lead: Class H/C + additives
	142	14.8	3.31	1.33	Tail: Class H/C + additives
Int II	480	9	5.31	3.27	Lead: Tuned Light® Cement
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Intermediate II (Bradenhead)	450	14.8	6.32	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	386	13.2	5.31	1.6	Tail: Class H/C + additives
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Production	702	14.8	6.32	1.33	Class H Cement + 0.125 lbs/sack Poly-E-Flake

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

**Devon Energy, Spud Muffin 31-30 Com 622H**

Casing String	% Excess
Surface	50%
Intermediate	30%
Production	25%

**Cementing Program (Alternate Design II)**

Casing	# Sks	Wt. lb/ gal	H <sub>2</sub> O gal/sk	Yld ft <sup>3</sup> / sack	Slurry Description
Surface	310	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
Int	715	9	5.31	3.27	Lead: Tuned Light® Cement
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Intermediate (Bradenhead)	485	14.8	6.32	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	386	13.2	5.31	1.6	Tail: Class H/C + additives
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Production	702	14.8	6.32	1.33	Class H Cement + 0.125 lbs/sack Poly-E-Flake

**4. Pressure Control Equipment**

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

## Devon Energy, Spud Muffin 31-30 Com 622H

			Double Ram		
			Other *		

\*Specify if additional ram is utilized.

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

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

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	<p>A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.</p> <p>Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.</p> <ul style="list-style-type: none"> <li>Wellhead will be installed by wellhead representatives.</li> <li>If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.</li> <li>Wellhead representative will install the test plug for the initial BOP test.</li> <li>Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.</li> <li>If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.</li> </ul>

## Devon Energy, Spud Muffin 31-30 Com 622H

- Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.
- Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.

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

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

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

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

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

### 5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	400'	FW Gel	8.6-8.8	28-34	N/C
400'	2700'	Sat Brine /DBE	9.5-10.1	34-40	N/C - 6
2700'	9200'	Sat Brine/Cut Brine/DBE	9.0-9.8	32-36	N/C - 6
9200'	TD	OBM	10.0-11.5	45-65	N/C-6

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

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

## 7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5965 psi
Abnormal Temperature	No

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

Hydrogen Sulfide (H <sub>2</sub> S) monitors will be installed prior to drilling out the surface shoe. If H <sub>2</sub> S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H <sub>2</sub> S is present
Y	H <sub>2</sub> S Plan attached

## 8. Other facets of operation

Is this a walking operation? Potentially

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

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

Will be pre-setting casing? Potentially

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

## **Devon Energy, Spud Muffin 31-30 Com 622H**

- a. Rig will utilize fresh water based mud to drill 14 3/4" surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the 10-3/4" surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
  - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

### **Attachments**

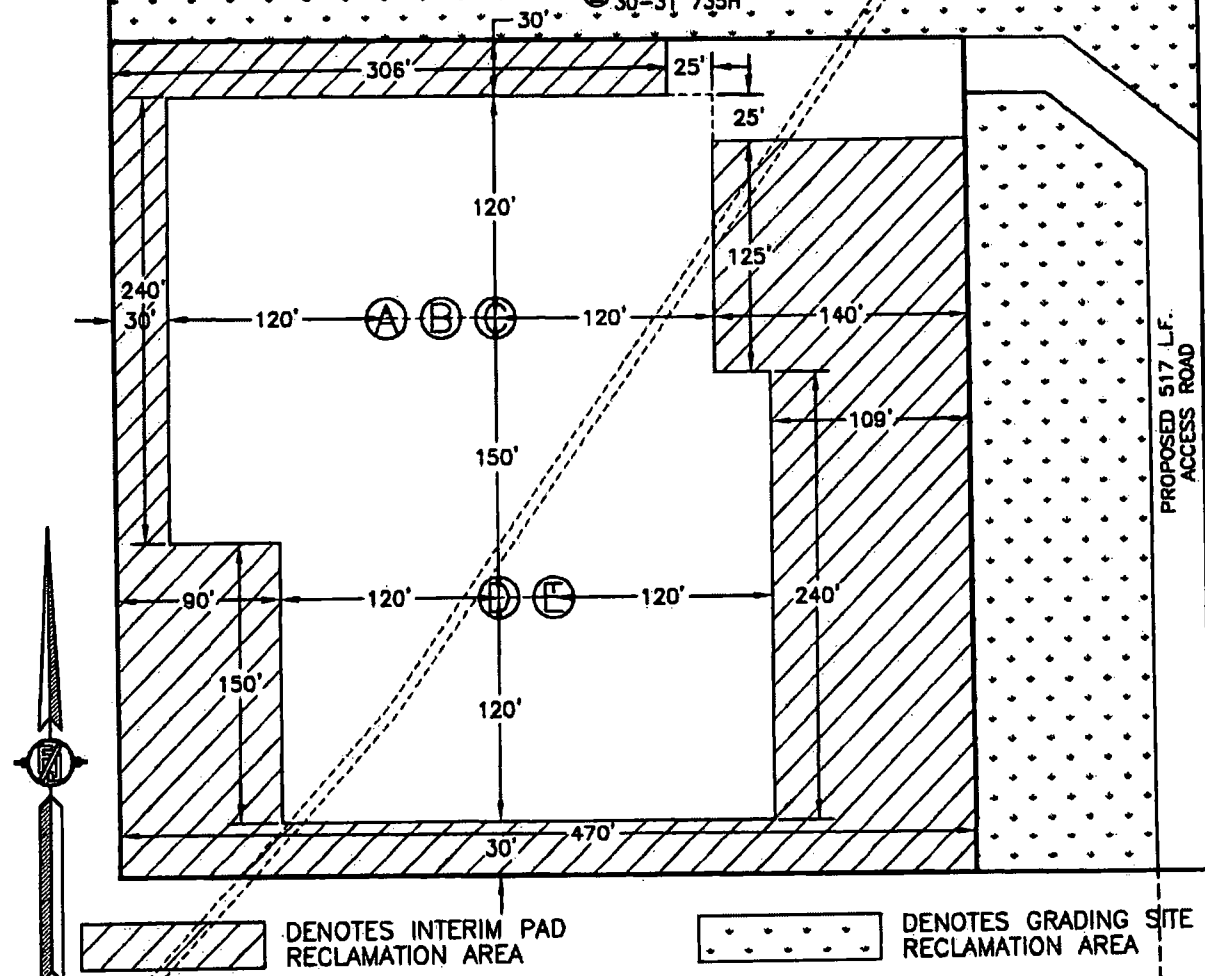
- ☒ Directional Plan  
☐ Other, describe

