Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

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

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE - Other instructions on page 2

HOBBS OCD
DEC 11 2017
RECEIVED

5. Lease Serial No.
NMNM117120

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NMNM124060

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

8. Well Name and No.
ZACH MCCORMICK FED COM 221H

2. Name of Operator
MATADOR PRODUCTION COMPANY

Contact: TAMMY R LINK
E-Mail: tlink@matadorresources.com

9. API Well No.
30-015-44241-00-X1

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

3b. Phone No. (include area code)
575-627-2465

10. Field and Pool or Exploratory Area
~~PIERCE CROSSING~~
Purple Sage Wa, gas

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 18 T24S R29E Lot 1 712FNL 291FWL
32.223061 N Lat, 104.031319 W Lon

11. County or Parish, State
EDDY COUNTY, NM

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

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

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

BLM BOND NO. NMB001079
SURETY BOND NO. RLB0015172

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Please see attached plats to revise SHL on Matador's Zach McCormick Fed 18-24S-29E RB #121H from 712' FNL and 291' FWL of Sec 18, T24S, R29E to 712' FNL and 351' FWL of Sec 18, T24S, R29E. There is no change in pad size or location. SHL has moved within previously approved footprint. There is no change in BHL. SHL revisions are to accommodate Matador's drill schedule.

12/4/17 - Surface - VBW

Matador also requests a variance to run 7-5/8" casing inside 9 5/8" BTC casing which will be less than the 0.422" stand off regulation. Matador has met with Christopher Walls and Mustafa Haque as well as other BLM representatives and determined that this would be acceptable as long as the 7 5/8" flush casing was run throughout the entire 300' cement tie back section between 9 5/8" and 7

10/4/2017: Engineering review completed by M Haque.

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

Electronic Submission #387923 verified by the BLM Well Information System
For MATADOR PRODUCTION COMPANY, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 10/03/2017 (18PP0053SE)

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 04 2018

Name *(Printed/Typed)* TAMMY R LINK — Title PRODUCTION ANALYST

Signature (Electronic Submission) — Date 09/07/2017

RECEIVED

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By Cody R Layton — Title AFM - L&M — Date 12/04/17

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. — Office CFO

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

(Instructions on page 2)

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

RNP 1-5-2018.

Additional data for EC transaction #387923 that would not fit on the form

32. Additional remarks, continued

5/8" casing. Please see attachments for new casing design.

Please contact Cassie Hahn by phone at 972-371-5440 or by e-mail chahn@matadorresources.com should you have any questions.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr, Sante Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources
Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Sante Fe, NM 87505

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

☐ **AMENDED REPORT**

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1]API Number	[2]Pool Code	[3]Pool Name
30-015-44241	98220	Purple Sage; Wolfcamp

[4]Property Code	[5]Property Name	[6]Well Number
317797	ZACH MCCORMICK FED 18-24S-29E RB	#221H

[7]OGRID No.	[8]Operator Name	[9]Elevation
228937	MATADOR PRODUCTION COMPANY	2953'

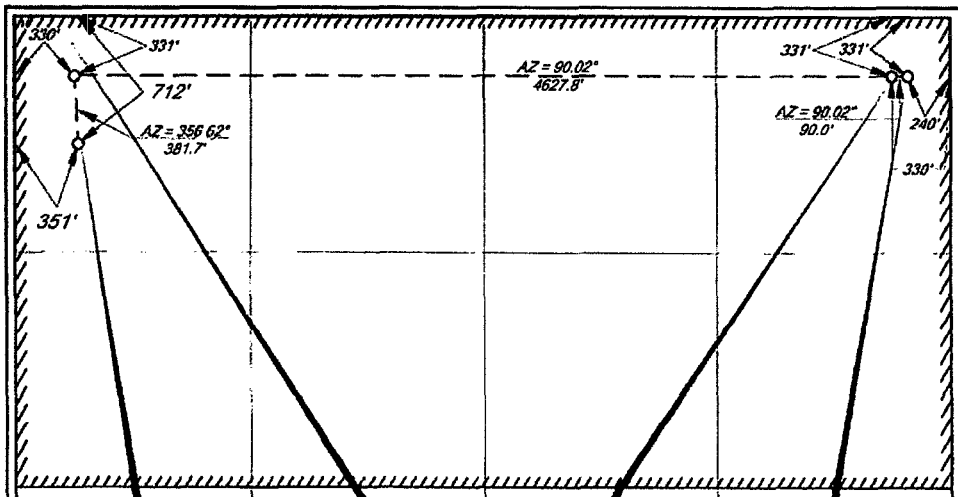
[10]Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D 1	18	24-S	29-E	-	712'	NORTH	351'	WEST	EDDY

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	18	24-S	29-E	-	331'	NORTH	240'	EAST	EDDY

[12]Dedicated Acres	[13]Joint or Infill	[14]Consolidation Code	[15]Order No.
323.11			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



