

# Carlsbad Field Office OCD Artesia

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0137  
Expires October 31, 2014

5. Lease Serial No.  
NMNM-004825 NMNM-129261

6. If Indian, Allottee or Tribe Name  
N/A

1a. Type of work: ☒ DRILL ☐ REENTER

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

1b. Type of Well: ☒ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.  
PENNZOIL 32 FED 202H 320077

2. Name of Operator MATADOR PRODUCTION COMPANY

9. API Well No.  
30-015- 44927

3a. Address 5400 LBJ FREEWAY, SUITE 1500  
DALLAS, TX 75240

3b. Phone No. (include area code)  
972 371 5241

10. Field and Pool, or Exploratory  
BURTON FLAT; WOLFCAMP, E (GAS)

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

At surface 2090' FNL & 348' FWL 33-20S-29E

At proposed prod. zone 1870' FNL & 240' FWL 32-20S-29E

11. Sec., T. R. M. or Blk. and Survey or Area  
SHL: SWNW 33-20S-29E NMPM  
BHL: SWNW 32-20S-29E NMPM

14. Distance in miles and direction from nearest town or post office\*  
12 MILES NE OF CARLSBAD, NM

12. County or Parish  
EDDY

13. State  
NM

15. Distance from proposed\*  
location to nearest SHL: 348'  
property or lease line, ft. BHL: 240'  
(Also to nearest drig. unit line, if any)

16. No. of acres in lease  
SHL = 1711.45 acres  
BHL = 320.00 acres

17. Spacing Unit dedicated to this well  
N2 32-20S-29E

18. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft. SHL: 30' (Pen'z 132H)  
BHL: 245' (ditto)

19. Proposed Depth  
TVD: 9475'  
MD: 14758'

20. BLM/BIA Bond No. on file  
BLM NMB-001079

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3263' UNGRADED

22. Approximate date work will start\*  
02/01/2017

23. Estimated duration  
3 MONTHS

### 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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

25. Signature

*B. Wood*

Name (Printed/Typed)

BRIAN WOOD (PHONE: 505 466-8120)

Date

11/12/2016

Title

CONSULTANT

(FAX: 505 466-9682)

Approved by (Signature)

*Cody R. Layman*

Name (Printed/Typed)

*Cody R. Layman*

Date

*04/16/2018*

Title

*Field Manager*

Office

*CFO*

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.

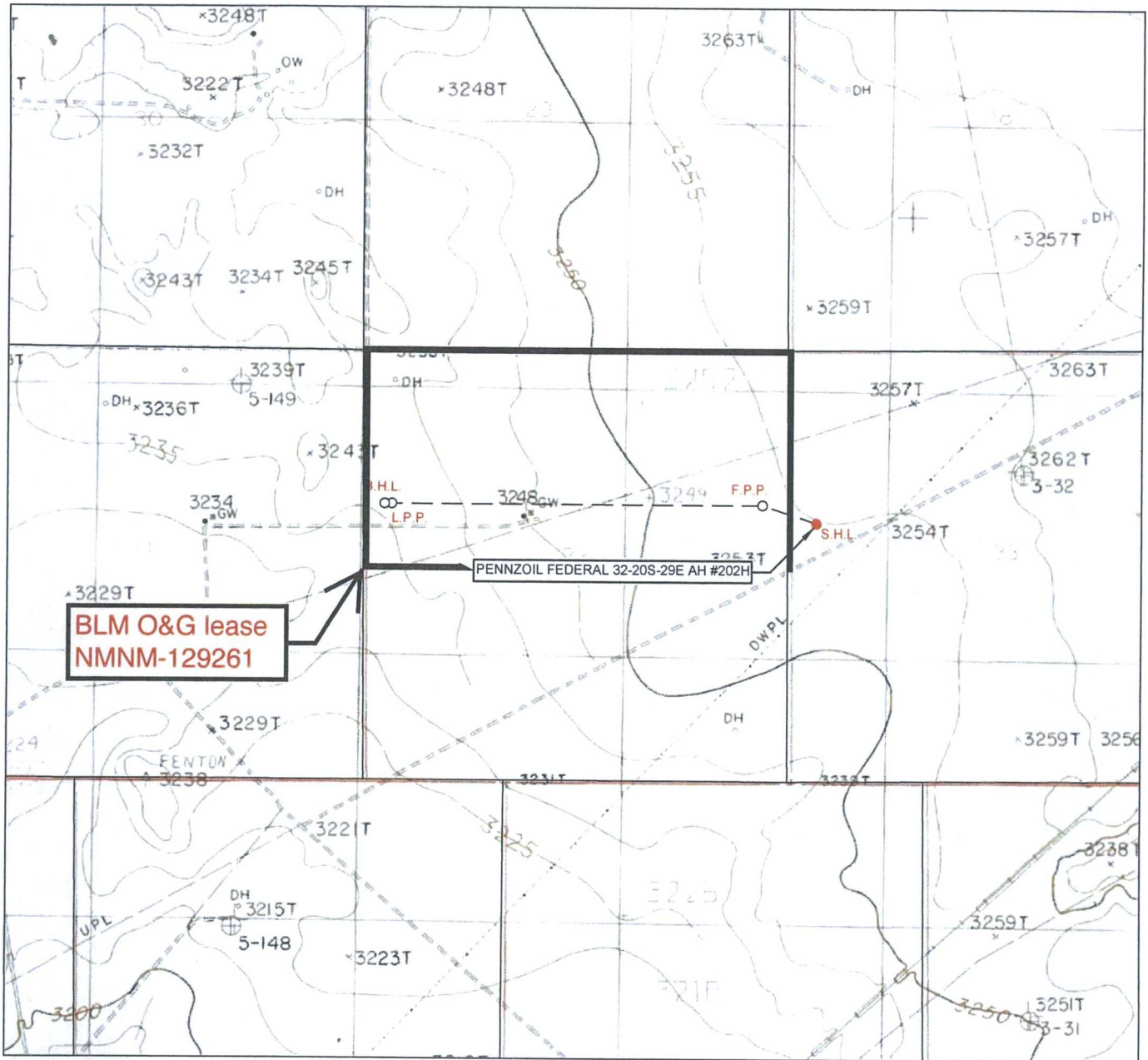
(Continued on page 2)

\*(Instructions on page 2)

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

*RW 5-1-18*

# LOCATION & ELEVATION VERIFICATION MAP



LEASE NAME & WELL NO.: PENNZOIL FEDERAL 32-20S-29E AH #202H

SECTION 33 TWP 20-S RGE 29-E SURVEY N.M.P.M.  
 COUNTY EDDY STATE NM ELEVATION 3263'  
 DESCRIPTION 2090' FNL & 348' FWL

LATITUDE N 32.5312934 LONGITUDE W 104.0869666



SCALE: 1" = 2000'  
 0' 1000' 2000'



WWW.TOPOGRAPHIC.COM

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY MATADOR PRODUCTION COMPANY. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

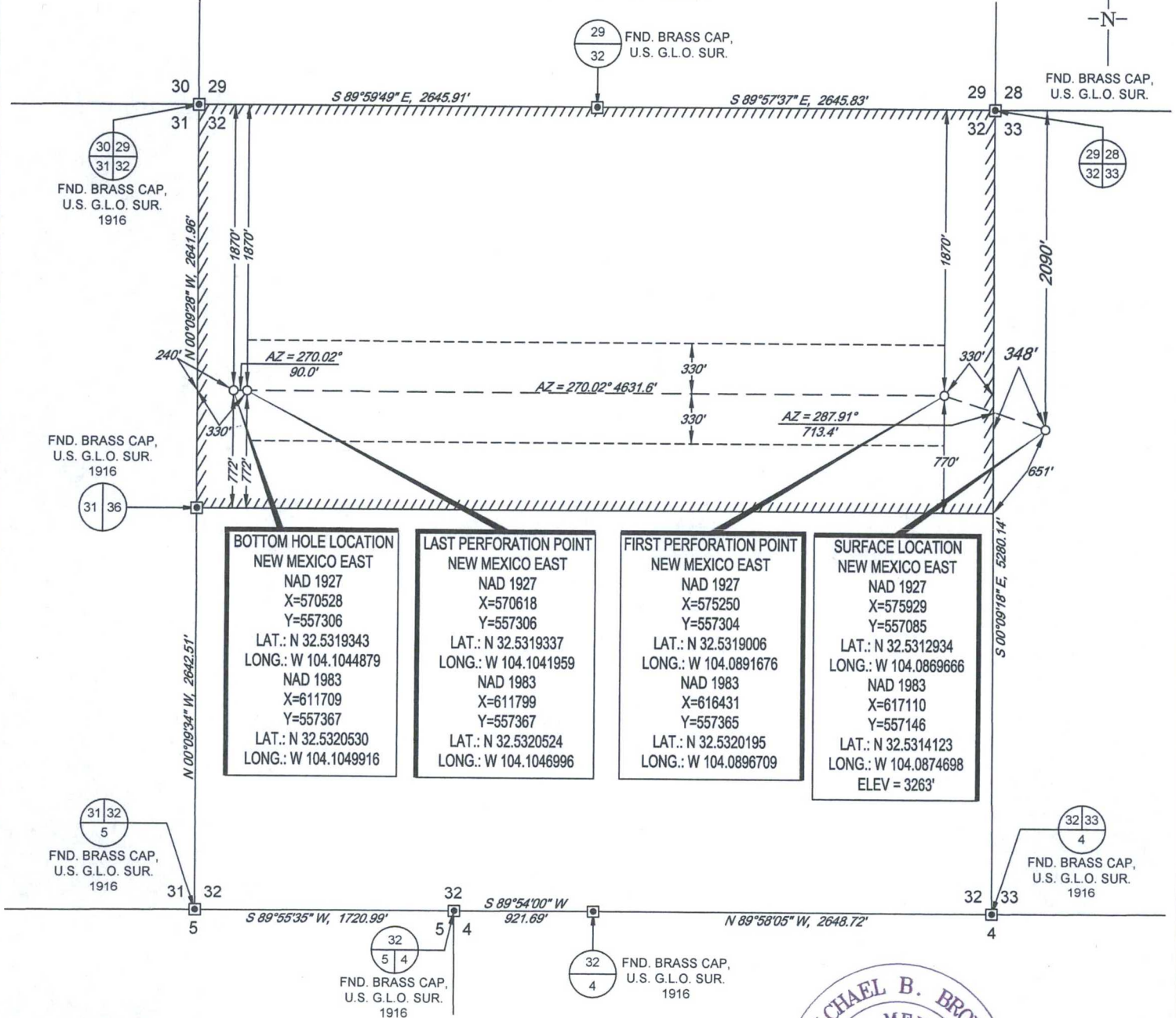
ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET.



SCALE: 1" = 1000'



SECTION 33, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



**BOTTOM HOLE LOCATION**  
NEW MEXICO EAST  
NAD 1927  
X=570528  
Y=557306  
LAT.: N 32.5319343  
LONG.: W 104.1044879  
NAD 1983  
X=611709  
Y=557367  
LAT.: N 32.5320530  
LONG.: W 104.1049916

**LAST PERFORATION POINT**  
NEW MEXICO EAST  
NAD 1927  
X=570618  
Y=557306  
LAT.: N 32.5319337  
LONG.: W 104.1041959  
NAD 1983  
X=611799  
Y=557367  
LAT.: N 32.5320524  
LONG.: W 104.1046996

**FIRST PERFORATION POINT**  
NEW MEXICO EAST  
NAD 1927  
X=575250  
Y=557304  
LAT.: N 32.5319006  
LONG.: W 104.0891676  
NAD 1983  
X=616431  
Y=557365  
LAT.: N 32.5320195  
LONG.: W 104.0896709

**SURFACE LOCATION**  
NEW MEXICO EAST  
NAD 1927  
X=575929  
Y=557085  
LAT.: N 32.5312934  
LONG.: W 104.0869666  
NAD 1983  
X=617110  
Y=557146  
LAT.: N 32.5314123  
LONG.: W 104.0874698  
ELEV = 3263'

LEASE NAME & WELL NO.: PENNZOIL FEDERAL 32-20S-29E AH #202H

SECTION 33 TWP 20-S RGE 29-E SURVEY N.M.P.M.

COUNTY EDDY STATE NM

DESCRIPTION 2090' FNL & 348' FWL

DISTANCE & DIRECTION

FROM INT. OF US-285 AND US-180/US-62 E/W GREENE ST. GO EAST ON

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



Michael B. Brown, P.S. No. 18329

JUNE 22, 2016

FEET NORTHEAST OF THE LOCATION

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY MATADOR PRODUCTION COMPANY. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

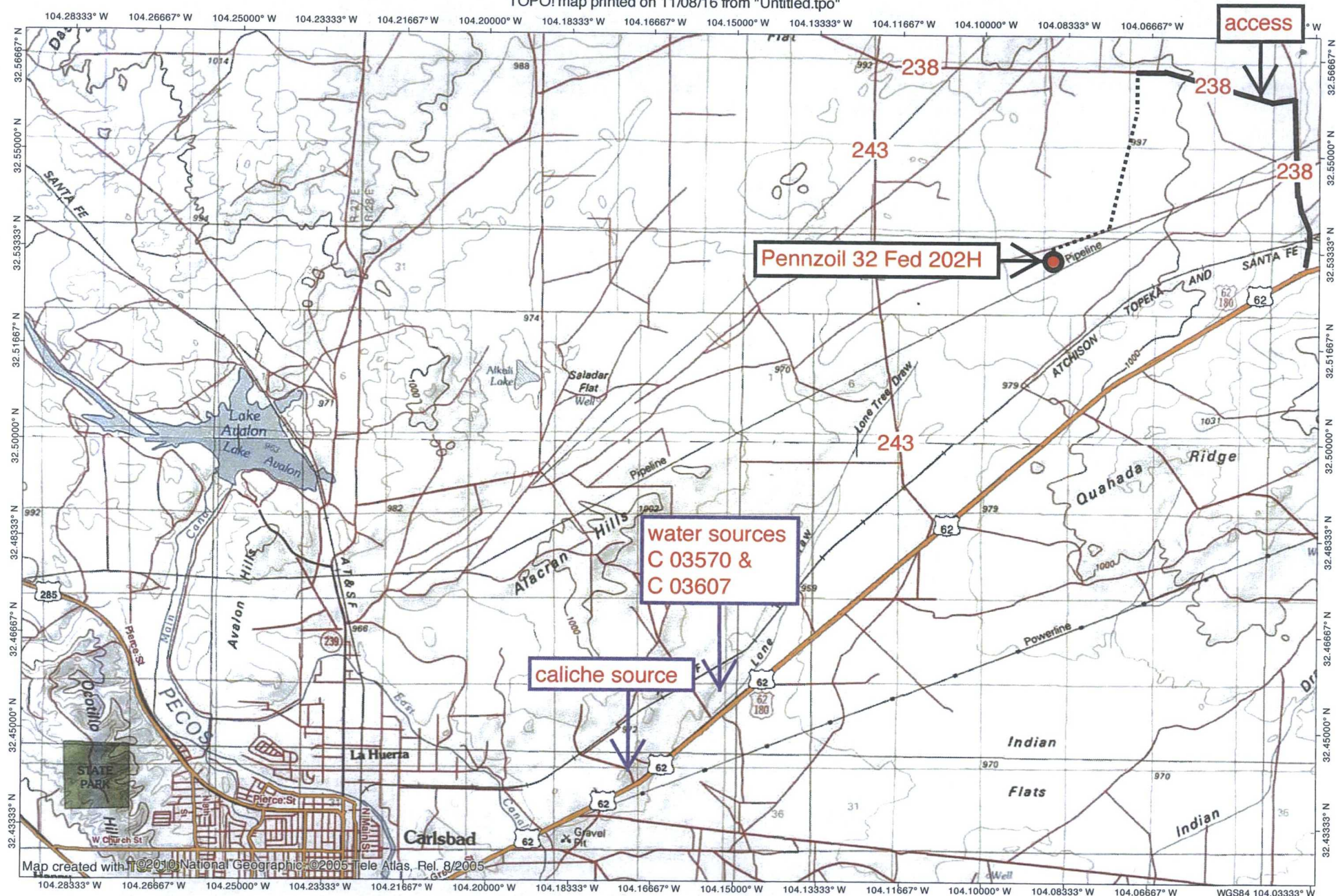
AS OF THE DATE OF SURVEY, ALL ABOVE GROUND APPURTENANCES WITHIN 300' OF THE STAKED LOCATION ARE SHOWN HEREON.



**TOPOGRAPHIC**  
LOYALTY INNOVATION LEGACY

WWW.TOPOGRAPHIC.COM







BLM O&G lease  
NMNM-129261

BHL

proposed road  
& gas line

existing caliche road

SHL

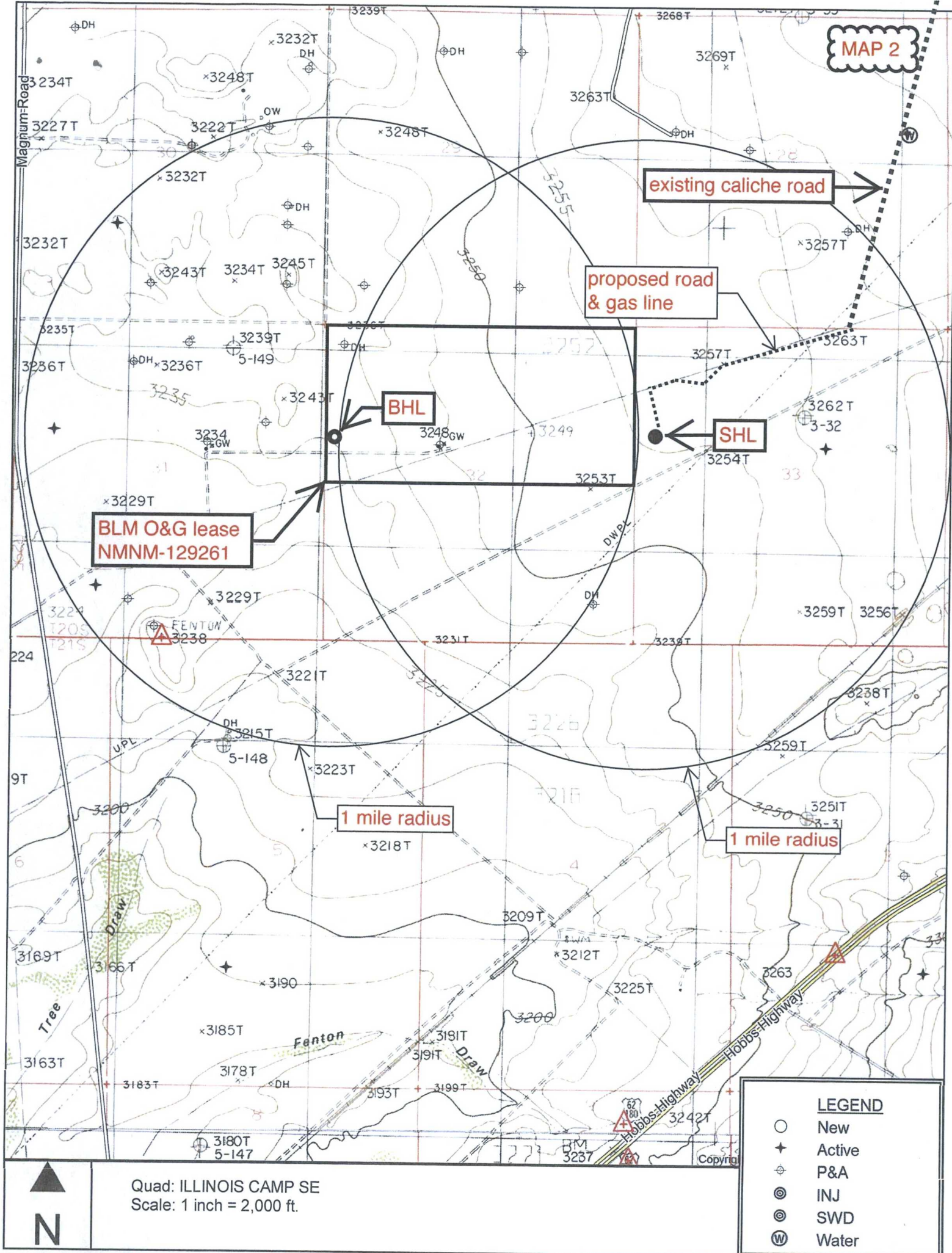
1 mile radius

1 mile radius

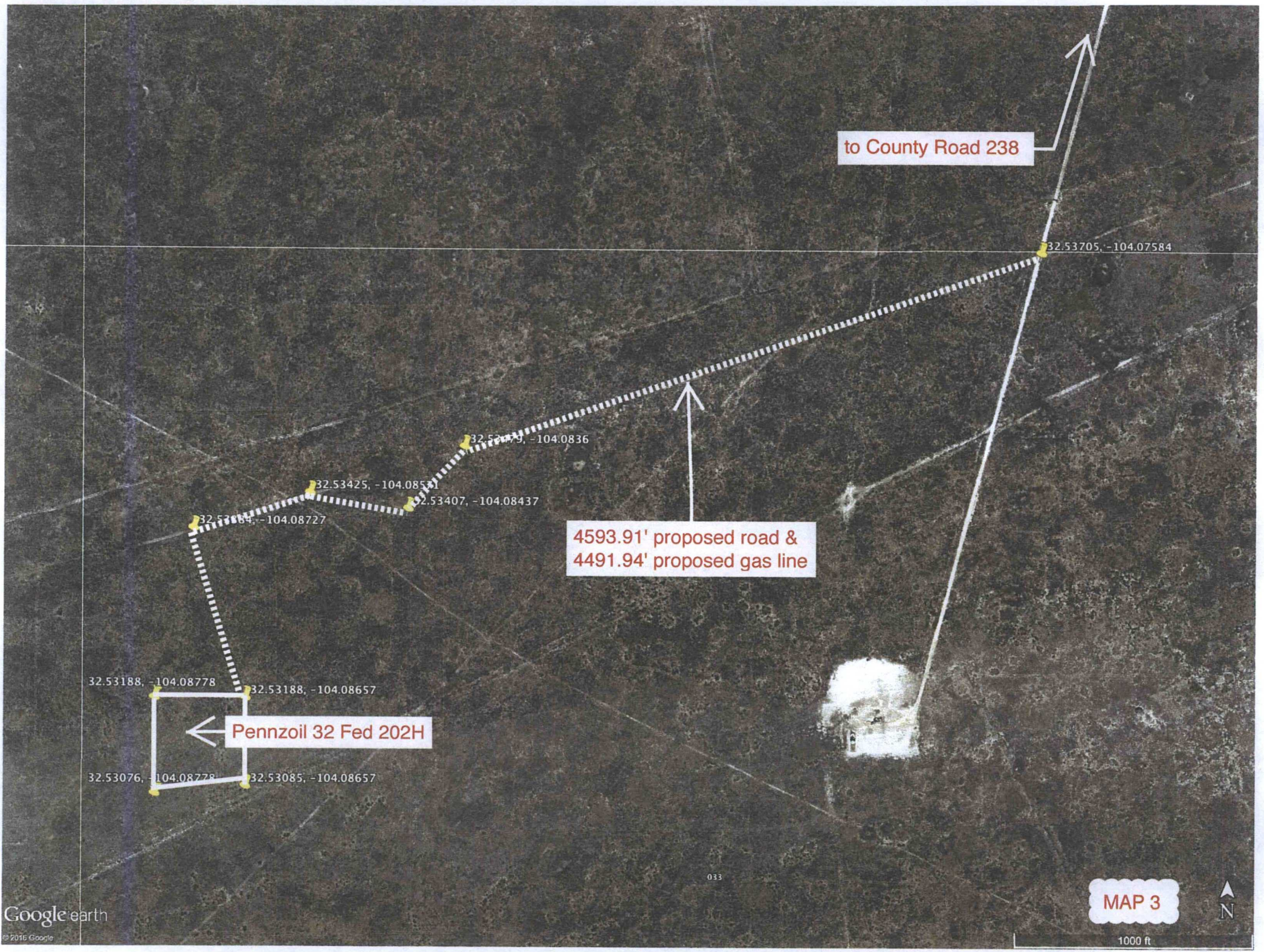
LEGEND

- New
- ★ Active
- ⊕ P&A
- ⊙ INJ
- ⊙ SWD
- ⊙ Water

Quad: ILLINOIS CAMP SE  
Scale: 1 inch = 2,000 ft.







to County Road 238

32.53705, -104.07584

32.53179, -104.0836

32.53425, -104.08531

32.53407, -104.08437

32.53188, -104.08778

4593.91' proposed road & 4491.94' proposed gas line

32.53188, -104.08778

32.53188, -104.08657

Pennzoil 32 Fed 202H

32.53076, -104.08778

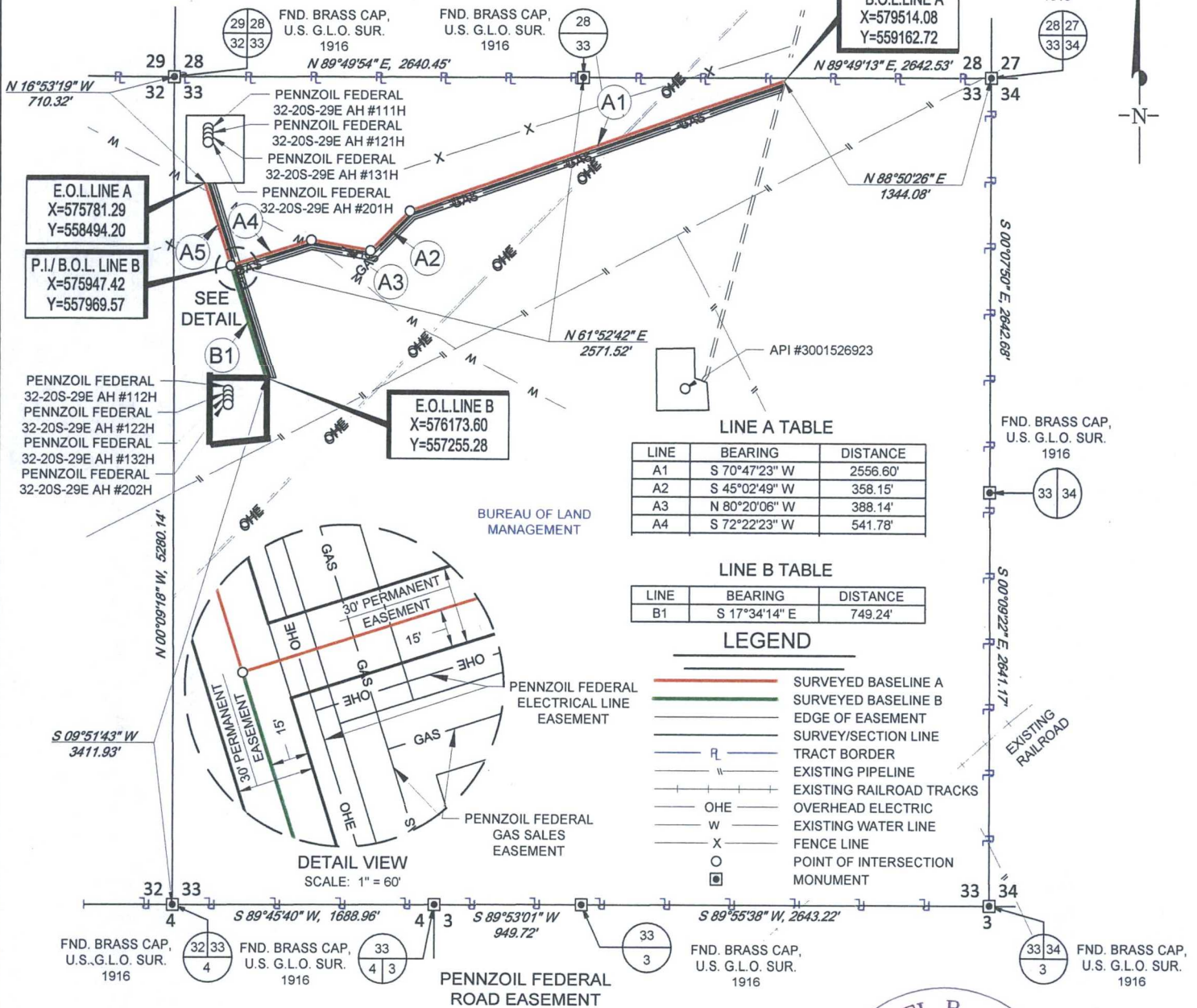
32.53085, -104.08657



SCALE: 1" = 1000'

SECTION 33, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

MAP 4



Being a proposed road easement being 30 feet in width, 15 feet left, and 15 feet right of the above platted centerline total line footage containing 5144.22 feet or 311.77 rods, containing 3.54 acres more or less.