[illegible]

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

SPUD MUFFIN  
• 31 PAD 1 •

- (A) SPUD MUFFIN  
 30-31 COM 622H  
 (B) SPUD MUFFIN  
 30-31 332H  
 (C) SPUD MUFFIN  
 30-31 623H  
 (D) SPUD MUFFIN  
 30-31 COM 734H  
 (E) SPUD MUFFIN  
 30-31 735H



2.018± ACRES INTERIM PAD RECLAMATION AREA  
3.052± ACRES GRADING SITE RECLAMATION AREA  
3.193± ACRES NON-RECLAIMED AREA  

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8.263± ACRES SPUD MUFFIN 31 PAD 1

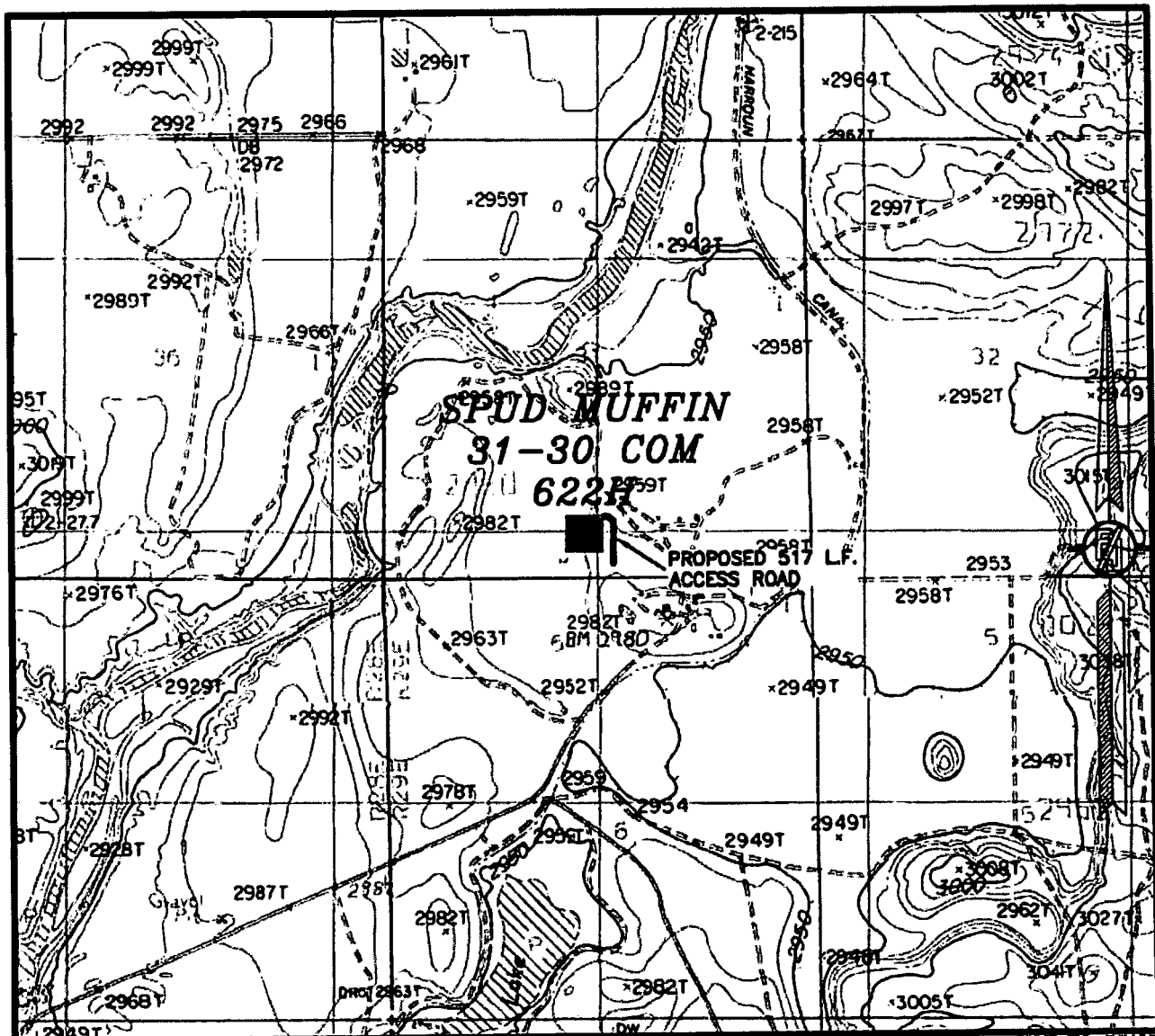
**DEVON ENERGY PRODUCTION COMPANY, L.P.  
SPUD MUFFIN 31-30 COM 622H  
LOCATED 625 FT. FROM THE SOUTH LINE  
AND 2375 FT. FROM THE WEST LINE OF  
SECTION 31, TOWNSHIP 23 SOUTH,  
RANGE 29 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO**