SURFACE LOCATION	FIRST PERFORATION POINT	LAST PERFORATION POINT	BOTTOM HOLE LOCATION
NEW MEXICO EAST	NEW MEXICO EAST	NEW MEXICO EAST	NEW MEXICO EAST
NAD 1927	NAD 1927	NAD 1927	NAD 1927
X=593607	X=593584	X=598212	X=598302
Y=444956	Y=445337	Y=445335	Y=445335
LAT.: N 32.2229376	LAT.: N 32.2239851	LAT.: N 32.2239429	LAT.: N 32.2239421
LONG.: W 104.0306372	LONG.: W 104.0307064	LONG.: W 104.0157417	LONG.: W 104.0154507
NAD 1983	NAD 1983	NAD 1983	NAD 1983
X=634790	X=634768	X=639396	X=639486
Y=445014	Y=445395	Y=445394	Y=445393
LAT.: N 32.2230598	LAT.: N 32.2241074	LAT.: N 32.2240654	LAT.: N 32.2240646
LONG.: W 104.0311277	LONG.: W 104.0311970	LONG.: W 104.0162317	LONG.: W 104.0159406

[17]OPERATOR CERTIFICATION

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

Cassie Hann 9/7/2017
Signature Date

Cassie Hann
Printed Name

chann@matadorresources.com
E-mail Address

[18]SURVEYOR CERTIFICATION

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

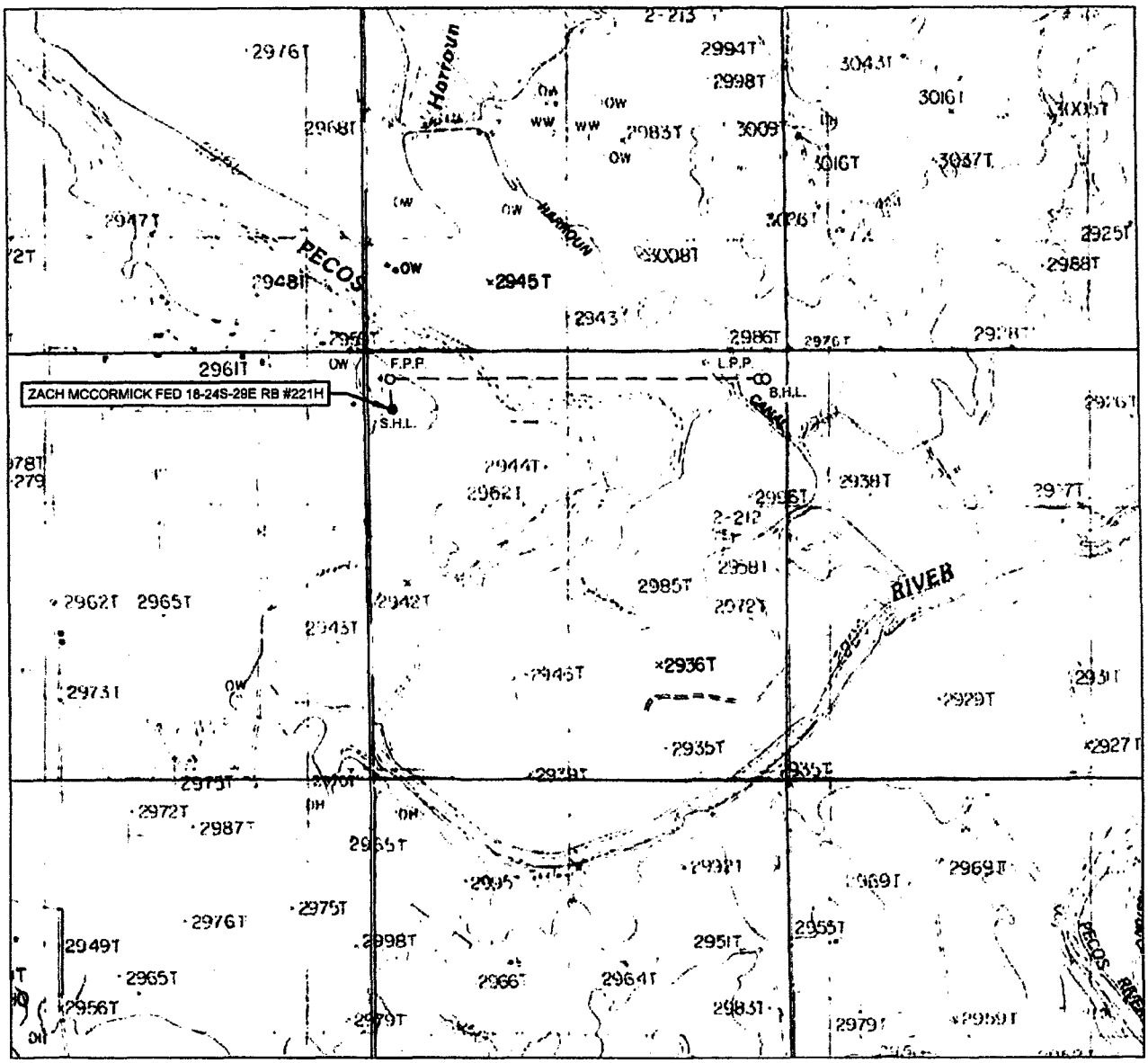
08/07/2017
Date of Survey
Signature and Seal of Professional Surveyor