**TOPOGRAPHIC**  
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140  
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548  
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705  
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743  
WWW.TOPOGRAPHIC.COM



Michael Blake Brown, P.S. No. 18329  
AUGUST 01, 2016

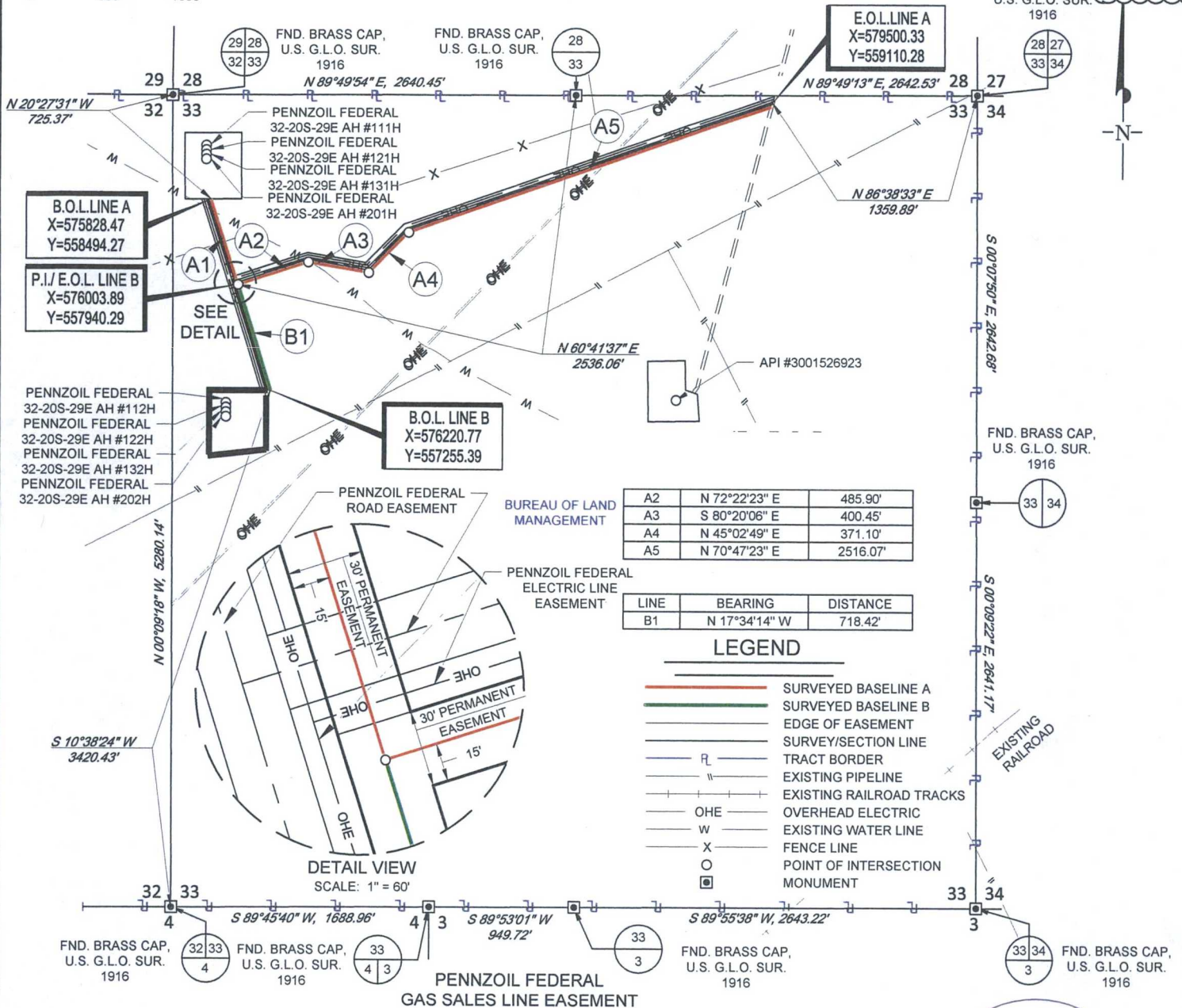
PENNZOIL FEDERAL ROAD EASEMENT	REVISION:		NOTES:
	INT	DATE	
DATE: 08/01/16			1. ORIGINAL DOCUMENT SIZE: 8.5" X 11" 2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927. 3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY MATADOR PRODUCTION COMPANY. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY. 4. B.O.L. = BEGINNING OF LINE 5. E.O.L. = END OF LINE 6. P.I. = POINT OF INTERSECTION
FILE:EP_PENNZOIL_FEDERAL_ROAD_REV1			
DRAWN BY: MML			
SHEET: 1 OF 1			



0' 500' 1000'

### MAP 5

FND. BRASS CAP  
U.S. G.L.O. SUR.  
1916

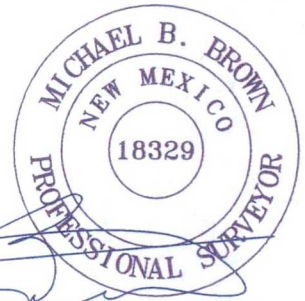


Being a proposed gas sales line easement being 30 feet in width, 15 feet left, and 15 feet right of the above platted centerline total line footage containing 5073.03 feet or 307.46 rods, containing 3.49 acres more or less.



**TOPOGRAPHIC**  
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140  
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548  
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705  
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743  
 WWW.TOPOGRAPHIC.COM



Michael Blake Brown, P.S. No. 18329  
AUGUST 01, 2016

PENNZOIL FEDERAL GAS SALES LINE EASEMENT	REVISION:	
	INT	DATE
DATE: 08/01/16		
FILE: EP_PENNZOIL_FEDERAL_GAS_SALES_LINE_REV1		
DRAWN BY: MML		
SHEET : 1 OF 1		

NOTES:

1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY MATADOR PRODUCTION COMPANY. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. B.O.L. = BEGINNING OF LINE
5. E.O.L. = END OF LINE
6. P.I. = POINT OF INTERSECTION

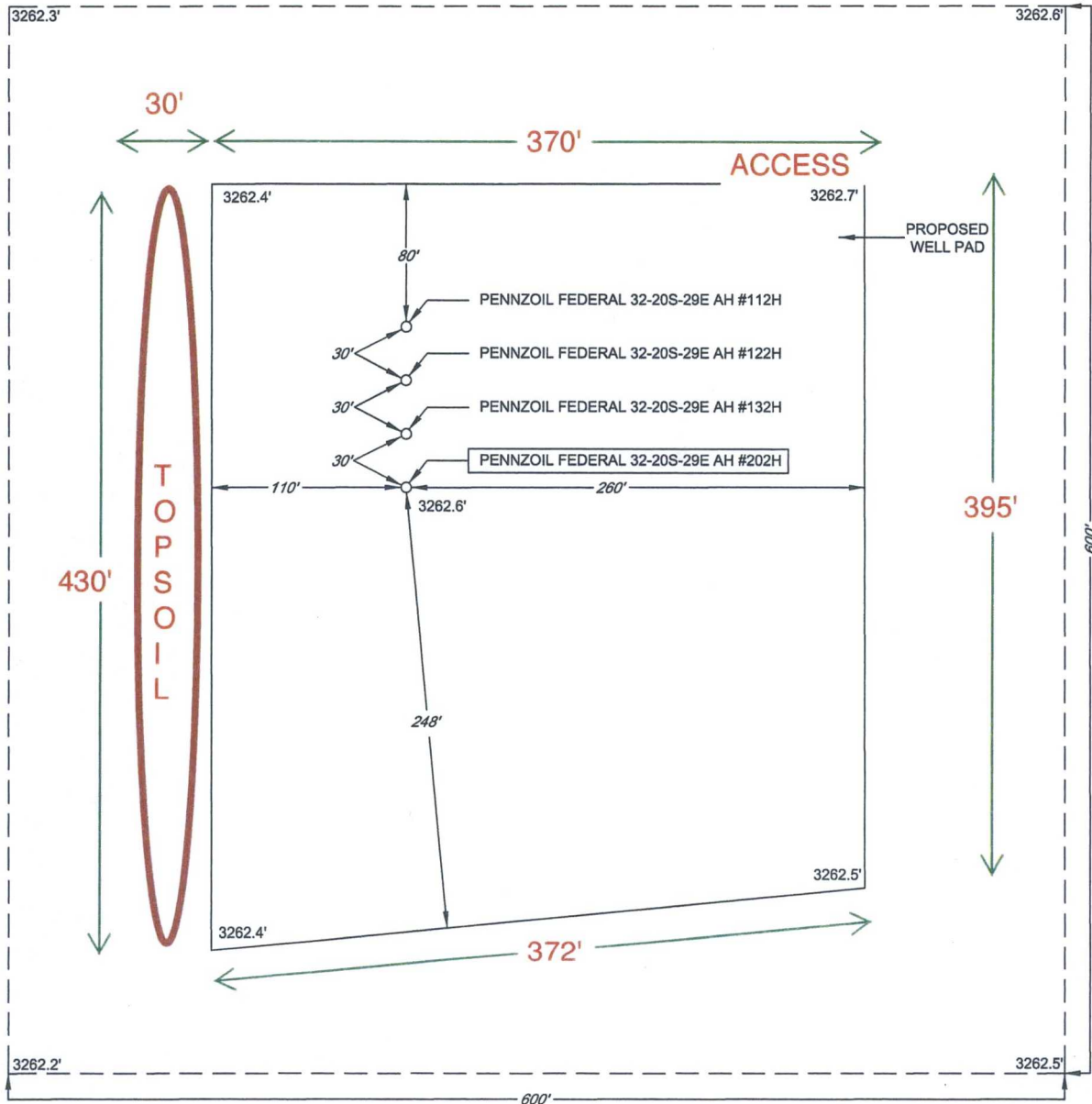




MAP 6

SECTION 33, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

DETAIL VIEW  
SCALE: 1" = 100'



LEGEND

----- ARCH SITE

LEASE NAME & WELL NO.: PENNZOIL FEDERAL 32-20S-29E AH #202H  
#202H LATITUDE N 32.5312934 #202H LONGITUDE W 104.0869666

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID  
BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE  
NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET

THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER  
MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY,  
AND DATA PROVIDED BY MATADOR PRODUCTION COMPANY. THIS CERTIFICATION IS MADE AND  
LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS  
NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ORIGINAL DOCUMENT SIZE: 8.5" X 11"

S:\SURVEY\MATADOR\_RESOURCES\PENNZOIL\_FEDERAL\_32-20S-29E\_AH\_202H\FINAL\_PRODUCTS\SLO\_PENNZOIL\_FEDERAL\_32-20S-29E\_AH\_202H\_REV1.DWG 6/24/2016 10:35:38 AM gurena



WWW.TOPOGRAPHIC.COM

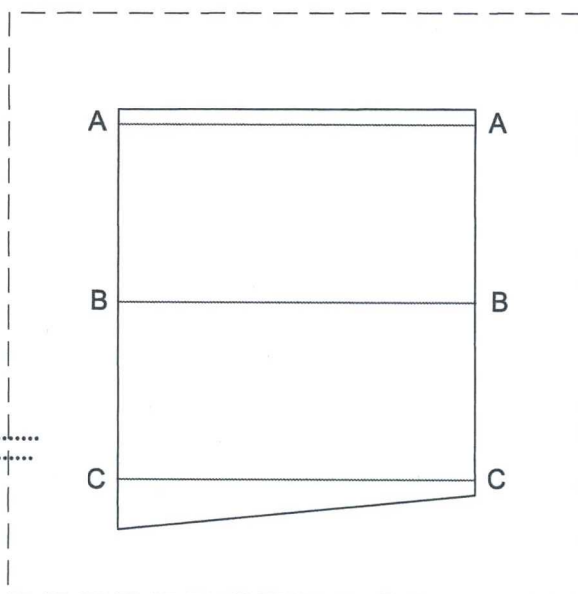


SCALE: 1" = 200'

0' 100' 200'

SECTION 33, TOWNSHIP 20-S, RANGE 29-E, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

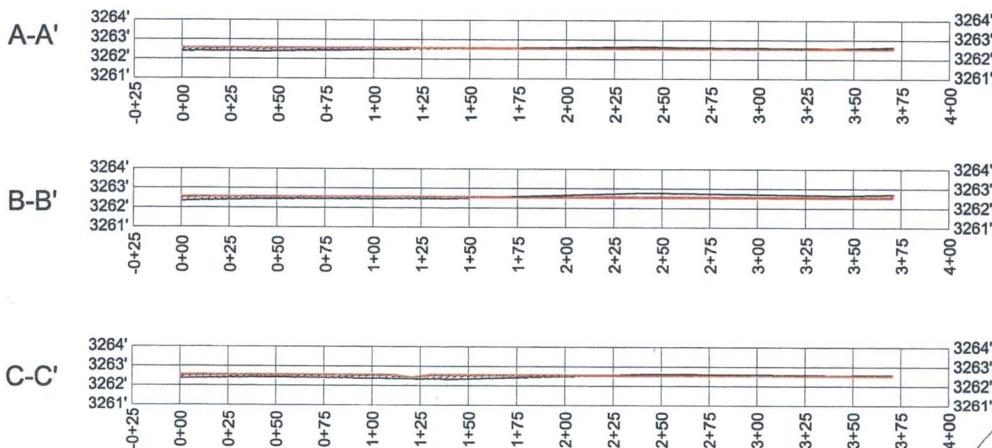
MAP 7



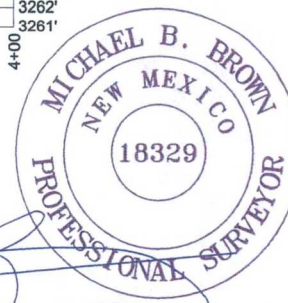
TOP OF PAD ELEVATION:  
3262.5'

BALANCE TOLERANCE (C.Y.): 0.00  
CUT SWELL FACTOR: 1.00  
FILL SHRINK FACTOR: 1.00

PAD EARTHWORK VOLUMES  
CUT : 7,061.5 C.F., 261.54 C.Y.  
FILL: 7,061.5 C.F., 261.54 C.Y.  
BALANCE EXPORT: 0.0 C.F., 0.00 C.Y.  
AREA: 153117.0 Sq.Ft., 3.515 Acres



Horizontal Scale = 1:100  
Vertical Scale = 1:5



*[Signature]*  
Michael Blake Brown, P.S., No. 18329

TEXAS FIRM REGISTRATION NO. 10042504  
WWW.TOPOGRAPHIC.COM

JUNE 23, 2016

Field note description of even date accompanies this plat.

PENNZOIL FEDERAL 32-20S-29E AH 112H SURFACE PAD SITE PRO	REVISION:	NOTES:
	GJU    06/23/16	1. ORIGINAL DOCUMENT SIZE: 8.5" X 11" 2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 1927. 3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY MATADOR RESOURCE COMPANY. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
DATE: 04/19/16		
FILE: 00_PENNZOIL_FEDERAL_32-20S-29E_AH_112H_SURFACE_PAD_SITE_PRO_REV1		
DRAWN BY: SRJ		
SHEET: 1 OF 1		



Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

DRILL PLAN PAGE 1

Drilling Program

1. ESTIMATED TOPS

Formation Name	TVD	Bearing
Rustler	Surface	silt., gyp., SS, dolo.
Yates	1065'	gypsum
Seven Rivers	1390'	dolomite
Capitan Reef	1400'	water
Cherry Canyon	3275'	hydrocarbons
Brushy Canyon	4520'	hydrocarbons
Bone Spring Lime	6005'	hydrocarbons
1 <sup>st</sup> Bone Spring Carbonate	6665'	hydrocarbons
1 <sup>st</sup> Bone Spring Sand	7020'	Hydrocarbons
2 <sup>nd</sup> Bone Spring Carbonate	7330'	hydrocarbons
2 <sup>nd</sup> Bone Spring Sand	7750'	hydrocarbons
3 <sup>rd</sup> Bone Spring Carbonate	8150'	hydrocarbons
3 <sup>rd</sup> Bone Spring Sand	8930'	hydrocarbons
Wolfcamp	9340'	hydrocarbons & goal
TD (MD = 14758')	9475'	hydrocarbons

2. NOTABLE ZONES

Wolfcamp is the goal. Hole will extend west of the last perforation point to allow for pump installation. All perforations will be  $\geq 330'$  from the dedication perimeter. Closest water well (CP 00759) is 6871' northeast. Depth to water is 90' in this 205' deep well.



Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

DRILL PLAN PAGE 2

### 3. PRESSURE CONTROL

Matador requests a variance for a speed head and for a 2000 psi annular to be installed after running 20" surface casing.

After 20" surface casing, a BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be installed. The BOP will be used below intermediate casing 1 to TD. See attached BOP and choke manifold diagrams.

An accumulator complying with Onshore Order 2 requirements for the BOP stack pressure rating will be present. Rotating head will be installed as needed.

Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required in Onshore Order 2. Kelly cock and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position.

A third party company will test the BOPs.

Intermediate 1 casing pressure tests will be made to 250 psi low and 2000 psi high. Intermediate 2 casing pressure tests will be made to 250 psi low and 3000 psi high. Intermediate 3 casing pressure tests will be made to 250 psi low and 7500 psi high. Annular preventer will be tested to 250 psi low and 2500 psi high on the intermediate 1 casing and tested to 250 psi low and 2500 psi high on the intermediate 2 and 3 casing.

In the case of running a speed head with landing mandrel for 9-5/8" and 7-5/8" x 7" casing, initial intermediate 1 casing test pressures will be 250 psi low and 3000 psi high, with wellhead seals tested to 5000 psi once the 9-5/8" casing has been landed and cemented. BOP will then be lifted to install the D-section of the wellhead. BOP will be nipped back up and pressure tests will be made to 250 psi low and 7500 psi high. The annular will be tested to 250 psi low and 2500 psi high.



Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

## DRILL PLAN PAGE 3

Matador requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. Manufacturer does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

### 4. CASING & CEMENT

All casing will be new. Minimum safety factors are burst = 1.125, collapse = 1.125, and tension = 1.8.

Hole O. D.	Set @ (MD)	Name	Casing O. D.	TOC	Weight (lb/ft)	Grade	Thread Collar
26"	400'	Surface	20"	GL	94	K-55	BTC
17.5"	1200'	Intermediate 1	13.375"	GL	54.5	J-55	BTC
12.25"	3100'	Intermediate 2	9.625"	GL	40	J-55	BTC
8.75"	0'-3000'	Intermediate 3	7.625"	2100'	29.7	P-110	BTC
	3000'-8862'		7.625"		29.7	P-110	Hydril 513
	8862'-9750'		7"		29	P-110	BTC
6.125"	0'-8762'	Production	5.5"	8750'	20	P-110	Tenaris XP
	8762'-14758'		4.5"		13.5	P-110	Tenaris XP



Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

## DRILL PLAN PAGE 4

Casing Name	Type	Sacks	Yield	Cu. Ft.	Weight	Blend
Surface	Tail	873	1.38	1204	14.8	Class C + 5% NaCl + LCM
TOC = GL		100% Excess			Centralizers per Onshore Order 2.III.B.1f	
Intermediate 1	Lead	528	2.09	1103	12.6	Class C + Bentonite + 1% CaCl <sub>2</sub> + 8% NaCl + LCM
	Tail	302	1.38	416	14.8	Class C + 5% NaCl + LCM
TOC = GL		100% Excess			2 on btm jt, 1 on 2nd jt, 1 every 4th jt to GL	
Intermediate 2	Lead	499	2.48	1237	11.9	Class C + Bentonite + 2% CaCl <sub>2</sub> + 3% NaCl + LCM
	Tail	308	1.26	388	14.4	Class C + 5% NaCl +
TOC = GL		100% Excess			2 on btm jt, 1 on 2nd jt, 1 every 4th jt to GL	
Intermediate 3	Lead	642	2.36	1515	11.5	TXI + Fluid Loss + Dispersant + Retarder + LCM
	Tail	254	1.38	350	13.2	TXI + Fluid Loss + Dispersant + Retarder + LCM
TOC = 2100'		35% Excess			2 on btm jt, 1 on 2nd jt, 1 every other jt to top of tail cement (500' above TOC), 1 every 4 <sup>th</sup> jt to GL	
Production	Tail	451	1.38	622	15.8	Class H + Fluid loss + Dispersant + Retarder + LCM
TOC = 8750'		10% excess			2 on btm jt, 1 on 2 <sup>nd</sup> jt, 1 every 3 <sup>rd</sup> jt to top of tail cement (1000' tie back)	

### 5. MUD PROGRAM

An electronic Pason mud monitoring system satisfying the requirements of Onshore Order 1 will be used. All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions.



Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

DRILL PLAN PAGE 5

Name	Hole Size	Mud Weight	Visc	Fluid Loss	Type Mud
Surface	26"	8.4	28	NC	FW Spud Mud
Intermediate 1	17.5"	10.0	30-32	NC	Brine Water
Intermediate 2	12.25"	8.4 - 8.6	28-30	NC	Fresh Water
Intermediate 3	8.75"	9.0	30-32	NC	FW/Cut Brine
Production	6.125"	12.5	50-60	<10 cc	OBM

6. CORES, TESTS, & LOGS

No core or drill stem test is planned.

A 2-person mud-logging program will be used from  $\approx 1200'$  to TD.

No electric logs are planned at this time. GR will be collected through the MWD tools from intermediate 2 casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is  $\approx 7106$  psi. Expected bottom hole temperature is  $\approx 135^\circ$  F.

In accordance with Onshore Order 6, Matador does not anticipate that there will be enough  $H_2S$  from the surface to the Bone Spring to meet the BLM's minimum requirements for the submission of an " $H_2S$  Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since Matador has an  $H_2S$  safety package on all wells, an " $H_2S$  Drilling Operations Plan" is attached. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.



Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

DRILL PLAN PAGE 6

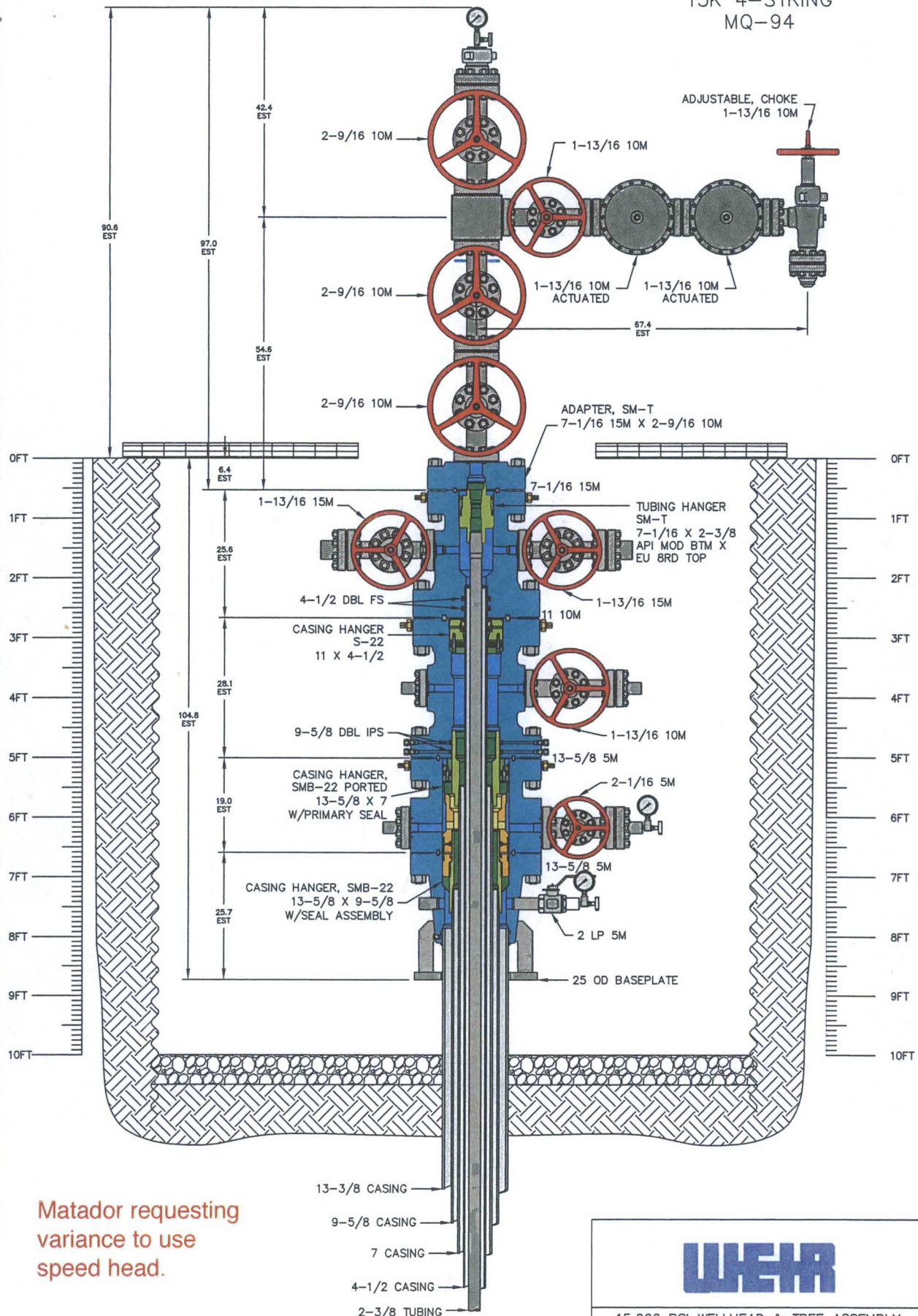
8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take  $\approx$ 3 months to drill and complete the well.

Matador Production Company owns the majority working interest in this well. Per its discussions with its potential partners, Matador will be named operator upon execution of the final Operating Agreements signed by the partners or the issuance of a pooling order by the State.



MATADOR  
15K 4-STRING  
MQ-94



Matador requesting  
variance to use  
speed head.

NOTE:  
DIMENSIONS SHOWN ON THIS DRAWING ARE  
ESTIMATES ONLY AND CAN VARY SIGNIFICANTLY  
DEPENDING ON RAW MATERIAL LENGTHS.  
NO GUARANTEE OF STACKUP HEIGHT IS IMPLIED.  
DIMENSIONS SHOWN SHOULD BE CONSIDERED  
FOR REFERENCE PURPOSES ONLY.

RESTRICTED CONFIDENTIAL DOCUMENT

THIS DRAWING AND ALL INFORMATION SHOWN HEREON ARE THE  
EXCLUSIVE PROPERTY OF SEABOARD INTERNATIONAL INC AND ARE  
SUBMITTED ON A CONFIDENTIAL BASIS ONLY. THE RECIPIENT AGREES  
NOT TO REPRODUCE THE DRAWING, TO RETURN IT UPON REQUEST, AND  
THAT NO DISCLOSURE OF THE DRAWING OR THE INFORMATION SHOWN  
HEREON WILL BE MADE TO A THIRD PARTY WITHOUT PRIOR WRITTEN  
CONSENT OF SEABOARD INTERNATIONAL INC.