**AUGUST 30, 2018**

**SURVEY NO. 6960C**

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

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
LOCATION VERIFICATION MAP



USGS QUAD MAP:  
LOVING

NOT TO SCALE

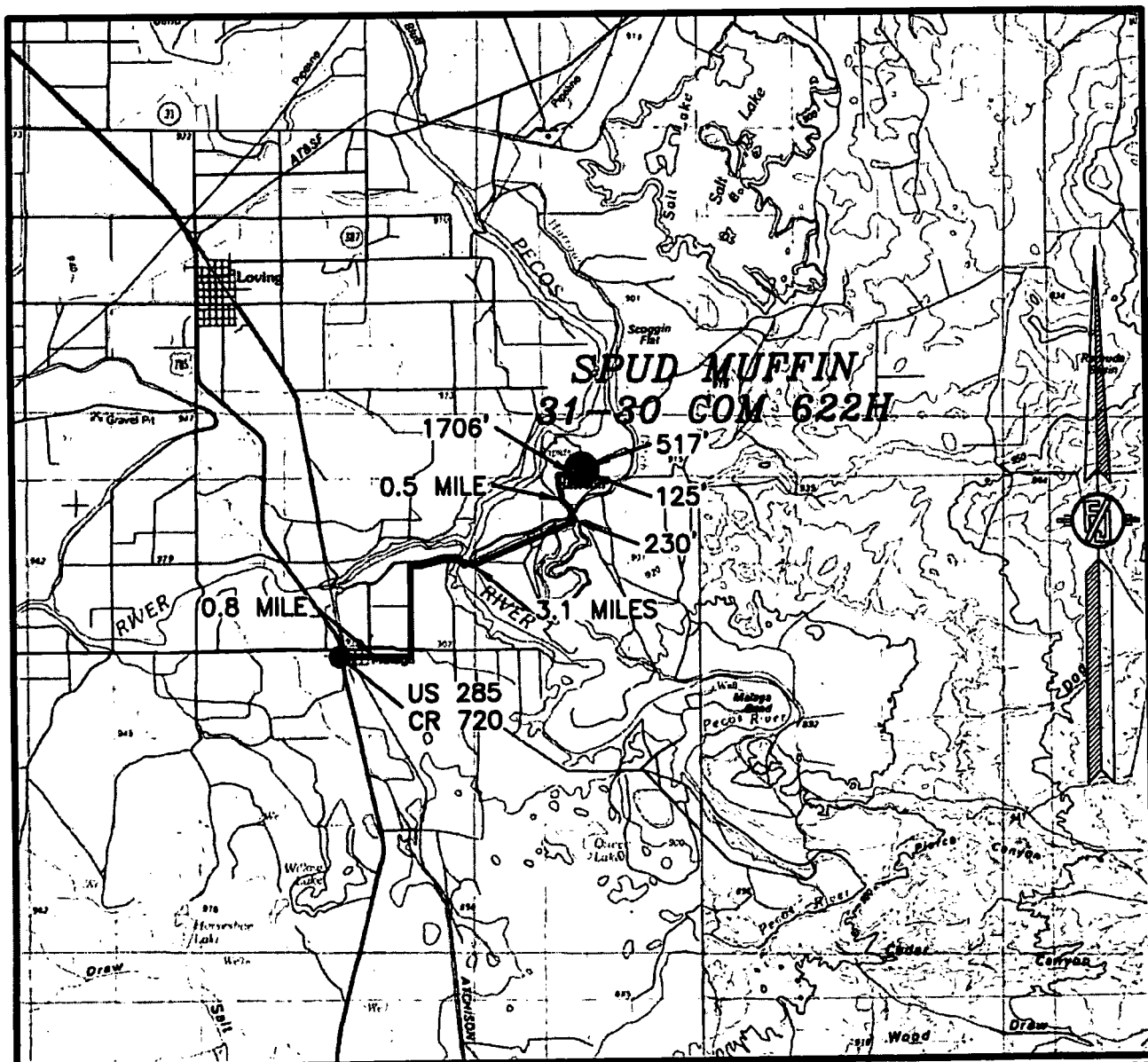
DEVON ENERGY PRODUCTION COMPANY, L.P.  
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SECTION 31, TOWNSHIP 23 SOUTH,  
RANGE 29 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