MICHAEL BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

Certificate Number

S:\SURVEY\MATADOR_RESOURCES\ZACH_MCCORMICK_FED_18-24S-29E_RB_221H\FINAL_PRODUCTS\LO_ZACH_MCCORMICK_FEDERAL_18-24S-29E_RB_221H_REV1.DWG 8/14/2017 4:32:01 PM mlowe

LOCATION & ELEVATION VERIFICATION MAP



Matador PRODUCTION COMPANY

LEASE NAME & WELL NO.: ZACH MCCORMICK FED 18-24S-29E RB #221H

SECTION 18 TWP 24-S RGE 29-E SURVEY N.M.P.M.
COUNTY EDDY STATE NM ELEVATION 2953'
DESCRIPTION 712' FNL & 351' FWL

LATITUDE N 32.2230598 LONGITUDE W 104.0311277

N

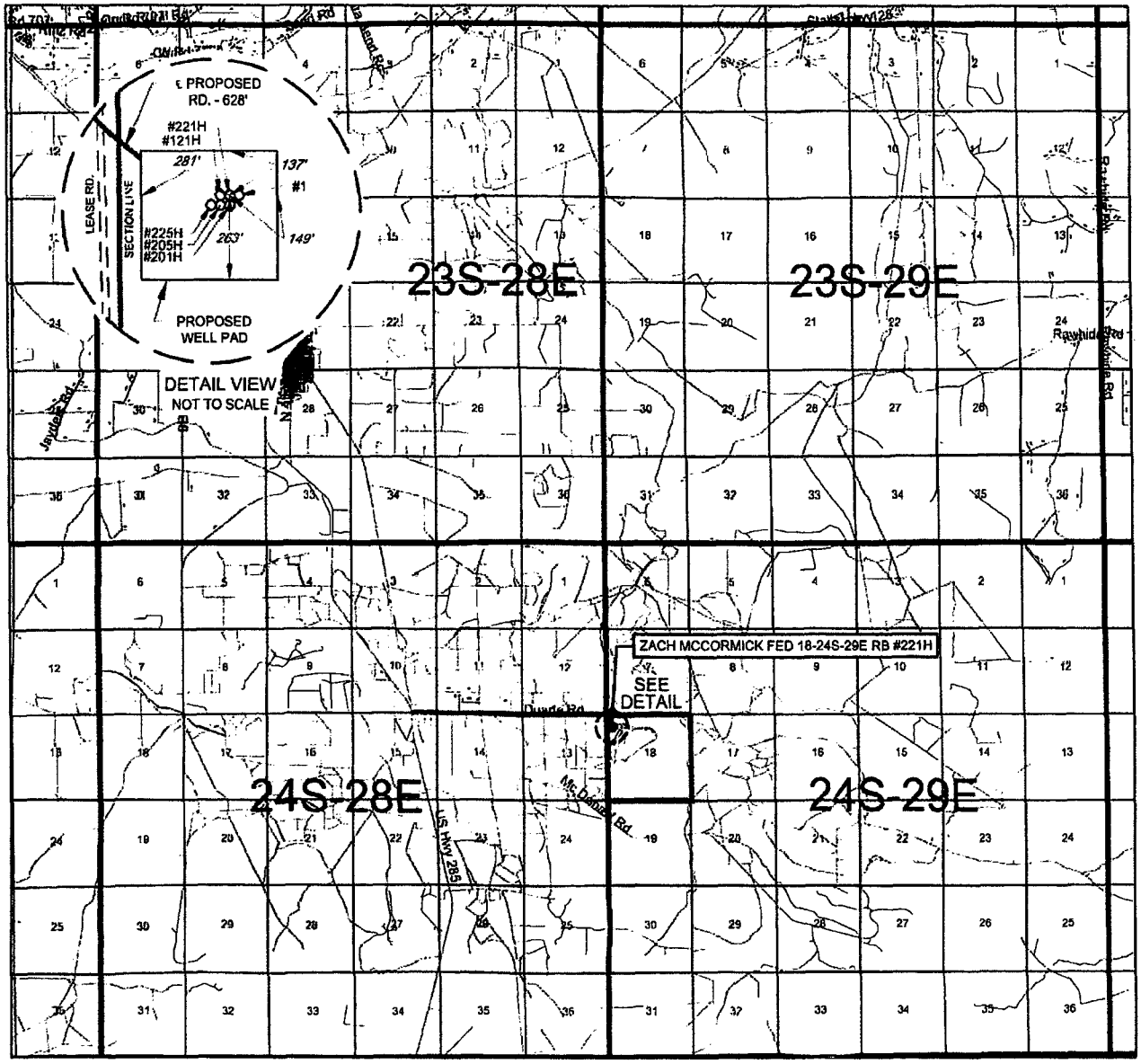
SCALE: 1" = 2000'
0' 1000' 2000'

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 1983, U.S. SURVEY FEET.