WEIR

15,000 PSI WELLHEAD & TREE ASSEMBLY  
13-3/8 X 9-5/8 X 7 X 4-1/2 X 2-3/8

DRAWN BY:	RPL	SCALE:	1:10	DATE:	18JAN16	REV:	
CHECKED BY:		DRAWING NO.:	P-20986				
APPROVED BY:							



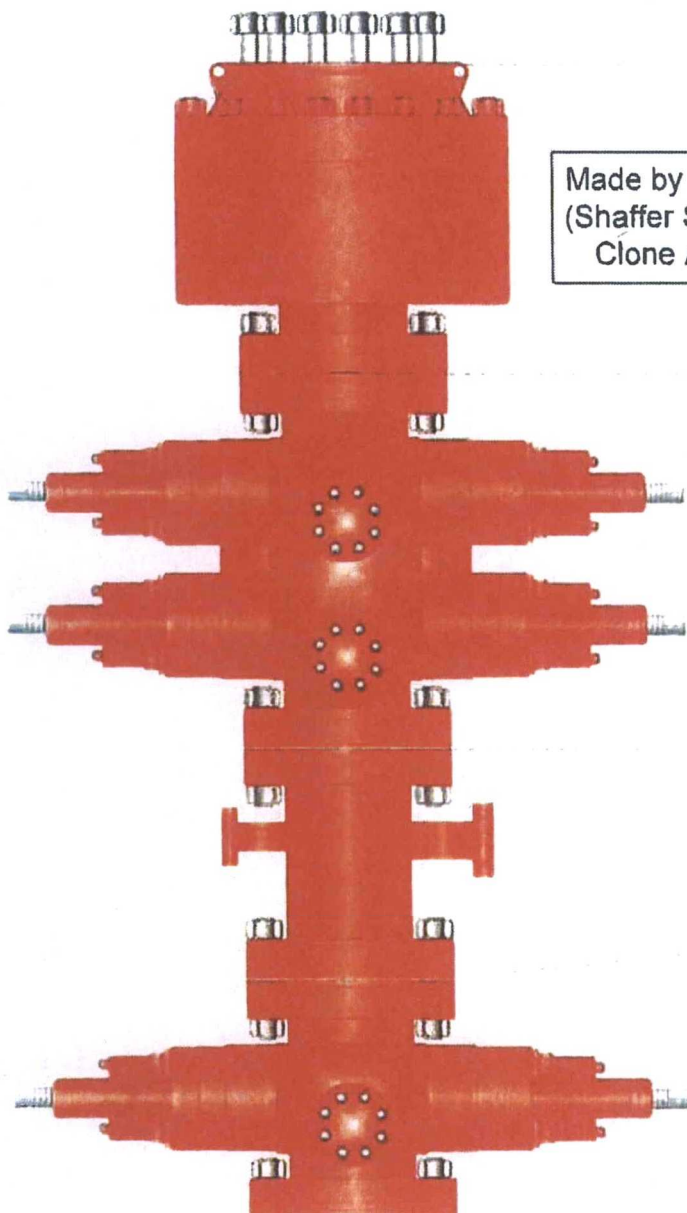


# PATTERSON-UTI

Well Control

RIG:

809



Made by Cameron  
(Shaffer Spherical)  
Clone Annular

PATTERSON-UTI # PS2-628

STYLE: New Shaffer Spherical

BORE 13 5/8" PRESSURE 5,000

HEIGHT: 48 1/2" WEIGHT: 13,800 lbs

PATTERSON-UTI # PC2-128

STYLE: New Cameron Type U

BORE 13 5/8" PRESSURE 10,000

RAMS: TOP 5" Pipe BTM Blinds

HEIGHT: 66 5/8" WEIGHT: 24,000 lbs

Length 40" Outlets 4" 10M

DSA 4" 10M x 2" 10M

PATTERSON-UTI # PC2-228

STYLE: New Cameron Type U

BORE 13 5/8" PRESSURE 10,000

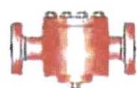
RAMS: 5" Pipe

HEIGHT: 41 5/8" WEIGHT: 13,000 lbs

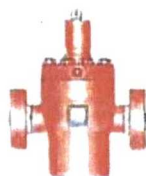
2" Minimum Kill Line

## WING VALVES

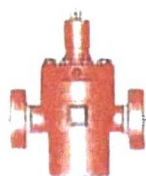
3" Minimum Choke Line



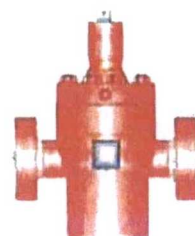
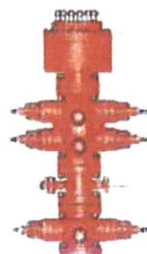
2" Check Valve



2" Manual Valve



2" Manual Valve



4" Manual Valve



4" Hydraulic Valve







Midwest Hose  
& Specialty, Inc.

## Internal Hydrostatic Test Graph

R809

March 10, 2015

Customer: Patterson B&E

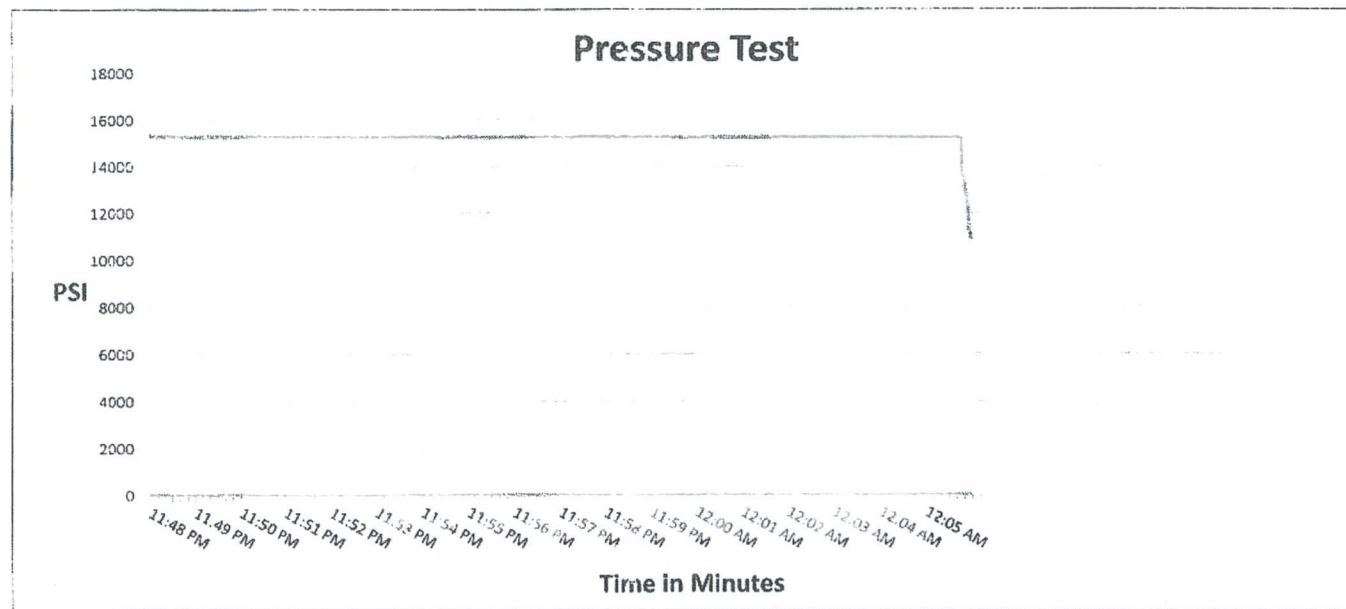
Pick Ticket #: 296283

### Hose Specifications

<u>Hose Type</u>	<u>Length</u>
Mud	50'
<u>I.D.</u>	<u>O.D.</u>
2"	3.47"
<u>Working Pressure</u>	<u>Burst Pressure</u>
10000 PSI	Standard Safety Multiple Applies

### Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
2" 1502	Swage
<u>Die Size</u>	<u>Final O.D.</u>
97MM	4.03"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
11839	296283



Test Pressure  
15000 PSI

Time Held at Test Pressure  
17 3/4 Minutes

Actual Burst Pressure

Peak Pressure  
15361 PSI

**Comments:** Hose assembly pressure tested with water at ambient temperature.

**Tested By:** Richard Davis

**Approved By:** Ryan Adams

*[Signature]*

*[Signature]*



Midwest Hose  
& Specialty, Inc.

### Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K/FSL Level 2
Date Assembled	3/10/2015	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	245805	Hose Lot # and Date Code	11839-11/14
Customer Purchase Order #	270590	Hose I.D. (Inches)	2"
Assembly Serial # (Pick Ticket #)	296283	Hose O.D. (Inches)	3.99"
Hose Assembly Length	50'	Armor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R2.0X32M1502	Stem (Part and Revision #)	RF2.0 32F1502
Stem (Heat #)	14104546	Stem (Heat #)	A144853
Ferrule (Part and Revision #)	RF2.0 10K	Ferrule (Part and Revision #)	RF2.0 10K
Ferrule (Heat #)	41044	Ferrule (Heat #)	41044
Connection - Flange Hammer Union Part		Connection (Part #)	
Connection (Heat #)		Connection (Heat #)	
Nut (Part #)	2" 1502 H2S	Nut (Part #)	
Nut (Heat #)		Nut (Heat #)	
Dies Used	97MM	Dies Used	97MM
Hydrostatic Test Requirements			
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.	
Test Pressure Hold Time (minutes)	17 3/4		
Date Tested	Tested By		Approved By
3/10/2015			





Midwest Hose  
& Specialty, Inc.

### Certificate of Conformity

Customer: **PATTERSON B&E**

Customer P.O.# **270590**

Sales Order # **245805**

Date Assembled: **3/10/2015**

### Specifications

Hose Assembly Type: **Choke & Kill**

Assembly Serial # **296283**

Hose Lot # and Date Code **11839-11/14**

Hose Working Pressure (psi) **10000**

Test Pressure (psi) **15000**

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:

Midwest Hose & Specialty, Inc.

3312 S I-35 Service Rd

Oklahoma City, OK 73129

Comments:

Approved By

Date

3/19/2015



Midwest Hose  
& Specialty, Inc.

## Internal Hydrostatic Test Graph

Customer: Patterson

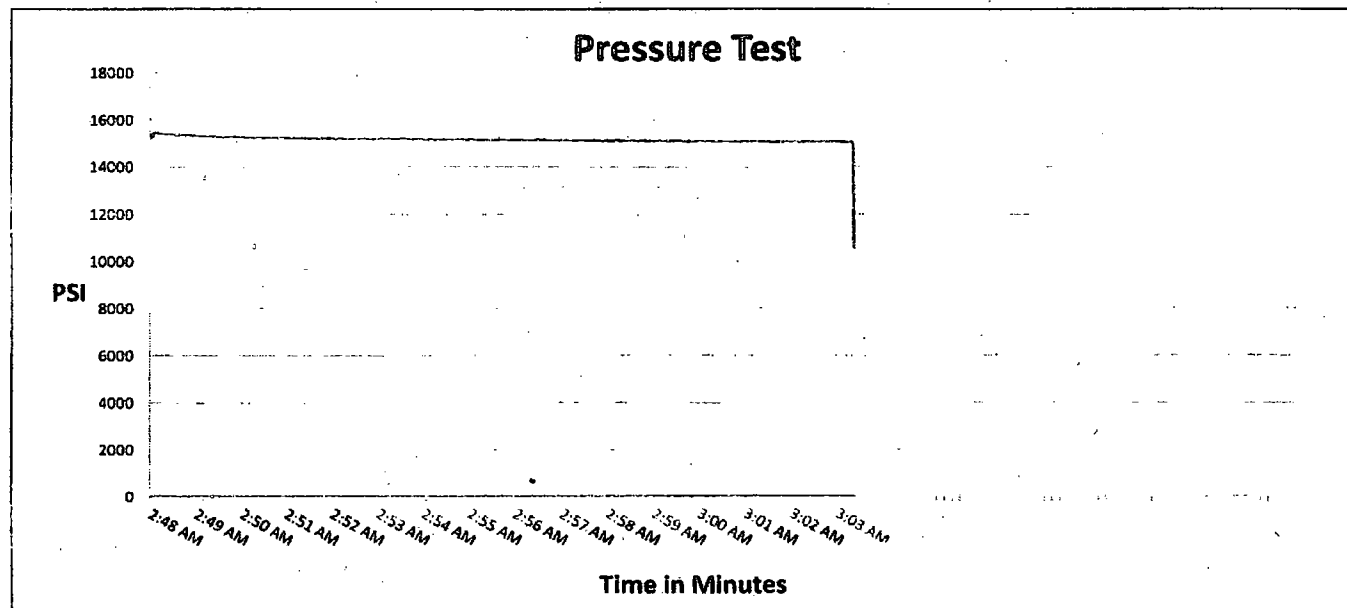
Pick Ticket #: 286159

### Hose Specifications

<u>Hose Type</u>	<u>Length</u>
Ck	50'
<u>I.D.</u>	<u>O.D.</u>
2"	3.55"
<u>Working Pressure</u>	<u>Burst Pressure</u>
10000 PSI	Standard Safety Multiplier Applies

### Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
2" 1502	Swage
<u>Die Size</u>	<u>Final O.D.</u>
97MM	3.98"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
11784	286159



Test Pressure  
15000 PSI

Time Held at Test Pressure  
15 1/4 Minutes

Actual Burst Pressure

Peak Pressure  
15410 PSI

**Comments:** Hose assembly pressure tested with water at ambient temperature.

**Tested By:** Tyler Hill

**Approved By:** Ryan Adams

*Tyler Hill*

*Ryan Adams*





Midwest Hose  
& Specialty, Inc.

### Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K/FSL Level 2
Date Assembled	12/23/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	237566	Hose Lot # and Date Code	11784-10/14
Customer Purchase Order #	261581	Hose I.D. (Inches)	2"
Assembly Serial # (Pick Ticket #)	286159	Hose O.D. (Inches)	4.00"
Hose Assembly Length	50'	Armor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R2.0X32M1502	Stem (Part and Revision #)	R2.0X32M1502
Stem (Heat #)	M14104546	Stem (Heat #)	M14101226
Ferrule (Part and Revision #)	RF2.0 10K	Ferrule (Part and Revision #)	RF2.0 10K
Ferrule (Heat #)	41044	Ferrule (Heat #)	41044
Connection . Flange Hammer Union Part	2"1502	Connection (Part #)	
Connection (Heat #)	2866	Connection (Heat #)	
Nut (Part #)		Nut (Part #)	
Nut (Heat #)		Nut (Heat #)	
Dies Used	97MM	Dies Used	97MM
Hydrostatic Test Requirements			
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.	
Test Pressure Hold Time (minutes)	15 1/4		
Date Tested	Tested By		Approved By
12/24/2014	Tyler Hill		Gar Adams



Midwest Hose  
& Specialty, Inc.

### Certificate of Conformity

Customer: **PATTERSON B&E**

Customer P.O.# **261581**

Sales Order # **237566**

Date Assembled: **12/23/2014**

### Specifications

Hose Assembly Type: **Choke & Kill**

Assembly Serial # **286159**

Hose Lot # and Date Code **11784-10/14**

Hose Working Pressure (psi) **10000**

Test Pressure (psi) **15000**

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:

**Midwest Hose & Specialty, Inc.**

**3312 S I-35 Service Rd**

**Oklahoma City, OK 73129**

Comments:

Approved By

Date

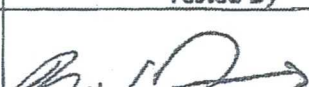
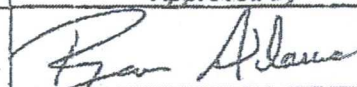
**12/29/2014**



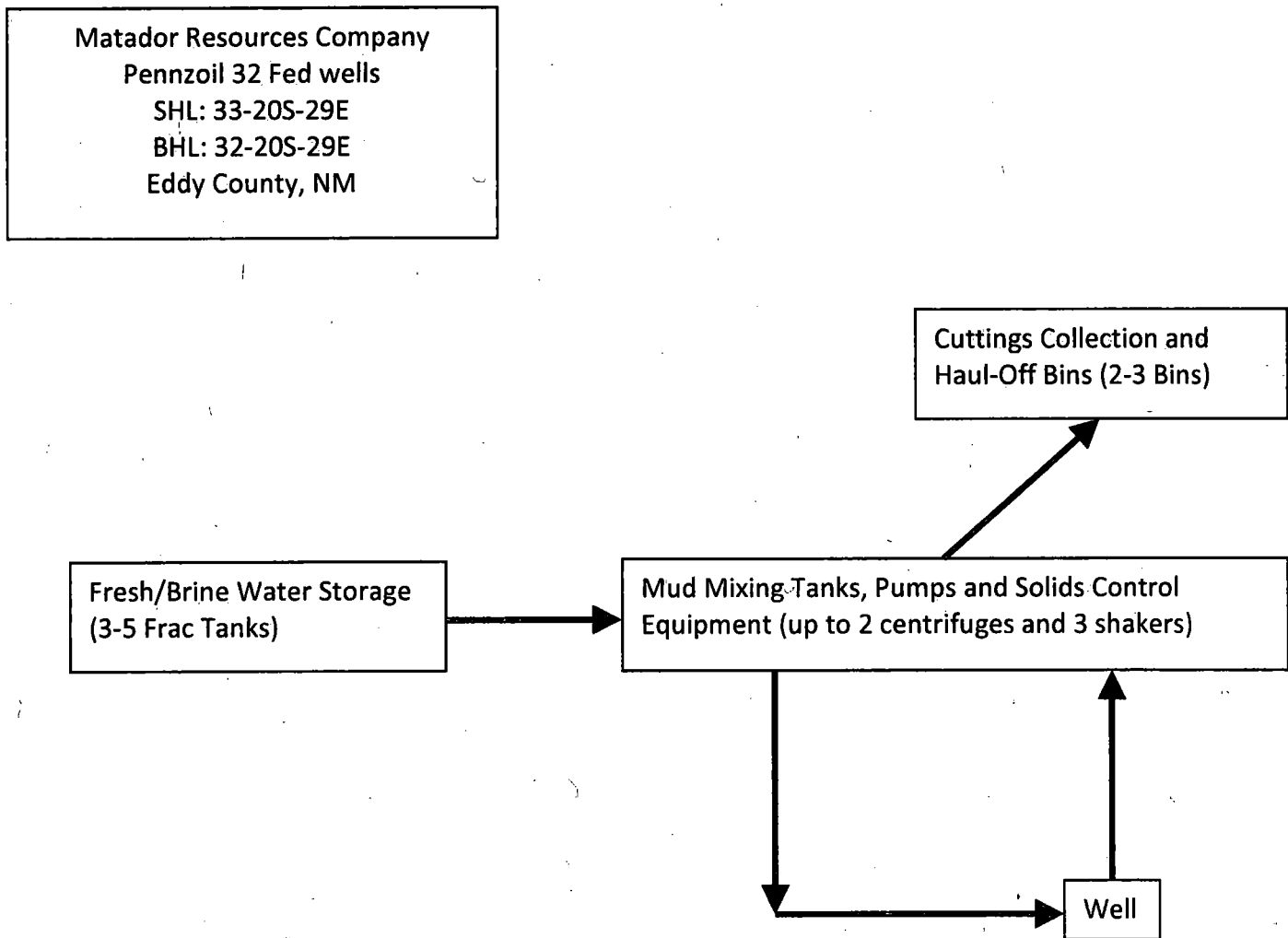


Midwest Hose  
& Specialty, Inc.

### Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K/FSL Level 2
Date Assembled	3/10/2015	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	245805	Hose Lot # and Date Code	11839-11/14
Customer Purchase Order #	270590	Hose I.D. (Inches)	2"
Assembly Serial # (Pick Ticket #)	296283	Hose O.D. (Inches)	3.99"
Hose Assembly Length	50'	Aarmor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R2.0X32M1502	Stem (Part and Revision #)	RF2.0 32F1502
Stem (Heat #)	14104546	Stem (Heat #)	A144853
Ferrule (Part and Revision #)	RF2.0 10K	Ferrule (Part and Revision #)	RF2.0 10K
Ferrule (Heat #)	41044	Ferrule (Heat #)	41044
Connection . Flange Hammer Union Part		Connection (Part #)	
Connection (Heat #)		Connection (Heat #)	
Nut (Part #)	2" 1502 H2S	Nut (Part #)	
Nut (Heat #)		Nut (Heat #)	
Dies Used	97MM	Dies Used	97MM
Hydrostatic Test Requirements			
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.	
Test Pressure Hold Time (minutes)	17 3/4		
Date Tested	Tested By	Approved By	
3/10/2015			

## Closed-Loop System



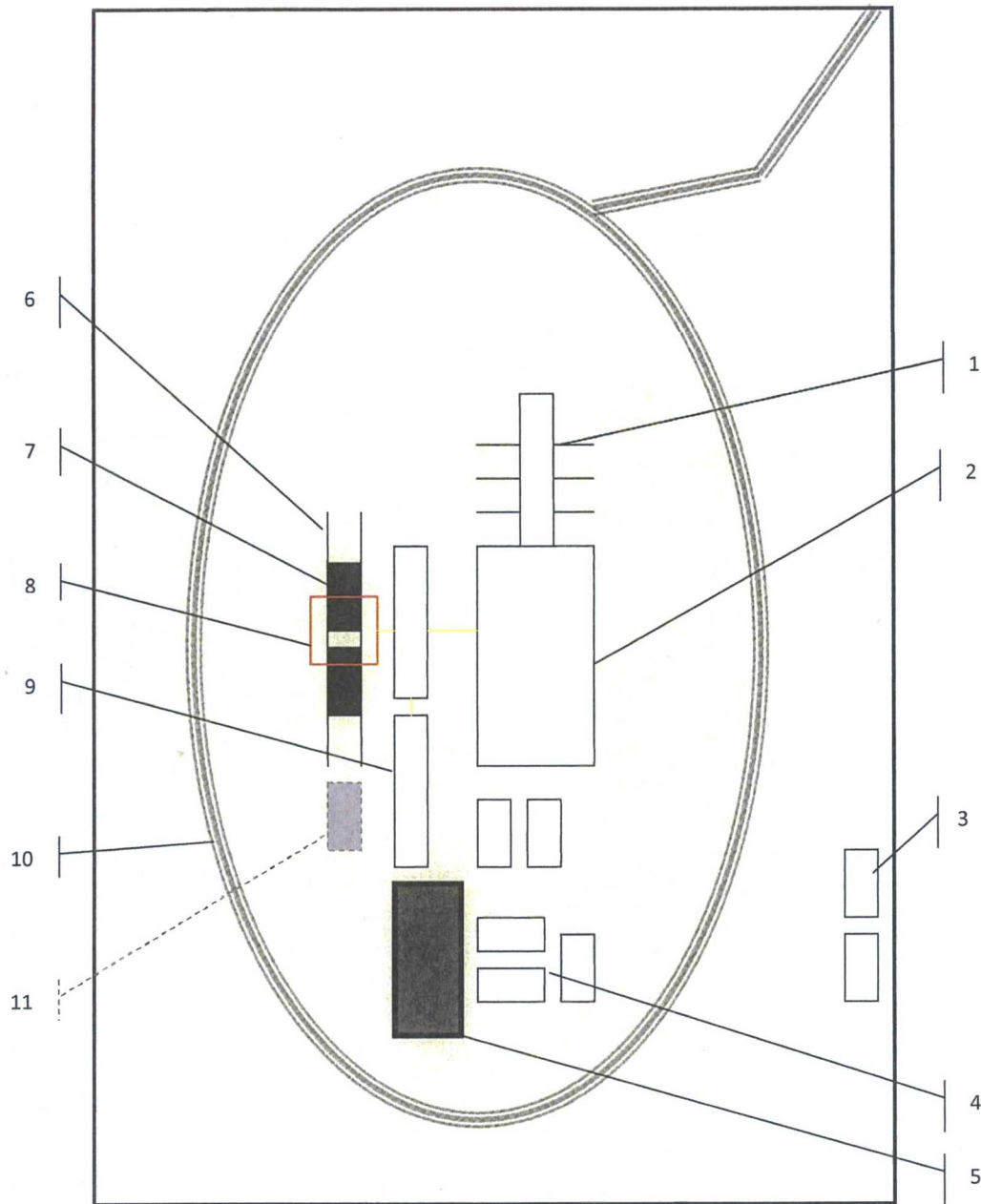
### Operating and Maintenance Plan:

During drilling operations, third party service companies will utilize solids control equipment to remove cuttings from the drilling fluids and collect it in haul-off bins. Equipment will be closely monitored at all times while drilling by the derrick man and the service company employees.

### Closure Plan:

During drilling operations, third party service companies will haul off drill solids and fluids to an approved disposal facility. At the end of the well, all closed loop equipment will be removed from the location.





**Schematic Closed Loop Drilling Rig\***

1. Pipe Rack
2. Drill Rig
3. House Trailers/ Offices
4. Generator/Fuel/Storage
5. Overflow-Frac Tank
6. Skids
7. Roll Offs
8. Hopper or Centrifuge
9. Mud Tanks
10. Loop Drive
11. Generator (only for use with centrifuge)

\*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available

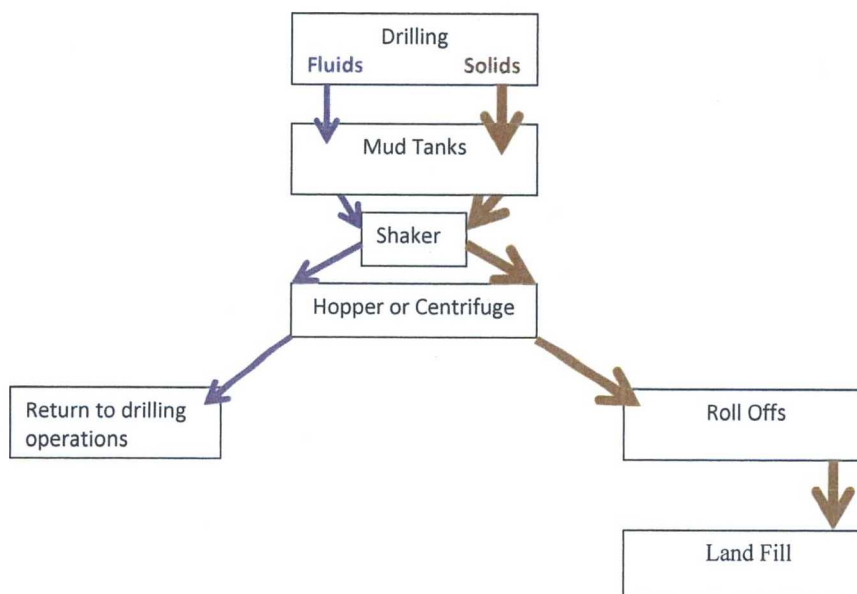


**Above: Centrifugal Closed Loop System**



Closed Loop Drilling System: Mud tanks to right (1)  
Hopper in air to settle out solids (2)  
Water return pipe (3)  
Shaker between hopper and mud tanks (4)  
Roll offs on skids (5)

#### Flow Chart for Drilling Fluids and Solids



Photos Courtesy of Gandy Corporation Oil  
Field Service



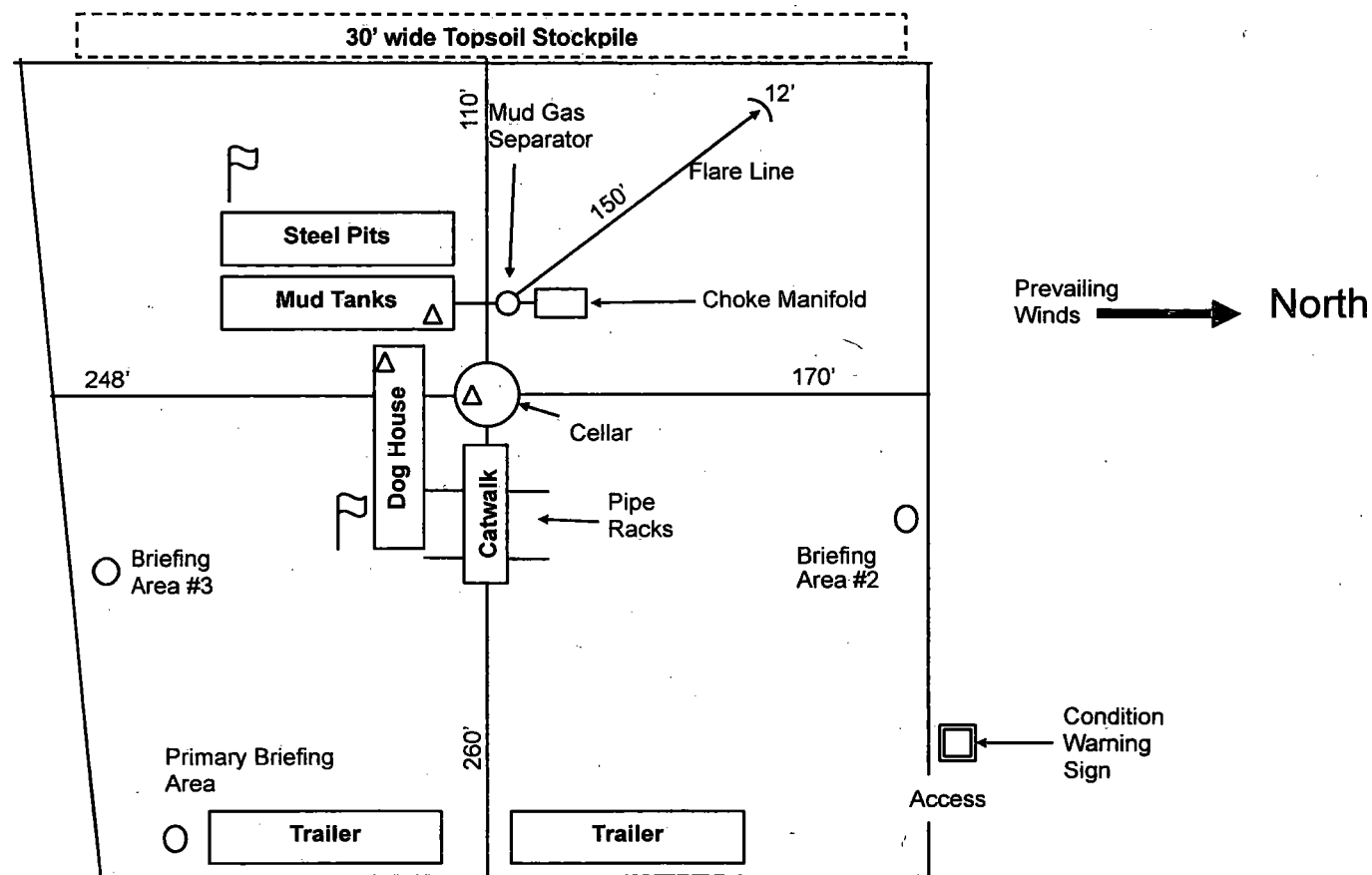
# Rig Layout

Pennzoil 32 Fed 202H  
Eddy County, NM  
(not to scale)