AUGUST 30, 2018

SURVEY NO. 5960C

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

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

**DIRECTIONS TO LOCATION**

BEGINNING AT THE JUNCTION OF US 285 AND CR 720, GO EAST ON CR 720 0.8 OF A MILE TO HARROUN ROAD ON THE LEFT. GO NORTH-NORTHEAST ON HARROUN ROAD FOR 3.1 MILES TO A FORK IN THE ROAD. CONTINUE NORTH, LEFT ON SAID HARROUN ROAD 230' TO A LEASE ROAD TO THE LEFT, GO NORTH 0.5 OF A MILE, GO EAST 1706' THEN NORTH 125' TO SOUTHEAST PAD CORNER OF SPUD MUFFIN 31 PAD 1, THEN NORTH-NORTHWEST-WEST 517' TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

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

**SPUD MUFFIN 31-30 COM 622H**

LOCATED 625 FT. FROM THE SOUTH LINE  
AND 2375 FT. FROM THE WEST LINE OF  
SECTION 31, TOWNSHIP 23 SOUTH,

RANGE 29 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO

AUGUST 30, 2018

SURVEY NO. 5960C

MADRON SURVEYING, INC.

301 SOUTH CANAL  
(575) 234-3341

CARLSBAD, NEW MEXICO

**SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
AERIAL PHOTO**



NOT TO SCALE  
AERIAL PHOTO:  
GOOGLE EARTH  
FEB. 2017

**DEVON ENERGY PRODUCTION COMPANY, L.P.  
SPUD MUFFIN 31-30 COM 622H  
LOCATED 625 FT. FROM THE SOUTH LINE  
AND 2375 FT. FROM THE WEST LINE OF  
SECTION 31, TOWNSHIP 23 SOUTH,  
RANGE 29 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO**