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

VICINITY MAP



Matador PRODUCTION COMPANY

LEASE NAME & WELL NO.: ZACH MCCORMICK FED 18-24S-29E RB #221H

SECTION 18 TWP 24-S RGE 29-E SURVEY N.M.P.M.
COUNTY EDDY STATE NM
DESCRIPTION 712' FNL & 351' FWL

DISTANCE & DIRECTION

FROM INT. OF US-285, & DUARTE RD., GO EAST ON DUARTE RD. ±2.3 MILES, THENCE SOUTH (RIGHT) ON A PROPOSED ROAD ±628 FEET TO A POINT ±300 FEET NORTHEAST OF THE LOCATION.

SCALE: 1" = 10000'

0' 5000' 10000'

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

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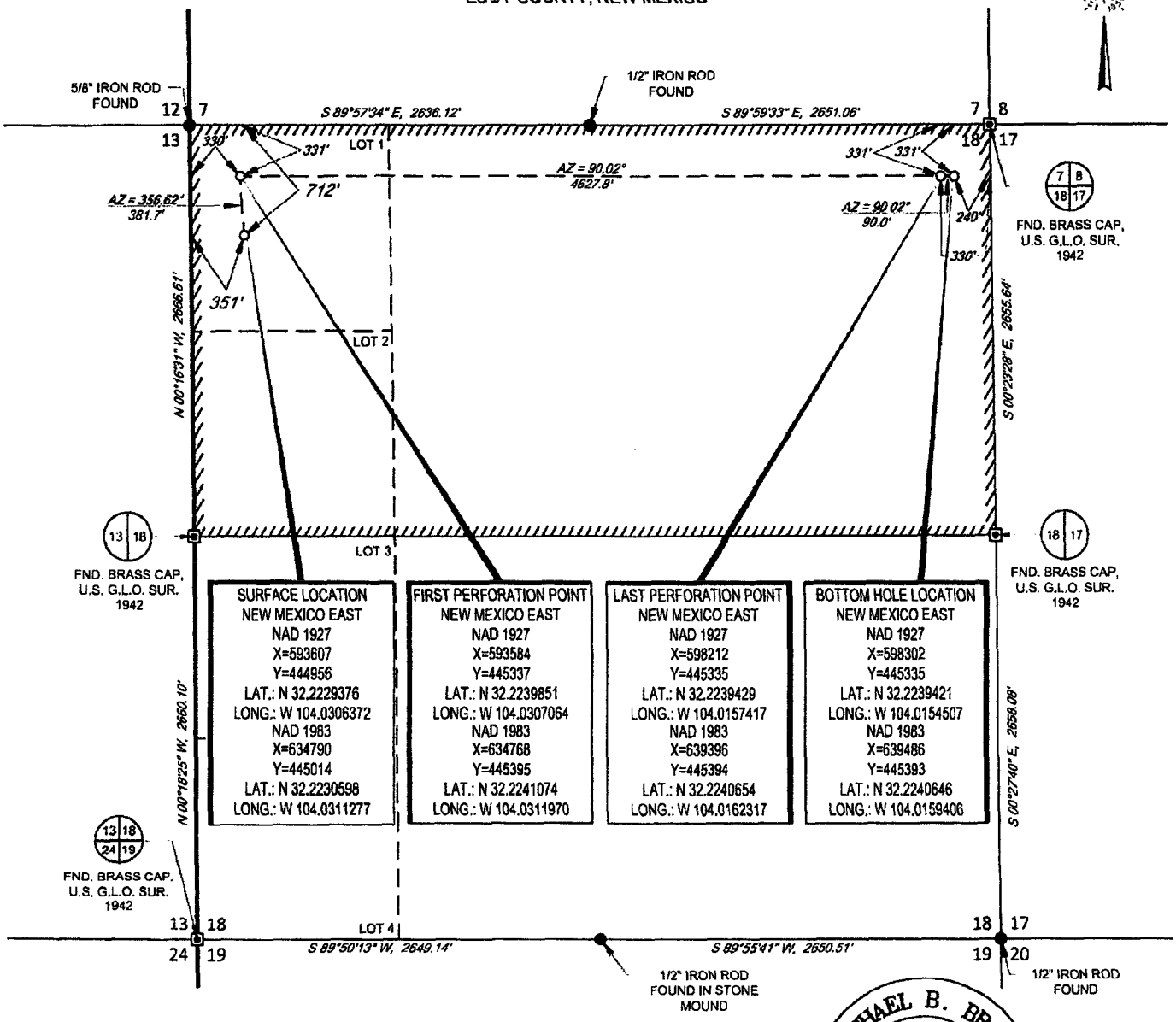
WWW.TOPOGRAPHIC.COM

SCALE: 1" = 1000'

0' 500' 1000'

SECTION 18, TOWNSHIP 24-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



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LEASE NAME & WELL NO.: ZACH MCCORMICK FED 18-24S-29E RB #221H

SECTION 18 TWP 24-S RGE 29-E SURVEY N.M.P.M.