Wind Direction Indicator

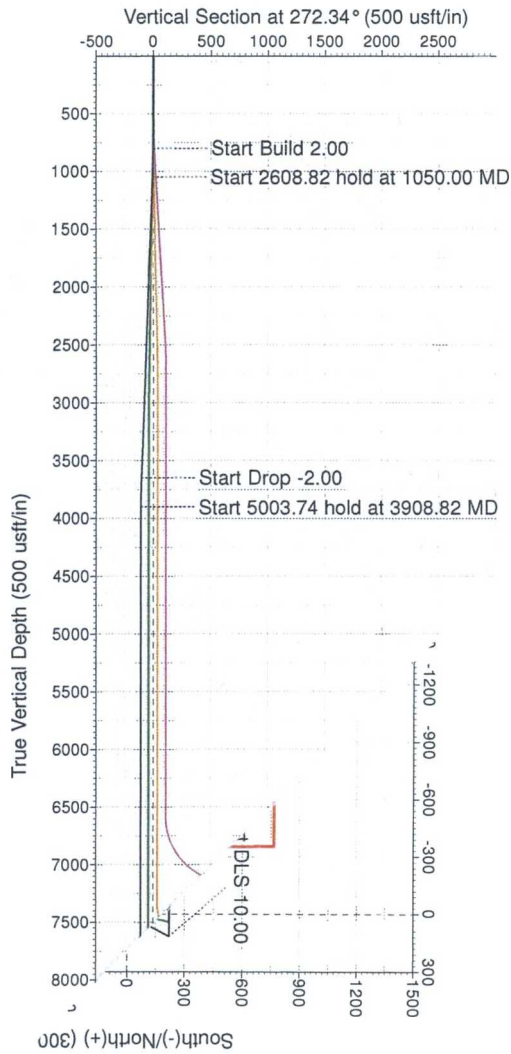
H2S Monitors

Briefing Areas





Penn  
202)



RKB Elevation:

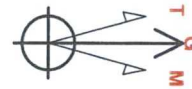
+N/-S	+E/-W	Northir
0.00	0.00	55708'

Sec

1  
2  
3  
4

Total Magnetic Corr. (M to G): 7.33°  
Declination (M to T): 7.47° East

Azimuth Corrections



Azimuths to Grid North  
True North: -0.13°  
Magnetic North: 7.33°  
Magnetic Field  
Strength: 48281.1nT  
Dip Angle: 60.40°  
Date: 8/31/2016  
Model: HDGM







Matador Resources  
Eddy County, NM  
Pennzoll Federal 32 (112-122-132-202)  
No. 202H  
Prelim Plan A  
GL: 3263' + KB: 28.5' (Pat1809)

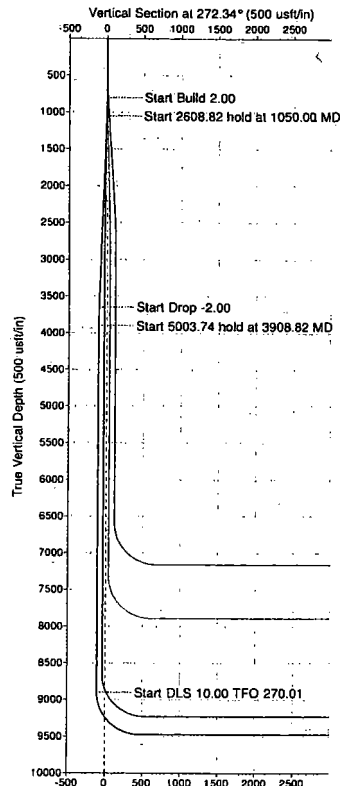


US State Plane 1927 (Exact solution)  
NAD 1927 (NADCON CONUS)  
Clarke 1866  
New Mexico East 3001  
Mean Sea Level



Admiralty to Grid North  
True North: -0.13°  
Magnetic North: 7.33°  
Magnetic Field  
Strength: 48281.1nT  
Dip Angle: 80.40°  
Date: 9/31/2016  
Model: ICGM

Asimuth Corrections  
Total Magnetic Corr. (M to G): 7.33°  
Declination (M to T): 7.47° East

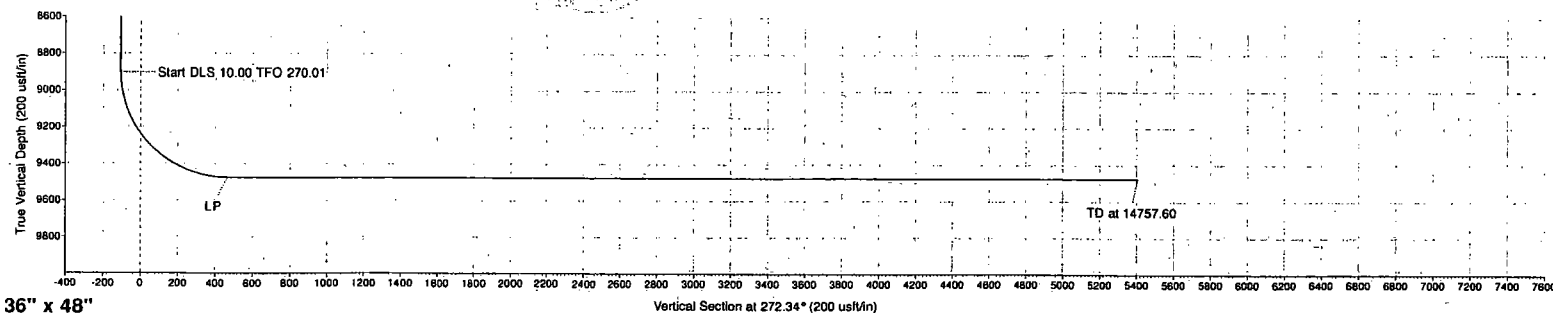
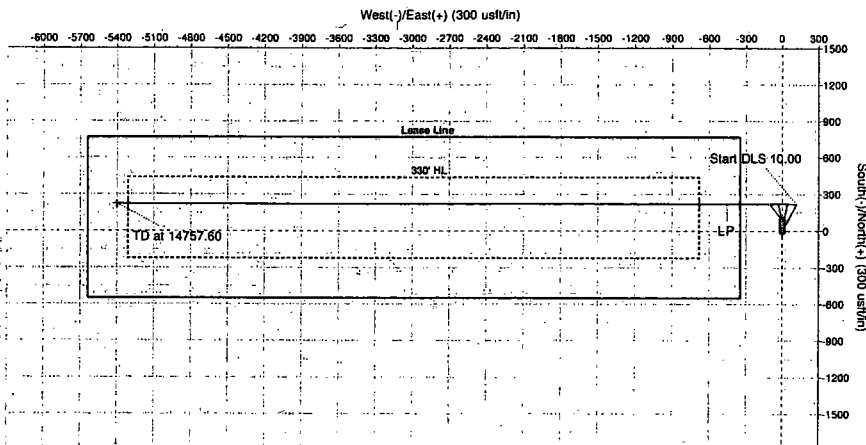
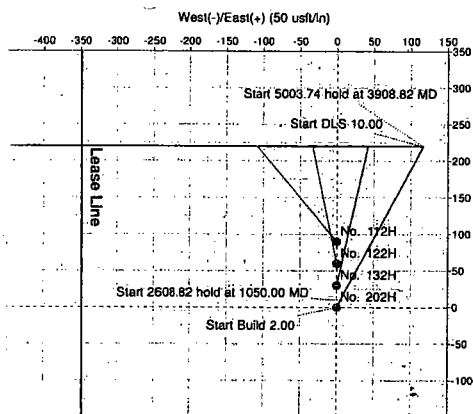


RKB Elevation: Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Pat1809))

+N-S	+E-W	Northing	Easting	Latitude	Longitude	Spot
0.00	0.00	557085.00	575929.00	32°31' 52.660 N	104° 5' 13.078 W	

#### SECTION DETAILS - Lateral

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Diag	VSed
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00
3	1050.00	5.00	28.00	1048.68	9.82	5.12	2.00	-4.72
4	3658.82	5.00	28.00	3648.58	210.38	111.88	0.00	-103.18
5	3908.82	0.00	0.00	3888.26	220.00	117.00	2.00	-107.81
6	8912.56	0.00	0.00	8902.00	220.00	117.00	0.00	-107.81
7	9912.56	90.00	270.01	9474.96	220.10	455.95	10.00	464.57
8	14757.60	90.00	270.01	9475.00	221.00	5401.00	0.00	5405.52



36" x 48"



# Pro Directional Survey Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well No. 202H
Project:	Eddy County, NM	TVD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Site:	Pennzoil Federal 32 (112-122-132-202)	MD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Well:	No. 202H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	Well_Planner1

Project	Eddy County, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		Pennzoil Federal 32 (112-122-132-202)			
Site Position:		Northing:		557,175.00 usft	
From:		Easting:		575,929.00 usft	
Position Uncertainty:		Slot Radius:		13-3/16 "	
Map				Latitude:	
				32° 31' 53.550 N	
				Longitude:	
				104° 5' 13.075 W	
				Grid Convergence:	
				0.13 °	

Well	No. 202H					
Well Position	+N/-S	0.00 usft	Northing:	557,085.00 usft	Latitude:	32° 31' 52.660 N
	+E/-W	0.00 usft	Easting:	575,929.00 usft	Longitude:	104° 5' 13.078 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,263.00 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/31/2016	7.47	60.40	48,281

Design	Prelim Plan A			
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	272.34

Survey Tool Program	Date 9/1/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	2,000.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
2,000.00	6,500.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
6,500.00	14,757.60	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[PennzFed32#202H]LPP - [PennzFed32#202H]FPP									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00





# Pro Directional Survey Report



<b>Company:</b>	Matador Resources	<b>Local Co-ordinate Reference:</b>	Well No. 202H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Site:</b>	Pennzoil Federal 32 (112-122-132-202)	<b>MD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Well:</b>	No. 202H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Prelim Plan A	<b>Database:</b>	Well_Planner1

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
900.00	2.00	28.00	899.98	1.54	0.82	-0.76	2.00	2.00	0.00
1,000.00	4.00	28.00	999.84	6.16	3.28	-3.02	2.00	2.00	0.00
1,050.00	5.00	28.00	1,049.68	9.62	5.12	-4.72	2.00	2.00	0.00
Start 2608.82 hold at 1050.00 MD									
1,100.00	5.00	28.00	1,099.49	13.47	7.16	-6.61	0.00	0.00	0.00
1,200.00	5.00	28.00	1,199.11	21.17	11.26	-10.38	0.00	0.00	0.00
1,300.00	5.00	28.00	1,298.73	28.86	15.35	-14.16	0.00	0.00	0.00
1,400.00	5.00	28.00	1,398.35	36.56	19.44	-17.93	0.00	0.00	0.00
1,500.00	5.00	28.00	1,497.97	44.25	23.53	-21.71	0.00	0.00	0.00
1,600.00	5.00	28.00	1,597.59	51.95	27.63	-25.48	0.00	0.00	0.00
1,700.00	5.00	28.00	1,697.21	59.64	31.72	-29.25	0.00	0.00	0.00
1,800.00	5.00	28.00	1,796.83	67.34	35.81	-33.03	0.00	0.00	0.00
1,900.00	5.00	28.00	1,896.45	75.03	39.90	-36.80	0.00	0.00	0.00
2,000.00	5.00	28.00	1,996.07	82.73	44.00	-40.58	0.00	0.00	0.00
2,100.00	5.00	28.00	2,095.69	90.42	48.09	-44.35	0.00	0.00	0.00
2,200.00	5.00	28.00	2,195.31	98.12	52.18	-48.13	0.00	0.00	0.00
2,300.00	5.00	28.00	2,294.93	105.81	56.27	-51.90	0.00	0.00	0.00
2,400.00	5.00	28.00	2,394.55	113.51	60.37	-55.67	0.00	0.00	0.00
2,500.00	5.00	28.00	2,494.17	121.20	64.46	-59.45	0.00	0.00	0.00
2,600.00	5.00	28.00	2,593.78	128.90	68.55	-63.22	0.00	0.00	0.00
2,700.00	5.00	28.00	2,693.40	136.59	72.64	-67.00	0.00	0.00	0.00
2,800.00	5.00	28.00	2,793.02	144.29	76.74	-70.77	0.00	0.00	0.00
2,900.00	5.00	28.00	2,892.64	151.98	80.83	-74.55	0.00	0.00	0.00
3,000.00	5.00	28.00	2,992.26	159.68	84.92	-78.32	0.00	0.00	0.00
3,100.00	5.00	28.00	3,091.88	167.37	89.01	-82.09	0.00	0.00	0.00
3,200.00	5.00	28.00	3,191.50	175.07	93.10	-85.87	0.00	0.00	0.00
3,300.00	5.00	28.00	3,291.12	182.76	97.20	-89.64	0.00	0.00	0.00
3,400.00	5.00	28.00	3,390.74	190.46	101.29	-93.42	0.00	0.00	0.00
3,500.00	5.00	28.00	3,490.36	198.15	105.38	-97.19	0.00	0.00	0.00
3,600.00	5.00	28.00	3,589.98	205.85	109.47	-100.97	0.00	0.00	0.00
3,658.82	5.00	28.00	3,648.58	210.38	111.88	-103.19	0.00	0.00	0.00
Start Drop -2.00									
3,700.00	4.18	28.00	3,689.62	213.28	113.43	-104.61	2.00	-2.00	0.00
3,800.00	2.18	28.00	3,789.46	218.18	116.03	-107.01	2.00	-2.00	0.00
3,908.82	0.00	0.00	3,898.26	220.00	117.00	-107.91	2.00	-2.00	-25.73
Start 5003.74 hold at 3908.82 MD									
4,000.00	0.00	0.00	3,989.44	220.00	117.00	-107.91	0.00	0.00	0.00
4,100.00	0.00	0.00	4,089.44	220.00	117.00	-107.91	0.00	0.00	0.00
4,200.00	0.00	0.00	4,189.44	220.00	117.00	-107.91	0.00	0.00	0.00



# Pro Directional Survey Report



**Company:** Matador Resources  
**Project:** Eddy County, NM  
**Site:** Pennzoil Federal 32 (112-122-132-202)  
**Well:** No. 202H  
**Wellbore:** OH  
**Design:** Prelim Plan A

**Local Co-ordinate Reference:** Well No. 202H  
**TVD Reference:** Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))  
**MD Reference:** Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Well\_Planner1

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,300.00	0.00	0.00	4,289.44	220.00	117.00	-107.91	0.00	0.00	0.00
4,400.00	0.00	0.00	4,389.44	220.00	117.00	-107.91	0.00	0.00	0.00
4,500.00	0.00	0.00	4,489.44	220.00	117.00	-107.91	0.00	0.00	0.00
4,600.00	0.00	0.00	4,589.44	220.00	117.00	-107.91	0.00	0.00	0.00
4,700.00	0.00	0.00	4,689.44	220.00	117.00	-107.91	0.00	0.00	0.00
4,800.00	0.00	0.00	4,789.44	220.00	117.00	-107.91	0.00	0.00	0.00
4,900.00	0.00	0.00	4,889.44	220.00	117.00	-107.91	0.00	0.00	0.00
5,000.00	0.00	0.00	4,989.44	220.00	117.00	-107.91	0.00	0.00	0.00
5,100.00	0.00	0.00	5,089.44	220.00	117.00	-107.91	0.00	0.00	0.00
5,200.00	0.00	0.00	5,189.44	220.00	117.00	-107.91	0.00	0.00	0.00
5,300.00	0.00	0.00	5,289.44	220.00	117.00	-107.91	0.00	0.00	0.00
5,400.00	0.00	0.00	5,389.44	220.00	117.00	-107.91	0.00	0.00	0.00
5,500.00	0.00	0.00	5,489.44	220.00	117.00	-107.91	0.00	0.00	0.00
5,600.00	0.00	0.00	5,589.44	220.00	117.00	-107.91	0.00	0.00	0.00
5,700.00	0.00	0.00	5,689.44	220.00	117.00	-107.91	0.00	0.00	0.00
5,800.00	0.00	0.00	5,789.44	220.00	117.00	-107.91	0.00	0.00	0.00
5,900.00	0.00	0.00	5,889.44	220.00	117.00	-107.91	0.00	0.00	0.00
6,000.00	0.00	0.00	5,989.44	220.00	117.00	-107.91	0.00	0.00	0.00
6,100.00	0.00	0.00	6,089.44	220.00	117.00	-107.91	0.00	0.00	0.00
6,200.00	0.00	0.00	6,189.44	220.00	117.00	-107.91	0.00	0.00	0.00
6,300.00	0.00	0.00	6,289.44	220.00	117.00	-107.91	0.00	0.00	0.00
6,400.00	0.00	0.00	6,389.44	220.00	117.00	-107.91	0.00	0.00	0.00
6,500.00	0.00	0.00	6,489.44	220.00	117.00	-107.91	0.00	0.00	0.00
6,600.00	0.00	0.00	6,589.44	220.00	117.00	-107.91	0.00	0.00	0.00
6,700.00	0.00	0.00	6,689.44	220.00	117.00	-107.91	0.00	0.00	0.00
6,800.00	0.00	0.00	6,789.44	220.00	117.00	-107.91	0.00	0.00	0.00
6,900.00	0.00	0.00	6,889.44	220.00	117.00	-107.91	0.00	0.00	0.00
7,000.00	0.00	0.00	6,989.44	220.00	117.00	-107.91	0.00	0.00	0.00
7,100.00	0.00	0.00	7,089.44	220.00	117.00	-107.91	0.00	0.00	0.00
7,200.00	0.00	0.00	7,189.44	220.00	117.00	-107.91	0.00	0.00	0.00
7,300.00	0.00	0.00	7,289.44	220.00	117.00	-107.91	0.00	0.00	0.00
7,400.00	0.00	0.00	7,389.44	220.00	117.00	-107.91	0.00	0.00	0.00
7,500.00	0.00	0.00	7,489.44	220.00	117.00	-107.91	0.00	0.00	0.00
7,600.00	0.00	0.00	7,589.44	220.00	117.00	-107.91	0.00	0.00	0.00
7,700.00	0.00	0.00	7,689.44	220.00	117.00	-107.91	0.00	0.00	0.00
7,800.00	0.00	0.00	7,789.44	220.00	117.00	-107.91	0.00	0.00	0.00
7,900.00	0.00	0.00	7,889.44	220.00	117.00	-107.91	0.00	0.00	0.00
8,000.00	0.00	0.00	7,989.44	220.00	117.00	-107.91	0.00	0.00	0.00
8,100.00	0.00	0.00	8,089.44	220.00	117.00	-107.91	0.00	0.00	0.00
8,200.00	0.00	0.00	8,189.44	220.00	117.00	-107.91	0.00	0.00	0.00
8,300.00	0.00	0.00	8,289.44	220.00	117.00	-107.91	0.00	0.00	0.00
8,400.00	0.00	0.00	8,389.44	220.00	117.00	-107.91	0.00	0.00	0.00





# Pro Directional Survey Report



<b>Company:</b>	Matador Resources	<b>Local Co-ordinate Reference:</b>	Well No. 202H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Site:</b>	Pennzoil Federal 32 (112-122-132-202)	<b>MD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Well:</b>	No. 202H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Prelim Plan A	<b>Database:</b>	Well_Planner1

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,500.00	0.00	0.00	8,489.44	220.00	117.00	-107.91	0.00	0.00	0.00
8,600.00	0.00	0.00	8,589.44	220.00	117.00	-107.91	0.00	0.00	0.00
8,700.00	0.00	0.00	8,689.44	220.00	117.00	-107.91	0.00	0.00	0.00
8,800.00	0.00	0.00	8,789.44	220.00	117.00	-107.91	0.00	0.00	0.00
8,900.00	0.00	0.00	8,889.44	220.00	117.00	-107.91	0.00	0.00	0.00
8,912.56	0.00	0.00	8,902.00	220.00	117.00	-107.91	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 270.01</b>									
8,950.00	3.74	270.01	8,939.41	220.00	115.78	-106.69	10.00	10.00	0.00
9,000.00	8.74	270.01	8,989.10	220.00	110.34	-101.25	10.00	10.00	0.00
9,050.00	13.74	270.01	9,038.12	220.00	100.59	-91.52	10.00	10.00	0.00
9,100.00	18.74	270.01	9,086.11	220.01	86.61	-77.55	10.00	10.00	0.00
9,150.00	23.74	270.01	9,132.70	220.01	68.50	-59.45	10.00	10.00	0.00
9,200.00	28.74	270.01	9,177.53	220.01	46.40	-37.37	10.00	10.00	0.00
9,250.00	33.74	270.01	9,220.27	220.02	20.47	-11.46	10.00	10.00	0.00
9,300.00	38.74	270.01	9,260.58	220.02	-9.08	18.07	10.00	10.00	0.00
9,350.00	43.74	270.01	9,298.16	220.03	-42.03	50.99	10.00	10.00	0.00
9,400.00	48.74	270.01	9,332.73	220.04	-78.13	87.06	10.00	10.00	0.00
9,450.00	53.74	270.01	9,364.02	220.04	-117.11	126.01	10.00	10.00	0.00
9,500.00	58.74	270.01	9,391.80	220.05	-158.67	167.53	10.00	10.00	0.00
9,550.00	63.74	270.01	9,415.84	220.06	-202.49	211.32	10.00	10.00	0.00
9,600.00	68.74	270.01	9,435.98	220.07	-248.24	257.03	10.00	10.00	0.00
9,650.00	73.74	270.01	9,452.05	220.07	-295.57	304.32	10.00	10.00	0.00
9,700.00	78.74	270.01	9,463.94	220.08	-344.12	352.83	10.00	10.00	0.00
9,750.00	83.74	270.01	9,471.55	220.09	-393.52	402.19	10.00	10.00	0.00
9,800.00	88.74	270.01	9,474.82	220.10	-443.40	452.03	10.00	10.00	0.00
9,812.56	90.00	270.01	9,474.96	220.10	-455.95	464.57	10.00	10.00	0.00
<b>LP</b>									
9,900.00	90.00	270.01	9,474.96	220.12	-543.40	551.94	0.00	0.00	0.00
10,000.00	90.00	270.01	9,474.96	220.14	-643.40	651.86	0.00	0.00	0.00
10,100.00	90.00	270.01	9,474.96	220.16	-743.40	751.78	0.00	0.00	0.00
10,200.00	90.00	270.01	9,474.96	220.17	-843.40	851.69	0.00	0.00	0.00
10,300.00	90.00	270.01	9,474.96	220.19	-943.40	951.61	0.00	0.00	0.00
10,400.00	90.00	270.01	9,474.96	220.21	-1,043.40	1,051.53	0.00	0.00	0.00
10,500.00	90.00	270.01	9,474.96	220.23	-1,143.40	1,151.44	0.00	0.00	0.00
10,600.00	90.00	270.01	9,474.96	220.25	-1,243.40	1,251.36	0.00	0.00	0.00
10,700.00	90.00	270.01	9,474.97	220.26	-1,343.40	1,351.28	0.00	0.00	0.00
10,800.00	90.00	270.01	9,474.97	220.28	-1,443.40	1,451.20	0.00	0.00	0.00
10,900.00	90.00	270.01	9,474.97	220.30	-1,543.40	1,551.11	0.00	0.00	0.00
11,000.00	90.00	270.01	9,474.97	220.32	-1,643.40	1,651.03	0.00	0.00	0.00
11,100.00	90.00	270.01	9,474.97	220.34	-1,743.40	1,750.95	0.00	0.00	0.00
11,200.00	90.00	270.01	9,474.97	220.36	-1,843.40	1,850.86	0.00	0.00	0.00
11,300.00	90.00	270.01	9,474.97	220.37	-1,943.40	1,950.78	0.00	0.00	0.00



# Pro Directional Survey Report



<b>Company:</b>	Matador Resources	<b>Local Co-ordinate Reference:</b>	Well No. 202H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Site:</b>	Pennzoil Federal 32 (112-122-132-202)	<b>MD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Well:</b>	No. 202H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Prelim Plan A	<b>Database:</b>	Well_Planner1

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,400.00	90.00	270.01	9,474.97	220.39	-2,043.40	2,050.70	0.00	0.00	0.00
11,500.00	90.00	270.01	9,474.97	220.41	-2,143.40	2,150.62	0.00	0.00	0.00
11,600.00	90.00	270.01	9,474.97	220.43	-2,243.40	2,250.53	0.00	0.00	0.00
11,700.00	90.00	270.01	9,474.97	220.45	-2,343.40	2,350.45	0.00	0.00	0.00
11,800.00	90.00	270.01	9,474.97	220.46	-2,443.40	2,450.37	0.00	0.00	0.00
11,900.00	90.00	270.01	9,474.98	220.48	-2,543.40	2,550.28	0.00	0.00	0.00
12,000.00	90.00	270.01	9,474.98	220.50	-2,643.40	2,650.20	0.00	0.00	0.00
12,100.00	90.00	270.01	9,474.98	220.52	-2,743.40	2,750.12	0.00	0.00	0.00
12,200.00	90.00	270.01	9,474.98	220.54	-2,843.40	2,850.04	0.00	0.00	0.00
12,300.00	90.00	270.01	9,474.98	220.55	-2,943.40	2,949.95	0.00	0.00	0.00
12,400.00	90.00	270.01	9,474.98	220.57	-3,043.40	3,049.87	0.00	0.00	0.00
12,500.00	90.00	270.01	9,474.98	220.59	-3,143.40	3,149.79	0.00	0.00	0.00
12,600.00	90.00	270.01	9,474.98	220.61	-3,243.40	3,249.70	0.00	0.00	0.00
12,700.00	90.00	270.01	9,474.98	220.63	-3,343.40	3,349.62	0.00	0.00	0.00
12,800.00	90.00	270.01	9,474.98	220.65	-3,443.40	3,449.54	0.00	0.00	0.00
12,900.00	90.00	270.01	9,474.98	220.66	-3,543.40	3,549.46	0.00	0.00	0.00
13,000.00	90.00	270.01	9,474.99	220.68	-3,643.40	3,649.37	0.00	0.00	0.00
13,100.00	90.00	270.01	9,474.99	220.70	-3,743.40	3,749.29	0.00	0.00	0.00
13,200.00	90.00	270.01	9,474.99	220.72	-3,843.40	3,849.21	0.00	0.00	0.00
13,300.00	90.00	270.01	9,474.99	220.74	-3,943.40	3,949.12	0.00	0.00	0.00
13,400.00	90.00	270.01	9,474.99	220.75	-4,043.40	4,049.04	0.00	0.00	0.00
13,500.00	90.00	270.01	9,474.99	220.77	-4,143.40	4,148.96	0.00	0.00	0.00
13,600.00	90.00	270.01	9,474.99	220.79	-4,243.40	4,248.87	0.00	0.00	0.00
13,700.00	90.00	270.01	9,474.99	220.81	-4,343.40	4,348.79	0.00	0.00	0.00
13,800.00	90.00	270.01	9,474.99	220.83	-4,443.40	4,448.71	0.00	0.00	0.00
13,900.00	90.00	270.01	9,474.99	220.84	-4,543.40	4,548.63	0.00	0.00	0.00
14,000.00	90.00	270.01	9,474.99	220.86	-4,643.40	4,648.54	0.00	0.00	0.00
14,100.00	90.00	270.01	9,474.99	220.88	-4,743.40	4,748.46	0.00	0.00	0.00
14,200.00	90.00	270.01	9,475.00	220.90	-4,843.40	4,848.38	0.00	0.00	0.00
14,300.00	90.00	270.01	9,475.00	220.92	-4,943.40	4,948.29	0.00	0.00	0.00
14,400.00	90.00	270.01	9,475.00	220.94	-5,043.40	5,048.21	0.00	0.00	0.00
14,500.00	90.00	270.01	9,475.00	220.95	-5,143.40	5,148.13	0.00	0.00	0.00
14,600.00	90.00	270.01	9,475.00	220.97	-5,243.40	5,248.05	0.00	0.00	0.00
14,700.00	90.00	270.01	9,475.00	220.99	-5,343.40	5,347.96	0.00	0.00	0.00
14,757.60	90.00	270.01	9,475.00	221.00	-5,401.00	5,405.52	0.00	0.00	0.00