**AUGUST 30, 2018**

**SURVEY NO. 5960C**

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

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
AERIAL ACCESS ROUTE MAP



NOT TO SCALE  
AERIAL PHOTO:  
GOOGLE EARTH  
FEB. 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.  
SPUD MUFFIN 31-30 COM 622H  
LOCATED 625 FT. FROM THE SOUTH LINE  
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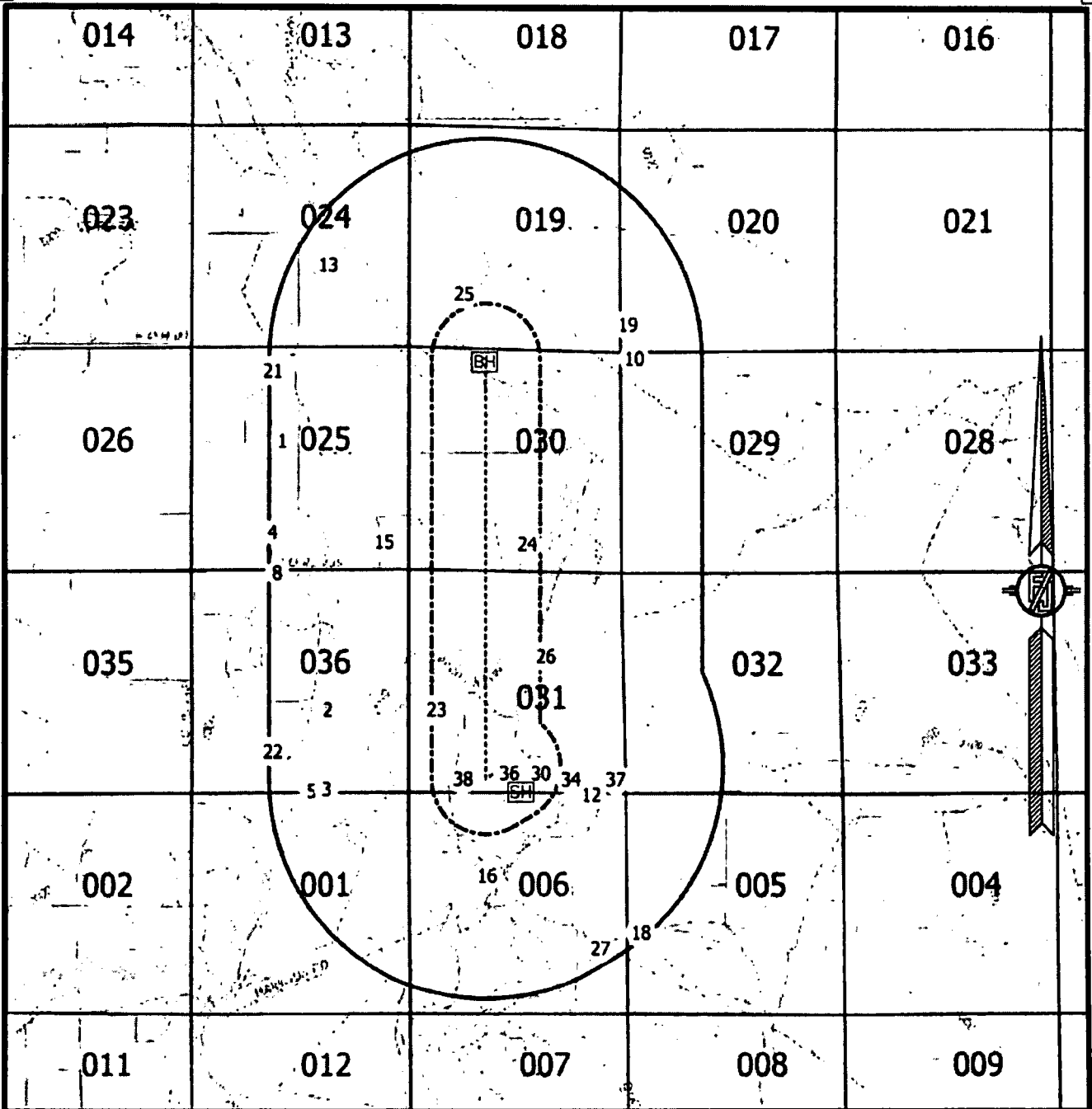
AUGUST 30, 2018