COUNTY EDDY STATE NM

DESCRIPTION 712' FNL & 351' FWL

DISTANCE & DIRECTION

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MICHAEL B. BROWN NEW MEXICO 18329 PROFESSIONAL SURVEYOR

Michael Blake Brown, P.S. No. 18329
AUGUST 14, 2017

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 1983, 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
1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140
TELEPHONE (817) 744-7512 • FAX (817) 744-7548
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WWW.TOPOGRAPHIC.COM

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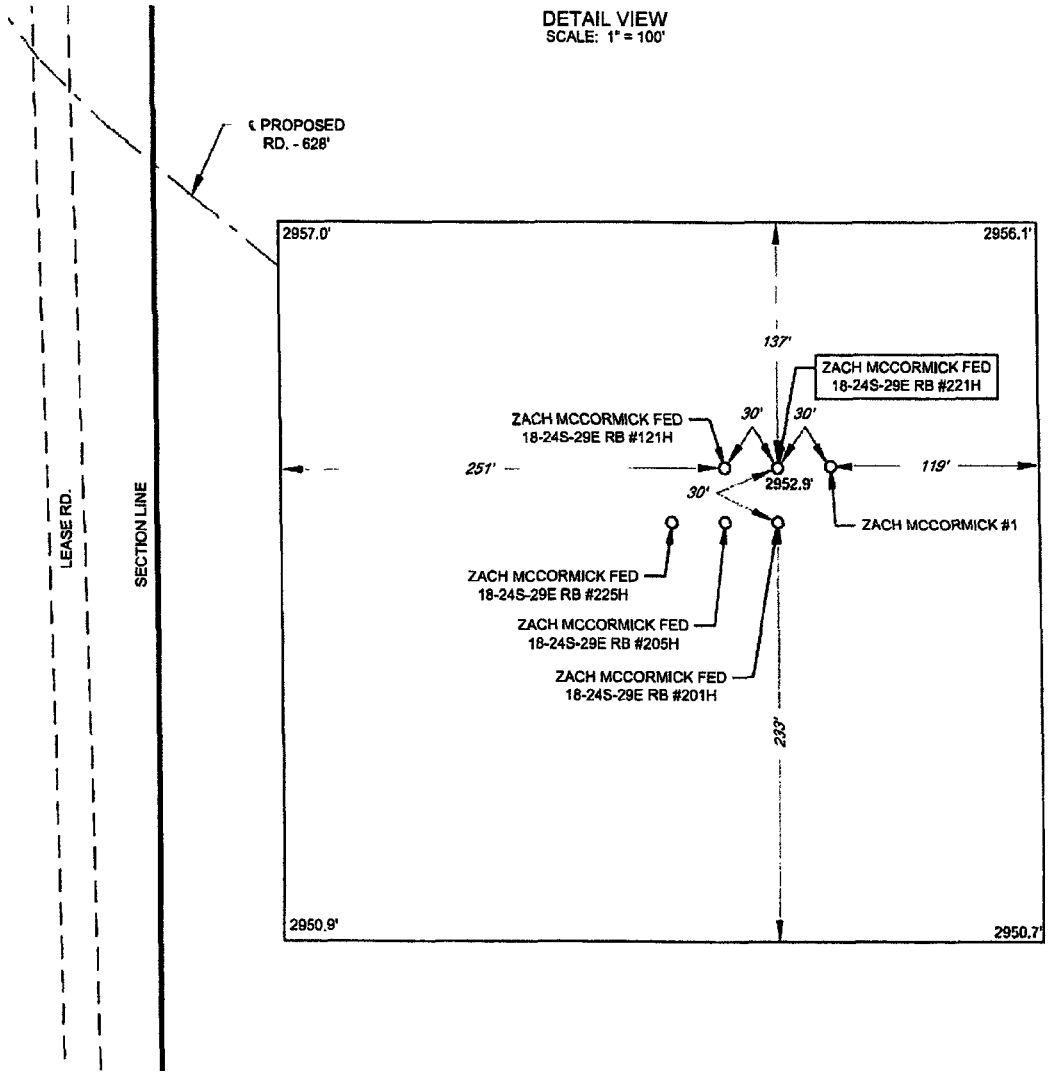
SECTION 18, TOWNSHIP 24-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



LEASE NAME & WELL NO.: ZACH MCCORMICK FED 18-24S-29E RB #221H

#221H LATITUDE N 32.2230598 #221H LONGITUDE W 104.0311277

LEGEND

EXISTING ROAD
BLOCK LINE
PROPOSED ROAD

SCALE: 1" = 100'
0' 50' 100'

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 1983, 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.