TD at 14757.60 - [PennzFed32#202H]BHL





# Pro Directional Survey Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well No. 202H
Project:	Eddy County, NM	TVD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Site:	Pennzoil Federal 32 (112-122-132-202)	MD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Well:	No. 202H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan A	Database:	Well_Planner1

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
[PennzFed32#202H]LPF	0.00	0.00	0.00	221.00	-5,311.00	557,306.00	570,618.00	32° 31' 54.964 N	104° 6' 15.109 W
- plan misses target center by 5315.60usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
[PennzFed32#202H]FPF	0.00	0.00	0.00	219.00	-679.00	557,304.00	575,250.00	32° 31' 54.842 N	104° 5' 21.003 W
- plan misses target center by 713.44usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
[PennzFed32#202H]BHI	0.00	0.00	9,475.00	221.00	-5,401.00	557,306.00	570,528.00	32° 31' 54.966 N	104° 6' 16.161 W
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
800	800	0	0	Start Build 2.00
1050	1050	10	5	Start 2608.82 hold at 1050.00 MD
3659	3649	210	112	Start Drop -2.00
3909	3898	220	117	Start 5003.74 hold at 3908.82 MD
8913	8902	220	117	Start DLS 10.00 TFO 270.01
9813	9475	220	-456	LP
14,758	9475	221	-5401	TD at 14757.60

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------





# Pro Directional Anticollision Report



<b>Company:</b>	Matador Resources	<b>Local Co-ordinate Reference:</b>	Well No. 202H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Reference Site:</b>	Pennzoil Federal 32 (112-122-132-202)	<b>MD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	No. 202H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Well_Planner1
<b>Reference Design:</b>	Prelim Plan A	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Prelim Plan A		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 2,000.00 usft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	9/1/2016		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	2,000.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
2,000.00	6,500.00	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG
6,500.00	14,757.60	Prelim Plan A (OH)	MWD - OWSG	MWD - OWSG

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (usft)</b>	<b>Offset Measured Depth (usft)</b>	<b>Distance Between Centres (usft)</b>	<b>Distance Between Ellipses (usft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
Pennzoil Federal 32 (112-122-132-202)						
No. 112H - OH - Prelim Plan A	500.00	500.00	90.00	86.88	28.808	CC, ES
No. 112H - OH - Prelim Plan A	6,600.00	6,595.81	225.00	190.07	6.441	SF
No. 122H - OH - Prelim Plan A	600.00	600.00	60.00	56.16	15.621	CC, ES
No. 122H - OH - Prelim Plan A	7,300.00	7,296.25	150.00	114.49	4.225	SF
No. 132H - OH - Prelim Plan A	700.00	700.00	30.00	25.44	6.582	CC, ES
No. 132H - OH - Prelim Plan A	8,600.66	8,598.27	75.00	36.73	1.960	SF

<b>Offset Design</b>												
Pennzoil Federal 32 (112-122-132-202) - No. 112H - OH - Prelim Plan A												
Survey Program: 0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG												
<b>Reference</b>	<b>Offset</b>	<b>Semi Major Axis</b>			<b>Distance</b>							
<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Reference (usft)</b>	<b>Offset (usft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Between Centres (usft)</b>	<b>Between Ellipses (usft)</b>	<b>Minimum Separation (usft)</b>	<b>Separation Factor</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	90.00			
100.00	100.00	100.00	100.00	0.13	0.13	0.00	90.00	0.00	90.00	89.74	0.26	351.141
200.00	200.00	200.00	200.00	0.49	0.49	0.00	90.00	0.00	90.00	89.03	0.97	92.474
300.00	300.00	300.00	300.00	0.85	0.85	0.00	90.00	0.00	90.00	88.31	1.69	53.248
400.00	400.00	400.00	400.00	1.20	1.20	0.00	90.00	0.00	90.00	87.59	2.41	37.389
500.00	500.00	500.00	500.00	1.56	1.56	0.00	90.00	0.00	90.00	86.88	3.12	28.808 CC, ES
600.00	600.00	597.60	597.58	1.92	1.91	-0.67	91.28	-1.06	91.32	87.48	3.83	23.815
700.00	700.00	694.98	694.83	2.28	2.26	-2.55	95.10	-4.24	95.34	90.79	4.55	20.967
800.00	800.00	793.14	792.66	2.64	2.62	-5.29	101.28	-9.37	101.97	96.71	5.26	19.386
900.00	899.98	892.80	891.94	3.00	2.98	-36.35	107.96	-14.92	107.88	101.90	5.97	18.059
1,000.00	999.84	992.45	991.21	3.35	3.35	-40.22	114.64	-20.47	111.38	104.69	6.69	16.655
1,050.00	1,049.68	1,042.23	1,040.81	3.54	3.54	-42.51	117.98	-23.24	112.35	105.31	7.05	15.948
1,100.00	1,099.49	1,092.00	1,090.38	3.71	3.72	-44.93	121.31	-26.01	113.20	105.79	7.40	15.289
1,200.00	1,199.11	1,191.53	1,189.53	4.08	4.10	-49.64	127.98	-31.56	115.48	107.35	8.12	14.216
1,300.00	1,298.73	1,291.06	1,288.68	4.44	4.47	-54.13	134.66	-37.10	118.51	109.66	8.84	13.399
1,400.00	1,398.35	1,390.58	1,387.83	4.81	4.85	-58.38	141.33	-42.64	122.24	112.67	9.57	12.775
1,500.00	1,497.97	1,490.11	1,486.98	5.18	5.22	-62.36	148.00	-48.19	126.60	116.31	10.30	12.297

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





# Pro Directional Anticollision Report



<b>Company:</b>	Matador Resources	<b>Local Co-ordinate Reference:</b>	Well No. 202H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Reference Site:</b>	Pennzoil Federal 32 (112-122-132-202)	<b>MD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	No. 202H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Well_Planner1
<b>Reference Design:</b>	Prelim Plan A	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Pennzoil Federal 32 (112-122-132-202) - No. 112H - OH - Prelim Plan A												Offset Site Error:	0.00 usft
Survey Program: 0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG												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
1,600.00	1,597.59	1,589.64	1,586.13	5.56	5.60	-66.06	154.67	-53.73	131.54	120.52	11.02	11.931	
1,700.00	1,697.21	1,689.17	1,685.28	5.93	5.98	-69.48	161.35	-59.27	136.99	125.23	11.76	11.652	
1,800.00	1,796.83	1,788.70	1,784.43	6.30	6.35	-72.64	168.02	-64.82	142.89	130.40	12.49	11.440	
1,900.00	1,896.45	1,888.23	1,883.58	6.68	6.73	-75.53	174.69	-70.36	149.18	135.96	13.23	11.280	
2,000.00	1,996.07	1,987.75	1,982.73	7.06	7.11	-78.18	181.36	-75.90	155.83	141.87	13.96	11.160	
2,100.00	2,095.69	2,087.28	2,081.88	7.26	7.34	-80.62	188.04	-81.45	162.78	148.41	14.37	11.326	
2,200.00	2,195.31	2,186.81	2,181.03	7.30	7.41	-82.85	194.71	-86.99	170.00	155.54	14.46	11.756	
2,300.00	2,294.93	2,286.34	2,280.18	7.37	7.48	-84.90	201.38	-92.53	177.46	162.90	14.57	12.183	
2,400.00	2,394.55	2,385.87	2,379.33	7.45	7.56	-86.78	208.05	-98.07	185.13	170.42	14.71	12.586	
2,500.00	2,494.17	2,485.50	2,481.60	7.55	7.67	-88.61	214.61	-103.52	192.61	177.71	14.90	12.926	
2,600.00	2,593.78	2,584.87	2,587.82	7.67	7.78	-90.73	218.81	-107.01	197.34	182.21	15.13	13.042	
2,700.00	2,693.40	2,700.47	2,693.40	7.81	7.89	-93.21	220.00	-108.00	198.97	183.59	15.38	12.939	
2,800.00	2,793.02	2,800.09	2,793.02	7.96	8.00	-95.70	220.00	-108.00	199.65	183.99	15.65	12.753	
2,900.00	2,892.64	2,899.70	2,892.64	8.13	8.12	-98.16	220.00	-108.00	200.70	184.74	15.96	12.575	
3,000.00	2,992.26	2,999.32	2,992.26	8.31	8.26	-100.60	220.00	-108.00	202.13	185.84	16.29	12.407	
3,100.00	3,091.88	3,098.94	3,091.88	8.50	8.42	-103.00	220.00	-108.00	203.92	187.27	16.65	12.250	
3,200.00	3,191.50	3,198.56	3,191.50	8.71	8.58	-105.35	220.00	-108.00	206.06	189.04	17.02	12.104	
3,300.00	3,291.12	3,298.18	3,291.12	8.93	8.76	-107.66	220.00	-108.00	208.55	191.13	17.42	11.970	
3,400.00	3,390.74	3,397.80	3,390.74	9.16	8.94	-109.90	220.00	-108.00	211.36	193.52	17.84	11.848	
3,500.00	3,490.36	3,497.42	3,490.36	9.40	9.14	-112.08	220.00	-108.00	214.50	196.22	18.27	11.738	
3,600.00	3,589.98	3,597.04	3,589.98	9.65	9.34	-114.20	220.00	-108.00	217.93	199.21	18.72	11.639	
3,658.82	3,648.58	3,655.64	3,648.58	9.80	9.47	-115.41	220.00	-108.00	220.09	201.09	19.00	11.586	
3,700.00	3,689.62	3,696.68	3,689.62	9.90	9.56	-116.21	220.00	-108.00	221.53	202.34	19.19	11.545	
3,800.00	3,789.46	3,796.53	3,789.46	10.15	9.78	-117.52	220.00	-108.00	224.04	204.38	19.65	11.399	
3,908.82	3,898.26	3,905.32	3,898.26	10.40	10.04	-90.00	220.00	-108.00	225.00	204.84	20.16	11.158	
4,000.00	3,989.44	3,996.50	3,989.44	10.61	10.26	-90.00	220.00	-108.00	225.00	204.40	20.60	10.924	
4,100.00	4,089.44	4,096.50	4,089.44	10.85	10.50	-90.00	220.00	-108.00	225.00	203.92	21.08	10.671	
4,200.00	4,189.44	4,196.50	4,189.44	11.09	10.75	-90.00	220.00	-108.00	225.00	203.41	21.59	10.424	
4,300.00	4,289.44	4,296.50	4,289.44	11.34	11.01	-90.00	220.00	-108.00	225.00	202.90	22.10	10.182	
4,400.00	4,389.44	4,396.50	4,389.44	11.59	11.28	-90.00	220.00	-108.00	225.00	202.38	22.62	9.946	
4,500.00	4,489.44	4,496.50	4,489.44	11.86	11.54	-90.00	220.00	-108.00	225.00	201.84	23.16	9.717	
4,600.00	4,589.44	4,596.50	4,589.44	12.12	11.82	-90.00	220.00	-108.00	225.00	201.30	23.70	9.494	
4,700.00	4,689.44	4,696.50	4,689.44	12.39	12.10	-90.00	220.00	-108.00	225.00	200.75	24.25	9.278	
4,800.00	4,789.44	4,796.50	4,789.44	12.66	12.38	-90.00	220.00	-108.00	225.00	200.19	24.81	9.068	
4,900.00	4,889.44	4,896.50	4,889.44	12.94	12.66	-90.00	220.00	-108.00	225.00	199.62	25.38	8.865	
5,000.00	4,989.44	4,996.50	4,989.44	13.23	12.95	-90.00	220.00	-108.00	225.00	199.04	25.96	8.668	
5,100.00	5,089.44	5,096.50	5,089.44	13.51	13.25	-90.00	220.00	-108.00	225.00	198.46	26.54	8.477	
5,200.00	5,189.44	5,196.50	5,189.44	13.80	13.54	-90.00	220.00	-108.00	225.00	197.87	27.13	8.293	
5,300.00	5,289.44	5,296.50	5,289.44	14.09	13.84	-90.00	220.00	-108.00	225.00	197.27	27.73	8.115	
5,400.00	5,389.44	5,396.50	5,389.44	14.39	14.14	-90.00	220.00	-108.00	225.00	196.67	28.33	7.943	
5,500.00	5,489.44	5,496.50	5,489.44	14.69	14.45	-90.00	220.00	-108.00	225.00	196.07	28.93	7.776	
5,600.00	5,589.44	5,596.50	5,589.44	14.99	14.76	-90.00	220.00	-108.00	225.00	195.46	29.54	7.616	
5,700.00	5,689.44	5,696.50	5,689.44	15.29	15.07	-90.00	220.00	-108.00	225.00	194.84	30.16	7.460	
5,800.00	5,789.44	5,796.50	5,789.44	15.60	15.38	-90.00	220.00	-108.00	225.00	194.22	30.78	7.310	
5,900.00	5,889.44	5,896.50	5,889.44	15.90	15.69	-90.00	220.00	-108.00	225.00	193.59	31.41	7.164	
6,000.00	5,989.44	5,996.50	5,989.44	16.21	16.01	-90.00	220.00	-108.00	225.00	192.97	32.03	7.024	
6,100.00	6,089.44	6,096.50	6,089.44	16.53	16.32	-90.00	220.00	-108.00	225.00	192.33	32.67	6.888	
6,200.00	6,189.44	6,196.50	6,189.44	16.84	16.64	-90.00	220.00	-108.00	225.00	191.70	33.30	6.756	
6,300.00	6,289.44	6,296.50	6,289.44	17.16	16.96	-90.00	220.00	-108.00	225.00	191.06	33.94	6.629	
6,400.00	6,389.44	6,396.50	6,389.44	17.47	17.28	-90.00	220.00	-108.00	225.00	190.42	34.58	6.506	
6,500.00	6,489.44	6,496.50	6,489.44	17.63	17.45	-90.00	220.00	-108.00	225.00	190.09	34.91	6.445	

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





# Pro Directional Anticollision Report



<b>Company:</b>	Matador Resources	<b>Local Co-ordinate Reference:</b>	Well No. 202H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Reference Site:</b>	Pennzoil Federal 32 (112-122-132-202)	<b>MD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	No. 202H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Well_Planner1
<b>Reference Design:</b>	Prelim Plan A	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Pennzoil Federal 32 (112-122-132-202) - No. 112H - OH - Prelim Plan A													Offset Site Error:	0.00 usft
Survey Program: 0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,515.83	6,505.27	6,512.33	6,505.27	17.63	17.46	-90.00		220.00	-108.00	225.00	190.08	34.92	6.443	
6,600.00	6,589.44	6,595.81	6,588.75	17.64	17.46	-90.00		220.00	-108.00	225.00	190.07	34.93	6.441 SF	
6,700.00	6,689.44	6,667.22	6,659.96	17.65	17.48	-90.00		220.00	-112.66	231.55	196.86	34.69	6.675	
6,800.00	6,789.44	6,736.42	6,727.89	17.68	17.52	-90.00		220.00	-125.59	250.28	216.27	34.01	7.360	
6,900.00	6,889.44	6,800.00	6,788.53	17.71	17.57	-90.00		220.01	-144.61	280.40	247.48	32.91	8.519	
7,000.00	6,989.44	6,861.70	6,845.01	17.74	17.64	-90.00		220.01	-169.38	320.74	289.01	31.73	10.108	
7,100.00	7,089.44	6,916.03	6,892.29	17.79	17.73	-90.00		220.02	-196.11	370.01	339.63	30.38	12.180	
7,200.00	7,189.44	6,964.58	6,932.23	17.84	17.85	-90.00		220.02	-223.69	426.88	397.86	29.01	14.713	
7,300.00	7,289.44	7,000.00	6,959.82	17.89	17.95	-90.00		220.03	-245.89	490.24	462.85	27.39	17.896	
7,400.00	7,389.44	7,050.00	6,996.32	17.96	18.13	-90.00		220.03	-280.04	558.73	532.07	26.66	20.960	
7,500.00	7,489.44	7,079.22	7,016.23	18.03	18.28	-89.99		220.04	-301.43	631.67	606.27	25.40	24.865	
7,600.00	7,589.44	7,100.00	7,029.70	18.11	18.39	-89.99		220.04	-317.24	708.42	684.27	24.15	29.329	
7,700.00	7,689.44	7,135.09	7,051.13	18.19	18.61	-89.99		220.04	-345.01	787.96	764.37	23.59	33.398	
7,800.00	7,789.44	7,150.00	7,059.72	18.28	18.71	-89.99		220.05	-357.20	870.26	847.62	22.64	38.433	
7,900.00	7,889.44	7,179.12	7,075.56	18.38	18.95	-89.99		220.05	-381.64	954.49	932.24	22.25	42.901	
8,000.00	7,989.44	7,200.00	7,086.14	18.49	19.12	-89.99		220.06	-399.64	1,040.61	1,018.83	21.78	47.782	
8,100.00	8,089.44	7,200.00	7,086.14	18.60	19.12	-89.99		220.06	-399.64	1,128.51	1,107.51	21.00	53.744	
8,200.00	8,189.44	7,229.34	7,099.89	18.71	19.42	-89.99		220.06	-425.56	1,217.17	1,196.23	20.94	58.136	
8,300.00	8,289.44	7,250.00	7,108.76	18.84	19.63	-89.99		220.06	-444.21	1,307.27	1,286.50	20.77	62.933	
8,400.00	8,389.44	7,250.00	7,108.76	18.97	19.63	-89.99		220.06	-444.21	1,398.25	1,377.91	20.33	68.764	
8,500.00	8,489.44	7,250.00	7,108.76	19.10	19.63	-89.99		220.06	-444.21	1,490.38	1,470.39	20.00	74.535	
8,600.00	8,589.44	7,276.79	7,119.25	19.24	19.95	-89.99		220.07	-468.86	1,582.62	1,562.49	20.12	78.657	
8,700.00	8,689.44	7,300.00	7,127.41	19.39	20.23	-89.99		220.07	-490.59	1,676.04	1,655.82	20.22	82.892	
8,800.00	8,789.44	7,300.00	7,127.41	19.54	20.23	-89.99		220.07	-490.59	1,769.61	1,749.56	20.05	88.262	
8,900.00	8,889.44	7,300.00	7,127.41	19.70	20.23	-89.99		220.07	-490.59	1,863.84	1,843.91	19.93	93.500	
8,912.56	8,902.00	7,300.00	7,127.41	19.72	20.23	-89.99		220.07	-490.59	1,875.72	1,855.80	19.92	94.148	
8,950.00	8,939.41	7,300.00	7,127.41	19.78	20.23	0.00		220.07	-490.59	1,910.77	1,890.89	19.88	96.120	
9,000.00	8,989.10	7,300.00	7,127.41	19.85	20.23	0.00		220.07	-490.59	1,956.28	1,936.48	19.79	98.832	





# Pro Directional Anticollision Report



**Company:** Matador Resources  
**Project:** Eddy County, NM  
**Reference Site:** Pennzoil Federal 32 (112-122-132-202)  
**Site Error:** 0.00 usft  
**Reference Well:** No. 202H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Prelim Plan A

**Local Co-ordinate Reference:** Well No. 202H  
**TVD Reference:** Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))  
**MD Reference:** Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** Well\_Planner1  
**Offset TVD Reference:** Offset Datum

Offset Design Pennzoil Federal 32 (112-122-132-202) - No. 122H - OH - Prelim Plan A												Offset Site Error:	0.00 usft
Survey Program: 0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG												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	0.00	60.00	0.00	60.00				
100.00	100.00	100.00	100.00	0.13	0.13	0.00	60.00	0.00	60.00	59.74	0.26	234.094	
200.00	200.00	200.00	200.00	0.49	0.49	0.00	60.00	0.00	60.00	59.03	0.97	61.649	
300.00	300.00	300.00	300.00	0.85	0.85	0.00	60.00	0.00	60.00	58.31	1.69	35.499	
400.00	400.00	400.00	400.00	1.20	1.20	0.00	60.00	0.00	60.00	57.59	2.41	24.926	
500.00	500.00	500.00	500.00	1.56	1.56	0.00	60.00	0.00	60.00	56.88	3.12	19.206	
600.00	600.00	600.00	600.00	1.92	1.92	0.00	60.00	0.00	60.00	56.16	3.84	15.621 CC, ES	
700.00	700.00	697.95	697.93	2.28	2.27	-0.31	61.64	-0.34	61.68	57.12	4.55	13.542	
800.00	800.00	795.68	795.52	2.64	2.62	-1.16	66.54	-1.35	66.71	61.44	5.27	12.661	
900.00	899.98	894.15	893.67	3.00	2.98	-30.91	74.45	-2.98	73.28	67.30	5.98	12.259	
1,000.00	999.84	993.98	993.11	3.35	3.34	-33.83	82.97	-4.74	77.51	70.83	6.69	11.589	
1,050.00	1,049.68	1,043.90	1,042.84	3.54	3.53	-35.73	87.23	-5.62	78.64	71.59	7.05	11.160	
1,100.00	1,099.49	1,093.81	1,092.57	3.71	3.71	-37.77	91.49	-6.49	79.50	72.10	7.40	10.738	
1,200.00	1,199.11	1,193.64	1,192.01	4.08	4.08	-41.72	100.01	-8.25	81.53	73.40	8.12	10.035	
1,300.00	1,298.73	1,293.46	1,291.46	4.44	4.46	-45.46	108.53	-10.01	83.92	75.07	8.85	9.485	
1,400.00	1,398.35	1,393.29	1,390.90	4.81	4.83	-48.98	117.05	-11.77	86.65	77.08	9.58	9.049	
1,500.00	1,497.97	1,493.11	1,490.35	5.18	5.21	-52.27	125.57	-13.52	89.69	79.38	10.31	8.703	
1,600.00	1,597.59	1,592.94	1,589.79	5.56	5.58	-55.34	134.09	-15.28	93.00	81.96	11.04	8.424	
1,700.00	1,697.21	1,692.76	1,689.24	5.93	5.96	-58.19	142.61	-17.04	96.57	84.79	11.78	8.200	
1,800.00	1,796.83	1,792.59	1,788.68	6.30	6.33	-60.83	151.14	-18.80	100.35	87.84	12.52	8.018	
1,900.00	1,896.45	1,892.41	1,888.13	6.68	6.71	-63.28	159.66	-20.55	104.33	91.08	13.26	7.869	
2,000.00	1,996.07	1,992.24	1,987.57	7.06	7.09	-65.54	168.18	-22.31	108.49	94.49	14.00	7.748	
2,100.00	2,095.69	2,092.06	2,087.02	7.26	7.31	-67.63	176.70	-24.07	112.81	98.40	14.41	7.828	
2,200.00	2,195.31	2,191.89	2,186.46	7.30	7.37	-69.57	185.22	-25.83	117.26	102.76	14.50	8.088	
2,300.00	2,294.93	2,291.71	2,285.91	7.37	7.44	-71.36	193.74	-27.58	121.84	107.23	14.61	8.339	
2,400.00	2,394.55	2,391.54	2,385.36	7.45	7.52	-73.02	202.26	-29.34	126.53	111.76	14.76	8.570	
2,500.00	2,494.17	2,492.03	2,485.47	7.55	7.62	-74.59	210.79	-31.10	131.27	116.31	14.96	8.777	
2,600.00	2,593.78	2,595.76	2,588.99	7.67	7.74	-76.72	217.18	-32.42	134.20	119.01	15.20	8.832	
2,700.00	2,693.40	2,699.32	2,692.51	7.81	7.85	-79.75	219.89	-32.98	134.52	119.06	15.46	8.703	
2,800.00	2,793.02	2,799.84	2,793.02	7.96	7.97	-83.43	220.00	-33.00	133.32	117.57	15.75	8.466	
2,900.00	2,892.64	2,899.46	2,892.64	8.13	8.09	-87.16	220.00	-33.00	132.60	116.53	16.07	8.253	
2,975.79	2,968.14	2,974.96	2,968.14	8.27	8.20	-90.00	220.00	-33.00	132.44	116.11	16.33	8.110	
3,000.00	2,992.26	2,999.08	2,992.26	8.31	8.23	-90.91	220.00	-33.00	132.45	116.04	16.41	8.070	
3,100.00	3,091.88	3,098.70	3,091.88	8.50	8.39	-94.66	220.00	-33.00	132.88	116.10	16.78	7.920	
3,200.00	3,191.50	3,198.32	3,191.50	8.71	8.55	-98.36	220.00	-33.00	133.87	116.71	17.16	7.800	
3,300.00	3,291.12	3,297.94	3,291.12	8.93	8.73	-102.00	220.00	-33.00	135.42	117.85	17.56	7.710	
3,400.00	3,390.74	3,397.56	3,390.74	9.16	8.91	-105.54	220.00	-33.00	137.50	119.52	17.98	7.648	
3,500.00	3,490.36	3,497.18	3,490.36	9.40	9.11	-108.97	220.00	-33.00	140.10	121.69	18.41	7.611	
3,600.00	3,589.98	3,596.79	3,589.98	9.65	9.32	-112.26	220.00	-33.00	143.18	124.33	18.85	7.596	
3,658.82	3,648.58	3,655.39	3,648.58	9.80	9.45	-114.12	220.00	-33.00	145.20	126.09	19.12	7.596	
3,700.00	3,689.62	3,696.44	3,689.62	9.90	9.54	-115.32	220.00	-33.00	146.58	127.28	19.30	7.594	
3,800.00	3,789.46	3,796.28	3,789.46	10.15	9.76	-117.29	220.00	-33.00	149.04	129.28	19.76	7.543	
3,908.82	3,898.26	3,905.08	3,898.26	10.40	10.01	-90.00	220.00	-33.00	150.00	129.74	20.26	7.403	
4,000.00	3,989.44	3,996.25	3,989.44	10.61	10.23	-90.00	220.00	-33.00	150.00	129.31	20.69	7.248	
4,100.00	4,089.44	4,096.25	4,089.44	10.85	10.48	-90.00	220.00	-33.00	150.00	128.82	21.18	7.082	
4,200.00	4,189.44	4,196.25	4,189.44	11.09	10.73	-90.00	220.00	-33.00	150.00	128.32	21.68	6.919	
4,300.00	4,289.44	4,296.25	4,289.44	11.34	10.99	-90.00	220.00	-33.00	150.00	127.81	22.19	6.760	
4,400.00	4,389.44	4,396.25	4,389.44	11.59	11.26	-90.00	220.00	-33.00	150.00	127.29	22.71	6.604	
4,500.00	4,489.44	4,496.25	4,489.44	11.86	11.53	-90.00	220.00	-33.00	150.00	126.76	23.24	6.453	
4,600.00	4,589.44	4,596.25	4,589.44	12.12	11.80	-90.00	220.00	-33.00	150.00	126.21	23.79	6.306	
4,700.00	4,689.44	4,696.25	4,689.44	12.39	12.08	-90.00	220.00	-33.00	150.00	125.66	24.34	6.163	

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





# Pro Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well No. 202H
Project:	Eddy County, NM	TVD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Reference Site:	Pennzoil Federal 32 (112-122-132-202)	MD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	No. 202H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Well_Planner1
Reference Design:	Prelim Plan A	Offset TVD Reference:	Offset Datum