SURVEY NO. 5960C

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



# 1-MILE WELL MAP



WELL DATA FROM NMOC GIS - 8/29/18

SH SURFACE LOCATION

BH BOTTOM OF HOLE

XX WELLS WITHIN 1 MILE

----- WELL PATH

----- 1/4 MILE BOUNDARY

----- 1-MILE BOUNDARY

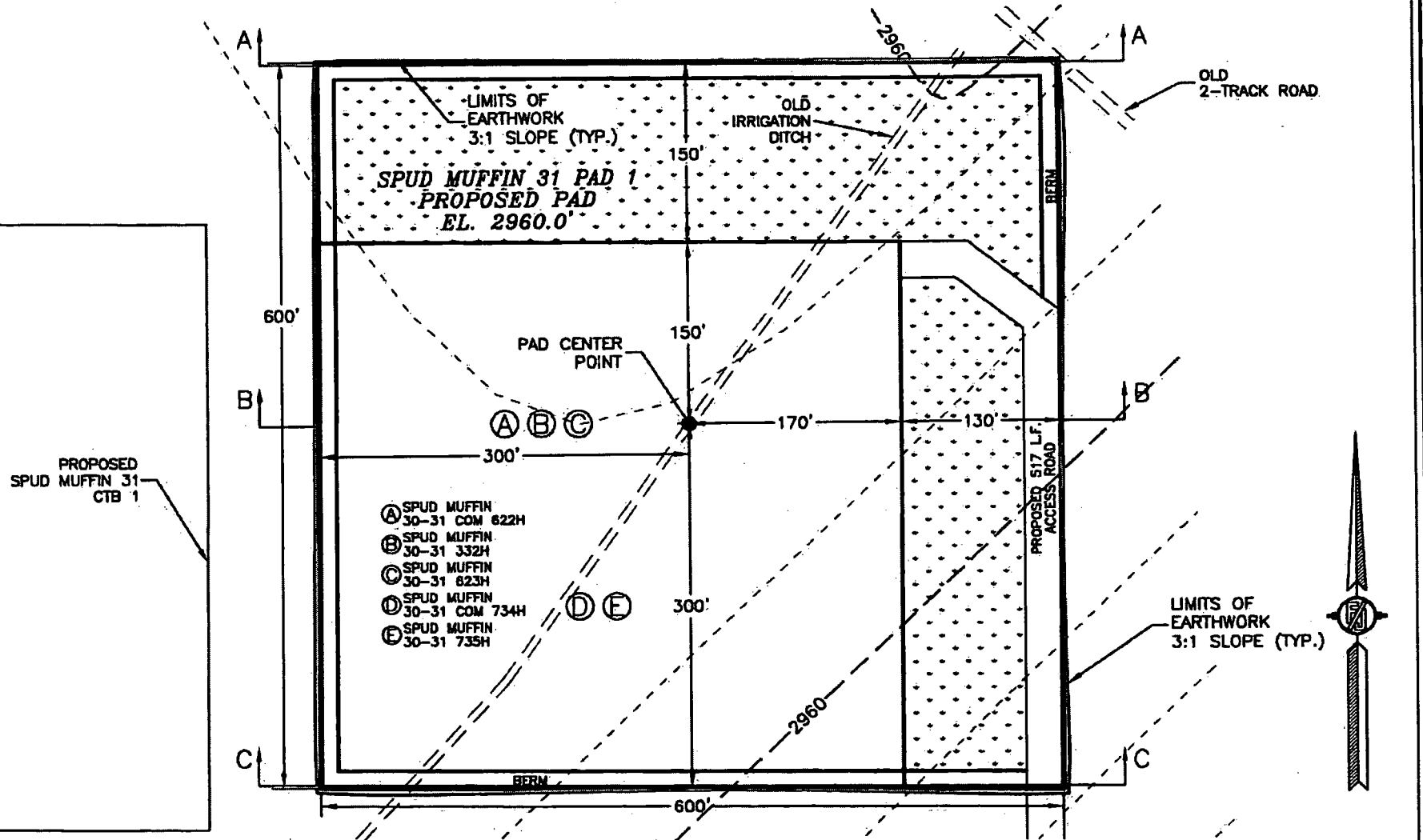
DEVON ENERGY PRODUCTION COMPANY, L.P.  
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 RANGE 29 EAST, N.M.P.M.  
 EDDY COUNTY, STATE OF NEW MEXICO

AUGUST 30, 2018

SURVEY NO. 5980C

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

# PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.  
GRADING PLAN AND CROSS SECTIONS  
SPUD MUFFIN 31-30 COM 622H  
SECTION 31, TOWNSHIP 23 SOUTH,  
RANGE 29 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

AUGUST 30, 2018

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

(575) 234-3341

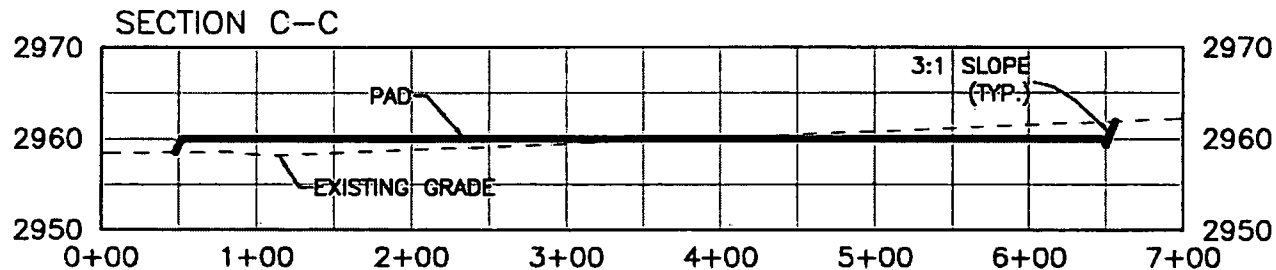
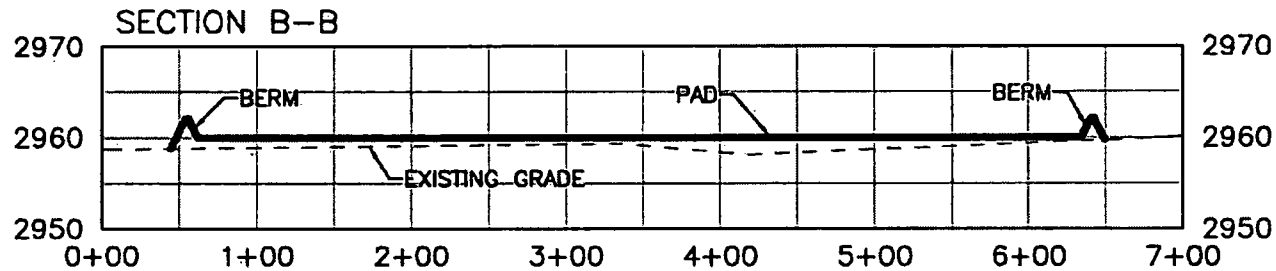
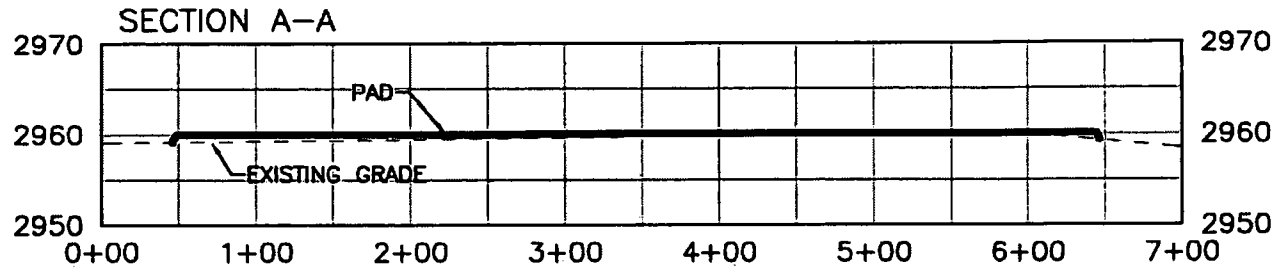
CUT	FILL	NET
666 CU. YD	12477 CU. YD	11810 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 1-2