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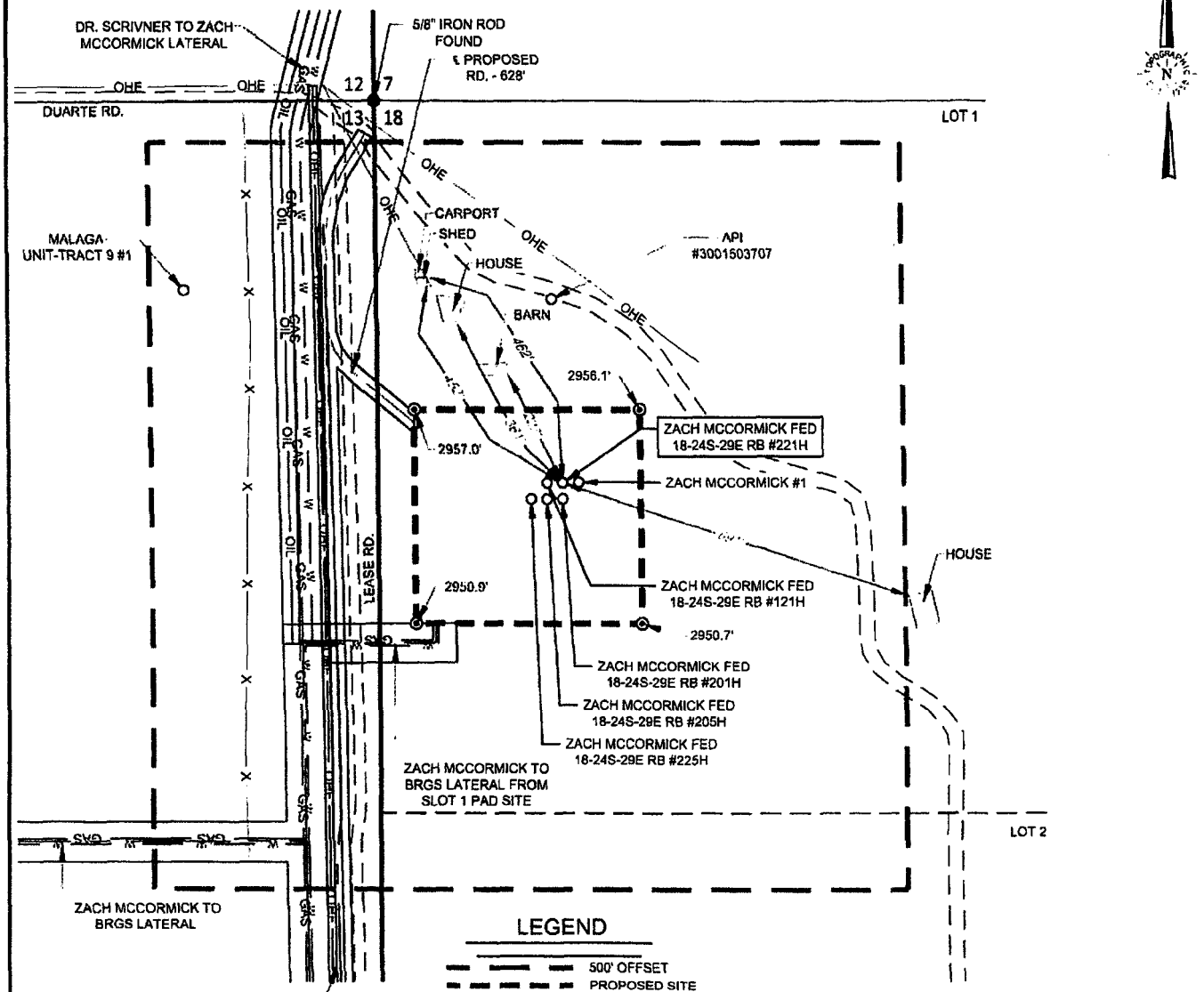
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140
TELEPHONE (817) 744-7512 • FAX (817) 744-7546
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

ORIGINAL DOCUMENT SIZE: 8.5" X 11"

SCALE: 1" = 300'

0' 150' 300'

SECTION 18, TOWNSHIP 24-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



LEGEND

- 500' OFFSET
- PROPOSED SITE
- BLOCK/TOWNSHIP LINE
- SURVEY/SECTION LINE
- ROAD WAY
- FENCE LINE
- OVERHEAD ELECTRIC
- WATER LINE
- OIL LINE
- GAS LINE
- IRON ROD SET
- IRON ROD FOUND

MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

Michael Blake Brown, P.S. No. 18329
AUGUST 14, 2017

Matador PRODUCTION COMPANY

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

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WWW.TOPOGRAPHIC.COM

ZACH MCCORMICK FED 18-24S-29E RB #221H PROXIMITY	REVISION: INT	DATE
DATE: 08/11/17		
FILE: 10 ZACH MCCORMICK FEDERAL 18-24S-29E RB 221H REV1		
DRAWN BY: MML		
SHEET: 7 OF 7		

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 1983
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

S:\SURVEY\MATADOR_RESOURCES\ZACH_MCCORMICK_FED_18-24S-29E_RB_221H\FINAL_PRODUCTS\10_ZACH_MCCORMICK_FEDERAL_18-24S-29E_RB_221H_REV1.DWG 8/14/2017 4:32:07 PM mlewis