Offset Design Pennzoil Federal 32 (112-122-132-202) - No. 122H - OH - Prelim Plan A													Offset Site Error:	0.00 usft
Survey Program: 0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG													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		
4,800.00	4,789.44	4,796.25	4,789.44	12.66	12.36	-90.00	220.00	-33.00	150.00	125.10	24.90	6.025		
4,900.00	4,889.44	4,896.25	4,889.44	12.94	12.65	-90.00	220.00	-33.00	150.00	124.54	25.46	5.891		
5,000.00	4,989.44	4,996.25	4,989.44	13.23	12.94	-90.00	220.00	-33.00	150.00	123.96	26.04	5.760		
5,100.00	5,089.44	5,096.25	5,089.44	13.51	13.23	-90.00	220.00	-33.00	150.00	123.38	26.62	5.635		
5,200.00	5,189.44	5,196.25	5,189.44	13.80	13.53	-90.00	220.00	-33.00	150.00	122.79	27.21	5.513		
5,300.00	5,289.44	5,296.25	5,289.44	14.09	13.83	-90.00	220.00	-33.00	150.00	122.20	27.80	5.395		
5,400.00	5,389.44	5,396.25	5,389.44	14.39	14.13	-90.00	220.00	-33.00	150.00	121.60	28.40	5.281		
5,500.00	5,489.44	5,496.25	5,489.44	14.69	14.44	-90.00	220.00	-33.00	150.00	120.99	29.01	5.171		
5,600.00	5,589.44	5,596.25	5,589.44	14.99	14.74	-90.00	220.00	-33.00	150.00	120.38	29.62	5.064		
5,700.00	5,689.44	5,696.25	5,689.44	15.29	15.05	-90.00	220.00	-33.00	150.00	119.77	30.23	4.961		
5,800.00	5,789.44	5,796.25	5,789.44	15.60	15.37	-90.00	220.00	-33.00	150.00	119.15	30.85	4.862		
5,900.00	5,889.44	5,896.25	5,889.44	15.90	15.68	-90.00	220.00	-33.00	150.00	118.52	31.48	4.765		
6,000.00	5,989.44	5,996.25	5,989.44	16.21	15.99	-90.00	220.00	-33.00	150.00	117.90	32.10	4.672		
6,100.00	6,089.44	6,096.25	6,089.44	16.53	16.31	-90.00	220.00	-33.00	150.00	117.27	32.73	4.582		
6,200.00	6,189.44	6,196.25	6,189.44	16.84	16.63	-90.00	220.00	-33.00	150.00	116.63	33.37	4.495		
6,300.00	6,289.44	6,296.25	6,289.44	17.16	16.95	-90.00	220.00	-33.00	150.00	115.99	34.01	4.411		
6,400.00	6,389.44	6,396.25	6,389.44	17.47	17.27	-90.00	220.00	-33.00	150.00	115.35	34.65	4.329		
6,500.00	6,489.44	6,496.25	6,489.44	17.63	17.44	-90.00	220.00	-33.00	150.00	115.02	34.98	4.289		
6,600.00	6,589.44	6,596.25	6,589.44	17.64	17.46	-90.00	220.00	-33.00	150.00	115.00	35.00	4.286		
6,700.00	6,689.44	6,696.25	6,689.44	17.65	17.47	-90.00	220.00	-33.00	150.00	114.97	35.03	4.282		
6,800.00	6,789.44	6,796.25	6,789.44	17.68	17.49	-90.00	220.00	-33.00	150.00	114.93	35.07	4.277		
6,900.00	6,889.44	6,896.25	6,889.44	17.71	17.52	-90.00	220.00	-33.00	150.00	114.87	35.13	4.270		
7,000.00	6,989.44	6,996.25	6,989.44	17.74	17.56	-90.00	220.00	-33.00	150.00	114.80	35.20	4.261		
7,100.00	7,089.44	7,096.25	7,089.44	17.79	17.60	-90.00	220.00	-33.00	150.00	114.71	35.29	4.251		
7,200.00	7,189.44	7,196.25	7,189.44	17.84	17.65	-90.00	220.00	-33.00	150.00	114.61	35.39	4.238		
7,300.00	7,289.44	7,296.25	7,289.44	17.89	17.71	-90.00	220.00	-33.00	150.00	114.49	35.51	4.225 SF		
7,400.00	7,389.44	7,391.03	7,374.12	17.96	17.77	-90.00	220.00	-35.85	153.62	118.17	35.45	4.333		
7,500.00	7,489.44	7,457.97	7,449.93	18.03	17.83	-90.00	220.00	-48.63	170.28	135.41	34.87	4.883		
7,600.00	7,589.44	7,530.30	7,519.04	18.11	17.90	-90.00	220.01	-69.81	199.63	165.76	33.87	5.895		
7,700.00	7,689.44	7,600.00	7,582.61	18.19	17.99	-90.00	220.01	-98.29	240.33	207.53	32.80	7.327		
7,800.00	7,789.44	7,650.00	7,625.85	18.28	18.08	-90.00	220.02	-123.37	290.75	259.85	30.90	9.410		
7,900.00	7,889.44	7,700.00	7,666.73	18.38	18.18	-90.00	220.02	-152.12	349.32	319.89	29.43	11.868		
8,000.00	7,989.44	7,750.00	7,704.96	18.49	18.32	-89.99	220.03	-184.33	414.40	386.02	28.39	14.599		
8,100.00	8,089.44	7,800.00	7,740.23	18.60	18.52	-89.99	220.03	-219.75	485.13	457.46	27.66	17.536		
8,200.00	8,189.44	7,827.34	7,758.17	18.71	18.65	-89.99	220.04	-240.38	560.10	533.76	26.33	21.269		
8,300.00	8,289.44	7,850.00	7,772.28	18.84	18.77	-89.99	220.04	-258.10	638.87	613.67	25.20	25.354		
8,400.00	8,389.44	7,883.97	7,792.09	18.97	19.00	-89.99	220.05	-285.69	720.41	695.70	24.71	29.160		
8,500.00	8,489.44	7,900.00	7,800.86	19.10	19.10	-89.99	220.05	-299.11	804.54	780.65	23.89	33.674		
8,600.00	8,589.44	7,927.78	7,815.17	19.24	19.34	-89.99	220.05	-322.92	890.52	866.94	23.58	37.771		
8,700.00	8,689.44	7,950.00	7,825.77	19.39	19.52	-89.99	220.06	-342.45	978.27	955.02	23.26	42.066		
8,800.00	8,789.44	7,950.00	7,825.77	19.54	19.52	-89.99	220.06	-342.45	1,067.59	1,044.99	22.60	47.233		
8,900.00	8,889.44	7,976.90	7,837.57	19.70	19.80	-89.99	220.06	-366.61	1,157.72	1,135.12	22.60	51.235		
8,912.56	8,902.00	7,978.63	7,838.29	19.72	19.82	-89.99	220.06	-368.18	1,169.14	1,146.57	22.57	51.801		
8,950.00	8,939.41	8,000.00	7,846.80	19.78	20.03	0.00	220.07	-387.79	1,203.08	1,180.32	22.76	52.864		
9,000.00	8,989.10	8,000.00	7,846.80	19.85	20.03	0.00	220.07	-387.79	1,246.19	1,223.72	22.47	55.460		
9,050.00	9,038.12	8,000.00	7,846.80	19.92	20.03	0.00	220.07	-387.79	1,287.55	1,265.39	22.16	58.094		
9,100.00	9,086.11	8,000.00	7,846.80	19.98	20.03	0.00	220.07	-387.79	1,327.01	1,305.17	21.85	60.746		
9,150.00	9,132.70	8,020.04	7,854.10	20.05	20.28	0.00	220.07	-406.45	1,363.96	1,342.15	21.81	62.540		
9,200.00	9,177.53	8,030.59	7,857.68	20.11	20.41	0.00	220.07	-416.38	1,398.63	1,377.01	21.62	64.704		
9,250.00	9,220.27	8,050.00	7,863.79	20.18	20.64	0.00	220.07	-434.80	1,430.83	1,409.30	21.53	66.455		

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





# Pro Directional Anticollision Report



<b>Company:</b>	Matador Resources	<b>Local Co-ordinate Reference:</b>	Well No. 202H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Reference Site:</b>	Pennzoil Federal 32 (112-122-132-202)	<b>MD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	No. 202H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Well_Planner1
<b>Reference Design:</b>	Prelim Plan A	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Pennzoil Federal 32 (112-122-132-202) - No. 122H - OH - Prelim Plan A													Offset Site Error:	0.00 usft
Survey Program: 0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
9,300.00	9,260.58	8,050.00	7,863.79	20.25	20.64	0.00	220.07	-434.80	1,460.22	1,439.03	21.19	68.924		
9,350.00	9,298.16	8,050.00	7,863.79	20.34	20.64	0.00	220.07	-434.80	1,487.17	1,466.31	20.86	71.296		
9,400.00	9,332.73	8,077.08	7,871.27	20.49	21.02	0.00	220.08	-460.82	1,510.73	1,489.88	20.86	72.426		
9,450.00	9,364.02	8,100.00	7,876.63	20.70	21.34	0.00	220.08	-483.10	1,531.76	1,510.95	20.81	73.613		
9,500.00	9,391.80	8,100.00	7,876.63	20.99	21.34	0.00	220.08	-483.10	1,549.51	1,528.98	20.53	75.492		
9,550.00	9,415.84	8,100.00	7,876.63	21.36	21.34	0.00	220.08	-483.10	1,564.58	1,544.30	20.28	77.138		
9,600.00	9,435.98	8,127.99	7,881.96	21.80	21.78	0.00	220.09	-510.58	1,576.00	1,555.68	20.33	77.531		
9,650.00	9,452.05	8,150.00	7,885.21	22.34	22.13	0.00	220.09	-532.35	1,584.63	1,564.30	20.33	77.937		
9,700.00	9,463.94	8,150.00	7,885.21	22.96	22.13	0.00	220.09	-532.35	1,589.91	1,569.72	20.19	78.754		
9,750.00	9,471.55	8,150.00	7,885.21	23.65	22.13	0.00	220.09	-532.35	1,592.40	1,572.30	20.10	79.222		
9,800.00	9,474.82	8,180.73	7,888.34	24.42	22.66	0.00	220.10	-562.92	1,590.98	1,570.73	20.25	78.569		
9,812.56	9,474.96	8,200.00	7,889.46	24.62	22.99	0.00	220.10	-582.15	1,590.51	1,570.15	20.36	78.115		
9,900.00	9,474.96	8,200.00	7,889.46	26.13	22.99	0.00	220.10	-582.15	1,585.97	1,565.58	20.39	77.782		
10,000.00	9,474.96	8,261.27	7,889.96	28.06	24.14	0.00	220.11	-643.41	1,585.00	1,564.14	20.86	75.967		
10,100.00	9,474.96	8,361.27	7,889.96	30.15	26.17	0.00	220.13	-743.41	1,585.00	1,563.42	21.58	73.431		
10,200.00	9,474.96	8,461.27	7,889.96	32.38	28.35	0.00	220.15	-843.41	1,585.00	1,562.61	22.39	70.785		
10,300.00	9,474.96	8,561.27	7,889.96	34.72	30.67	0.00	220.17	-943.41	1,585.00	1,561.72	23.28	68.090		
10,400.00	9,474.96	8,661.27	7,889.96	37.16	33.09	0.00	220.19	-1,043.41	1,585.00	1,560.77	24.23	65.403		
10,500.00	9,474.96	8,761.27	7,889.96	39.66	35.60	0.00	220.21	-1,143.41	1,585.00	1,559.75	25.25	62.766		
10,600.00	9,474.96	8,861.27	7,889.96	42.23	38.18	0.00	220.23	-1,243.41	1,585.00	1,558.68	26.32	60.209		
10,700.00	9,474.97	8,961.27	7,889.96	44.85	40.81	0.00	220.24	-1,343.41	1,585.00	1,557.56	27.45	57.752		
10,800.00	9,474.97	9,061.27	7,889.97	47.51	43.48	0.00	220.26	-1,443.41	1,585.00	1,556.39	28.61	55.406		
10,900.00	9,474.97	9,161.27	7,889.97	50.20	46.19	0.00	220.28	-1,543.41	1,585.00	1,555.19	29.81	53.176		
11,000.00	9,474.97	9,261.27	7,889.97	52.92	48.93	0.00	220.30	-1,643.41	1,585.00	1,553.96	31.04	51.066		
11,100.00	9,474.97	9,361.27	7,889.97	55.67	51.70	0.00	220.32	-1,743.41	1,585.00	1,552.70	32.30	49.073		
11,200.00	9,474.97	9,461.27	7,889.97	58.44	54.48	0.00	220.34	-1,843.41	1,585.00	1,551.42	33.59	47.193		
11,300.00	9,474.97	9,561.27	7,889.97	61.23	57.29	0.00	220.36	-1,943.41	1,585.00	1,550.11	34.89	45.422		
11,400.00	9,474.97	9,661.27	7,889.97	64.04	60.11	0.00	220.37	-2,043.41	1,585.00	1,548.78	36.22	43.755		
11,500.00	9,474.97	9,761.27	7,889.97	66.86	62.95	0.00	220.39	-2,143.41	1,585.00	1,547.43	37.57	42.185		
11,600.00	9,474.97	9,861.27	7,889.97	69.69	65.80	0.00	220.41	-2,243.41	1,585.00	1,546.06	38.94	40.707		
11,700.00	9,474.97	9,961.27	7,889.97	72.54	68.66	0.00	220.43	-2,343.41	1,585.00	1,544.69	40.32	39.315		
11,800.00	9,474.97	10,061.27	7,889.97	75.39	71.52	0.00	220.45	-2,443.41	1,585.00	1,543.29	41.71	38.002		
11,900.00	9,474.98	10,161.27	7,889.98	78.25	74.40	0.00	220.47	-2,543.41	1,585.00	1,541.89	43.11	36.764		
12,000.00	9,474.98	10,261.27	7,889.98	81.12	77.28	0.00	220.49	-2,643.41	1,585.00	1,540.47	44.53	35.596		
12,100.00	9,474.98	10,361.27	7,889.98	84.00	80.17	0.00	220.50	-2,743.41	1,585.00	1,539.05	45.95	34.492		
12,200.00	9,474.98	10,461.27	7,889.98	86.89	83.07	0.00	220.52	-2,843.41	1,585.00	1,537.61	47.39	33.448		
12,300.00	9,474.98	10,561.27	7,889.98	89.78	85.97	0.00	220.54	-2,943.41	1,585.00	1,536.17	48.83	32.461		
12,400.00	9,474.98	10,661.27	7,889.98	92.67	88.88	0.00	220.56	-3,043.41	1,585.00	1,534.72	50.28	31.525		
12,500.00	9,474.98	10,761.27	7,889.98	95.57	91.79	0.00	220.58	-3,143.41	1,585.00	1,533.27	51.73	30.637		
12,600.00	9,474.98	10,861.27	7,889.98	98.48	94.70	0.00	220.60	-3,243.41	1,585.00	1,531.80	53.20	29.795		
12,700.00	9,474.98	10,961.27	7,889.98	101.38	97.62	0.00	220.62	-3,343.41	1,585.00	1,530.33	54.67	28.994		
12,800.00	9,474.98	11,061.27	7,889.98	104.30	100.54	0.00	220.64	-3,443.41	1,585.00	1,528.86	56.14	28.233		
12,900.00	9,474.98	11,161.27	7,889.98	107.21	103.46	0.00	220.65	-3,543.41	1,585.00	1,527.38	57.62	27.508		
13,000.00	9,474.99	11,261.27	7,889.98	110.13	106.39	0.00	220.67	-3,643.41	1,585.00	1,525.90	59.10	26.817		
13,100.00	9,474.99	11,361.27	7,889.99	113.05	109.31	0.00	220.69	-3,743.41	1,585.00	1,524.41	60.59	26.159		
13,200.00	9,474.99	11,461.27	7,889.99	115.97	112.25	0.00	220.71	-3,843.41	1,585.00	1,522.92	62.08	25.530		
13,300.00	9,474.99	11,561.27	7,889.99	118.90	115.18	0.00	220.73	-3,943.41	1,585.00	1,521.42	63.58	24.930		
13,400.00	9,474.99	11,661.27	7,889.99	121.83	118.11	0.00	220.75	-4,043.41	1,585.00	1,519.92	65.08	24.355		
13,500.00	9,474.99	11,761.27	7,889.99	124.76	121.05	0.00	220.77	-4,143.41	1,585.00	1,518.42	66.58	23.806		
13,600.00	9,474.99	11,861.27	7,889.99	127.69	123.99	0.00	220.78	-4,243.41	1,585.00	1,516.91	68.09	23.279		
13,700.00	9,474.99	11,961.27	7,889.99	130.62	126.93	0.00	220.80	-4,343.41	1,585.00	1,515.41	69.59	22.775		

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



# Pro Directional Anticollision Report



<b>Company:</b>	Matador Resources	<b>Local Co-ordinate Reference:</b>	Well No. 202H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Pat809))
<b>Reference Site:</b>	Pennzoil Federal 32 (112-122-132-202)	<b>MD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Pat809))
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	No. 202H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Well_Planner1
<b>Reference Design:</b>	Prelim Plan A	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design      Pennzoil Federal 32 (112-122-132-202) - No. 122H - OH - Prelim Plan A													Offset Site Error:      0.00 usft	
Survey Program:      0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG													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		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
							+N/-S (usft)	+E/-W (usft)						
13,800.00	9,474.99	12,061.27	7,889.99	133.56	129.87	0.00	220.82	-4,443.41	1,585.00	1,513.90	71.10	22.291		
13,900.00	9,474.99	12,161.27	7,889.99	136.50	132.81	0.00	220.84	-4,543.41	1,585.00	1,512.38	72.62	21.827		
14,000.00	9,474.99	12,261.27	7,889.99	139.43	135.76	0.00	220.86	-4,643.41	1,585.00	1,510.87	74.13	21.380		
14,100.00	9,474.99	12,361.27	7,889.99	142.37	138.70	0.00	220.88	-4,743.41	1,585.00	1,509.35	75.65	20.951		
14,200.00	9,475.00	12,461.27	7,890.00	145.32	141.65	0.00	220.90	-4,843.41	1,585.00	1,507.83	77.17	20.539		
14,300.00	9,475.00	12,561.27	7,890.00	148.26	144.60	0.00	220.91	-4,943.41	1,585.00	1,506.31	78.69	20.142		
14,400.00	9,475.00	12,661.27	7,890.00	151.20	147.54	0.00	220.93	-5,043.41	1,585.00	1,504.78	80.22	19.759		
14,500.00	9,475.00	12,761.27	7,890.00	154.15	150.49	0.00	220.95	-5,143.41	1,585.00	1,503.26	81.74	19.390		
14,600.00	9,475.00	12,861.27	7,890.00	157.09	153.44	0.00	220.97	-5,243.41	1,585.00	1,501.73	83.27	19.035		
14,700.00	9,475.00	12,961.27	7,890.00	160.04	156.40	0.00	220.99	-5,343.41	1,585.00	1,500.20	84.80	18.692		
14,739.25	9,475.00	13,000.52	7,890.00	161.20	157.55	0.00	221.00	-5,382.66	1,585.00	1,499.60	85.40	18.560		
14,757.60	9,475.00	13,018.86	7,890.00	161.74	158.10	0.00	221.00	-5,401.00	1,585.00	1,499.32	85.68	18.500		





# Pro Directional Anticollision Report



<b>Company:</b>	Matador Resources	<b>Local Co-ordinate Reference:</b>	Well No. 202H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Reference Site:</b>	Pennzoil Federal 32 (112-122-132-202)	<b>MD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	No. 202H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Well_Planner1
<b>Reference Design:</b>	Prelim Plan A	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Pennzoil Federal 32 (112-122-132-202) - No. 132H - OH - Prelim Plan A												Offset Site Error:	0.00 usft
Survey Program: 0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG												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	0.00	30.00	0.00	30.00				
100.00	100.00	100.00	100.00	0.13	0.13	0.00	30.00	0.00	30.00	29.74	0.26	117.047	
200.00	200.00	200.00	200.00	0.49	0.49	0.00	30.00	0.00	30.00	29.03	0.97	30.825	
300.00	300.00	300.00	300.00	0.85	0.85	0.00	30.00	0.00	30.00	28.31	1.69	17.749	
400.00	400.00	400.00	400.00	1.20	1.20	0.00	30.00	0.00	30.00	27.59	2.41	12.463	
500.00	500.00	500.00	500.00	1.56	1.56	0.00	30.00	0.00	30.00	26.88	3.12	9.603	
600.00	600.00	600.00	600.00	1.92	1.92	0.00	30.00	0.00	30.00	26.16	3.84	7.810	
700.00	700.00	700.00	700.00	2.28	2.28	0.00	30.00	0.00	30.00	25.44	4.56	6.582 CC, ES	
800.00	800.00	798.95	798.93	2.64	2.63	0.67	31.67	0.37	31.69	26.42	5.27	6.009	
900.00	899.98	897.76	897.60	3.00	2.99	-26.89	36.66	1.47	35.21	29.22	5.99	5.882	
1,000.00	999.84	997.05	996.55	3.35	3.35	-27.96	44.65	3.24	38.63	31.93	6.70	5.769	
1,050.00	1,049.68	1,047.03	1,046.35	3.54	3.53	-29.26	48.90	4.18	39.43	32.38	7.05	5.590	
1,100.00	1,099.49	1,097.02	1,096.14	3.71	3.71	-30.84	53.16	5.12	39.88	32.47	7.41	5.380	
1,200.00	1,199.11	1,196.99	1,195.73	4.08	4.08	-33.88	61.66	7.00	40.86	32.73	8.13	5.024	
1,300.00	1,298.73	1,296.96	1,295.32	4.44	4.45	-36.77	70.17	8.88	41.95	33.09	8.86	4.736	
1,400.00	1,398.35	1,396.93	1,394.92	4.81	4.82	-39.50	78.68	10.76	43.14	33.56	9.59	4.500	
1,500.00	1,497.97	1,496.91	1,494.51	5.18	5.19	-42.09	87.19	12.64	44.43	34.11	10.32	4.306	
1,600.00	1,597.59	1,596.88	1,594.10	5.56	5.57	-44.52	95.69	14.52	45.80	34.75	11.05	4.143	
1,700.00	1,697.21	1,696.85	1,693.69	5.93	5.94	-46.81	104.20	16.40	47.25	35.46	11.79	4.007	
1,800.00	1,796.83	1,796.82	1,793.28	6.30	6.32	-48.96	112.71	18.28	48.77	36.24	12.53	3.891	
1,900.00	1,896.45	1,896.80	1,892.88	6.68	6.70	-50.98	121.22	20.16	50.35	37.08	13.28	3.793	
2,000.00	1,996.07	1,996.77	1,992.47	7.06	7.07	-52.87	129.73	22.04	52.00	37.98	14.02	3.708	
2,100.00	2,095.69	2,096.74	2,092.06	7.26	7.28	-54.64	138.23	23.93	53.69	39.27	14.42	3.723	
2,200.00	2,195.31	2,196.71	2,191.65	7.30	7.34	-56.31	146.74	25.81	55.44	40.93	14.50	3.823	
2,300.00	2,294.93	2,296.68	2,291.24	7.37	7.40	-57.87	155.25	27.69	57.22	42.61	14.62	3.915	
2,400.00	2,394.55	2,396.66	2,390.83	7.45	7.49	-59.33	163.76	29.57	59.05	44.28	14.77	3.998	
2,500.00	2,494.17	2,496.63	2,490.43	7.55	7.59	-60.71	172.26	31.45	60.92	45.95	14.96	4.071	
2,600.00	2,593.78	2,596.60	2,590.02	7.67	7.71	-62.01	180.77	33.33	62.81	47.62	15.19	4.135	
2,700.00	2,693.40	2,696.57	2,689.61	7.81	7.85	-63.22	189.28	35.21	64.74	49.29	15.46	4.189	
2,800.00	2,793.02	2,796.55	2,789.20	7.96	8.00	-64.37	197.79	37.09	66.70	50.94	15.75	4.234	
2,900.00	2,892.64	2,896.52	2,888.79	8.13	8.17	-65.45	206.30	38.97	68.68	52.60	16.08	4.270	
3,000.00	2,992.26	2,997.49	2,989.44	8.31	8.34	-66.95	214.17	40.71	70.23	53.78	16.45	4.269	
3,100.00	3,091.88	3,098.88	3,090.71	8.50	8.52	-70.58	218.81	41.74	69.87	53.02	16.85	4.146	
3,200.00	3,191.50	3,199.68	3,191.50	8.71	8.69	-76.73	220.00	42.00	68.05	50.76	17.29	3.936	
3,300.00	3,291.12	3,299.30	3,291.12	8.93	8.86	-84.02	220.00	42.00	66.58	48.85	17.74	3.754	
3,379.84	3,370.66	3,378.84	3,370.66	9.11	9.01	-90.00	220.00	42.00	66.22	48.12	18.10	3.659	
3,400.00	3,390.74	3,398.92	3,390.74	9.16	9.05	-91.51	220.00	42.00	66.24	48.06	18.18	3.643	
3,500.00	3,490.36	3,498.54	3,490.36	9.40	9.24	-98.95	220.00	42.00	67.04	48.42	18.62	3.601	
3,600.00	3,589.98	3,598.16	3,589.98	9.65	9.45	-106.10	220.00	42.00	68.94	49.90	19.04	3.620	
3,658.82	3,648.58	3,656.76	3,648.58	9.80	9.57	-110.09	220.00	42.00	70.54	51.25	19.29	3.657	
3,700.00	3,689.62	3,697.80	3,689.62	9.90	9.66	-112.58	220.00	42.00	71.74	52.28	19.46	3.687	
3,800.00	3,789.46	3,797.64	3,789.46	10.15	9.88	-116.58	220.00	42.00	74.05	54.17	19.88	3.724	
3,908.82	3,898.26	3,906.44	3,898.26	10.40	10.13	-90.00	220.00	42.00	75.00	54.63	20.37	3.681	
4,000.00	3,989.44	3,997.62	3,989.44	10.61	10.35	-90.00	220.00	42.00	75.00	54.20	20.80	3.605	
4,100.00	4,089.44	4,097.62	4,089.44	10.85	10.59	-90.00	220.00	42.00	75.00	53.71	21.29	3.524	
4,200.00	4,189.44	4,197.62	4,189.44	11.09	10.84	-90.00	220.00	42.00	75.00	53.22	21.78	3.443	
4,300.00	4,289.44	4,297.62	4,289.44	11.34	11.10	-90.00	220.00	42.00	75.00	52.71	22.29	3.365	
4,400.00	4,389.44	4,397.62	4,389.44	11.59	11.36	-90.00	220.00	42.00	75.00	52.19	22.81	3.288	
4,500.00	4,489.44	4,497.62	4,489.44	11.86	11.62	-90.00	220.00	42.00	75.00	51.66	23.34	3.214	
4,600.00	4,589.44	4,597.62	4,589.44	12.12	11.90	-90.00	220.00	42.00	75.00	51.12	23.88	3.141	
4,700.00	4,689.44	4,697.62	4,689.44	12.39	12.17	-90.00	220.00	42.00	75.00	50.57	24.43	3.071	