SURVEY NO. 6960C

# CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.  
GRADING PLAN AND CROSS SECTIONS  
SPUD MUFFIN 31-30 COM 622H  
SECTION 31, TOWNSHIP 23 SOUTH,  
RANGE 29 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

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

CUT	FILL	NET
666 CU. YD	12477 CU. YD	11810 CU. YD (FILL)

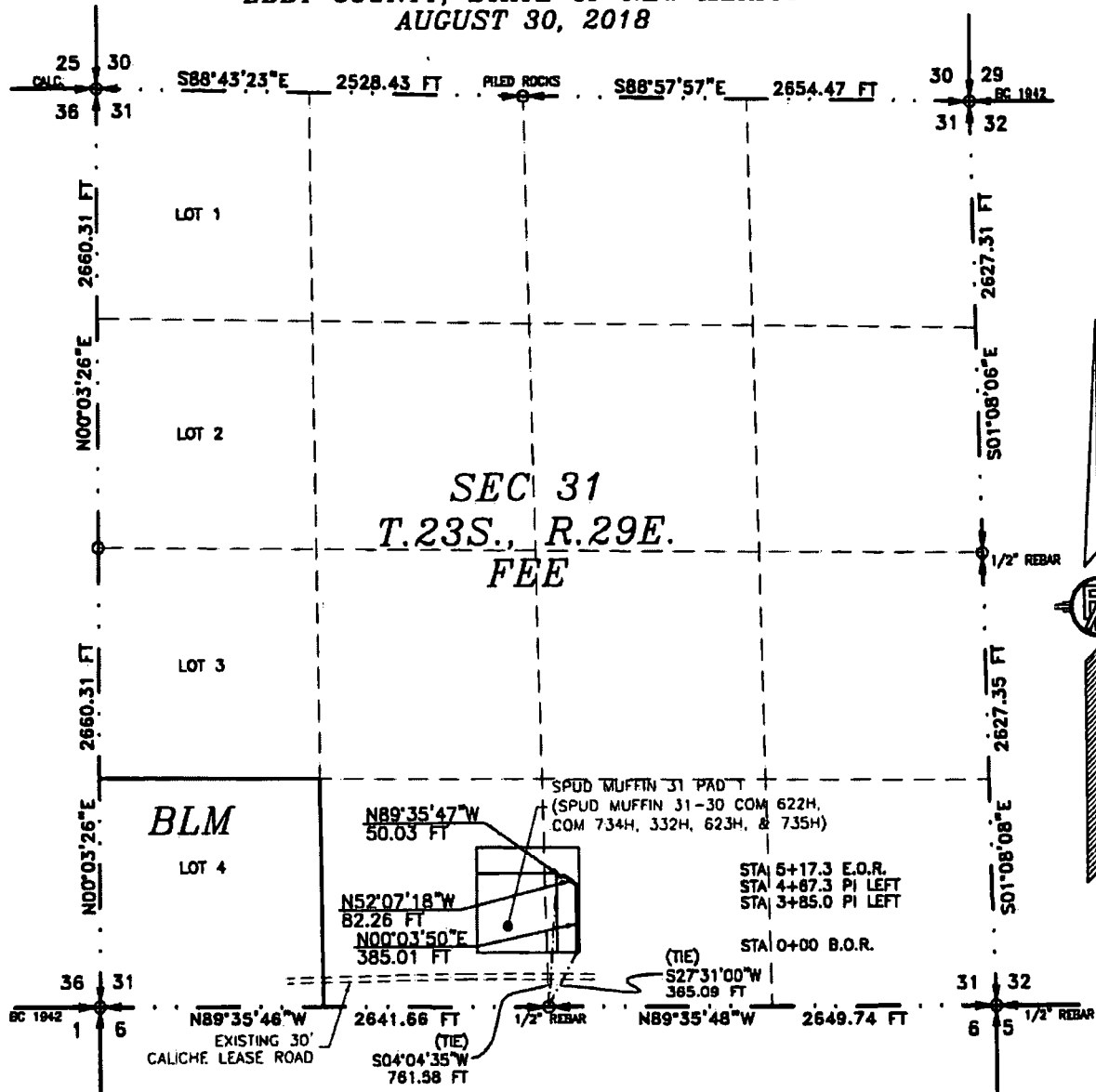
EARTHWORK QUANTITIES ARE ESTIMATED

AUGUST 30, 2018  
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO  
(979) 234-3341

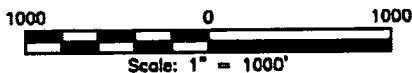
SHEET 2-2  
SURVEY NO. 5960C

**ACCESS ROAD PLAT**  
**ACCESS ROAD TO THE SPUD MUFFIN 31 PAD 1**  
 (SPUD MUFFIN 31-30 COM 622H, COM 734H, 332H, 623H, & 735H)

**DEVON ENERGY PRODUCTION COMPANY, L.P.**  
**CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING**  
**SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.**  
**EDDY COUNTY, STATE OF NEW MEXICO**  
**AUGUST 30, 2018**



SEE NEXT SHEET (2-2) 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: 1-2**

**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 5 DAY OF SEPTEMBER 2018

*[Signature]*  
 FILMON F. JARAMILLO, PLS 12797

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

**SURVEY NO. 5960C**

**CARLSBAD, NEW MEXICO**

**ACCESS ROAD PLAT**  
**ACCESS ROAD TO THE SPUD MUFFIN 31 PAD 1**  
**(SPUD MUFFIN 31-30 COM 622H, COM 734H, 332H, 623H, & 735H)**

**DEVON ENERGY PRODUCTION COMPANY, L.P.**  
**CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING**  
**SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.**  
**EDDY COUNTY, STATE OF NEW MEXICO**  
**AUGUST 30, 2018**

**DESCRIPTION**

A STRIP OF LAND 30 FEET WIDE CROSSING FEE LAND IN SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 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 SW/4 SE/4 OF SAID SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M., WHENCE THE SOUTH QUARTER CORNER OF SAID SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS S27°31'00"W, A DISTANCE OF 385.09 FEET;

THENCE N00°03'50"E A DISTANCE OF 385.01 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N52°07'18"W A DISTANCE OF 82.26 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N89°35'47"W A DISTANCE OF 80.03 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTH QUARTER CORNER OF SAID SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS S04°04'35"W, A DISTANCE OF 781.58 FEET;

SAID STRIP OF LAND BEING 517.30 FEET OR 31.35 RODS IN LENGTH, CONTAINING 0.356 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 SE/4 517.30 LF. 31.35 RODS 0.356 ACRES

**SURVEYOR CERTIFICATE**

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12787, 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 5 DAY OF SEPTEMBER 2018

**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: 2-2**

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301 SOUTH CANAL  
CARLSBAD, NEW MEXICO 88220  
Phone (575) 234-3341

**SURVEY NO. 5960C**

# WCDSC Permian NM

WELL DETAILS: Spud Muffin 31-30 624H

RKB @ 2985.30ft  
2960.30

Northing 456835.59 Easting 639380.88 Latitude 32.255518 Longitude -104.016170

## SECTION DETAILS Permit Plan 3

MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	
2238.61	2.39	189.17	2238.54	-4.80	-0.79	1.00	-4.89	
6973.88	2.39	189.17	6987.97	-281.73	-45.47	0.00	-280.95	
9132.95	0.00	0.00	9127.00	-285.00	-46.00	1.50	-284.21	KOP @ 9483' MD, 200' FSL, 330' FEL
9482.99	0.00	0.00	9477.04	-285.00	-46.00	0.00	-284.21	
10383.00	90.00	359.35	10050.00	287.92	-52.48	10.00	288.74	
19929.15	90.00	359.35	10050.00	9833.46	-160.53	0.00	9834.77	PBHL: 230' FNL, 330' FEL

# devon