Name	Hole Size	Casing Size	Wt/Grade	Thread Collar	Setting Depth	Top Cement
Surface	17-1/2"	13-3/8" (new)	54.5# J-55	BTC	~~600~~ 650'	Surface
Intermediate	12-1/4"	9-5/8" (new)	40# J-55	BTC	2750	Surface
Intermediate 2 Top	8-3/4"	7-5/8" (new)	29.7# P-110	BTC	2450	2450
Intermediate 2 Middle	8-3/4"	7-5/8" (new)	29.7# P-110	VAM HTF-NR	10000	2450
Intermediate 2 Bottom	8-3/4"	7" (new)	29# P-110	BTC	10794	2450
Production Top	6-1/8"	5-1/2" (new)	20# P-110	BTC/TXP	9900	10300
Production Bottom	6-1/8"	4-1/2" (new)	13.5# P-110	BTC/TXP	15432	10300

low cement - SEE COA

Name	Type	Sacks	Yield	Weight	Blend
Surface	Tail	400	1.38	14.8	Class C + 5% NaCl + LCM
TOC = 0'		100% Excess			Centralizers per Onshore Order 2.III.B.1f
Intermediate	Lead	550	2.13	12.6	Class C + Bentonite + 1% CaCL2 + 8% NaCl + LCM
	Tail	270	1.38	14.8	Class C + 5% NaCl + LCM
TOC = 0'		100% Excess			2 on btm jt, 1 on 2nd jt, 1 every 4th jt to surface
Intermediate 2	Lead	400	2.13	12.6	TXI + Fluid Loss + Dispersant + Retarder + LCM
	Tail	310	1.38	14.8	TXI + Fluid Loss + Dispersant + Retarder + LCM
TOC = 2450'		60% Excess			2 on btm jt, 1 on 2nd jt, 1 every 4th jt to top of tail cement (500' above TOC)
Production	Tail	510	1.17	15.8	Class H + Fluid Loss + Dispersant + Retarder + LCM
TOC = 10,300'		25% Excess			2 on btm jt, 1 on 2nd jt, 1 every other jt to top of curve

For the latest performance data, always visit our website: www.tenaris.com

February 02 2017

Tenaris

Size: 5.500 in.
Wall: 0.361 in.
Weight: 20.00 lbs/ft
Grade: P110-IC
Min. Wall Thickness: 87.5 %

Connection: TenarisXP® BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

Nominal OD	**5.500** in.	Nominal Weight	**20.00** lbs/ft	Standard Drift Diameter	**4.653** in.
Nominal ID	**4.778** in.	Wall Thickness	**0.361** in.	Special Drift Diameter	**N/A**
Plain End Weight	**19.83** lbs/ft				

Body Yield Strength	**641** x 1000 lbs	Internal Yield	**12630** psi	SMYS	**110000** psi
Collapse	**12100** psi				

Connection OD	**6.100** in.	Coupling Length	**9.450** in.	Connection ID	**4.766** in.
Critical Section Area	**5.828** sq. in.	Threads per in.	**5.00**	Make-Up Loss	**4.204** in.

Tension Efficiency	**100** %	Joint Yield Strength	**641** x 1000 lbs	Internal Pressure Capacity(1)	**12630** psi
Structural Compression Efficiency	**100** %	Structural Compression Strength	**641** x 1000 lbs	Structural Bending(2)	**92** °/100 ft
External Pressure Capacity	**12100** psi				

Minimum	**11270** ft-lbs	Optimum	**12520** ft-lbs	Maximum	**13770** ft-lbs

Operating Torque	**21500** ft-lbs	Yield Torque	**23900** ft-lbs		

Blanking Dimensions

(1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per

section 10.3 API 5C3 / ISO 10400 - 2007.

(2) Structural rating, pure bending to yield (i.e no other loads applied)

(3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed.

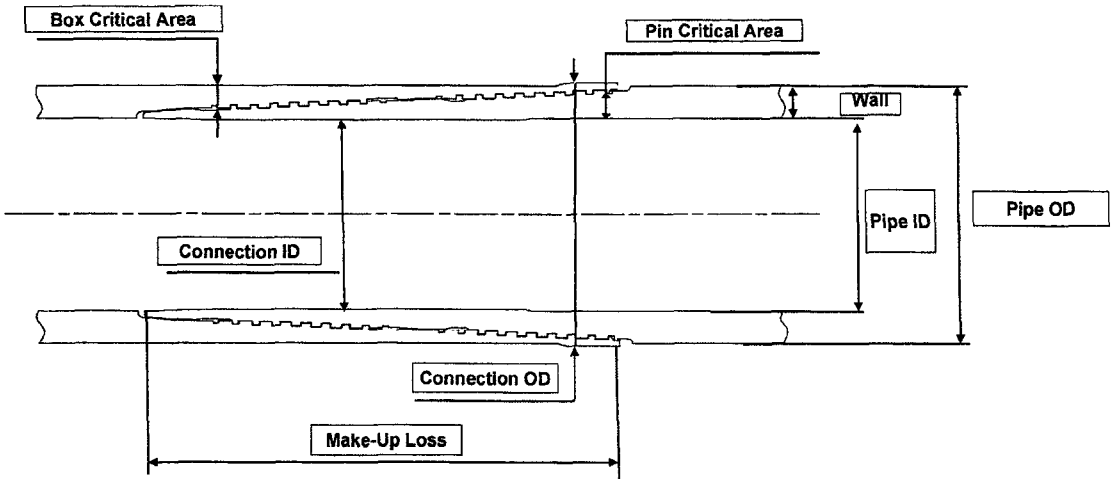
For additional information, please contact us at contact-tenarishydril@tenaris.com