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





# Pro Directional Anticollision Report



<b>Company:</b>	Matador Resources	<b>Local Co-ordinate Reference:</b>	Well No. 202H
<b>Project:</b>	Eddy County, NM	<b>TVD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Reference Site:</b>	Pennzoil Federal 32 (112-122-132-202)	<b>MD Reference:</b>	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	No. 202H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Well_Planner1
<b>Reference Design:</b>	Prelim Plan A	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Pennzoil Federal 32 (112-122-132-202) - No. 132H - OH - Prelim Plan A													Offset Site Error: 0.00 usft
Survey Program: 0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG													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	
4,800.00	4,789.44	4,797.62	4,789.44	12.66	12.45	-90.00	220.00	42.00	75.00	50.02	24.98	3.002	
4,900.00	4,889.44	4,897.62	4,889.44	12.94	12.74	-90.00	220.00	42.00	75.00	49.45	25.55	2.936	
5,000.00	4,989.44	4,997.62	4,989.44	13.23	13.02	-90.00	220.00	42.00	75.00	48.88	26.12	2.871	
5,100.00	5,089.44	5,097.62	5,089.44	13.51	13.32	-90.00	220.00	42.00	75.00	48.30	26.70	2.809	
5,200.00	5,189.44	5,197.62	5,189.44	13.80	13.61	-90.00	220.00	42.00	75.00	47.71	27.29	2.749	
5,300.00	5,289.44	5,297.62	5,289.44	14.09	13.91	-90.00	220.00	42.00	75.00	47.12	27.88	2.690	
5,400.00	5,389.44	5,397.62	5,389.44	14.39	14.21	-90.00	220.00	42.00	75.00	46.52	28.48	2.634	
5,500.00	5,489.44	5,497.62	5,489.44	14.69	14.51	-90.00	220.00	42.00	75.00	45.92	29.08	2.579	
5,600.00	5,589.44	5,597.62	5,589.44	14.99	14.82	-90.00	220.00	42.00	75.00	45.31	29.69	2.526	
5,700.00	5,689.44	5,697.62	5,689.44	15.29	15.12	-90.00	220.00	42.00	75.00	44.70	30.30	2.475	
5,800.00	5,789.44	5,797.62	5,789.44	15.60	15.43	-90.00	220.00	42.00	75.00	44.08	30.92	2.426	
5,900.00	5,889.44	5,897.62	5,889.44	15.90	15.75	-90.00	220.00	42.00	75.00	43.46	31.54	2.378	
6,000.00	5,989.44	5,997.62	5,989.44	16.21	16.06	-90.00	220.00	42.00	75.00	42.83	32.17	2.332	
6,100.00	6,089.44	6,097.62	6,089.44	16.53	16.38	-90.00	220.00	42.00	75.00	42.21	32.79	2.287	
6,200.00	6,189.44	6,197.62	6,189.44	16.84	16.69	-90.00	220.00	42.00	75.00	41.57	33.43	2.244	
6,300.00	6,289.44	6,297.62	6,289.44	17.16	17.01	-90.00	220.00	42.00	75.00	40.94	34.06	2.202	
6,400.00	6,389.44	6,397.62	6,389.44	17.47	17.33	-90.00	220.00	42.00	75.00	40.30	34.70	2.161	
6,500.00	6,489.44	6,497.62	6,489.44	17.63	17.50	-90.00	220.00	42.00	75.00	39.97	35.03	2.141	
6,600.00	6,589.44	6,597.62	6,589.44	17.64	17.51	-90.00	220.00	42.00	75.00	39.95	35.05	2.140	
6,700.00	6,689.44	6,697.62	6,689.44	17.65	17.52	-90.00	220.00	42.00	75.00	39.92	35.08	2.138	
6,800.00	6,789.44	6,797.62	6,789.44	17.68	17.55	-90.00	220.00	42.00	75.00	39.88	35.12	2.135	
6,900.00	6,889.44	6,897.62	6,889.44	17.71	17.57	-90.00	220.00	42.00	75.00	39.82	35.18	2.132	
7,000.00	6,989.44	6,997.62	6,989.44	17.74	17.61	-90.00	220.00	42.00	75.00	39.75	35.25	2.128	
7,100.00	7,089.44	7,097.62	7,089.44	17.79	17.65	-90.00	220.00	42.00	75.00	39.66	35.34	2.122	
7,200.00	7,189.44	7,197.62	7,189.44	17.84	17.71	-90.00	220.00	42.00	75.00	39.56	35.44	2.116	
7,300.00	7,289.44	7,297.62	7,289.44	17.89	17.76	-90.00	220.00	42.00	75.00	39.44	35.56	2.109	
7,400.00	7,389.44	7,397.62	7,389.44	17.96	17.83	-90.00	220.00	42.00	75.00	39.31	35.69	2.102	
7,500.00	7,489.44	7,497.62	7,489.44	18.03	17.90	-90.00	220.00	42.00	75.00	39.17	35.83	2.093	
7,600.00	7,589.44	7,597.62	7,589.44	18.11	17.98	-90.00	220.00	42.00	75.00	39.01	35.99	2.084	
7,700.00	7,689.44	7,697.62	7,689.44	18.19	18.06	-90.00	220.00	42.00	75.00	38.84	36.16	2.074	
7,800.00	7,789.44	7,797.62	7,789.44	18.28	18.16	-90.00	220.00	42.00	75.00	38.66	36.34	2.064	
7,900.00	7,889.44	7,897.62	7,889.44	18.38	18.25	-90.00	220.00	42.00	75.00	38.46	36.54	2.053	
8,000.00	7,989.44	7,997.62	7,989.44	18.49	18.36	-90.00	220.00	42.00	75.00	38.25	36.75	2.041	
8,100.00	8,089.44	8,097.62	8,089.44	18.60	18.47	-90.00	220.00	42.00	75.00	38.03	36.97	2.029	
8,200.00	8,189.44	8,197.62	8,189.44	18.71	18.59	-90.00	220.00	42.00	75.00	37.79	37.21	2.016	
8,300.00	8,289.44	8,297.62	8,289.44	18.84	18.71	-90.00	220.00	42.00	75.00	37.54	37.46	2.002	
8,400.00	8,389.44	8,397.62	8,389.44	18.97	18.84	-90.00	220.00	42.00	75.00	37.28	37.72	1.989	
8,500.00	8,489.44	8,497.62	8,489.44	19.10	18.98	-90.00	220.00	42.00	75.00	37.01	37.99	1.974	
8,600.00	8,589.44	8,597.62	8,589.44	19.24	19.12	-90.00	220.00	42.00	75.00	36.73	38.27	1.960	
8,600.66	8,590.10	8,598.27	8,590.10	19.24	19.12	-90.00	220.00	42.00	75.00	36.73	38.27	1.960 SF	
8,700.00	8,689.44	8,693.84	8,685.65	19.39	19.26	-90.00	220.00	41.28	75.81	37.31	38.50	1.969	
8,800.00	8,789.44	8,780.70	8,771.74	19.54	19.38	-90.00	220.00	30.39	88.40	50.21	38.18	2.315	
8,900.00	8,889.44	8,862.52	8,850.46	19.70	19.50	-90.00	220.01	8.35	115.43	78.12	37.31	3.094	
8,912.56	8,902.00	8,872.30	8,859.64	19.72	19.52	-90.00	220.01	4.97	119.77	82.60	37.17	3.222	
8,950.00	8,939.41	8,900.00	8,885.30	19.78	19.56	-0.01	220.01	-5.45	132.75	96.13	36.63	3.624	
9,000.00	8,989.10	8,938.95	8,920.48	19.85	19.62	-0.01	220.01	-22.17	149.23	113.19	36.04	4.141	
9,050.00	9,038.12	8,976.28	8,953.04	19.92	19.68	0.00	220.02	-40.40	164.68	129.42	35.27	4.670	
9,100.00	9,086.11	9,013.11	8,983.94	19.98	19.75	0.00	220.02	-60.43	179.06	144.64	34.42	5.202	
9,150.00	9,132.70	9,050.00	9,013.54	20.05	19.83	0.00	220.02	-82.45	192.32	158.75	33.57	5.730	
9,200.00	9,177.53	9,085.55	9,040.66	20.11	19.93	0.00	220.03	-105.42	204.41	171.83	32.57	6.275	

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





# Pro Directional Anticollision Report



**Company:** Matador Resources  
**Project:** Eddy County, NM  
**Reference Site:** Pennzoil Federal 32 (112-122-132-202)  
**Site Error:** 0.00 usft  
**Reference Well:** No. 202H  
**Well Error:** 0.00 usft  
**Reference Wellbore:** OH  
**Reference Design:** Prelim Plan A

**Local Co-ordinate Reference:** Well No. 202H  
**TVD Reference:** Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))  
**MD Reference:** Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** Well\_Planner1  
**Offset TVD Reference:** Offset Datum

Offset Design Pennzoil Federal 32 (112-122-132-202) - No. 132H - OH - Prelim Plan A												Offset Site Error:	0.00 usft
Survey Program: 0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG												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)					
9,250.00	9,220.27	9,121.26	9,066.42	20.18	20.04	0.00	220.03	-130.14	215.30	183.71	31.59	6.816	
9,300.00	9,260.58	9,150.00	9,086.00	20.25	20.15	0.00	220.04	-151.17	225.09	195.08	30.01	7.500	
9,350.00	9,298.16	9,191.90	9,112.60	20.34	20.35	0.00	220.04	-183.53	233.35	203.79	29.56	7.893	
9,400.00	9,332.73	9,226.91	9,132.97	20.49	20.56	0.00	220.05	-212.00	240.47	211.91	28.56	8.420	
9,450.00	9,364.02	9,261.76	9,151.48	20.70	20.80	0.00	220.05	-241.52	246.28	218.70	27.58	8.930	
9,500.00	9,391.80	9,300.00	9,169.68	20.99	21.10	0.00	220.06	-275.15	250.80	223.91	26.90	9.325	
9,550.00	9,415.84	9,331.12	9,182.81	21.36	21.39	0.00	220.06	-303.36	253.92	228.14	25.78	9.849	
9,600.00	9,435.98	9,365.70	9,195.58	21.80	21.75	0.00	220.07	-335.49	255.74	230.75	24.99	10.232	
9,650.00	9,452.05	9,400.00	9,206.31	22.34	22.14	0.00	220.08	-368.06	256.21	231.89	24.32	10.537	
9,700.00	9,463.94	9,434.81	9,215.19	22.96	22.59	0.00	220.08	-401.71	255.33	231.53	23.79	10.731	
9,750.00	9,471.55	9,469.41	9,221.97	23.65	23.07	0.00	220.09	-435.63	253.10	229.69	23.41	10.813	
9,800.00	9,474.82	9,500.00	9,226.25	24.42	23.52	0.00	220.09	-465.92	249.58	226.48	23.10	10.805	
9,812.56	9,474.96	9,512.79	9,227.56	24.62	23.72	0.00	220.10	-478.64	248.43	225.27	23.17	10.724	
9,900.00	9,474.96	9,577.62	9,229.96	26.13	24.78	0.00	220.11	-543.40	245.00	221.68	23.32	10.505	
10,000.00	9,474.96	9,677.62	9,229.96	28.06	26.63	0.00	220.13	-643.40	245.00	221.10	23.90	10.252	
10,100.00	9,474.96	9,777.62	9,229.96	30.15	28.65	0.00	220.14	-743.40	245.00	220.44	24.56	9.976	
10,200.00	9,474.96	9,877.62	9,229.96	32.38	30.82	0.00	220.16	-843.40	245.00	219.70	25.30	9.684	
10,300.00	9,474.96	9,977.62	9,229.96	34.72	33.12	0.00	220.18	-943.40	245.00	218.89	26.11	9.382	
10,400.00	9,474.96	10,077.62	9,229.96	37.16	35.52	0.00	220.20	-1,043.40	245.00	218.01	26.99	9.076	
10,500.00	9,474.96	10,177.62	9,229.96	39.66	38.00	0.00	220.22	-1,143.40	245.00	217.07	27.94	8.770	
10,600.00	9,474.96	10,277.62	9,229.96	42.23	40.55	0.00	220.24	-1,243.40	245.00	216.07	28.93	8.468	
10,700.00	9,474.97	10,377.62	9,229.97	44.85	43.15	0.00	220.25	-1,343.40	245.00	215.02	29.98	8.173	
10,800.00	9,474.97	10,477.62	9,229.97	47.51	45.79	0.00	220.27	-1,443.40	245.00	213.93	31.07	7.886	
10,900.00	9,474.97	10,577.62	9,229.97	50.20	48.48	0.00	220.29	-1,543.40	245.00	212.81	32.20	7.610	
11,000.00	9,474.97	10,677.62	9,229.97	52.92	51.20	0.00	220.31	-1,643.40	245.00	211.64	33.36	7.344	
11,100.00	9,474.97	10,777.62	9,229.97	55.67	53.94	0.00	220.33	-1,743.40	245.00	210.44	34.56	7.090	
11,200.00	9,474.97	10,877.62	9,229.97	58.44	56.71	0.00	220.35	-1,843.40	245.00	209.22	35.78	6.847	
11,300.00	9,474.97	10,977.62	9,229.97	61.23	59.49	0.00	220.36	-1,943.40	245.00	207.97	37.03	6.615	
11,400.00	9,474.97	11,077.62	9,229.97	64.04	62.30	0.00	220.38	-2,043.40	245.00	206.69	38.31	6.395	
11,500.00	9,474.97	11,177.62	9,229.97	66.86	65.11	0.00	220.40	-2,143.40	245.00	205.39	39.61	6.186	
11,600.00	9,474.97	11,277.62	9,229.97	69.69	67.95	0.00	220.42	-2,243.40	245.00	204.08	40.92	5.987	
11,700.00	9,474.97	11,377.62	9,229.97	72.54	70.79	0.00	220.44	-2,343.40	245.00	202.75	42.25	5.798	
11,800.00	9,474.97	11,477.62	9,229.97	75.39	73.64	0.00	220.46	-2,443.40	245.00	201.40	43.60	5.619	
11,900.00	9,474.98	11,577.62	9,229.98	78.25	76.50	0.00	220.47	-2,543.40	245.00	200.03	44.97	5.449	
12,000.00	9,474.98	11,677.62	9,229.98	81.12	79.37	0.00	220.49	-2,643.40	245.00	198.66	46.34	5.287	
12,100.00	9,474.98	11,777.62	9,229.98	84.00	82.25	0.00	220.51	-2,743.40	245.00	197.27	47.73	5.133	
12,200.00	9,474.98	11,877.62	9,229.98	86.89	85.14	0.00	220.53	-2,843.40	245.00	195.87	49.13	4.987	
12,300.00	9,474.98	11,977.62	9,229.98	89.78	88.03	0.00	220.55	-2,943.40	245.00	194.46	50.54	4.848	
12,400.00	9,474.98	12,077.62	9,229.98	92.67	90.92	0.00	220.57	-3,043.40	245.00	193.04	51.96	4.716	
12,500.00	9,474.98	12,177.62	9,229.98	95.57	93.82	0.00	220.59	-3,143.40	245.00	191.62	53.38	4.590	
12,600.00	9,474.98	12,277.62	9,229.98	98.48	96.73	0.00	220.60	-3,243.40	245.00	190.18	54.82	4.469	
12,700.00	9,474.98	12,377.62	9,229.98	101.38	99.64	0.00	220.62	-3,343.40	245.00	188.74	56.26	4.355	
12,800.00	9,474.98	12,477.62	9,229.98	104.30	102.55	0.00	220.64	-3,443.40	245.00	187.29	57.71	4.246	
12,900.00	9,474.98	12,577.62	9,229.98	107.21	105.46	0.00	220.66	-3,543.40	245.00	185.84	59.16	4.141	
13,000.00	9,474.99	12,677.62	9,229.98	110.13	108.38	0.00	220.68	-3,643.40	245.00	184.38	60.62	4.041	
13,100.00	9,474.99	12,777.62	9,229.99	113.05	111.30	0.00	220.70	-3,743.40	245.00	182.91	62.09	3.946	
13,200.00	9,474.99	12,877.62	9,229.99	115.97	114.23	0.00	220.71	-3,843.40	245.00	181.44	63.56	3.855	
13,300.00	9,474.99	12,977.62	9,229.99	118.90	117.15	0.00	220.73	-3,943.40	245.00	179.97	65.03	3.767	
13,400.00	9,474.99	13,077.62	9,229.99	121.83	120.08	0.00	220.75	-4,043.40	245.00	178.49	66.51	3.684	
13,500.00	9,474.99	13,177.62	9,229.99	124.76	123.01	0.00	220.77	-4,143.40	245.00	177.00	68.00	3.603	
13,600.00	9,474.99	13,277.62	9,229.99	127.69	125.95	0.00	220.79	-4,243.40	245.00	175.52	69.48	3.526	

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



# Pro Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well No. 202H
Project:	Eddy County, NM	TVD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Reference Site:	Pennzoil Federal 32 (112-122-132-202)	MD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	No. 202H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Well_Planner1
Reference Design:	Prelim Plan A	Offset TVD Reference:	Offset Datum

Offset Design Pennzoil Federal 32 (112-122-132-202) - No. 132H - OH - Prelim Plan A												Offset Site Error:	0.00 usft
Survey Program: 0-MWD - OWSG, 2000-MWD - OWSG, 6500-MWD - OWSG												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		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)	Between Centres (usft)	Between Ellipses (usft)			
13,700.00	9,474.99	13,377.62	9,229.99	130.62	128.88	0.00	220.81	-4,343.40	245.00	174.03	70.97	3.452	
13,800.00	9,474.99	13,477.62	9,229.99	133.56	131.82	0.00	220.82	-4,443.40	245.00	172.53	72.47	3.381	
13,900.00	9,474.99	13,577.62	9,229.99	136.50	134.75	0.00	220.84	-4,543.40	245.00	171.03	73.97	3.312	
14,000.00	9,474.99	13,677.62	9,229.99	139.43	137.69	0.00	220.86	-4,643.40	245.00	169.53	75.47	3.246	
14,100.00	9,474.99	13,777.62	9,229.99	142.37	140.63	0.00	220.88	-4,743.40	245.00	168.03	76.97	3.183	
14,200.00	9,475.00	13,877.62	9,230.00	145.32	143.58	0.00	220.90	-4,843.40	245.00	166.53	78.47	3.122	
14,300.00	9,475.00	13,977.62	9,230.00	148.26	146.52	0.00	220.92	-4,943.40	245.00	165.02	79.98	3.063	
14,400.00	9,475.00	14,077.62	9,230.00	151.20	149.46	0.00	220.93	-5,043.40	245.00	163.51	81.49	3.006	
14,500.00	9,475.00	14,177.62	9,230.00	154.15	152.41	0.00	220.95	-5,143.40	245.00	161.99	83.01	2.952	
14,600.00	9,475.00	14,277.62	9,230.00	157.09	155.35	0.00	220.97	-5,243.40	245.00	160.48	84.52	2.899	
14,700.00	9,475.00	14,377.62	9,230.00	160.04	158.30	0.00	220.99	-5,343.40	245.00	158.96	86.04	2.848	
14,738.83	9,475.00	14,416.45	9,230.00	161.18	159.45	0.00	221.00	-5,382.23	245.00	158.37	86.63	2.828	
14,757.60	9,475.00	14,435.22	9,230.00	161.74	160.00	0.00	221.00	-5,401.00	245.00	158.09	86.91	2.819	



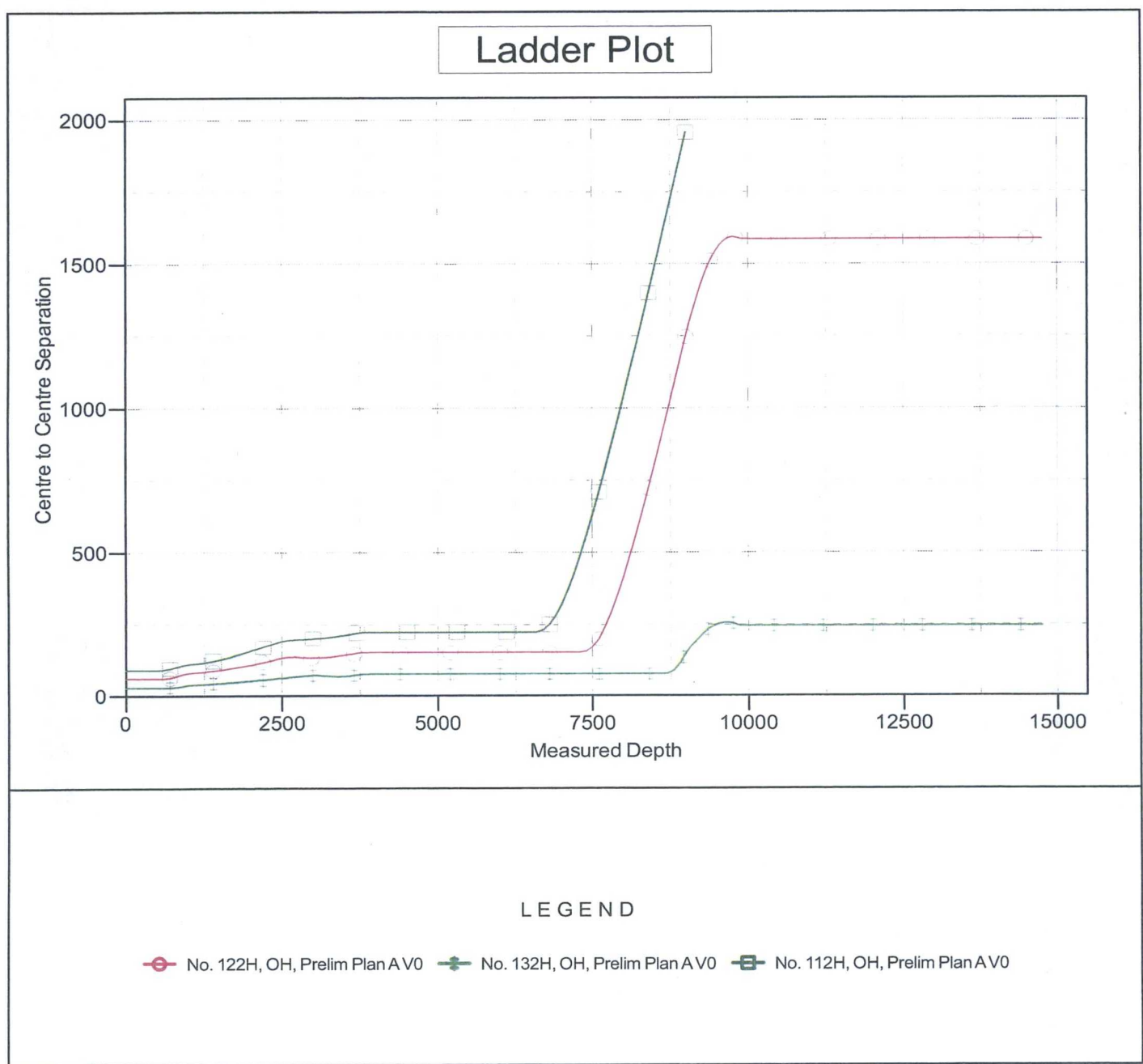


# Pro Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well No. 202H
Project:	Eddy County, NM	TVD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Reference Site:	Pennzoil Federal 32 (112-122-132-202)	MD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	No. 202H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Well_Planner1
Reference Design:	Prelim Plan A	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 3291.50usft (GL: 3263' + KB:	Coordinates are relative to: No. 202H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 20' 0.000 W	Grid Convergence at Surface is: 0.13°





# Pro Directional Anticollision Report



Company:	Matador Resources	Local Co-ordinate Reference:	Well No. 202H
Project:	Eddy County, NM	TVD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Reference Site:	Pennzoil Federal 32 (112-122-132-202)	MD Reference:	Well @ 3291.50usft (GL: 3263' + KB: 28.5' (Patt809))
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	No. 202H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	Well_Planner1
Reference Design:	Prelim Plan A	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 3291.50usft (GL: 3263' + KB:

Offset Depths are relative to Offset Datum

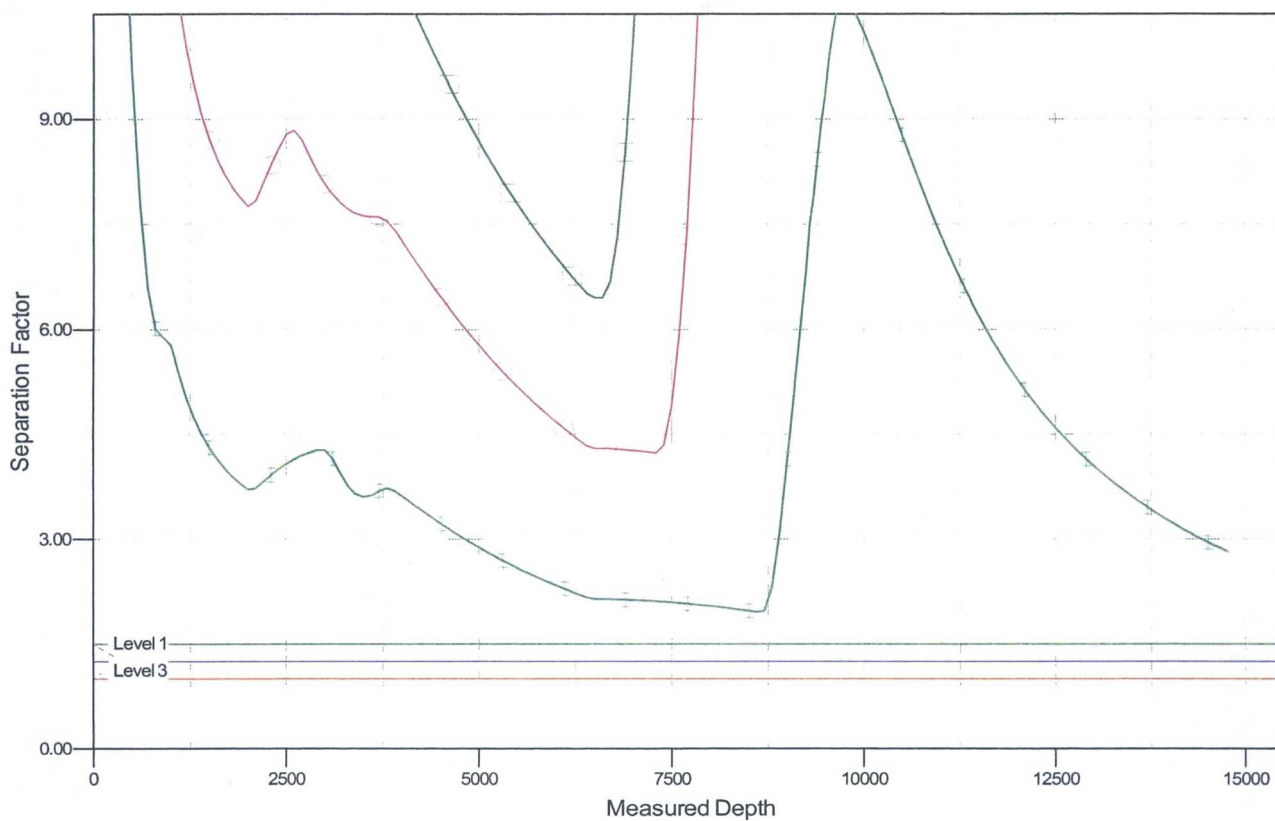
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: No. 202H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Grid Convergence at Surface is: 0.13°

## Separation Factor Plot



## LEGEND

— No. 122H, OH, Prelim Plan AV0 — No. 132H, OH, Prelim Plan AV0 — No. 112H, OH, Prelim Plan AV0





## Hydrogen Sulfide Drilling

### Operations Plan

#### Matador Resources

##### 1 H2S safety instructions to the following:

- Characteristics of H2S
- Physical effects and hazards
- Principal and operation of H2S detectors, warning system, and briefing areas
- Evacuation procedures, routes, and first aid
- Proper use of safety equipment & life support systems
- Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30-minute pressure demand air packs.

##### 2 H2S Detection and Alarm Systems:

- H2S sensor/detectors will be located on the drilling rig floor, in the base of the sub structure / cellar area, and on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary.
- An audio alarm system will be installed on the derrick floor and in the doghouse.

##### 3 Windsocks and / Wind Streamers:

- Windsocks at mud pit area should be high enough to be visible.
- Windsock on the rig floor and / top of doghouse should be high enough to be visible.

##### 4 Condition Flags and Signs:

- Warning sign on access road to location
- Flags to be displayed on sign at entrance to location
  - Green Flag – Normal Safe Operation Condition
  - Yellow Flag – Potential Pressure and Danger
  - Red Flag – Danger (H2S present in dangerous concentrations) Only H2S trained personnel admitted on location

##### 5 Well Control Equipment:

- See APD

##### 6 Communication:

- While working under masks, chalkboards will be used for communications.
- Hand signals will be used where chalkboard is inappropriate.
- Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.



#### 7 Drill Stem Testing:

- No DST or cores are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubulars good and other mechanical equipment.

9 If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.

#### 11 Emergency Contacts

- See APD



H2S Contingency Plan Emergency Contacts  
Matador Production Company  
T20S, R29E, Eddy County, NM

Company Office			
Matador Production Company		(972)-371-5200	
Key Personnel			
Name	Title	Office	Mobile
Billy Goodwin	Vice President Drilling	972-371-5210	817-522-2928
Gary Martin	Drilling Superintendent		601-669-1774
Dee Smith	Drilling Superintendent	972-371-5447	972-822-1010
Aaron Byrd	Drilling Engineer	972-371-5267	214-507-2333
	Construction Superintendent		
	Construction Superintendent		
Artesia			
Ambulance			911
State Police		575-746-2703	
City Police		575-746-2703	
Sheriff's Office		575-746-9888	
Fire Department		575-746-2701	
Local Emergency Planning Committee		575-746-2122	
New Mexico Oil Conservation Division		575-748-1283	
Carlsbad			
Ambulance			911
State Police		575-885-3137	
City Police		575-885-2111	
Sheriff's Office		575-887-7551	
Fire Department		575-887-3798	
Local Emergency Planning Committee		575-885-3581	
Santa Fe			
New Mexico Emergency Response Commission (Santa Fe)		505-476-9600	
New Mexico Emergency Response Commission (Santa Fe) 24 hrs		505-827-9126	
New Mexico State Emergency Operations Center		505-476-9635	
National			
Carlsbad BLM		575-234-5972	
National Emergency Response Center (Washington, D.C.)		800-424-8802	
Medical			
Flight for Life- 4000 24th St.; Lubbock, TX		806-743-9911	
Aerocare- R3, Box 49F; Lubbock, TX		806-747-8923	
Med Flight Air Amb- 2301 Yale Blvd S.E., D3; Albuquerque, NM		505-842-4433	
SB Air Med Service- 2505 Clark Carr Loop S.E.; Albuquerque, NM		505-842-4949	
Other			
Boots & Coots IWC		800-256-9688	or 281-931-8884
Cudd Pressure Control		432-699-0139	or 432-563-3356
Haliburton		575-746-2757	
B.J. Services		575-746-3569	

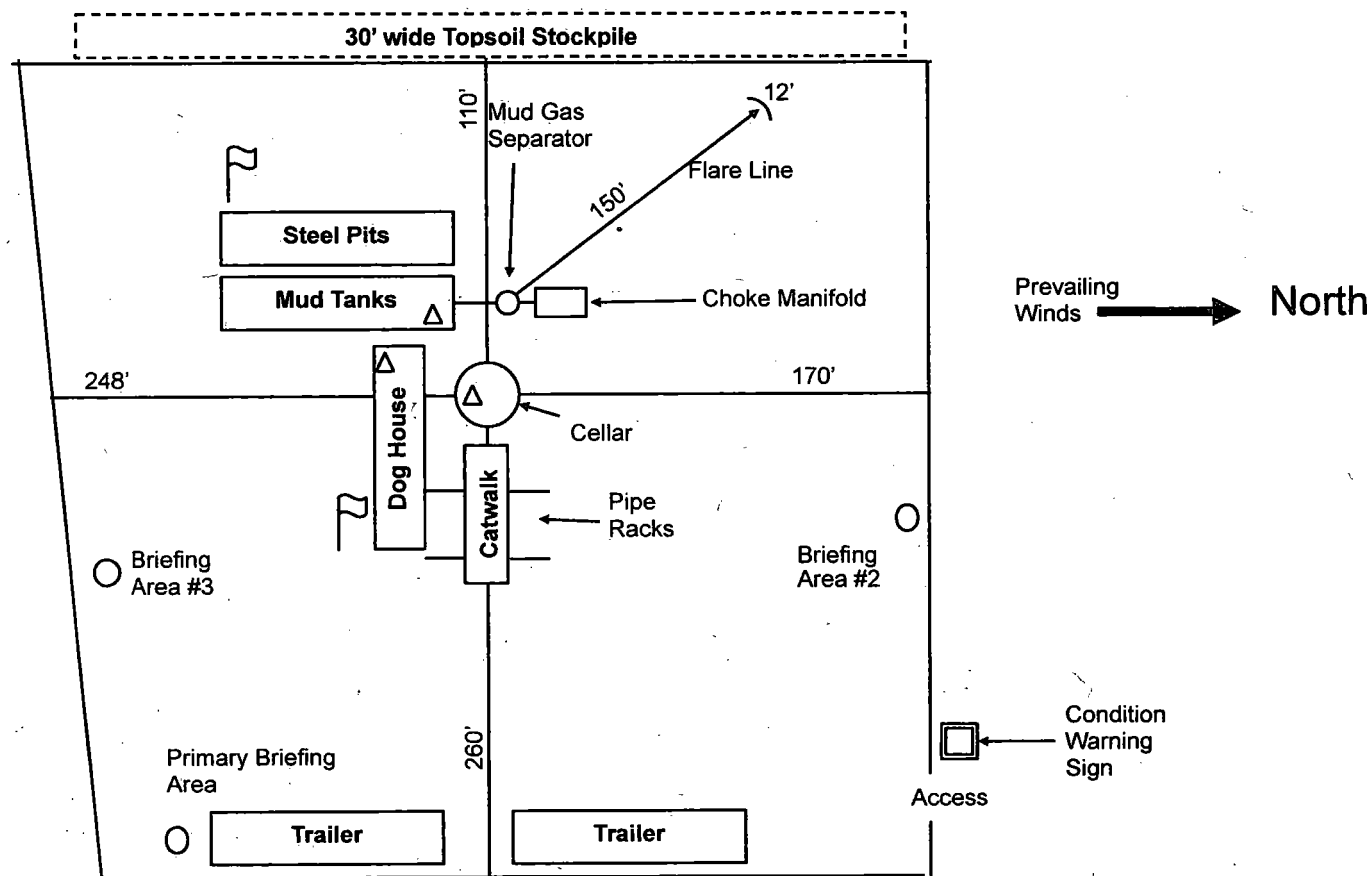
# H2S Rig Layout

Pennzoil 32 Fed 202H  
Eddy County, NM  
(not to scale)

Wind Direction Indicator

H2S Monitors

Briefing Areas

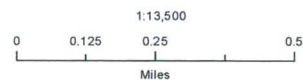




# Matador Production Company

Pennzoil Fed 32 #202H  
H2S Contingency Plan:  
1 Mile Radius Map

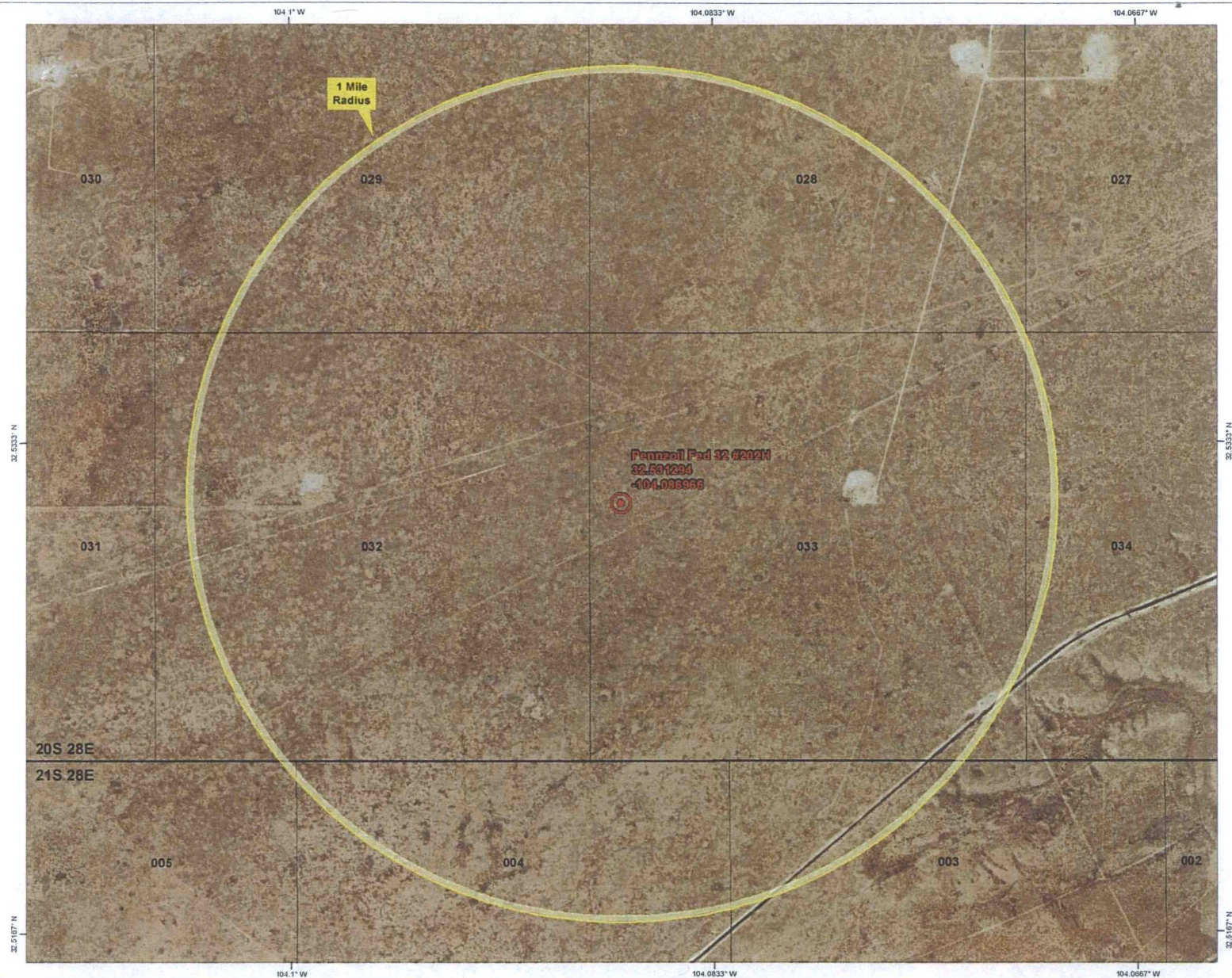
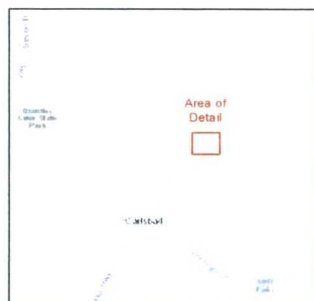
Section 33, Township 20S, Range 29E  
Eddy County, New Mexico



NAD 1927 New Mexico State Plane East  
FIPS 3001 Feet



Prepared by Permits West, Inc., October 9, 2016  
for Matador Production Company



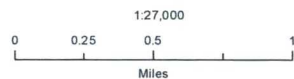


# Matador Production Company

Pennzoil Fed 32 #202H  
H2S Contingency Plan:  
2 Mile Radius Map

Section 33, Township 20S, Range 29E  
Eddy County, New Mexico

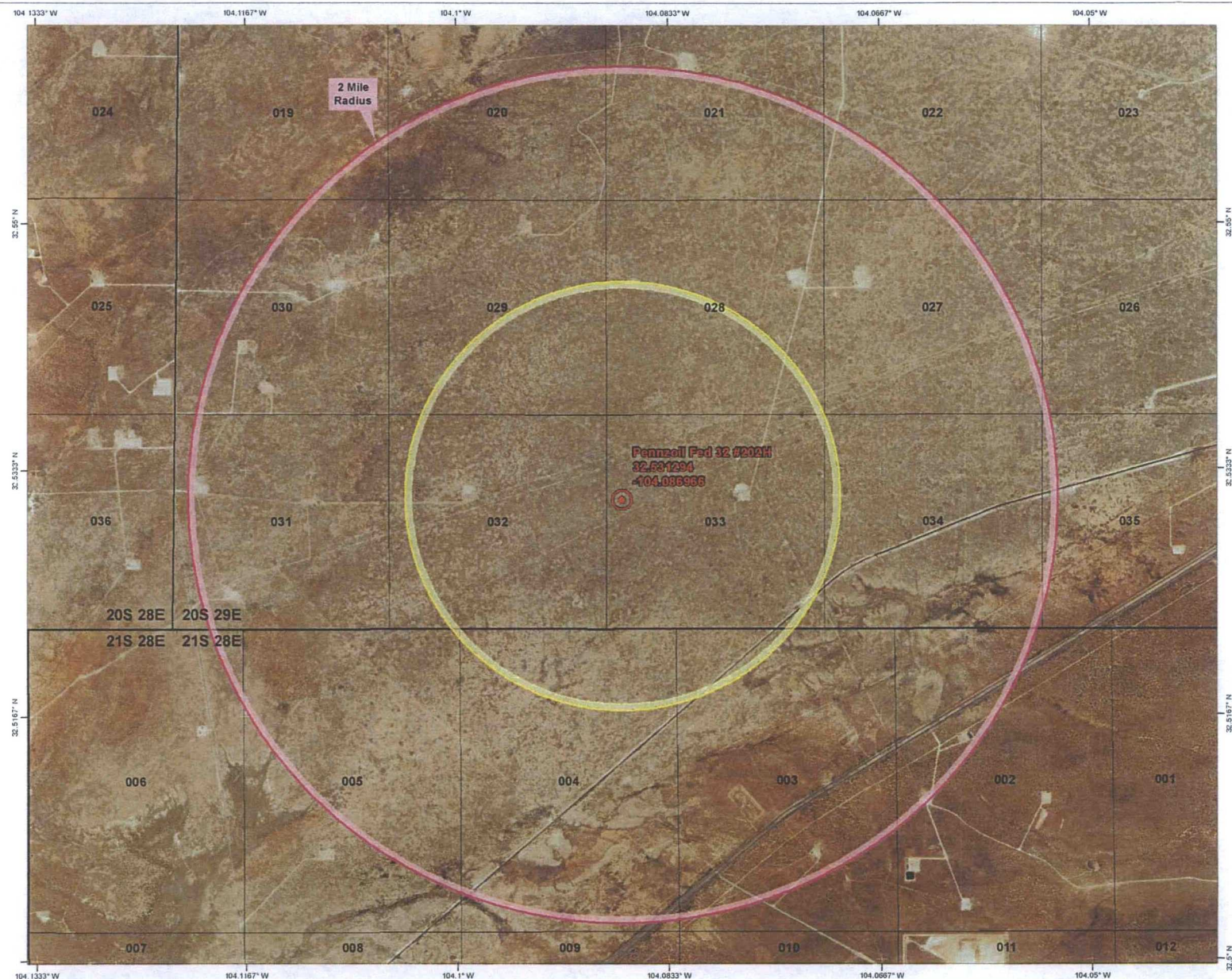
 Surface Hole Location



NAD 1927 New Mexico State Plane East  
FIPS 3001 Feet



Prepared by Permits West, Inc., October 9, 2016  
for Matador Production Company







2.50 acres  
left open for  
producing  
4 wells



Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

SURFACE PLAN PAGE 1

Surface Use Plan

1. ROAD DIRECTIONS & DESCRIPTIONS (See MAPS 1-4)

From the junction of US 285 and US 62/180 in Carlsbad...  
Go East 14.4 miles on paved US 62/180 to the equivalent of Mile Post 49.4  
Then turn left and go North 2.1 miles on paved County Road 238  
Then turn left and go West 1.95 mile on paved County Road 238  
Then turn left and go South 1.95 mile on a caliche road.  
Then turn right and go Southwest 3844.67' cross-country  
Then turn left and go Southeast 749.24' cross-country to the proposed pad

Non-county roads will be maintained as needed to Gold Book standards. This includes pulling ditches, preserving the crown, and cleaning culverts. This will be done at least once a year, and more often as needed. Caliche will be hauled from the existing Constructors, Inc. pit on private land in NWNE 34-21s-27e.

2. ROAD TO BE BUILT OR UPGRADED (See MAPS 2-4)

The 4593.91' of new road to the well will be crowned and ditched, have a 14' wide driving surface, and be surfaced with caliche. Maximum disturbed width = 30'. Maximum grade = 1%. Maximum cut or fill = 2'.

Straw wattles will be installed on the north side of the road along segments A2 and A3. Borrow ditches will turn out every  $\approx 500'$ , except on the north side of Segments A2 and A3. No cattle guard, culvert, or vehicle turn out is needed.

Upgrading of will consist of filling potholes with caliche on the existing road. A right-of-way application for the existing road is being filed.



Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

SURFACE PLAN PAGE 2

3. EXISTING WELLS (See MAP 2)

Gas and P & A wells are within a mile. No oil, injection, disposal, or water well is within a mile.

4. PROPOSED PRODUCTION FACILITIES (See MAPS 3 & 5)

A tank battery will be built on the east side of the pad. A  $\approx 6$ " O. D. steel gas line will be buried 4491.94' parallel to the new road. Power line plans have not been finalized.

5. WATER SUPPLY (See MAPS 1-4)

Water will be trucked from existing water wells (C 0370 & C 03607) on private land in NENE 24-21s-27e.

6. CONSTRUCTION MATERIALS & METHODS

NM One Call (811) will be notified before construction starts. Top  $\approx 6$ " of soil and brush will be stockpiled west of the pad. Pipe racks will be to the east. A closed loop drilling system will be used. Caliche will be hauled from the existing Constructors, Inc. pit on private land in NWNE 34-21s-27e.

7. WASTE DISPOSAL

All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to CRI's state approved (NM-01-0006) disposal site. Human waste will be disposed of in chemical toilets and hauled to the Carlsbad wastewater treatment plant.

Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

## SURFACE PLAN PAGE 3

### 8. ANCILLARY FACILITIES

There will be no airstrip or camp. Camper trailers will be on location for the company man, tool pusher, or mud logger.

### 9. WELL SITE LAYOUT

See Rig Diagram for depictions of the well pad, trash cage, access onto the location, parking, living facilities, and rig orientation.

### 10. RECLAMATION

Interim reclamation will consist of shrinking the pad  $\approx 29\%$  by removing caliche and reclaiming the south side (350' x 100' x 352' x 135'), leaving 2.5 acres around the production equipment. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas. Disturbed areas will be seeded in accordance with BLM requirements. Enough stockpiled topsoil will be retained to cover the remainder of the pad when the wells are plugged. Once the last well is plugged, then the remainder of the pad and new road will be similarly reclaimed. Noxious weeds will be controlled.

### 11. SURFACE OWNER

All construction will be on BLM

### 12. OTHER INFORMATION

On site inspection was held with Vance Wolf and Stan Allison (both BLM) on June 16, 2016. Matador will contribute to the archaeology fund.

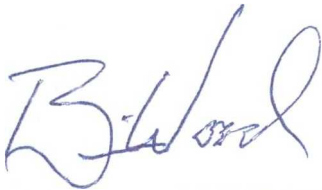


Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

SURFACE PLAN PAGE 4

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. Executed this 12th day of November, 2016.



-----  
Brian Wood, Consultant  
Permits West, Inc.

37 Verano Loop, Santa Fe, NM 87508

(505) 466-8120

FAX: (505) 466-9682

Cellular: (505) 699-2276

Field representative will be:

Sam Pryor, Senior Staff Landman  
Matador Production Company  
5400 LBJ Freeway, Suite 1500  
Dallas TX 75240  
Phone: (972) 371-5241  
FAX: (214) 866-4841

# PECOS DISTRICT DRILLING OPERATIONS CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Matador Production Company
LEASE NO.:	NMNM04825
WELL NAME & NO.:	202H-Pennzoil 32 Fed
SURFACE HOLE FOOTAGE:	2090'/N & 348'/W
BOTTOM HOLE FOOTAGE:	1870'/N & 240'/W, 32
LOCATION:	Section 33, T.20 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input type="radio"/> Medium	<input checked="" type="radio"/> High
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl or Conventional	
Other	<input checked="" type="checkbox"/> 4 String Area	<input checked="" type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP

## A. Hydrogen Sulfide

1. Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

## B. CASING

1. The **20** inch surface casing shall be set at approximately **480** 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.
2. The minimum required fill of cement behind the 13 3/8 inch first intermediate casing, which shall be set at approximately 970 feet, is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.
  - 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 9 5/8 inch second intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.
  - **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**
4. The minimum required fill of cement behind the 7 5/8 X 7 inch third intermediate casing is:
  - Cement should tie-back at least **50 feet above the Capitan Reef** (Top of Capitan Reef estimated at 1400'). **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**
5. The minimum required fill of cement behind the 5 1/2 X 4 1/2 inch production casing is:
  - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to negative 41% - additional cement will be required.**

### C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) annular**.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13 3/8 inch first intermediate casing shoe shall be 2000 (2M).

**Option 1:**

- i. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9 5/8 inch second intermediate 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 7 5/8 X 7 inch third intermediate casing shoe shall be 5000 (5M) psi.

**Option 2:**

- i. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the second intermediate casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9 5/8 inch second intermediate casing shoe shall be 5000 (5M) psi.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. After the 9 5/8" casing has been landed and cemented, the operator will then lift up the BOP to install the 'D-section' of the wellhead. Therefore, per Onshore Oil and Gas Order No. 2, the entire BOP/BOPE shall be tested prior to drilling out the second intermediate casing hole.
  - 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.

MHH 08242017



## 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 2<sup>nd</sup> 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. Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
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.

Matador Production Company  
Pennzoil 32 Fed 202H  
SHL 2090' FNL & 348' FWL Sec. 33  
BHL 1870' FNL & 240' FWL Sec. 32  
T. 20 S., R. 29 E., Eddy County, NM

DRILL PLAN PAGE 3

Matador requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. Manufacturer does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

4. CASING & CEMENT

All casing will be new. Minimum safety factors are burst = 1.125, collapse = 1.125, and tension = 1.8.

Hole O. D.	Set @ (MD)	Name	Casing O. D.	TOC	Weight (lb/ft)	Grade	Thread Collar
26"	<del>400'</del> 480'	Surface	20"	GL	94	K-55	BTC
17.5"	<del>1200'</del> 920'	Intermediate 1	13.375"	GL	54.5	J-55	BTC
12.25"	3100'	Intermediate 2	9.625"	GL	40	J-55	BTC
8.75"	<del>0'-3000'</del> 1350'	Intermediate 3	7.625"	<del>2100'</del> 1350'	29.7	P-110	BTC
	3000'-8862'		7.625"		29.7	P-110	Hydril 513
	8862'-9750'		7"		29	P-110	BTC
6.125"	0'-8762'	Production	5.5"	8750'	20	P-110	Tenaris XP
	8762'-14758'		4.5"		13.5	P-110	Tenaris XP



# **PECOS DISTRICT SURFACE USE CONDITIONS OF APPROVAL**

<b>OPERATOR'S NAME:</b>	Matador Production Company
<b>LEASE NO.:</b>	NMNM04825
<b>WELL NAME &amp; NO.:</b>	202H-Pennzoil 32 Fed
<b>SURFACE HOLE FOOTAGE:</b>	2090'/N & 348'/W
<b>BOTTOM HOLE FOOTAGE:</b>	1870'/N & 240'/W, 32
<b>LOCATION:</b>	Section 33, T.20 S., R.29 E., NMPM
<b>COUNTY:</b>	Eddy County, New Mexico

## **TABLE OF CONTENTS**

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Cave/Karst
  - Watershed
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

## **I. GENERAL PROVISIONS**

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

## **II. PERMIT EXPIRATION**

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

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

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

## **IV. NOXIOUS WEEDS**

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



## **V. SPECIAL REQUIREMENT(S)**

### **Cave and Karst Conditions of Approval for APDs**

**\*\*** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

### **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production.

#### **Construction:**

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

#### **No Blasting:**

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

#### **Pad Berming:**

The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

#### **Tank Battery Liners and Berms:**

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

**Leak Detection System:**

A method of detecting leaks is required. The method could incorporate gauges to measure loss, siting values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

**Automatic Shut-off Systems:**

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

**Cave/Karst Subsurface Mitigation**

The following stipulations will be applied to protect cave/karst and ground water concerns:

**Rotary Drilling with Fresh Water:**

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

**Directional Drilling:**

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

**Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

**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.

**Pressure Testing:**

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.



## **MITIGATING MEASURES for ROADS:**

- A two (2) foot sand bag berm will be constructed along the north side of the road at segments A and B reroute around a sinkhole. The berm will be maintained for the life of the project.
- Roads will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction and no further construction will be done until clearance has been issued by the Authorized Officer.
- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to increase or decrease the natural flow of water into or out of cave or karst features.
- Special restoration stipulations or realignment may be required.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

## **Watershed**

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

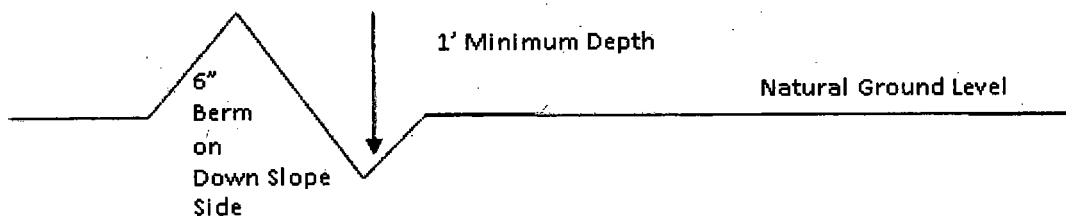
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

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

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

#### **Cross Section of a Typical Lead-off Ditch**



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

#### **Formula for Spacing Interval of Lead-off Ditches**

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

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

#### **Cattle guards**

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

#### **Fence Requirement**

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

#### **Public Access**

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



### Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

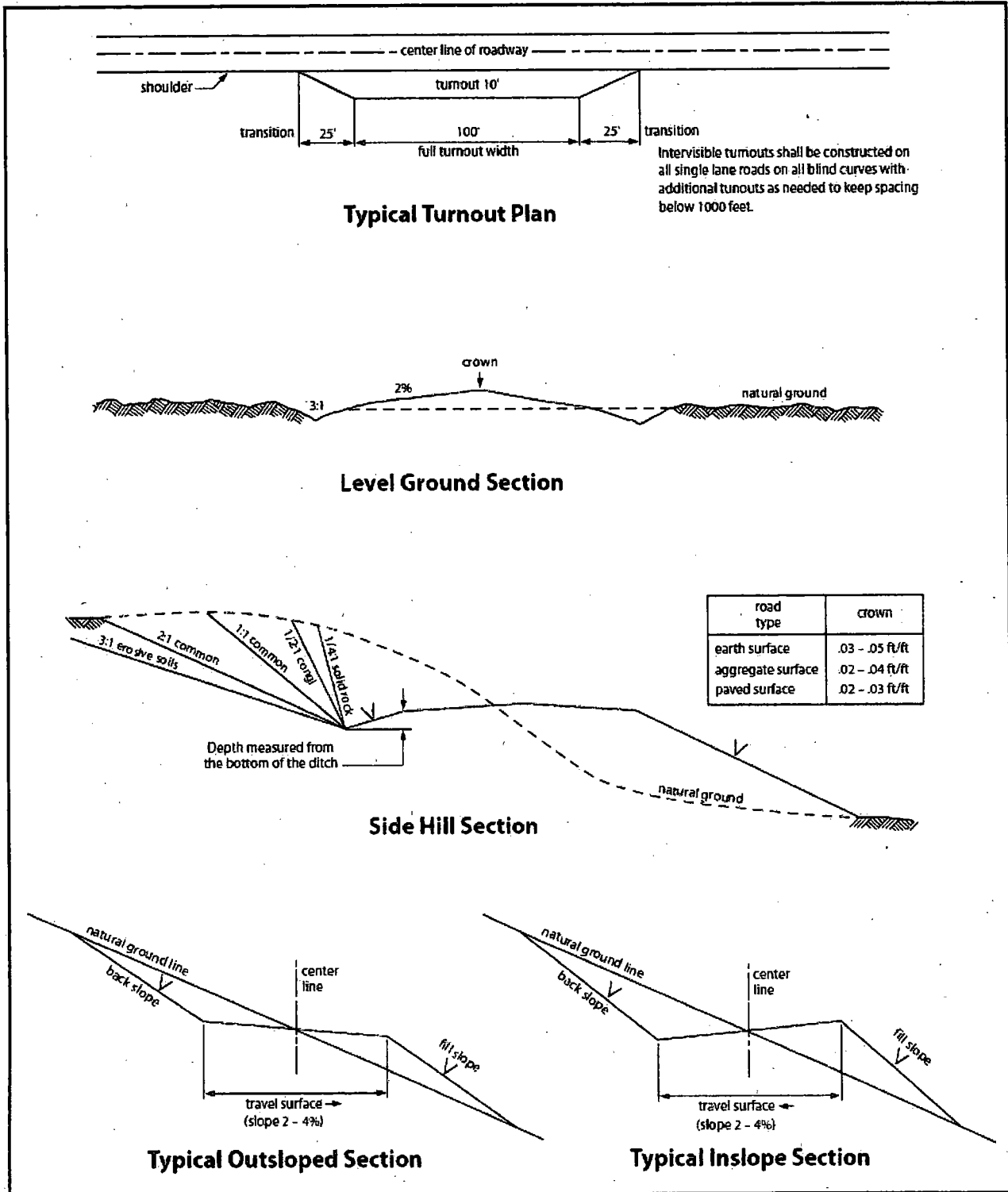


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## **VII. PRODUCTION (POST DRILLING)**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

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

#### **Exclosure Netting (Open-top Tanks)**

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

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

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

#### **Open-Vent Exhaust Stack Exclosures**

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

#### **Containment Structures**



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

#### **Painting Requirement**

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

### **B. PIPELINES**

#### **BURIED PIPELINE STIPULATIONS**

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

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

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of

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

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

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

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

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

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

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

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

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

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

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

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

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

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



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

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

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

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

- 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.

## **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).

#### Mixture 4, for Gypsum Sites

The holder shall seed all the 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 will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will 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). The 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. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will 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>
Alkli Sacaton ( <i>Sporobolus airoides</i> )	1.5
DWS~ Four-wing saltbush ( <i>Atriplex canescens</i> )	8.0

~DWS: DeWinged Seed

\*Pounds of pure live seed:

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