CONNECTION DATA SHEET (Imperial Units)

ISO 9001

Connection: VAM® HTF-NR 7,625" 29,70# P110EC
Alternate Drift: 6,750"

Drawing: PD-101836P PD-101836B Isolated connection



OD	WEIGHT	WALL	GRADE	API DRIFT
7,625"	29,70 lb/ft	0,375"	P110EC	6,750"

PIPE BODY PROPERTIES:

Outside Diameter	*inch*	7,625
Internal Diameter	*inch*	6,875
Nominal Area	*sqin.*	8,541
Yield Strength	*klb*	1 068
Ultimate Strength	*klb*	1 153
MIYP	*psi*	10 760
Collapse Pressure	*psi*	5 670

CONNECTION PROPERTIES:

Connection OD (nom)	*inch*	7,701
Connection ID	*inch*	6,782
Coupling Length	*inch*	N/A
Make-up Loss	*inch*	4,657
Box critical area	*%PBYS*	58%
Pin critical area	%PBYS	67%
Yield Strength	*klb*	619
Ultimate strength	*klb*	669
Structural compression	*klb*	776
Compression with sealability	*klb*	371
MIYP	*psi*	10 760
Ext Pressure Resistance	*psi*	5 670
Regular Make-up Torque	*ft.lb*	
	Min	9 600
	Opt	11 300
	Max	13 000
Maximum Torque with Sealability	*ft.lb*	58 500
Maximum Torsional Value	*ft.lb*	73 000

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80 VAM Specialists available worldwide 24/7 for Rig Site Assistance

vallourec

OCTG DIVISION

Designed by :
X. MENCAGLIA

Reference: VRCC16-1177
Revision : 0
Date : July 19, 2016

For the latest performance data, always visit our website: www.tenaris.com

February 02 2017

Tenaris

Size: 4.500 in.
Wall: 0.290 in.
Weight: 13.50 lbs/ft
Grade: P110-ICY
Min. Wall Thickness: 87.5 %

Connection: TenarisXP® BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

Nominal OD	**4.500** in.	Nominal Weight	**13.50** lbs/ft	Standard Drift Diameter	**3.795** in.
Nominal ID	**3.920** in.	Wall Thickness	**0.290** in.	Special Drift Diameter	**N/A**
Plain End Weight	**13.05** lbs/ft				

Body Yield Strength	**479** x 1000 lbs	Internal Yield	**14100** psi	SMYS	**125000** psi
Collapse	**11620** psi				

Connection OD	**5.000** in.	Coupling Length	**9.075** in.	Connection ID	**3.908** in.
Critical Section Area	**3.836** sq. in.	Threads per in.	**5.00**	Make-Up Loss	**4.016** in.

Tension Efficiency	**100** %	Joint Yield Strength	**479** x 1000 lbs	Internal Pressure Capacity(1)	**14100** psi
Structural Compression Efficiency	**100** %	Structural Compression Strength	**479** x 1000 lbs	Structural Bending(2)	**127** °/100 ft
External Pressure Capacity	**11620** psi				

Minimum	**6950** ft-lbs	Optimum	**7720** ft-lbs	Maximum	**8490** ft-lbs

Operating Torque	**10500** ft-lbs	Yield Torque	**12200** ft-lbs		

Blanking Dimensions

(1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per

section 10.3 API 5C3 / ISO 10400 - 2007.

(2) Structural rating, pure bending to yield (i.e no other loads applied)

(3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed. For additional information, please contact us at contact-tenarishydril@tenaris.com

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Matador Production Company
LEASE NO.:	NMNM117120
WELL NAME & NO.:	221H-Zach McCormick Fed Com
SURFACE HOLE FOOTAGE:	712'/N & 351'/W
BOTTOM HOLE FOOTAGE	331'/N & 240'/E
LOCATION:	Section 18, T.24 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

All previous COAs still apply, except for the following:

A. CASING

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

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

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

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

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

Medium Cave/Karst
Possible water flows in the Artesia Group and Salado.

Possibility of lost circulation in the Artesia Group, Rustler, Capitan Reef, and Delaware.
Abnormal pressure might be encountered upon entering third Bone Spring and subsequent formations.

1. The **13-3/8** inch surface casing shall be set at approximately **650** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt. Excess calculates to 9% - additional cement might be required.**

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

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

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

2. The minimum required fill of cement behind the **9-5/8** inch first intermediate casing, is:

    ☒ Cement to surface. If cement does not circulate see A.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.**

If cement does not circulate to surface on the the first two casing strings, the cement on the third casing must come to surface.

3. The minimum required fill of cement behind the **7 5/8 X 7** inch second intermediate casing, is:

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

Formation below the 7 5/8" X 7.0" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight

required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

4. 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.

5. 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.

MHH 12042017